February 1, 2018
Amended 10/11/2018

Advanced Life Support
Standard Operating Procedures
Illinois Department of Public Health Approval 12/14/2017

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2017 REGION X STANDARD OPERATING PROCEDURES

These protocols have been developed and approved through a collaborative process involving the four Emergency Medical Services (EMS) Systems located in the EMS/Trauma Region X of the Illinois Department of Public Health (IDPH).

- Condell Medical Center EMS System
- Highland Park Hospital EMS System
- Saint Francis Hospital EMS System
- Vista Health/North Lake County EMS System
- Lake Forest Hospital EMS System

These protocols shall be used:
- as the written practice guidelines and pre-hospital standing medical orders as approved by the EMS Medical Directors and to be initiated by the System EMS personnel for off-line medical control,
- as the standing medical orders to be used by Emergency Communication Radio Nurses (ECRN’s) when providing on-line medical control,
- in disaster situations, given that the usual and customary forms of communication are contraindicated as specified in the Region X Multiple Patient Management Plan (MPMP).

The signatures of the agents listed below officially authorize the provision of emergency medical care by Region X EMS personnel and hospital-based Emergency Communication Registered Nurses. These protocols have been approved by the Illinois Department of Public Health.

Officially approved: ___________________________ (Date)

___________________________  ___________________________
Scott French, MD, FACEP  Justin Griffith, MD, FACEP
EMS Medical Director  EMS Medical Director
Condell Medical Center EMS System  Highland Park Hospital EMS System
Advocate Condell Medical Center  NorthShore University HealthSystem
Libertyville, Illinois  Highland Park, Illinois

___________________________  ___________________________
Sara Ferrera, MD  Justin Yee, MD
EMS Medical Director  EMS Medical Director
North Lake County EMS system  Saint Francis EMS System
Vista Health System  Presence Saint Francis Hospital
Waukegan, Illinois  Evanston, Illinois

___________________________
Michael Peters, MD
EMS Medical Director
Lake Forest EMS System
Northwestern Lake Forest Hospital
Lake Forest, Illinois
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INTRODUCTION TO THE USE OF STANDARD OPERATING PROCEDURES

The following Standard Operating Procedures (SOPs) are to be employed for all patients requiring pre-hospital medical treatment within the IDPH designated EMS/Trauma Region X.

Important points:

- Care is to be initiated consistent with these Standard Operating Procedures upon the arrival of EMS or at the earliest possible time after EMS determines that the scene is considered to be safe.
- EMS System providers are authorized to carry out these protocols to the extent necessitated by the patient’s condition.
- ECRN’s may give only those orders outlined in these protocols. *Any deviations from Standard Operating Procedures are to be made in collaboration with the Emergency Department (ED) Physician.*
- If a patient’s situation is not covered by the standard operating procedures, providers should initiate routine medical or trauma care and **Contact Medical Control** at the appropriate hospital for further direction from an ED physician. In all circumstances, such physicians have the latitude to deviate from these protocols if it is believed that the deviation is in the best interest of the patient.
- Under no circumstances shall emergency pre-hospital care be delayed while attempting to establish contact with Medical Control.
- EMS personnel may withhold or withdraw resuscitative efforts in accordance with *Withdrawing Resuscitative Efforts* found on page 11 or *Withholding Resuscitative Efforts* found on page 85 of these Standard Operating Procedures.
- Unless otherwise specified, the pediatric patient is considered to be under the age of 16.
- An alternate order of listed interventions may be appropriate based upon patient assessment.
- It is understood that during multiple patient incidents altered standards of care may be necessary in order to provide the greatest good to the greatest number of patients.
- Pediatric medication dosages should not exceed adult dosages unless specifically indicated.
- **Procedures/Interventions are dictated by individual System permissions.**
SEQUENCE FOR TRANSMISSION OF PATIENT INFORMATION

1. Identify provider name and vehicle number

2. Age, gender, and approximate weight

3. Level of consciousness

4. Chief Complaint - Degree Of Distress - Assessment Findings
   - Blood Pressure
   - Pulse
   - Respirations - rate and degree of distress
   - ECG/12 lead if indicated
   - Pulse Oximetry
   - Capnography (when indicated)
   - Blood Glucose level (when indicated)
   - Lung sounds (when indicated)
   - Pupils
   - Skin condition and color
   - Glasgow Coma Scale
   - Pain Assessment

5. Treatment rendered and the patient’s response to the treatment rendered

6. History of present illness or injury, time of onset, mechanism of injury, and/or nature of illness

7. Past medical history

8. Allergies

9. Medications

10. ETA and destination
ABBREVIATED REPORT

An abbreviated report may be provided to, or requested by Medical Control in situations where resources are limited and/or the patient’s condition is critical

1. Identify provider name, vehicle number and receiving hospital

2. Declare “This is an abbreviated radio report”

3. Nature of situation and protocol being followed

4. Age and gender of patient

5. Chief complaint, brief history of present illness/injury and time of onset

6. Airway and vascular access status

7. Current vital signs, Glasgow Coma Scale

8. Major interventions completed or being attempted

9. ETA to receiving hospital

Be prepared to provide detailed information upon arrival at the hospital.
Aeromedical transportation should be considered for the patient after a thorough patient assessment has been completed. Aeromedical transportation should be considered:

1. When the time of transport by ground to an appropriate facility poses a threat to the patient’s survival and recovery.
2. When extrication, rescue, weather and/or traffic conditions may delay the transportation of the patient to an appropriate hospital.

Ongoing assessment, treatment and patient packaging should be continued until relieved by the Aeromedical Transportation Team.

Circumstances that may warrant Aeromedical Transportation include, but are not limited to:

1. Trauma patients with prolonged extrication
2. Patients requiring reimplantation
3. Patients requiring a burn center in association with multiple system injuries
4. Clear evidence of cardiac/great vessel injury
5. Paralysis due to spinal cord injury
6. Multiple patients (i.e., mass-casualty incident) in need of a Trauma Center
7. Multiple system trauma

Communication Details:

1. EMS personnel at the scene may contact a helicopter service directly.
2. EMS personnel must Contact Medical Control that a helicopter service has been contacted. A patient status report and the helicopter’s hospital destination shall also be reported.

NOTE: Consider helicopter estimated time of arrival (ETA) as well as air transport time when determining the benefit of aeromedical transportation vs. ground transport.
ALL patient care begins with assessing scene safety and the use of standard precautions.

1. INITIAL/PRIMARY ASSESSMENT
   a. Airway
   b. Breathing
   c. Circulation
   d. AVPU and Glasgow Coma Scale determination
   e. Expose and examine as indicated

2. IDENTIFY PRIORITY PATIENTS AND MAKE TRANSPORT DECISION.

3. ADDITIONAL ASSESSMENT (To include Focused History, Physical Exam and SAMPLE History)
   a. Vital Signs, pain scale
   b. Determine weight as indicated
   c. Apply pulse oximeter or capnography/EtCO2 and record reading before and during OXYGEN administration. Administer OXYGEN, if SpO2 is less than 94% or patient shows signs of respiratory distress.
      • Nasal Cannula 2-6 liters/minute
      • Non-Rebreather Mask – 12-15 liters/minute
      • Bag Valve Mask – 15 liters/minute
   d. Evaluate cardiac rhythm as needed
   e. Obtain a 12-lead ECG as indicated and report interpretation findings
   f. Establish NORMAL SALINE per IV/IO and adjust flow rate as indicated by the patient’s condition and age. If signs and symptoms of shock or hypoperfusion, administer IV/IO FLUID CHALLENGE in 500 mL increments. Titrate to desired patient response. (May use a saline lock cap on IV catheter hub for stable patients.)
   g. Determine blood glucose level if appropriate
   h. Reassess vital signs, pain scale, pulse oximetry or capnography/EtCO2 and patient condition as frequently as the patient’s condition indicates and after each intervention

4. CONTACT MEDICAL CONTROL

5. TRANSPORT TO THE CLOSEST APPROPRIATE FACILITY

   Closest appropriate facility means the comprehensive emergency department of patient choice within the department’s transport area or the nearest hospital in cases of life threatening emergencies.
Assess responsiveness
Assess pulse

**RESPONSIVE**

↓

Adult Routine Medical Care

**UNRESPONSIVE**

↓

If no breathing or only gasping, and no pulse felt within 10 seconds
begin compressions until monitor/defibrillator is ready to view rhythm
Treat dysrhythmias per protocols
↓

After 30 compressions, deliver 2 breaths
Continue 30:2 compressions to ventilation cycle for 2 minutes
↓

Assess cardiac rhythm and pulse every 2 minutes during CPR
↓

Vascular access IV/IO
↓

Consider advanced airway (Insertion of an ET tube or supraglottic airway)
Confirm device placement and ventilation
With advanced airway in place, deliver 1 breath every 6 seconds
Monitor status with capnography/EtCO2
ADULT DRUG ASSISTED INTUBATION

INDICATIONS:
- Failure to maintain an adequate airway or aspiration risk, or
- Actual or pending respiratory failure (severe CHF, pulmonary edema, COPD, asthma or anaphylaxis, with RR < 10 or > 40, shallow/labored effort or SpO₂ ≤ 92% while on 100% oxygen), or
- GCS 8 or less, or
- Inability to ventilate/oxygenate adequately, or
- Anticipated patient deterioration due to airway in imminent risk of closure

CAUTION:
- Patients 60 years of age or older, debilitated or chronically ill may require much lower dosages to achieve desired effect

Adult Routine Medical Care/Adult Routine Trauma Care
↓
Pre-oxygenate 100% OXYGEN for 3 minutes
Assist ventilations with 1 breath every 5-6 seconds

NOTE: For suspected increased intracranial pressure patients
(head injury, stroke, HTN crisis)
premedicate with:
LIDOCAINE 1.5 mg/kg IVP/IO
↓
ETOMIDATE 0.3 mg/kg IVP/IO
(maximum 20 mg)
↓
Attempt to Intubate
For post-intubation sedation VERSED 2 mg IVP/IO every 2 minutes titrate to desired effect to a maximum of 20 mg
If airway secured with endotracheal tube, verify tube placement with capnography/EtCO₂
Apply cervical collar to maintain tube position
↓
If unable to intubate, consider airway alternatives
↓
Monitor patient with continuous capnography/EtCO₂
AUTOMATIC IMPLANTED CARDIAC DEFIBRILLATOR (AICD)

1. Adult Routine Medical Care or Pediatric Routine Medical Care (position of comfort)

2. Prehospital personnel in contact with the patient at the time of AICD firing are in NO DANGER.

3. Treat dysrhythmias per protocols or AED except:

   a. ALL DEFIBRILLATION ATTEMPTS SHOULD BE AT 360 JOULES OR EQUIVALENT BIPHASIC.
   b. If NO response, alter pad placement slightly between defibrillation attempts.
   c. Avoid direct placement of the defib pads over the AICD unit as this could damage the unit.

4. Any patient who has been defibrillated by his/her AICD should be strongly encouraged to seek medical attention regardless of the patient’s current condition.
PROCEDURE

1. On arrival of ALS trained personnel:
   a. Obtain report from the AED personnel
   b. Allow the AED to finish the cycle, continue CPR
   c. For suspected opioid emergency (if not previously given): Administer NARCAN 2 mg IN/IVP/IO/IM every 3 minutes as needed to achieve desired effect to a maximum total of 10 mg
   d. Attach a monitor/defibrillator to the patient before disconnecting the AED
   e. Perform a rapid assessment and rhythm interpretation
   f. If a shockable rhythm, defibrillate at maximum joules or biphasic equivalent
   g. Consider the shocks delivered by the AED as part of the ALS protocol

2. ALS personnel should proceed to IV/IO access, medication administration and advanced airway maintenance.

3. Subsequent defibrillation should be at maximum joules.

NOTE: For children 1 through 8 years of age, a standard AED may be used if pediatric dose-attenuator system is not available. For infants less than 1 year of age, manual selection defibrillation is preferred; however an AED with pediatric dose-attenuator is acceptable. If neither is available, a standard AED may be used.
## ADULT ASYSTOLE/PULSELESS ELECTRICAL ACTIVITY

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Universal Adult Emergency Cardiac Care

\[\text{Consider and treat possible causes}\]

\[\text{EPINEPHRINE 1:10,000 (1mg/10mL) 1 mg IVP/IO}\]

\[\text{May repeat every 3-5 minutes}\]

\[\text{Administer 500 mL FLUID CHALLENGE if breath sounds are clear}\]

\[\text{Repeat FLUID CHALLENGE as needed}\]
## WITHDRAWING RESUSCITATIVE EFFORTS

### Contact Medical Control
while continuing patient care

- Report events of the call including estimated duration of cardiac arrest and treatments rendered.

- Reaffirm all of the following:
  - Patient is a normothermic adult,
  - Patient experienced an unwitnessed arrest,
  - Airway secured and IV/IO placement confirmed,
  - Patient remains in Asystole and
  - No response to at least 20 minutes of ALS care and EtCO2 <10

- If the Physician orders termination of efforts;
  - Note the time of withdrawal of efforts
  - Note the physician’s name on the run report
  - Notify Coroner or Medical Examiner

**NOTE:** Only a physician may make the determination to withdraw resuscitative efforts. Local law enforcement may assist with Coroner/Medical Examiner notification. Local department policy may affect transportation considerations.
ADULT BRADYCARDIA AND AV BLOCKS

Adult Routine Medical Care

**STABLE**
*Patient alert*
*Skin warm and dry*
*Systolic BP >90 mmHg*

**UNSTABLE**
*Altered mental status*
*Systolic BP <90 mmHg*

↓
ATROPINE 0.5 mg rapid IVP/IO
Prepare for transcutaneous pacing
↓
If Atropine is ineffective
↓
VALIUM 2 mg IVP/IO over 2 minutes
VERSED 2 mg IVP/IO
↓
Begin Transcutaneous Pacing
↓
May repeat VALIUM 2 mg IVP/IO every 2 minutes as needed to a maximum of 10 mg
May repeat VERSED 2 mg IVP/IO every 2 minutes titrate to desired effect up to a maximum of 10 mg
↓
If Transcutaneous Pacing is ineffective
ATROPINE 0.5 mg rapid IVP/IO may be repeated every 3-5 minutes to a maximum total dose of 3 mg
↓
Manage pain appropriately
FENTANYL 1 mcg/kg IVP/IO/IN
↓
If Atropine is ineffective begin
DOPAMINE DRIP at 5mcg/kg/min and titrate up to 20 mcg/kg/min
Refer to Adult Cardiogenic Shock protocol
ADULT ACUTE CORONARY SYNDROME

Adult Routine Medical Care

12 lead ECG and Contact Medical Control for STEMI alert if ST elevation noted

CAUTION: If ST elevation in II, III and AVF, Contact Medical Control as Nitroglycerin and Morphine may be contraindicated.

↓

**STABLE**

*Patient alert*

*Skin warm and dry*

*Systolic BP >90 mmHg*

↓

ASPIRIN 81 mg x 4 (324 mg) PO
chewed and swallowed

↓

NITROGLYCERIN 0.4 mg SL
May repeat every 5 minutes
to a maximum of 3 doses

↓

Manage pain appropriately:

↓

MORPHINE SULFATE 2 mg IVP
slowly over 2 minutes,
May repeat every 2 minutes as needed,
to a maximum total dose of 10 mg

↓

**UNSTABLE**

*Altered mental status*

*Systolic BP < 90 mmHg*

↓

ASPIRIN 81 mg x 4 (324 mg) PO
chewed and swallowed
if patient can tolerate

↓

IV/IO FLUID CHALLENGE in 500 mL increments
Titrate to desired patient response

NOTE: Computer assisted ECG interpretation may be used along with provider interpretation.

NOTE: If Right Sided ECG (V4R) obtained, label as “Right Sided ECG” but do not transmit.
ADULT CARDIOGENIC SHOCK

Adult Routine Medical Care

↓

IV/IO FLUID CHALLENGE in 500 mL increments
Titrate to desired patient response

↓

DOPAMINE DRIP begin at 5mcg/kg/min and titrate up to 20 mcg/kg/min
to maintain a Systolic BP ≥ 90 mmHg

DOPAMINE DRIP PREMIX (800 mg/500 mL or 400 mg/250 mL)

<table>
<thead>
<tr>
<th>BODY WEIGHT</th>
<th>DOSE RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>lbs</td>
<td>kg</td>
</tr>
<tr>
<td>100</td>
<td>45</td>
</tr>
<tr>
<td>121</td>
<td>55</td>
</tr>
<tr>
<td>143</td>
<td>65</td>
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<tr>
<td>165</td>
<td>75</td>
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<tr>
<td>187</td>
<td>85</td>
</tr>
<tr>
<td>210</td>
<td>95</td>
</tr>
<tr>
<td>240</td>
<td>109</td>
</tr>
<tr>
<td>260</td>
<td>118</td>
</tr>
</tbody>
</table>
### Adult Supraventricular Tachycardia (Narrow Complex Tachycardia)

**Consider and Treat Possible Underlying Causes**
- Heart failure
- Hypovolemia
- Side effects of other drugs

---

**Adult Routine Medical Care**

#### Stable

- **Patient alert**
- **Skin warm and dry**
- **Systolic BP ≥ 90 mmHg**

- Instruct the patient to perform VALSALVA MANEUVER

  - ADENOSINE 6 mg rapid IVP followed by rapid flush of 20 mL NS
    - If no response in 2 minutes:
      - ADENOSINE 12 mg rapid IVP followed by rapid flush of 20 mL NS
        - If no response in 2 minutes:
          - VERAPAMIL 5 mg IVP slowly over 2 minutes
            - If no response in 15 minutes and Systolic BP ≥ 90 mmHg: may repeat VERAPAMIL 5 mg IVP slowly over 2 minutes

#### Unstable

- **Altered mental status**
- **Systolic BP < 90 mmHg**

  - The conscious patient may receive VERSED 2 mg IVP/IO every 2 minutes titrate to desired effect to a maximum of 10 mg
  - **NOTE:** Do not delay cardioversion for sedation

  - SYNCHRONIZED CARDIOVERSION at 100 joules or equivalent biphasic
    - SYNCHRONIZED CARDIOVERSION at 200 joules or equivalent biphasic
      - SYNCHRONIZED CARDIOVERSION at 300 joules or equivalent biphasic
        - SYNCHRONIZED CARDIOVERSION at 360 joules or equivalent biphasic

**NOTE:** Manage pain appropriately
ADULT RAPID ATRIAL FLUTTER/FIBRILLATION  
(NARROW COMPLEX TACHYCARDIA)

Adult Routine Medical Care

<table>
<thead>
<tr>
<th>STABLE</th>
<th>UNSTABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patient alert</strong></td>
<td><strong>Altered mental status</strong></td>
</tr>
<tr>
<td><strong>Skin warm and dry</strong></td>
<td><strong>Systolic BP &lt; 90 mmHg</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STABLE</th>
<th>UNSTABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instruct the patient to perform <strong>VALSALVA MANEUVER</strong></td>
<td>The conscious patient may receive VERSED 2 mg IVP/IO every 2 minutes titrate to desired effect to a maximum of 10 mg</td>
</tr>
</tbody>
</table>

**NOTE:** Do not delay cardioversion for sedation

<table>
<thead>
<tr>
<th>STABLE</th>
<th>UNSTABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>VERAPAMIL 5 mg IVP slowly over 2 minutes</strong></td>
<td>SYNRCHRONIZED CARDIOVERSION at 100 joules or equivalent biphasic</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STABLE</th>
<th>UNSTABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>If no response in 15 minutes and Systolic BP ≥ 90 mmHg: may repeat <strong>VERAPAMIL 5 mg IVP slowly over 2 minutes</strong></td>
<td>SYNRCHRONIZED CARDIOVERSION at 200 joules or equivalent biphasic</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STABLE</th>
<th>UNSTABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYNRCHRONIZED CARDIOVERSION at 300 joules or equivalent biphasic</td>
<td>SYNRCHRONIZED CARDIOVERSION at 360 joules or equivalent biphasic</td>
</tr>
</tbody>
</table>

**NOTE:** Manage pain appropriately
**POSSIBLE CAUSES**

<table>
<thead>
<tr>
<th>Cause</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypovolemia</td>
<td>Toxins</td>
</tr>
<tr>
<td>Hypoxia</td>
<td>Tamponade, Cardiac</td>
</tr>
<tr>
<td>Hydrogen ion – acidosis</td>
<td>Tension Pneumothorax</td>
</tr>
<tr>
<td>Hyper/Hypokalemia</td>
<td>Thrombosis, Coronary (ACS)</td>
</tr>
<tr>
<td>Hypothermia</td>
<td>Thrombosis, Pulmonary (embolism)</td>
</tr>
</tbody>
</table>

Universal Adult Emergency Cardiac Care

\[ \downarrow \]

DEFIBRILLATE at 360 j or equivalent biphasic

Resume CPR for 2 minutes

\[ \downarrow \]

**RETURN OF RHYTHM**

↓

Adult Routine Medical Care

**PERSISTENT OR RECURRENT V-FIB/PULSELESS V-TACH**

↓

Check Rhythm, if V-fib or Pulseless V-tach remains:

DEFIBRILLATE at 360 j or equivalent biphasic

\[ \downarrow \]

EPINEPHRINE 1:10,000 (1mg/10mL) 1 mg IVP/IO

Repeat every 3-5 minutes if no response

↓

Check Rhythm, if V-fib or Pulseless V-tach remains:

DEFIBRILLATE at 360 j or equivalent biphasic

↓

Resume CPR for 2 minutes and administer

AMIODARONE 300 mg IVP/IO

↓

**NOTE:** Dialysis Patient Only*,

SODIUM BICARBONATE 50 mEq IV/IO (1 amp)

↓

Check Rhythm and DEFIBRILLATE at 360 j or equivalent biphasic

Resume CPR for 2 minutes

↓

AMIODARONE 150 mg IVP/IO

**NOTE:** If rhythm appears to be Torsades de Pointes (polymorphic ventricular tachycardia):

Contact Medical Control to consider MAGNESIUM SULFATE IVPB 2gm/100mL D5W over 5 minutes.

*MAGNESIUM SULFATE should not be administered to patient with renal failure or on dialysis.
**ADULT VENTRICULAR TACHYCARDIA OR WIDE COMPLEX TACHYCARDIA (PATIENT WITH A PULSE)**

Adult Routine Medical Care

<table>
<thead>
<tr>
<th>STABLE</th>
<th>STABLE</th>
<th>UNSTABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monomorphic Wide Complex</td>
<td>Polymorphic Wide Complex</td>
<td>Altered mental status</td>
</tr>
<tr>
<td>Patient alert</td>
<td>Patient alert</td>
<td>Systolic BP &lt; 90 mmHg</td>
</tr>
<tr>
<td>Skin warm and dry</td>
<td>Skin warm and dry</td>
<td></td>
</tr>
<tr>
<td>Systolic BP ≥90 mmHg</td>
<td>Systolic BP ≥90</td>
<td></td>
</tr>
</tbody>
</table>

↓

| ADENOSINE 6 mg rapid IVP followed by rapid flush of 20 mL NS |
| AMIODARONE 150 mg diluted in 100 mL D5W IVPB over 10 minutes |
| The conscious patient may receive VERSED 2 mg IVP/IO every 2 minutes titrate to desired effect to a maximum of 10 mg |

**NOTE:** Do not delay cardioversion for sedation

↓

| SYNCHRONIZED CARDIOVERSION at 100 joules or equivalent biphasic |
| If Unsuccessful: AMIODARONE 150 mg diluted in 100 mL D5W IVPB over 10 minutes and SYNCHRONIZED CARDIOVERSION at 200 joules or equivalent biphasic |
| SYNCHRONIZED CARDIOVERSION at 300 joules or equivalent biphasic |
| SYNCHRONIZED CARDIOVERSION at 360 joules or equivalent biphasic |

If VT recurs, SYNCHRONIZED CARDIOVERSION at energy level that was previously successful

**NOTE:** If rhythm appears to be Torsades de Pointes (polymorphic ventricular tachycardia with a pulse) DEFIBRILLATE at 360 j or biphasic equivalent
ADULT ACUTE PULMONARY EDEMA

Adult Routine Medical Care

STABLE
Patient alert
Skin warm and dry
Systolic BP ≥ 90 mmHg

↓

NITROGLYCERIN 0.4 mg SL
May repeat every 5 minutes to a maximum of 3 doses
↓
Administer CPAP at 5 cm/PEEP and titrate to desired effect (max PEEP=10)
↓
LASIX 40 mg IVP
(LASIX 80 mg IVP if patient on LASIX)

UNSTABLE
Altered mental status
Systolic BP < 90 mmHg

↓

Consider Cardiogenic Shock Protocol
↓
Treat dysrhythmias per protocols
↓
Contact Medical Control for CPAP order

NOTE: At any time during CPAP treatment, if the patient shows signs and symptoms of deterioration, remove CPAP and consider endotracheal intubation.
ADULT ASTHMA/COPD WITH WHEEZING

Adult Routine Medical Care
↓
ALBUTEROL 2.5 mg/3mL mixed with ATROVENT 0.5 mg/2.5 mL (DUONEB) NEB treatment with OXYGEN flow of 6 liters/minute
↓

If no improvement, administer
ALBUTEROL 2.5 mg/3mL mixed with ATROVENT 0.5 mg/2.5 mL (DUONEB) NEB treatment
↓

If no improvement, administer ALBUTEROL 2.5 mg/3mL NEB treatment
May repeat every 5 minutes
↓
For severe distress Contact Medical Control to consider
EPINEPHRINE 1:1,000 (1mg/mL) 0.5 mg IM

Do not delay transport while waiting for response

NOTE: ALBUTEROL/ATROVENT (DUONEB) and ALBUTEROL NEB treatment may be administered in-line for those patients requiring CPAP or intubation.

