Kitsap County
EMS and TCC Protocols
Washington State DOH approved February 18, 2015

The following protocols and procedures have been approved by Washington State Department of Health for use by pre-hospital care providers in Kitsap County.

These protocols will be reviewed and revised, as necessary, to reflect changes in the EMS standard of care.

Dr. Scott Davarn, MPD Kitsap County

Kitsap County Emergency Medical Services and Trauma Care Council would like to extend a special thank you all who dedicated their time and efforts in the production of the Kitsap County EMS protocols. These protocols will be used to provide the highest level of care to the citizens of Kitsap County.
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### Kitsap County Patient Care Procedures
These procedures have been developed by the Kitsap County EMS & Trauma council in conjunction with local councils. The Patient Care Procedures define how the EMS system operates within the Kitsap County of Washington State, by identifying the level of medical care personnel who participate in the system, their roles in the system, and participation of the hospital facilities in the system. They also address the issue of inter-hospital transfer, transfer agreements for identification, and transfer of critical care patients.

The Prehospital Trauma Triage Procedure and the Regional Patient Care Procedures outline an EMS system structure which effectively reduces morbidity and mortality. A full copy of the Kitsap County Patient Care Procedures may be accessed on our website at [www.nwrems.org](http://www.nwrems.org).

### Regional Guidelines
Prehospital Provider Scope of Practice

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<th>Level of Certification</th>
<th>Medical Control &amp; Skills Capabilities</th>
<th>Medication Administration</th>
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<td>Emergency Medical Responder</td>
<td>MPD protocols, patient assessment, CPR, AED, BVM, Bandaging, splinting, trauma, triage, medical, and pediatrics.</td>
<td>$O_2$</td>
</tr>
<tr>
<td>Emergency Medical Technician</td>
<td>MPD protocols/ endorsements, patient assessment, CPR, AED, BVM, supraglottic airway, NIPPV, bandaging, splinting, trauma, triage, medical, pediatrics, OB/GYN. ECG/12-Lead can read only.</td>
<td>Above plus aspirin, epinephrine, activated charcoal, oral glucose, assist with patient’s own Diastat, nitroglycerin and metered dose inhaler prescribed</td>
</tr>
<tr>
<td>Advanced Emergency Medical Technician</td>
<td>MPD protocols, EMT skills and knowledge, IV Therapy skills, ET, NIPPV, supraglottic airway.</td>
<td>Above plus naloxone, dextrose 50/25/10, albuterol</td>
</tr>
<tr>
<td>Paramedic</td>
<td>MPD protocols, EMT skills and knowledge, IV Therapy skills, ET, Supraglottic airway, NIPPV, capnography, advanced airway control, ACLS w/ manual defibrillation, and advanced patient assessment, trauma and medical skills.</td>
<td>Above plus MPD protocol</td>
</tr>
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CDC National Trauma Triage Procedure

Measure vital signs and level of consciousness

Glasgow Coma Scale < 14 or
Systolic blood pressure < 90 mmHg or
Respiratory rate < 10 or > 29 breaths/minute (< 20 in infant < one year)

Assess anatomy of Injury

• All penetrating injuries to head, neck, torso, and extremities proximal to elbow and knee
• Flail chest
• Two or more proximal long-bone fractures
• Crushed, degloved, or mangled extremity
• Amputation proximal to wrist and ankle
• Pelvic fractures
• Open or depressed skull fracture
• Paralysis

Assess mechanism of Injury and evidence of high-energy impact

Falls
• Adults: > 20ft. (one story is equal to 10 ft.)
• Children: > 10ft. or 2-3 times the height of the child

High-Risk Auto Crash
• Intrusion: > 12in. Occupant site; > 18in. Any site
• Ejection (partial or complete) from automobile
• Death in same passenger compartment
• Vehicle telemetry data consistent with high risk of injury

Auto v. pedestrian/Bicyclist Thrown, Run Over, or with Significant (> 20 mph) Impact
Motorcycle Crash > 20 mph

Assess special patient or system considerations

Age
• Older Adults: Risk of injury death increases after age 55 years
• Children: Should be triaged preferentially to pediatric capable trauma centers

Anticoagulation and Bleeding Disorders
Burns
• Without other trauma mechanism: Triage to burn facility
• With trauma mechanism: Triage to trauma center

Time Sensitive Extremity Injury
End-Stage Renal Disease Requiring Dialysis
Pregnancy > 20 Weeks
EMS Provider Judgment

Transport according to protocol

Take to a trauma center. Steps 1 and 2 attempt to identify the most seriously injured patients. These patients should be transported preferentially to the highest level of care within the trauma system

Transport to closest appropriate trauma center, which depending on the trauma system, need not be the highest level trauma center

Contact medical control and consider transport to a trauma center or a specific resource hospital.
Kitsap County Acute Coronary Syndrome/ STEMI Protocol

Inclusion Criteria:

Acute onset chest pain of less than twelve (12) hours duration with:

1. Typical ST elevation per STEMI criteria
   a. ST elevation at J point > 2mm in men or > 1.5mm in women in leads V2-V3
   b. ST elevation at J point > 1mm in contiguous chest or limb leads.
   c. ST depression > 1mm in > 2 precordial leads (V1-V4) can indicate posterior STEMI
2. A computerized ECG interpretation diagnosing acute myocardial infarction is helpful but not mandatory.
   a. Confirmation of STEMI via transmitted ECG from the field when possible.
3. A conscious patient, able to provide verbal consent and reasonable history OR resuscitated cardiac arrest with ST elevation on subsequent ECG.
4. No obvious end stage disease.
5. In the setting of symptoms suggestive of acute coronary syndrome with ECG features that obscure accurate interpretation of ST segments (e.g. LBBB, a paced rhythm, LVH) prompt ECG transmission when possible and contact with Medical Control shall occur.

1. Universal Patient Care.
2. Oxygen PRN / Advanced Airway management PRN.
3. EKG/12-lead (notify receiving facility ASAP if STEMI and document time of contact)
   - Repeat 12-lead EKG with any change in patient condition.
4. Vascular access PRN x 2
   - Fluid bolus PRN.
5. Administer Aspirin 325 mg PO.
6. If patient complains of nausea:
   - Consider Zofran 4mg IV/IO/PO, Q 3 to 5 minutes, to max dose of 8mg.
7. Administer Nitroglycerin 0.4 mg SL Q 5 minutes if SBP ≥ 100 mm Hg.
8. Pain management:
   - Consider Lorazepam 0.5 - 2.0 mg IV/IO PRN for anxiety.
   - [Physician Order] for additional Lorazepam.
   Choose One PRN:
   - Consider Fentanyl 25 to 50 mcg IV/IM/IO PRN, Q 3 to 5 minute’s.
   - Consider Morphine 2.0 – 4.0 mg IV/IM/IO PRN, Q 3 to 5 minutes.
9. Administer Metropolol 5 mg IV over 2 to 5 minutes, may repeat up to a total dose of 15 mg.
   *Goal HR 60, Hold for HR < 60 or BP <100. Use Caution in Asthma/COPD, Inferior MI; not to be given if any sign of cardiogenic shock (CHF, hypotension)
10. Administer Heparin Bolus (Loading dose) 60 units/kg to max of 4000 units. If patient weight greater than 100kg, than administer 5000 units.
   - IF TRANSPORT TIME >30 MINUTES: Administer Nitroglycerin drip. Start at 10 mcg/min to 100 mcg/min max. Titrate to chest pain. (Refer to drip rate calculation sheet)
   - IF TRANSPORT TIME >30 MINUTES: Administer Heparin Drip 12 units/kg/hr to max of 1000 units/hour. (Refer to drip rate calculation sheet)

*Administer only if transport is > 20 minutes
11. Contact Medical Control.
**PREHOSPITAL PROVIDER CONDUCT**

1. Kitsap County EMS Providers must maintain the highest standard of professional conduct.
2. Competent medical care must be provided with compassion and dignity for all persons regardless of nationality, race, creed, religion, sex or status.
3. Providers must refuse to participate in unethical activities and/or activities which may impair professional judgment and the ability to act competently.
4. Matters of disagreement between prehospital providers regarding patient care must be handled professionally without alarming anyone on the scene. Medical Control contact will be made for immediate direction. Providers should not threaten, degrade, insult or verbally abuse each other.
5. Patient Confidentiality will be maintained at all times in compliance with Health Insurance Portability and Accountability Act (HIPAA) of 1996.

**INFECTION CONTROL STANDARDS**

1. Infection Control Standards assume that all contact with blood, other bodily fluids and potentially infectious materials is infectious.
2. The standards of use of Universal Precautions / Body Substance Isolation, which includes safe work practices, correct use of engineering controls and personal protective equipment is mandated by WISHA, and must be adhered to.
3. EMS Providers must protect themselves at all times from “reasonably anticipated potential for exposure”. The following is a list of mandated items: Gloves, Masks, Face Shields, Safety Glasses, High Efficiency Particulate Air (HEPA) Filters, Resuscitation Equipment, and Protective Clothing.

**PATIENT REFUSAL OF MEDICAL EVALUATION**

1. **Consent**
   a. The patient has responsibility to consent to or refuse treatment. If the patient is unable to do so, a responsible relative or guardian has this right.
   b. If waiting to obtain lawful consent from the authorized person would present a serious risk of death, serious impairment of health, or would prolong severe pain or suffering to the patient, treatment may be undertaken to avoid these risks without consent. In no event should legal consent procedures be allowed to delay immediately required treatment.
   c. The patient must be eighteen years of age or emancipated to legally refuse treatment.
   d. If the patient is under age, consent should be from a natural parent, adopted parent, or legal guardian only.

2. **Mental competence**
   a. A person is mentally competent if:
      1. Capable of understanding the nature and consequence of the proposed treatment.
      2. Sufficient emotional control, judgment, and discretion to manage their own affairs are present.
   b. A person is not mentally competent if he/she has impaired cerebral perfusion, presents in shock, is postictal, or under the influence of drugs or alcohol.
   c. Medical Control contact with the Base physician is necessary for all patients refusing transport in those counties requiring it.
   d. Nurses may speak for the Medical Control physician if the physician is unable to come to the telephone. The nurse must give the prehospital care provider the name of the Base physician who is directing the nurse.
PROTOCOLS

Adult/Pediatric START/JumpSTART Triage

Able to walk?
  Yes → Minor → Refer to appropriate Protocol
  No → Breathing?

Breathing?
  No → Position upper airway → Breaths → IMMEDIATE
  Yes → 5 Rescue Breaths

Respiratory Rate
  > 30 Adult → IMMEDIATE
  < 30 Adult
  15 - 45 Pediatric → IMMEDIATE
  < 15 or > 45 Pediatric → IMMEDIATE

Perfusion
  Capillary Refill > 2 sec (Adult)
  No Palpable Pulse (Pediatric) → IMMEDIATE

Mental Status
  Doesn't obey commands (Adult)
  "P" Inappropriate posturing or "U" (Pediatric) → IMMEDIATE
  Obeys Commands (Adult)
  "A", "V" or "P" Appropriate (Pediatric) → DELAYED

AVPU Infant / Child

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<th>Child</th>
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<td>Curious / Recognizes parents</td>
<td>Alert / Aware of surroundings</td>
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<td>V - Responds to Voice</td>
<td>Irritable / Cries</td>
<td>Opens eyes</td>
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<tr>
<td>P - Responds to Pain</td>
<td>Cries in response to pain</td>
<td>Withdrawals from pain</td>
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<td>U - Unresponsive</td>
<td>No Response</td>
<td>Opens eyes</td>
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Universal Patient Care Protocol Adult / Child

Consider ALS Evaluation & Transport if:
- Suspected Coronary chest pain
- Shortness of breath not relieved by initial interventions
- Abdominal pain
- Altered mental status
- Abnormal vital signs

Scene Safety / BSI

Initial Assessment
Pediatric Assessment Procedure Pg. 71

Vital Signs
BP, Pulse, Respiratory

Temperature PRN
Blood Sugar
Pulse Oximetry

Oxygen
O₂ sat > 92%

*Consider
Cardiac Monitor/12 Lead ECG

Capnography

Appropriate Protocol(s)

Doesn’t fit protocol?
Contact Medical Control

Cardiac Arrest Protocol
Adult Pg. 15
Pediatric Pg. 48

Legend

Notes:
- A pediatric patient is defined by a length based tape. If the patient does not fit on the tape, they are considered adult.
- Exam: Minimal exam if not noted on the specific protocol is vital signs, mental status, and location of injury or complaint.
- Any patient contact which does not result in an EMS transport shall be documented.
- *EMT can acquire 12-lead ECG and read/report text printout but cannot interpret.
Suspected Abuse

Transport all patients

Physical findings:
- Unexplained bruises
- Numerous/multiple bruises
- Burns: Cigarette, Immersion, Rope, Infected
- Torn, stained, bloody underclothes
- Bleeding, irritation or pain of the genitals
- Poor hygiene/malnourished
- Child with repeated injuries/multiple calls to the same address
- Flat/bald spots on head (infants)
- Unexplained wet clothing/body

Behavioral:
- History of minor incident inconsistent with major injury
- MOI inconsistent with developmental age
- Inappropriate fear of parent
- Inconsistent explanation for injury
- Nervous disorders (rash, hives, stomachaches)
- Age-inappropriate behaviors (bedwetting)
- Lack of adult supervision
- Delay in seeking medical care
- Caregiver who refuses treatment or transport
  Contact LE/CPS/APS should caretaker not allow transport to hospital

Sexual abuse:
- May be present without apparent signs of physical abuse
- Discourage patient from going to the bathroom
- Don’t allow patient to change clothes or wash
- Bring clothing to hospital

1-866-END-HARM
(1-866-363-4276)

Universal Patient Care Protocol

Oxygen
Advanced Airway Management

Consider other treatment Protocol as necessary

Documentation:
- Carefully document caretaker's description of event
- Note environment including temperature
- Note clothing, stains, and conditions

Contact Medical Control

Legend
E EMT E
A AEMT A
P PM P
M MC Order M
Cardiac Arrest

Begin/continue CPR
Airway Management
Pg. 89-99
Attach Monitor/Defibrillator

Call for ALS

Witnessed Arrest
Duration < 4 min

Yes
Assess Rhythm

No shock advised
Shock advised
Defibrillate once

2 minutes CPR

Assess for pulse

Yes
Post Resuscitation Management Protocol Pg. 23

No

Asystole / PEA
(No shock advised)

See Asystole / PEA Protocol Pg. 21

Vf/Vt
(Shock advised)

See Vf/Pulseless VT Protocol Pg. 20

Notes:
• All shocks Monophasic 360 J or the Biphasic device specific equivalent. If Biphasic equivalent unknown deliver shock at 200 J.
• Consider discontinuing CPR pursuant to Procedure page 112
• For spontaneous resuscitation refer to Post Resuscitation Management protocol page 23
• High Density CPR page 111
Non-Traumatic Shock

<table>
<thead>
<tr>
<th>History:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Cardiac ischemia (MI, CHF)</td>
</tr>
<tr>
<td>• Medications</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Signs/Symptoms:</th>
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</thead>
<tbody>
<tr>
<td>• Hypotension</td>
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<tr>
<td>• Rales &amp; pulmonary edema on exam</td>
</tr>
<tr>
<td>• Altered mental status</td>
</tr>
<tr>
<td>• Weakness, dizziness</td>
</tr>
<tr>
<td>• Weak, rapid pulse</td>
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<tr>
<td>• Pale, cool, clammy skin</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Differential:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Dysrhythmias</td>
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<tr>
<td>• Vasovagal</td>
</tr>
<tr>
<td>• Allergic reaction</td>
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<tr>
<td>• Anaphylaxis</td>
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<tr>
<td>• Sepsis</td>
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<tr>
<td>• Neurogenic</td>
</tr>
</tbody>
</table>

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**Universal Patient Care Protocol**

1. **ECG / 12 lead**
2. **Obtain IV/IO access**
3. **Fluid Bolus NS/LR**
   - 250cc-1,000cc may repeat x 1 if not in Pulmonary Edema
   - Goal SBP > 100
4. **Norepinephrine**
   - Titrate drip 7-35 mcg/min
   - IV/IO SBP > 100
   - Or
5. **Epinephrine**
   - Titrate drip 2-10 mcg/min
   - IV/IO SBP > 100
   - Or
6. **Dopamine**
   - Titrate 5–20 mcg/kg/min
   - IV/IO SBP > 100
7. **Contact Medical Control**

---

**Legend**

- **E** EMT
- **A** AEMT
- **P** PM
- **MC Order**
- **PRN**
- **EMT**

**Bradycardia**

**History:**
- Past medical history
- Medications
  - Beta-Blockers
  - Calcium channel blockers
  - Clonidine
  - Digitalis
  - Pacemaker

**Potential causes:**
- Acute myocardial infarction
- Sinus bradycardia
- Athletes / non pathologic
- Stroke
- Sick Sinus Syndrome
- Heartblock

**Signs/Symptoms:**
- HR < 60/min and symptomatic
- Chest pain
- Respiratory distress
- Hypotension or Shock
- Altered mental status
- Syncope

**Universal Patient Care Protocol**

1. **ECG / 12 lead**
2. **Obtain IV/IO access**

**Perfusion**

**Signs of inadequate perfusion:**
- acute altered mental status, ongoing chest pain, hypotension or other signs of shock

**Adequate**

1. **Fluid Bolus NS/LR**
   - 250cc-1,000cc
   - may repeat x 1 if not in Pulmonary Edema
   - Goal SBP > 100
2. **Atropine**
   - 0.5-1mg IVP q 3-5 min max 3mg
3. **Sedation per Pain**
   - Management Protocol
   - Pg. 34
4. **Transcutaneous Pacing**
   - Pg. 105
5. **Epinephrine**
   - Titrate drip 2-10 mcg/min
   - IV/IO SBP > 100
   - Or
   - **Dopamine**
     - Titrate 5–20 mcg/kg/min
     - IV/IO SBP >100

**Inadequate**

- **Atropine** PRN
- **Transport and Contact Medical Control**

**Reminders**
- Hypovolemia
- Hypoxia
- Hydrogen ion (acidosis)
- Hypo-Hyperkalemia
- Hypoglycemia
- Hypothermia

- Toxins
- Tamponade, cardiac
- Tension pneumothorax
- Thrombosis (coronary or pulmonary)
- Trauma (hypovolemia, increased ICP)

**Legend**

- E: EMT
- A: AEMT
- P: PM
- M: MC Order

**PRN:**
- As needed
Narrow Complex Tachycardia

Universal Patient Care Protocol

- Immediate transport
- Call for ALS intercept

- Obtain IV/IO access
- Consider Fluid Bolus

- ECG / 12 lead

Stable at this Heart rate?

- Yes
  - Vital signs
  - Consider Fluid Bolus
  - Obtain IV/IO access

- No
  - Rapid Atrial Fib/Flutter
    - Diltiazem
      10-25 mg, may repeat PRN
      OR
    - Metoprolol
      2.5-5 mg slow IV q5min
      to max 15 mg
      OR
    - Procainamide for WPW
      20 mg/min IV push up to 17 mg/kg followed by drip of 1-4 mg/kg IV/IO

  - Stable?
    - Yes
      - Observe
    - No
      - Mild Symptoms

- SVT
  - Vagal maneuvers
  - Adenosine
    6 mg rapid IV/IO push
    If no conversion 12 mg rapid IV/IO push

- Conversion
  - No
  - Yes

- Stable at this Heart rate?
  - Yes
    - Observe
  - No
    - Consider Fluid Bolus
    - Obtain IV/IO access

- CAUTION before Cardioverting Afib
  - Etomidate
    0.1-0.3 mg/kg IV/IO
    over 15-30 seconds
    OR
  - Midazolam
    2.5-10mg IV/ IO
    WITH OR WITHOUT
  - Fentanyl
    50 mcg IV q 3-5 min to
    200 mcg max

- Synchronized
  Cardioversion Pg. 102
  Consider starting at 50J

- Contact Medical Control

Legend
- E EMT
- A AEMT
- P PM
- M MC Order

Notes:
- Use β-blockers with caution in pulmonary disease or CHF
- If patient already on a β-blocker, give Metoprolol
- WPW (Wolff Parkinson White): pre-existing syndrome which can lead to paroxysmal tachydysrhythmias. Caution must be used when treating WPW with rapid atrial fibrillation.
Wide Complex Tachycardia

Universal Patient Care Protocol

Immediate transport
Call for ALS intercept

Obtain IV/IO access

ECG / 12 lead

Stable

SVT with aberrancy

A-Fib

Ventricular Tachycardia
or uncertain rhythm

Adenosine
6 mg rapid IV/IO push.
If no conversion 12 mg rapid IV/IO push

Lidocaine
Initial bolus 1-1.5 mg/kg IV/IO repeat bolus
0.5 - 0.75 mg/kg q 5 min to max 3 mg/kg
OR
Procainamide for WPW
20 mg/min IV push up to 17 mg/kg followed by
drip of 1-4 mg/min IV/IO
OR
Amiodarone
150 mg IV/IO infusion over 10 mins, may
repeat once, consider 1 mg/min drip

Go to Narrow complex tachycardia Protocol Pg. 18

Unstable

Etomidate
0.1-0.3 mg/kg IV/IO over 15-30 seconds
OR
Midazolam
2.5-10mg IV/IO
WITH OR WITHOUT
Fentanyl
50 mcg IV q 3-5 min to 200 mcg max

Synchronized Cardioversion per AHA Guidelines Pg. 101

Lidocaine
Initial bolus 1-1.5 mg/kg IV/IO repeat bolus
0.5 - 0.75 mg/kg q 5 min to max 3 mg/kg
OR
Procainamide for WPW
20 mg/min IV push up to 17 mg/kg followed by
drip of 1-4 mg/min IV/IO
OR
Amiodarone
150 mg IV/IO infusion over 10 mins, may
repeat once, consider 1 mg/min drip

Contact Medical Control
V-Fib/Pulseless V-Tach (shock advised)

Arrive here from Cardiac Arrest Protocol Pg. 15

Defibrillate once

High Density CPR Pg. 111
Airway Management and confirm effective oxygenation and ventilation

Obtain IV/IO access

Assess Rhythm

VF/VT (Shock Advised)

Epinephrine
1 mg IV/IO repeat q 3-5 min.
AND/OR

Vasopressin
40 Units IV/IO once
Effect lasts approx 15 min.
may then resume Epinephrine

Resume attempts to defibrillate
High density CPR between defibrillations

Lidocaine
Initial bolus 1-1.5 mg/kg
IV/IO repeat bolus
0.5 -0.75 mg/kg q 5 min to max 3 mg/kg
OR
Amiodarone
300 mg IVP, repeat once at 150mg IVP

Consider Sodium Bicarbonate
1 mEq/kg IV/IO

Resume attempts to defibrillate
High density CPR between defibrillations

If Torsades des Pointes-
Magnesium Sulfate
2gm IVP, may repeat

Asystole Or PEA (No Shock Advised)

Go to Asystole or PEA (NSA) Protocol Pg. 21

Reminders
- Hypovolemia
- Hypoxia
- Hydrogen ion (acidosis)
- Hypo-/Hyperkalemia
- Hypoglycemia
- Hypothermia
- Toxins
- Tamponade, cardiac
- Tension pneumothorax
- Thrombosis (coronary or pulmonary)
- Trauma (hypovolemia, increased ICP)

Notes:
- Guidelines for Discontinuation of Resuscitation Pg. 112
Asystole / PEA (no shock advised)

Arrive here from Cardiac Arrest protocol Pg. 15

High Density CPR Pg. 111
Airway Management and confirm effective oxygenation and ventilation

Obtain IV/IO access

Search for at treat possible causes:
- Hypovolemia
- Hypoxia
- Hydrogen ion (acidosis)
- Hypo-/Hyperkalemia
- Hypoglycemia
- Hypothermia
- Toxins
- Tamponade, cardiac
- Tension pneumothorax
- Thrombosis (coronary or pulmonary)
- Trauma (hypovolemia, increased ICP)

Consider Hyperkalemia Protocol Pg. 22

Epinephrine
1 mg IV/IO repeat q 3-5 min.
AND/OR
Vasopressin
40 Units IV/IO once
Effect lasts approx 15 min.
may then resume
Epinephrine

Atropine PRN
for slow (<60 bpm) PEA
1 mg IV/IO
repeat PRN to 3 mg max

Assess Rhythm

VF/VT (Shock Advised)
See VF/Pulseless VT (SA) Protocol Pg. 20

Asystole or PEA (No Shock Advised)

Consider Sodium Bicarbonate
1 mEq/kg IV/IO
if preexisting hyperkalemia (renal failure), TCA or ASA OD
Consider TCP for Bradycardic rhythms

Contact Medical Control

Notes:
- Guidelines for Discontinuation of Resuscitation Pg. 112
Hyperkalemia

**Consider in patients with History of:**
- Chronic dialysis patient (typically due for dialysis or late)
- Suspected Rhabdomyolysis or crush injury
- Extensive Burn Injury
- ACE or Potassium sparing diuretics (recent)
- Extensive Hemolysis
- Tumor Lysis Syndrome
- Severe Acidosis
- Extensive physical activity
- Depolarizing paralytic (Succ)

**With EKG Changes of:**
- Peaked T-Waves (without suspected MI)
- Loss of P-Waves (with peaked T-Waves)
- Wide QRS (IVCD Pattern)
- Sine wave pattern VT or VF
- Bradycardia or Bradyasystolic Rhythm Asystole

---

**Universal Patient Care Protocol**

1. **ECG / 12 lead**
2. **Symptomatic Arrhythmia?**
   - Yes
   - **Calcium Chloride**
     - 500-1000 mg IV - Slowly
   - **Sodium Bicarbonate**
     - 1 mEq/kg IV/IO
   - **Continuous Albuterol**
   - **Consider Dextrose D50**
     - 25-50 grams IV
   - **Consider Normal Saline**
     - Bolus 500-1000 cc
       - with Furosemide 40 mg IV
3. **Peaked T, Loss of P Waves**
4. **IVCD Sine Wave VT**
5. **IVCD Sine Wave**
6. **Bradyasystolic**
7. **Contact Medical Control**

---

**Legend**
- EMT
- AEMT
- PM
- MC Order
- E
- A
- PRN
- A
- A

---

**Notes:**
- Guidelines for Discontinuation of Resuscitation Pg. 112
- Line must be flushed after administration of calcium chloride to avoid precipitation of subsequent medications.
- Use patients own Regular Insulin
Post Resuscitation Management

**ALS Transport if Available**

**History:**
- Respiratory arrest
- Cardiac arrest

**Signs/Symptoms:**
- Return of Spontaneous Circulation

**Differential:**
- Continue to address specific differentials associated with the original dysrhythmia

---

**Repeat Primary Assessment**

- Continue ventilatory support with 100% oxygen
- Obtain IV/IO access
- Monitor / 12 Lead ECG / Capnography
- Vital Signs / Pulse oximetry

---

**Notes:**
- Sedate as needed
- Continue antiarrhythmic infusions from previous resuscitation protocol PRN

---

**Legend**

- EMT
- AEMT
- A
- PM
- MC Order

---

**Norepinephrine**
Titrate drip 7-35 mcg/min IV/IO SBP > 120
Or
**Epinephrine**
Titrate drip 2-10 mcg/in IV/IO SBP > 120
Or
**Dopamine**
Titrate 5–20 mcg/kg/min IV/IO SBP > 120

---

**Midazolam**
2.5-10mg IV/IO/IM
Or
**Lorazepam**
1 - 2 mg IV/IO/IM
Or
**Diazepam**
2-5 mg IV/IO/IM

---

**Contact Medical Control**
## Chest Pain / Acute Coronary Syndrome

### Cardiac Risk Factors:
- Previous MI / Known Cardiac disease
- Hypotension
- Diabetes
- Smoking tobacco use
- Family History
- High Cholesterol
- Hyperlipidemia

### History:
- **Viagra, Cialis, Levitra** (Male or Female)
- **Onset**
- **Palliation / Provocation**
- **Quality** (crampy, constant, sharp, dull, etc.)
- **Region / Radiation / Referred**
- **Severity** (1-10)
- **Time** (duration / repetition)

### Signs/Symptoms:
- **CP** (pain, pressure, aching, tightness)
- **Radiation of pain**
- **Pale, diaphoresis**
- **Shortness of breath**
- **Nausea, vomiting, dizziness**
- **Abnormal vital signs**

### Differential:
- Aortic dissection or aneurysm
- Trauma vs. Medical
- Pericarditis
- Pulmonary embolism
- Asthma / COPD
- Pneumothorax
- GE reflux or Hiatal hernia
- Esophageal spasm
- Chest wall injury or pain
- Pleural pain

### Universal Patient Care Protocol

**Suspect Acute Coronary Syndrome**

**Aspirin**
- 325 mg chewable PO

**Nitroglycerin**
- If BP > 100 systolic per patient Rx, 0.4 mg SL q 3-5 min

**Obtain IV/IO access**

**Interpret ECG / 12 Lead**

**Metroprolol**
- 2.5 - 5 mg IV, over 2 mins q 3-5 mins to max 15 mg
- Hold if SBP < 120 or Heart rate < 75

Consider repeat ECG / 12 lead

**Contact Medical Control**

### Notes:
- Avoid Nitroglycerin in any patient (man or woman) who has used sexual performance enhancement drugs (ie Viagra, Levitra, etc.) in the past 24 hours due to possible severe hypotension.
- If positive ECG changes, establish a second IV while en route to the hospital.
- Monitor for hypotension after administration of nitroglycerin and morphine.
- *Metroprolol* - contraindicated with CNS stimulant.
  - consider ½ doses for elderly, asthma & COPD
RESPIRATORY

Airway, Adult

Universal Patient Care Protocol

Assess ABC’s, respiratory rate, effort, adequacy

E Pulse Oximetry E

Inadequate

Basic Maneuvers first-- open airway; nasal/oral airway; bag-valve mask

Supplemental Oxygen Preoxygenation Procedure PG. 85

Unsuccessful

Remove obstruction per AHA guidelines

Successful removal

Adequate

Obstruction

Inadequate

Alternate Airway Adjuncts Pg. 78-99

Establish Advanced Airway Pg. 78-99

Failed Airway Protocol Pg. 26

Notes:
- Capnometry or capnography is mandatory with all methods of intubation. Document results.
- For this protocol, adult is defined any person who does not fit the length based tape
- EMT’s must have multi-lumen airway training to use Supraglottic Airway Adjuncts.
- Maintain C-spine immobilization for patients with suspected spinal injury
- Paramedics should consider Supraglottic Airway Adjuncts.
- Reconfirm ETT placement each time patient is moved
- Continuous pulse oximetry should be utilized in all patients with compromised respiratory function
Airway, Adult Failed

Two (2) failed intubation attempts
By most proficient technician on scene

NO MORE THAN THREE (3) ATTEMPTS TOTAL

E Continue BVM

SPO₂ > 90% With BVM ventilation?

No

If SPO₂ drops < 90% or it becomes difficult to ventilate with BVM

Facial Trauma, obstruction or Swelling?

No

Alternate Airway Adjuncts Pg. 78-99

SPO₂ > 90%?

No

Continue ventilation with Alternate Airway Adjuncts

Yes

Contact Medical Control

E

Surgical Airway Pg. 78-99

P

Notes:

- Difficult Airway Assessment Pg. 85
- If first intubation attempt fails, make an adjustment and then try again:
  - Different laryngoscope blade
  - Different ETT size
  - Eschmann Catheter Pg. 90
  - Video Assisted Laryngoscopy Pg. 95
  - Change cricoid pressure
  - Apply BURP maneuver (push trachea Back [posterior], Up, and to patient's Right)
  - Change head positioning
- Continuous Pulse Oximetry and ETCO2 should be utilized in all patients with inadequate respiratory function
- Notify Medical Control AS EARLY AS POSSIBLE about the patients difficult/failed airway.
Reactive Airway Disease

**History:**
- Asthma
- COPD- emphysema, chronic bronchitis
- Congestive heart failure
- Home treatment (O₂, nebulizer)
- Medications (theophylline, steroids, inhalers)
- Toxic exposure
- Smoking
- No improvement with initial treatment

**Signs and Symptoms:**
- Shortness of breath
- Pursed-lip breathing
- Decreased ability to speak
- Increased respiratory rate and effort
- Wheezing, rhonchi, rales
- Use of accessory muscles
- Fever, cough
- Tachycardia
- Suspected PE

**Differential:**
- Asthma
- Anaphylaxis
- Aspiration
- COPD (Emphysema, Bronchitis)
- Pleural effusion
- Pneumonia
- Pulmonary Embolus
- Pneumothorax
- Cardiac (MI or CHF)
- Pericardial Tamponade
- Hyperventilation
- Inhaled Toxin (Carbon monoxide, etc.)

**Universal Patient Care Protocol**

**Notes:**
- Barotrauma is often caused by the over-ventilation of Reactive airway patients. Allow for a prolonged expiratory time when ventilating such patients.
Pulmonary Edema

**History:**
- Congestive heart failure
- Past medical history
- Medications (digoxin, lasix, HCTZ)
- Viagra, Levitra, Cialis
- Cardiac history- past myocardial infarction

**Signs/Symptoms:**
- Respiratory distress, rales
- Apprehension, orthopnea
- Jugular vein distention
- Pink, frothy sputum
- Peripheral edema, diaphoresis
- Hypotension, shock
- Chest pain

**Differential:**
- Myocardial infarction
- Congestive heart failure
- Asthma
- Anaphylaxis
- Aspiration
- COPD
- Pleural effusion
- Pneumonia
- Pulmonary Embolus
- Pericardial tamponade

**Legend**
- E EMT
- A AEMT
- P PM
- M MC Order

**Notes:**
- Avoid Nitroglycerin in any patient (man or woman) who has used sexual performance enhancement drugs (ie Viagra, Levitra, etc.) in the past 24 hours due to possible severe hypotension.
- If patient has taken nitroglycerin without relief, consider potency of the medication.
- Consider myocardial infarction in all these patients.
- Allow the patient to be in their position of comfort to maximize their breathing effort.

**Universal Patient Care Protocol**

1. **Fever or Purulent Sputum?**
   - Yes
     - Nitroglycerin if SBP > 100
     - 0.4 mg SL
     - May repeat q 3-5 min
     - May repeat q 1 min
   - No
     - Consider mild sedation

2. Consider Adult Airway Protocol Pg. 25

3. Support Adult Airway Protocol

4. Consider
   - Midazolam
     - 1 - 2 mg IV / IO
     - Or
     - Diazepam
     - 1 - 2 mg IV / IM / IO
     - Or
     - Lorazepam
     - 0.5 - 1 mg IV/IM. May repeat PRN

5. **Nitroglycerin drip**
   - Hold if SBP <100
   - Nitro Paste 1-2’ to chest wall

6. **Non-Invasive positive pressure ventilation**
   - NIPPV if available
   - May repeat q 1 min

7. **Furosemide**
   - 40-80 mg IV

8. **Morphine**
   - 2 mg IV q 3.5 min to 20mg max
   - OR
   - Fentanyl
   - 25 mcg IV q 3.5 min to 200 mcg max
   - OR
   - Hydromorphone
   - 0.5mg IV q 3.5 min to 4mg max

9. **Contact Medical Control**

**Mild-Moderate:** able to speak sentences, crackles base only, O2 sat ≥ 92%

**Severe:** respiratory distress, crackles throughout, O2 sat < 92%

**Near Death:** Decreased LOC, cyanosis, dropping sats, ineffective respiratory drive
## Abdominal Pain

**History:**
- Age
- Past medical / surgical history
- Medications
- Onset
- Palliation / Provocation
- Quality (crampy, constant, sharp, dull, etc.)
- Region / Radiation / Referred
- Severity (1-10)
- Time (duration / repetition)
- Fever
- Last meal eaten
- Last bowel movement / emesis
- Menstrual history (pregnancy)

**Signs/Symptoms:**
- Pain (location / migration)
- Tenderness
- Nausea
- Vomiting
- Diarrhea
- Dysuria
- Constipation
- Vaginal bleeding
- Pregnancy
- Pulsating mass
- Chest pain
- Shortness of breath
- Abnormal vital signs

**Differential:**
- AAA
- Ectopic pregnancy
- Bowel obstruction
- Cardiac
- Pregnancy (ectopic?)
- GI bleed
- Appendicitis
- Cholecystitis
- Pancreatitis
- Kidney stones

### Universal Patient Care Protocol

1. **Obtain IV/IO access**
2. **Nausea/Vomiting?**
   - Yes: Consider **Chest Pain protocol Pg. 24**
   - No: Consider **Pain Management Protocol Pg. 34**
3. **Contact Medical Control**

### Notes:
- Document the mental status and vital signs prior to administration of **Promethazine** (Phenergan) and **Droperidol**.
- Abdominal pain in women of childbearing age should be treated as an ectopic pregnancy until proven otherwise.
- The diagnosis of abdominal aneurysm should be considered with abdominal pain in patients over 50.
- Appendicitis presents with vague, peri-umbilical pain which migrates to the RLQ over time.

### Legend

- **E** EMT
- **A** AEMT
- **P** PM
- **M** MC Order

### Medications

- **Ondansetron** 4-8 mg IV/IM/SL
- **Promethazine** 6.25-12.5 mg IV/IM
- **Droperidol** 0.625-1.25 mg IV/IM
- **Diphenhydramine** 25-50 mg IV/IM/PO
# Allergic Reaction

## History:
- Onset and Location
- Insect bite/sting
- New clothing, soap, detergent

## Signs/Symptoms:
- Anxiety
- Nausea / Vomiting
- Altered Mental Status
- Pale Diaphoresis
- Hypotension
- Rash
- Hives
- Angioedema
- Shortness of breath

## Universal Patient Care Protocol

### Signs of shock include
- SBP < 90
- The shorter the onset from contact to symptoms, the more severe the reaction
- A single dose of epinephrine may not reverse the effects of anaphylaxis. Administer additional doses as needed
- EMT may assist with patients own MDI
- Be watchful for possible secondary allergic response, after apparent resolution of initial S/S and patient should continue to be monitored by responsible adult for 30-60 minutes.

### Notes:
- May assist patient with own meds – Benadryl, Allegra™, Claritin™, Dramamine™ (Diphenhydramine, cetirizine, fexofenadine, loratadine, dimenhydrinate)
- Diphenhydramine 25-50 mg PO/IM/IV
- Reassess patient
- Contact Medical Control

### Epinephrine
- 1:1000 0.1 – 0.3 mg IM
- Repeat Epinephrine PRN

### Albuterol
- 2.5 mg Pt.s MDI

### Methylprednisolone
- 125 mg IV/IO OR
- Prednisone 60 mg PO OR
- Decadron 0.6 mg/kg max 20mg IV/IO/IM/PO

### Diphenhydramine
- 25-50 mg PO/IM/IV

### Methylprednisolone
- 125 mg IV/IO OR
- Prednisone 60 mg PO OR
- Decadron 0.6 mg/kg max 20mg IV/IO/IM/PO

### Diphenhydramine
- 25-50 mg PO/IM/IV

### Fluid Bolus NS
- NS

### Albuterol
- 2.5 mg SVN PRN

### Ipratropium
- 0.5 mg SVN

### Epinephrine
- 1:1,000 0.3 ml SVN

### Epinephrine
- Titrate drip 2–10 mcg/min IV/IO SBP > 100 OR
- Dopamine
- Titrate 5–20 mcg/kg/min IV/IO SBP >100

### ECG / Consider 12 lead

### Order

### Native American Language

### Ambulance

### Critical Care

### Emergency Medical Technician

### Paramedic

### Medical Control

### Notes:
- Signs of shock include SBP < 90
- The shorter the onset from contact to symptoms, the more severe the reaction
- A single dose of epinephrine may not reverse the effects of anaphylaxis. Administer additional doses as needed
- EMT may assist with patients own MDI
- Be watchful for possible secondary allergic response, after apparent resolution of initial S/S and patient should continue to be monitored by responsible adult for 30-60 minutes.
### Altered Mental Status/ Diabetic Emergency

#### History:
- Known diabetic, medic alert tag
- Drugs, drug paraphernalia
- Report of illicit drug use or toxic ingestion
- Past medical history
- Medications
- History of trauma
- GI History
- Syncope

#### Signs/Symptoms:
- Decreased mental status
- Change in baseline mental status
- Bizarre behavior
- Hypoglycemia (cool, diaphoretic skin; fruity breath; Kussmaul resp.; signs of dehydration)
- Diabetic
- Syncope
- Abnormal Vital signs persists
- Shortness of breath

#### Differential:
- Hypovolemia
- Hypoxia
- Hydrogen ions (acidosis)
- Hypo-hyperkalemia
- Hypoglycemia
- Hypothermia
- Toxins
- Tamponade, cardiac
- Tension pneumothorax
- Thrombosis, coronary or pulmonary
- Trauma

### Universal Patient Care Protocol

- **Blood Glucose < 60 mg/dL**
  - Administer Oral Glucose If possible
  - Consider Thiamine 100 mg IV/IM
  - Consider starting with 25g
  - Glucagon 1 mg IM/IN
  - Obtain IV / IO access

- **Blood Glucose 60-250 mg/dL**
  - Obtain IV / IO access
  - Blood Glucose check

- **Blood Glucose > 250 mg/dL**
  - Blood Glucose check
  - Naloxone 0.4-2 mg IV/IM/IN
  - ECG / 12 lead
  - Normal Saline 500-1,000 ml

### Notes:
- Be aware of AMS as presenting sign of an environmental toxin or Haz-Mat exposure and protect personal safety.
- It is safer to assume hypoglycemia than hyperglycemia if doubt exists.
- Do not let alcohol confuse the clinical picture. Alcoholics frequently develop hypoglycemia.
- Low glucose (< 60), normal glucose (60 - 120), high glucose (> 250).
- Consider Restraints if necessary for patient’s and/or personnel's protection per the restraint procedure.
- Repeat blood glucose for any change in mental status after treatment has begun.
### General Illness

#### Fever / Nausea / Vomiting / Unknown

**History:**
- Age
- Duration
- Past medical history
- Last oral intake
- Medications
- Immunocompromised
- Bloody emesis/diarrhea
- Menstrual history
- Past surgical history
- Environmental exposure/travel history

**Signs/Symptoms:**
- Warm
- Sweaty
- Flushed
- Pain
- Radiation
- Abdominal distension
- Chills/Rigors
- Constipation
- Diarrhea
- Persistent Abnormal Vital signs
- ALOC
- Shortness of Breath

**Differential:**
- Infections / Sepsis
- Cancer / Tumors / Lymphomas
- GI or Renal disorders
- Heat Stroke
- Medication or drug reaction
- Vasculitis
- Hyperthyroid
- CNS disease/trauma
- Myocardial infarction
- Diabetic ketoacidosis
- Gynecologic disease (ovarian cyst, PID)
- Electrolyte abnormalities
- Pregnancy
- Psychologic

---

#### Universal Patient Care Protocol

1. **Check blood glucose**
2. **Perform FAST Assessment**
   - Obtain IV access
   - Fluid Bolus: NS/LR 250-1,000cc
3. **ECG/ 12 lead**
4. **Nausea/vomiting?**
   - Yes: Consider Acetaminophen 500-1000 mg PO
   - No
5. **Fever?**
   - Yes
   - No: **Contact Medical Control**

#### Legend

- **E**: EMT
- **A**: AEMT
- **P**: EMT
- **M**: MC Order

#### Notes:
- Individuals’ normal body temperatures differ, with 98.6°F (37°C) being average. Generally a temperature over 100.4°F (38°C) is considered a fever.
## Overdose/Poisoning

### History:
- Ingestion or suspected ingestion of a potentially toxic substance
- Substance ingested, route, quantity
- Time of ingestion
- Reason (suicidal, accidental, criminal)
- Available medications in home
- Past medical history, medications
- Home remedies given to patient prior to aid arrival

### Signs/Symptoms:
- Mental status changes
- Hypotension / hypertension
- Decreased respiratory rate
- Tachycardia, dysrhythmias
- Seizures

### Differential:
- Tricyclic antidepressants (TCAs)
- Acetaminophen (Tylenol)
- Depressants
- Stimulants
- Anticholinergic
- Cardiac medications
- Solvents, Alcohols, Cleaning agents
- Insecticides (organophosphates)

### Notes:
- Do not rely on patient history of ingestion, especially in suicide attempts.
- Bring bottles, contents, emesis to ED.
- Treat medication overdoses if symptomatic including ECG changes SBP <100, ALOC, HR >100
- Document case number from Poison Control on the PCR.

### Universal Patient Care Protocol

<table>
<thead>
<tr>
<th>E</th>
<th>Glucose Paste</th>
<th>E</th>
<th>Check blood glucose</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Obtain IV/IO access</td>
<td>A</td>
<td>Above 60 mg/dl</td>
</tr>
<tr>
<td>A</td>
<td>Dextrose 25-50 g IV PRN</td>
<td>A</td>
<td>Consider Per Poison/Medical Control recommendations Activated Charcoal</td>
</tr>
</tbody>
</table>

- **< 60 mg/dl**
  - Sodium Bicarbonate 50 mEq IV/IO followed by drip
  - Calcium Chloride 500-1000 mg IV- Slowly
  - Norepinephrine Titrate drip 7-35 mcg/min IV/IO SBP > 100 OR Dopamine Titrate 5-20 mcg/kg/min IV/IO SBP >100
  - Atropine 2 mg IVP q 5-15 min. Max 20 mg
  - Norepinephrine Titrate drip 7-35 mcg/min IV/IO SBP > 100 OR Dopamine Titrate 5-20 mcg/kg/min IV/IO SBP >100
  - Glucagon 3-5 mg IV over 5-10 min

- **Above 60 mg/dl**
  - Naloxone 0.4-2 mg IN/IV/IM
  - ECG/ 12 lead

### Legend
- **E** EMT
- **A** AEMT
- **P** PM
- **M** MC Order

### If concern for EDC/ PIC see Pg. 35

### Contact Medical Control

### Poison Control 800-222-1222

###song/12 lead
Pain Management

ALS transport if patients given a sedating medication.

**History:**
- Location
- Duration
- Aggravating factors
- Alleviating factors

**Signs/Symptoms:**
- O, P, Q, R, S, T
  - Onset
  - Palliation/Position/Provocation
  - Quality/Quantity
  - Radiation/Referral/Region
  - Severity (0-10)
  - Timing (duration/repetition)

**Universal Patient Care Protocol**

- Rest
- Ice/Immobilize
- Compression
- Elevation

- Obtain IV/IO access

- ECG/12 lead

- Nitrous Oxide (if available)

- Consider:
  - Morphine PRN
    2-4 mg IV/IM/IO, then
    1-3 mg q 2 min to
    20 mg max
    OR
  - Hydromorphone PRN
    0.25-0.5 mg IV/IM/IO
    q 3-5 min max 4 mg
    OR
  - Fentanyl PRN
    25-50 mcg IV titrated q
    3-5 min to max 200 mcg
    AND/OR
  - Ketorolac PRN
    15-30 mg IV or
    30-60 mg IM

- Ondansetron PRN
  4-8mg IV/IM/SL
  AND/OR
- Promethazine PRN
  6.25-12.5 mg IV/IM
  AND/OR
- Droperidol PRN
  0.625-1.25 mg IV/IM
  AND/OR
- Diphenhydramine PRN
  12.5 to 50 mg IV/IO/IM

**Legend**
- E = EMT
- A = AEMT
- P = PM
- M = MC Order

**Notes:**
- The goal of pain management is patient comfort while maintaining alertness and the ability to communicate effectively with the medical care team.
- *see indications in formulary. Low dose especially in the elderly*
# Psychological/Emotional/Excited Delirium

**History:**
- Situational crisis
- Psychiatric illness
- Medications
- Injury to self or threats to others
- Medic alert tag
- Substance abuse / overdose
- Diabetes

**Signs/Symptoms:**
- Anxiety, agitation, confusion
- Affect change, hallucinations
- Delusional thoughts, bizarre behavior
- Combative violent
- Expression of suicidal / homicidal thoughts

**Differential:**
- Alcohol Intoxication
- Toxin / Substance abuse
- Medication effect / overdose
- Withdrawal syndromes
- Sepsis / Meningitis
- See Altered Mental Status differential

---

## Universal Patient Care Protocol

<table>
<thead>
<tr>
<th>Leave scene immediately</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Await Police</td>
<td>PRN</td>
</tr>
</tbody>
</table>

**Immediate risk of harm to self or others?**

<table>
<thead>
<tr>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restraint Procedure Pg. 122</td>
</tr>
<tr>
<td>Or monitor situation and await Police</td>
</tr>
</tbody>
</table>

---

### Patient remains aggressive or refractory to TASER?

<table>
<thead>
<tr>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consider for long transport RSI Pg. 94</td>
</tr>
<tr>
<td>Propofol* 1-2 mg/kg IV followed by drip 2.5 mcg/kg/min keep BP &gt; 90</td>
</tr>
</tbody>
</table>

### No

<table>
<thead>
<tr>
<th>Ketamine* 5-10 mg/kg IM/IN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Droperidol* 2.5-10 mg IM</td>
</tr>
</tbody>
</table>

---

### Obtain IV/IO access PRN

<table>
<thead>
<tr>
<th>ECG / 12 Lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECG / 12 Lead</td>
</tr>
</tbody>
</table>

---

### No

<table>
<thead>
<tr>
<th>Droperidol* 2.5-5 mg IV/IM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midazolam* 2.5-10 mg IN/IM AND/OR Lorazepam* 0.5-4 mg IN/IM AND/OR Diazepam* 2-10 mg IN</td>
</tr>
</tbody>
</table>

### Yes

| Midazolam* 2.5-5 mg IV/IO/IN/IM AND/OR Lorazepam* 0.5-2 mg IV/IO/IN/IM AND/OR Diazepam* 2-5 mg IV/IO/IN |

---

### M Contact Medical Control

**Notes:**
- Be sure to consider all possible medical/trauma causes for behavior.
- Do not overlook the possibility of associated domestic violence or child abuse.
- Do not stop Propofol until the patient is at the ED.
- *Doses may be repeated for the immediate safety of the provider or the patient.
Seizure

**History:**
- Prior history of seizures
- Seizure medications
- Reported seizure activity
- History of recent head trauma
- Congenital abnormality
- Pregnancy (see Pregnancy Induced Hypertension - Eclampsia)
- Medical alert tag
- If given sedation medication by EMS

**Signs/Symptoms:**
- Observed seizure activity
- Altered mental status
- Tonic / clonic activity
- Status epilepticus
- Incontinence
- Mouth trauma
- First time Seizure

**Differential:**
- Hypovolemia
- Hypoxia
- Hydrogen ions (acidosis)
- Hypo-/Hyperkalemia
- Hypoglycemia
- Hypothermia
- Toxins
- Tamponade, cardiac
- Tension pneumothorax
- Thrombosis, coronary or pulmonary
- Trauma

---

**Universal Patient Care Protocol**

1. **Position patient on side to prevent aspiration**
2. **Blood Glucose <60mg/dL?**
   - Yes, Obtain IV/IO access
   - No
      - Yes, Pregnant Patient, Pregnancy Induced Hypertension Pg. 38
      - No
         - Active Seizure?
            - Yes
               - Diastat * Patients own RX
               - Midazolam PRN
                  - 5-10 mg IN/IM
               - Lorazepam PRN
                  - 1-2 mg IV/IO/IN/IM OR
               - Diazepam PRN
                  - 2-5 mg IV/IO/IN
            - No
               - Assess for cause of seizure
                  - Treat per appropriate protocol
               - Repeat seizures?
                  - Yes, Contact Medical Control

**Notes:**
- Be prepared to assist ventilations especially if a benzodiazepine is used.
- If evidence or suspicion of trauma, spine should be restricted/immobilized.
- Consider nasopharyngeal airway and elevate head of bed to 30 degrees after seizure control.
- * Clallam County Versed IM or IN for seizures.
Stroke

**Universal Patient Care Protocol**

**History:**
- Previous CVA, TIA's
- Previous cardiac / vascular surgery
- Associated diseases: diabetes, hypertension, CAD
- Atrial fibrillation
- Medications (blood thinners)
- History of trauma

**Signs/Symptoms:**
- Altered mental status
- Weakness / Paralysis
- Blindness or other sensory loss
- Aphasia / Dysarthria
- Syncope
- Vertigo / Dizziness
- Vomiting
- Headache
- Seizures
- Respiratory pattern change
- Questionable airway
- Abnormal vital signs

**Differential:**
- Hypovolemia
- Hypoxia
- Hydrogen ions (acidosis)
- Hypo-/Hyperkalemia
- Hypoglycemia
- Hypothermia
- Toxins
- Tamponade, cardiac
- Tension pneumothorax
- Thrombosis, coronary or pulmonary
- Trauma

**Notes:**
- Onset of symptoms is defined as the last witnessed time the patient was symptom free (i.e. awakening with stroke symptoms would be defined as an onset time of the previous night when patient was symptom free)
- The differential listed on the Altered Mental Status Protocol should also be considered
- Be alert for airway problems (swallowing difficulty, vomiting).
- Hypoglycemia can present as a localized neurologic deficit, especially in the elderly.
- Elevate head of bed to 30 degrees after seizure control.