Contact Medical Control to consider use of CPAP in a patient with symptoms of COPD.
CARBON MONOXIDE/SMOKE INHALATION

Adult Routine Medical Care or Pediatric Routine Medical Care

↓

OXYGEN at 100%
Vomiting precautions

↓

NON-INVASIVE CARBON MONOXIDE MEASUREMENTS:

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Signs and Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 5%</td>
<td>None (Normal for non-smoker)</td>
</tr>
<tr>
<td>5 – 9%</td>
<td>Minor headache (May be normal for smoker)</td>
</tr>
<tr>
<td>10 – 19%</td>
<td>Headache, shortness of breath</td>
</tr>
<tr>
<td>20 – 29%</td>
<td>Headache, nausea, dizziness, fatigue</td>
</tr>
<tr>
<td>30 – 39%</td>
<td>Severe headache, vomiting, vertigo, altered LOC</td>
</tr>
<tr>
<td>40 – 49%</td>
<td>Confusion, syncope, tachycardia</td>
</tr>
<tr>
<td>50 – 59%</td>
<td>Seizures, shock, apnea</td>
</tr>
<tr>
<td>Greater than 59%</td>
<td>Coma, death, cardiac dysrhythmias</td>
</tr>
</tbody>
</table>

**NOTE:** If indicated, consider Adult (p. 7) or Pediatric Drug Assisted Intubation (p. 45).
Do not rely on pulse oximetry to indicate degree of hypoxia.
Consider cyanide poisoning in presence of smoke/fire situations.
## ADULT ALLERGIC REACTION
### ANAPHYLACTIC SHOCK

**Adult Routine Medical Care**

<table>
<thead>
<tr>
<th>ALLERGIC REACTION</th>
<th>ALLERGIC REACTION</th>
<th>ANAPHYLACTIC SHOCK</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STABLE</strong></td>
<td><strong>STABLE</strong></td>
<td><strong>UNSTABLE</strong></td>
</tr>
<tr>
<td>Hives, itching, and rash</td>
<td>WITH AIRWAY INVOLVEMENT</td>
<td>Altered mental status</td>
</tr>
<tr>
<td>GI distress</td>
<td>Patient alert</td>
<td>Systolic BP &lt; 90 mmHg</td>
</tr>
<tr>
<td>Patient alert</td>
<td>Skin warm and dry</td>
<td></td>
</tr>
<tr>
<td>Skin warm and dry</td>
<td>Systolic BP ≥90 mmHg</td>
<td></td>
</tr>
</tbody>
</table>

- **STABLE**: Apply ice/cold pack to site.
- **WITH AIRWAY INVOLVEMENT**: EPINEPHRINE 1:1,000 (1 mg/mL) 0.5mg IM may repeat every 5 minutes.
- **UNSTABLE**: Secure Airway.

### BENADRYL: 25 mg IVP slowly over 2 minutes or IM

- **STABLE**: BENADRYL 50 mg IVP slowly over 2 minutes or IM.

### ALBUTEROL/ATROVENT (DUONEB) NEB treatment

- If wheezing, ALBUTEROL 2.5 mg/3 mL mixed with ATROVENT 0.5 mg/2.5 mL (DUONEB) NEB treatment.
- If no improvement, ALBUTEROL 2.5 mg/3 mL mixed with ATROVENT 0.5 mg/2.5 mL (DUONEB) NEB treatment.

### IV/IO FLUID CHALLENGE in 500 mL increments

- Titrated to desired patient response.

### ALBUTEROL 2.5 mg/3 mL NEB treatment

- Contact Medical Control to consider EPINEPHRINE 1:10,000 (1 mg/10 mL) 0.5mg IVP/IO every 5 minutes.

**NOTE:** ALBUTEROL/ATROVENT (DUONEB) and ALBUTEROL NEB treatment may be administered in-line for those patients requiring intubation.
ADULT SEPSIS

Adult Routine Medical Care

↓

Determine if patient meets Sepsis criteria:

Suspected or documented infection, or altered mental status
Two or more of the following vital signs:

- Systolic BP <90
- Mean Arterial Pressure (MAP) <65
- Temperature > 38°C (100.4°F) OR < 36°C (96.8°F)
- Respiratory Rate > 20 breaths/min
- Heart Rate > 90 beats/min
- EtCO2 ≤ 25 mmHg

Administer FLUID CHALLENGE in 500mL NS increments IV/IO
NOTE: Total amount of IV FLUID CHALLENGE should target a minimum of 30mL/kg

Contact Medical Control to notify of Sepsis assessment findings

↓

If systolic BP remains < 90 mmHg after reaching target minimum of 30mL/kg IV fluid

DOPAMINE infusion at 5-20 mcg/kg/min titrated to maintain systolic BP > 90 mm Hg

NOTE: Bedside report to hospital to include total amount of IVF infused
ADULT ALTERED MENTAL STATUS

CONSIDER ETIOLOGY

<table>
<thead>
<tr>
<th>Diabetes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drug Overdose</td>
</tr>
<tr>
<td>Poisoning</td>
</tr>
<tr>
<td>Alcohol related</td>
</tr>
<tr>
<td>Stroke</td>
</tr>
</tbody>
</table>

Adult Routine Medical Care
Immobilize C-spine as indicated
↓

Obtain blood glucose level and record.
If blood glucose is < 60:
If patient is able to tolerate oral preparation, has gag reflex and able to protect own airway ORAL GLUCOSE GEL 15 G or
Administer DEXTROSE 50% 50 mL IVP/IO or
GLUCAGON 1 mg IM/IN
↓

If patient is not alert, respirations are decreased or a narcotic overdose is suspected:
NARCAN 2 mg IN/IVP/IO/IM every 3 minutes as needed to achieve desired effect to a maximum total of 10 mg

NOTE: Attempt to identify substance(s) involved.
Any containers found at the scene with medications and/or substances should be brought to the emergency department providing that the transport of the item(s) do not pose a safety risk. Consider the use of restraints prior to the administration of NARCAN.
STROKE

Adult Routine Medical Care

↓

Determine time of onset of symptoms (last known well time)
Obtain blood glucose level and record,
   if result <60
↓

Administer DEXTROSE 50% 50 mL IVP or
GLUCAGON 1 mg IM/IN

↓

Perform Cincinnati Prehospital Stroke Scale
↓

Contact Medical Control for Stroke Alert

with Stroke Scale Response and Time of Symptom Onset (last known well time)

Document Findings
↓

If rapid neurologic deterioration (unequal pupils, extensor posturing, lateralizing signs),
ventilate with BVM at the following rates:

↓

Ventilate 1 breath every 3- 6 seconds
Ventilate patient guided by capnography to aim for EtCO2 of 35 when there is a perfusing rhythm

↓

Consider Drug Assisted Intubation (p. 7)

NOTE: Do not delay transport of Stroke patient for IV Start unless IV fluids or medications are required based on patient presentation.

Cincinnati Prehospital Stroke Scale

<table>
<thead>
<tr>
<th>TEST</th>
<th>NORMAL</th>
<th>ABNORMAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>FACIAL DROOP</td>
<td>Have patient show teeth or smile</td>
<td>Both sides of face move equally</td>
</tr>
<tr>
<td>ARM DRIFT</td>
<td>Patient closes eyes and holds both arms straight out, palms up for 10 seconds</td>
<td>Both arms move the same or don’t move at all</td>
</tr>
<tr>
<td>ABNORMAL SPEECH</td>
<td>Have patient say, “You can’t teach an old dog new tricks”</td>
<td>Patient uses correct words with no slurring</td>
</tr>
</tbody>
</table>


ADULT HYPERTENSIVE EMERGENCY
No History of Head Trauma

Definition: An acute elevation of Systolic BP > 220 mm Hg or Diastolic BP > 120 mm Hg.
Symptoms: Epistaxis (nosebleed), headache, visual disturbances, and neurologic changes ranging from altered mental status to coma and seizure activity.

Adult Routine Medical Care
Take Blood Pressure in both arms

↓
Monitor vital signs and neuro status every 5 minutes

↓

Contact Medical Control
to consider NITROGLYCERIN 0.4 mg SL
ADULT DIABETIC EMERGENCIES

Adult Routine Medical Care

↓
Obtain history of time of patient’s last medication dosage
and whether or not the patient has eaten

↓

HYPOGLYCEMIA
Altered mental status
Blood glucose < 60
or
Unable to determine blood glucose level and
cool, clammy skin

↓
If patient is able to tolerate oral preparation,
has gag reflex and able to protect own airway
ORAL GLUCOSE GEL 15 G

↓
If unable to tolerate oral preparation
DEXTROSE 50% 50 mL IVP
or
GLUCAGON 1 mg IM/IN

↓
If no response repeat
DEXTROSE 50% 50 mL IVP

HYPERGLYCEMIA/KETOACIDOSIS
Blood glucose > 200
or
Unable to determine blood glucose level and warm,
flushed skin and deep, rapid respirations

↓
IV FLUID CHALLENGE in 500 mL increments
Titrato to desired patient response
ADULT SEIZURES
STATUS EPILEPTICUS

Adult Routine Medical Care

↓

Protect patient from injury
Vomiting/aspiration precautions
Do NOT place anything in mouth if actively seizing

↓

VERSED 2 mg IN/IVP/IO every 2 minutes titrate to control seizure activity up to a maximum of 10 mg
Monitor patient with continuous capnography/EtCO2

↓

If seizure activity continues or recurs,
**Contact Medical Control**

to repeat VERSED 2 mg IN/IVP/IO every 2 minutes titrate to control seizure activity up to a total maximum of an additional 10 mg

↓

 Obtain blood glucose level
If blood glucose < 60, administer:

DEXTROSE 50% 50 mL IVP/IO
Or
GLUCAGON 1 mg IM/IN

Assess for any injury sustained during seizure and/or any incontinence
## SEVERE FEBRILE RESPIRATORY ILLNESS

### SYMPTOMS

<table>
<thead>
<tr>
<th>症状</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fever &gt; 100.4°F</td>
</tr>
<tr>
<td>Cough, shortness of breath or hypoxia</td>
</tr>
<tr>
<td>Close contact with person confirmed or suspected of illness in the last 10 days</td>
</tr>
<tr>
<td>Employment in an occupation associated with risk</td>
</tr>
<tr>
<td>Atypical pneumonia without an alternative diagnosis</td>
</tr>
</tbody>
</table>

Take measures to decrease risk of transmission by droplet/airborne/contact

### PATIENT

- Patient to don surgical mask
- Hand hygiene with waterless soap
- Instruct on tissue use

### PROVIDER

- Limit number of personnel exposed
- Provider to don N95 mask, gloves and eye protection
- Avoid touching outside of N95 mask

### Adult Routine Medical Care

- Limit interventions to essential procedures

### Notify receiving facility of precautions

- Consider initial facility evaluation of patient in back of ambulance to determine isolation needs

### Leave equipment in patient room until appropriately cleaned

- Refer to agency policy on decontamination of ambulance and equipment
- Document exposure to possible communicable disease
1. **SCENE SIZE-UP**
   a. Standard Precautions
   b. Scene Hazards
   c. Mechanism of Injury
   d. Number of Patients
   e. Need for Additional Resources

2. **INITIAL ASSESSMENT/PRIMARY SURVEY**
   a. Airway/Spinal Precaution
   b. Breathing
   c. Circulation
   d. AVPU and Glasgow Coma Scale
   e. Management of immediate life threats
      i. If traumatic arrest associated with chest trauma, perform bilateral needle decompression
      ii. If tension pneumothorax, needle decompression to affected side
      iii. Sucking chest wound
      iv. Control bleeding

3. **IDENTIFY PRIORITY OF TRANSPORT**

<table>
<thead>
<tr>
<th>TREAT AND TRANSPORT</th>
<th>RAPID TRANSPORT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focused Exam</td>
<td>Rapid Trauma Assessment</td>
</tr>
<tr>
<td>Examine areas where trauma is expected</td>
<td></td>
</tr>
<tr>
<td>• As per mechanism of injury</td>
<td></td>
</tr>
<tr>
<td>• As per patient complaint</td>
<td></td>
</tr>
<tr>
<td>History</td>
<td></td>
</tr>
<tr>
<td>Vital signs, Pain scale, Neuro exam, Blood glucose</td>
<td></td>
</tr>
<tr>
<td>Continue management of life threats</td>
<td></td>
</tr>
<tr>
<td>Examine head, neck, chest, abdomen, pelvis, extremities, back</td>
<td></td>
</tr>
<tr>
<td>History</td>
<td></td>
</tr>
<tr>
<td>Vital signs, pulse oximeter and capnography/EtCO2, Pain scale, Neuro exam, Blood glucose</td>
<td></td>
</tr>
<tr>
<td>Injury management</td>
<td></td>
</tr>
<tr>
<td>• Airway</td>
<td></td>
</tr>
<tr>
<td>• Consider need for IV</td>
<td></td>
</tr>
<tr>
<td>Manage pain appropriately</td>
<td></td>
</tr>
<tr>
<td>Package patient Transport</td>
<td></td>
</tr>
<tr>
<td>• IV/IO FLUID CHALLENGE in 500 mL increments. Titrate to desired patient response</td>
<td></td>
</tr>
<tr>
<td>Other serious injury management</td>
<td></td>
</tr>
<tr>
<td>Package patient Transport</td>
<td></td>
</tr>
<tr>
<td>Perform Detailed Exam/Secondary Survey as time permits enroute</td>
<td></td>
</tr>
<tr>
<td>Perform Detailed Exam/Secondary Survey as time permits enroute</td>
<td></td>
</tr>
<tr>
<td>Ongoing assessment as patient condition indicates</td>
<td></td>
</tr>
<tr>
<td>Ongoing assessment every 5 minutes</td>
<td></td>
</tr>
</tbody>
</table>

4. **Contact Medical Control enroute; Abbreviated Radio Report may be appropriate for Rapid Transport patients.**
# Region X Field Trauma Triage and Transport Criteria

**NOTE:** Traumatic Arrest – Transport to closest Trauma Center  
No Airway – Transport to closest Comprehensive Emergency Department

<table>
<thead>
<tr>
<th>Systolic Blood Pressure</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult ( \leq 90 ) (2 consecutive measurements)</td>
<td></td>
</tr>
<tr>
<td>Peds ( \leq 80 ) (2 consecutive measurements)</td>
<td></td>
</tr>
</tbody>
</table>

**Category I**  
Unstable Vital Signs  
- Glasgow Coma Scale \( \leq 13 \) with associated head trauma  
- Respiratory Rate \( <10 \) or \( >29 \) (<20 infant<1 year) or need for ventilatory support  

Anatomic Criteria  
- Penetrating injuries to head, neck, torso and extremities proximal to elbow or knee  
- Two or more proximal long bone fractures  
- Unstable pelvis  
- Chest wall instability or deformity (e.g. flail chest)  
- Crushed, degloved, mangled or pulseless extremity  
- Open or depressed skull fractures  
- Amputation proximal to wrist or ankle  
- Paralysis

**Category II**  
Mechanism of Injury  
High Risk Auto Crash  
- Ejection from Automobile (partial or complete)  
- Death in same passenger compartment  
- Intrusion, including roof; \( >12 \) inches occupant site or \( >18 \) inches any site  
- Vehicle telemetry data consistent with a high risk for injury  
- Motorcycle crash \( >20 \) mph  
- Rollover (Unrestrained)  

Falls  
- Adult Falls \( \geq 20 \) feet \( (1 \text{ story} = 10 \text{ feet}) \)  
- Peds falls \( >10 \) feet or \( 2X \) height of the child

Other  
- Auto vs. Pedestrian thrown or run over or with \( >20 \) mph impact  
- Auto vs. Bicyclist thrown, run over or with \( >20 \) mph impact

**Special Considerations**  
Age:  
- Adults \( >55 \) years; risk of injury and death increases  
- SBP \( <110 \); might be shock if age \( >65 \) years  
- Low impact mechanisms/standing falls may lead to severe injury  

Children should be transported to a trauma center  
Anticoagulation and bleeding disorders: Patient with head injury is at high risk for rapid deterioration  
Burns: MOI with or without trauma: transfer to closest trauma center  
Pregnancy \( >20 \) weeks  
EMS Provider judgment

Transport to closest appropriate comprehensive emergency department
ADULT HEAD/SPINAL INJURIES

Adult Routine Trauma Care

STABLE
Patient alert
Skin warm and dry
Systolic BP ≥ 90 mmHg

Focused Exam

UNSTABLE
Altered mental status
Systolic BP < 90 mmHg

Rapid Trauma Assessment

Obtain Blood Glucose level
If results are < 60 administer DEXTROSE 50% 50 mL IVP
or
GLUCAGON 1 mg IM/IN

IV FLUID CHALLENGE in 500 mL increments
Titrate to desired patient response

If rapid neurologic deterioration (unequal pupils, extensor posturing, lateralizing signs)
ventilate with BVM at the following rates:
Adult 1 breath every 3-6 seconds,
Ventilate patient guided by capnography to aim for EtCO2 of 35 when there is a perfusing rhythm

Consider Adult Drug Assisted Intubation (p. 7)

For seizure activity
VERSED 2 mg IN/IVP/IO every 2 minutes titrate to control seizure activity up to a maximum of 10 mg
Monitor patient with continuous capnography/EtCO2

If seizure activity continues or recurs, Contact Medical Control

to repeat VERSED 2 mg IN/IVP/IO every 2 minutes titrate to control seizure activity up to a total maximum of an additional 10 mg
### SELECTIVE SPINAL IMMOBILIZATION

A reliable patient who can adequately communicate, is without signs/symptoms of neck/spine injury, has no evidence of a distracting injury and has a low risk mechanism of injury does not require full spinal immobilization.

**If in doubt, fully immobilize the patient.**

<table>
<thead>
<tr>
<th><strong>Mechanism of Injury</strong></th>
<th><strong>High Risk Mechanism</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Low velocity MVC</td>
<td></td>
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<tr>
<td>Restrained occupant in MVC</td>
<td></td>
</tr>
<tr>
<td>Passenger compartment intrusion minimal</td>
<td></td>
</tr>
<tr>
<td>No Ejection from vehicle</td>
<td></td>
</tr>
<tr>
<td>No Rollover MVC</td>
<td></td>
</tr>
<tr>
<td>Motorcycle collision &lt; 20 mph</td>
<td></td>
</tr>
<tr>
<td>Ground level fall</td>
<td></td>
</tr>
</tbody>
</table>

↓Yes – Low Risk Mechanism↓

<table>
<thead>
<tr>
<th><strong>Patient Reliability</strong></th>
<th><strong>Patient is not Reliable</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>No signs of intoxication</td>
<td></td>
</tr>
<tr>
<td>Normal mental status</td>
<td></td>
</tr>
<tr>
<td>Communicates without difficulty</td>
<td></td>
</tr>
<tr>
<td>Normal stress reaction</td>
<td></td>
</tr>
<tr>
<td>No distracting injuries</td>
<td></td>
</tr>
</tbody>
</table>

↓Yes – Patient is Reliable↓

<table>
<thead>
<tr>
<th><strong>Signs and Symptoms</strong></th>
<th><strong>Patient has signs or symptoms</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>No pain in neck or spine</td>
<td></td>
</tr>
<tr>
<td>No tenderness/deformity of neck or spine</td>
<td></td>
</tr>
<tr>
<td>Normal motor exam</td>
<td></td>
</tr>
<tr>
<td>No paresthesia</td>
<td></td>
</tr>
<tr>
<td>No paralysis</td>
<td></td>
</tr>
<tr>
<td>Normal response to painful stimuli</td>
<td></td>
</tr>
</tbody>
</table>

↓Yes – Does not have signs or symptoms↓

<table>
<thead>
<tr>
<th><strong>Consider no immobilization</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Routine Trauma Care or Pediatric Routine Trauma Care</td>
</tr>
<tr>
<td>Full Spinal Immobilization</td>
</tr>
<tr>
<td>Selective Spinal Immobilization</td>
</tr>
</tbody>
</table>
**ADULT BURNS**

Adult Routine Trauma Care
Assess for airway compromise
May be indicated by presence of wheezing, hoarseness, stridor, carbonaceous sputum or singed nasal hair
Consider advanced airway

To control pain:
MORPHINE SULFATE 2 mg IVP/IO over 2 minutes
May repeat every 2 minutes as needed
to a maximum total of 10 mg

If no IV access, refer to Adult Pain Management protocol (p. 35)

**FURTHER CARE DEPENDENT ON MECHANISM OF BURN:**
Evaluate depth of burn and estimate extent using Rule of Nines (p. 89)

**IV/IO FLUID CHALLENGE** in 500 mL increments as indicated by patient condition
Titrate to patient response

<table>
<thead>
<tr>
<th>THERMAL</th>
<th>ELECTRICAL</th>
<th>CHEMICAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>•Superficial (1st degree) Cool burned area with water or saline &lt;20% body surface involved, apply sterile SALINE SOAKED dressings DO NOT OVER COOL major burns or apply ice directly to burned areas</td>
<td>•Assess for dysrhythmia Identify and document any entrance and exit wounds Assess neurovascular status of affected part Immobilize affected part Cover wounds with DRY, sterile dressings</td>
<td>•Refer to Haz/Mat protocol If powdered chemical, brush away excess Remove clothing if necessary Flush burn area with sterile water or saline •IF EYE INVOLVEMENT Assist patient with removal of contact lens and irrigate with saline or sterile water continuously. DO NOT CONTAMINATE THE UNINJURED EYE WITH EYE IRRIGATION</td>
</tr>
</tbody>
</table>
ADULT PAIN MANAGEMENT

Routine Adult Trauma Care or Routine Adult Medical Care
↓
Determine pain intensity by utilizing Pain Scale
↓
FENTANYL 1 mcg/kg IVP/IN/IO
(100mcg max/initial dose)
May repeat in 5 minutes
↓
FENTANYL 1 mcg/kg IVP/IN/IO
to a maximum total of 200 mcg
↓
If respiratory depression occurs
NARCAN 2 mg IVP/IN/IO/IM

ADULT NAUSEA MANAGEMENT

Routine Adult Medical Care or Routine Adult Trauma Care
↓
If nausea or vomiting
ZOFRAN 4 mg IVP over 30 seconds
Or
ZOFRAN 4 mg ORAL
May repeat in 10 minutes to a maximum total of 8 mg

NOTE: Do not administer to patients who are pregnant
ADULT DROWNING

Adult Routine Medical Care or Adult Routine Trauma Care

↓

Spinal Precautions

↓

Consider CPAP if patient condition indicates

↓

**STABLE**

*Patient alert*

*Skin warm and dry*

*Systolic BP ≥ 90 mmHg*

**UNSTABLE**

*Altered mental status*

*Systolic BP < 90 mmHg*

↓

Secure Airway

↓

Assess for hypothermia

↓

**Normothermic**

↓

*Treat dysrhythmias per protocols*

↓

**Hypothermic**

↓

Refer to Hypothermia protocol (p. 38)
## Adult Routine Medical Care

Move the patient to a cool environment
Remove as much clothing as necessary to facilitate cooling

### Heat Cramps
- Normal level of consciousness
- Muscle cramps or spasms

### Heat Exhaustion
- May have altered mental status
- Perspiring, weakness, fatigue, frontal headache, nausea, vomiting, dizziness, syncope, temperature may be elevated

### Heat Stroke
- Altered mental status
- Hot skin (dry or moist)

<table>
<thead>
<tr>
<th>HEAT CRAMPS</th>
<th>HEAT EXHAUSTION</th>
<th>HEAT STROKE</th>
</tr>
</thead>
<tbody>
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<td>Altered mental status</td>
</tr>
<tr>
<td>Muscle cramps or spasms</td>
<td>Perspiring, weakness, fatigue, frontal headache, nausea, vomiting, dizziness, syncope, temperature may be elevated</td>
<td>Hot skin (dry or moist)</td>
</tr>
</tbody>
</table>

**IV/IO Fluid Challenge**

<table>
<thead>
<tr>
<th>HEAT CRAMPS</th>
<th>HEAT EXHAUSTION</th>
<th>HEAT STROKE</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV/IO Fluid Challenge in 500 mL increments</td>
<td>IV/IO Fluid Challenge in 500 mL increments</td>
<td>IV/IO Fluid Challenge in 500 mL increments</td>
</tr>
<tr>
<td>Titrate to desired patient response</td>
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<td>Titrate to desired patient response.</td>
</tr>
</tbody>
</table>

**Initiate Rapid Cooling:**
Douse towels or sheets with cool water, place on patient, and fan body

Cold packs (as available) to lateral chest wall, groin, axilla, carotid arteries, temples, and behind knees

Stop cooling if shivering occurs

**Consider Versed 2 mg IVP/IO**
May repeat VERSED 2 mg IVP/IO every 2 minutes titrate to desired effect up to a maximum of 10 mg

**Valium 5 mg IVP/IO over 2 minutes, titrate to control shivering**
If needed, repeat VALIUM 5 mg IVP/IO over 2 minutes, to a total maximum of 10 mg

**IF ACTIVELY SEIZING**
Refer to
Adult Seizure protocol (p. 28)
ADULT HYPOTHERMIA/COLD EMERGENCIES

Adult Routine Medical Care

**FROSTBITE**

- Move patient to a warm environment
- Rapidly re-warm frozen areas with warm water (if available)
- Hot packs wrapped in a towel

**HANDLE SKIN LIKE A BURN**

- Protect affected area with light, dry, sterile dressings
- Elevate and immobilize
- Do not let affected skin surfaces rub together

To control pain:

- MORPHINE SULFATE 2 mg IVP/IO over 2 minutes
- May repeat every 2 minutes as needed
to a maximum total of 10 mg

**SYSTEMIC HYPOTHERMIA**

- Avoid rough handling and excess activity
- Apply heat packs (as available) to axilla, groin, neck and thorax

**Present**

- Assess pulse

**Absent**

- Continue assessment

Universal Adult Emergency Cardiac Care

- Can extremities be flexed?