**ALs transport if:**

1. Obtain IV/IO access
2. **Blood Glucose**
   - ≤ 60 mg/dL
   - > 60 mg/dL
3. **Stroke FAST assessment Pg. 110**
4. Prehospital Thrombolytic Screening Pg. 131
   - Make destination decision
   - Consider other appropriate protocol as needed
5. **Contact Medical Control**

**Legend**
- E: EMT
- A: AEMT
- P: PM
- M: MC Order

**Administer Oral Glucose**
- Dextrose D10/25/50 10-25g IV/IO
- PRN
- If no IV access
  - Glucagon 1 mg IM

**See Stroke Follow County Operating Procedure Pg. 10**
## OB/GYN

### Pregnancy Induced Hypertension

**ALS transport gently and quietly**

**History:**
- Past medical history
- Prenatal care
- Medications/drugs
- Familial incidence
- Primigravida
- Renal disease

**Signs/Symptoms:**
- Seizure
- Hypertension
- Tachycardia
- Edema
- Headache
- Visual disturbance
- Abdominal pain
- Amnesia and/or other change in mental status

**Differential:**
- Hypertension
- Multiple fetuses
- Gestational diabetes
- Microthrombi
- Improper placental implantation

### Universal Patient Care Protocol

1. Place in left lateral recumbent position
2. Obtain IV/IO access
3. ECG
4. Doppler Fetal Heart Tones if available
5. Seizing? (Eclamptic)
   - Yes: Magnesium Sulfate 4 g IVP
   - No: Contact Medical Control

**Legend**
- E = EMT
- A = AEMT
- P = PM
- M = MC Order

**Notes:**
- Eclampsia can present up to two months postpartum
- Severe headache, vision changes, or RUQ pain may indicate preeclampsia.
- In the setting of pregnancy, hypertension is defined as a BP greater than 140 systolic or greater than 90 diastolic, or a relative increase of 30 systolic and 20 diastolic from the patient's normal (pre-pregnancy) blood pressure.
- Maintain patient in a left lateral position to minimize risk of supine hypotensive syndrome.
Postpartum

ALS transport if available:

<table>
<thead>
<tr>
<th>History:</th>
<th>Signs/Symptoms:</th>
<th>Differential:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Prenatal care?</td>
<td>- Excess vaginal bleeding</td>
<td>- Secretions</td>
</tr>
<tr>
<td>- Due date and gestational age</td>
<td>- Signs of shock</td>
<td>- Infection</td>
</tr>
<tr>
<td>- Multiple gestation (twins etc.)</td>
<td></td>
<td>- Hypovolemia</td>
</tr>
<tr>
<td>- Meconium</td>
<td></td>
<td>- Hypoglycemia</td>
</tr>
<tr>
<td>- Delivery difficulties</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Medications (maternal)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Maternal risk factors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Substance abuse</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Universal Patient Care Protocol

Encourage breast feeding

Obtain IV/IO access

Placenta delivered?

Yes

Fundal Massage Pg. 109

Newborn Resuscitation/Post-Delivery Care Pg. 60

No

Contact Medical Control

Notes:
- In the event of a non-viable delivery or fetal demise; transport to the hospital with the mother, all products of conception from the field including all fetal remains
Environmental Emergencies

### History:
- Age
- Exposure to increased/decreased temperatures and/or humidity
- Past medical history/medications
- Extreme exertion
- Time and length of exposure
- Poor PO intake

### Signs/Symptoms:
- Altered mental status or unconsciousness
- Hot, dry or sweaty skin
- Hypotension or shock
- Seizure
- Nausea
- Fatigue and / or muscle cramping

### Differential:
- Fever (Infection) / Sepsis
- Dehydration
- Medications
- Hyperthyroidism (Storm)
- Delirium tremens (DT's)
- Heat exhaustion
- Heat stroke
- Hypoglycemia
- Poisoning/overdose

### Universal Patient Care Protocol

#### Cooling Measures
- Shivering?
  - No
  - Yes

#### Warming Measures
- Shivering?
  - No
  - Yes

#### Cooling
- Consider
  - Lorazepam 0.5 -1 mg IV/IO/IN/IM
  - Midazolam 2.5-5 mg IM/IN
  - Diazepam 2-5 mg IV/IO

#### Warming
- Obtain IV/IO access
- Fluid bolus NS
- ECG/ 12 lead
- Blood Glucose check
- Treat per appropriate protocol
- Contact Medical Control

### Notes:
- **ATTEMPT REWARMING BEFORE CEASING RESUSCITATION EFFORTS.**
- Extremes of age are more prone to temperature emergencies (i.e. young and old).
- Core temperature is the most reliable measure- for pts with ALOC and pts < 2 years old this should be the method of measurement.
- Heat emergencies can be precipitated by use of: tricyclic antidepressants, phenothiazines, anticholinergic medications, and alcohol.
- Cocaine, Amphetamines, and Salicylates may elevate body temperatures.
- Shivering stops below 32° C (90° F).
- Sweating generally disappears as body temperature rises above 104° F (40° C).
- With temperature less than 31° C (88° F) ventricular fibrillation is common cause of death. Handling patients gently may prevent this (rarely responds to defibrillation).
- Hypothermia may produce severe bradycardia.
**Burns**

**ALS transport if available:**

**History:**
- Type of exposure (heat, gas, chemical)
- Inhalation injury
- Other trauma
- Loss of consciousness

**Signs and Symptoms:**
- Burns, pain, swelling
- Dizziness
- Loss of consciousness
- Shock / Hypotension
- Airway compromise / distress
- Singed facial or nasal hair
- Hoarseness / wheezing

**Differential:**
- Chemical
- Thermal
- Electrical
- Radiation

**Universal Patient Care Protocol**

**Oxygen**
- PRN

**Advanced Airway Management**
- Pg. 78-99

**Stop the burning process:**
- Remove jewelry and clothing that may be burned, covered in chemicals or restricting.
- Brush off any excess chemical or powder
- Eye involvement?
  - Saline flush in the affected eye
  - Flush area with water or Normal Saline (except materials that react with H2O)
  - Keep warm

**Thermal / Electrical**

- Cover burn with a dry clean sheet or dressing
- Keep warm
- Use Rule of 9's
- >15% then

**Chemical**

- Obtain IV / IO access
  - If Hypotensive fluid bolus
  - If not Hypotensive
  - Maintenance fluid
- Pain Management Protocol
  - Pg. 34
- If burn < 10% body surface area
  - Cool down the wound with Normal Saline
  - Cover burn with a dry clean sheet or dressing
  - Outlying areas may use burn gel for comfort in burns < 10% BSA

**Legend**

- E: EMT
- A: AEMT
- P: PM
- M: MC Order

**Contact Medical Control**

---

**Differential:**

- Chemical
- Thermal
- Electrical
- Radiation

**History:**

- Type of exposure (heat, gas, chemical)
- Inhalation injury
- Other trauma
- Loss of consciousness

**Signs and Symptoms:**

- Burns, pain, swelling
- Dizziness
- Loss of consciousness
- Shock / Hypotension
- Airway compromise / distress
- Singed facial or nasal hair
- Hoarseness / wheezing

**Differential:**

- Chemical
- Thermal
- Electrical
- Radiation

---

**Legend**

- E: EMT
- A: AEMT
- P: PM
- M: MC Order

---

**Contact Medical Control**
SCUBA Emergencies

### History:
- Aspiration of fluid
- Possible history of trauma
- Duration of immersion
- Temperature of water
- Depth of dive
- Know history of dive (tank pressure / gas content)
- Recent air travel
- Salt vs. Fresh water

### Signs and Symptoms:
- Unresponsive
- Changes in mental status
- Coughing
- Joint pain or tooth pain
- Ear pain/hearing loss
- Stroke like symptoms
- Itching
- Rash

### Differential:
- Trauma
- Pre-existing medical problem
- Pressure injury (diving)
- Barotrauma
- Decompression sickness
- Near Drowning

---

### Universal Patient Care Protocol

1. **100% O₂ Non rebreather mask**

2. **Spinal Motion Restriction/Spinal Immobilization**
   - PRN
   - Left lateral recumbent
   - Remove wet clothing
   - Cover with dry (warm) blankets
   - Warming Measures

3. **Obtain IV/IO access**

4. **Monitor and reassess**

5. **Contact Medical Control**

---

### Notes:
- Transport dive computer with patient
- What type of gas used? Any seizures in the history? Mixed gas?
- **Scene safety!** Drowning is a leading cause of death in would-be rescuers.
- With cold water there is no time limit- resuscitate all.
- All near drowning victims should be transported- conditions may deteriorate during the next several hours
- Activate Trauma system. Harborview must clear patient prior to going to Virginia Mason (unless Active duty/ dependents) Consider Airlift Transport. Contact early
- For Air Embolism symptoms patient should be placed on high flow oxygen, and lie patient down on left side with head and feet neutral.
- **Diver’s Alert network (DAN) (877) 595-0625**

Hyperbaric Chambers capable of taking patients with the Bends or Carbon Monoxide poisoning on an emergency basis:

**Virginia Mason Medical Center**
Center for Hyperbaric Medicine
925 Seneca Street
Seattle, WA 98111
Phone 24 hours (206) 583-6543

**US Naval Undersea Warfare Center (Active duty/dependants)**
Phone 24 hours (360) 396-2111
Daytime (360) 396-2522
*Call for availability*
Drowning / Near Drowning

Transport ALL near drowning Patients/ALS if:

History:
- Aspiration of fluid
- Submersion in water - regardless of depth
- Possible history of trauma
- Duration of immersion
- Temperature of water
- Salt vs. Fresh water

Signs and Symptoms:
- Unresponsive
- Changes in mental status
- Coughing
- Respiratory compromise

Differential:
- Trauma
- Pre-existing medical problem
- Pressure injury (diving)
- Barotrauma
- Decompression sickness

Universal Patient Care Protocol

100% O₂ Non rebreather mask

Spinal Motion Restriction/ Spinal Immobilization Pg. 124-127

Remove wet clothing
Cover with dry (warm) blankets
Warming Measures

Obtain IV/IO access

ECG / 12 lead

Monitor and reassess

Treat per appropriate protocol

Contact Medical Control

Notes:
- Exam: Check Head, Neck, Chest, Abdomen, Pelvis, Back, Extremities, Skin, Neuro for Trauma
- With cold water there is no time limit- resuscitate all.
- Scene safety! Drowning is a leading cause of death in would-be rescuers.
Head Injury

**History:**
- Onset
- Mechanism (blunt / penetrating)
- Loss of consciousness
- Bleeding
- Medical History (ETOH...)
- Medications (Coumadin...)
- Extremes of age

**Signs and Symptoms:**
- Pain, swelling, bleeding, oto/rhinorrhea
- Altered Level of Consciousness
- Respiratory distress/failure
- Vomiting
- Significant mechanism of injury

**Signs of Herniation:**
- GCS < 8
- Fixed or asymmetric pupils
- Neurologic Posturing
- Cushing's Triad
- Intermittent apnea
- Neurologic deterioration (decrease in GCS ≥ 2)

**Differential:**
- Seizure
- Stroke
- Alcohol
- Epilepsy
- Endocrine
- Insulin
- Overdose
- Uremia
- Trauma
- Infection / sepsis
- Psychosis

---

**Universal Patient Care Protocol**

**Isolated Head Trauma?**
- No
- Yes
  - Spinal Motion Restriction with head of board elevated approx. 30°

**GCS**

**GCS 9 or greater**
- Obtain IV access
- Maintain SBP ≥ 90 mm Hg

**GCS 3-8**
- Obtain IV access
- Maintain SBP ≥ 90 mm Hg

**GCS ≥ 14**
- Treat S/S Per Appropriate Protocol

**Ondansetron**
- 4-8mg IV/IM/SL
- And/or

**Droperidol**
- 0.625-1.25 mg IV/IM
- And/or

**Promethazine**
- 6.25-12.5 mg IV/IM

**Maintain Capnography**
- where available Pg. 79
- (maintain EtCO₂ 32-37 mmHg)
- Avoid excessive hyperventilation

**Intubate (RSI)**
- PRN Pg. 94

**Maintain SpO₂ ≥ 90%**
- PRN

**Obtain IV access**
- Maintain SBP ≥ 90 mm Hg

**Legend**
- E EMT
- A AEMT
- P PM
- M MC Order

---

**Multi-system Trauma Protocol**
Pg. 45

**ALs transport if available:**
Multi-system Trauma

**ALS transport if available:**

### History:
- Time and Mechanism of injury
- Damage to structure or vehicle
- Location in structure or vehicle
- Others injured or dead
- Speed and details of MVA
- Restraints / protective equipment
- Symptoms preceding incident

### Signs and Symptoms:
- Altered mental status or unconscious
- Hypotension or shock

### Differential:
- Chest: Tension pneumothorax
- Flail Chest
- Pericardial Tamponade
- Open chest wound
- Hemothorax
- Intra-abdominal bleeding
- Pelvis/femur fracture
- Spine fracture / Cord injury
- Extremity fracture / Dislocation
- HEENT (Airway Obstruction)
- Hypothermia

### Universal Patient Care Protocol

1. Expose injuries
2. Arrange transport according to the CDC Page 9 / Or County Operating Procedure
3. Wound Care / Hemorrhage Control?
   - Pelvic Stabilization? Page 120
   - Spinal Motion Restriction/Spinal Immobilization? Page 124-127
4. Obtain IV/IO access
5. Signs of Shock?
   - LR/NS bolus: repeat as needed to maintain BP of 80-90 systolic
   - Reassess Airway/Ventilation
6. Advanced Airway Procedures as Needed Page 78-99
7. Ongoing Assessment
   - Appropriate Protocol
8. Contact Medical Control

### Notes:
- Exam: Mental Status, Skin, HEENT, Heart, Lung, Abdomen, Extremities, Back, Neuro
- Mechanism is often a good indicator of serious injury
- If domestic violence or abuse is suspected it must be reported to Law Enforcement, receiving facility, airlift.
**PEDIATRIC PROTOCOLS**

Pediatric Airway

**ALS transport if available**

**History:**
- Know difficult Airway
- Neck or head trauma
- Trisomy 21
- Congenital malformations

**Differential:**
- Physical Examination
  - Small jaw or limited jaw opening
  - Limited cervical spine movement swollen tongue, oropharynx, or neck, midface hypoplasia

---

**Supplemental Oxygen**

- Adequate

**Assess ABC’s, respiratory rate, effort, adequacy**

- Inadequate

**Basic Maneuvers**

- First -- open airway; nasal/oral airway; bag-valve mask

---

**Obstruction**

- Attempt to remove obstruction per AHA guidelines

**Unsuccessful**

**Pediatric Needle Cricothyrotomy**

procedure Pg. 73

**Successful removal**

---

**Oropharyngeal Intubation**

Pg. 89

**Inadequate**

- Oxygenate, Ventilate, Position, Reassess

**Deteriorating**

**Alternate Airway Management**

Pg. 78-99

**Successful**

- Rapid Transport

**Unsuccessful**

- **Contact Medical Control**
  - MC Order

---

**Notes:**
- For this Guideline, child is defined as less than 8 years old.
- Limit intubation attempts to 3 per patient
- Maintain C-spine immobilization for patients with suspected spinal injury
- Reconfirm ETT placement each time patient is moved
- **All** choking victims need to be transported to the hospital. Children who have possibly aspirated anything may not be transported POV, but can be transported BLS if stable.
### Universal Patient Care Protocol

**A** Preoxygenate with 100% FiO2 for 5 min. Avoid bag mask ventilation if possible

**A** Obtain IV/IO access

**P** Consider Atropine 0.02 mg/kg

**P** Consider Lidocaine 1 mg/kg

**P** Ketamine 1.5 mg/kg IV Or Etomidate 0.3 mg/kg

**P** Ketamine 1.5 mg/kg IV Or Fentanyl 2 mcg/kg And Midazolam 0.1 mg/kg

**P** Apply cricoid pressure

**P** Contact Medical Control

**E** EMT

**A** AEMT

**P** PM

**M** MC Order

---

### Weight and Drug Dosages

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<td>24 mg</td>
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</table>
Pediatric Cardiac Arrest

**ALS transport if available**

### History:
- Medical history
- Possibility of foreign body
- Respiratory distress or arrest
- Possible toxic or poison exposure
- Congenital disease
- Medication (maternal or infant)

### Differential:
- Respiratory effort
- Foreign body obstructions
- Hypovolemia (dehydration)
- Hypoxia
- Hydrogen ion (acidosis)
- Hypo-/hyperkalemia
- Hypoglycemia
- Hypothermia
- Toxins
- Tamponade, cardiac
- Tension pneumothorax
- Thrombosis (coronary or pulmonary)
- Trauma (hypovolemia, increased ICP)

---

**Universal Patient Care Protocol**

1. **Begin CPR Pg. 111**

2. Apply AED / ECG monitor / Defibrillator
   - Access rhythm, shock as advised

3. **Continue CPR Pg. 111 IMMEDIATELY** following shock or rhythm analysis

4. Oxygen
   - Advanced Airway Management
   - Pg. 73, 78-99

5. **Obtain IV/IO access**

6. **Fluid bolus 20 ml/kg IV/IO**
   - May repeat up to 60 ml/kg

---

**Ongoing assessment**

**Consider other treatment Protocol as necessary**

**Return Of Spontaneous Circulation (ROSC)?**

- **Yes**
  - Contact Medical Control

- **No**
  - Contact Medical Control

---

**Legend**

- EMT
- AEMT
- A
- PM
- M
- MC Order
**Pediatric Bradycardia**

### History:
- Medical history
- Possibility of foreign body
- Respiratory distress or arrest
- Possible toxic or poison exposure
- Congenital disease
- Medication (maternal or infant)

### Differential:
- Respiratory failure
- Foreign body obstructions
- Hypovolemia (dehydration)
- Hypoxia
- Hydrogen ion (acidosis)
- Hypo-/hyperkalemia
- Hypoglycemia
- Hypothermia
- Toxins
- Tamponade, cardiac
- Tension pneumothorax
- Thrombosis (coronary or pulmonary)
- Trauma (hypovolemia, increased ICP)

### Universal Patient Care Protocol

1. **Oxygen**
   - Advanced Airway Management
   - Pg. 73, 78-99

   - ECG / 12 lead

2. **Perform CPR (Pg. 111)** if HR<60/min with poor perfusion despite good oxygenation and ventilation

3. **Obtain IV/IO access**

   - Persistent symptomatic bradycardia?
     - Support ABC’s; give oxygen if needed
     - Observe
     - Yes
     - No

4. **Contact Medical Control**

   - **Legend**
     - EMT
     - AEMT
     - A
     - PM
     - P
     - M
     - **MC Order**

### Dosing Table

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<td>0.48 mg</td>
<td>0.6 mg</td>
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</table>
**Pediatric Narrow Complex Tachycardia**

**History:**
- Medications or toxins
- Congenital heart disease
- Respiratory distress
- Syncope
- Volume loss (diarrhea / vomiting)

**Differential:**
- **Sinus Tachycardia vs. SVT**
  - Heart disease (congenital)
  - Electrolyte imbalance
  - Hypotension
  - Fever / infection / sepsis
  - Medication / toxin / drugs
  - Pulmonary Embolism
  - Tension pneumothorax

---

**Universal Patient Care Protocol**

- **Oxygen**
  - PRN
  - Advanced Airway Management
  - Pg. 73, 78-99

- **12 lead / ECG**
  - PRN

- **Adenosine**
  - 0.1 mg/kg
  - PRN Repeat dose
  - 0.2 mg/kg

- **Synchronized Cardioversion**
  - Pg. 102

---

**Legend**

- EMT
- AEMT
- A
- PM
- M

---

**Weight (kg)***

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<td>1.5 mg</td>
<td>1.9 mg</td>
<td>2 mg</td>
<td>2 mg</td>
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</table>
Pediatric Wide Complex Tachycardia

**History:**
- Medications or toxins
- Congenital heart disease
- Respiratory distress
- Syncope
- Drugs (cocaine)

**Differential:**
- Heart disease (congenital)
- Hypovolemia (dehydration) or anemia
- Electrolyte imbalance
- Anxiety
- Hypotension
- Medication / toxin / drugs

---

**Universal Patient Care Protocol**

- **Oxygen** PRN
- **Advanced Airway Management** Pg. 73, 78-99
- **12 lead / ECG** PRN
- **Obtain IV/IO access**

**Wide Complex Tachycardia**

- **Regular**
  - **Adequate Perfusion**
  - **Lidocaine** 1 mg/kg IV/IO
    - Or
    - **Amiodarone** 5 mg/kg IV/IO
      - **Unable to convert or unstable?**
        - **Yes**
          - **Midazolam** 0.1 mg/kg IV / IO
            - Or
            - **Diazepam** 0.1 mg/kg IV / IO
              - Or
              - **Lorazepam** 0.1mg/kg IV / IO
                - **Synchronized Cardioversion Pg.102**
                  - **Contact Medical Control**
                    - **M**

- **Irregular**
  - **Atrial Fibrillation**
    - **Monitor patient and transport.** (Atrial Fibrillation very rare)

**Legend**

- **E** EMT
- **A** AEMT
- **P** Paramedic
- **M** MC Order

---

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Pediatric V-Fib/Pulseless V-Tach (shock advised)

Arrive here from Pediatric Cardiac Arrest Protocol Pg. 48

Defibrillate at 2J/kg

High Density CPR x2 min.
Pg. 111
Airway Management and confirm effective oxygenation and ventilation

Obtain IV/IO access

Assess Rhythm

Asystole
Or PEA (No Shock Advised)

Go to Pediatric Asystole or PEA (NSA) Protocol Pg. 53

Defibrillate at 4J/kg
High Density CPR x2 min.
Between defibrillations

Epinephrine
1 : 10,000
0.01 mg/kg IV / IO
Repeat every 3-5 min. PRN

Consider
Lidocaine
1.5 mg/kg
IV/IO repeat bolus
0.5 -0.75 mg/kg q 5 min to max 3 mg/kg
OR
Amiodarone
5mg/kg IV/IO
Max dose 300mg; may repeat x1 to max 450mg

If recovery of pulses go to Pediatric Post Resuscitation Protocol Pg. 54

Contact Medical Control And Transport

Legend
E EMT E
A AEMT A
P PM P
M MC Order M

Weight
4 kg grey
6 kg pink
8 kg red
10 kg purple
12 kg yellow
15 kg white
19 kg blue
24 kg orange
30 kg green

Epinephrine 1 : 10,000
0.01 mg/kg IV / IO
0.04 mg 0.06 mg 0.08 mg 0.1 mg 0.12 mg 0.15 mg 0.19 mg 0.24 mg 0.3 mg

Lidocaine 1.5 mg/kg
6 mg 9 mg 12 mg 15 mg 18 mg 22 mg 28 mg 36 mg 45 mg

Lidocaine repeat bolus 0.5-0.75 mg/kg
2-3 mg 3-4 mg 4-6 mg 5-7 mg 6-9 mg 7-11 mg 9-14 mg 12-18 mg 15-22 mg

Amiodarone
20 mg 30 mg 40 mg 50 mg 60 mg 75 mg 95 mg 120 mg 150 mg
Pediatric PEA / Asystole

**Universal Patient Care Protocol**

1. **History:**
   - Time of arrest
   - Medical history
   - Possibility of foreign body
   - Hypothermia
   - Non-accidental trauma
   - SIDS

2. **Differential:**
   - Respiratory failure
   - Foreign body obstructions
   - Hypovolemia (dehydration)
   - Hypoxia
   - Hydrogen ion (acidosis)
   - Hypo-hyperkalemia
   - Hypoglycemia
   - Hypothermia
   - Toxins
   - Tamponade, cardiac
   - Tension pneumothorax
   - Thrombosis (coronary or pulmonary)
   - Trauma (hypovolemia, increased ICP)

3. **Epinephrine 1 : 10,000**
   - 0.01 mg/kg IV / IO
   - Repeat every 3-5 min. PRN

4. **Assess Rhythm after 2 minutes of CPR**

5. **Resume CPR and treat other associated rhythms, consider differentials**

6. **Obtain IV/IO access PRN**

7. **Fluid bolus 20 ml/kg IV/IO**
   - May repeat up to 60 ml/kg
   - For signs of shock

8. **12 lead / ECG PRN**

9. **Obtain IV/IO access PRN**

10. **Epinephrine 1 : 1000**
    - 0.1 mg/kg ET
    - Repeat every 3-5 min. PRN

11. **Assess Rhythm after 2 minutes of CPR**

12. **Contact Medical Control**

---

**Legend**

- **E** = EMT
- **A** = AEMT
- **P** = EMT/PM
- **M** = MC Order

---

**Weight**

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Pediatric Post Resuscitation Management

**Universal Patient Care Protocol**

- **Oxygen** PRN
  - Advanced Airway Management
  - Pg. 73, 78-99

- **A** Obtain IV/IO access

- **A** Fluid bolus 20 ml/kg IV/IO
  - May repeat up to 60 ml/kg

- **P** 12 lead / ECG PRN

- **P** ETCO2 If available PRN

- **P** Sedation Post Intubation

- **Midazolam**
  - 0.1 mg/kg IV / IO
  - Or
  - **Diazepam**
    - 0.1 mg/kg IV / IO max 2 mg
  - Or
  - **Lorazepam**
    - 0.1 mg/kg IV / IO max 2 mg

- **Consider Pain Management**
  - Procedure Pg. 62

- **Treat other associated signs and symptoms per guideline**
- **Consider temperature control**

- **Contact Medical Control**

---

**Legend**

- **E** EMT
- **A** AEMT
- **P** PM
- **M** MC Order

---

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<td>0.8 mg</td>
<td>1 mg</td>
<td>1.2 mg</td>
<td>1.5 mg</td>
<td>1.9 mg</td>
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<tr>
<td><strong>Diazepam</strong></td>
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<td>0.8 mg</td>
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<tr>
<td><strong>Lorazepam</strong></td>
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<td>1.5 mg</td>
<td>1.9 mg</td>
<td>2 mg</td>
<td>2 mg</td>
</tr>
</tbody>
</table>
Pediatric Anaphylaxis

**History:**
- Allergies
- Medications
- Past Medical history
- Last oral ingestion
- Event preceding

**Differential:**
- Acute respiratory failure
- Anxiety
- Aspiration
- Asthma
- Drug reaction
- Shock

---

### Universal Patient Care Protocol

**Evidence of impending Respiratory distress or shock?**

- **Yes**
  - Oxygen
  - Advanced Airway Management
  - **PRN**

- **No**
  - **PRN**
  - ECG/ Consider 12 lead
  - Obtain IV/IO access

**Fluid Bolus NS**
20 ml/kg IV/IO
May repeat up to 60 ml/kg

---

**Epinephrine**
1:1,000 0.01 mg/kg IM
May repeat q 5 mins X 2 (total 3 doses)

---

**Epinephrine Drip**
0.1-1.5 mcg/kg/min IV/IO

---

**Diphenhydramine**
1 mg/kg IV/IOM/PO

---

**Prednisone**
1 mg/kg PO
Or
**Methylprednisolone**
2 mg/kg IV/IOM/IM
Or
**Dexamethasone**
0.6 mg/kg IV/IOM/IM/PO

---

**Median Patient Care Protocol**

**Contact Medical Control**

---

### Epinephrine Drip

1 mg Epinephrine 1:1,000 in 250 ml = 4 mcg/ml
Use 60 gtt tubing

<table>
<thead>
<tr>
<th>Mcg/min</th>
<th>2</th>
<th>4</th>
<th>6</th>
<th>8</th>
<th>10</th>
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<tbody>
<tr>
<td>Administer</td>
<td>30 gtt/min</td>
<td>60 gtt/min</td>
<td>90 gtt/min</td>
<td>120 gtt/min</td>
<td>150 gtt/min</td>
</tr>
<tr>
<td>Run gtt/sec</td>
<td>1 every 2 seconds</td>
<td>1 every second</td>
<td>1.5 every second</td>
<td>2 every second</td>
<td>2.5 every second</td>
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</tbody>
</table>

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### Table

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<td>12 mg</td>
<td>16 mg</td>
<td>20 mg</td>
<td>24 mg</td>
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<td>48 mg</td>
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<tr>
<td>Prednisone</td>
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<td>12 mg</td>
<td>15 mg</td>
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<td>30 mg</td>
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<tr>
<td>Dexamethasone</td>
<td>2.4 mg</td>
<td>3.6 mg</td>
<td>4.8 mg</td>
<td>6 mg</td>
<td>7.2 mg</td>
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<td>11.4 mg</td>
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<td>0.19 mg</td>
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<td>0.3 mg</td>
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</table>
Pediatric Apparent Life Threatening Event (ALTE)

**ALS transport if available:**

<table>
<thead>
<tr>
<th>History:</th>
<th>Differential:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Altered Mental Status</td>
<td>• Toxins</td>
</tr>
<tr>
<td>• Cardiac</td>
<td>• Tamponade, cardiac</td>
</tr>
<tr>
<td>• Respiratory Failure</td>
<td>• Tension pneumothorax</td>
</tr>
<tr>
<td>• Seizures</td>
<td>• Thrombosis (coronary or pulmonary)</td>
</tr>
<tr>
<td>• Syncope</td>
<td>• Trauma (hypovolemia, increased ICP)</td>
</tr>
</tbody>
</table>

**Universal Patient Care Protocol**

- **Oxygen**
- Advanced Airway Management
  - *Pg. 73, 78-99*

- **12 lead / ECG**

- **Obtain IV/IO access**

  - **Consider other treatment Protocols as necessary**
  - Obtain full history and features of event
  - Explore medication ingestion/toxin risk

- **Complete thorough history**
  - • Specifically assess for history of apnea (>15 seconds?), increased or decreased tone?, change of color?, pallor or cyanosis?