**Yes**

- Follow appropriate cardiac protocol, but extend time between medications – repeat defibrillation as core temp rises

**No**

- Follow appropriate cardiac protocol, but limit shocks to 1 and withhold IV medications

**NOTE:** Withdrawal of Resuscitative Effort policy does not apply to these patients.
EMERGENCY CHILDBIRTH

LABOR:
1. Obtain history. Initiate Adult Routine Medical Care.
   Gravida (# of pregnancies)  Length of previous labors
   Para (# of live births)    Bag of waters (amniotic sac) Intact? Broken?
   Due date                  Duration and frequency of contractions
   High risk concerns

2. Position patient and evaluate for:
   **SIGNS OF IMMINENT DELIVERY**         **SIGNS OF COMPLICATIONS**
   Crowning                            Prolapsed Cord
   Bulging Perineum                    Profuse Bleeding
   Involuntary Pushing                 Meconium Staining

3. If delivery is not imminent, transport patient on her left side.

DELIVERY:
1. If contractions are 2 minutes apart, or signs of imminent delivery are present, open OB pack and don sterile gloves as well as standard precautions. Drape mother’s abdomen and perineum. Prepare to assist the delivery.

2. Initiate Adult Routine Medical Care.

3. Protect perineum with gentle hand pressure while supporting the newborn’s head as it emerges from the vagina. Tear amniotic membrane if it is still intact at this point.

4. Check for nuchal cord (cord wrapped around the neck).

5. Clear airway, if necessary, with a bulb syringe. Suction mouth, then nose as soon as head is delivered.

6. To facilitate delivery of the upper shoulder, gently guide the head downwards. Support and lift the head and neck slightly to deliver the lower shoulder. The rest of the newborn should deliver with minimal assistance. Get a firm grasp on newborn. Note time of delivery and record on newborn’s PCR.

NEWBORN and POST PARTUM CARE:
1. Spontaneous respirations should begin within 15 seconds after stimulating newborn by drying, rubbing back or flicking the soles of the feet. Do not shake newborn. Rapid assessment should include the following characteristics: term gestation, crying or breathing and good muscle tone.

2. Suctioning with the bulb syringe should be reserved for a newborn with obvious obstruction to spontaneous breathing.
a. If still no respirations, begin ventilating at 40-60 breaths/minute. After 30 seconds of ventilation and if pulse < 60 begin chest compressions at a ratio of 3 compressions to 1 ventilation. Refer to Resuscitation of the Newborn/Neonate protocol.

3. Obtain 1 minute APGAR SCORE (p. 90).

4. Keep newborn level with the vagina until the cord is double-clamped. Delay cord clamping at least 30 seconds. The cord should be clamped 8 inches from the newborn’s navel with 2 clamps placed 2 inches apart. Cut the cord between the two clamps.

5. Continue to dry the newborn and wrap in a dry blanket to provide and maintain body warmth. Wrap the newborn in silver swaddler or blanket, ensuring the head is covered. If the newborn is cyanotic, but breathing spontaneously, place infant NRB mask next to newborn’s face and run OXYGEN at 15 liters/minute.

6. Obtain 5 minute APGAR score.

7. Allow placenta to deliver spontaneously. Do not delay transport while waiting for placenta to deliver. Do not pull on cord to facilitate placental delivery. When delivered, collect placenta in plastic bag, bring to hospital and document time of placental delivery.

8. Check perineum for tears. If torn and bleeding, apply direct pressure with sanitary pads, and have patient bring legs together.

9. Observe for excessive vaginal bleeding (more than 500 mL).
   a. IV FLUID CHALLENGE in 500 mL increments. Titrate to desired patient response.
   b. Following delivery of the placenta, massage fundus of uterus until firm. Check every five (5) minutes for firmness and massage as necessary.

10. Utilize identification tags for mother and newborn, must include mother’s name, gender of newborn, time of delivery.

11. Every reasonable attempt should be made to secure the mother and the newborn for transport.

**INFANT PATIENT CARE REPORT must include:**
   1. Time of delivery, gender and mother’s name.

   2. If nuchal cord was present.

   3. If meconium flecks were noted in amniotic fluid.

   4. APGAR scores at 1 minute and 5 minutes.

   5. Any infant resuscitation initiated and response.
DELIVERY COMPLICATIONS

Adult Routine Medical Care
Contact Medical Control

BREECH BIRTH:

Delivery Procedure:
1. Prepare to transport with care enroute if only the buttocks or lower extremities are delivered. It is acceptable to stay on the scene while in contact with Medical Control and delivery is in progress.
2. As soon as the legs are delivered, support the baby’s body wrapped in a towel/chux. If the cord is accessible, palpate frequently for pulsations. Attempt to loosen the cord to create slack for delivery of the head.
3. After the torso and shoulders are delivered, gently sweep down the arms.
   a. If face down, gently elevate the legs and trunk to facilitate the delivery of the head.
   b. **Do not hyperextend the neck.**
   c. Apply firm pressure over the mother’s fundus to facilitate the delivery of the head.
   d. **NEVER ATTEMPT TO PULL THE INFANT BY THE LEGS OR TRUNK.**
   e. Allow the entire body to be delivered with contractions while continuing to support the newborn’s body.
4. **The head should deliver in 30 seconds**
   a. If not, reach 2 gloved fingers in the shape of a “V” into the vagina with the palm facing the newborn’s face to locate the newborn’s mouth and nose.
   b. Push vaginal wall away from the newborn’s face to maintain an airway.
   c. Keep your fingers in place and transport, alerting the receiving hospital. Keep the delivered portion of the body warm and dry.
5. If the head delivers, anticipate neonatal distress.
6. Anticipate maternal hemorrhage after the birth of the infant.

**NOTE:** Do not attempt delivery or delay transport of any single limb or other abnormal presentation.

PROLAPSED CORD:
If the umbilical cord is visualized prior to delivery:
1. Elevate mother’s hips. Instruct patient to pant during contractions.
2. Place gloved hand into vagina between pubic bone and presenting part with cord between two fingers to monitor cord pulsations and exert counter-pressure on presenting part to keep pressure off the cord.
3. Cover exposed cord with moist dressing and keep warm.
4. Transport with hand pressure in place.

NUCHAL CORD: (Cord wrapped around neck)
1. Increase mother’s OXYGEN to 100 % with non-rebreather mask.
2. Slip two fingers around the cord and lift over newborn’s head, proceed with delivery.
3. If unsuccessful, attempt to slide cord over shoulders.
4. If unsuccessful, double-clamp cord, cut cord between clamps with sterile scissors to allow for release of cord from neck.
5. Proceed with delivery.
RESUSCITATION OF THE NEWBORN/NEONATE

Assess the Airway
Assess the pulse
↓
Dry the baby and keep the baby warm
Stimulate
Place the baby on back with neck in neutral position
↓

If there is obvious obstruction to spontaneous breathing or significant respiratory distress suction mouth and then nose with bulb syringe
(Suctioning should continue for no longer than 3-5 seconds per attempt)
↓

Stimulate if the above methods fail: gently slap/flick the soles of the feet or rub the trunk
↓

Apnea or the heart rate < 100, positive pressure ventilation via BVM/ETT at 40-60/minute

After 30 seconds of ventilation, assess the pulse
↓
↓
If pulse 60 – 100
Continue positive pressure ventilation
If pulse < 60
Begin chest compressions
At a ratio of 3 compressions to 1 ventilation
↓

**Contact Medical Control** for further consideration
↓

Re-evaluate newborn every 30 seconds

**NOTE:** APGAR score (p. 90) must be obtained at one (1) and five (5) minutes after birth.
OBSTETRICAL COMPLICATIONS

Adult Routine Medical Care

BLEEDING IN PREGNANCY: (Placenta Previa, Placenta Abruptio, Threatened Miscarriage)
Position mother on her left side if possible.

Administer FLUID CHALLENGE in 500 mL increments. Titrate to patient response.

NOTE: Type, color and amount of bleeding and/or discharge. If tissue passes, collect and transport to hospital with the patient.

HYPERTENSIVE DISORDERS OF PREGNANCY (includes Pre-Eclampsia and Eclampsia):
GENTLE handling. Minimal CNS stimulation.

Position patient on her left side if possible.

Seizure precautions and secure airway.

If seizure occurs,
Pregnancy greater than 20 weeks or Postpartum
MAGNESIUM SULFATE 4gm in 100mL D5W IVPB over 15 minutes
VERSED 2 mg IN/IVP/IO every 2 minutes titrate to desired effect up to a maximum of 10 mg.

If seizure activity continues or recurs;
Contact Medical Control
To repeat VERSED 2 mg IN/IVP/IO every 2 minutes titrate to desired effect up to a total maximum of an additional 10 mg.

MATERNAL RESUSCITATION MODIFICATIONS
Perform left uterine displacement while the patient is in the supine position.
Chest compressions should be performed slightly higher on the sternum than normal.
Defibrillation should be performed following standard guidelines.
A patient under the age of 16 is considered to be a pediatric patient.  
All patient care begins with assessing scene safety and the use of standard precautions.

1. **GENERAL ASSESSMENT USING THE PEDIATRIC ASSESSMENT TRIANGLE (PAT)**  
(To establish a level of severity, determine urgency for life support and identify key physiologic problems)
   a. Appearance  
   b. Work of Breathing  
   c. Circulation to Skin

2. **INITIAL ASSESSMENT**  
(A prioritized sequence of life support interventions to reverse critical physiologic abnormalities and determine transport priority)
   a. Airway / determine need for Selective Spinal Immobilization  
   b. Breathing  
   c. Circulation  
   d. AVPU and Pediatric Glasgow Coma Scale determination  
   e. Expose and examine as indicated

3. **IDENTIFY PRIORITY PATIENTS AND MAKE TRANSPORT DECISION.**

4. **ADDITIONAL ASSESSMENT (To include Focused History, Physical Exam and SAMPLE History)**
   a. Vital signs, pain scale  
   b. Determine weight and age.
      - Medication dosage should be age/weight-based and contained within Region X Standard Operating Procedures.  
      - Utilize length-based tape to measure body length and to determine approximate weight (if actual weight is not available).  
      - If less than 5 kg, Contact Medical Control for medication guidance.  
   c. Apply pulse oximeter or capnography/EtCO2 and record reading before and during OXYGEN administration. Administer OXYGEN if SpO2 is less than 94% or if patient shows signs of respiratory distress.  
   d. Evaluate cardiac rhythm and perform 12 Lead ECG if appropriate.  
   e. Establish NORMAL SALINE per IV/IO as indicated by patient condition and adjust flow rate based upon condition and weight.  
   f. Determine blood glucose level if appropriate.  
   g. Reassess vital signs, pain scale, pulse oximetry/capnography and patient condition as frequently as the patient’s condition indicates and after each intervention.

5. **DETAILED PHYSICAL EXAM**  
(To build on the findings of the Initial Assessment and Focused Exam, use the toe-to-head sequence for infants, toddlers and preschoolers)

6. **CONTACT MEDICAL CONTROL**

7. **TRANSPORT TO CLOSEST APPROPRIATE FACILITY**
PEDIATRIC DRUG ASSISTED INTUBATION

INDICATIONS:
- Failure to maintain an adequate airway or aspiration risk, or
- Actual or pending respiratory failure, shallow or labored effort or $\text{SpO}_2 \leq 92\%$ while on 100% oxygen, or
- GCS 8 or less, or
- Inability to ventilate/oxygenate adequately, or
- Anticipated patient deterioration due to airway in imminent risk of closure

Routine Pediatric Medical/Trauma Care

Pre-Oxygenate 100% OXYGEN for 3 minutes
Assist ventilation with 1 breath every 3-5 seconds

NOTE: For suspected increased intracranial pressure patients (head injury, stroke) pre-medicate with:
LIDOCAINE 1.5 mg/kg IVP/IO

ETOMIDATE 0.3 mg/kg IVP/IO
(Adult maximum 20 mg)

Attempt to intubate
For post-intubation sedation VERSED 0.1 mg/kg IVP/IO titrate to desired effect
(Adult maximum 20 mg)

If additional sedation required, Contact Medical Control
If airway secured with endotracheal tube, verify tube placement with capnography/EtCO2
Apply cervical collar to maintain tube position
Monitor patient with continuous capnography/EtCO2

If unable to intubate, consider airway alternatives
**PEDIATRIC ASYSTOLE, PEA, PULSELESS IDIOVENTRICULAR RHYTHMS**

<table>
<thead>
<tr>
<th>POSSIBLE CAUSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypovolemia</td>
</tr>
<tr>
<td>Hypoxia</td>
</tr>
<tr>
<td>Hydrogen ion – acidosis</td>
</tr>
<tr>
<td>Hyper/Hypokalemia</td>
</tr>
<tr>
<td>Hypothermia</td>
</tr>
<tr>
<td>Hypoglycemia</td>
</tr>
<tr>
<td>Toxins</td>
</tr>
<tr>
<td>Tamponade, Cardiac</td>
</tr>
<tr>
<td>Tension Pneumothorax</td>
</tr>
<tr>
<td>Thrombosis, Coronary (ACS)</td>
</tr>
<tr>
<td>Thrombosis, Pulmonary (embolism)</td>
</tr>
<tr>
<td>Trauma</td>
</tr>
</tbody>
</table>

Routine Pediatric Care
Consider and treat possible causes
↓

Begin compressions
5 cycles/2 minutes
Assess cardiac rhythm every 2 minutes during CPR
↓

Secure airway with 100% OXYGEN with minimal interruption of compressions
Once airway is secured with an advanced airway device, ventilate with 1 unsynchronized breath every 6 seconds
↓

Monitor patient with continuous capnography/EtCO₂
↓

Establish IV/IO
Administer IV FLUID CHALLENGE 20 mL/kg
Repeat FLUID CHALLENGE as needed
↓

EPINEPHRINE 1:10,000 (1mg/10 mL) 0.01 mg/kg IVP/IO
Repeat every 3-5 minutes
↓

Transport
With further interventions en route
↓

If organized rhythm present, perform a pulse check for a maximum of 10 seconds
### PEDIATRIC BRADYARRHYTHMIAS

#### POSSIBLE CAUSES

<table>
<thead>
<tr>
<th>Cause</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Hypovolemia</td>
<td>Toxins</td>
</tr>
<tr>
<td>Hypoxia</td>
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<td>Hyper/Hypokalemia</td>
<td>Thrombosis, Coronary (ACS)</td>
</tr>
<tr>
<td>Hypothermia</td>
<td>Thrombosis, Pulmonary (embolism)</td>
</tr>
<tr>
<td>Hypoglycemia</td>
<td>Trauma</td>
</tr>
</tbody>
</table>

#### Routine Pediatric Care

↓

Secure airway

Assist ventilations with BVM at 100% OXYGEN

↓

If heart rate <60/min and poor perfusion despite oxygenation and ventilation (Weak or absent pulses, hypotension, pallor/cyanosis, altered mental status)

↓

**NO**

↓

Observe

**YES**

↓

Begin CPR with compressions

Reassess cardiac rhythm after 2 minutes

If bradycardia persists

↓

Monitor patient with continuous capnography/EtCO2

Establish IV/IO

↓

**EPINEPHRINE 1:10,000 (1mg/10mL) 0.01 mg/kg IVP/IO**

May repeat every 3-5 minutes if no response

↓

For persistent bradycardia with hypotension

**IV FLUID CHALLENGE 20 mL/kg, then TKO**

↓

**Contact Medical Control** to consider:

**ATROPINE 0.02 mg/kg IVP/IO**

(Pediatric maximum single dose 0.5 mg)

ATROPINE may be repeated once if no response

Maximum total dose is 1 mg

↓

**Contact Medical Control** to consider transcutaneous pacing
PEDIATRIC VENTRICULAR FIBRILLATION
PULSELESS VENTRICULAR TACHYCARDIA

**Possible Causes**

<table>
<thead>
<tr>
<th>Possible Causes</th>
<th>Possible Causes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypovolemia</td>
<td>Toxins</td>
</tr>
<tr>
<td>Hypoxia</td>
<td>Tamponade, Cardiac</td>
</tr>
<tr>
<td>Hydrogen ion – acidosis</td>
<td>Tension Pneumothorax</td>
</tr>
<tr>
<td>Hyper/Hypokalemia</td>
<td>Thrombosis, Coronary (ACS)</td>
</tr>
<tr>
<td>Hypothermia</td>
<td>Thrombosis, Pulmonary (embolism)</td>
</tr>
<tr>
<td>Hypoglycemia</td>
<td>Trauma</td>
</tr>
</tbody>
</table>

Routine Pediatric Care
Consider and treat possible causes
↓
Begin compressions while preparing to defibrillate
Secure airway with 100% OXYGEN/ Monitor patient with continuous capnography/EtCO2
↓
DEFIBRILLATE at 2j/kg or equivalent biphasic
↓
Resume compressions for 5 cycles (2 minutes)
Establish IV/IO
↓
Assess cardiac rhythm and if necessary:
DEFIBRILLATE at 4j/kg or equivalent biphasic
Resume CPR
↓
EPINEPHRINE 1:10,000 (1mg/10mL) 0.01 mg/kg IVP/IO
Repeat every 3-5 minutes
↓
Assess cardiac rhythm and if necessary:
DEFIBRILLATE 6j/kg
Resume CPR
↓
AMIODARONE 5 mg/kg IVP/IO
(Adult maximum 300 mg)
↓
Assess cardiac rhythm and if necessary:
DEFIBRILLATE 8j/kg
↓
If no response, repeat AMIODARONE 5 mg/kg IVP/IO once in 3-5 minutes
↓
Assess cardiac rhythm and if necessary:
DEFIBRILLATE 10j/kg
(Maximum 10j/kg or Adult maximum of 360j or equivalent biphasic)

For Torsades de Pointe: Contact Medical Control to consider MAGNESIUM SULFATE 25 mg/kg in 100 mL D5W (Maximum 2gm) IVPB over 5 minutes.
PEDIATRIC TACHYCARDIA WITH POOR PERFUSION

### Possible Causes

<table>
<thead>
<tr>
<th>Hypovolemia</th>
<th>Toxins</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypoxia</td>
<td>Tamponade, Cardiac</td>
</tr>
<tr>
<td>Hydrogen ion – acidosis</td>
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<tr>
<td>Hyper/Hypokalemia</td>
<td>Thrombosis, coronary (ACS)</td>
</tr>
<tr>
<td>Hypothermia</td>
<td>Thrombosis, pulmonary (embolism)</td>
</tr>
<tr>
<td>Hypoglycemia</td>
<td>Trauma</td>
</tr>
</tbody>
</table>

Routine Pediatric Care

**Consider and treat possible causes**

\[↓\]

**Probable Sinus Tachycardia**

- History compatible
- P wave present/normal
- HR varies with activity
- Variable RR with constant PR
- Infants: usually <220 beats/min
- Child: usually <180 beats/min

**Probable Supraventricular Tachycardia**

- Compatible history (vague, nonspecific)
- P waves absent/abnormal
- HR not variable with activity
- Abrupt rate changes
- Infants: usually ≥220 beats/minute
- Child: usually ≥180 beats/minute

- Vagal maneuvers

**Possible Ventricular Tachycardia**

- Cardiopulmonary compromise:
  - Hypotension
  - Altered mental status
  - Signs of shock

\[↓\]

**Versed 0.1 mg/kg IVP/IO**

<table>
<thead>
<tr>
<th>Titrate for desired effect (Adult maximum 10 mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitor patient with continuous capnography/EtCO2</td>
</tr>
</tbody>
</table>

**NOTE:** Do not delay cardioversion for sedation

- **Cardioversion 1 j/kg**

  \[↓\]

  If no response, **Cardioversion 2 j/kg**

**Contact Medical Control**

- **Adenosine 0.1 mg/kg rapid IVP**
  - Followed by rapid flush of **normal saline 5 mL**
  - (Adult maximum 6 mg)

  \[↓\]

  If no response, **Adenosine 0.2 mg/kg rapid IVP**
  - Followed by rapid flush of **normal saline 5 mL**
  - (Adult maximum 12 mg)

**NOTE:** Do not delay cardioversion for sedation

- **Cardioversion 1 j/kg**

  \[↓\]

  If no response, **Cardioversion 2 j/kg**

**Contact Medical Control**

- to consider **Amiodarone**
# Pediatric Tachycardia with Adequate Perfusion

## Possible Causes

<table>
<thead>
<tr>
<th>Probable Sinus Tachycardia</th>
<th>Probable Supraventricular Tachycardia</th>
<th>Probable Ventricular Tachycardia</th>
</tr>
</thead>
<tbody>
<tr>
<td>History compatible</td>
<td>History compatible</td>
<td>ADENOSINE 0.1 mg/kg IVP if wide</td>
</tr>
<tr>
<td>P wave present/normal</td>
<td>P waves absent/abnormal</td>
<td>monomorphic VT</td>
</tr>
<tr>
<td>HR varies with activity</td>
<td>HR not variable with activity</td>
<td>(Adult maximum 6 mg)</td>
</tr>
<tr>
<td>Variable RR with constant PR</td>
<td>Abrupt rate changes</td>
<td>↓</td>
</tr>
<tr>
<td>Infants: usually &lt;220 beats/min</td>
<td>Infants: usually ≥220 beats/min</td>
<td>AMIODARONE 5 mg/kg IVPB</td>
</tr>
<tr>
<td>Child: usually &lt;180 beats/min</td>
<td>Child: usually ≥180 beats/min</td>
<td>(Adult maximum 150 mg)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(diluted in 100 mL D5W)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>over 20 minutes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If no response, VERSED 0.1 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IVP/IO titrate for desired effect</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Adult maximum 10 mg)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NOTE: Do not delay cardioversion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>for sedation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>↓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CARDIOVERSION 2 j/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>↓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If no response,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CARDIOVERSION 2 j/kg</td>
</tr>
</tbody>
</table>

**NOTE:** If receiving sedation:
Monitor patient with continuous capnography/EtCO2

**NOTE:** Do not delay cardioversion for sedation
# Pediatric Shock

**Routine Pediatric Care**

**Determine Etiology of Shock**

**Contact Medical Control**

<table>
<thead>
<tr>
<th>Hypovolemic</th>
<th>Cardiogenic</th>
<th>Distributive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hemorrhagic/Volume Loss/Suspected dehydration</td>
<td>Hx of congenital heart disease/cardiac surgery/rhythm disturbance/post-cardiac arrest</td>
<td>Sepsis/Anaphylactic</td>
</tr>
</tbody>
</table>

- **Establish vascular access IV/IO NORMAL SALINE**
- **Administer IV FLUID CHALLENGE 20 mL/kg**
  - Titrate to desired patient response

- **Administer IV FLUID CHALLENGE 10mL/kg then 20mL/hr**
  - Titrate to desired patient response

- **Contact Medical Control to consider additional IV FLUID CHALLENGES or DOPAMINE**
- **Identify any rhythm disturbance and refer to appropriate dysrhythmia protocol**
- **If suspected allergic reaction refer to Allergic Reaction/Anaphylaxis Protocol (p. 55)**

- **If no response to initial bolus, repeat at 20mL/kg to maximum of 60 mL/kg**
- **If no response to initial FLUID CHALLENGE and Hx of fever/infection, repeat IV FLUID CHALLENGE of 20 mL/kg to maximum of 60 mL/kg**
PEDIATRIC ASTHMA

Routine Pediatric Care

Obtain history of patient’s current asthma medications and time of last dosage and current weight

**Mild to Moderate Distress**
(Increased work of breathing with wheezing or coughing)

↓
Supplemental OXYGEN

↓
Position of comfort
ALBUTEROL 2.5 mg/3mL mixed with
ATROVENT 0.5 mg/2.5 mL (DUONEB) NEB treatment
with OXYGEN flow of 6 liters/minute

↓
If no improvement, administer
ALBUTEROL 2.5 mg/3mL mixed with
ATROVENT 0.5 mg/2.5 mL (DUONEB) NEB treatment
with OXYGEN flow of 6 liters/minute

↓
May repeat ALBUTEROL every 5 minutes

**Severe Distress**
(Inadequate oxygenation, ventilation or both, breath sounds decreased or absent, hypoxia, exhausted)

↓
Open the airway, ventilate with 100% OXYGEN via BVM 1 breath every 3-5 seconds
Monitor patient with continuous capnography/EtCO2