- **No?**

- **Yes to any?**

- **Meets criteria for an ALTE**
  - Patient must be transported for evaluation even if well appearing
  - Contact medical control if caregiver refusing transport

- **Contact Medical Control**
Pediatric Breathing Difficulty

**ALS transport if available:**

**History:**
- Possibility of foreign body
- Cardiac/Respiratory history
- Respiratory infection
- Persistent Symptoms

**Differential:**
- Asthma
- Aspiration
- Foreign body
- Pneumonia (aspiration)
- Croup
- Epiglottitis (Rare)
- Congenital heart disease
- Medication or Toxin
- Trauma

**Universal Patient Care Protocol**

- High flow Oxygen
- Advanced Airway Management
  - Pg. 73, 78-99

**Pediatric Airway Pg. 57**

**Severe Distress Respiratory Failure**

- Transport in position of minimal agitation

**Lower Airway**

- Wheeze?
  - Yes
    - Consider Methylprednisolone
      - 2 mg/kg IV/IM
      - Or Prednisone
        - 1 mg/kg PO
      - Or Dexamethasone
        - 0.6 mg/kg IV/IO/IM/PO

- Repeat appropriate nebulizer treatment as indicated for continued symptoms

- **Contact Medical Control**

**Upper Airway**

- Stridor and/or Retractions?
  - Yes
    - Epinephrine
      - 3 mL 1:1,000 SVN
      - (No saline needed)

**Legend**

- E = EMT
- A = AEMT
- P = EMT
- M = MC Order

**Weight**

<table>
<thead>
<tr>
<th></th>
<th>4 kg</th>
<th>6 kg</th>
<th>8 kg</th>
<th>10 kg</th>
<th>12 kg</th>
<th>15 kg</th>
<th>19 kg</th>
<th>24 kg</th>
<th>30 kg</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Nebulizer</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
| Albuterol    | 2.5 - 5 mg SVN
| Ipratropium  | 0.5 mg SVN for greater than 12 kg

**Prednisone**

<table>
<thead>
<tr>
<th></th>
<th>4 mg</th>
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<th>10 mg</th>
<th>12 mg</th>
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<th>19 mg</th>
<th>24 mg</th>
<th>30 mg</th>
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</thead>
<tbody>
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<td>16 mg</td>
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<td>24 mg</td>
<td>30 mg</td>
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</tr>
<tr>
<td>Prednisone</td>
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<td>12 mg</td>
<td>15 mg</td>
<td>19 mg</td>
<td>24 mg</td>
<td>30 mg</td>
</tr>
<tr>
<td>Dexamethasone</td>
<td>2.4 mg</td>
<td>3.6 mg</td>
<td>4.8 mg</td>
<td>6 mg</td>
<td>7.2 mg</td>
<td>9 mg</td>
<td>11.4 mg</td>
<td>14.4 mg</td>
<td>18 mg</td>
</tr>
</tbody>
</table>
Pediatric Diabetic Ketoacidosis / Hyperglycemia

**ALS transport if available**

**History:**
- Polyuria
- Polydipsia
- Vomiting
- Weakness
- Confusion

**Clinical Signs:**
- Dehydration
- Kussmaul respirations
- Smell of ketones
- Change in mental status

**Universal Patient Care Protocol**

- Oxygen PRN
  - Advanced Airway Management
    - Pg. 73, 78-99

- Check Glucose

- A Obtain IV/IO access A

- Yes
  - Clinical Signs of Intracranial Hypertension?

- No
  - Clinical Signs of Dehydration or Hyperglycemia > 250?

- A Fluid bolus 20 ml/kg IV/IO A

**Notes:**
- Signs of intracranial hypertension include severe headache, lethargy, vomiting, coma.
Pediatric Hypoglycemia

**ALS transport if available:**

**History:**
- Known diabetic, medic alert tag
- Past medical history
- Medications
- History of trauma
- Ingestion
- Syncope
- Persistent abnormal vital signs
- Persistent Hypoglycemia

**Differential:**
- Head trauma
- CNS (stroke, tumor, seizure, infection)
- Infection
- Thyroid (hyper / hypo)
- Diabetes (hyper / hypoglycemia)
- Toxicologic
- Acidosis / Alkalosis
- Electrolyte abnormatility

---

**Universal Patient Care Protocol**

1. **Blood Glucose check**
2. **< 60 mg/dL**
3. **Yes**
   - **Administer Oral Glucose**
4. **No**
   - **Alert and stable airway?**
5. **Yes**
   - **Obtain IV/IO access**
6. **Blood Glucose < 60**
   - **D25 2 mL/kg or D10 5mL/kg**
   - **OR**
   - **Glucagon 0.1 mg/kg IM to 1 mg max**
7. **Contact Medical Control**

---

**Legend**
- E = EMT
- A = AEMT
- P = EMT
- M = MC Order
- Glucagon 0.4 mg, 0.06 mg, 0.8 mg, 1 mg, 1 mg, 1 mg, 1 mg, 1 mg, 1 mg

---

<table>
<thead>
<tr>
<th>Weight</th>
<th>4 kg</th>
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<th>8 kg</th>
<th>10 kg</th>
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<th>24 kg</th>
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</tr>
</thead>
<tbody>
<tr>
<td>grey</td>
<td>8 mL</td>
<td>12 mL</td>
<td>16 mL</td>
<td>20 mL</td>
<td>24 mL</td>
<td>30 mL</td>
<td>38 mL</td>
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<tr>
<td>pink</td>
<td>8 mL</td>
<td>12 mL</td>
<td>16 mL</td>
<td>20 mL</td>
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<tr>
<td>red</td>
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<td>12 mL</td>
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<td>38 mL</td>
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<td>24 mL</td>
<td>30 mL</td>
<td>38 mL</td>
<td>48 mL</td>
<td>60 mL</td>
</tr>
<tr>
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<td>38 mL</td>
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<tr>
<td>orange</td>
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<td>12 mL</td>
<td>16 mL</td>
<td>20 mL</td>
<td>24 mL</td>
<td>30 mL</td>
<td>38 mL</td>
<td>48 mL</td>
<td>60 mL</td>
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<td>12 mL</td>
<td>16 mL</td>
<td>20 mL</td>
<td>24 mL</td>
<td>30 mL</td>
<td>38 mL</td>
<td>48 mL</td>
<td>60 mL</td>
</tr>
</tbody>
</table>

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2015 – Kitsap County Emergency Medical Services & Trauma Care Council
Newborn Resuscitation/Post Delivery Care

ALS transport if available:

**History:**
- Prenatal care and history
- Due date/LMP
- Expected multiple births
- Meconium
- Congenital disease
- Medications
- Maternal risk factors

**Differential:**
- Airway obstruction
- Respiratory distress
- Infection
- Hypovolemia
- Hypoglycemia
- Congenital heart disease
- Hypothermia
- Persistent Central Cyanosis

* Consider ceasing resuscitation efforts if fetal foot length is less than 33mm

Universal Patient Care Protocol *

Suction with bulb syringe
Mouth then nose
Dry infant and keep warm

APGAR Pg. 74

Oxygen Blow-by
Assess breathing and heart rate

Heart rate < 100
Or inadequate respirations

Assist ventilations BVM

No improvement after 30 seconds?
begin chest compressions

Consider
Blood Glucose check If < 60mg/dL then see
Pediatric Hypoglycemia
Pg. 59

Consider
Naloxone 0.1 mg/kg
IM/IN/IV/IO

Obtain IV/IO acess

Fluid bolus 20 ml/kg IV/IO
May repeat up to 60 ml/kg

ECG / 12 Lead

Epinephrine
1 : 10,000
0.01 mg/kg IV / IO
OR
Epinephrine
1 : 1,000
0.1 mg/kg ET
Repeat every 3-5 min.PRN

Intubation

Contact Medical Control

---

**Legend**

- EMT
- AEMT
- PM
- MC Order

**Weight**

<table>
<thead>
<tr>
<th>Weight</th>
<th>2 kg</th>
<th>3 kg</th>
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<th>5 kg</th>
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<tr>
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<td>0.03 mg</td>
<td>0.04 mg</td>
<td>0.05 mg</td>
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<tr>
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<td>0.3 mg</td>
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**Naloxone**

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<th>0.4 mg</th>
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<th>1.9 mg</th>
<th>2 mg</th>
<th>2 mg</th>
</tr>
</thead>
<tbody>
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<td>purple</td>
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<td>white</td>
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</tbody>
</table>

---

* Consider ceasing resuscitation efforts if fetal foot length is less than 33mm
Pediatric Toxic Exposure

**History:**
- Ingestion or suspected ingestion of a potentially toxic substance
- Substance ingested, route, quantity
- Time of ingestion
- Reason (suicidal, accidental, criminal)
- Available medications in home

**Differential:**
- Tricyclic antidepressants (TCAs)
- Acetaminophen (tylenol)
- Depressants
- Stimulants
- Anticholinergic
- Cardiac medications
- Solvents, Alcohols, Cleaning agents
- Insecticides (organophosphates)

**Universal Patient Care Protocol**

1. **Oxygen**
   - Advanced Airway Management
   - Pg. 73, 78-99

2. **BLS Provider?**
   - Yes
   - No

3. **Consider Activated Charcoal**
   - 1 gm/kg PO

4. **Respiratory depression, Opiate O.D**
   - **Naloxone** 0.1 mg/kg IV/IO/IM

5. **Calcium Chloride** 10 mg/kg IV/IO

6. **Epinephrine**
   - PRN
   - See Ped. Shock Non-Traumatic Pg. 64

7. **Glucagon** 0.1 mg/kg IV/IO

8. **Consider TCP**

9. **Cardiac medications**
   - Cardiac medications

10. **Solvents, Alcohols, Cleaning agents**

11. **Insecticides (organophosphates)**

**Legend**
- EMT
- AEMT
- PM
- MC Order

**Possible Treatments: (0.1 mg/kg)**
- **Atropine**
- **Diazepam**
- **Lorazepam**

**Fluid bolus**
- 20 ml/kg IV/IO
- May repeat up to 60 ml/kg

**Contact Medical Control**
- with nature of toxic exposure

**ALS transport if available**

**Obtain IV access**

**Weight**

<table>
<thead>
<tr>
<th>Weight</th>
<th>4 kg grey</th>
<th>6 kg pink</th>
<th>8 kg red</th>
<th>10 kg purple</th>
<th>12 kg yellow</th>
<th>15 kg white</th>
<th>19 kg blue</th>
<th>24 kg orange</th>
<th>30 kg green</th>
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</thead>
<tbody>
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<td>30 gm</td>
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<tr>
<td>Naloxone</td>
<td>0.4 mg</td>
<td>0.6 mg</td>
<td>0.8 mg</td>
<td>1 mg</td>
<td>1.2 mg</td>
<td>1.5 mg</td>
<td>1.9 mg</td>
<td>2 mg</td>
<td>2 mg</td>
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<tr>
<td>Sodium Bicarbonate</td>
<td>4 mEq</td>
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<td>0.8 mg</td>
<td>1 mg</td>
<td>1.2 mg</td>
<td>1.5 mg</td>
<td>1.9 mg</td>
<td>2.4 mg</td>
<td>3 mg</td>
</tr>
<tr>
<td>Atropine</td>
<td>0.32 mg</td>
<td>0.48 mg</td>
<td>0.64 mg</td>
<td>0.8 mg</td>
<td>0.96 mg</td>
<td>1.2 mg</td>
<td>1.52 mg</td>
<td>1.92 mg</td>
<td>2.4 mg</td>
</tr>
<tr>
<td>Midazolam</td>
<td>0.4 mg</td>
<td>0.6 mg</td>
<td>0.8 mg</td>
<td>1 mg</td>
<td>1.2 mg</td>
<td>1.5 mg</td>
<td>1.9 mg</td>
<td>2 mg</td>
<td>2 mg</td>
</tr>
<tr>
<td>Diazepam</td>
<td>0.4 mg</td>
<td>0.6 mg</td>
<td>0.8 mg</td>
<td>1 mg</td>
<td>1.2 mg</td>
<td>1.5 mg</td>
<td>1.9 mg</td>
<td>2 mg</td>
<td>2 mg</td>
</tr>
<tr>
<td>Lorazepam</td>
<td>0.4 mg</td>
<td>0.6 mg</td>
<td>0.8 mg</td>
<td>1 mg</td>
<td>1.2 mg</td>
<td>1.5 mg</td>
<td>1.9 mg</td>
<td>2 mg</td>
<td>2 mg</td>
</tr>
</tbody>
</table>
**Pediatric Pain Management**

**ALS transport if patients given a sedation medication**

**History:**
- Age
- Location
- Duration
- Severity (1 - 10)
- Past medical history

**Differential:**
- Per the specific protocol
- Musculoskeletal
- Visceral (abdominal)
- Cardiac
- Pleural / Respiratory
- Neurogenic
- Renal (colic)

---

**Universal Patient Care Protocol**

1. **Obtain IV/IO access**
2. **ECG/ 12 lead**
3. **High pain level?**
   - Burns?
     - Yes
     - No
4. **Extremely anxious?**
   - Yes
   - No
5. **Nausea?**
   - Yes
   - No

---

**Medications**

- **Morphine**
  - 0.1 mg/kg IV/IO/IM OR
  - 0.1 mg/kg IV/IM
- **Fentanyl**
  - 2 mcg/kg IV/IO/IM/IN OR
- **Hydromorphone**
  - 0.015 mg/kg IV/IM
- **Midazolam**
  - 0.1 mg/kg IV/IO/IN/IM OR
- **Diazepam**
  - 0.1 mg/kg IV/IO
- **Lorazepam**
  - 0.1 mg/kg IV/IO
- **Ondansetron**
  - 0.1 mg/kg IV
  - 4 mg PO if patient weight > 10kg

**Weight**

<table>
<thead>
<tr>
<th>Weight</th>
<th>4 kg grey</th>
<th>6 kg pink</th>
<th>8 kg red</th>
<th>10 kg purple</th>
<th>12 kg yellow</th>
<th>15 kg white</th>
<th>19 kg blue</th>
<th>24 kg orange</th>
<th>30 kg green</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphine</td>
<td>.04 mg</td>
<td>.06 mg</td>
<td>.08 mg</td>
<td>1 mg</td>
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<td>1.5 mg</td>
<td>1.9 mg</td>
<td>2.4 mg</td>
<td>3 mg</td>
</tr>
<tr>
<td>Fentanyl</td>
<td>8 mcg</td>
<td>12 mcg</td>
<td>16 mcg</td>
<td>20 mcg</td>
<td>24 mcg</td>
<td>30 mcg</td>
<td>38 mcg</td>
<td>48 mcg</td>
<td>60 mcg</td>
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<tr>
<td>Hydromorphone</td>
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<td>0.09mg</td>
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<td>1 mg</td>
<td>1mg</td>
<td>1mg</td>
<td>1mg</td>
<td>1mg</td>
<td>1mg</td>
</tr>
<tr>
<td>Midazolam</td>
<td>0.4 mg</td>
<td>0.6 mg</td>
<td>0.8 mg</td>
<td>1 mg</td>
<td>1.2 mg</td>
<td>1.5 mg</td>
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<td>2 mg</td>
</tr>
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<td>1.9 mg</td>
<td>2 mg</td>
<td>2 mg</td>
</tr>
<tr>
<td>Lorazepam</td>
<td>0.4 mg</td>
<td>0.6 mg</td>
<td>0.8 mg</td>
<td>1 mg</td>
<td>1.2 mg</td>
<td>1.5 mg</td>
<td>1.9 mg</td>
<td>2 mg</td>
<td>2 mg</td>
</tr>
<tr>
<td>Ondansetron</td>
<td>Contact MC</td>
<td>1 mg</td>
<td>1 mg</td>
<td>1 mg</td>
<td>2 mg</td>
<td>2 mg</td>
<td>3 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ondansetron PO</td>
<td>Contact MC</td>
<td>4 mg ODT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Pediatric Fever

**ALS transport if available:**

### History:
- Fever not associated with heat injury does not require rapid temperature reduction

### Differential:
- Infections / Sepsis
- Medication or drug reaction
- Altered mental status

**Universal Patient Care Protocol**

1. **Temp ≥ 101°F or ≥ 38 C?**
   - **Yes**
     - Keep patient comfortable
     - Do Not undress
     - Do Not apply cool compress
   - **No**
     - **Otherwise well?**
       - **Yes**
         - **Associated with needing treatment?**
           - **Yes**
             - **See appropriate protocol**
           - **No**
             - **See appropriate protocol**
       - **No**
         - **See appropriate protocol**

2. **No vomiting, no acetaminophen in 4 hours and Transport > 10 mins**
   - **Consider**
     - **Acetaminophen 15 mg/kg PO/PR**

3. **Contact Medical Control**

<table>
<thead>
<tr>
<th>Weight</th>
<th>Acetaminophen</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 kg</td>
<td>60 mg</td>
</tr>
<tr>
<td>6 kg</td>
<td>90 mg</td>
</tr>
<tr>
<td>8 kg</td>
<td>120 mg</td>
</tr>
<tr>
<td>10 kg</td>
<td>150 mg</td>
</tr>
<tr>
<td>12 kg</td>
<td>180 mg</td>
</tr>
<tr>
<td>15 kg</td>
<td>225 mg</td>
</tr>
<tr>
<td>19 kg</td>
<td>285 mg</td>
</tr>
<tr>
<td>24 kg</td>
<td>360 mg</td>
</tr>
<tr>
<td>30 kg</td>
<td>450 mg</td>
</tr>
</tbody>
</table>
Pediatric Shock Non-traumatic

### History:
- Medical history
- Respiratory distress or arrest
- Possible toxic or poison exposure
- Congenital disease
- Medication (maternal or infant)
- Non accidental trauma

### Differential:
- Respiratory effort
- Hypovolemia (dehydration)
- Hypoxia
- Hypoxia
- Hypo-hyperkalemia
- Hypoglycemia
- Hypothermia
- Toxins
- Tamponade, cardiac
- Tension pneumothorax
- Thrombosis (coronary or pulmonary)

### Universal Patient Care Protocol

1. **Oxygen**
   - PRN
   - Early assisted ventilation
   - Advanced Airway Management
   - Pg. 73, 78-99

2. **ECG/12 lead**
   - PRN

3. **Obtain IV/IO access**
   - PRN

4. **Fluid bolus 20 ml/kg IV/IO**
   - May repeat up to 60 ml/kg

5. **Epinephrine Bolus**
   - 0.01 mg/kg IV/IO

6. **Epinephrine Drip**
   - 0.1-1.5 mcg/kg/min IV/IO

7. **Ongoing assessment**

8. **Consider other treatment Protocol as necessary**

### Legend

- EMT
- AEMT
- PM
- MC Order

### Weight

<table>
<thead>
<tr>
<th>Weight</th>
<th>4 kg grey</th>
<th>6 kg pink</th>
<th>8 kg red</th>
<th>10 kg purple</th>
<th>12 kg yellow</th>
<th>15 kg white</th>
<th>19 kg blue</th>
<th>24 kg orange</th>
<th>30 kg green</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epinephrine 1:10,000</td>
<td>0.04 mg</td>
<td>0.06 mg</td>
<td>0.08 mg</td>
<td>0.1 mg</td>
<td>0.12 mg</td>
<td>0.15 mg</td>
<td>0.19 mg</td>
<td>0.24 mg</td>
<td>0.3 mg</td>
</tr>
</tbody>
</table>

### Epinephrine Drip

- 1 mg Epinephrine 1:1,000 in 250 ml = 4 mcg/ml
- Use 60 gtt tubing

<table>
<thead>
<tr>
<th>Mcg/min</th>
<th>2</th>
<th>4</th>
<th>6</th>
<th>8</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administer</td>
<td>30 gtt/min</td>
<td>60 gtt/min</td>
<td>90 gtt/min</td>
<td>120 gtt/min</td>
<td>150 gtt/min</td>
</tr>
<tr>
<td>Run gtt/sec</td>
<td>1 every 2 seconds</td>
<td>1 every second</td>
<td>1.5 every second</td>
<td>2 every second</td>
<td>2.5 every second</td>
</tr>
</tbody>
</table>
Pediatric Seizure

ALS transport if available:

**History:**
- Prior history of seizures
- Seizure medications
- History of VP Shunt
- Fever
- Head Trauma

**Differential:**
- Medication or Toxin
- Hypoxia or Respiratory failure
- Hypoglycemia
- First time Seizure

---

**Universal Patient Care Protocol**

1. **Febrile?**
   - Yes: See Fever Protocol Page 63
   - No: Continue

2. **Oxygen**
   - Advanced Airway Management Pg. 73, 78-99

3. **Obtain IV/IO access**
   - PRN

4. **Blood Glucose < 60**
   - D25 2 mL/kg or D10 5mL/kg

5. **OR**
   - Glucagon 0.1 mg/kg IM to 1 mg max

6. **Active Seizure ≥ 5 minutes?**
   - Yes: Contact Medical Control
   - No: Repeat seizures?

---

**Legend**
- EMT
- AEMT
- A
- PM
- P
- MC Order

**Diastat * **
- Patients own RX

- Midazolam 0.1 mg/kg IN/IM
  - OR
  - Diazepam 0.1 mg/kg IV/IO
  - OR
  - Lorazepam 0.1 mg/kg IV/IO

---

**Contact Medical Control**

**Legend**
- EMT
- AEMT
- A
- PM
- P
- MC Order

**Weight**
- 4 kg grey
- 6 kg pink
- 8 kg red
- 10 kg purple
- 12 kg yellow
- 15 kg white
- 19 kg blue
- 24 kg orange
- 30 kg green

<table>
<thead>
<tr>
<th>Weight</th>
<th>4 kg grey</th>
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<th>12 kg yellow</th>
<th>15 kg white</th>
<th>19 kg blue</th>
<th>24 kg orange</th>
<th>30 kg green</th>
</tr>
</thead>
<tbody>
<tr>
<td>D25</td>
<td>8 mL</td>
<td>12 mL</td>
<td>16 mL</td>
<td>20 mL</td>
<td>24 mL</td>
<td>30 mL</td>
<td>38 mL</td>
<td>48 mL</td>
<td>60 mL</td>
</tr>
<tr>
<td>D10</td>
<td>20 mL</td>
<td>30 mL</td>
<td>40 mL</td>
<td>50 mL</td>
<td>60 mL</td>
<td>75 mL</td>
<td>95 mL</td>
<td>120 mL</td>
<td>150 mL</td>
</tr>
<tr>
<td>Glucagon</td>
<td>0.4 mg</td>
<td>0.6 mg</td>
<td>0.8 mg</td>
<td>1 mg</td>
<td>1 mg</td>
<td>1 mg</td>
<td>1 mg</td>
<td>1 mg</td>
<td>1 mg</td>
</tr>
<tr>
<td>Midazolam</td>
<td>0.4 mg</td>
<td>0.6 mg</td>
<td>0.8 mg</td>
<td>1 mg</td>
<td>1.2 mg</td>
<td>1.5 mg</td>
<td>1.9 mg</td>
<td>2 mg</td>
<td>2 mg</td>
</tr>
<tr>
<td>Diazepam</td>
<td>0.4 mg</td>
<td>0.6 mg</td>
<td>0.8 mg</td>
<td>1 mg</td>
<td>1.2 mg</td>
<td>1.5 mg</td>
<td>1.9 mg</td>
<td>2 mg</td>
<td>2 mg</td>
</tr>
<tr>
<td>Lorazepam</td>
<td>0.4 mg</td>
<td>0.6 mg</td>
<td>0.8 mg</td>
<td>1 mg</td>
<td>1.2 mg</td>
<td>1.5 mg</td>
<td>1.9 mg</td>
<td>2 mg</td>
<td>2 mg</td>
</tr>
</tbody>
</table>
Pediatric Multi-system Trauma

- ALS transport if available:

### History:
- Time and Mechanism of injury
- Damage to structure or vehicle
- Location in structure or vehicle
- Others injured or dead
- Speed and details of MVA
- Restraints / protective equipment
- Symptoms preceding incident

### Signs and Symptoms:
- Altered mental status or unconscious
- Hypotension or shock

### Differential:
- Chest: Tension pneumothorax, Flail Chest, Pericardial Tamponade
- Open chest wound, Hemothorax
- Intra-abdominal bleeding
- Pelvis/femur fracture
- Spine fracture / Cord injury
- Extremity fracture / Dislocation
- HEENT (Airway Obstruction)
- Hypothermia

### Universal Patient Care Protocol
- Expose injuries
- Arrange transport according to the CDC
  - Pg. 9 / Or County Operating Procedure
- Wound Care / Hemorrhage Control? Pg. 135
- Pelvic Stabilization? Pg. 120
- Patient with mechanism or exam concerning for potential spinal injury
  - Spinal Motion Restriction/Spinal Immobilization Procedure? Pg. 124-126
  - Obtain IV/IO access
  - Signs of Shock?
    - Yes
      - LR/NS bolus: 20 mL/kg IV/IO may repeat up to 60 mL/kg
      - Reassess Airway/Ventilation
    - No
      - Advanced Airway Procedures
        - Pediatric RSI Pg. 47
        - Pediatric Airway Pg. 46
        - Pediatric Pain Management Pg. 62
      - Ongoing Assessment
      - Appropriate Protocol

### Notes:
- Exam: Mental Status, Skin, HEENT, Heart, Lung, Abdomen, Extremities, Back, Neuro
- Mechanism is often a good indicator of serious injury
- If domestic violence or abuse is suspected it must be reported to Law Enforcement, receiving facility, airlift.
**Pediatric Near Drowning**

**Transport ALL near drowning Patients**

**History:**
- Submersion in water regardless of depth
- Possible history of trauma
- Duration of submersion
- Temperature of water
- Salt vs. Fresh Water

**Differential:**
- Trauma
- Pre-existing medical problems
- Barotrauma
- Decompression Sickness

---

**Universal Patient Care Protocol**

- Consider Spinal Motion Restriction/Spinal Immobilization
  - Pg. 124-127

- Oxygen
  - Advanced Airway Management
  - Pg. 73, 78-99

- If no pulse or Symptomatic Bradycardia begin CPR
  - Pg. 111
  - See Appropriate Guideline

- Remove wet clothing
- Cover with dry (warm) blankets
- Warming Measures

- Obtain IV/IO access
- ECG/12 lead
- PRN

- Consider other treatment Protocol as necessary

- Contact Medical Control

---

**Legend**

- EMT
- AEMT
- EMT
- MC Order
Pediatric Burns

**ALS transport if available > 15%:**

**History:**
- Type of exposure
- Inhalation injury
- Time of injury
- Mechanism of Injury
- Non-accidental trauma
- Trauma

**Differential:**
- Superficial (1°) red and painful
- Partial thickness (2°) blistersing
- Full thickness (3°) charred or leathery skin
- Chemical
- Thermal
- Electrical

**Universal Patient Care Protocol**

**Stop the burning process:**
Remove jewelry and clothing that may be burned, covered in chemicals or restricting.

**Cover burn with a dry clean sheet or dressing**
Keep warm

**Use Rule of 9’s**

**>15% then**

**Obtain IV/IO access PRN**
If Hypotensive fluid bolus LR/NS 20ml/kg
If not Hypotensive Maintenance fluid

**Pain Management Protocol Pg. 62**

**If burn < 10% body surface area**
Cool down the wound with Normal Saline
Cover burn with a dry clean sheet or dressing

**Outlying areas may use burn gel for comfort in burns < 10% BSA**

**Relative percentage of body surface area (% BSA) affected by growth**

<table>
<thead>
<tr>
<th>Body Part</th>
<th>0 yr</th>
<th>1 yr</th>
<th>5 yr</th>
<th>10 yr</th>
<th>15 yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>a = 1/2 of head</td>
<td>9 1/2</td>
<td>6 1/2</td>
<td>6 1/2</td>
<td>5 1/2</td>
<td>4 1/2</td>
</tr>
<tr>
<td>b = 1/2 of face</td>
<td>2 3/4</td>
<td>3 1/4</td>
<td>4</td>
<td>4 1/4</td>
<td>4 1/2</td>
</tr>
<tr>
<td>c = 1/2 of 1 lower leg</td>
<td>2 1/2</td>
<td>2 1/2</td>
<td>2 3/4</td>
<td>3</td>
<td>3 1/4</td>
</tr>
</tbody>
</table>

**Legend**

- E: EMT
- A: AEMT
- P: PM
- M: MC Order

**Oxygen**
Advanced Airway Management
Pg. 73, 78-99

**Prn**

**Eye involvement?**
Saline flush in the affected eye

**Oxygen**

**Advanced Airway Management**
Pg. 73, 78-99

**PRN**

**Use Rule of 9’s**

**>15% then**

**Obtain IV/IO access PRN**
If Hypotensive fluid bolus LR/NS 20ml/kg
If not Hypotensive Maintenance fluid

**Pain Management Protocol Pg. 62**

**If burn < 10% body surface area**
Cool down the wound with Normal Saline
Cover burn with a dry clean sheet or dressing

**Outlying areas may use burn gel for comfort in burns < 10% BSA**
**Pediatric Environmental Emergencies**

**ALS transport if available:**

**History:**
- Age
- Exposure to increase temperature and/or humidity
- Extreme exertion
- Time and length of exposure
- Fatigue and/or muscle cramping
- Altered Mental Status
- Temp > 104° F or 40 C due to heat
- Abnormal vital signs

**Differential:**
- Infection
- Dehydration
- Medications
- Thyroid storm

**Universal Patient Care Protocol**

- **Cooling Measures**
  - **Hyperthermic?**
    - Yes
      - **Blood Glucose check**
      - **Treat per appropriate protocol**
    - No
      - **Document patient temperature**
      - **Midazolam**
        - 0.1 mg/kg IN/IM/IV/IO
        - **OR**
        - **Diazepam**
          - 0.1 mg/kg IV/IO
        - **OR**
        - **Lorazepam**
          - 0.1 mg/kg IV/IO

- **Warming Measures**
  - **Hypothermic?**
    - Yes
      - **Obtain IV/IO access**
      - **Fluid bolus NS**
        - 20 mL/kg
      - **ECG/12 lead**
    - No
      - **Document patient temperature**

**Legend**

- EMT
- AEMT
- PM
- MC Order
- E
- P
- M
- PRN

<table>
<thead>
<tr>
<th>Weight</th>
<th>4 kg grey</th>
<th>6 kg pink</th>
<th>8 kg red</th>
<th>10 kg purple</th>
<th>12 kg yellow</th>
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<th>19 kg blue</th>
<th>24 kg orange</th>
<th>30 kg green</th>
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</thead>
<tbody>
<tr>
<td>Midazolam</td>
<td>0.4 mg</td>
<td>0.6 mg</td>
<td>0.8 mg</td>
<td>1 mg</td>
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<td>1.5 mg</td>
<td>1.9 mg</td>
<td>2 mg</td>
<td>2 mg</td>
</tr>
</tbody>
</table>

**Notes:**
- Succinycholine not recommended for Hyperthermic patients
- Document patient’s rectal temperature
- Rapid cooling to 39° C (103° F) to avoid overshooting and shivering.
- Apply room temperature water to skin and increase airflow around patient if possible.
- Ice packs to axillae and groin
Pediatric Concussion/Traumatic Brain Injury

Signs observed by Others:
- Appears dazed or stunned
- Confusion
- Forgetfulness
- Unsure
- Moves Clumsily
- Answers Questions slowly
- Loses consciousness
- Behavior or personality Changes
- Can't recall events prior to hit / fall
- Apparent weakness
- Neurological deterioration over time
- Abnormal Vital signs

Symptoms Report by Athlete:
- Headache
- Nausea or vomiting
- Balance problems or dizziness
- Double or blurry vision
- Sensitivity to light
- Sensitivity to noise
- Numbness or weakness in extremities
- Feeling sluggish, hazy, foggy, or groggy
- Concentration or memory problems
- Confusion / Altered Mental Status
- DOES NOT “FEEL RIGHT”

Universal Patient Care Protocol

Mechanism or Signs / Symptoms of Head Injury

Consider Spinal Motion Restriction/Spinal Immobilization Pg. 124-127

Advanced Airway Management
Pg. 73, 78-99

or
Focal neurologic abnormalities, or GCS < 8

Yes

Consider Rapid Sequence Intubation
for GCS < 8 Pg. 46

Hypotension?

Yes

Obtain IV/IO access

Fluid bolus 20 ml/kg IV/IO
May repeat up to 60 ml/kg

No

P

Signs of Intracranial Hypertension?

Yes

Consider Rapid Sequence Intubation
for GCS < 8 Pg. 47

Elevate head of bed to 45°

Ventilate patient to maintain
30-35 mm/Hg ETCO2

No

Clinical signs of seizure?

Yes

See Pediatric Seizure Protocol Pg. 65

No

M Contact Medical Control

Notes:
Recommended that patient not return to sports until cleared by qualified medical professional

Legend

E EMT
A AEMT
P PM
M MC Order

Support ABC’s Monitor
Treat other associated symptoms
Consider Differentials
PEDIATRIC PROCEDURES

Pediatric Assessment

Airway & Appearance
(Open/Clear – Muscle Tone/Body Position)

Abnormal: Abnormal or absent cry or speech. Decreased response to parents or environmental stimuli. Floppy or rigid muscle tone or not moving.
Normal: Normal cry or speech. Responds to parents or to environmental stimuli such as lights, keys, or toys. Good muscle tone. Move extremities well.

Work of Breathing
(Visible movement/Respiratory Effort)

Abnormal: Increased/excessive (nasal flaring, retractions or abdominal muscle use) or decreased/absent respiratory effort or noisy breathing.
Normal: Breathing appears regular without excessive respiratory muscle effort or audible respiratory sounds.

Circulation to skin (Color / Obvious Bleeding)

Abnormal: Cyanosis, mottling, paleness/pallor or obvious significant bleeding.
Normal: Color appears normal for racial group of child. No significant bleeding.

Decision/Action Points:
Any abnormal findings or life-threatening chief complaint such as major trauma/burns, seizures, diabetes, asthma attack, airway obstruction, etc (urgent) – proceed to Initial Assessment. Contact ALS if not already on scene/enroute.
All findings normal (non-urgent) – proceed to Initial Assessment.

Initial Assessment (Primary Survey)

Breathing
(Effort / Sounds / Rate / Central Color)

Abnormal: Presence of retractions, nasal flaring, stridor, wheezes, grunting, gasping or gurgling. Respiratory rate outside normal range. Central cyanosis.
Normal: Easy, quiet respirations. Respiratory rate within normal range. No central cyanosis.

Circulation to skin (Color / Obvious Bleeding)

Abnormal: Cyanosis, mottling, or pallor. Absent or weak peripheral or central pulses; Pulse or systolic BP outside normal range; Capillary refill > 2 sec with other abnormal findings.
Normal: Color normal. Capillary refill at palms, soles, forehead or central body ≤2 sec. Strong peripheral and central pulses with regular rhythm.

Decision/Action Points:
Any abnormal findings (C,U, or P pg. 74) – Immediate transport with ALS. Open airway & provide oxygen. Assist ventilations, start CPR, suction, or control bleeding as appropriate. Check for causes such as diabetes, poisoning, trauma, seizure, etc. Assist patient with prescribed bronchodilators or epinephrine auto-injector, if appropriate.
All findings on assessment of child normal (S) – Continue assessment, detailed history & treatment at scene or enroute.
### Pediatric References

<table>
<thead>
<tr>
<th>Weight</th>
<th>4 kg grey</th>
<th>6 kg pink</th>
<th>8 kg red</th>
<th>10 kg purple</th>
<th>12 kg yellow</th>
<th>15 kg white</th>
<th>19 kg blue</th>
<th>24 kg orange</th>
<th>30 kg green</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>Newborn – 3 mos</td>
<td>6 mos</td>
<td>9 mos</td>
<td>1 yr</td>
<td>2 yrs</td>
<td>3 yrs</td>
<td>5 yrs</td>
<td>7 yrs</td>
<td>10 yrs</td>
</tr>
<tr>
<td><strong>Pulse</strong></td>
<td>100-160</td>
<td>100-160</td>
<td>100-160</td>
<td>90-150</td>
<td>90-150</td>
<td>80-140</td>
<td>70-120</td>
<td>70-120</td>
<td>70-120</td>
</tr>
<tr>
<td><strong>Respiratory Rate</strong></td>
<td>30-60</td>
<td>30-60</td>
<td>30-60</td>
<td>24-40</td>
<td>24-40</td>
<td>22-34</td>
<td>18-30</td>
<td>18-30</td>
<td>18-30</td>
</tr>
<tr>
<td><strong>Blood Pressure</strong></td>
<td>40 mmHg</td>
<td>60 mmHg</td>
<td>60 mmHg</td>
<td>70 mmHg</td>
<td>70 mmHg</td>
<td>80 mmHg</td>
<td>80 mmHg</td>
<td>80 mmHg</td>
<td>90 mmHg</td>
</tr>
<tr>
<td><strong>Endotracheal uncuffed</strong></td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
<td>4.0</td>
<td>4.5</td>
<td>5.0</td>
<td>5.5</td>
<td>6.0</td>
<td>6.5</td>
</tr>
<tr>
<td><strong>Endotracheal cuffed</strong></td>
<td>2.5</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>4.0</td>
<td>4.5</td>
<td>5.0</td>
<td>5.5</td>
<td>6.0</td>
</tr>
<tr>
<td><strong>Nasogastric Tube</strong></td>
<td>5 Fr</td>
<td>5 Fr</td>
<td>8 Fr</td>
<td>8-10 Fr</td>
<td>10 Fr</td>
<td>10 Fr</td>
<td>12 Fr</td>
<td>14 Fr</td>
<td>14 Fr</td>
</tr>
<tr>
<td><strong>Defibrillation</strong></td>
<td>8 J</td>
<td>12 J</td>
<td>16 J</td>
<td>20 J</td>
<td>24 J</td>
<td>30 J</td>
<td>38 J</td>
<td>48 J</td>
<td>60 J</td>
</tr>
<tr>
<td><strong>Cardioversion</strong></td>
<td>2-4 J</td>
<td>3-6 J</td>
<td>4-8 J</td>
<td>5-10 J</td>
<td>6-12 J</td>
<td>8-15 J</td>
<td>10-20 J</td>
<td>12-24 J</td>
<td>15-30 J</td>
</tr>
<tr>
<td><strong>Fluid Challenge</strong></td>
<td>80 mL</td>
<td>120 mL</td>
<td>160 mL</td>
<td>200 mL</td>
<td>240 mL</td>
<td>300 mL</td>
<td>380 mL</td>
<td>480 mL</td>
<td>600 mL</td>
</tr>
<tr>
<td><strong>Suction Catheter</strong></td>
<td>6Fr</td>
<td>8Fr</td>
<td>8Fr</td>
<td>10Fr</td>
<td>10Fr</td>
<td>10Fr</td>
<td>10Fr</td>
<td>10Fr</td>
<td>12Fr</td>
</tr>
</tbody>
</table>
Airway Needle Cricothyrotomy- (Pediatric)

Clinical Indications:
- Failed Airway Protocol
- Management of an airway when standard airway procedures cannot be accomplished or have failed in a patient less than or equal to 8 years of age

Procedure:
1. Have suction supplies available and ready. Collect supplies including the endotracheal adapter of a 3.0 mm- ID ET tube.
2. Place a roll of sheets or towels under the child’s shoulders to hyperextend the neck and position the larynx as far anterior as possible.
3. Prep the area with antiseptic swab.
4. Locate the cricothyroid membrane utilizing anatomical landmarks.
5. Use the non-dominant hand to secure the membrane.
6. Use commercially prepared kit or:
   a. Attach a 5-cc syringe to a 16-18-20 gauge catheter-over-needle device; insert the needle through the cricothyroid membrane at a 45 to 60 degree caudal angle.
   b. Aspirate for air with the syringe throughout the procedure.
   c. Once air returns easily, stop advancing the device.
   d. Thread the catheter off the needle gently at a 60 degree caudal angle.
   e. Maintain stabilization of the membrane remove and safely dispose of the needle.
   f. Attach the previously sized ET adapter to the end of the catheter and begin ventilation with a Bag Valve Mask connected to high flow oxygen source.
7. Assess breath sounds. Make certain ample time is used not only for inspiration but expiration as well. A 1:4 ratio is not unreasonable.
8. Gentle ventilation is necessary to avoid barotrauma and subsequent pneumothorax.
9. Secure by best method available, recognizing that this method may be direct hands-on control of the device throughout the entire transport.
10. If unable to obtain an adequate airway, resume basic airway management and transport the patient as soon as possible.
11. Regardless of success or failure of needle cricothyrotomy, notify the receiving hospital at the earliest possible time of a surgical airway emergency.
12. Document time/procedure/confirmation/change in patient condition/time on the patient care record (PCR)
### APGAR Scale

<table>
<thead>
<tr>
<th></th>
<th>0 Points</th>
<th>1 Point</th>
<th>2 Points</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong></td>
<td><strong>Appearance</strong></td>
<td>Blue / Pale</td>
<td>Normal, except for extremities</td>
</tr>
<tr>
<td></td>
<td>(Skin Color)</td>
<td></td>
<td>Normal over entire body</td>
</tr>
<tr>
<td><strong>P</strong></td>
<td><strong>Pulse</strong></td>
<td>Absent</td>
<td>Below 100</td>
</tr>
<tr>
<td><strong>G</strong></td>
<td><strong>Grimace</strong></td>
<td>No Response</td>
<td>Grimace</td>
</tr>
<tr>
<td></td>
<td>(Reflex Irritability)</td>
<td></td>
<td>Sneeze, cough, pulls away</td>
</tr>
<tr>
<td><strong>A</strong></td>
<td><strong>Activity</strong></td>
<td>Absent</td>
<td>Arms and Legs Flexed</td>
</tr>
<tr>
<td><strong>R</strong></td>
<td><strong>Respiration</strong></td>
<td>Absent</td>
<td>Slow, irregular</td>
</tr>
</tbody>
</table>

### AVPU Infant/Child

<table>
<thead>
<tr>
<th>Response</th>
<th>Infant</th>
<th>Child</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong> – Alert</td>
<td>Curious / Recognizes parents</td>
<td>Alert / Aware of surroundings</td>
</tr>
<tr>
<td><strong>V</strong> – Responds to Voice</td>
<td>Irritable / Cries</td>
<td>Opens eyes</td>
</tr>
<tr>
<td><strong>P</strong> – Responds to Pain</td>
<td>Cries in response to pain</td>
<td>Withdraws from pain</td>
</tr>
<tr>
<td><strong>U</strong> – Unresponsive</td>
<td>No response</td>
<td>No response</td>
</tr>
</tbody>
</table>

### CUPS Pediatric

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C</strong> – Critical</td>
<td><strong>Absent airway, breathing or circulation</strong> (cardiac or respiratory arrest or severe traumatic injury)</td>
</tr>
<tr>
<td><strong>U</strong> – Unstable</td>
<td><strong>Compromised airway, breathing or circulation</strong> (Unresponsive, respiratory distress, active bleeding, shock, active seizure, significant injury, shock, near-drowning, etc.)</td>
</tr>
<tr>
<td><strong>P</strong> – Potentially Unstable</td>
<td><strong>Normal airway, breathing &amp; circulation but significant mechanism of injury or illness</strong> (Post-seizure, minor fractures, infant &lt;3 months with fever, etc.)</td>
</tr>
<tr>
<td><strong>S</strong> – Stable</td>
<td><strong>Normal airway, breathing &amp; circulation</strong> No significant mechanism of injury or illness (small lacerations or abrasions, infant ≥3 months with fever)</td>
</tr>
</tbody>
</table>
Neonatal Resuscitation

Dry, Warm, Position, Tactile stimulation. Suction mouth then nose. Administer O₂ as needed.

Apnea/Gasping, HR <100 or central cyanosis

Ventilatate with BVM

HR <60 after 30 sec BVM

Chest Compressions

ALS - HR<60

Intubate

Meds
Clinical Indications:
- Any pediatric patient with pain

Definitions:
- Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage.
- Pain is subjective (whatever the patient says it is).

Procedure:
1. Initial and ongoing assessment of pain intensity and character is accomplished through the patient’s self-report.
2. Pain should be assessed and documented during initial assessment, before starting pain control treatment, and with each set of vitals.
3. Pain should be assessed using the appropriate approved scale.
4. 0 – 10 Scale: the most familiar scale used by EMS for rating pain based on the patient being able to express their perception of the pain as related to numbers. Avoid coaching the patient; simply ask them to rate their pain on a scale from 0 to 10, where 0 is no pain at all and 10 is the worst pain ever.

Visual Analog Scale

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Pain</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Worst pain</td>
</tr>
</tbody>
</table>

5. Wong – Baker “faces” scale: may be used with any patient with a language barrier. The faces correspond to numeric values from 0-10.

Venous Access Intraosseous - Pediatric

Clinical Indications:

- Life threatening illness or injury in a child < 8 years of age (72 months after effective ventilation is established), (>8 years old see Adult Venous Access Intraosseous Adult Pg. 134).

Procedure:

1. Expose the lower leg.
2. Identify the tibial tubercle (bony prominence below the knee cap) on the proximal tibia. The insertion location will be 1-2 cm (2 finger widths) below this and medially.
3. Prep the site as per peripheral IV site.
4. **If using a commercially prepared device follow manufacturer’s recommendation.**
5. Holding the intraosseous needle perpendicular to the skin, twist the needle handle with a rotating grinding motion applying controlled downward force until a “pop” or “give” is felt indicating loss of resistance. Do not advance the needle any further.
6. Remove the trocar and attach the IV.
7. Stabilize and secure the needle.
8. Document the procedure, time, and result (success) on/with the patient care report (PCR).
PROCEDURES

Airway
I-gel Supraglottic Airway

Clinical Indications: Appropriate intubation is impossible due to patient access or difficult airway anatomy
- Airway, Adult; Airway Rapid Sequence Intubation; Failed Airway, Adult; & Cardiac Arrest
- Newborn Resuscitation
- Pediatric Airway; Pediatric Difficult Airway & Pediatric Rapid Sequence Intubation

Caution: This airway does not prevent or protect against aspiration

Clinical Contraindications:
- Pulmonary Fibrosis

Procedure:
1. Select the appropriate size I-gel
   - Compatible Endotracheal Tube
   - Size 1.0  2 – 5 kg  3.0 mm I.D.
   - Size 1.5  5 – 12 kg  4.0 mm I.D.
   - Size 2   10 – 25 kg  5.0 mm I.D.
   - Size 2.5  25 – 35 kg  5.0 mm I.D.
   - Size 3   30 – 60 kg  6.0 mm I.D.
   - Size 4   50 – 90 kg  7.0 mm I.D.
   - Size 5   > 90 kg  8.0 mm I.D.
2. Lubricate with a water-soluble jelly on the middle of the smooth surface and return to the cradle
3. Pre-Oxygenate the patient
4. Grasp the lubricated i-gel along the integral bite block. Position the device so that the i-gel cuff outlet is facing towards the patient’s chin (mental region of mandible)
5. The patient should always be in the ‘sniffing position’ with the head extended and neck flexed prior to insertion unless head/neck movement is inadvisable or contraindicated
6. Introduce the leading soft tip into the mouth of the patient in the direction of the hard palate
7. Glide the i-gel downward and backward along the hard palate with a continuous but gentle push until a definitive resistance is felt
8. Connect the i-gel to a bag-valve-mask and assess for breath sounds, adequate air exchange and end tidal CO2 (EtCO2)
9. Monitor oxygen saturation with pulse oximetry, EtCO2 and heart monitor
10. Re-verify i-gel placement after every move and upon arrival in the Emergency Department
11. Secure the i-gel
12. Document the procedure, time, and result (success) on/with the patient care report (M.I.R/P.C.R).

*When using the device after encountering a difficult intubation endotracheal intubation may be accomplished by passing a bougie through the i-gel into the trachea (see above chart for endotracheal tube compatibility). When advancing the bougie you may be able to “rail-road” the bougie to over the cartilaginous rings in the trachea to confirm proper location. Place an endotracheal tube over the bougie and advance into the trachea.
Airway - Capnography

Clinical Indications:
- Capnography shall be used in all patients with endotracheal or supraglottic airways.
- If appropriate cannula-type sensors are available capnography may be used in non-intubated patients with severe respiratory distress/respiratory insufficiency.

Procedure:
1. For non-intubated patients with severe respiratory distress/respiratory insufficiency, place cannula-type sensor in patient’s nares.
2. Attach capnography sensor to supraglottic airway or endotracheal tube.
3. Note CO₂ level and waveform changes. These will be documented on each respiratory failure or cardiac arrest patient.
4. The capnometer shall remain in place with the airway and be monitored throughout the prehospital care and transport.
5. Any loss of CO₂ detection or waveform indicative of an airway problem should be documented.
6. The capnogram should be monitored as procedures are performed to verify or correct the airway problem.
7. Document the procedure and results on/with the Patient Care Report (PCR).

| NORMAL: “Square box” waveform; baseline CO₂ = 0; ETCO₂ = 35-45 mm Hg Management: Monitor |
| DISLODGED ETT / ESOPHAGEAL INTUBATION: Loss of waveform, Loss of ETCO₂ reading Management: Replace ETT |
| “SHARKFIN” with/without prolonged expiration = Bronchospasm (asthma, COPD, allergic reaction): Management: Bronchodilators (Albuterol, Atrovent, or epinephrine) |
| RISING BASELINE = Patient is rebreathing CO₂: Management: Check equipment for adequate oxygen inflow Allow intubated patient more time to exhale |
| HYPERVENTILATION: Rapid RR; shortened waveform; baseline ETCO₂ = 0; ETCO₂ < 35 mm Hg Management: Biofeedback if conscious, decrease assisted ventilation rate if unconscious/intubated |
| PATIENT BREATHING AROUND ET TUBE: angled, sloping down stroke on waveform Broken cuff or tube is too small Management: Assess patient, oxygenation, ventilation; may need to re-intubate |

**Important: Severe metabolic acidosis (DKA, sepsis, salicylate poisoning, acute renal failure, methanol ingestion. Tricyclic overdose) will cause tachypnea, but ETCO₂ will be HIGH. THIS IS NOT NORMAL**
Airway
Combitube

Clinical Indications:
- Apneic patient when endotracheal intubation is not possible or readily available.
- Patient must be > 5 feet and >16 years of age.
- Patient must be unconscious without a gag reflex.
- No history of esophageal disease or caustic ingestion.
- Failed Airway Protocol

Procedure:
1. Pre-oxygenate and hyperventilate the patient.
2. Lubricate the tube.
3. Maintain the head in a neutral inline position.
4. Grasp the patient’s tongue and jaw with your gloved hand and pull forward.
5. Gently insert the tube until the teeth are between the printed rings.
6. Inflate line 1 (blue pilot balloon) leading to the pharyngeal cuff with 100 cc air.
7. Inflate line 2 (white pilot balloon) leading to the distal cuff with 15 cc of air.
8. **Ventilate the patient through the longer blue tube.**
9. Auscultate for breath sounds and sounds over the epigastrium.
10. Look for the chest to rise and fall.
11. **If breath sounds are positive and epigastric sounds are negative, continue ventilation through the blue tube. The tube is in the esophagus.**
12. In the esophageal mode, stomach contents can be aspirated through the #2, white tube relieving gastric distention.
13. If breath sounds are negative and epigastric sounds are positive, attempt ventilation through the shorter, #2 white tube and reassess for lung and epigastric sounds. If breath sounds are present and the chest rises, you have intubated the trachea and continue ventilation through the shorter tube.
14. The device is secured by the large pharyngeal balloon.
15. Confirm tube placement using end-tidal CO₂ detector or esophageal bulb device.