↓
Consider Drug Assisted Intubation

ALBUTEROL 2.5 mg/3mL mixed with
ATROVENT 0.5 mg/2.5 mL (DUONEB) NEB treatment
with OXYGEN flow of 6 liters/minute
In-line nebulizer if needed

↓
EPINEPHRINE 1:1000 (1mg/1mL)
0.01 mg/kg IM
(Adult maximum 0.5 mg)

↓
MAGNESIUM SULFATE 25 mg/kg mixed with 100mL D5W IVPB over 15 minutes
(Adult maximum 2gm)

↓
If no response and continued deterioration, **Contact Medical Control** to consider to repeat EPINEPHRINE 1:1000 (1mg/1mL)
0.01 mg/kg IM
(Adult maximum 0.5 mg)
If no improvement, administer

↓
ALBUTEROL 2.5 mg/3mL mixed with
ATROVENT 0.5 mg/2.5 mL (DUONEB) NEB treatment with OXYGEN flow of 6 liters/minute
May repeat ALBUTEROL every 5 minutes
**PEDIATRIC CROUP/EPIGLOTTITIS**

**Routine Pediatric Care**
- Keep patient calm – **DO NOT AGITATE**
- Provide emotional support and allow position of comfort

**CROUP**
- Infant/toddler, low grade fever, barking cough
  - **STABLE**
    - (No cyanosis, good air exchange)
    - Administer humidified OXYGEN by placing NORMAL SALINE 6 mL in nebulizer, deliver by mask or aim mist near the child’s face
  - **UNSTABLE**
    - (Cyanosis present, respiratory distress)
    - Attempt ventilation via BVM with supplemental OXYGEN
    - Be prepared for intubation (attempt x1)

If wheezing, ALBUTEROL 2.5 mg/3 mL mixed with ATROVENT 0.5 mg/2.5 mL (DUONEB) NEB treatment
- If no improvement,
  - ALBUTEROL 2.5 mg/3 mL mixed with ATROVENT 0.5 mg/2.5 mL (DUONEB) NEB treatment
  - If no improvement,
    - ALBUTEROL 2.5 mg/3 mL NEB treatment
    - May repeat ALBUTEROL NEB every 5 minutes

If patient condition deteriorates, attempt ventilation via BVM with supplemental OXYGEN 1 breath every 3-5 seconds

**EPIGLOTTITIS**
- Toddler, high fever, drooling, no cough, stridor
  - Administer humidified OXYGEN by placing NORMAL SALINE 6 mL in nebulizer, deliver by mask or aim mist near the child’s face
  - If no improvement, EPINEPHRINE 1:1000 (1mg/1mL) 0.5 mg/kg NEB
  - Not to exceed 5 mg or 5 mL

**NEBULIZED EPINEPHRINE 1:1000 (1mg/1mL) DILUTION TABLE**

<table>
<thead>
<tr>
<th>Lb/Kg</th>
<th>≤11Lb/5kg</th>
<th>13Lb/6kg</th>
<th>18Lb/8kg</th>
<th>≥22Lb/10kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPINEPHRINE</td>
<td>Contact Medical Control</td>
<td>3mg (3mL)</td>
<td>4mg (4mL)</td>
<td>5mg (5mL)</td>
</tr>
<tr>
<td>NS</td>
<td></td>
<td>2mL</td>
<td>1mL</td>
<td>0</td>
</tr>
</tbody>
</table>
PEDIATRIC RESPIRATORY FAILURE

Routine Pediatric Care
Consider and treat possible causes

RESPIRATORY DISTRESS
(Increased work of breathing, increased respiratory rate, use of accessory muscles, nasal flaring, effectively compensating)

↓
Supplemental OXYGEN

↓
Support head in neutral position

↓
Keep child calm, allow caregiver access to child

RESPIRATORY FAILURE
(Exhausted energy reserves, cannot maintain adequate oxygenation and ventilation, low respiratory rate, decreased effort, usually with bradycardia, agitation or lethargy and cyanosis)

↓
Open the airway, ventilate with 100% OXYGEN via BVM 1 breath every 3-5 seconds

↓
If unable to adequately ventilate, secure airway
Consider Pediatric Drug Assisted Intubation

↓
IV/IO vascular access
↓
Assess cardiac rhythm
↓
Treat dysrhythmias per protocols

NOTE: Monitor patient with continuous capnography/EtCO2
# Pediatric Allergic Reaction/Anaphylaxis

## Routine Pediatric Care

### Allergic Reaction

- **Stable**
  - Hives, itching, and rash
  - GI distress, Patient alert
  - **Skin warm and dry**
  
  - **Apply ice/cold pack to site**

### Anaphylactic Shock

- **Unstable**
  - Altered mental status

## Treatment

### Allergic Reaction

- **Stable**
  - **With Airway Involvement**
  
  - **Patient alert**
  - **Skin warm and dry**
  
  - **EPINEPHRINE 1:1000 (1mg/1mL)**
  - 0.01mg/kg IM
  - Maximum 0.5 mg (0.5mL) per single dose
  - May repeat every 5 minutes
  
  - **BENADRYL 1 mg/kg IVP slowly over 2 minutes or IM**
  
  - If wheezing,
  
  - **ALBUTEROL 2.5 mg/3 mL**
  - mixed with
  
  - **ATROVENT 0.5 mg/2.5 mL**
  
  - **DUONEB** NEB treatment
  
  - If no improvement,
  
  - **ALBUTEROL 2.5 mg/3 mL**
  
  - mixed with
  
  - **ATROVENT 0.5 mg/2.5 mL**
  
  - **DUONEB** NEB treatment
  
  - If no improvement may repeat
  
  - **ALBUTEROL 2.5 mg/3 mL NEB every 5 minutes**

### Unstable

- **Contact Medical Control**

## Dosages

- **<15kg (33lbs)** 0.15mg
- **15-29kg (33-65lbs)** 0.3mg
- **≥30kg (>66lbs)** 0.3mg

## Contact Medical Control

- **<15kg (33lbs)**
- **≥15-29kg (33-65lbs)**
- **≥30kg (>66lbs)**

## Additional Treatments

- **IV FLUID CHALLENGE 20 mL/kg**
- Titrated to desired patient response
  
  - Maximum 60 mL/kg

- **ALBUTEROL 2.5 mg/3 mL**
  
  - mixed with
  
  - **ATROVENT 0.5 mg/2.5 mL**
  
  - **DUONEB** NEB treatment
  
  - If no improvement administer
  
  - **ALBUTEROL 2.5 mg/3 mL NEB every 5 minutes**

- **If no response and continued deterioration,**
  
  - **Contact Medical Control** to consider
  
  - **EPINEPHRINE 1:10,000 (1mg/10mL)**
  
  - 0.01 mg/kg IVP/IO
  
  - every 5 minutes as indicated
PEDIATRIC ALTERED MENTAL STATUS

<table>
<thead>
<tr>
<th>CONSIDER ETIOLOGY</th>
<th>AEIOU-TIPPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>Trauma/Temperature</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>Infection</td>
</tr>
<tr>
<td>Insulin</td>
<td>Psychogenic</td>
</tr>
<tr>
<td>Overdose/Opiate</td>
<td>Poisoning</td>
</tr>
<tr>
<td>Uremia</td>
<td>Shock/Seizure/Stroke/Shunt</td>
</tr>
</tbody>
</table>

Routine Pediatric Care
Immobilize C-Spine as indicated

↓

Check blood glucose level

↓

Establish IV/IO vascular access
Administer IV FLUID CHALLENGE 20 mL/kg if indicated

↓

If blood glucose < 60, administer:
If patient >2 y/o and is able to tolerate oral preparation, has gag reflex and able to protect own airway
ORAL GLUCOSE GEL 15 G
or
DEXTROSE 12.5% 4 mL/kg IVP/IO for ages < 1 year
DEXTROSE 25% 2 mL/kg IVP/IO for ages 1-8 years
DEXTROSE 50% 1mL/kg IVP/IO > 8 years

or
GLUCAGON 0.5 mg IM/IN ≤ 8 years
GLUCAGON 1 mg IM/IN > 8 years

↓

Reassess respiratory effort
Secure airway if ineffective

↓

If patient is not alert, respirations are decreased or a narcotic overdose with respiratory depression is suspected:
Administer NARCAN
≤20 kg = 0.1 mg/kg IN/IVP/IO/IM
>20 kg = 2 mg IN/IVP/IO/IM

If no response Contact Medical Control to consider additional NARCAN
PEDIATRIC SEIZURES

Routine Pediatric Care

Protec airway and protect from injury
Vomiting/aspiration precautions
DO NOT place anything in mouth if seizing

VERSED 0.1 mg/kg IN/IVP/IO/IM (max 2mg/dose) every 2 minutes, titrate to control seizure activity
Max total dose ≤ 5 years = 6 mg
Max total dose ≥ 6 years = 10 mg

Monitor patient with continuous capnography/EtCO2

If seizure activity continues or recurs
Contact Medical Control
to repeat VERSED 0.1 mg/kg IN/IVP/IO/IM every 2 minutes titrate to control seizure activity
Max total dose ≤ 5 years = 6 mg
Max total dose ≥ 6 years = 10 mg

Obtain blood glucose level
If result is < 60, administer:

DEXTROSE 12.5% 4 mL/kg IV/IO for ages < 1 year
DEXTROSE 25% 2 mL/kg IV/IO for ages 1-8 years
DEXTROSE 50% 1 mL/kg IV/IO for ages > 8 years
or
GLUCAGON 0.5 mg IM/IN for ages ≤ 8 years
GLUCAGON 1 mg IM/IN for ages > 8 years

Observe patient’s sensorium and maintain airway
Note any injury sustained during seizure and/or any incontinence

FEVRILE SEIZURES
Routine Pediatric Care

Cool patient by removing clothing
Consider placing towels moistened in tepid (room temperature) water over patient and fan patient
DO NOT induce shivering
DO NOT rub down with alcohol or place in ice-water bath

Allow nothing by mouth
## PEDIATRIC BURNS

### Routine Pediatric Care

- **No Respiratory Compromise**
  - *(no increased work of breathing)*

- **Respiratory Compromise**
  - *(wheezing, retractions, stridor, decreased respirations, apnea, tachypnea, grunting, decreasing consciousness)*

- Secure airway

### To control pain:

- **MORPHINE SULFATE** 0.1 mg/kg IVP/IO

- Administer slowly, not to exceed 1 mg/minute

  - (Adult maximum single dose 2 mg, Adult maximum total dose 10 mg)

- If no IV access, refer to Pediatric Pain Management protocol (p. 59)

### Further Care Dependent on Mechanism of Burn:

- Evaluate depth of burn and estimate extent using Rule of Nines (p. 89)

### IV/IO Fluid Challenge for Thermal and Electrical burns as indicated by patient age

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Fluid Challenge</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤5 y/o</td>
<td>@ 125 mL/hr</td>
</tr>
<tr>
<td>6-13 y/o</td>
<td>@ 250 mL/hr</td>
</tr>
<tr>
<td>&gt;14 y/o</td>
<td>@ 500 mL/hr</td>
</tr>
</tbody>
</table>

### Thermal Burns

- **Superficial (1st degree)**
  - Cool burned area with water or saline
  - <20% body surface involved, apply sterile saline soaked dressings
  - DO NOT OVER COOL major burns or apply ice directly to burned areas

- **Partial or Full thickness (2nd or 3rd degree)**
  - Cover burn wound with DRY sterile dressings
  - Place patient on clean sheet on stretcher, cover patient with dry clean sheets and blanket
  - Refer to Pediatric Shock protocol as indicated (p. 51)

### Electrical Burns

- **Assess for dysrhythmia**
  - Identify and document any entrance and exit wounds
  - Assess neurovascular status of affected part
  - Immobilize affected part
  - Cover wounds with DRY sterile dressings

### Chemical Burns

- Refer to HazMat protocol (p. 94)

  - If powdered chemical, brush away excess
  - Remove clothing if possible
  - Flush burn area with sterile water or saline

  - **IF EYE INVOLVEMENT**
    - Assist with removal of contact lens and irrigate with saline or sterile water continuously. DO NOT CONTAMINATE THE UNINJURED EYE WITH EYE IRRIGATION
PEDIATRIC PAIN MANAGEMENT

Routine Pediatric Care
Determine pain by utilizing pain scale
Contact Medical Control for patients <2 years of age
↓
Monitor patient with continuous capnography/EtCO2
Assure Systolic BP remains age appropriate
↓
FENTANYL 1 mcg/kg IVP/IN/IO
(100 mcg max/dose)
↓
May repeat in 5 minutes
FENTANYL 1 mcg/kg IVP/IN/IO
(Adult maximum total 200 mcg)
↓
If respiratory depression occurs,
Administer NARCAN
≤20 kg = 0.1 mg/kg IN/IVP/IO/IM
>20 kg = 2 mg IN/IVP/IO/IM

PEDIATRIC NAUSEA MANAGEMENT

Routine Pediatric Care
↓
If nausea or vomiting
ZOFRAN 0.1 mg/kg IVP over 30 seconds if <40 kg
ZOFRAN 4 mg IVP if ≥ 40 kg
Or
ZOFRAN 4 mg ORAL if ≥ 40 kg
May repeat once after 10 minutes

NOTE: Do not administer to patients who are pregnant
Pediatric Routine Trauma Care

**STABLE**

*Patient alert*

*Skin warm and dry*

*PGCS: Mild*

**UNSTABLE**

*Altered mental status*

*PGCS: Moderate-Severe*

Support ventilation, administer 100% O2 as indicated

*If rapid neurologic deterioration (unequal pupils, extensor posturing, lateralizing signs)*

Ventilate with BVM at the following rates:

1 breath every 3-5 seconds,

Ventilate patient guided by capnography to aim for EtCO2 of 35 when there is a perfusing rhythm

**Obtain Blood Glucose level**

If results are < 60 administer:

DEXTROSE D12.5% 4mL/kg IV/IO for ages < 1 year
DEXTROSE D25% 2 mL/kg IV/IO for ages 1 - 8 years
DEXTROSE 50% 1 mL/kg IV/IO for ages >8 years

or

GLUCAGON 0.5 mg IM/IN for ages ≤ 8 years
GLUCAGON 1 mg IM/IN for ages > 8 years

**IV FLUID CHALLENGE 20ml/kg if indicated**

If evidence of shock, repeat FLUID CHALLENGE 20mL/kg up to a maximum of 60mL/kg

**Consider Pediatric Drug Assisted Intubation (p. 45)**

If actively seizing, refer to Pediatric Seizure protocol (p. 57)

<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>• Administer 100% O2 as indicated</td>
<td>• Administer 100% O2</td>
<td>• Administer 100% O2</td>
</tr>
<tr>
<td>• Control hemorrhage</td>
<td>• *Support ventilation with bag mask as indicated</td>
<td>• Support ventilation with bag mask</td>
</tr>
<tr>
<td>• Reassess PGCS</td>
<td>• Control hemorrhage</td>
<td>• *Provide hyperventilation only for impending</td>
</tr>
<tr>
<td>• Observe</td>
<td>• Reassess PGCS</td>
<td>herniation (non-reactive/unequal pupils or posturing)</td>
</tr>
<tr>
<td></td>
<td>• Observe</td>
<td>• Intubate orally as indicated</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Control hemorrhage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Reassess PGCS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Observe</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Refer to Seizure Protocol as indicated</td>
</tr>
</tbody>
</table>
PEDIATRIC DROWNING

Routine Pediatric Care
↓
Spinal Precautions as indicated
↓
OXYGEN 100%
↓

STABLE
Awake, alert, normal respirations

UNSTABLE
Abnormal respirations
Altered mental status
↓
Evaluate for gag reflex

Negative
↓
Intubate and assist ventilations via BVM
1 breath every 6 seconds
↓
Assess for hypothermia
↓
Normothermic
↓
Treat dysrhythmias per protocols

Positive
↓
Assist ventilations via BVM
1 breath every 3-5 seconds
↓
Assess for hypothermia
↓
Hypothermic
↓
Refer to Hypothermia protocol (p. 63)
**PEDIATRIC HEAT EMERGENCIES**

Routine Pediatric Care
Move to a cool environment
Remove as much clothing as necessary to facilitate cooling

<table>
<thead>
<tr>
<th>HEAT CRAMPS</th>
<th>HEAT EXHAUSTION</th>
<th>HEAT STROKE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal level of consciousness, muscle cramps or spasm</td>
<td>May have altered mental status, perspiring, weakness, fatigue, frontal headache, nausea, vomiting, dizziness, syncope, temperature may be elevated</td>
<td>Hot, dry or moist skin, weak thready pulse, altered level of consciousness</td>
</tr>
<tr>
<td><strong>IV FLUID CHALLENGE 20 mL/kg</strong></td>
<td><strong>IV FLUID CHALLENGE</strong></td>
<td></td>
</tr>
<tr>
<td>May repeat to a maximum of 60 mL/kg</td>
<td>May repeat to a maximum of 60 mL/kg</td>
<td></td>
</tr>
<tr>
<td>Titrate to desired patient response</td>
<td>Titrate to desired patient response</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>INITIATE RAPID COOLING:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Douse towels or sheets with cool water, place on patient, and fan body</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cold packs (as available) to lateral chest wall, groin, axilla, carotid arteries, temples, and behind knees</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Stop cooling if shivering occurs</strong></td>
<td></td>
</tr>
<tr>
<td>Consider Versed 0.1 mg/kg IVP/IO</td>
<td>Consider VALIUM 0.2 mg/kg IVP/IO over 2 minutes</td>
<td>IF ACTIVELY SEIZING</td>
</tr>
<tr>
<td>(2 mg max. dose)</td>
<td>(maximum dose 2mg)</td>
<td>Refer to Pediatric Seizure protocol (p. 57)</td>
</tr>
<tr>
<td>May repeat VERSED 0.1mg/kg IVP/IO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>every 2 minutes titrate to desired effect up to a maximum of 10 mg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PEDiatric hypothermia/cold emergencies

Pediatric Routine Medical Care

**Frostbite**
- Move patient to a warm environment
- Rapidly re-warm frozen areas with warm water (if available) or Hot packs wrapped in a towel
- **Handle skin like a burn**
  - Protect affected area with light, dry, sterile dressings
  - Elevate and immobilize
  - Do not let affected skin surfaces rub together

To control pain:
- **Morphine Sulfate** 0.1 mg/kg IVP/IO
  - Administer slowly, not to exceed 1 mg/minute
  - (Adult maximum single dose 2 mg, Adult maximum total 10 mg)

**Systemic Hypothermia**
- Avoid rough handling and excess activity
  - Apply heat packs (as available) to axilla, groin, neck and thorax
  - Assess pulse

<table>
<thead>
<tr>
<th>Present</th>
<th>Absent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continue assessment</td>
<td>Can extremities be flexed?</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>No</td>
</tr>
</tbody>
</table>

- Follow appropriate cardiac protocol, but extend time between medications – repeat defibrillation as core temp rises
- Follow appropriate cardiac protocol, but limit shocks to 1 and withhold IV medications

**Note:** Withdrawal of resuscitative effort policy does not apply to these patients.
PEDIA TRIC TOXIC INGESTIONS

Assess Scene Safety

↓

Routine Pediatric Care

↓

Contact Medical Control
for interventions as indicated for identified exposure

↓

Bring container(s) of drug or substance to the emergency department providing that the transport of the item(s) do not pose a safety risk

NOTE: Do not give patient anything to eat or drink by mouth. Anticipate vomiting, respiratory arrest, seizure, dysrhythmias and refer to indicated protocols. Do not induce vomiting, especially in cases where caustic substance ingestion is suspected. Illinois Poison Center (800) 222-1222
SUSPECTED CHILD ABUSE

Routine Pediatric Care
↓
Note environment, child’s interaction with parents, discrepancies in the history obtained from child and caregivers, and any signs of obvious injury
↓
Treat obvious injuries
↓
If parent/guardian refuses to let you transport the child, remain at the scene
Contact police and request the child be placed in protective custody
↓
Transport
↓
Report your suspicions to the Emergency Department Physician and/or Nurse
↓
Carefully document history and physical exam findings as well as environmental/circumstantial data on the report
↓
Department of Children and Family Services must be notified at (800)-25-ABUSE (24-hour phone line)
When contacting DCFS, identify self as a State Mandated Reporter to expedite the process
Written confirmation of the verbal report must be filed with DCFS within 48 hours
ELECTRICAL DEVICE WEAPON EXPOSURE

Adult Routine Trauma Care
Routine Pediatric Medical/Trauma Care

Evaluate depth of skin penetration
Do not remove darts if patient is not under control
Identify location of probes on the patient’s body

If darts are found to be superficially embedded in other than critical locations, they may be removed as follows:

1. Remove Taser cartridge from gun or cut wires before removing darts.
2. Place one hand on the patient where the dart is embedded to stabilize the skin surrounding the puncture site.
3. Firmly grasp the probe with your other hand.
4. Remove by gently pulling the dart straight out along the same plane it entered the body.
5. Assure that the dart is intact.
6. Repeat procedure with second dart, if embedded.
7. Return the darts to law enforcement officials, utilizing standard precautions.
8. Cleanse the wound area with saline.
9. Cover with a dry dressing.

If darts are embedded in any of the following critical areas, stabilize in place and transport patient:

- lid/globe of the eye
- face or neck
- genitalia
- bony prominence
- spinal column

Transport decision should be based on patient condition.
BEHAVIORAL EMERGENCIES

Establish SCENE AND PERSONAL SAFETY
Call law enforcement personnel to scene as appropriate

Determine and document if patient is a threat to self or others
or if patient is unable to care for self

Attempt to verbally calm the patient

Restrain as necessary and document reasons for the use of restraints,
type of restraint, time of restraint and patient’s response

Consider medical etiology of behavioral disorder:
- Hypoxia
- Substance Abuse/Overdose
- Excited Delirium/Hyperthermia
- Neurologic disease (CVA, intracerebral bleed, etc.)
- Metabolic problems (hypoglycemia, etc.)

### Adult Routine Medical Care as situation warrants

For SEVERE anxiety or agitation,
VERSED 2 mg IN/IM,
If needed, may repeat VERSED 2 mg IN/IM
every 2 minutes titrate to desired effect up
to a maximum of 10 mg
If possible, monitor patient with continuous
capnography/EtCO2

If additional sedation required:
**Contact Medical Control for**
VERSED 2 mg IN/IM
every 2 minutes titrate to desired effect up
to a maximum of 10 mg

**VALIUM 5 mg IVP over 2 minutes and repeat as needed to max total dose of 10mg**
or
**VALIUM 10mg IM**

### Pediatric Routine Medical Care as situation warrants

If Pediatric Behavioral patient,
**Contact Medical Control**
for weight based medication orders

### NOTE:
All Emergency Departments in Region X are able to receive patients with behavioral emergencies who may need psychiatric referral. Any containers found at the scene with medications and/or substances should be brought to the emergency department providing that the transport of the item(s) does not pose a safety risk. **Contact Medical Control** in all instances where a refusal of transport is being considered.
SEXUAL ASSAULT

Approach the victim calmly and professionally

EMS should limit questioning concerning the incident to the minimum necessary to provide appropriate patient care

Respect the victim’s modesty
Explain all procedures before beginning the procedures

Avoid touching the patient other than taking vital signs or examining physical injuries (Do not examine the genitalia unless there is a life threatening hemorrhage)

Attempt to preserve physical evidence

Provide emotional support with a non-judgmental attitude

NOTE: Physical trauma, such as bruising, lacerations and fractures are often associated with sexual assault and may be life-threatening.
DOMESTIC VIOLENCE

Adult Routine Medical Care or Adult Routine Trauma Care as appropriate by patient condition

Definition: Domestic Violence is the MOST common form of violence and the least reported. Domestic Violence is the act of attacking, threatening, harassing or interfering with the personal liberty of any family or household member by any other family or household member, excluding any reasonable discipline of a minor child by a parent or guardian of such minor child.

- BE NON-JUDGMENTAL AND NON-THREATENING.
- Respect and take the patient seriously.
- Maintain privacy. The patient should be interviewed and examined alone.
- Questions should be asked when household members are not within hearing distance.
- The patient must be asked directly if their injuries are a result of physical attack.
- Have a high index of suspicion; battered patients rarely admit the source of their injury.
- Aside from the typical injuries (trauma to head, neck, face, arms or back) look for:
  - Suicide attempts
  - Depression
  - Substance abuse
  - Hysteric
  - Multiple vague somatic complaints
  - Anxiety
  - Miscarriage
- Maintain a helping approach and be as non-threatening as possible.
- Respect and take the patient seriously.

NOTE: If the victim signs a refusal, inform the patient that EMS personnel are mandated by the State to report all cases of domestic violence to the local police. Document this conversation on the PCR. Also, offer immediate and adequate information regarding services available to victims of abuse, for any person suspected to be a victim of domestic abuse.
SUSPECTED ELDER ABUSE

Adult Routine Medical Care or Adult Routine Trauma Care as appropriate by patient condition

Definition: “Abuse” is defined as any physical injury, sexual abuse or mental injury inflicted on a person, age 60 or older, other than by accidental means.

Definition: “Neglect” means a failure to provide adequate medical or personal care or maintenance, which failure results in physical or mental injury to a person or in the deterioration of a person’s physical or mental condition.