**Endotracheal intubation with a Combitube in Place:**
(Not necessary if the ventilations are adequate with the Combitube.)
A. The tube must be in the esophageal mode.
B. Prepare all equipment needed for endotracheal intubation.
C. Decompress the stomach.
D. Hyperoxygenate the patient.
E. Deflate the balloons on the Combitube and remove. **Suction equipment must be ready.**
F. Rapidly proceed with endotracheal intubation.
Airway
King LTS-D™

Clinical Indications:

- Apneic patient when endotracheal intubation is not possible or readily available.
- Respiratory arrest with absent gag reflex when endotracheal intubation is not possible or not available.
- Failed airway protocol
- Patient must be > 5 feet tall.
- No history of esophageal disease or caustic ingestion.

Procedure:

1. Select appropriate size tube per manufacturer specifications.
2. Pre-oxygenate and hyperventilate patient with BVM.
3. Lubricate distal portion of the tube.
4. Draw up 60 ml of air in syringe and connect to pilot balloon.
5. Maintain the head in a neutral inline position.
6. Grasp the patient’s tongue and jaw and pull up and forward.
7. Insert the tube into the corner of mouth with the blue orientation line facing laterally until the teeth are between the 14cm-16cm lines.
8. Inflate the cuff with 60 ml of air and remove syringe from pilot balloon
9. Connect BVM to tube and ventilate patient.
10. Auscultate for negative epigastric sounds and present bilateral lung sounds.
11. Check for chest rise and fall.
12. If available use ETCO2 monitoring.
13. Secure tube with tape or commercial device.

Endotracheal intubation with a King™ Airway in place. (Not necessary if ventilations are adequate with King™ Airway).

A. Prepare all equipment needed for an endotracheal intubation
B. Pre-oxygenate and hyperventilate patient.
C. Pass an Eschmann Catheter (Pg.90) through the King airway.
D. Deflate cuff and extubate the tube.
E. Using the Eschmann Catheter (Pg.90) insert ETT into airway.
F. Confirm correct placement. If ETT is in esophagus use direct laryngoscopy and insert ETT into the trachea.
Airway
Laryngeal Mask Airway (LMA)

Clinical Indications:

- Apneic patient when endotracheal intubation is not possible or readily available.
- Appropriate intubation is impossible due to patient access or difficult airway anatomy.
- **This airway does not prevent aspiration of stomach contents.**
- The device shall be dual lumen.

Clinical Contraindications:

- Pulmonary Fibrosis
- Morbid Obesity

Procedure:

1. Check the tube for proper inflation and deflation.
2. Lubricate with a water-soluble jelly.
3. Pre-Oxygenate the patient with 100% Oxygen.
4. Using proper technique, insert the LMA into the hypopharynx until resistance is met.
5. Inflate the cuff until a seal is obtained.
6. Connect the LMA to an ambu bag and assess for breath sounds, air entry, and end tidal CO2.
7. Monitor oxygen saturation with pulse oximetry and heart rhythm with ECG.
8. Re-verify LMA placement after every move and upon arrival in the ED.
9. Document the procedure, time, and result (success) on/with the patient care report (PCR).
Airway
Needle Cricothyrotomy (Adult)

Clinical Indications:

- Failed Airway Protocol.
- Management of an airway when standard airway procedures cannot be accomplished or have failed in a patient greater than or equal to 8 years of age.

Procedure:

1. Have suction supplies available and ready.
2. Collect supplies including the endotracheal adapter of a 3.0 mm-ID ET tube.
3. Locate the cricothyroid membrane utilizing anatomical landmarks.
4. Use the non-dominant hand to secure the membrane.
5. Prep the area with antiseptic swab.
6. Using the syringe and the finder needle supplied in the commercial needle cricothyrotomy kit (or a 5-cc syringe attached to a 10 to 14 gauge catheter-over-needle device if needed), insert the needle through the cricothyroid membrane at a 45 to 60 degree caudal angle.
7. Aspirate for air with the syringe throughout the procedure.
8. Once air returns easily, stop advancing the device. If using an over the needle catheter, thread the catheter off the needle gently at a 60 degree caudal angle.
9. Attach the previously sized ET adapter to the end of the catheter and begin ventilation with a Bag Valve Mask connected to high flow oxygen source.
10. Assess breath sounds. Make certain ample time is used not only for inspiration but expiration as well. A 1:6 ratio is not unreasonable.
11. Secure needle by best method available, recognizing that this method may be direct hands-on control of the device throughout the entire transport.
12. If unable to obtain an adequate airway, resume basic airway management and transport the patient as soon as possible.
13. Regardless of success or failure of needle cricothyrotomy, notify the receiving hospital at the earliest possible time of a surgical airway emergency.
Airway
Cricothyrotomy Surgical (Adult)

Clinical Indications:
- Failed Airway Protocol
- Management of an airway when standard airway procedures cannot be performed or have failed in a patient > 12 years old

Clinical Contraindications:
- Significant trauma to the trachea or larynx suspicious of a tear or fracture
- Massive neck edema obstructing landmark identification
- Children less than 12 years of age
- Ability to effectively ventilate / oxygenate and suction if necessary.

Procedure:
1. Have suction and supplies available and ready.
2. Place patient supine with the neck in a neutral position.
3. Locate the cricothyroid membrane utilizing anatomical landmarks.
4. Prep the area with an antiseptic swab.
5. Stabilize the thyroid cartilage with the non-dominant hand.
6. Identify the cricothyroid membrane.
7. Make a transverse incision over the cricothyroid membrane.
8. Visualize the cricothyroid membrane and puncture with the cric introducer or scalpel.
9. Dilate the cricothyroid membrane using any of the following techniques: kit dilator, curved hemostats, or gloved finger. You may insert a skin hook and advance a Bougie thru the incision with a curved tip directed towards the feet.
10. Insert a 5.5-6.5 ID ETT just until the cuff passes into the trachea. Be sure the cuff has cleared the cricothyroid space. If you’ve inserted a Bougie, pass the endotracheal tube over the top of the Bougie stylet.
11. Inflate the cuff with 5-10cc of air and ventilate the patient while manually stabilizing the tube.
12. All of the standard assessment techniques for insuring tube placement should be performed (auscultation, chest rise & fall, end-tidal CO2 detector, etc.). Esophageal bulb devices are not accurate with this procedure.
13. Secure the tube.
## Airway
### Difficult Airway Assessment

<table>
<thead>
<tr>
<th>LEMON</th>
<th>Physical signs</th>
<th>Less difficult airway</th>
<th>More difficult airway</th>
</tr>
</thead>
</table>
| **L**  | Look externally | • Normal face and neck  
• No face or neck pathology | • Abnormal face shape  
• Sunken cheeks  
• Edentulous  
• “Buck teeth”  
• Narrow mouth  
• Obesity  
• Face or neck pathology |
| **E**  | Evaluate the 3-3-2 rule | • Mouth opening >3F  
• Hyoid-chin distance >3F  
• Thyroid cartilage-mouth floor distance >2F | • Mouth opening <3F  
• Hyoid-chin distance <3F  
• Thyroid cartilage-mouth floor distance <2F |
| **M**  | Mallampati | • Class I and II (can see the soft palate, uvula, fauces +/- faucial pillars) | • Class III and IV (can only see the hard palate +/- soft palate +/- base of uvula) |
| **O**  | Obstruction | • None | • Pathology within or surrounding the upper airway (e.g. peri-tonsillar abscess, epiglottis, retro-pharyngeal abscess) |
| **N**  | Neck Mobility | • Can flex and extend the neck normally | • Limited ROM of the neck |
Airway
Passive Pre-oxygenation Procedure

Clinical indications:
- To support and maintain oxygen saturation throughout airway procedures
- All rapid sequence intubations
- All conscious sedations

Clinical contraindications:
- None

Procedure:
- Place a nasal cannula on all patients while preparing for RSI, with EtCO2 monitoring if available
- For awake patients set to 4-6L/min

1. **Low risk patient (96-100%)**:
   a. pre-oxygenation: non rebreather mask (NRB) w/ normal flow
   b. induction: NRB and nasal cannula (NC) set to 15L/min
   c. during intubation: NC kept at 15L/min

2. **High risk (91-95%)**:
   a. pre-oxygenation: NRB or CPAP or bag valve mask (BVM) with PEEP valve
   b. induction: as above plus NC at 15L/min
   c. intubation: NC at 15L/min

3. **Hypoxemic (<90%)**:
   a. pre-oxygenation: CPAP or BVM w/ PEEP
   b. induction: as above plus NC at 15L/min
   c. intubation: NC at 15L/min

4. Once tracheal intubation has been confirmed per routine the nasal cannula can be removed

5. Document the procedure and results on/with the Patient Care Report (PCR)
Airway
Intubation Confirmation End-Tidal CO₂ Detector

Clinical Indications:

- The End-Tidal CO₂ detector shall be used with all endotracheal or supraglottic airway airways.
- The use of capnometric or capnographic devices, when available, is preferred over colorimetric ETCO₂ devices.

Procedure:

1. Attach End-Tidal CO₂ detector to supraglottic airway or endotracheal tube.
2. Note color change. A color change or CO₂ detection will be documented on each respiratory failure or cardiac arrest patient.
3. The CO₂ detector shall remain in place with the airway and monitored throughout the prehospital care and transport. Any loss of CO₂ detection or color change is to be documented and monitored as procedures are done to verify or correct the airway problem.
4. Tube placement should be verified frequently and always with each patient move or loss of color change in the End-Tidal CO₂ detector.
5. Document the procedure and the results on/with the Patient Care Report (PCR).
Airway
Intubation Confirmation Esophageal Bulb
(or other commercial device)

Clinical Indications:

- To assist in determining and documenting the correct placement of an endotracheal or nasotracheal tube. Use of capnometric, capnographic or colorimetric ETCO2 detector is mandatory after the use of an esophageal bulb detector.

Procedure:

1. Complete intubation as per Airway Intubation-Oral or Airway Intubation-Nasal protocols.
2. Place the bulb device over the proximal end of the ETT or NTT. Squeeze the bulb to remove air prior to securing the bulb on the tube.
3. Once secured on the tube, release the bulb.
4. If the bulb expands evenly and easily, this indicates probable tracheal intubation. Assessment of the patients breath sounds bilaterally should also be performed.
5. If the bulb does not expand easily, this indicates possible esophageal intubation and the need to reassess the airway.
Airway
Orotracheal Intubation

Clinical Indications:

- An unconscious patient without a gag reflex who is apneic or is demonstrating inadequate respiratory effort.
- Any patient medicated for rapid sequence intubation.

Procedure:

1. Prepare all equipment and have suction ready.
2. Pre-oxygenate the patient Page 86.
3. Apply cricoid manipulation.
4. Open the patient’s airway and holding the laryngoscope in the left hand, insert the blade into the right side of the mouth and sweep the tongue to the left.
5. If using a Video Assisted Laryngoscope use as manufacturer has suggested and as instructed during training. Record and save for QI purposes if possible.
6. Medicate according to appropriate RSI procedure. Page 94.
7. Use the blade to lift the tongue and epiglottis (either directly with the straight blade or indirectly with the curved blade).
8. Once the glottic opening is visualized, slip the tube through the cords and continue to visualize until the cuff is past the cords.
9. Number of attempts at ventilation shall not further compromise oxygenation. Oxygenate between each attempt and record SPO2. If unable to intubate after two (2) attempts proceed to Failed Airway protocol Page 24.
10. Remove the stylet and inflate the cuff (5-10cc until no cuff leak).
11. Auscultate for absence of sounds over the epigastrium and bilaterally equal breath sounds.
12. This should be repeated frequently and after movement or manipulation.
13. Confirm the placement using a minimum of two (2) methods. CO2 detection device mandatory.
14. Secure the tube.
15. Document ETT size, time, result (success), and placement location by the centimeter marks either at the patient’s teeth or lips on/with the patient care report (PCR).
16. Document all devices used to confirm initial tube placement. Also document positive or negative breath sounds before and after each movement of the patient.
Technique

1. Perform direct laryngoscopy after thorough pre-oxygenation. **Passive Pre-oxygenation Pg. 86**

2. Insert bougie under direct visualization (grade II) or semi blind (grade III) using epiglottis as a guide. Maintain midline bent end facing anteriorly.

3. With the tip directed anteriorly guide the bougie toward the epiglottis.

4. Advance the bougie posterior to the epiglottis and into the glottic opening.

5. Cricoid pressure may facilitate correct placement (when the tip of the introducer passes the cricoid cartilage and enters the trachea it also may be palpable at the anatomic location).

6. The operator may be able to feel the bougie “click” or “bump” over the anterior tracheal rings (“wash boarding or railroading”)

7. Use the laryngoscope to elevate the pharyngeal soft tissue.

8. Subtle maneuvering may be required to traverse the vocal cords.

9. Advance to the carina (resistance to passage) to verify placement (approximately 45 cm). Once advanced to the carina, further insertion causes the bougie to rotate on entrance into a bronchus as an additional criterion to confirm correct placement. Failure to meet resistance after inserting nearly the full length of the bougie indicates esophageal placement. Withdraw and align the black “lip-line marker” with the lips (1 cm band located 40 cm (4 stripes) from proximal end).

10. Pass endotracheal tube (larger than 6.0 mm) over the bougie.

11. If the endotracheal tube catches on the arytenoid or aryepiglottic folds, withdraw the tube slightly and rotate it $90^\circ$ counterclockwise and advance it forward (allows beveled end to pass).

12. For optimal passage of the tube over the bougie into the trachea, the laryngoscope may be left in place as the endotracheal tube is advanced with the bevel facing posteriorly.

13. Secure the tube (remove bougie) and verify tube placement.
Airway
Nasotracheal Intubation

Clinical Indications:

- A spontaneously breathing patient in need of intubation (inadequate respiratory effort, evidence of hypoxia or carbon dioxide retention, or need for airway protection).
- Patient must be 12 years of age or older.

Procedure:

1. Pre-medicate the patient with nasal spray (oxymetazoline) Afrin®.
2. Select the largest and least obstructed nostril and insert a lubricated nasal airway to help dilate the nasal passage.
3. Pre-oxygenate the patient. Lubricate the tube with water soluble lubricant. The use of a BAAM device is recommended. (Endotrol). Passive Pre-oxygen Pg. 86
4. Remove the nasal airway and gently insert the tube keeping the bevel of the tube toward the septum.
5. Insert the tube along the floor of the nasopharynx angling toward the posterior hypopharynx.
6. Continue to pass the tube listening for air movement and looking for vapor condensation in the tube. As the tube approaches the larynx, the air movement gets louder.
7. Open the patient’s mouth to assure the tube is centered behind the uvula.
8. Gently and evenly advance the tube through the glottic opening on inspiration. This facilitates passage of the tube and reduces the incidence of trauma to the vocal cords.
9. Upon entering the trachea, the tube may cause the patient to cough, buck, strain, or gag. Do not remove the tube! This is normal, but be prepared to control the cervical spine and the patient, and be alert for vomiting.
10. Auscultate for bilaterally equal breath sounds and absence of sounds of the epigastrium. Observe for symmetrical chest expansion. The 15mm adapter usually rests close to the nostril with proper positioning.
11. Inflate the cuff with 5-10 cc of air. Confirm tube placement using an end-tidal CO₂ monitoring or esophageal bulb device.
12. Medicate patient according to physician order.
13. Secure the tube. Document the procedure, time, and result (success) on/with the patient care report (PCR).
Airway Nebulizer Inhalation Therapy

Clinical Indications:

- Patients experiencing bronchospasm.

Procedure:

1. Gather the necessary equipment.
2. Assemble the nebulizer kit.
3. Instill appropriate medication into the reservoir well of the nebulizer.
4. Connect the nebulizer device to oxygen at 6 liters per minute or adequate flow to produce a steady, visible mist.
5. Instruct the patient to inhale normally through the mouthpiece of the nebulizer. The patient needs to have a good lip seal around the mouthpiece.
6. If the patient is unable to maintain good lip seal around the mouth piece, nebulizer may be connected to a face mask.
7. In the intubated patient, patient on NIPPV, or BVM, nebulizer should be placed in-line for effective medication delivery.
8. The treatment should last until the solution is depleted. Tapping the reservoir well near the end of the treatment will assist in utilizing all of the solution.
9. Monitor the patient for medication effects. This should include the patient’s assessment of his/her response to the treatment and reassessment of vital signs, ECG, and breathe sounds.
10. Document the treatment, dose, and route on/with the patient care report (PCR).
Airway
Non-Invasive Positive Pressure Ventilation (NIPPV)

Clinical Indications:
- Consider in respiratory distress in the conscious patient suffering from:
  - Presumed pulmonary edema
  - Severe reactive airway disease
  - Conditions reactive under medical management (e.g. hypoxic respiratory failure)
  - Consider use in patients DNR/DNI with signs of respiratory compromise
- Continue medical management of cardiogenic pulmonary edema while preparing and during use of NIPPV

Contraindications:
- Cardiac and/or respiratory arrest
- Hemodynamic instability
- Facial trauma/surgery/deformity
- Known or suspected pneumothorax
- Upper airway obstruction
- Pulmonary fibrosis
  - Relative contraindications include inability to protect airway and impaired consciousness

Procedure:
1. Assemble equipment and assure proper function.
2. Ensure adequate oxygen supply to ventilation device.
3. Assess and document initial SpO2, work of breathing and EtCO2 if possible.
4. Explain the procedure to the patient.
5. Calmly and continuously reassure the patient.
   a. Consider placement of a nasopharyngeal airway.
6. Place the delivery mask over the mouth and nose.
7. Secure the mask with provided straps or other provided devices
8. Begin with low pressure (e.g. 5cm H2O) and increase as patient tolerates and/or the clinical situation dictates by 2.5cm H2O to maximum of 10cm H2O.
9. Frequently reassess patient’s respiratory status and vital signs.
   a. If rapid improvement noted, discontinue NIPPV and manage respiratory condition via other means
10. Notify receiving facility of NIPPV use.
11. SVN can be utilized in line in the NIPPV circuit.
Airway
Rapid Sequence Induction (RSI)

<table>
<thead>
<tr>
<th>INDICATIONS</th>
<th>• Need for airway control persistent GCS ≤ 8</th>
</tr>
</thead>
</table>
| RELATIVE CONTRAINDICATIONS | • Patients with adequate Oxygenation  
| | • Patients with adequate ventilation  
| | • Patients who would be difficult to intubate  
| | • Patients with distorted facial or laryngeal anatomy  
| | • Known neuromuscular disease  
| | Caution with Succinylcholine:  
| | • Chronic renal failure and on dialysis  
| | • Patient or family history of malignant hyperthermia  
| | • Significant burns between 24 hours and 2 weeks old  
| | • Massive crush injury / suspected rhabdomyolysis |

| PROCEDURE | • Pre-oxygenate with 100% O₂ via NRB or BVM. Pg. 86  
| | • Monitor oxygen saturation with pulse oximetry and cardiac rhythm with ECG.  
| | • Ensure functioning vascular access.  
| | • Evaluate for difficult airway (LEMON)-see page 85.  
| | • Prepare equipment (intubation kit, BVM, suction, RSI medications, alternate Airway devices/adjuncts: Eschmann, cric kit, supraglottic airway. |

| PRE-MEDICATE ADULT | Consider Lidocaine 1.5 mg/kg  
| | None |
| PRE-MEDICATE PEDIATRIC | Lidocaine 1.5 mg/kg  
| | Atropine 0.02 mg/kg IV/IO min dose 0.1mg |

| SEDATE ADULT/PEDIATRIC | Etomidate 0.3 mg/kg IV/IO over 15 sec  
| | OR  
| | Ketamine 1-2 mg/kg IVP/IO  
| | OR  
| | Midazolam 0.1 mg/kg IV/IO, max 10 mg |

| NEUROMUSCULAR BLOCKADE | Rocuronium 1 mg/kg IV/IO  
| | OR  
| | Vecuronium 0.01 mg/kg IV/IO  
| | AND  
| | Succinylcholine 1.5 mg/kg IV/IO/IM |
| | Succinylcholine 1.5mg/kg IV/IO/IM  
| | OR  
| | Rocuronium 1 mg/kg IV/IO |

| CONTINUED MAINTENANCE/SEDATION/ | Midazolam 2.5 – 10 mg IV/IO, max 10 mg q 5-10 min PRN  
| | OR  
| | Lorazepam 1 – 2 mg IV/IO, max 2 mg q 5 min PRN  
| | OR  
| | Diazepam 2 – 5 mg IV/IO, max 5 mg q 5 min  
| | OR  
| | Propofol 1.2-5 mcg/kg per min |
Airway
Video Assisted Laryngoscopy

Clinical Indications:

- Difficult airways
- Routine airways
- First-use intubations, replacing direct laryngoscopy (DL)
- Normal or restricted oropharyngeal views / visualization and assessment of the oropharynx
- Trauma airways
- Airway management in morbidly obese patients
- Preterm and neonatal intubations
- Patients requiring cervical spine immobilization
- Supervision and documentation of the laryngoscopy
- Nasal tracheal intubation
- Video-guided foreign body removal
- Awake intubation for difficult airway management
- Insertion of double lumen tubes (DLTs)

Procedure:

1. Prepare all equipment, activate video assisted laryngoscope, and have suction ready.
2. Pre-oxygenate the patient.
3. Medicate according to appropriate RSI procedure. Page 95.
4. Record and save intubation whenever possible.
5. Instrument oropharynx as manufacturer has suggested and as instructed during training. An endotracheal tube stylet may be recommended by the manufacturer.
6. When using the video laryngoscope, visualize the tube to pass through the vocal cords.
7. Remove the stylet and inflate the cuff (5-10 mL until no cuff leak).
8. Auscultate for absence of sounds over the epigastrium and bilaterally equal breath sounds.
9. This should be repeated frequently and after movement or manipulation.
10. Confirm the placement using a minimum of two (2) methods. CO₂ detection device mandatory.
11. Secure the tube.
Airway
Suctioning-Basic

Clinical Indications:

- Obstruction of the airway (secondary to secretions, blood, or any other substance) in a patient who cannot maintain or keep the airway clear.

Procedure:

Oropharyngeal
1. Ensure suction device is in proper working order with rigid suction tip in place.
2. Pre-oxygenate the patient as much as possible.
3. Explain the procedure to the patient if they are coherent.
4. Examine the oropharynx and remove any potential foreign bodies or material which may occlude the airway if dislodged by the suction device.
5. If applicable, remove ventilation devices from the airway.
6. Use the suction device to remove any secretions, blood, or other substances.
7. Be aware that a patient with altered mentation may bite on the catheter resulting in a foreign body obstruction.
8. The alert patient may assist with this procedure.
9. Reattach ventilation device (e.g., bag-valve mask) and ventilate or assist the patient.
10. Record the time and result of the suctioning in the patient care report (PCR).

Nasopharyngeal
1. Ensure suction device is in proper working order with flexible suction tip in place.
2. Lubricate the end of the suction catheter with water soluble lubricant.
3. Pre-oxygenate the patient as much as possible.
4. Explain the procedure to the patient if they are coherent.
5. Examine the oropharynx and remove any potential foreign bodies or material which may occlude the airway if dislodged by the suction device.
6. If applicable, remove ventilation devices from the airway.
7. Insert the flexible catheter through the largest nare following the floor of the nasal passage angling toward the posterior pharynx.
8. Use the suction device to remove any secretions, blood, or other substance.
9. Reattach ventilation device (e.g., bag-valve mask) and ventilate or assist the patient.
10. Record the time and result of the suctioning in the patient care report (PCR).
Airway Suctioning-Advanced

Clinical Indications:

- Obstruction of the airway (secondary to secretions, blood, or any other substance) in a patient currently being assisted by an airway adjunct such as:
  - a naso-tracheal tube
  - endotracheal tube
  - supraglogic airway
  - tracheostomy tube
  - cricothyrotomy tube

Procedure:

1. Ensure suction device is in proper working order.
2. Collect supplies including flexible suction catheter, sterile saline in container, clean gloves.
3. Pre-oxygenate the patient as much as possible. Do not over inflate the lungs.
4. Attach suction catheter to suction device, keeping end of catheter aseptic.
5. Measure length of catheter for proper depth of insertion based on the type of device in place.
6. If applicable, remove ventilation devices from the airway.
7. With the thumb port of the catheter uncovered, insert the catheter through the airway device.
8. Once the desired depth (measured in #5 above) has been reached, occlude the thumb port and remove the suction catheter slowly.
9. Interrupt ventilations for no more than 30 seconds.
10. Reattach ventilation device (e.g., bag-valve mask) and ventilate the patient.
11. Clear the suction catheter of thick secretions by aspirating sterile saline.
12. If thick secretions prevent effective suctioning instill 3-5 cc of sterile saline in the tube and ventilate the patient 3-4 breaths. Then repeat suctioning as described.
13. Document time and result including SpO₂ readings before and after procedure in the patient care report (PCR).
Airway
Tracheostomy Tube Change

Clinical Indications:

- Presence of Tracheostomy site.
- Urgent or emergent indication to change the tube such as:
  - obstruction that will not clear with suction,
  - dislodgement,
  - The inability to oxygenate/ventilate the patient without other obvious explanation.

Procedure:

1. Have all airway equipment prepared for standard airway management, including equipment for orotracheal intubation and failed airway.
2. Have airway device (endotracheal tube or tracheostomy tube) of the same size as the tracheostomy tube currently in place as well as 0.5 size smaller available (e.g., if the patient has a #6.0 Shilley, then have a 6.0 and a 5.5 tube).
3. Lubricate the replacement tube(s) and check the cuff.
4. Remove the tracheostomy tube from mechanical ventilation devices and use a bag-valve apparatus to pre-oxygenate the patient as much as possible.
5. Once all equipment is in place, remove devices securing the tracheostomy tube, including sutures and/or supporting bandages.
6. If applicable, deflate the cuff on the tube.
7. Remove the tracheostomy tube.
8. Insert the replacement tube. Confirm placement via standard measures except for esophageal detection (which is ineffective for surgical airways).
9. If there is any difficulty placing the tube, re-attempt procedure with the smaller tube.
10. If difficulty is still encountered, use standard airway procedures such as oral bag-valve mask or endotracheal intubation (as per protocol). More difficulty with tube changing can be anticipated for tracheostomy sites that are immature – i.e., less than two weeks old.