Abuse and/or neglect of elderly patients may occur in the non-institutional or nursing home setting. It is mandated by the State of Illinois to report suspected abuse cases to the Abuse Hot Line:

(866) 800-1409

The prehospital provider must accurately and completely document any physical findings on the PCR and relay such findings to the Emergency Department Staff upon transfer to the hospital.
**NERVE AGENT EXPOSURE**

### WARM ZONE
**Mild to Severe Exposures**
- Reassess Patient & Triage
- Assist Ventilations
- Decontaminate Patient
- Contact Medical Control When Appropriate
- Initiate IV NS
- Repeat Atropine If Conditions Warrants

### MILD EXPOSURE
SOB, Wheezing, Runny Nose

### MODERATE EXPOSURE
Vomiting, Drooling, Pinpoint Pupils

### SEVERE EXPOSURE
Unconscious, cyanosis, seizures

### HOT ZONE
Severe Exposures Only

#### Adult/Adolescent
Assess Patient
Inject one DuoDote Kit
Label or Tag Patient to Identify Dosage
Remove Patient to Warm Zone

#### Infant 0-6 mths (<7kg)
- Atropine: 0.25mg IM/IV
- 2 PAM: 15 mg/kg IM

#### Infant 7 mths–2 yrs (7-13kg)
- Atropine: 0.5mg IM/IV
- 2 PAM: 15 mg/kg IM

#### Child 3 yrs–7 yrs (14-25 kg)
- Atropine: 1 mg IM/IV
- 2 PAM: 300 mg IM

#### Child 8 yrs–14 yrs (26-50 kg)
- Atropine: 2 mg IM/IV
- 2 PAM: 600 mg

#### Adult/Adolescent
Inject 2 DuoDote
**OR**
- Atropine: 4mg IM/IV
- 2 PAM: 1200 mg IM

#### Child 3 yrs–7 yrs (14-25 kg)
- Atropine: 1mg IM/IV
- 2 PAM: 300 mg/kg IM

#### Child 8 yrs–14 yrs (26-50 kg)
- Atropine: 2 mg IM/IV
- 2 PAM: 600 mg IM

#### Infant 0-6 mths (<7kg)
- Atropine: 0.5mg IM/IV
- 2 PAM: 25 mg/kg IM

#### Infant 7 mths–2 yrs (7-13 kg)
- Atropine: 2mg IM/IV
- 2 PAM: 300 mg/kg IM

#### Child 8 yrs–14 yrs (26-50 kg)
- Atropine: 2 mg IM/IV
- 2 PAM: 1200 mg IM

---
KING AIRWAY DEVICE

INDICATIONS: Cardiac or respiratory arrest, unresponsive medical or trauma patient without a gag reflex in which endotracheal intubation is unable to be established.

CONTRAINDICATIONS: Height less than 4 feet, gag reflex, caustic substance ingestion, known esophageal disease.

1. Pre-oxygenate patient with bag-valve-mask device attached to 100% oxygen and appropriate airway adjunct (OPA or NPA). (May need to remove adjunct prior to insertion of King airway).

2. Choose the correct size based on patient’s height:
   a. Size 3 for patients 4 to 5 feet tall
   b. Size 4 for patients 5 to 6 feet tall
   c. Size 5 for patients over 6 feet tall

3. Assemble and check equipment and apply water-soluble lubricant to distal tip of King airway.

4. With the non-dominant hand, hold the mouth open and apply chin lift. Hold the King at the connector with the dominant hand.

5. Introduce the tip into the patient’s mouth, using a lateral approach. The blue orientation line should be touching the corner of the mouth.

6. Advance the tip behind the base of the tongue while rotating the tube to midline so that the blue orientation line faces the chin of the patient.

7. Without exerting excessive force, advance the tube until the base of the colored connector is aligned with the patient’s teeth or gums.

8. Inflate the pilot balloon with the appropriate volume of air:
   a. Size 3 – 50 mL
   b. Size 4 – 70 mL
   c. Size 5 – 80 mL

9. Attach the BVM to the King. While ventilating the patient, gently withdraw the tube until ventilation becomes easy and free flowing.

10. Adjust cuff inflation, if necessary, to obtain a seal of the airway at the peak ventilatory pressure.

11. Confirm bilateral breath sounds and negative gastric sounds and observe chest rise.

12. Apply cervical collar to maintain tube position.
CRICOTHYROTOMY, QUICKTRACH

INDICATIONS: Patients requiring emergency assisted ventilation when all other conventional methods of ventilation have failed.

CONTRAINDICATIONS: Tracheal transection, when any other less invasive maneuver allows ventilation of the patient.

ADULT PROCEDURE: For patients greater than 77 lbs (35 kg) use the 4.0 mm I.D.

PEDIATRIC PROCEDURE: For patients between 22 lbs and 77 lbs (10 – 35 kg) use the 2.0 mm I.D.

PEDIATRIC PROCEDURE: For patients less than 22 lbs. (10 kg) use needle cricothyrotomy procedure

1. Attempt to oxygenate the patient with 100% oxygen via BVM.
2. Assemble and check Quicktrach equipment for sizing.
3. Position the patient supine with the neck hyperextended (contraindicated if the cervical spine trauma is suspected).
4. Locate the cricothyroid membrane and cleanse the area.
5. Secure the larynx laterally between thumb and forefinger. Anchor and stretch the skin slightly.
6. Puncture the cricothyroid membrane at a 90 degree angle.
7. Confirm entry of the needle in the trachea by aspirating air through the syringe.
8. Change the angle of insertion to 60 degrees with the tip pointed towards the feet. Advance the device forward to the level of the stopper. The stopper will be snug against the skin.
9. Remove the stopper.
10. Hold the needle and syringe firmly and slide only the plastic cannula forward until the hub of the cannula is snug against the skin. Carefully remove the needle and syringe.
11. Attach the QUICKTRACH flexible connecting tube to the cannula end.
12. Attach a BVM to the top end of the QUICKTRACH flexible connecting tube and begin ventilating with 100% oxygen.
13. Use the pre-attached strap to secure the QUICKTRACH, ensuring the hub of the catheter is snug against the neck.
15. Continuously monitor patient’s airway and lung sounds to ensure proper placement.
CRICOTHYROTOMY, NEEDLE

ADULT INDICATIONS: For patients when Quicktrach cannot be used.
PEDIATRIC INDICATIONS: For patients less than 22 lbs. (10 kg)

1. Position the patient (supine, hyperextend the neck unless C-spine trauma is suspected).
2. Locate cricothyroid membrane.
3. Stabilize the larynx with thumb and middle finger of one hand.
4. Locate membrane with index finger.
5. Prepare the area.
6. Insert a 14 gauge angiocath, or smaller (with syringe attached) into the trachea (midline 45 degree angle). Depending upon weight of child, size of angiocath may vary from 18 to 14 gauge.
7. Aspirate with syringe; air should return easily.
8. Advance catheter while withdrawing stylet.
9. Attach 3.0 mm ET tube adapter to needle hub.
10. Connect BVM to ET tube adapter.
11. Ventilate; assess breath sounds.
13. Continue to ventilate.
TRANSCUTANEOUS PACING

Continue ALS treatment already in progress

Apply pacer electrode pads:
Anterior chest pad (-) placed in apical area
Posterior chest pad (+) placed in mid-upper back area, between the spine and the scapula

If symptomatic bradycardia persists, initiate transcutaneous pacing

Set pacemaker as follows:

RATE: 80/minute
SENSITIVITY: Auto (Demand)
OUTPUT: Lowest output mA; if no capture*, increase to lowest level which delivers consistent capture

Document Settings On Patient Care Report

NOTE: *CAPTURE can be determined by the ECG strip appearance. A wide QRS complex follows the pacer artifact (or “spike”) immediately, AND suppresses any underlying bradycardia rhythm that may be present.
ADULT INTRAOSSEOUS INFUSION EZ-IO®

Use only on patients 40 kg (88 lbs) and over
Utilize larger/blue needle (25 mm/15 gauge) or bariatric/yellow needle (45 mm/15 gauge)

INDICATIONS:
- Shock, arrest or impending arrest
- Unconscious/unresponsive or conscious critical patient without IV access
- 2 unsuccessful IV attempts or 90 second duration or no visible sites

CONTRAINDICATIONS:
- Insertion into extremity with a fracture
- Infection at insertion site
- Previous orthopedic procedures (knee replacement, previous IO within 48 hours)
- Pre-existing medical condition (tumor near site, peripheral vascular disease)
- Inability to locate landmarks (significant edema)

Take standard precautions.
Fill 10 mL syringe with 0.9 NS. Prime EZ-connect tubing, leaving 9 mL of fluid in syringe.
Locate and cleanse insertion site (proximal medial tibia or proximal humerus).
Prepare EZ-IO driver and needle set. Remove safety cap from needle.
Stabilize arm/leg with non-dominant hand.
Insert EZ-IO needle at 90 degrees through skin until needle stops at bone. (The line on the needle closest to the hub must remain visible. If the line is not visible, remove needle from skin and place band-aid over site. EZIO may not be utilized if the line is not visible.)
Activate driver by depressing trigger on handgrip while maintaining firm and steady pressure on driver.
Once decreased resistance is felt, or needle flange touches skin (which ever is first), release trigger.
While stabilizing hub, remove driver from needle set.
Remove stylet by rotating counterclockwise.
Connect primed EZ-connect tubing.
Using syringe, aspirate then flush with remaining 9 mL of NS to confirm placement.
Inject LIDOCAINE 50 mg IO over 60 seconds for a conscious critical patient. Wait another 60 seconds before beginning fluid infusion.
Remove the syringe, and attach EZ-connect to IV tubing and begin infusion. Apply pressure to IV bag to facilitate infusion.
LIDOCAINE 50 mg IO may be repeated x1 for pain control.
Secure tubing with tape.
Apply wristband – note date and time of insertion on wristband.
If utilizing Proximal Humerus site, immobilize arm to limit movement.
Frequently reassess pressure to IV bag and amount of fluid infused.
Monitor EZ-IO site and patient condition.
PEDIATRIC INTRAOSSEOUS INFUSION EZ-IO®

Use only on patients between 3 kg and 39 kg (88 lbs)
Utilize smaller/pink needle (15 mm/15 gauge) or large/blue needle (25mm/15gauge) based on assessment

INDICATIONS:
- Shock, arrest or impending arrest
- Unconscious/unresponsive or conscious critical patient without IV access
- 2 unsuccessful IV attempts or 90 second duration or no visible sites

CONTRAINDICATIONS:
- Insertion into extremity with a fracture
- Infection at insertion site
- Previous orthopedic procedures (knee replacement, previous IO within 48 hours)
- Pre-existing medical condition (tumor near site, peripheral vascular disease)
- Inability to locate landmarks (significant edema)

Take standard precautions.

Fill 10 mL syringe with 5 mL 0.9 NS. Prime EZ-connect tubing, leaving 4 mL of fluid in syringe.
Locate and cleanse insertion site proximal medial tibia.
Prepare EZ-IO driver and needle set. Remove safety cap from needle.
Stabilize leg with non-dominant hand.
Insert EZ-IO needle at 90 degrees through skin until needle stops at bone. (The line on the needle closest to the hub must remain visible. If the line is not visible, remove needle from skin and place band-aid over site. 15 mm EZIO may not be utilized if the line is not visible. Repeat the same procedure with the larger (25 mm) needle.)
Activate driver by depressing trigger on handgrip while maintaining gentle pressure on driver.
Once decreased resistance is felt release trigger.
While stabilizing hub, remove driver from needle set.
Remove stylet by rotating counterclockwise.
Connect primed EZ-connect tubing.
Using syringe, aspirate then flush with remaining 4 mL of NS to confirm placement
Inject LIDOCAINE 1 mg/kg (Adult maximum 50 mg) IO over 60 seconds for conscious critical patient. Wait another 60 seconds before beginning fluid infusion.
Remove the syringe, and attach EZ-connect to IV tubing and begin infusion. Apply pressure to IV bag to facilitate infusion.
LIDOCAINE 1 mg/kg (Adult maximum 50 mg) may be repeated x1 for pain control.
Secure tubing to leg with tape.
Apply wristband – note date and time of insertion on wristband.
Frequently reassess pressure to IV bag and amount of fluid infused.
Monitor EZ-IO site and patient condition.
NEEDLE DECOMPRESSION, CHEST

1. Prepare equipment.
2. Palpate site at 2\textsuperscript{nd} intercostal space, mid-clavicular line.
3. Clean site appropriately.
4. Insert 14 gauge (2.5-3 inch) angiocatheter at superior border of third rib until air is released.
5. Check for improvement in clinical status.
7. Reassess ventilations and patient status.
1. Adult Routine Trauma Care or Pediatric Routine Trauma Care

2. Remove gross contamination of stump and amputated part by gentle irrigation with NORMAL SALINE.

3. Control bleeding with direct pressure. If unable to control with direct pressure, apply a tourniquet at least 4 inches wide or a commercial device.

4. Cover stump with damp sterile dressing and an elastic wrap (provide uniform pressure over the entire stump). Cover wounds with a sterile dressing.

5. Care of amputated part:
   Place in a plastic bag; place in a larger bag or container with ice and water. *Do not use ice alone.*
TOURNIQUET USE

INDICATIONS: Life threatening extremity hemorrhage; defined as extremity hemorrhage that continues after application of direct pressure and/or pressure dressing. Tourniquet use may be considered as first line treatment for extremity amputation.

Tourniquet Placement
1. Place as far distally on the extremity as possible but at least 2 inches proximal to the wound and on bare skin if possible.
2. Tighten windlass until bleeding stops and pulse is no longer palpable.
3. Monitor for further bleeding, tighten tourniquet only if necessary. (If bleeding is not controlled, consider an additional tourniquet applied proximal to first tourniquet applied.)
4. Record time of placement on the tourniquet.
5. Notify MEDICAL CONTROL of tourniquet placement.
6. Consider pain management.

Tourniquet Removal: If placed prior to arrival and determined to be unnecessary, Contact Medical Control to consider Tourniquet removal.

NOTE: Do not cover the wound, an impaled foreign body, or an open fracture. Do not place tourniquet over a joint. Do not cover the tourniquet with a dressing or splint. Lower leg injuries may require placement on the thigh for adequate compression to be obtained.
1. Tear open plastic pouch at any of the notches, and remove the DuoDote Auto-Injector.

2. Place DuoDote in your dominant hand and firmly grasp it, with the green tip pointing downward.

3. With your other hand, pull off the gray safety release, taking care never to touch the green tip.

4. Keep fingers clear of both ends of the auto-injector.

5. Select the site and inject. The injection site is the mid-outer thigh area. You can inject through clothing but make sure that the pockets are empty.

6. Swing and firmly push the green tip straight down (at a 90 degree angle) against the mid-outer thigh, continuing to push firmly until you feel the auto-injector trigger.

7. After the DuoDote Auto-Injector triggers, hold it firmly in place against the injection site for 10 seconds.

8. After injecting, remove the DuoDote Auto-Injector from the thigh and inspect the green tip: if the needle is visible, then the injection was successful. If the needle is not visible, make sure the gray safety release is removed and repeat the preceding injection steps.

9. Keep used auto-injector(s) plastic pouch with the patient so the other medical personnel will be aware of how many injections were administered.

10. Move away from the contaminated area, decontaminate the skin and clothing, and seek definitive medical treatment.
INDICATIONS: Adult with a known exposure to cyanide with symptoms of headache, confusion, dyspnea, chest tightness, change in sensorium, seizures, dilated pupils, tachypnea, bradypnea, hypertension as an early sign, hypotension, vomiting and shock.

1. Adult Routine Medical Care. Note: pulse oximetry may be inaccurate. Cyanokit is not compatible with many other medications; therefore, two intravenous lines shall be required. Do not administer other drugs in the same intravenous line as Cyanokit.

2. Decontamination should be concurrent with initial resuscitation.

3. Cyanokit contains 1 vial of HYDROXOCOBALAMIN, reconstitute by using the transfer spike in the kit to add 200mL of NORMAL SALINE to HYDROXOCOBALAMIN 5 grams.

4. Rock vials for 60 seconds to mix contents, do not shake.

5. Administer vial IV over 15 minutes, approximately 15 mL per minute.

6. Do not delay transport.

7. Notify ED as early as possible.
<table>
<thead>
<tr>
<th>Component</th>
<th>Neonate (0-28 days)</th>
<th>Infant (Age Less than 1 year)</th>
<th>Children (Age 1 year to Puberty)</th>
<th>Adults and Adolescents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scene Safety</td>
<td>Make sure the environment is safe for rescuers and victim</td>
<td>Check for responsiveness&lt;br&gt;No breathing or only gasping (i.e. no normal breathing)&lt;br&gt;No definite pulse felt within 10 seconds&lt;br&gt;(Breathing &amp; pulse check can be performed simultaneously in &lt; than 10 seconds)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recognition of Cardiac Arrest</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compression to ventilation ratio</td>
<td>3:1 ratio&lt;br&gt;compressions to&lt;br&gt;ventilation</td>
<td>One Rescuer 30:2&lt;br&gt;Two or more Rescuers 15:2</td>
<td>One or Two Rescuers 30:2</td>
<td></td>
</tr>
<tr>
<td>without advanced airway</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compression to ventilation ratio</td>
<td></td>
<td></td>
<td>Continuous compressions at a rate of 100-120/min&lt;br&gt;Give 1 breath every 6 seconds (10 breaths/min)</td>
<td></td>
</tr>
<tr>
<td>with advanced airway</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compression rate</td>
<td>90/min</td>
<td>100-120/min</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compression depth</td>
<td>At least (1/3) AP&lt;br&gt;diameter</td>
<td>At least (1/3) AP&lt;br&gt;diameter&lt;br&gt;(about 1 1/2” or&lt;br&gt;4cm)</td>
<td>At least (1/3) AP&lt;br&gt;diameter&lt;br&gt;(about 2” or&lt;br&gt;5cm)</td>
<td>At least 2” (5cm)</td>
</tr>
<tr>
<td>Hand Placement</td>
<td>Compressions are delivered on the lower third of the sternum using 2 thumbs, with the fingers encircling the chest and supporting the back</td>
<td>One rescuer: fingers in the center of the chest just below the nipple line&lt;br&gt;Two or more rescuers&lt;br&gt;Two thumb encircling hands in the center of the chest, just below the nipple line</td>
<td>2 hands or 1 hand (optional for very small child) on the lower half of the breastbone (sternum)</td>
<td>2 hands on the lower half of the breastbone (sternum)</td>
</tr>
<tr>
<td>Chest recoil</td>
<td>Allow full recoil but the rescuer’s thumbs should not leave the chest</td>
<td>Allow full recoil of chest after each compression; do not lean on the chest after each compression</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimizing interruptions</td>
<td>Limit interruptions in chest compressions to less than 10 seconds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inadequate breathing with pulse</td>
<td>Rescue breaths 12-20/minute&lt;br&gt;(1 breath every 3-5 seconds)</td>
<td>Rescue breaths 10-12/minute&lt;br&gt;(1 breath every 5-6 seconds)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard AED without pediatric attenuator</td>
<td>Not recommended</td>
<td>Only if pediatric attenuator not available</td>
<td>Recommended</td>
<td></td>
</tr>
<tr>
<td>Component</td>
<td>Neonate/Infant (Age Less than 1 year)</td>
<td>Children (Age 1 year to Puberty)</td>
<td>Adults and Adolescents</td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>--------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Conscious patient unable to speak or cough</td>
<td>Cycles of 5 back blows (slaps) followed by 5 chest compressions</td>
<td>Abdominal thrusts in rapid sequence until the obstruction is relieved. Obese patients – chest thrusts Later stages of pregnancy – chest thrusts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If patient becomes unresponsive, begin CPR starting with chest compressions (no pulse check)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unresponsive victim with obstructed airway No change in AHA</td>
<td>Each time the airway is opened, look in mouth for object; attempt removal only if visualized. After visual inspection, attempt 2 ventilations</td>
<td></td>
<td>If obstruction unrelieved with Magill forceps or manual maneuvers, consider cricothyrotomy or needle cricothyrotomy</td>
<td></td>
</tr>
</tbody>
</table>
EMS personnel may withhold or cease resuscitative efforts in the following circumstances:

- There is a risk to the health and safety of EMS personnel.
- Resources are inadequate to treat all patients (i.e. multiple patient incidents).
- The patient shows indications of irreversible death process:
  - Decapitation
  - Rigor mortis
  - Dependent lividity
  - Body decomposition
  - Transection
  - Incineration
  - Obvious mortal trauma
- Death has been declared by a physician, medical examiner or coroner.
- A valid State of Illinois Practitioner Order for Life-Sustaining Treatment (POLST) or state approved Do Not Resuscitate (DNR) order has been secured that includes:
  - Name of patient,
  - Name and signature of authorized practitioner to include physician, licensed resident (second year or higher), advanced practice nurse or physician assistant,
  - Effective date,
  - The words “Do Not Resuscitate” or “Do Not Attempt Resuscitation/DNR”,
  - Evidence of consent:
    - signature of patient; or
    - signature of legal guardian; or
    - signature of durable power of attorney for health care agent; or
    - signature of surrogate decision-maker
    - signature of witness required if IDPH DNR Advanced Directive (POLST) form used
- A living will by itself cannot be recognized by pre-hospital care providers.
12 LEAD PLACEMENT GUIDELINES

V1 – 4th Intercostal space, right of sternum
V2 – 4th Intercostal space, left of sternum
V3 – Midway between V2 and V4
V4 – 5th Intercostal space, midclavicular line
V5 – Anterior-axillary line, level with V4
V6 – Midaxillary line, level with V4

DEFFIBRILLATOR GUIDELINES

<table>
<thead>
<tr>
<th>Device Specific Defibrillator Energy Recommendations for Adults</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Manufacturer</strong></td>
</tr>
<tr>
<td>LifePak 12 &amp; 15</td>
</tr>
<tr>
<td>Philips HeartStart XL</td>
</tr>
<tr>
<td>Zoll All Series</td>
</tr>
</tbody>
</table>

*BTE=Biphasic Truncated Exponential, RB=Rectilinear Biphasic*
## ADULT GLASGOW COMA SCALE

<table>
<thead>
<tr>
<th></th>
<th>VALUE</th>
<th>SCORE</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RESPIRATORY RATE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10-29</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt;29</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6-9</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1-5</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>SYSTOLIC BLOOD PRESSURE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt;89</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>76-89</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>50-75</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1-49</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

## GLASGOW COMA SCORE

<table>
<thead>
<tr>
<th><strong>EYE OPENING</strong></th>
<th>SCORE</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spontaneous</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>To Voice</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>To Pain</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>VERBAL RESPONSE</strong></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Oriented (conversation)</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Confused (conversation)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Inappropriate words</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Incomprehensible sounds</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>MOTOR RESPONSE</strong></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Obeys commands</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Purposeful Movement to Pain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Withdraw to Pain</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Abnormal flexion</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Abnormal extension</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL GLASGOW COMA SCALE POINTS =**
# PEDIATRIC GLASGOW COMA SCALE (PGCS)

<table>
<thead>
<tr>
<th>EYE OPENING</th>
<th>&lt; 2 years</th>
<th>≥ 2 years</th>
<th>Score</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spontaneous</td>
<td>Spontaneous</td>
<td></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>To Speech</td>
<td>To Speech</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>To Pain</td>
<td>To Pain</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>No response</td>
<td>No response</td>
<td></td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

| VERBAL RESPONSE   | Coos, babbles, appropriate words | Orientated/appropriate words | 5 |  
| Irritable, Cries but consolable | Confused | | 4 |  
| Cries to pain, inconsolable | Inappropriate word/persistent cry | | 3 |  
| Moans to pain | Incomprehensible sounds | | 2 |  
| No Response | No response | | 1 |  

| MOTOR RESPONSE    | Normal spontaneous movements | Obeys commands | 6 |
| Withdraws from touch | Localizes to pain | | 5 |
| Withdraws from pain | Withdraws from pain | | 4 |
| Abnormal flexion (Decorticate) | Abnormal flexion (Decorticate) | | 3 |
| Abnormal extension (Decerebrate) | Abnormal extension (Decerebrate) | | 2 |
| No response | No response | | 1 |

**TOTAL PEDIATRIC GLASGOW COMA SCALE (3-15)**

Reference: EMSC

<table>
<thead>
<tr>
<th>PGCS 13-15 (Mild)</th>
<th>PGCS 9-12 (Moderate)</th>
<th>PGCS &lt; 8 (Severe)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administer 100% 0₂ as indicated</td>
<td>Administer 100% 0₂</td>
<td>Administer 100% 0₂</td>
</tr>
<tr>
<td>Control hemorrhage</td>
<td>Support ventilation with bag mask as indicated</td>
<td>Support ventilation with bag mask</td>
</tr>
<tr>
<td>Reassess PGCS</td>
<td>Control hemorrhage</td>
<td>Control hemorrhage</td>
</tr>
<tr>
<td>Observe</td>
<td>Reassess PGCS</td>
<td>Reassess PGCS</td>
</tr>
<tr>
<td></td>
<td>Observe</td>
<td>Observe</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Refer to Seizure Protocol as indicated</td>
</tr>
</tbody>
</table>
## BODY SURFACE BURN PERCENTAGE CALCULATION

<table>
<thead>
<tr>
<th>Adult</th>
<th>Infant</th>
</tr>
</thead>
<tbody>
<tr>
<td>• full head &amp; neck 9%</td>
<td>• full head and neck 18%</td>
</tr>
<tr>
<td>• upper back 9%</td>
<td>• upper back 9%</td>
</tr>
<tr>
<td>• lower back 9%</td>
<td>• lower back 9%</td>
</tr>
<tr>
<td>• anterior chest 9%</td>
<td>• anterior chest 9%</td>
</tr>
<tr>
<td>• anterior abdomen 9%</td>
<td>• anterior abdomen 9%</td>
</tr>
<tr>
<td>• full upper extremity 9%</td>
<td>• full upper extremity 9%</td>
</tr>
<tr>
<td>• full lower extremity 18%</td>
<td>• full lower extremity 13.5%</td>
</tr>
<tr>
<td>• genitalia 1%</td>
<td>• genitalia 1%</td>
</tr>
</tbody>
</table>

Palm of hand (including fingers) of infant or child = 1% of the total body surface
# APGAR SCORING

<table>
<thead>
<tr>
<th>APGAR SCORING</th>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A=Appearance (color)</td>
<td>Blue or pale</td>
<td>Blue hands or feet</td>
<td>Entirely pink</td>
</tr>
<tr>
<td>P=Pulse</td>
<td>Absent</td>
<td>&lt; 100/min</td>
<td>&gt; 100/min</td>
</tr>
<tr>
<td>G=Grimace (reflex irritability)</td>
<td>Absent</td>
<td>Grimace</td>
<td>Cry or Active Withdrawal</td>
</tr>
<tr>
<td>A=Activity (muscle tone)</td>
<td>Limp</td>
<td>Some extremity flexion</td>
<td>Active motion</td>
</tr>
<tr>
<td>R=Respirations</td>
<td>Absent</td>
<td>Weak cry, hypoventilation</td>
<td>Strong cry</td>
</tr>
</tbody>
</table>

Reference: AHA 2015

Scores:
7 to 10 – Majority of infants generally requiring only routine care
4 to 6 – Moderately depressed infants requiring oxygenation and stimulation to breathe
0 to 3 – Severely depressed requiring immediate ventilatory and circulatory assistance
## PEDIATRIC NORMAL VITAL SIGNS

<table>
<thead>
<tr>
<th>AGE</th>
<th>SYSTOLIC BP</th>
<th>HEART RATE</th>
<th>RESPIRATORY RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newborn</td>
<td>&gt;60/</td>
<td>100 – 180</td>
<td>30 – 60</td>
</tr>
<tr>
<td>3 months</td>
<td>&gt;70/</td>
<td>100 – 160</td>
<td>30 – 60</td>
</tr>
<tr>
<td>6 months</td>
<td>&gt;70/</td>
<td>110 – 160</td>
<td>30 – 60</td>
</tr>
<tr>
<td>9 months</td>
<td>&gt;70/</td>
<td>110 – 160</td>
<td>30 – 60</td>
</tr>
<tr>
<td>12 months</td>
<td>&gt;70/</td>
<td>110 – 160</td>
<td>30 – 60</td>
</tr>
<tr>
<td>2 years</td>
<td>&gt;70/</td>
<td>90 – 150</td>
<td>24 – 40</td>
</tr>
<tr>
<td>4 years</td>
<td>&gt;75/</td>
<td>90 – 150</td>
<td>22 – 34</td>
</tr>
<tr>
<td>6 years</td>
<td>&gt;80/</td>
<td>70 – 120</td>
<td>18 – 30</td>
</tr>
<tr>
<td>8 years</td>
<td>&gt;80/</td>
<td>70 – 120</td>
<td>18 – 30</td>
</tr>
<tr>
<td>10 years</td>
<td>&gt;80/</td>
<td>70 – 120</td>
<td>18 – 30</td>
</tr>
<tr>
<td>12 years</td>
<td>&gt;90/</td>
<td>60 – 110</td>
<td>12 – 16</td>
</tr>
</tbody>
</table>

Reference: EMSC
# PEDIATRIC ENDOTRACHEAL TUBES & SUCTION CATHETERS

<table>
<thead>
<tr>
<th>Weight kg</th>
<th>UNCUFFED ENDOTRACHEAL TUBE mm internal diameter (i.d.)</th>
<th>CUFFED ENDOTRACHEAL TUBE mm i.d.</th>
<th>DEPTH OF INSERTION</th>
<th>SUCTION CATHETER F</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-5 kg</td>
<td>3.5</td>
<td>3</td>
<td>9-10.5 cm</td>
<td>8</td>
</tr>
<tr>
<td>6-7 kg</td>
<td>3.5</td>
<td>3</td>
<td>10-10.5 cm</td>
<td>8</td>
</tr>
<tr>
<td>8-9 kg</td>
<td>3.5</td>
<td>3</td>
<td>10.5-11 cm</td>
<td>8</td>
</tr>
<tr>
<td>10-11 kg</td>
<td>4</td>
<td>3.5</td>
<td>11-12 cm</td>
<td>8</td>
</tr>
<tr>
<td>12-14 kg</td>
<td>4.5</td>
<td>4</td>
<td>12.5-13.5 cm</td>
<td>10</td>
</tr>
<tr>
<td>15-18 kg</td>
<td>5</td>
<td>4.5</td>
<td>14-15 cm</td>
<td>10</td>
</tr>
<tr>
<td>19-22 kg</td>
<td>5.5</td>
<td>5</td>
<td>15.5-16.5 cm</td>
<td>10</td>
</tr>
<tr>
<td>24-28 kg</td>
<td>6</td>
<td>6</td>
<td>17-18 cm</td>
<td>10</td>
</tr>
<tr>
<td>30-36 kg</td>
<td>6.5</td>
<td>18.5-19.5 cm</td>
<td>10-12</td>
<td></td>
</tr>
</tbody>
</table>

References: Broselow 2017, PALS 2015

**NOTE:** Tube Sizes and Depth of Insertion are estimates. During preparation for intubation, providers should have tubes ready that are 0.5 mm smaller and 0.5 mm larger than estimated sizes above. Confirm placement with both clinical assessment (e.g., breath sounds, chest expansion) and device (e.g., exhaled CO2 detector).
### Wong-Baker FACES™ Pain Rating Scale

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No Hurt</td>
</tr>
<tr>
<td>2</td>
<td>Hurts Little Bit</td>
</tr>
<tr>
<td>4</td>
<td>Hurts Little More</td>
</tr>
<tr>
<td>6</td>
<td>Hurts Even More</td>
</tr>
<tr>
<td>8</td>
<td>Hurts Whole Lot</td>
</tr>
<tr>
<td>10</td>
<td>Hurts Worst</td>
</tr>
</tbody>
</table>

### FLACC PAIN SCALE

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face</td>
<td>0 – No particular expression or smile</td>
</tr>
<tr>
<td></td>
<td>1 – Occasional grimace or frown, withdrawn, disinterested</td>
</tr>
<tr>
<td></td>
<td>2 – Frequent to constant quivering chin, clenched jaw</td>
</tr>
<tr>
<td>Legs</td>
<td>0 – Normal position or relaxed</td>
</tr>
<tr>
<td></td>
<td>1 – Uneasy, restless, tense</td>
</tr>
<tr>
<td></td>
<td>2 – Kicking or legs drawn up</td>
</tr>
<tr>
<td>Activity</td>
<td>0 – Lying quietly, normal position, moves easily</td>
</tr>
<tr>
<td></td>
<td>1 – Squirming, shifting back and forth, tense</td>
</tr>
<tr>
<td></td>
<td>2 – Arched, rigid or jerking</td>
</tr>
<tr>
<td>Cry</td>
<td>0 – No cry (awake or asleep)</td>
</tr>
<tr>
<td></td>
<td>1 – Moans or whimpers; occasional complaint</td>
</tr>
<tr>
<td></td>
<td>2 – Crying steadily, screams or sobs, frequent complaints</td>
</tr>
<tr>
<td>Consolability</td>
<td>0 – Content, relaxed</td>
</tr>
<tr>
<td></td>
<td>1 – Reassured by occasional touching, hugging or being talked to, distractible</td>
</tr>
<tr>
<td></td>
<td>2 – Difficult to console or comfort</td>
</tr>
</tbody>
</table>

| TOTAL SCORE |
Use proper PPE and containment procedures during entire contact with the patient(s), equipment and environment. Avoid self-injury.

**Contact Medical Control** early to allow receiving hospital(s) time to prepare for the contaminated patient(s). The hospital staff treatment of the patient(s) may be performed separate from the main Emergency Department area, possibly in the ambulance.

**All attempts are to be made to decontaminate the patient prior to moving into ambulance.**

1. If warranted, contact the Department/Regional HazMat Response Team/Illinois Poison Center for assistance.
2. Remove as much of the outermost layer of clothing as possible.
3. The usual decontamination solution is soap and water.
   a. Refer to reference material for any variation to this solution i.e.: alkali.
4. If powdered/dry agent, brush excess before irrigating.
5. If possible, bring copy of the MSDS with the patient to the hospital.

**CHEMICAL WEAPONS** (vapor or liquid):

<table>
<thead>
<tr>
<th>NERVE AGENTS</th>
<th>BLISTER AGENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms: Salivation, Lacrimation, Urination, Defecation, Gastrointestinal Distress, Emesis, Breathing Difficulty With Bronchospasm And Copious Secretions, Arrhythmias And Myosis (constricted pupils) (SLUDGE BAM)</td>
<td>Symptoms: Reddened skin, blistering, tearing, itching, CNS effect and respiratory failure</td>
</tr>
<tr>
<td>✅ Duodote Auto-Injector (Refer to Nerve Agent Exposure protocol p. 71)</td>
<td></td>
</tr>
</tbody>
</table>

Follow hazmat response protocols as above. Treat these materials as extremely toxic substances.

**BIOLOGICAL AGENTS** Symptoms may include: Fever, chills, diarrhea, sore throat, swollen lymph nodes, malaise, cough, respiratory insufficiency or distress, and jaundice.

1. For all possible exposures wear appropriate PPE
2. If the patient is coughing, all rescuers to wear N95 mask and surgical mask on patient.
3. Cover any lesions with dressings to avoid spread of contaminant.

**CYANIDE POISONING** Symptoms may include hypotension, apnea and seizures.

1. **Contact Medical Control** as soon as possible.
2. Administer Cyanide antidote if available.

**NOTE**: Illinois Poison Center (800) 222-1222
RADIATION EMERGENCIES

Always practice scene safety.

If radiation hazard suspected:

1. If warranted, contact the Department/Regional HazMat Response Team/Illinois Poison Center.
2. Use proper PPE.
3. Use available survey meters and dosimeters to measure radiation levels.
4. If injured victims in radiation zone, assess and treat life-threatening injuries.
5. Utilize the Time, Distance and Shielding rule.
6. Move patient to the proper control area for further treatment and monitoring.
7. Treat all patients contaminated until proven otherwise.
8. Life threatening injury/illness takes precedence over decontamination procedure. Refer to appropriate protocols.

If contamination suspected, Contact Medical Control with the following:

1. Location of the incident and number of victims
2. Medical status of the victims
3. Source of radiation, fixed facility, transportation, Weapons of Mass Destruction (WMD) device
4. Amount and types of radiation
5. Type of contamination, external vs. internal
6. Need for decontamination at the hospital

If thorough surveying and decontamination cannot be completed at the scene:

1. Transfer patient onto a clean sheet to receive and cover.
2. Prevent contamination of equipment and the ambulance.
3. The rescuers, equipment and ambulance will need to be surveyed and decontaminated at the hospital.

If assistance is needed, 24-hour hot line numbers are available:

Radiation Emergency Assistance Center/Training Site (REACT/TS) in Oak Ridge, TN (865) 576-1005
Illinois Emergency Management Agency, Division of Nuclear Safety (217) 785-0600
Illinois Poison Center (800) 222-1222
FUNCTIONAL NEEDS
CARE OF PATIENTS WITH FUNCTIONAL NEEDS

Patients may present with special health care needs (functional needs) and may require reasonable modification to policies, practices, and procedures. Patients may be dependent upon durable medical equipment, consumable medical supplies, personal assistance services or other goods and services. Children and adults requiring functional needs support may have physical, sensory, mental health, cognitive and/or intellectual disabilities affecting their ability to function independently without assistance; others that may benefit include women in late stages of pregnancy, elders, and people needing bariatric equipment. Communicate with caregiver/parent for medical information and to assist with care if necessary. Confirm the baseline assessment of the patient with the caregiver.

Care of the patient with a tracheostomy:
Evaluate for displacement, obstruction, pulmonary problems and/or equipment issue. There are several types of tracheostomy tubes to include cuffed/uncuffed, fenestrated, single or double lumen; communicate with caregiver regarding specific device. May ventilate/oxygenate via a BVM with a tracheostomy adapter or with a mask over the stoma. If unable to ventilate, cover opening with gauze and ventilate with BVM over nose and mouth. Suction as needed.

Care of the patient with a stoma:
Consider the use of an infant or child mask to make a seal over the stoma site for ventilation; seal mouth and nose if air is escaping.

Care of the patient with a Left Ventricular Assist Device (LVAD): Battery operated, mechanical pump surgically implanted next to the native heart. A tube pulls blood from LV into pump that bypasses aortic valve to send blood directly into the aorta. This aids to help a weakened ventricle.

- NEVER remove both sources of power (batteries) at the same time!
- Patient may or may not have a peripheral pulse or BP
- SpO2 registers if perfusion is present, but may be unreliable
- Evaluate perfusion based on mental status, skin signs
- If patient is unconscious and non-breathing, CHEST COMPRESSIONS ARE ALLOWED
- Patient may be defibrillated without disconnecting the pump
- Do not defibrillate over the pump; defibrillate at nipple line or above. Anterior-posterior pad placement is preferred
- ECG waveforms may have artifact and or may be flat due to device
- Patients will often have pacemakers and/or Internal Cardioverter Devices (ICDs)
- Patients will be on anticoagulant medications
- Avoid water submersion; avoid contact with strong magnets or magnetic fields
- Transport specialized equipment, extra battery pack, charger and cords with the patient
- LVAD Coordinator may be contacted for further information (patient information sheet)

Other technology-assisted special needs:
If possible, transport specialized equipment, emergency information forms and medications to the emergency department with the patient.
CARE OF PATIENTS WITH GRAFTS OR FISTULAS

To treat a person by hemodialysis, an access must be made to the circulatory system, enabling blood to flow out through the machine and return to the patient.

A. **Arteriovenous Fistula.** The most common type of access, a fistula, is created internally by sewing an artery to a vein, forming a small opening between the two. Pressure from the arterial blood flow causes enlargement of the veins.

B. **Arteriovenous Graft.** This access is similar to the fistula. A synthetic tube is used to connect the artery to the vein.

C. **Venous Catheter.** Usually inserted in the internal jugular vein and tunneled to exit below the clavicle.

**Care of patients with a graft or fistula**

1. Do not take a blood pressure on the arm where an active graft or fistula is present.

2. Do not start an IV line on the arm where an active graft or fistula is present.

3. If a graft or fistula is bleeding, apply direct pressure and transport the patient.

4. In case of cardiac arrest, graft or fistula may be used for intravenous access. **Contact Medical Control** for further direction.

**Continuous ambulatory peritoneal dialysis**

Continuous ambulatory peritoneal dialysis (CAPD) is a self-care treatment where the patient instills dialysate fluid into the peritoneal (abdominal) cavity through a catheter that is surgically implanted. The dialysate is allowed to stay in the cavity for a prescribed period of time and is then drained out, carrying out body wastes.

**Care of the patient on CAPD**

1. Do not disconnect the CAPD bags from the catheter.

2. Do not infuse any fluids or medications directly into the catheter.

3. Transport the patient to the hospital with the CAPD intact, maintaining drainage bag lower than waist height.
**PEDIATRIC WEIGHT-BASED MEDICATION-CARDIAC**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Adenosine</th>
<th>Amiodarone</th>
<th>Amiodarone</th>
<th>Atropine</th>
<th>Epinephrine 1:10,000 (1 mg/10 mL)</th>
<th>NS IV Fluid Challenge (Cardiogenic Shock Only)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>How Supplied</strong></td>
<td>3 mg/mL</td>
<td>150 mg/3mL</td>
<td>150 mg/3mL</td>
<td>1 mg/10mL</td>
<td>1 mg/10mL</td>
<td>1 mg/10mL</td>
</tr>
<tr>
<td><strong>Protocol Dosage</strong></td>
<td>0.1 mg/kg</td>
<td>5 mg/kg</td>
<td>5 mg/kg</td>
<td>0.02 mg/kg</td>
<td>0.01 mg/kg</td>
<td>10mL/kg</td>
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<tr>
<td></td>
<td>2nd Dose Doubled (0.2mg/kg)</td>
<td>Dilute in 100 mL D5W for SVT or VT w/ pulse</td>
<td>IVP for VT/VF without a pulse</td>
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<table>
<thead>
<tr>
<th><strong>Routes</strong></th>
<th>IVP/IO</th>
<th>IVPB</th>
<th>IVP/IO</th>
<th>IVP/IO</th>
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<td><strong>Weight</strong></td>
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</tr>
<tr>
<td><strong>Lbs.</strong></td>
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<td></td>
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</tr>
<tr>
<td><strong>Kgs.</strong></td>
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<td><strong>Max 150 mg</strong></td>
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<td><strong>Max dose 300 mg</strong></td>
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<tr>
<td><strong>Min 0.1 mg</strong></td>
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<td></td>
<td></td>
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<tr>
<td><strong>Max 0.5 mg</strong></td>
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<tr>
<td><strong>Max 1 mg</strong></td>
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<td></td>
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</table>

|              |        |      |       |       |      |
| 2            | 0.03 mL (0.1mg) | 0.1 mL (5mg) | 0.1 mL (5 mg) | 1 mL (0.1 mg) | 0.1 mL (0.01mg) | 10 mL |
| 4            | 0.07 mL (0.2mg) | 0.2 mL (10mg) | 0.2 mL (10 mg) | 1 mL (0.1 mg) | 0.2 mL (0.02mg) | 20 mL |
| 7            | 0.1 mL (0.mg)  | 0.3 mL (15mg) | 0.3 mL (15 mg) | 1 mL (0.1 mg) | 0.3 mL (0.03mg) | 30 mL |
| 9            | 0.13 mL (0.4 mg) | 0.4 mL (20mg) | 0.4 mL (20 mg) | 1 mL (0.1 mg) | 0.4 mL (0.04mg) | 40 mL |
| 13           | 0.2 mL (0.6mg) | 0.6 mL (30mg) | 0.6 mL (30 mg) | 1.2 mL (0.12mg) | 0.6 mL (0.06mg) | 60 mL |
| 18           | 0.27 mL (0.8mg) | 0.8 mL (40mg) | 0.8 mL (40 mg) | 1.6 mL (0.16mg) | 0.8 mL (0.08mg) | 80 mL |
| 22           | 0.33 mL (1mg)  | 1 mL (50mg)  | 1 mL (50 mg)  | 2 mL (0.2 mg)  | 1 mL (0.1mg)   | 100 mL |
| 26           | 0.4 mL (1.2mg) | 1.2 mL (60mg) | 1.2 mL (60 mg) | 2.4 mL (0.24mg) | 1.2 mL (0.12mg) | 120 mL |
| 31           | 0.47 mL (1.4mg) | 1.4 mL (70mg) | 1.4 mL (70 mg) | 2.8 mL (0.28mg) | 1.4 mL (0.14mg) | 140 mL |
| 35           | 0.53 mL (1.6mg) | 1.6 mL (80mg) | 1.6 mL (80 mg) | 3.2 mL (0.32mg) | 1.6 mL (0.16mg) | 160 mL |
| 40           | 0.6 mL (1.8mg) | 1.8 mL (90mg) | 1.8 mL (90 mg) | 3.6 mL (0.36mg) | 1.8 mL (0.18mg) | 180 mL |
| 44           | 0.67 mL (2mg)  | 2 mL (100mg) | 2 mL (100 mg) | 4 mL (0.4 mg)  | 2 mL (0.2mg)   | 200 mL |
| 48           | 0.73 mL (2.2mg) | 2.2 mL (110mg) | 2.2 mL (110 mg) | 4.4 mL (0.44mg) | 2.2 mL (0.22mg) | 220 mL |
| 53           | 0.8 mL (2.4mg) | 2.4 mL (120mg) | 2.4 mL (120 mg) | 4.8 mL (0.48mg) | 2.4 mL (0.24mg) | 240 mL |
| 57           | 0.87 mL (2.6mg) | 2.6 mL (130mg) | 2.6 mL (130 mg) | 5 mL (0.5 mg)  | 2.6 mL (0.26mg) | 269 mL |
| 62           | 0.93 mL (2.8mg) | 2.8 mL (140mg) | 2.8 mL (140 mg) | 5 mL (0.5 mg)  | 2.8 mL (0.28mg) | 280 mL |
| 66           | 1 mL (3mg)     | 3 mL (150mg) | 3 mL (150 mg) | 5 mL (0.5 mg)  | 3 mL (0.3mg)   | 300 mL |
| 70           | 1.07 mL (3.2mg) | 3 mL (150mg) | 3 mL (150 mg) | 5 mL (0.5 mg)  | 3.2 mL (0.32mg) | 320 mL |
| 75           | 1.13 mL (3.4mg) | 3 mL (150mg) | 3.4 mL (170 mg) | 5 mL (0.5 mg)  | 3.4 mL (0.34mg) | 340 mL |
| 79           | 1.2 mL (3.6mg) | 3 mL (150mg) | 3.6 mL (180 mg) | 5 mL (0.5 mg)  | 3.6 mL (0.36mg) | 360 mL |
| 84           | 1.27 mL (3.8mg) | 3 mL (150mg) | 3.8 mL (190 mg) | 5 mL (0.5 mg)  | 3.8 mL (0.38mg) | 380 mL |
| 88           | 1.33 mL (4mg)  | 3 mL (150mg) | 4 mL (200 mg)  | 5 mL (0.5 mg)  | 4 mL (0.4mg)   | 400 mL |
| 92           | 1.4 mL (4.2mg) | 3 mL (150mg) | 4.2 mL (210 mg) | 5 mL (0.5 mg)  | 4.2 mL (0.42mg) | 420 mL |
| 98           | 1.47 mL (4.4mg) | 3 mL (150mg) | 4.4 mL (220 mg) | 5 mL (0.5 mg)  | 4.4 mL (0.44mg) | 440 mL |

*NOTE: Titrate = Administer slowly to desired effect*
## PEDIATRIC WEIGHT-BASED MEDICATION-MEDICAL