- Great caution should be exercised in attempts to change immature tracheotomy sites.
11. Document procedure, confirmation, patient response, and any complications in the PCR.
Airway
Ventilator Operation

Clinical Indications:

- Transport of an intubated patient

Procedure:

1. Confirm the placement of tube as per airway protocol.
2. Ensure adequate oxygen delivery to the ventilator device.
3. Pre-oxygenate the patient as much as possible with bag-valve mask.
4. Remove BVM and attach tube to ventilator device.
5. Per instructions of device, set initial values. For example, set an inspiratory / expiratory ratio of 1:4 with a rate of 12 to 20, tidal volume 6-8 mL/kg.
7. If any worsening of patient condition, decrease in oxygen saturation, or any question regarding the function of the ventilator, remove the ventilator and resume bag-valve mask ventilations.
Cardiac
Automatic Implantable Cardio Defibrillator (AICD) Deactivation

Clinical Implications:
- For verified frequent and recurrent inappropriate AICD discharges
- End of Life Care
- During resuscitation
- With External Transcutaneous Pacing
- During Central Line Placement

Procedure:
1. Monitor rhythm (EKG) and verify triggering rhythm and inappropriate defibrillator discharge
2. Record EKG rhythm before and after magnet application
3. Identify location of AICD
4. Place magnet directly over AICD and secure in place
5. Treat underlying rhythm

Considerations:
- Identification of AICD type, date of implantation should be found on wallet card with patient

Note:

MAGNET INHIBITION:

In most devices, placing a magnet over a permanent pacemaker temporarily "reprograms" the pacer into asynchronous mode. It does not turn off the pacemaker. Each pacemaker type has a unique asynchronous rate for beginning-of-life (BOL), elective replacement indicator (EFI), and end-of-life (EOL). Therefore, if the device company parameters are known, application of a magnet can determine if the pacer’s battery needs to be replaced. Further interrogation or manipulating of the device should be performed by an individual skilled in the technique. If patient’s condition deteriorates with magnet in place then remove magnet and reassess patient. Although many different branded pacemaker/ICD magnets are available, in general any pacemaker/ICD magnet can be used to inhibit the device. When a magnet is applied to an ICD, it can temporarily turn off defibrillation therapy without affecting its pacemaker ability. Some devices can be programmed not to respond to a magnet.
Clinical Indications:
- Chest pain/upper abdominal pain age > 35
- Suspected overdose
- Electrical injuries
- Syncope
- Suspected arrhythmias
- Suspected electrolyte imbalance

Procedure:
1. Assess patient and monitor cardiac status.
2. Administer oxygen as patient condition warrants.
3. If patient presents with pain or complaint, suspect of a cardiac related emergency, then perform a 12 Lead ECG. (EMT can perform ECG - read only)
4. Prepare ECG monitor and connect patient cable with electrodes.
5. Enter the required patient information (patient name, etc.) into the 12 lead ECG device.
6. Expose chest and prep as necessary. Modesty of the patient should be respected.
7. Apply chest leads and extremity leads using the following landmarks:
   - RA -Right arm
   - LA -Left arm
   - RL -Right leg
   - LL -Left leg
   - V1 -4th intercostal space at right sternal border
   - V2 -4th intercostal space at left sternal border
   - V3 -Directly between V2 and V4
   - V4 -5th intercostal space at midclavicular line
   - V5 -Level with V4 at left anterior axillary line
   - V6 -Level with V5 at left midaxillary line
8. Instruct patient to remain still.
9. Press the appropriate button to acquire the 12 Lead ECG.
10. If the monitor detects signal noise (such as patient motion or a disconnected electrode), the 12 Lead acquisition will be interrupted until the noise is removed.
11. Once acquired, transmit the ECG data by fax (where available) to the appropriate hospital.
12. Contact the receiving hospital to notify them that a 12 Lead ECG has been sent.
13. Monitor the patient while continuing with the treatment protocol.
14. Download data as per guidelines and attach a copy of the 12 lead to the Patient Care Report.
15. Document the procedure, time, and results on/with the patient care report (PCR)
Synchronized Cardioversion

Clinical Indications:

- **Unstable** patient with a tachyarrhythmia (rapid atrial fibrillation known to be acute onset, supraventricular tachycardia, ventricular tachycardia).
- Patient is not pulseless (the pulseless patient requires unsynchronized cardioversion, i.e., defibrillation).

Procedure:

1. Ensure the patient is attached properly to a monitor/defibrillator capable of synchronized cardioversion.
2. Apply pads to the patient’s chest in either of the following positions: anterior-posterior (preferred); or anterior-anterior.
3. Have all equipment prepared for unsynchronized cardioversion/defibrillation if the patient fails synchronized cardioversion and the condition worsens.
4. Consider the use of pain or sedating medications.
5. Set energy selection to appropriate level per AHA guidelines.
   a. For pediatrics start with 0.5-1J/kg, if unsuccessful increase to 2J/kg.
6. Set monitor/defibrillator to synchronized cardioversion mode.
7. Make certain all personnel are clear of patient.
8. Press and hold the button to cardiovert. Stay clear of the patient until you are certain the energy has been delivered. NOTE: It may take the monitor/defibrillator several cardiac cycles to “synchronize”, so there may a delay between activating the cardioversion and the actual delivery of energy.
10. If the patient’s condition is unchanged, repeat steps 2 to 8 above, using appropriate energy level per AHA guidelines.
11. If the patient has not improved after two attempts of unsynchronized cardioversion, contact medical control.
Cardiac Defibrillation - Automated

Clinical Indications:

- Non-traumatic cardiac arrest in patients older than 1 year of age

Procedure:

1. Confirm the cardiac arrest. Instruct partners or First Responders to initiate CPR while the defibrillator is set up. If defibrillation is underway by First Responders, continue resuscitation as outlined.

2. Turn the defibrillator on and begin documentation.

3. Attach the cables to the appropriate pads and then apply the pads to the patient’s chest in the proper position.

4. **Stop CPR and clear the patient** prior to rhythm analysis.

5. Analyze the patient’s rhythm by pushing the “analyze” button.

6. **Assertively state “CLEAR” and visualize that no one, including yourself, is in contact with the patient prior to defibrillation.**

7. Defibrillate if appropriate by depressing the “shock” button.

8. The sequence of defibrillation charges is preprogrammed for monophasic defibrillators. Biphasic defibrillators will determine the correct joules accordingly.

9. Immediately resume CPR for two minutes and then repeat steps 4 - 7 three more times if indicated.

10. If “no shock advised” appears, perform CPR for two minutes and then reanalyze.

11. Transport and continue treatment as indicated.
Cardiac Defibrillation - Manual

Clinical Indications:

- Non-traumatic cardiac arrest with ventricular fibrillation or pulseless ventricular tachycardia

Procedure:

1. Clinically confirm the diagnosis of cardiac arrest and identify the need for defibrillation.
2. After application of an appropriate conductive agent if needed, apply defibrillation paddles or hands free pads to the patient’s chest in the proper position.
3. Set the appropriate energy level according to AHA guidelines and device type (mono vs biphasic).
4. Charge the defibrillator to the selected energy level.
   a. for pediatrics start with 0.5-1J/kg, if unsuccessful increase to 2J/kg
5. Assure proper placement of the paddles or pads.
6. Make sure fast patch pads have good skin contact.
7. Assertively state, “CLEAR” and visualize that no one, including yourself, is in contact with the patient.
8. Deliver the counter-shock by depressing the shock button.
9. Immediately resume CPR for 2 minutes.
10. Repeat the procedure as indicated by patient response and ECG rhythm.
11. Document the dysrhythmia and the response to defibrillation with ECG strips on/with the PCR.
Cardiac Transcutaneous Pacing

Clinical Indications:

- Patients with symptomatic bradycardia.
- Pediatric patients requiring external transcutaneous pacing require the appropriate placement of pads for pediatric patients per the manufacturer’s guidelines.
- If used in asystole, it must be used early.

Procedure:

1. Oxygen, ECG monitor, IV (if possible) should be in place prior to pacing.
2. Confirm the presence of the dysrhythmia (include a copy of the ECG strip) and evaluate the patient’s hemodynamic status.
3. Adjust the QRS amplitude so the machine can sense the intrinsic QRS activity.
4. Apply pacing pads to the patient’s chest in either of the following positions - anterior-posterior or preferred anterior-anterior.
5. Attach the pacing pads to the therapy cable from the machine.
6. Consider the use of sedation and or analgesia if patient is uncomfortable.
7. Turn the pacer on.
8. Observe the ECG screen for a “sense” marker on each QRS complex. If a “sense” marker is not present, readjust ECG size or select another lead.
9. Set the desired pacing rate (60-80).
10. Start at the lowest setting and increase the current slowly while observing the ECG screen for evidence of electrical pacing capture.
11. Assess the patient’s response to the pacing therapy.
12. Document the dysrhythmia and the response to external pacing with ECG strips.
Central Venous Device

Clinical Indications:
- Need for vascular access using a patient's current externally accessible central venous device.
- For multi-lumen lines, PICC lines, Hickman's and Groshong catheters.

Procedures:
1. Apply gloves.
2. Gather all equipment required: antiseptic; 10 mL syringe of Normal Saline; IV solution and tubing; extra syringes
3. If thumb or slide clamps are present, assure they are in the locked position before beginning. Clamps need to be closed before removing any syringe or adapter from the hub. Always clean the hub with antiseptic while changing of syringes or adapters.
4. Clean hub with alcohol swab and attach a syringe of saline.
5. Flush with 5 ml of Normal Saline, aspirate for blood return and flush with the remaining 5 ml of Normal Saline.
6. Regardless of the type of PICC line access, if resistance is met, assume the lumen is obstructed and repeat procedure on the second lumen if available. Also repeat the procedure on the second lumen if aspirating for blood is unsuccessful.
7. If a clamp is present, close it, remove the syringe, clean the hub, attach a new syringe, open the clamp and aspirate 5ml of blood to discard.
8. Attach a new syringe if needed, open the clamp and draw blood for labs.
9. Establish IV fluids at minimum TKO rate or desired infusion rate and secure the line.
10. Discontinue if complication occurs.

Accessing a Subcutaneous Implanted Port
1. Don mask and sterile gloves.
2. Palpate port to locate septum.
3. Stabilize device with thumb and index finger.
4. Cleanse area around port with 3 separate antiseptic swabs/pads.
5. While stabilizing port, insert Huber needle at 90 degree angle through skin into the septum. Apply pressure until needle comes into contact with metal backing of device.
6. Aspirate for blood to confirm placement. If no blood return, attempt to irrigate with saline and aspirate blood again.
7. Add new syringe of saline and flush with saline.
8. Assess for swelling around device. If swelling occurs, STOP INJECTION.
9. Tape down Huber needle “wings”.
10. Apply transparent dressing.
Hickman Catheter

Central Venous Device (continued)
Chest Decompression

Clinical Indications:

- Tension pneumothorax

Procedure:

1. Confirm presence of a tension pneumothorax or identify strong clinical evidence in a rapidly deteriorating patient in the setting of major trauma. Consider in the setting of refractory PEA.

2. Locate the insertion site at the second intercostal space at the midclavicular line on the affected side of the chest. May consider fifth intercostal space in the midaxillary line.

3. Prep the insertion site.

4. Insert the 2 inch, 10/12/14/16 gauge angiocath (1¼ inch, 18 gauge angiocath in patients less than 8 years) with a 10cc syringe attached, by directing the needle just over the top of the third rib (2nd intercostal space) or (fifth intercostal space in the midaxillary line) to avoid intercostal nerves and vessels which are located on the inferior rib borders.

5. Advance the catheter 1-2 inches (3/4 - 1 inch in patients less than 8 years) through the chest wall. Pull back on the plunger of the syringe as the needle is advanced. Tension should be felt until the needle enters the pleural space. A “pop” or “give” may also be felt. Do not advance the needle any further.

6. Withdraw the needle and advance the catheter until flush with the skin. Listen for a gush or “hiss” of air which confirms placement and diagnosis. Caution: this is frequently missed due to ambient noise.

7. Dispose of the needle properly and never reinset into the catheter.

8. Secure the catheter and rapidly transport the patient providing appropriate airway assistance.
Childbirth / Fundal Massage

Clinical Indications for Childbirth:

- Imminent delivery with crowning

Procedure for Childbirth:

1. Delivery should be controlled so as to allow a slow controlled delivery of the infant. This will prevent injury to the mother and infant.
2. Support the infant’s head as needed.
3. Check the umbilical cord surrounding the neck. If it is present, slip it over the head. If unable to free the cord from the neck, double clamp the cord and cut between the clamps.
4. Suction the airway with a bulb syringe. Mouth then nose.
5. Grasping the head with hands over the ears, gently aim the baby down to allow delivery of the anterior shoulder.
6. Gently aim the baby up to allow delivery of the posterior shoulder.
7. Slowly deliver the remainder of the infant.
8. Clamp the cord 2 inches from the abdomen with 2 clamps and cut the cord between the clamps.
9. Record APGAR scores at 1 and 5 minutes. Pg. 74
10. Child should be placed skin to skin with mother as soon as possible.
11. Follow the Newborn Resuscitation/Post Delivery Care for further treatment. Pg. 60
12. The placenta will deliver spontaneously, usually within 5 minutes of the infant. Do not force the placenta to deliver.
13. Continue rapid transport to the hospital.

Clinical Indications for Fundal Massage:

- Post-partum hemorrhage AFTER placental delivery

Procedure for Fundal Massage:

1. Assure complete delivery of placenta.
2. Place absorbent material underneath pelvis of patient to facilitate the estimation of blood loss.
3. Place the ulnar aspect of your non dominant hand perpendicular to the abdomen, parallel and just superior to the symphysis pubis.
4. Exert moderate pressure up and in toward the spine.
5. With your dominant hand find the uterine fundus and begin a “kneading” motion using moderate pressure.
6. This procedure will be uncomfortable to the patient but should not be painful.
7. Uterine massage should result in uterine contracture and the feeling of a firm “grapefruit” sized mass.
8. Continue procedure until bleeding subsides.
9. Document patient condition, procedure and response on PCR.
Stroke FAST Assessment

Clinical Indications:

- Suspected Stroke Patient

Procedure:

1. Assess and treat suspected stroke patients as per protocol.
2. Use FAST assessment to evaluate three major physical findings to identify a stroke patient who requires rapid transport to the hospital.
3. If possible, prehospital care providers should establish the time of onset of stroke signs and symptoms.

Stroke test

1. **Facial droop** – Have patient show their teeth or smile.
   a. Normal – Both sides of face move equally
   b. Abnormal – One side of the face does not move as well as the other.
2. **Arm drift** – Have the patient close their eyes and hold both arms straight out with palms upward.
   a. Normal – Both arms move the same direction or do not move at all (pronator grip may be helpful).
   b. Abnormal – One arm does not move or one arm drifts down compared to the other.
3. **Speech** – Have the patient say “you can’t teach an old dog new tricks”.
   a. Normal – The patient uses the correct words with no slurring
   b. Abnormal – The patient slurs their words, uses inappropriate words or is unable to speak.
4. **Time** – Identify onset of symptoms or last known normal

Any positive findings in steps 1-3 may indicate stroke and you should consider activating your Code Stroke per County Operating Procedure.

Report specific findings for example: left side facial drooping, slurred speech.
## CPR (High Density)

<table>
<thead>
<tr>
<th>MANEUVER</th>
<th><strong>Adult</strong> HCP: Adolescent and older</th>
<th><strong>Child</strong> HCP: 1 year to adolescent</th>
<th><strong>Infant</strong> Under 1 year old</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RECOGNITION</strong></td>
<td>Unresponsive (for all ages)</td>
<td>No breathing or only gasping (i.e., only gasping)</td>
<td>No pulse palpated within 10 seconds for all ages (HCP only)</td>
</tr>
<tr>
<td><strong>ACTIVATE:</strong> Emergency Response Number (lone rescuer)</td>
<td>Activate when victim found unresponsive HCP: if asphyxial arrest likely, call after 5 cycles (2 minutes) of CPR</td>
<td>Activate after performing 5 cycles of CPR For sudden, witnessed collapse, activate after verifying that victim unresponsive</td>
<td></td>
</tr>
<tr>
<td><strong>CPR Sequence</strong></td>
<td>C-A-B</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Compression Rate</strong></td>
<td>At least 100/min</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Compression Depth</strong></td>
<td>At least 2 inches (5cm)</td>
<td>At least 1/3 AP diameter About 2 inches (5cm)</td>
<td>At least 1/3 AP diameter About 1 1/2 inches (5cm)</td>
</tr>
<tr>
<td><strong>Chest Wall Recoil</strong></td>
<td>Allow complete recoil between compressions HCPs rotate compressors every 2 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Compression Interruptions</strong></td>
<td>Minimize interruptions in chest compressions Attempt to limit interruptions to &lt;10 seconds</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Airway</strong></td>
<td>Head tilt-chin lift (HCP suspected trauma: jaw thrust)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Compression-to-ventilation ratio (until advanced airway placed)</strong></td>
<td>30:2 1 or 2 rescuers</td>
<td>30:2 Single rescuer 15:2 2 HCP rescuers</td>
<td></td>
</tr>
<tr>
<td><strong>Ventilations: when rescuer untrained or trained and not proficient</strong></td>
<td></td>
<td>Compressions only</td>
<td></td>
</tr>
<tr>
<td><strong>Ventilations with advanced airway (HCP)</strong></td>
<td>1 breath every 6-8 seconds (8-10 breaths/min) Asynchronous with chest compressions About 1 second per breath Visible chest rise</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Foreign-body airway obstruction</strong></td>
<td><strong>Responsive:</strong> Abdominal thrusts <strong>Unresponsive:</strong> CPR with airway check</td>
<td><strong>Responsive:</strong> Back slaps and chest thrusts <strong>Unresponsive:</strong> CPR with airway check</td>
<td></td>
</tr>
<tr>
<td><strong>Defibrillation</strong></td>
<td>Attach and use AED as soon as available. Minimize interruptions in chest compressions before and after shock; resume CPR beginning with compressions immediately after each shock.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Discontinuation of CPR  
Do not attempt Resuscitation  
Determination of Field Death

**DO NOT ATTEMPT RESUSCITATION:** Obvious death
- Decomposition of body tissue
- Total decapitation
- Total incineration
- Total separation or destruction of the heart or brain
- Fetus with a foot length of 33mm or less
- Traumatic Arrest (Non-breathing and pulseless)
- Rigor Mortis

POLST form or DNR papers are dated and signed by the patient with appropriate witnessed signatures and there is no question they belong to the patient. The patient may be of any age.

**DISCONTINUATION WITHOUT MEDICAL CONTROL:** (must meet 3 requirements)
- Non-breathing
- Pulseless
- Asystole in two leads OR No Shock Advised on AED (EMT’s can transmit Rhythm strip to hospital for convenience)
- Lividity

*Note: Exception – suspected hypothermia requires full resuscitation efforts*

**DISCONTINUATION OF EFFORTS:**
1. Endotracheal intubation and drug therapy appropriate to the presenting rhythm, according to AHA guidelines, have been initiated and the patient remains apneic, pulseless, and in asystole or PEA.
2. Compelling reasons to cease CPR/Resuscitation efforts. Such as but not limited to
   - End stage of terminal condition
   - Living will
   - Verbal request by family

*Note: Prehospital care providers desiring support in the field may contact the Medical Control at any time for Determination of Death*

3. DNR or POLST form has been presented after CPR was initiated.

Once death has been determined and resuscitation efforts discontinued, all ALS therapeutic modalities initiated during the resuscitation must be left in place until it has been determined that the patient will not be a Coroners’ case. This includes such equipment as endotracheal tubes, IV catheters, monitor electrodes and personal items including clothes, jewelry etc. If the coroner releases the body while the prehospital care provider is still on scene, remove all medical equipment used during the resuscitation.

Time of death recorded on PCR.
Glucometry

Clinical Indications:

- Patients with suspected hypoglycemia (diabetic emergencies, change in mental status, bizarre behavior, etc.)
- Patients with Altered Mental Status

Procedure:

1. Gather and prepare equipment.
2. Blood samples for performing glucose analysis should be obtained according to device manufacturers recommendations.
3. Place correct amount of blood on reagent strip or site on glucometer per the manufacturer’s instructions.
4. Time the analysis as instructed by the manufacturer.
5. Document the glucometer reading and treat the patient as indicated by the presenting symptoms, analysis, and protocol.
6. Repeat glucose analysis as indicated for reassessment after treatment and document patient response on the PCR.
7. Follow manufacture recommendations for device calibration.
<table>
<thead>
<tr>
<th></th>
<th>Infants</th>
<th>Children/Adults</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eye Opening</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spontaneous</td>
<td>4</td>
<td>Spontaneous</td>
</tr>
<tr>
<td>To speech/sound</td>
<td>3</td>
<td>To speech</td>
</tr>
<tr>
<td>To pain</td>
<td>2</td>
<td>To pain</td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td>No response</td>
</tr>
<tr>
<td><strong>Verbal Response</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coos or babbles</td>
<td>5</td>
<td>Oriented</td>
</tr>
<tr>
<td>Irritable crying</td>
<td>4</td>
<td>Confused</td>
</tr>
<tr>
<td>Cries to pain</td>
<td>3</td>
<td>Inappropriate words</td>
</tr>
<tr>
<td>Moans to pain</td>
<td>2</td>
<td>Incomprehensible</td>
</tr>
<tr>
<td>None</td>
<td>1</td>
<td>None</td>
</tr>
<tr>
<td><strong>Motor Response</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spontaneous</td>
<td>6</td>
<td>Obeys commands</td>
</tr>
<tr>
<td>Withdraws touch</td>
<td>5</td>
<td>Localizes pain</td>
</tr>
<tr>
<td>Withdraws pain</td>
<td>4</td>
<td>Withdraws pain</td>
</tr>
<tr>
<td>Abnormal flexion</td>
<td>3</td>
<td>Abnormal flexion</td>
</tr>
<tr>
<td>Abnormal extension</td>
<td>2</td>
<td>Abnormal extension</td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td>No response</td>
</tr>
</tbody>
</table>
Injections-Subcutaneous, Intramuscular

Clinical Indications:

- When medication administration is necessary and the medication must be given via the SQ or IM route or as an alternative route in selected medications.

Procedure:

1. Receive and confirm medication order or perform according to standing orders.
2. Prepare equipment and medication, expelling air from the syringe.
3. Needle size Subcutaneous Injection
   a. 25g 5/8 inch needle for average adult
   b. 25-27g ½ inch needle for infant, child, elderly, or thin patient
   c. The most common site for subcutaneous injection is the arm. Injection volume should not exceed 1 cc.
4. Needle size Intramuscular injection:
   a. 20-25g 1-2 inch depending on patient size.
   b. The possible injection sites for intramuscular injection include the arm, buttock and thigh.
5. Injection volume should not exceed 1 cc for the arm and not more than 2.5 cc in the thigh or buttock.
6. The thigh should be used for injections in pediatric patients and injection volume should not exceed 1 cc.
7. Explain the procedure to the patient and reconfirm patient allergies.
8. Expose the selected area and cleanse the injection site with alcohol.
9. Insert the needle into the skin with a smooth, steady motion
10. SQ: 45 degree angle IM: 90 degree angle
11. Aspirate for blood. If blood is aspirated do not inject medication. Discard and begin again.
12. Inject the medication.
13. Withdraw the needle quickly and dispose of properly without recapping.
14. Apply pressure to the site.
15. Monitor the patient for the desired therapeutic effects as well as any possible side effects.
Intranasal Medication Delivery

Clinical Indications:
- When medication administration is necessary and an alternative route is not available or impractical.

Materials:
1. Appropriate sized syringe and needle/needleless device to draw up medication.
2. Atomizer
3. Medication of appropriate concentration for nasal medication delivery

Procedure:
1. Aspirate the proper volume of medication required to treat the patient. An extra 0.1 mL of medication should be drawn up to account for the dead space within the atomizer at the end of the procedure.
2. Remove the syringe from the needle/needleless device
3. Attach the atomizer tip via Luer lock mechanism (twist into place).
4. Using your free hand to hold the crown of the head, place the tip of the atomizer snugly into the nostril aiming slightly upward and outward (toward the ear on the same side).
5. Briskly compress the syringe plunger to deliver half the medication into the nostril.
6. Move the device to the opposite nostril and administer the remaining medication as in step 5.

Notes:
Medications which are appropriate for intranasal use include:
- Diazepam (5mg/mL) 2-5mg
- Fentanyl (50mcg/mL) 25-50mcg
- Glucagon (solubilize 2mg vials in 1mL sterile water) 1-2 mg
- Ketamine (100mg/mL) 50-100mg
- Lorazepam (2mg/mL) 0.5-4mg
- Midazolam (5mg/mL) 1-10mg
- Naloxone (1mg/mL) 0.4-2mg
Nasogastric Tube Insertion

Clinical Indications:

- Gastric decompression in intubated patients.
- Administration of activated charcoal in patients with altered mental status with a secured airway.

Procedure:

1. Assemble all supplies. Assure functioning suction unit.
2. Estimate insertion length by superimposing the tube over the body from the nose, to the ear, to the stomach.
3. Mark the proper insertion distance with tape.
4. Flex the neck if not contraindicated to facilitate esophageal passage.
5. Liberally lubricate the distal end of the tube and pass through the patient’s nostril along the floor of the nasal passage. Do not orient the tip upward into the turbinates. This increases the difficulty of the insertion and may cause bleeding.
6. In the setting of an unconscious, intubated patient or a patient with facial trauma, oral insertion of the tube may be considered or preferred.
7. Continue to advance the tube gently until the appropriate distance is reached.
8. Confirm placement by injecting 20cc of air and auscultate for the swish or bubbling of the air over the stomach. Additionally, aspirate gastric contents to confirm proper placement.
9. Secure the tube.
10. Decompress the stomach of air and food either by connecting the tube to suction or manually aspirating with the large catheter tip syringe.
11. Mechanical suction should not reach high setting.
12. Document the procedure, time, patient response, and result (success) on/with the patient care report (PCR).
Orthostatic Blood Pressure Measurement

Clinical Indications:

- Patient situations with suspected blood / fluid loss / dehydration
- Patients larger than the Length Based tape

Procedure:

1. Assess the need for orthostatic vital sign measurement.
2. Obtain patient’s pulse and blood pressure while supine.
3. Have patient stand for two minutes.
4. Obtain patient’s pulse and blood pressure while standing.
5. If pulse has increased by 30 BPM or systolic blood pressure decreased by 30 mmHg, the orthostatics are considered positive.
6. If patient is unable to stand, orthostatics may be taken while the patient is sitting with feet dangling.
7. If positive orthostatic changes occur while sitting, DO NOT continue to the standing position.
8. Patients on prolonged beta-blocker therapy will not demonstrate orthostatic vital sign changes. Provider must complete assessment and utilize clinical judgment.
9. Document the time and vital signs for supine and standing positions on/with the patient care report (PCR).
10. Determine appropriate treatment based on protocol.
Pain Assessment and Documentation - ADULT

Clinical Indications:

- Any patient with pain

Definitions:

- Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage.
- Pain is subjective (whatever the patient says it is).

Procedure:

1. Initial and ongoing assessment of pain intensity and character is accomplished through the patient’s self-report.
2. Pain should be assessed and documented during initial assessment, before starting pain control treatment, and with each set of vitals.
3. Pain should be assessed using the appropriate approved scale.
4. Two pain scales are available: the 0 - 10 and the Wong - Baker "faces" scale.
5. 0 – 10 Scale: the most familiar scale used by EMS for rating pain with patients. It is primarily for adults and is based on the patient being able to express their perception of the pain as related to numbers. Avoid coaching the patient; simply ask them to rate their pain on a scale from 0 to 10, where 0 is no pain at all and 10 is the worst pain ever.

Visual Analog Scale

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Pain</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>Worst pain</td>
</tr>
</tbody>
</table>

6. Wong – Baker “faces” scale: may be used with geriatrics or any patient with a language barrier. The faces correspond to numeric values from 0-10. This scale can be documented with the numeric value or the textual pain description.