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dextrose 50% &gt;8 years</th>
<th>Dextrose 25% 1-8 years</th>
<th>Dextrose 12.5% &lt;1 year old</th>
<th>Narcan</th>
<th>NS IV Fluid Challenge</th>
<th>Magnesium Sulfate</th>
<th>Valium</th>
<th>Epi 1:1,000 (1mg/1mL) Non-Arrest/Stable</th>
</tr>
</thead>
<tbody>
<tr>
<td>How Supplied</td>
<td>25gm/50mL 500mg/1mL</td>
<td>2.5gm/10mL 250mg/1mL</td>
<td>2.5gm/10mL Dextrose 25%</td>
<td>2mg/2mL (1mg/1mL)</td>
<td>1gm/2mL</td>
<td>5mg/mL</td>
<td>1mg/1mL</td>
<td></td>
</tr>
<tr>
<td>Protocol Dosage</td>
<td>1mL/kg 0.5gm/kg</td>
<td>2mL/kg 0.5gm/kg</td>
<td>4mL/kg 0.5gm/kg</td>
<td>0.1mg/kg &lt;20 kg</td>
<td>20mL/kg</td>
<td>25mg/kg</td>
<td>0.3mg/kg</td>
<td>0.01mg/kg</td>
</tr>
<tr>
<td>Routes</td>
<td>IVP/IO</td>
<td>IVP/IO</td>
<td>IVP/IO</td>
<td>IVP/IO</td>
<td>IVP/IO/IN/IM</td>
<td>IV/IO</td>
<td>IV/IO</td>
<td></td>
</tr>
<tr>
<td>Weight Lbs. Kgs.</td>
<td>Use D 25% Dilute 1:1 with saline</td>
<td>Assess after each bolus</td>
<td>Max 2gm</td>
<td>Max 0.5mg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 1 Refer to 12.5%</td>
<td>Refer to 12.5%</td>
<td>4mL (0.5gm)</td>
<td>0.1mL (0.1mg)</td>
<td>20mL</td>
<td>20.05 mL (25mg)</td>
<td>0.01mL (0.02mg)</td>
<td>0.01mL (0.01mg)</td>
<td></td>
</tr>
<tr>
<td>4 2 Refer to 12.5%</td>
<td>Refer to 12.5%</td>
<td>8mL (1gm)</td>
<td>0.2mL (0.2mg)</td>
<td>40mL</td>
<td>0.1 mL (50mg)</td>
<td>0.08mL (0.04mg)</td>
<td>0.02mL (0.02mg)</td>
<td></td>
</tr>
<tr>
<td>7 3 Refer to 12.5%</td>
<td>Refer to 12.5%</td>
<td>12mL (1.5gm)</td>
<td>0.3mL (0.3mg)</td>
<td>60mL</td>
<td>0.15mL (75mg)</td>
<td>0.12mL (0.06mg)</td>
<td>0.03mL (0.03mg)</td>
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</tr>
<tr>
<td>9 4 Refer to 12.5%</td>
<td>Refer to 12.5%</td>
<td>16mL (2gm)</td>
<td>0.4mL (0.4mg)</td>
<td>80mL</td>
<td>0.2mL (100mg)</td>
<td>0.16mL (0.08mg)</td>
<td>0.04mL (0.04mg)</td>
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</tr>
<tr>
<td>13 6 Refer to 12.5%</td>
<td>Refer to 12.5%</td>
<td>24mL (3gm)</td>
<td>0.6mL (0.6mg)</td>
<td>120mL</td>
<td>0.3mL (150mg)</td>
<td>0.24mL (1.2mg)</td>
<td>0.06mL (0.06mg)</td>
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<tr>
<td>18 8 Refer to 12.5%</td>
<td>Refer to 12.5%</td>
<td>32mL (4gm)</td>
<td>0.8mL (0.8mg)</td>
<td>160mL</td>
<td>0.4mL (200mg)</td>
<td>0.32mL (1.6mg)</td>
<td>0.08mL (0.08mg)</td>
<td></td>
</tr>
<tr>
<td>22 10 10 mL (5gm)</td>
<td>20 mL (5gm)</td>
<td>40mL (5gm)</td>
<td>1mL (1mg)</td>
<td>200mL</td>
<td>0.5mL (250mg)</td>
<td>0.4mL (2mg)</td>
<td>0.1mL (0.1mg)</td>
<td></td>
</tr>
<tr>
<td>26 12 12 mL (6gm)</td>
<td>24 mL (6gm)</td>
<td>Refer to 25%</td>
<td>1.2mL (1.2mg)</td>
<td>240mL</td>
<td>0.6mL (300mg)</td>
<td>0.48mL (2.4mg)</td>
<td>0.12mL (0.12 mg)</td>
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<tr>
<td>31 14 14 mL (7gm)</td>
<td>28 mL (7gm)</td>
<td>Refer to 25%</td>
<td>1.4mL (1.4mg)</td>
<td>280mL</td>
<td>0.7mL (350mg)</td>
<td>0.56mL (2.8mg)</td>
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<tr>
<td>35 16 16 mL (8gm)</td>
<td>32 mL (8gm)</td>
<td>Refer to 25%</td>
<td>1.6mL (1.6mg)</td>
<td>320mL</td>
<td>0.8mL (400mg)</td>
<td>0.64mL (3.2mg)</td>
<td>0.16mL (0.16mg)</td>
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<tr>
<td>40 18 18 mL (9gm)</td>
<td>36 mL (9gm)</td>
<td>Refer to 25%</td>
<td>1.8mL (1.8mg)</td>
<td>360mL</td>
<td>0.9mL (450mg)</td>
<td>0.72mL (3.6mg)</td>
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<tr>
<td>44 20 20 mL (10gm)</td>
<td>40 mL (10gm)</td>
<td>Refer to 25%</td>
<td>2mL (2mg)</td>
<td>400mL</td>
<td>1mL (500mg)</td>
<td>0.8mL (4mg)</td>
<td>0.2mL (0.2mg)</td>
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<tr>
<td>48 22 22 mL (11gm)</td>
<td>44 mL (11gm)</td>
<td>Refer to 25%</td>
<td>2mL (2mg)</td>
<td>440mL</td>
<td>1.1mL (550mg)</td>
<td>0.88mL (4.4mg)</td>
<td>0.22mL (0.22mg)</td>
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<tr>
<td>53 24 24 mL (12gm)</td>
<td>48 mL (12gm)</td>
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<td>2mL (2mg)</td>
<td>480mL</td>
<td>1.2mL (600mg)</td>
<td>0.96mL (4.8mg)</td>
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<tr>
<td>57 26 26 mL (13gm)</td>
<td>52 mL (13gm)</td>
<td>Refer to 25%</td>
<td>2mL (2mg)</td>
<td>520mL</td>
<td>1.3mL (650mg)</td>
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<tr>
<td>62 28 28 mL (14gm)</td>
<td>56 mL (14gm)</td>
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<td>2mL (2mg)</td>
<td>560mL</td>
<td>1.4mL (700mg)</td>
<td>1.12mL (5.6mg)</td>
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<tr>
<td>66 30 30 mL (15 gm)</td>
<td>60 mL (15gm)</td>
<td>Refer to 25%</td>
<td>2mL (2mg)</td>
<td>600mL</td>
<td>1.5mL (750mg)</td>
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<tr>
<td>70 32 32 mL (16gm)</td>
<td>64 mL (16gm)</td>
<td>Refer to 25%</td>
<td>2mL (2mg)</td>
<td>640mL</td>
<td>1.6mL (800mg)</td>
<td>1.28mL (6.4mg)</td>
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<tr>
<td>75 34 34 mL (17gm)</td>
<td>68 mL (17gm)</td>
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<td>2mL (2mg)</td>
<td>680mL</td>
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<tr>
<td>79 36 36 mL (18gm)</td>
<td>72 mL (18gm)</td>
<td>Refer to 25%</td>
<td>2mL (2mg)</td>
<td>720mL</td>
<td>1.8mL (900mg)</td>
<td>1.44mL (7.2mg)</td>
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<tr>
<td>84 38 38 mL (19gm)</td>
<td>76 mL (19gm)</td>
<td>Refer to 25%</td>
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<td>760mL</td>
<td>1.9mL (950mg)</td>
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<td>88 40 40 mL (20gm)</td>
<td>80 mL (20gm)</td>
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<td>2mL (2mg)</td>
<td>800mL</td>
<td>2mL (1000mg)</td>
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<td>0.4mL (0.4mg)</td>
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<tr>
<td>92 42 42 mL (21gm)</td>
<td>84 mL (21gm)</td>
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<td>2.1mL (1050mg)</td>
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<td>98 44 44 mL (22 gm)</td>
<td>88 mL (22gm)</td>
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<td>880mL</td>
<td>2.2mL (1100mg)</td>
<td>1.76mL (8.8mg)</td>
<td>0.44mL (0.44mg)</td>
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*NOTE: Titrate = Administer slowly to desired effect*
<table>
<thead>
<tr>
<th>Drug</th>
<th>Etomidate Amide</th>
<th>Fentanyl Citrate</th>
<th>Lidocaine Xylocaïne</th>
<th>Ondansetron Zofran</th>
<th>Morphine Sulfate</th>
<th>Benadryl Diphenhydramine</th>
<th>Versed Midazolam</th>
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<td>How Supplied</td>
<td>20mg/10mL or 40mg/20mL</td>
<td>100mcg/2mL</td>
<td>100mg/5mL</td>
<td>4mg/2mL</td>
<td>10 mg/1mL</td>
<td>50 mg/1mL</td>
<td>1 mg/1mL or 5mg/1mL</td>
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<td>Protocol Dosage</td>
<td>0.3 mg/kg</td>
<td>1mcg/kg</td>
<td>1.5 mg/kg</td>
<td>0.1 mg/kg &lt;40 kg</td>
<td>0.1 mg/kg</td>
<td>1 mg/kg</td>
<td>0.1 mg/kg</td>
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<td>IVP/IN/IO</td>
<td>IVP/IO</td>
<td>IVP/IO</td>
<td>IVP/IO/IM</td>
<td>IVP/IO/IM</td>
<td>IVP/IO/IN/IM</td>
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<td>Max 20 mg</td>
<td>Titrate*</td>
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<td>IVP/IO</td>
<td>IVP/IO/IM</td>
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<tr>
<td>2</td>
<td>0.15mL (0.3mg)</td>
<td>0.02mL (1mcg)</td>
<td>0.075 mL (1.5mg)</td>
<td>0.01mL (0.1mg)</td>
<td>0.01mL (0.1mg)</td>
<td>0.02mL (1mg)</td>
<td>0.1mL (0.1mg)</td>
</tr>
<tr>
<td>4</td>
<td>0.2mL (1mcg)</td>
<td>0.03mL (0.3mcg)</td>
<td>0.15 mL (3mg)</td>
<td>0.02 mL (0.2mg)</td>
<td>0.02mL (0.2mg)</td>
<td>0.04mL (2mg)</td>
<td>0.2mL (0.2mg)</td>
</tr>
<tr>
<td>7</td>
<td>0.26mL (0.5mcg)</td>
<td>0.03mL (0.3mcg)</td>
<td>0.15 mL (3mg)</td>
<td>0.02 mL (0.2mg)</td>
<td>0.02mL (0.2mg)</td>
<td>0.04mL (2mg)</td>
<td>0.2mL (0.2mg)</td>
</tr>
<tr>
<td>9</td>
<td>0.28mL (0.5mcg)</td>
<td>0.03mL (0.3mcg)</td>
<td>0.15 mL (3mg)</td>
<td>0.02 mL (0.2mg)</td>
<td>0.02mL (0.2mg)</td>
<td>0.04mL (2mg)</td>
<td>0.2mL (0.2mg)</td>
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<tr>
<td>12</td>
<td>0.32mL (0.6mcg)</td>
<td>0.03mL (0.3mcg)</td>
<td>0.15 mL (3mg)</td>
<td>0.02 mL (0.2mg)</td>
<td>0.02mL (0.2mg)</td>
<td>0.04mL (2mg)</td>
<td>0.2mL (0.2mg)</td>
</tr>
<tr>
<td>14</td>
<td>0.36mL (0.7mcg)</td>
<td>0.03mL (0.3mcg)</td>
<td>0.15 mL (3mg)</td>
<td>0.02 mL (0.2mg)</td>
<td>0.02mL (0.2mg)</td>
<td>0.04mL (2mg)</td>
<td>0.2mL (0.2mg)</td>
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<tr>
<td>16</td>
<td>0.4mL (0.8mcg)</td>
<td>0.03mL (0.3mcg)</td>
<td>0.15 mL (3mg)</td>
<td>0.02 mL (0.2mg)</td>
<td>0.02mL (0.2mg)</td>
<td>0.04mL (2mg)</td>
<td>0.2mL (0.2mg)</td>
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<tr>
<td>18</td>
<td>0.44mL (0.9mcg)</td>
<td>0.03mL (0.3mcg)</td>
<td>0.15 mL (3mg)</td>
<td>0.02 mL (0.2mg)</td>
<td>0.02mL (0.2mg)</td>
<td>0.04mL (2mg)</td>
<td>0.2mL (0.2mg)</td>
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<tr>
<td>22</td>
<td>0.52mL (1mcg)</td>
<td>0.03mL (0.3mcg)</td>
<td>0.15 mL (3mg)</td>
<td>0.02 mL (0.2mg)</td>
<td>0.02mL (0.2mg)</td>
<td>0.04mL (2mg)</td>
<td>0.2mL (0.2mg)</td>
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<tr>
<td>24</td>
<td>0.56mL (1.1mcg)</td>
<td>0.03mL (0.3mcg)</td>
<td>0.15 mL (3mg)</td>
<td>0.02 mL (0.2mg)</td>
<td>0.02mL (0.2mg)</td>
<td>0.04mL (2mg)</td>
<td>0.2mL (0.2mg)</td>
</tr>
<tr>
<td>26</td>
<td>0.6mL (1.2mcg)</td>
<td>0.03mL (0.3mcg)</td>
<td>0.15 mL (3mg)</td>
<td>0.02 mL (0.2mg)</td>
<td>0.02mL (0.2mg)</td>
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<td>0.2mL (0.2mg)</td>
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<tr>
<td>28</td>
<td>0.64mL (1.4mcg)</td>
<td>0.03mL (0.3mcg)</td>
<td>0.15 mL (3mg)</td>
<td>0.02 mL (0.2mg)</td>
<td>0.02mL (0.2mg)</td>
<td>0.04mL (2mg)</td>
<td>0.2mL (0.2mg)</td>
</tr>
<tr>
<td>30</td>
<td>0.68mL (1.6mcg)</td>
<td>0.03mL (0.3mcg)</td>
<td>0.15 mL (3mg)</td>
<td>0.02 mL (0.2mg)</td>
<td>0.02mL (0.2mg)</td>
<td>0.04mL (2mg)</td>
<td>0.2mL (0.2mg)</td>
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<tr>
<td>32</td>
<td>0.72mL (1.8mcg)</td>
<td>0.03mL (0.3mcg)</td>
<td>0.15 mL (3mg)</td>
<td>0.02 mL (0.2mg)</td>
<td>0.02mL (0.2mg)</td>
<td>0.04mL (2mg)</td>
<td>0.2mL (0.2mg)</td>
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<tr>
<td>34</td>
<td>0.76mL (2.0mcg)</td>
<td>0.03mL (0.3mcg)</td>
<td>0.15 mL (3mg)</td>
<td>0.02 mL (0.2mg)</td>
<td>0.02mL (0.2mg)</td>
<td>0.04mL (2mg)</td>
<td>0.2mL (0.2mg)</td>
</tr>
<tr>
<td>36</td>
<td>0.8mL (2.2mcg)</td>
<td>0.03mL (0.3mcg)</td>
<td>0.15 mL (3mg)</td>
<td>0.02 mL (0.2mg)</td>
<td>0.02mL (0.2mg)</td>
<td>0.04mL (2mg)</td>
<td>0.2mL (0.2mg)</td>
</tr>
<tr>
<td>38</td>
<td>0.84mL (2.4mcg)</td>
<td>0.03mL (0.3mcg)</td>
<td>0.15 mL (3mg)</td>
<td>0.02 mL (0.2mg)</td>
<td>0.02mL (0.2mg)</td>
<td>0.04mL (2mg)</td>
<td>0.2mL (0.2mg)</td>
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<tr>
<td>40</td>
<td>0.88mL (2.6mcg)</td>
<td>0.03mL (0.3mcg)</td>
<td>0.15 mL (3mg)</td>
<td>0.02 mL (0.2mg)</td>
<td>0.02mL (0.2mg)</td>
<td>0.04mL (2mg)</td>
<td>0.2mL (0.2mg)</td>
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NOTE: Titrate = Administer slowly to desired effect

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**ADULT WEIGHT-BASED MEDICATION CHART**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Etomidate Amidate</th>
<th>Fentanyl Citrate</th>
<th>Lidocaine Xylocaine</th>
</tr>
</thead>
<tbody>
<tr>
<td>How Supplied</td>
<td>20/10 mL or 40mg/20mL</td>
<td>100 mcg/2 mL</td>
<td>100 mg/5 mL</td>
</tr>
<tr>
<td>Protocol Dosage</td>
<td>0.3 mg/kg</td>
<td>1 mcg/kg</td>
<td>1.5 mg/kg</td>
</tr>
<tr>
<td>Routes</td>
<td>IVP/IO</td>
<td>IVP/IN/IO</td>
<td>IVP/IO</td>
</tr>
<tr>
<td>Weight Lbs. Kgs.</td>
<td>Max 20 mg</td>
<td>Titrator*</td>
<td></td>
</tr>
<tr>
<td>88 40</td>
<td>6mL (12mg)</td>
<td>0.8mL (40mcg)</td>
<td>3mL (60mg)</td>
</tr>
<tr>
<td>97 44</td>
<td>6.6mL (13.2mg)</td>
<td>0.88mL (44mcg)</td>
<td>3.3mL (66mg)</td>
</tr>
<tr>
<td>106 48</td>
<td>7.2mL (14.4mg)</td>
<td>0.96mL (48mcg)</td>
<td>3.6mL (72mg)</td>
</tr>
<tr>
<td>114 52</td>
<td>7.8mL (15.6mg)</td>
<td>1.04mL (52mcg)</td>
<td>3.9mL (78mg)</td>
</tr>
<tr>
<td>123 56</td>
<td>8.4mL (16.8mg)</td>
<td>1.12mL (56mcg)</td>
<td>4.2mL (84mg)</td>
</tr>
<tr>
<td>132 60</td>
<td>9mL (18mg)</td>
<td>1.2mL (60mcg)</td>
<td>4.5mL (90mg)</td>
</tr>
<tr>
<td>141 64</td>
<td>9.6mL (19.2mg)</td>
<td>1.28mL (64mcg)</td>
<td>4.8mL (96mg)</td>
</tr>
<tr>
<td>150 68</td>
<td>10mL (20mg)</td>
<td>1.36mL (68mcg)</td>
<td>5.1mL (102mg)</td>
</tr>
<tr>
<td>158 72</td>
<td>10mL (20mg)</td>
<td>1.44mL (72mcg)</td>
<td>5.5mL (108mg)</td>
</tr>
<tr>
<td>167 76</td>
<td>10mL (20mg)</td>
<td>1.52mL (76mcg)</td>
<td>5.7mL (114mg)</td>
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<tr>
<td>176 80</td>
<td>10mL (20mg)</td>
<td>1.6mL (80mcg)</td>
<td>6mL (120mg)</td>
</tr>
<tr>
<td>185 84</td>
<td>10mL (20mg)</td>
<td>1.68mL (84mcg)</td>
<td>6.3mL (126mg)</td>
</tr>
<tr>
<td>194 88</td>
<td>10mL (20mg)</td>
<td>1.76mL (88mcg)</td>
<td>6.6mL (132mg)</td>
</tr>
<tr>
<td>202 92</td>
<td>10mL (20mg)</td>
<td>1.84mL (92mcg)</td>
<td>6.9mL (138mg)</td>
</tr>
<tr>
<td>211 96</td>
<td>10mL (20mg)</td>
<td>1.92mL (96mcg)</td>
<td>7.2mL (144mg)</td>
</tr>
<tr>
<td>220 100</td>
<td>10mL (20mg)</td>
<td>2mL (100mcg)</td>
<td>7.5mL (150mg)</td>
</tr>
<tr>
<td>229 104</td>
<td>10mL (20mg)</td>
<td>2mL (100mcg)</td>
<td>7.8mL (156mg)</td>
</tr>
<tr>
<td>238 108</td>
<td>10mL (20mg)</td>
<td>2mL (100mcg)</td>
<td>8.1mL (162mg)</td>
</tr>
<tr>
<td>246 112</td>
<td>10mL (20mg)</td>
<td>2mL (100mcg)</td>
<td>8.4mL (168mg)</td>
</tr>
<tr>
<td>255 116</td>
<td>10mL (20mg)</td>
<td>2mL (100mcg)</td>
<td>8.7mL (174mg)</td>
</tr>
<tr>
<td>264 120</td>
<td>10mL (20mg)</td>
<td>2mL (100mcg)</td>
<td>9mL (180mg)</td>
</tr>
<tr>
<td>273 124</td>
<td>10mL (20mg)</td>
<td>2mL (100mcg)</td>
<td>9.3mL (186mg)</td>
</tr>
<tr>
<td>282 128</td>
<td>10mL (20mg)</td>
<td>2mL (100mcg)</td>
<td>9.6mL (192mg)</td>
</tr>
<tr>
<td>290 132</td>
<td>10mL (20mg)</td>
<td>2mL (100mcg)</td>
<td>9.9mL (198mg)</td>
</tr>
<tr>
<td>300 136</td>
<td>10mL (20mg)</td>
<td>2mL (100mcg)</td>
<td>10.2mL (204mg)</td>
</tr>
</tbody>
</table>

*NOTE: Titrator = Administer slowly to desired effect*
<table>
<thead>
<tr>
<th>DRUG</th>
<th>DOSAGE AND ROUTE</th>
<th>ACTION</th>
<th>INDICATION</th>
<th>CONTRAINDICATIONS</th>
<th>SIDE EFFECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adenosine (Adenocard) 6mg/2mL vial</td>
<td>6 mg RAPID IV/IO and 20mL NS flush IV/IO. May repeat dose at 12 mg RAPID IVP and 20 mL NS flush.</td>
<td>Slows conduction time through AV node. Can interrupt re-entry pathways thru AV node.</td>
<td>Symptomatic SVT Stable monomorphic wide complex tachycardia</td>
<td>Sensitivity to ADENOSINE. Heart block, sick sinus syndrome.</td>
<td>Brief transient dysrhythmias including asystole, flushing, vertigo, nausea/vomiting</td>
</tr>
<tr>
<td>Albuterol (Proventil) 2.5mg/3mL vial</td>
<td>Hand held nebulizer 2.5 mg/3mL or inline or in-line ET</td>
<td>Produces bronchodilation regardless of route. Relaxes smooth muscle of bronchial tree.</td>
<td>Bronchospasm associated with chronic or acute asthma, bronchitis or other reversible obstructive airway diseases</td>
<td>Cautious w/HTN, MAO inhibitors, cardiovascular disease, hyperthyroid, diabetes mellitus, tricyclics</td>
<td>Anxiety, tremors, dizziness, paradoxical bronchospasm, nervousness, palpitations, high or low BP, reflex tachycardia, flushing, headache, nausea, vomiting</td>
</tr>
<tr>
<td>Amidate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amiodarone (Cordarone) 150mg/3mL</td>
<td>VF/VT – 300 mg IVP/IO VF 2nd dose 150 mg IVP/IO Adult Stable VT – 150 mg SLOW IVPB diluted in 100 mL D5W</td>
<td>Antiarrhythmic</td>
<td>Refractory VF/PVT Stable VT</td>
<td>Caution with renal failure. Use of drugs which prolong QT interval. Long terminal elimination (&gt;40 days).</td>
<td>Vasodilation, hypotension, negative inotropic, prolongs QT interval</td>
</tr>
</tbody>
</table>

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<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>ASPIRIN 81 or 324 mg Tablets</td>
<td>324mg Oral</td>
<td>Platelet inhibitor. Blocks platelet aggregation.</td>
<td>New chest pain suggestive of Acute MI</td>
<td>Patients with known hypersensitivity to drug</td>
<td>Heartburn, nausea, vomiting</td>
</tr>
<tr>
<td>ATROPINE SULFATE 1 mg/10 mL preload (0.1 mg/mL) –OR- 0.5mg/5 mL preload.</td>
<td>0.5 IVP/IO RAPIDLY up to total dose of 3 mg or via ET</td>
<td>Parasympathetic blocker, indirect cardioaccelerator</td>
<td>Decreased cardiac output, bradydysrhythmias with BP and sensorium changes, narrow complex AV block Organophosphate poisoning</td>
<td>HTN, tachycardia, glaucoma</td>
<td>Dilated pupils, dry mouth, headache, sensorium change, tachycardia, flushed skin, blurred vision</td>
</tr>
<tr>
<td>CYANOKIT 5 g Hydroxocobalamin packaged as (1) 5 gm vial</td>
<td>5 g IVP/IO over 15 minutes. May repeat one time.</td>
<td>Binds cyanide ion and forms cyanocobalamin which is excreted in the urine</td>
<td>Treatment of known or suspected cyanide poisoning</td>
<td>Sensitivity to hydroxocobalamin, use with caution in pregnancy</td>
<td>HTN, nausea, vomiting, headache, rash</td>
</tr>
</tbody>
</table>

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</thead>
<tbody>
<tr>
<td>DEXTROSE 50% 25 gm/50 mL preload (500 mg/mL)</td>
<td>25 gm IVP or IO</td>
<td>Monosaccharide, which provides glucose calories for metabolic needs, 50% solution acts an osmotic diuretic</td>
<td>Hypoglycemia, unconscious patients of unknown origin</td>
<td>Delirium tremens with dehydration, intracranial or intraspinal hemorrhage</td>
<td>Acidosis, alkalosis, hyperglycemia, hyperosmolarity syndrome. Burning from infusion, pain and thrombosis of peripheral veins. Skin and soft tissue necrosis with infiltration.</td>
</tr>
<tr>
<td>DIAZEPAM (Valium) 10 mg/2 mL preload syringe</td>
<td>2 - 5 mg increments IVP/IO SLOWLY up to 10 mg total. Titrate to desired effect. May be given IM.</td>
<td>Depresses the CNS autonomic and peripheral nervous systems. Suppresses spread of seizure activity</td>
<td>Seizures, cardioversion, status epilepticus, anxiety</td>
<td>Shock, coma, acute alcohol intoxication, glaucoma</td>
<td>Respiratory depression, drowsiness, lethargy, ataxia, transient hypotension, visual disturbances; evidence shows risk to fetus, but benefit may outweigh risk</td>
</tr>
<tr>
<td>DIPHENHYDRAMINE (Benadryl) 50 mg/1 mL preload</td>
<td>25-50 mg IM or IVP/IO SLOWLY over 2 minutes</td>
<td>Decreases allergic response by blocking histamine</td>
<td>Allergic reaction and anaphylaxis</td>
<td>Acute Asthma attack, COPD, hypersensitivity.</td>
<td>Drowsiness, sedation, headache, blurred vision, tremors, tachycardia, convulsions, hypotension. May cause excitable state in children.</td>
</tr>
</tbody>
</table>

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### REGION X APPROVED DRUG INFORMATION LIST

**NOTE:** See Pediatric Resuscitation Medication Chart for Pediatric Dose

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>DOPAMINE 400mg/250 mL</td>
<td>Starting dose 5μg/kg/min IVPB up to 20μg/kg/min</td>
<td>Stimulates alpha and beta-1 adrenergic and dopaminergic receptors</td>
<td>Hypotension with signs and symptoms of shock</td>
<td>Hypersensitivity, hypertension, tachydysrhythmias</td>
<td>Hypertension, tachycardia, headache, nausea, vomiting, angina, dyspnea, skin and soft tissue necrosis with infiltration</td>
</tr>
<tr>
<td>DUODOTE Atropine 2 mg/0.7 mL Pralidoxine Chloride (2 PAM) 600 mg/2 mL</td>
<td>May utilize up to 3 kits based upon exposure and presentation</td>
<td>Atropine counters the over-stimulating effects on nerve receptors. 2 PAM removes nerve agent at nerve endings.</td>
<td>Symptomatic nerve agent or organophosphate exposure. Dermal decontamination is critical</td>
<td>Not to be used for prophylactic measure. Use with caution but not withheld in patients with cardiac disease or hypertension</td>
<td>Atropine may cause chest pain. 2 PAM may cause blurred vision, headache, nausea, hypertension, rapid heart rate.</td>
</tr>
<tr>
<td>DUONEB See ALBUTEROL and IPRATROPIUM BROMIDE</td>
<td>Albuterol 2.5 mg/3 mL and Atrovent 0.5 mg/2.5 mL</td>
<td>Albuterol: Beta effects: increases automaticity, conductivity, contractility, dilation of bronchial tree. Alpha effects vasoconstriction.</td>
<td>Anaphylaxis, allergic reaction, bronchial asthma, bronchitis, bronchospasm, COPD, wheezing of any etiology in adults.</td>
<td>Use with caution in elderly patient and those with underlying cardiovascular disease. Known sensitivity to epinephrine or sulfites. Pregnant women in active labor.</td>
<td>Tachyarrhythmia, tremors, restlessness, anxiety, nausea, headache</td>
</tr>
<tr>
<td>EPINEPHRINE 1:1,000 (1mg/1mL) 1 mg/mL ampules or preload</td>
<td>0.5 mL IM</td>
<td>Beta effects: increases automaticity, conductivity, contractility, dilation of bronchial tree. Alpha effects vasoconstriction.</td>
<td>Anaphylaxis, allergic reaction, bronchial asthma, bronchitis, bronchospasm, COPD, wheezing of any etiology in adults.</td>
<td>Use with caution in elderly patient and those with underlying cardiovascular disease. Known sensitivity to epinephrine or sulfites. Pregnant women in active labor.</td>
<td>Tachyarrhythmia, tremors, restlessness, anxiety, nausea, headache</td>
</tr>
<tr>
<td></td>
<td>EpiPen Jr. 0.15mg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EpiPen 0.3mg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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105
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</thead>
<tbody>
<tr>
<td><strong>EPINEPHRINE</strong></td>
<td>1 mg given IVP/IO RAPIDLY during resuscitation. May repeat at 3-5 min. intervals</td>
<td>Beta effects: increases automaticity, conductivity, contractility, dilation of bronchial tree. Alpha effects: vasoconstriction</td>
<td>Asystole, V-fib, pulseless idioventricular rhythm</td>
<td>Pregnancy, hypertension, known sensitivity to epinephrine or sulfites</td>
<td>Tachyarrhythmias, tremors, restlessness, anxiety, nausea, headache</td>
</tr>
<tr>
<td>1:10,000 (1mg/10mL)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 mg/10 mL preload</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>ETOMIDATE</strong></td>
<td>0.3 mg/kg IVP/IO over 30 to 60 seconds</td>
<td>Ultrashort-acting nonbarbiturate hypnotic which produces a rapid induction of anesthesia with minimal cardiovascular effects Decreases intracranial pressure with no effect on cerebral perfusion or heart rate</td>
<td>Drug assisted intubation (DAI)</td>
<td>Used cautiously in patients with renal failure and hepatic cirrhosis as the duration of effect may be prolonged. Use cautiously in patients with seizure disorder. Use in pregnancy only if potential benefit justifies the risk.</td>
<td>Pain at injection site, temporary involuntary muscle movements, nausea, vomiting, hiccups bradycardia, tachycardia, arrhythmias, hypertension, hypotension, apnea, laryngospasm, hypoventilation</td>
</tr>
<tr>
<td>(Amidate) 20mg/10mL</td>
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</tr>
<tr>
<td>or 40mg/20mL</td>
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<tr>
<td>(2mg/1mL)</td>
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<th>SIDE EFFECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>FENTANYL CITRATE</td>
<td>100 mcg/2 mL vial</td>
<td>Binds with and activates opioid receptors in the brain and spinal cord to produce analgesia and euphoria. Reduces anxiety, apprehension and perception to pain</td>
<td>Pain relief</td>
<td>Hypersensitivity or intolerance to Fentanyl or other opioid agonists</td>
<td>Skeletal muscle and chest wall rigidity, Impaired ventilation, Respiratory distress, apnea, bronchoconstriction, laryngospasm</td>
</tr>
<tr>
<td></td>
<td>1 mcg/kg IVP/IO/IN for all doses, repeat dose 1 mcg/kg IVP/IO/IN to a maximum total of 200 mcg</td>
<td>Titrate to desired effect.</td>
<td></td>
<td>Fentanyl crosses the placenta but has been used safely in labor</td>
<td></td>
</tr>
<tr>
<td>Furosemide (Lasix)</td>
<td>Usual dose 40-80 mg IVP/IO or IM</td>
<td>Diuretic acts on kidneys to excrete water, sodium, potassium, vasodilation</td>
<td>CHF and pulmonary edema, head injury with high ICP, HTN</td>
<td>Symptomatic hypotension</td>
<td>Postural hypotension, electrolyte disorders, muscle cramps, blurred vision</td>
</tr>
<tr>
<td>GLUCAGON</td>
<td>1 mg</td>
<td>Increases blood glucose by converting liver glycogen to glucose</td>
<td>Hypoglycemia when unable to establish IV</td>
<td>Chronic hypoglycemia, adrenal insufficiency, starvation, allergy to protein.</td>
<td>Nausea, vomiting, hypotension, allergic reaction due to protein substance.</td>
</tr>
<tr>
<td>GLUCOSE (Glutose 15)</td>
<td>15 grams ORAL</td>
<td>Increases blood glucose</td>
<td>Hypoglycemia when known diabetic, able to tolerate oral preparation, intact gag reflex</td>
<td>Unable to tolerate oral preparation, lacking gag reflex, unable to protect own airway</td>
<td>Nausea</td>
</tr>
</tbody>
</table>

*NOTE: Titrate = Administer slowly to desired effect*
<table>
<thead>
<tr>
<th>DRUG</th>
<th>DOSE AND ROUTE</th>
<th>ACTION</th>
<th>INDICATION</th>
<th>CONTRAINDICATIONS</th>
<th>SIDE EFFECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPRATROPIUM BROMIDE (Atrovent) 0.5 mg/2.5 mL vial</td>
<td>Unit dose, hand-held nebulizer 0.5 mg/2.5 mL or inline ET</td>
<td>Anticholinergic Bronchodilator</td>
<td>Bronchospasm which is associated with mod/severe allergic reaction, COPD/Asthma</td>
<td>Hypersensitivity to Atropine or ipratropium products, Glaucoma, prostate hypertrophy</td>
<td>Dry mouth, nausea, bitter taste in mouth, blurred vision, dilated pupils</td>
</tr>
<tr>
<td>Lasix</td>
<td>See FUROSEMIDE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LIDOCAINE (Xylocaine) 100 mg/5 mL preload</td>
<td>DAI 1.5 mg/kg IVP/IO IO insertion 50 mg IO</td>
<td>Antiarrhythmic, local anesthetic Depresses cough reflex during DAI</td>
<td>DAI for head trauma, local anesthetic for IO infusion</td>
<td>Known hypersensitivity to amides, AV or intraventricular blocks, idioventricular or escape rhythms, brady dysrhythmias</td>
<td>Low systolic BP, nausea, coma, Bradycardia that may lead to arrest, twitching, seizures, widened QRS complex, CNS depressions</td>
</tr>
<tr>
<td>MAGNESIUM SULFATE 50% 1gm/2mL</td>
<td>2gm/100mL D5W IVPB over 5 minutes 4 gm/100mL D5W IVPB over 15 minutes</td>
<td>Inhibits smooth muscle contraction, decreases histamine release from MAST cells, inhibits acetylcholine release</td>
<td>VT/VF (Torsades) OB complications – hypertensive emergencies with seizures.</td>
<td>Heart blocks, pregnant women in active labor</td>
<td>Bradycardia, arrhythmias, hypotension, flushing, flaccid paralysis, drowsiness, hypocalcemia, respiratory paralysis, diaphoresis</td>
</tr>
</tbody>
</table>

*NOTE: Titrate = Administer slowly to desired effect*
<table>
<thead>
<tr>
<th>DRUG</th>
<th>DOSE AND ROUTE</th>
<th>ACTION</th>
<th>INDICATION</th>
<th>CONTRAINDICATIONS</th>
<th>SIDE EFFECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIDAZOLAM</td>
<td>2 mg IVP/IO/IN every 2 minutes may repeat to a maximum of 10 mg (20 mg for</td>
<td>Benzodiazepine CNS</td>
<td>Sedation prior to conscious intubation</td>
<td>Glaucoma</td>
<td>Drowsiness</td>
</tr>
<tr>
<td>(Versed)</td>
<td>post-intubation sedation and seizures)</td>
<td>depressant Amnesic</td>
<td>and/or Cardioversion suppress seizure activity</td>
<td>Shock</td>
<td>sedation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sedative/hypnotic Fast</td>
<td>Severe anxiety</td>
<td>Pregnancy unless seizing Head</td>
<td>confusion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>onset/offset</td>
<td></td>
<td>trauma</td>
<td>amnesia</td>
</tr>
<tr>
<td></td>
<td>NOTE: VERIFY CONCENTRATION PRIOR TO GIVING MEDICATION</td>
<td></td>
<td></td>
<td>Known hypersensitivity</td>
<td>ataxia</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Dose generally ↓ with; age &gt; 60;</td>
<td>respiratory depression</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>debilitated patients with chronic</td>
<td>respiratory arrest</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>diseases; those on narcotics or CNS</td>
<td>hypotension, crosses placental</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>depressants</td>
<td>barrier</td>
</tr>
<tr>
<td>MORPHINE</td>
<td>2 mg IVP/IO over 2 minutes may repeat to a maximum of 10 mg</td>
<td>Narcotic: Decreases</td>
<td>Severe pain in normotensive patients. Pulmonary</td>
<td>Use with caution with head injury,</td>
<td>Respiratory depression/arrest,</td>
</tr>
<tr>
<td>SULFATE</td>
<td></td>
<td>anxiety. Vasodilator</td>
<td>edema, ischemic chest pain.</td>
<td>undiagnosed abdominal pain,</td>
<td>decreased LOC, transient low BP,</td>
</tr>
<tr>
<td>10 mg/1 mL</td>
<td></td>
<td>decreases venous return.</td>
<td>Potent analgesic.</td>
<td>hypotension, brady arrhythmias.</td>
<td>Reversal agent</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Narcan.</td>
</tr>
<tr>
<td>NALOXONE HCL</td>
<td>2 mg IVP/IO/IN/IM</td>
<td>Narcotic antagonist</td>
<td>Known or suspected narcotic-induced respiratory</td>
<td>Use cautiously in patients with</td>
<td>Nausea, vomiting, withdrawal</td>
</tr>
<tr>
<td>(Narcan)</td>
<td></td>
<td></td>
<td>depression.</td>
<td>cardiac irritability and narcotic</td>
<td>symptoms, seizures</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>addiction.</td>
<td></td>
</tr>
<tr>
<td>Narcan</td>
<td>See NALOXONE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*NOTE: Titrate = Administer slowly to desired effect*
### REGION X APPROVED DRUG INFORMATION LIST

**NOTE: See Pediatric Resuscitation Medication Chart for Pediatric Dose**

<table>
<thead>
<tr>
<th>DRUG</th>
<th>DOSE AND ROUTE</th>
<th>ACTION</th>
<th>INDICATION</th>
<th>CONTRAINDICATIONS</th>
<th>SIDE EFFECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>NITROGLYCERIN (Nitrostat)</td>
<td>1 tablet SL (0.4mg - 1/150 gr.)</td>
<td>Vasodilator: decreases blood return to right heart, decreases preload and afterload and oxygen consumption.</td>
<td>Angina pectoris, chest pain. Pulmonary edema, Hypertensive crisis</td>
<td>Hypersensitivity to nitrates, head trauma, cerebral hemorrhage, and hypotension. Avoid use if Viagra drug taken within 24 hours or 48 hours with Cialis</td>
<td>Headache, dizziness, hypotension, nausea, vomiting, palpitations, sublingual burning.</td>
</tr>
<tr>
<td>1/150 gr. Tablets</td>
<td>May be given every 5 minutes if BP &gt; 90.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ONDANSETRON (Zofran)</td>
<td>4mg IVP/IO over 30 seconds may repeat in 10 minutes to a maximum of 8 mg Or 4mg ORAL</td>
<td>Blocks the action of serotonin, a natural substance that may cause nausea and vomiting</td>
<td>Nausea and vomiting</td>
<td>Hypersensitivity</td>
<td>Blurred vision after infusion, diarrhea in children</td>
</tr>
<tr>
<td>4mg/2 mL Also 4mg tablet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proventil</td>
<td>See ALBUTEROL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SODIUM BICARBONATE 8.4%</td>
<td>50meq IV/IO</td>
<td>Treatment of acidosis in severe renal disease</td>
<td>VT/VF in dialysis patients</td>
<td>Metabolic or respiratory alkalosis, patients with severe vomiting or continuous GI suctioning</td>
<td>Edema, hypocalcemia, tetany, gastric distension, metabolic alkalosis</td>
</tr>
<tr>
<td>50mEq/50mL preload</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valium</td>
<td>See DIAZEPAM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VERAPAMIL</td>
<td>5 mg IVP/IO SLOWLY over 2 minutes, if no response in 15 minutes may repeat</td>
<td>Relaxes coronary smooth muscle, decreases SA and AV node conduction, dilates peripheral arteries</td>
<td>SVT and Atrial Fib/Flutter</td>
<td>2nd or 3rd degree heart block, hypotension, severe CHF, cardiogenic shock, Sick Sinus Syndrome, Wolff-Parkinson-White Syndrome</td>
<td>Headache, dizziness, bradycardia, palpitations, hypotension, AV block, nausea</td>
</tr>
<tr>
<td>10 mg/4 mL preload (2.5mg/mL)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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</thead>
<tbody>
<tr>
<td>Versed</td>
<td>See MIDAZOLAM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xylocaine</td>
<td>See LIDOCAINE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zofran</td>
<td>See ONDANSETRON</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: See Pediatric Resuscitation Medication Chart for Pediatric Dose

*NOTE: Titrate = Administer slowly to desired effect
### Abbreviations, Acronyms and Symbols

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAA</td>
<td>abdominal aortic aneurysm</td>
</tr>
<tr>
<td>Abd.</td>
<td>abdomen</td>
</tr>
<tr>
<td>ACS</td>
<td>acute coronary syndrome</td>
</tr>
<tr>
<td>AED</td>
<td>automated external defibrillator</td>
</tr>
<tr>
<td>AHA</td>
<td>American Heart Association</td>
</tr>
<tr>
<td>AIDS</td>
<td>acquired immune deficiency syndrome</td>
</tr>
<tr>
<td>ALS</td>
<td>Advanced Life Support</td>
</tr>
<tr>
<td>AMA</td>
<td>against medical advice</td>
</tr>
<tr>
<td>Amb.</td>
<td>ambulance</td>
</tr>
<tr>
<td>AMI</td>
<td>acute myocardial infarction</td>
</tr>
<tr>
<td>Amp.</td>
<td>ampule</td>
</tr>
<tr>
<td>AMS</td>
<td>altered mental status</td>
</tr>
<tr>
<td>A&amp;O</td>
<td>alert and oriented</td>
</tr>
<tr>
<td>APGAR</td>
<td>appearance, pulse, grimace, activity, respirations</td>
</tr>
<tr>
<td>ASA</td>
<td>aspirin</td>
</tr>
<tr>
<td>ASAP</td>
<td>as soon as possible</td>
</tr>
<tr>
<td>ASHD</td>
<td>arteriosclerotic heart disease</td>
</tr>
<tr>
<td>AV</td>
<td>atrioventricular</td>
</tr>
<tr>
<td>AVPU</td>
<td>mental status: alert, verbal, pain, unresponsive</td>
</tr>
<tr>
<td>BB</td>
<td>backboard</td>
</tr>
<tr>
<td>BCP</td>
<td>birth control pills</td>
</tr>
<tr>
<td>BLS</td>
<td>Basic Life Support</td>
</tr>
<tr>
<td>bm</td>
<td>bowel movement</td>
</tr>
<tr>
<td>BOW</td>
<td>Bag of water</td>
</tr>
<tr>
<td>BP</td>
<td>blood pressure</td>
</tr>
<tr>
<td>BPM or bpm</td>
<td>beats per minute</td>
</tr>
<tr>
<td>bs</td>
<td>breath sounds</td>
</tr>
<tr>
<td>BSA</td>
<td>body surface area</td>
</tr>
<tr>
<td>BSI</td>
<td>body substance isolation</td>
</tr>
<tr>
<td>BVM</td>
<td>bag valve mask</td>
</tr>
<tr>
<td>C</td>
<td>Celsius or centigrade</td>
</tr>
<tr>
<td>CA</td>
<td>cancer</td>
</tr>
<tr>
<td>c&amp;a</td>
<td>conscious and alert</td>
</tr>
<tr>
<td>C-Card</td>
<td>cervical collar</td>
</tr>
<tr>
<td>CHB</td>
<td>complete heart block</td>
</tr>
<tr>
<td>CHF</td>
<td>congestive heart failure</td>
</tr>
<tr>
<td>CID</td>
<td>cervical immobilization device</td>
</tr>
<tr>
<td>cm</td>
<td>centimeter</td>
</tr>
<tr>
<td>CMS</td>
<td>circulation, motor, sensation</td>
</tr>
<tr>
<td>CNS</td>
<td>central nervous system</td>
</tr>
<tr>
<td>c/o</td>
<td>complaints of</td>
</tr>
<tr>
<td>CO</td>
<td>carbon monoxide</td>
</tr>
<tr>
<td>CO2</td>
<td>carbon dioxide</td>
</tr>
<tr>
<td>COPD</td>
<td>chronic obstructive pulmonary disease</td>
</tr>
<tr>
<td>CP</td>
<td>chest pain</td>
</tr>
<tr>
<td>CPAP</td>
<td>continuous positive airway pressure</td>
</tr>
<tr>
<td>CPR</td>
<td>cardiopulmonary resuscitation</td>
</tr>
<tr>
<td>CPSS</td>
<td>Cincinnati Prehospital Stroke Scale</td>
</tr>
<tr>
<td>Cric.</td>
<td>cricothyrotomy</td>
</tr>
<tr>
<td>C-Section</td>
<td>caesarian section</td>
</tr>
<tr>
<td>CSF</td>
<td>cerebral spinal fluid</td>
</tr>
<tr>
<td>C-spine</td>
<td>cervical spine</td>
</tr>
<tr>
<td>CV</td>
<td>cardiovascular</td>
</tr>
<tr>
<td>CVA</td>
<td>dilatation vascular accident</td>
</tr>
<tr>
<td>D&amp;C</td>
<td>dilate and curette</td>
</tr>
<tr>
<td>D/J</td>
<td>discontinue</td>
</tr>
<tr>
<td>DSW</td>
<td>5% dextrose in water</td>
</tr>
<tr>
<td>DCAP</td>
<td>deformity, contusion, abrasion, penetration</td>
</tr>
<tr>
<td>DCFS</td>
<td>Department of Children and Family Services</td>
</tr>
<tr>
<td>Dept.</td>
<td>department</td>
</tr>
<tr>
<td>Dig.</td>
<td>Digoxin</td>
</tr>
<tr>
<td>DKA</td>
<td>diabetic ketoacidosis</td>
</tr>
<tr>
<td>DM</td>
<td>diabetes mellitus</td>
</tr>
<tr>
<td>DNA</td>
<td>does not apply</td>
</tr>
<tr>
<td>DNR</td>
<td>do not resuscitate</td>
</tr>
<tr>
<td>DOA</td>
<td>dead on arrival</td>
</tr>
<tr>
<td>DOE</td>
<td>dyspnea on exertion</td>
</tr>
<tr>
<td>Drsg.</td>
<td>dressing</td>
</tr>
<tr>
<td>DTs</td>
<td>delirium tremens</td>
</tr>
<tr>
<td>DVT</td>
<td>deep vein thrombosis</td>
</tr>
<tr>
<td>Dx</td>
<td>diagnosis</td>
</tr>
<tr>
<td>ECG or EKG</td>
<td>electrocardiogram</td>
</tr>
<tr>
<td>ECRN</td>
<td>Emergency Communications RN</td>
</tr>
<tr>
<td>ED</td>
<td>emergency department</td>
</tr>
<tr>
<td>EDC</td>
<td>estimated date of confinement</td>
</tr>
<tr>
<td>EDD</td>
<td>esophageal detector device</td>
</tr>
<tr>
<td>EMS</td>
<td>Emergency Medical Services</td>
</tr>
<tr>
<td>EMT</td>
<td>Emergency Medical Technician</td>
</tr>
<tr>
<td>ENT</td>
<td>ear, nose and throat</td>
</tr>
<tr>
<td>ET</td>
<td>endotracheal</td>
</tr>
<tr>
<td>EtCO2</td>
<td>end tidal carbon dioxide</td>
</tr>
<tr>
<td>ETA</td>
<td>estimated time of arrival</td>
</tr>
<tr>
<td>ETOH</td>
<td>alcohol</td>
</tr>
<tr>
<td>Exam.</td>
<td>examination</td>
</tr>
<tr>
<td>F</td>
<td>fahrenheit</td>
</tr>
<tr>
<td>FB</td>
<td>foreign body</td>
</tr>
<tr>
<td>FBO</td>
<td>foreign body obstruction</td>
</tr>
<tr>
<td>Fib.</td>
<td>fibrillation</td>
</tr>
<tr>
<td>FHT</td>
<td>fetal heart tones</td>
</tr>
<tr>
<td>FUO</td>
<td>fever of unknown origin</td>
</tr>
<tr>
<td>FiO2</td>
<td>fraction of inspired O2 (% O2 delivered)</td>
</tr>
<tr>
<td>Fr.</td>
<td>french (suction catheter diameter)</td>
</tr>
<tr>
<td>Fx</td>
<td>fracture</td>
</tr>
<tr>
<td>GCS</td>
<td>Glasgow Coma Score</td>
</tr>
<tr>
<td>GERD</td>
<td>gastro-esophageal reflux disease</td>
</tr>
<tr>
<td>GI</td>
<td>gastrointestinal</td>
</tr>
<tr>
<td>gm</td>
<td>gram</td>
</tr>
<tr>
<td>gsw</td>
<td>gun shot wound</td>
</tr>
<tr>
<td>Gtt</td>
<td>drops</td>
</tr>
<tr>
<td>GU</td>
<td>genitourinary</td>
</tr>
<tr>
<td>Gyn</td>
<td>gynecological</td>
</tr>
<tr>
<td>h or hr</td>
<td>hour</td>
</tr>
<tr>
<td>H/A</td>
<td>headache</td>
</tr>
<tr>
<td>H2O</td>
<td>water</td>
</tr>
<tr>
<td>HCO3-</td>
<td>bicarbonate</td>
</tr>
</tbody>
</table>
SA.................................................. sinoatrial node
SAMPLE....................................... symptoms, allergies, medications,
... past history, last oral intake, events leading up to illness
SB................................................. sinus bradycardia
SBP............................................. systolic blood pressure
SCI................................................ spinal cord injury
SIDS............................................ sudden infant death syndrome
SL................................................. sublingual
SMV............................................ sensation, motor, vascular
SOB............................................. shortness of breath
SOP............................................. Standard Operating Procedure
SpO2.......................................... pulse oximetry
SQ............................................. subcutaneous
S&S............................................... signs & symptoms
STAT.......................................... immediately
STD........................................... sexually transmitted disease
SubQ or SQ.................................... subcutaneous
SVT............................................ supraventricular tachycardia
T................................................. temperature
Tab............................................. tablet
TB............................................. tuberculosis
TBI............................................. traumatic brain injury
TIA............................................. transient ischemic attack
TIC............................................. tenderness, instability, crepitus
TKO/KVO...................................... to keep open
TPN............................................. total parenteral nutrition
Tx............................................. treatment
Unk........................................... unknown
URI........................................... upper respiratory infection
UTI........................................... urinary tract infection
V-fib or VF.................................. ventricular fibrillation
VO............................................. verbal order
VS............................................. vital signs
VSD........................................... ventricular septal defect
V-tach or VT............................... ventricular tachycardia
w/........................................... with
w/d........................................... warm and dry
WPW........................................... Wolff-Parkinson White Syndrome
Wt............................................. weight
WNL........................................... within normal limits
w/o........................................... without
WOB........................................... work of breathing
Ws............................................. watt seconds
y/o........................................... year old
@.............................................. at
°............................................. degree
#............................................. number
↑ or ↓...................................... increased or decreased
<.............................................. less than
>.............................................. greater than
≥............................................. equal to or greater than
≤............................................. equal to or less than
+............................................ positive or plus