Pelvic Fracture Stabilization

Clinical Indications:

- Physical exam indicates and mechanism of injury suggests a pelvic fracture

Procedure:

1. Physical exam shows instability of pelvis with compression.
2. Assess the abdomen and neurovascular status of the lower extremities.
3. Assess for blood at the perineum
4. Fold a sheet lengthwise into a swathe approximately 12 to 18 inches wide.
5. Pass this swathe under the patient’s buttocks and tie circumferentially around the pelvis covering buttocks posteriorly. The swathe should be just below the iliac crests.
6. Re-assess the abdomen and neurovascular status of the lower extremities.

OR

1. Physical exam shows instability of pelvis with compression.
2. Assess the abdomen and neurovascular status of the lower extremities.
3. Assess for blood at the perineum.
4. Utilize a commercial pelvic stabilization device following the manufacturer’s specifications.
5. Re-assess the abdomen and neurovascular status of the lower extremities.
Pulse Oximetry

Clinical Indications:

- Patients with suspected hypoxemia.

Procedure:

1. Turn the machine on and allow for self-tests.
2. Apply probe to patient’s finger or any other digit as recommended by the device manufacturer.
3. Allow machine to register saturation level.
4. Record time and initial saturation percent on room air if possible on/with the patient care report (PCR).
5. Verify pulse rate on machine with palpated pulse of the patient.
6. Monitor critical patients continuously until arrival at the hospital. If recording a one-time reading, monitor patients for a few minutes as oxygen saturation can vary.
7. Document percent of oxygen saturation every time vital signs are recorded and in response to therapy to correct hypoxemia.
8. In general, normal saturation is $\text{SpO}_2$ 97-99%. Below 94%, suspect a respiratory compromise.
9. **Use the pulse oximetry as an added tool for patient evaluation. Treat the patient, not the data provided by the device.**
10. The pulse oximeter reading should never be used to withhold oxygen from a patient in respiratory distress or when it is the standard of care to apply oxygen despite good pulse oximetry readings, such as chest pain.
11. Factors which may reduce the reliability of the pulse oximetry reading include:
   (a) Poor peripheral circulation (blood volume, hypotension, hypothermia)
   (b) Excessive pulse oximeter sensor motion
   (c) Fingernail polish (may be removed with acetone pad)
   (d) Carbon monoxide bound to hemoglobin
   (e) Irregular heart rhythms (atrial fibrillation, SVT, etc.)
   (f) Jaundice
   (g) Excessive light entering the side of the probe causing "washout" of the signal
Restraints

Clinical Indications:

- Patients with actual or potential threat to self or others.
- Involuntary hold

Procedure:

1. Planning:
   A. Request assistance from Law Enforcement.
   B. EMS personnel are not to knowingly place themselves at risk during the process of restraining a patient.
   C. Obtain necessary resources to manage scene and patient.
   D. Assess patient for any condition that may contribute to violent behavior. Treatment for identified conditions is to be initiated according to protocol immediately after controlling the situation and patient behavior.
   E. Consult Medical Control as soon as possible regarding the application and use of restraints.
   F. Verbal de-escalation techniques are to be implemented and documented. If verbal de-escalation fails, providers may need to implement physical and or chemical restraint measures.

2. Application of restraints:
   A. Obtaining and preparing appropriate restraints
      - Padded leather restraints
      - Soft restraints (i.e. Posey, Velcro or seatbelt type)
      - Any method utilized must allow for quick release
   B. Assessing the safety of the situation
      - Complete a visual check for potential weapons
      - If there is suspicion of weapon involvement request involvement of Law Enforcement prior to engaging in patient interaction.
      - Providers should remove any potential weapons from their person. (i.e., pens, flashlights, trauma shears etc.)
   C. Assigning a contact for the out of control person
      - Minimize the number of people speaking to the out of control person.
      - Continue use of verbal de-escalation
   D. Designating who will direct and cue team members in the application of restraints
      - Assign each limb and the head to specific team members
      - Give the signal to go hands-on (this may be a non-verbal signal)
      - Supervise the application of restraints
      - Give the verbal signal for hands-off (RELEASE)
      - No team member is to release their designated limb until directed
   E. Conduct a preliminary debriefing
      - Assess team members and patient for any injuries
      - Re-assess restraints for appropriate application
3. Reassessment / Chemical Adjuncts:
   A. Following the application of physical restraints, EMS personnel must assess the patient to determine the need for administration of an anxiolytic, or sedative to prevent continued forceful struggling against the restraint. Continued forceful struggling against the restraint can lead to hyperkalemia, rhabdomyolysis, or cardiac arrest. See Psychological/Emotional/Excited Delirium Pg. 35
   B. Chemical adjuncts to physical restraints are to be administered in accordance with patient care protocols and / or on line medical direction.
   C. Post restraint assessment must include hemodynamic, respiratory, and neurologic systems. Restrained extremities should be evaluated for pulse quality, capillary refill, color, nerve and motor function distal to restraints, a minimum of every fifteen minutes.

4. Documentation:
   A. In addition to standard information, the Medical Incident Report must document the following:
      i. Complete assessment of patient
      ii. Objective description of patient behavior (competence)
      iii. Use and effectiveness of verbal de-escalation techniques
      iv. Reason for physical restraint
      v. Explanation offered to the patient
      vi. Type of restraint used and time applied
      vii. Post restraint serial extremity evaluation
      viii. Post evaluation of the patient’s respiratory status
      ix. Condition of the patient in-route and on transfer to Emergency Department Staff.

5. Approved restraint devices / patient positioning:
   A. The following forms of restraint are not to be utilized by EMS personnel:
      i. “Sandwiching” patients between backboards, scoop-stretchers, or mattresses, as a restraint
      ii. Restraining a patient’s hands and feet behind the patient (i.e. hog-tying)
      iii. Methods or other material applied in a manner that could cause respiratory, vascular, or neurological compromise, including the use of “choke holds”.
      iv. Locking handcuffs
      v. Hard plastic ties or any restraint device requiring a key to remove
   B. Patients should not be transported in the prone position. EMS personnel must ensure that the patient’s position does not compromise the patient’s respiratory, circulatory, or neurological systems, and does not preclude any necessary medical intervention to protect the patient’s airway should vomiting occur.
   C. Occasionally it is necessary for Law Enforcement to apply restraint devices that are not approved for EMS use (e.g. handcuffs) in order to protect the safety of the patient and the public. As soon as the situation is controlled EMS personnel are to exchange these devices for those that are approved for EMS use. In the event that restraint exchange cannot safely occur, Law Enforcement must accompany patient during transport.
Spinal Clearance

Clinical Indication:

- To determine whether it is appropriate for the **Certified Provider** to forgo full spinal immobilization i.e. rigid collar, backboard, three point restraining device and head immobilization devices, in the prehospital setting.

Procedure:

Assess for the following:

1. Midline bony spinal tenderness or palpable deformity on exam
2. Any neurologic complaint (numbness, weakness)
3. Blunt trauma with altered mental status
4. High energy mechanism of injury plus any of the following:
   a. Drug/alcohol intoxication
   b. Inability to communicate (includes language barrier)
   c. Presence of a painful distracting injury

If any of the above finding are present, full spinal immobilization is to be implemented

Patients who do not require full spinal immobilization must have all of the following:

1. GCS 15
2. No spine tenderness or anatomic abnormality
3. No acute neurologic impairment
4. No distracting injury
5. No evidence of intoxication
6. Penetrating injury with no evidence of spinal cord injury

Spinal precautions can be maintained by the use of a rigid cervical collar and securing the patient firmly to the EMS stretcher if patients are:

1. Ambulatory at the scene
2. Must be transported for a protracted time
Spinal Motion Restriction

Clinical Indication:

- To determine whether it is appropriate for the **Certified Provider** to apply spinal motion restrictions in the prehospital setting.

The following constitutes a positive spinal assessment and any ONE positive finding indicates the need for spinal motion restrictions:

1. Midline bony spinal tenderness or palpable deformity on exam
2. Any neurologic complaint (numbness, weakness).
3. High energy mechanism of injury plus any of the following:
   a. Altered mental status
   b. Drug/alcohol intoxication
   c. Inability to communicate (includes language barrier)
   d. Presence of a painful distracting injury
   e. Age <3

Procedure:

1. Place the patient in the appropriately sized C-collar
2. If the patient is **ambulatory** on scene, or if the patient can **safely** self-extricate:
   a. Assist the patient to the EMS stretcher
   b. Transport the patient in a supine position or in a position of comfort if supine position is not tolerated.
3. If the patient is not ambulatory or if extrication is required:
   a. Use a rigid extrication device once patient is on the EMS stretcher, if possible.
4. The head may be supported with head blocks or similar device to prevent rotation.
5. Secure the patient with seatbelts to the EMS stretcher in the supine position or a position of comfort if supine position is not tolerated.

Patients who do not require spinal motion restriction must have all of the following:

1. GCS 15
2. No spine tenderness or anatomic abnormality
3. No acute neurologic impairment
4. No distracting injury
5. No evidence of intoxication

If the patient has a negative spinal assessment:

1. Transport in a position of comfort
2. Place in the appropriately sized C-collar if age >65

See Notes: Next Page
Notes:

No patient shall be transported on a rigid extrication device **unless** removing patient from the device interferes with critical treatments or interventions.

Patients who are victims of penetrating trauma **without focal neurological deficits** do not require spinal immobilization.

Upon arrival at the receiving hospital, the patient shall be transferred to the hospital gurney via a sliding board.

C-collars may be removed if they interfere with airway management, or if causing extreme distress.

Examples of a painful distracting injury include obvious/suspected long bone fractures, large burns or any injury producing acute functional impairment.
Spinal Immobilization

Clinical Indications:

- Need for spinal immobilization as determined by protocol

Procedure:

1. Gather a backboard, straps, C-collar appropriate for patient’s size, tape, and head rolls or similar commercial device to secure the head.

2. Explain the procedure to the patient.

3. Place the patient in an appropriately sized C-collar while maintaining in-line stabilization of the C-spine. This stabilization, to be provided by a second rescuer, should not involve traction or tension but rather simply maintaining the head in a neutral, midline position while the first rescuer applied the collar.

4. Once the collar is secure, the second rescuer should still maintain their position to ensure stabilization (the collar is helpful but will not do the job by itself.)

5. Place the patient on a long spine board with the log-roll technique if the patient is supine or prone. For the patient in a vehicle or otherwise unable to be placed prone or supine, place them on a backboard by the safest method available that allows maintenance of inline spinal stability.

6. Stabilize the patient with straps and head rolls/tape or other similar device. Once the head is secured to the backboard, the second rescuer may release manual in-line stabilization.

7. NOTE: Patient must be secured to stretcher. Some patients, due to size or age, will not be able to be immobilized through inline stabilization with standard backboards and C-collars. Never force a patient into a non-neutral position to immobilize them. Such situations may require a second rescuer to maintain manual stabilization throughout the transport to the hospital.


PEDIATRIC PATIENTS (less than 12 yrs.) should have padding under shoulders and can be placed on a papoose or stabilized in a child car seat.
Splinting

Clinical Indications:

- Immobilization of an extremity for transport, either due to suspected fracture, sprain, or injury.
- Immobilization of an extremity for transport to secure medically necessary devices such as intravenous catheters.

Procedure:

1. Assess and document pulses, sensation, and motor function prior to placement of the splint. If no pulses are present and a fracture is suspected, consider reduction of the fracture prior to placement of the splint.
2. Remove all clothing, jewelry or restricting items from the extremity.
3. Select a site to secure the splint both proximal and distal to the area of suspected injury, or the area where the medical device will be placed.
4. Do not secure the splint directly over the injury or device.
5. Place the splint and secure with Velcro, straps, or bandage material (e.g., kling, kerlex, cloth bandage, etc.) depending on the splint manufacturer and design.
6. Document pulses, sensation, and motor function after placement of the splint. If there has been a deterioration in any of these 3 parameters, remove the splint and reassess.
7. If a femur fracture is suspected and there is no evidence of pelvic and/or knee fracture or instability, the following procedure may be followed for placement of a femoral traction splint:
   a. Assess neurovascular function as in #1 above.
   b. Place the ankle device over the ankle.
   c. Place the proximal end of the traction splint on the posterior side of the affected extremity, being careful to avoid placing too much pressure on genitalia or open wounds. Make certain the splint extends proximal to the suspected fracture. If the splint will not extend in such a manner, reassess possible involvement of the pelvis.
   d. Extend the distal end of the splint at least 6 inches beyond the foot.
   e. Attach the ankle device to the traction crank.
   f. Twist until moderate resistance is met.
   g. Reassess alignment, pulses, sensation, and motor function. If there has been deterioration in any of these 3 parameters, release traction and reassess.
8. Document the time, type of splint, and the pre and post assessment of pulse, sensation, and motor function in the patient care report (PCR).
Taser Dart Removal

Clinical Indication:

- The darts should only be removed in the field if they do not involve the eye, face, neck, breast or groin.
- Patients with retained darts in these areas should be transported to a hospital for removal by a physician.

Procedure:

1. Prior to removal, patient must be adequately restrained.
2. Body substance isolation procedures must be taken.
3. Ensure that wires are disconnected from the gun or the wires have been cut.
4. On the body part which the barbed dart (straight #8 fish hook) is imbedded, apply pressure to either side of the dart and pull it straight out.
5. Apply alcohol or iodine to the puncture area and dress wound.
6. Treat the dart as a “contaminated sharp”. The dart should be placed in a biohazard sharps container and turned over to law enforcement.
7. Patient must be thoroughly assessed to determine if other medical problems or injuries are present.
8. If the individual does not have any other presenting injuries/illness, they may be left in the custody/care of law enforcement.
9. If transported to the hospital, follow the Patient Care Procedure regarding restraints for aggressive or violent patients.
10. Detailed documentation is very important as it is likely to become evidence.
Temperature Measurement

Clinical Indications:

- Monitoring body temperature in a patient with suspected infection, hypothermia, hyperthermia, or to assist in evaluating resuscitation efforts.

Procedure:

1. If clinically appropriate, allow the patient to reach equilibrium with the surrounding environment. For example, the temperature of a child or infant that has been heavily bundled is often inaccurate, so “unbundle” the child for 3 to 5 minutes before obtaining temperature.

2. For adult patients that are conscious, cooperative, and in no respiratory distress, an oral temperature is preferred (steps 3 to 5 below). For infants or adults that do not meet the criteria above, a rectal temperature is preferred (steps 6 to 8 below).

3. To obtain an oral temperature, ensure the patient has no significant oral trauma and place the thermometer under the patient’s tongue with appropriate sterile covering.

4. Have the patient seal their mouth closed around thermometer.

5. If using an electric thermometer, leave the device in place until there is indication an accurate temperature has been recorded (per the “beep” or other indicator specific to the device). If using a traditional thermometer, leave it in place until there is no change in the reading for at least 30 seconds (usually 2 to 3 minutes). Proceed to step 9.

6. Prior to obtaining a rectal temperature, assess whether the patient has suffered any rectal trauma by history and/or brief examination as appropriate for patient’s complaint.

7. To obtain a rectal temperature, cover the thermometer with an appropriate sterile cover, apply lubricant, and insert into rectum no more than 1 to 2 cm beyond the external anal sphincter.

8. Follow guidelines in step 5 above to obtain temperature.

9. Record time, temperature, method, and scale (C° or F°) in Patient Care Report (PCR).
Thrombolytic Screen

Clinical Indications:

- Rapid evaluation of a patient with suspected acute stroke, acute myocardial infarction, or acute pulmonary embolus who may benefit from thrombolysis.
- OR USE YOUR COUNTY OPERATING PROCEDURE IF AVAILABLE

Procedure:

1. Follow the appropriate protocol for patient’s complaint to assess need for thrombolysis (e.g. FAST assessment for suspected stroke, 12-lead EKG for suspected myocardial infarction, etc.). If the screen is positive, proceed to step 2 below.

2. By history from the patient and/or family members, obtain and record the following information:
   a. History of active internal bleeding?
   b. History of CNS neoplasm, arteriovenous (AV) malformation, or CNS aneurysm?
   c. History of CNS surgery in past 2 months?
   d. History of severe, uncontrolled hypertension (>200/130)?
   e. History of bleeding disorder?
   f. History of aortic dissection?
   g. History of allergy to thrombolytic?

3. Record all findings in the Patient Care Report (PCR).
Venous Access
Blood Draw

Clinical Indications:

- Collection of a patient’s blood for laboratory analysis.

Procedure:

1. Utilize universal precautions as per Infection control standards Page 11.
2. Select vein and prep with topical antiseptic as usual.
3. Select appropriate blood-drawing devices: Vacutainer blood tubes and blood tube holders with male or female adaptors shall be available and used to obtain and transfer all blood samples.
4. Draw appropriate tubes of blood for lab testing per destination hospital protocol.
5. Assure that the blood samples are labeled with the correct information (a minimum of the patients name, along with the date and time the sample was collected).
6. Deliver the blood tubes to the appropriate individual at the hospital.

- Emergent Procedure Only
  - Will not be conducted on any patient that delays transport to definitive care.
  - With respect to draws requested by law enforcement, please follow your specific county operating procedure policy.
Venous Access
External Jugular

Clinical Indications:

- External jugular vein cannulation is indicated in a critically ill patient > 8 years of age who requires intravenous access for fluid or medication administration and in whom an extremity vein is not obtainable.

- External jugular cannulation can be attempted initially in life threatening events where no obvious peripheral site is noted.

Procedure:

1. Utilize universal precautions as per Infection Control Standards Page 11.
2. Place the patient in a supine head down position. This helps distend the vein and prevents air embolism.
3. Turn the patient’s head toward the opposite side if no risk of cervical injury exists.
4. Prep the site as per peripheral IV site.
5. Align the catheter with the vein and aim toward the same side shoulder.
6. "Tourniqueting" the vein lightly with one finger above the clavicle, puncture the vein midway between the angle of the jaw and the clavicle and cannulate the vein in the usual method.
7. Attach the IV and secure the catheter avoiding circumferential dressing or taping.
8. Document the procedure, time, and result (success) on/with the patient care report (PCR).
Venous Access
Extremity

Clinical Indications:
- Any patient where intravenous access is indicated (significant trauma or mechanism, emergent or potentially emergent medical condition).

Procedure:

1. Utilize universal precautions as per Infection Control Standards Page 11.
2. Inspect the IV solution for expiration date, cloudiness, discoloration, leaks, or the presence of particles.
3. Connect IV tubing to the solution in a sterile manner. Fill the drip chamber half full and then flush the tubing bleeding all air bubbles from the line.
4. Place a tourniquet around the patient’s extremity to restrict venous flow only.
5. Select a vein and an appropriate gauge catheter for the vein and the patient’s condition.
6. Prep the skin with an antiseptic solution.
7. Insert the needle with the bevel up into the skin in a steady, deliberate motion until the blood flash is visualized in the catheter.
8. Advance the catheter into the vein. Never reinsert the needle through the catheter. Dispose of the needle into the proper container without recapping.
9. Draw blood samples when appropriate.
10. Remove the tourniquet and connect the IV tubing or saline lock.
11. Open the IV to assure free flow of the fluid and then adjust the flow rate as per protocol or as clinically indicated.
12. Cover the site with a sterile dressing and secure the IV and tubing.
13. Document the procedure, time and result (success) on/with the patient care report (PCR).
Venous Access
Intra-osseous Adult

Clinical Indications:

- Inability to obtain vascular access in a patient that requires emergent access.

Procedure:

1. Utilize universal precautions as per Infection Control Standards Page 11.
2. Assemble standard intravenous access equipment as well as IO needle. If a commercial kit is being used (FAST 1™, EZ-IQ™, Bone Injection Gun™), or hand held Intra-osseous needle, follow the procedure recommended by the manufacturer.
4. Holding the I/O needle perpendicular to the site, insert it with a twisting motion until you feel decreased resistance or feel a “pop”. Stop advancing the needle.
5. Remove the trochar.
6. Flush 1-3mL of 2% Lidocaine in conscious patients PRN.
7. Begin infusion of IV fluids. The fluids should flow easily. Once ease of flow has been established, the line may be used just as any other IV line.
8. Stabilize the IO needle.
Clinical Indications:

- Bleeding control of open wounds, including tourniquet use.
- Protection and care for open wounds.

Procedure:

1. Utilize universal precautions as per Infection Control Standards Page 11.
2. Control Bleeding
   A. Apply direct pressure to wound with clean gauze pad. If extremity wound, elevate above the level of the heart.
   B. If gauze soaks through, apply additional gauze on top of original - do not remove initial dressing.
   C. Use pressure points if unable to control bleeding using direct pressure, elevation, and additional gauze.
   D. If prolonged extrication or transport and unable to control bleeding to extremity wound, consider use of commercially-prepared gauze impregnated with a hemostatic non-thermogenic agent (i.e. Quick Clot gauze). Follow manufacturers' recommendations for packing, dressing and bandaging site.
   E. Tourniquets. For partial or complete extremity amputation or uncontrolled bleeding, consider use of commercial tourniquet device. Use blood pressure cuff only if commercial device not available and continuous pressure monitoring can be assured.
      i. Follow device manufacturers’ recommendations for application and monitoring.
      ii. Apply tourniquet pressure only to point bleeding is controlled to preserve as much distal tissue as possible.
      iii. Record application time
      iv. Providers may immediately apply commercial tourniquets in the setting of severe, life-threatening bleeding to an extremity.
   F. Once bleeding is controlled, bandage dressing in place – do not rely on bandage to control bleeding.
3. Once bleeding is controlled, irrigate contaminated wounds with saline as appropriate (this may have to be avoided if bleeding was difficult to control). Consider analgesia per protocol prior to irrigation.
4. Cover wounds with sterile gauze/dressings. Check distal pulses, sensation, and motor function to ensure the bandage is not too tight.
5. Monitor wounds and/or dressings throughout transport for bleeding.
# DRUG FORMULARY

## Acetaminophen (Tylenol)

| Indications: | Fever, Pain |
| ADULT Dose: | ADULT: 20mg/kg PO TOXIC DOSE IS 150 mg/kg |
| Contraindications: | Documented hypersensitivity |
| Pediatric Considerations: | 15mg/kg PO Liquid solutions vary in concentration verify correct dose Do not exceed 5 doses in 24 hours |
| Precautions: | Use cautiously in patients with long term alcohol use Many OTC products contain APAP- Consider Toxicity |
| Adverse Effects: | Hypoglycemia Allergic reaction |
| Onset/Duration: | 20-30 minute onset 4-6 hour duration |
| Classification: | Antipyretic, Analgesic |
| Action: | Analgesia, Antipyresis |
| Notes: | Caution with long term alcohol ingestion |

## Acetylsalicylic Acid/Aspirin (Bayer/Ecotrin)

| Indications: | Chest Pain with Suspected MI |
| ADULT Dose: | 81mg x 4 tabs Chewable up to 325 mg PO |
| Contraindications: | Known Hypersensitivity |
| Pediatric Considerations: | Contraindicated |
| Precautions: | Toxic dose is 200-300mg/kg |
| Adverse Effects: | Angioedema Nausea-GI Upset Occult Blood Loss Hepatotoxicity |
| Onset/Duration: | 30-60 minute onset 4-6 hour duration |
| Classification: | Antiplatelet, Analgesic, Antipyretic, Anti-inflammatory |
| Action: | Inhibition of platelet aggregation and platelet synthesis Reduction of risk of death in patients with a history of myocardial infarction of unstable angina |
| Notes: | Salicylate Toxicity, tinnitus, nausea, vomiting |
### Activated Charcoal (Actidose-Aqua/Insta-Char)

<table>
<thead>
<tr>
<th>Indications:</th>
<th>Suspected overdose or accidental ingestion of drugs or chemicals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADULT Dose:</strong></td>
<td>ADULT 50 grams PO/NG</td>
</tr>
<tr>
<td><strong>Contraindications:</strong></td>
<td>ALOC Diminished or absent gag reflex Caustic, corrosive, or petroleum distillate ingestion</td>
</tr>
<tr>
<td><strong>Pediatric Considerations:</strong></td>
<td>PED 1 gm/kg PO/NG Do not use preparations containing sorbitol</td>
</tr>
<tr>
<td><strong>Precautions:</strong></td>
<td>Unpleasant taste be prepared for spitting or vomiting Use of straw may facilitate administration in adult patient</td>
</tr>
<tr>
<td><strong>Adverse Effects:</strong></td>
<td>Vomiting Aspiration</td>
</tr>
<tr>
<td><strong>Onset/Duration:</strong></td>
<td>Immediate onset 24 hour duration</td>
</tr>
<tr>
<td><strong>Classification:</strong></td>
<td>Chemical absorbent</td>
</tr>
<tr>
<td><strong>Action:</strong></td>
<td>Inhibits gastrointestinal absorption of drugs or chemicals.</td>
</tr>
<tr>
<td><strong>Notes:</strong></td>
<td>Most effective if administered within 30 minutes of ingestion.</td>
</tr>
</tbody>
</table>

### Adenosine (Adenocard)

<table>
<thead>
<tr>
<th>Indications:</th>
<th>Supra-ventricular tachyarrhythmias (stable)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADULT Dose:</strong></td>
<td>6 mg Rapid IVP followed with 10 -20 cc NS flush Repeat dose of 12 mg PRN X1 q 2 minute</td>
</tr>
<tr>
<td><strong>Contraindications:</strong></td>
<td>2nd or 3rd degree heart block Sick sinus syndrome Hypersensitivity to adenosine</td>
</tr>
<tr>
<td><strong>Pediatric Considerations:</strong></td>
<td>0.1 mg/kg initial Repeat 0.2 mg/kg</td>
</tr>
<tr>
<td><strong>Precautions:</strong></td>
<td>Some Asthma patients may experience bronchoconstriction</td>
</tr>
<tr>
<td><strong>Adverse Effects:</strong></td>
<td>Headache Dizziness Dyspnea Nausea/vomiting Chest pressure Transient asystole</td>
</tr>
<tr>
<td><strong>Onset/Duration:</strong></td>
<td>Immediate Onset 10 second duration</td>
</tr>
<tr>
<td><strong>Classification:</strong></td>
<td>Antidysrhythmic agent Endogenous purine nucleoside</td>
</tr>
<tr>
<td><strong>Action:</strong></td>
<td>Slows conduction through the A-V node, can interrupt the re-entry pathways through the A-V node</td>
</tr>
<tr>
<td><strong>Notes:</strong></td>
<td>Individuals with long term adjustment to nicotine or high doses of caffeine may require larger dose of Adenosine. Warn patient of unpleasant effects of medication PRIOR to administration</td>
</tr>
<tr>
<td><strong>Drug : Drug interactions</strong></td>
<td>Theophylline, nicotine, caffeine- may require higher doses</td>
</tr>
</tbody>
</table>
## Albuterol (Proventil / Ventolin)

<table>
<thead>
<tr>
<th>Indications:</th>
<th>Treatment of Bronchospasm in patients with reversible obstructive airway disease</th>
</tr>
</thead>
</table>
| ADULT Dose: | **E**: 1-2 puffs of patients OWN Metered Dose Inhaler (MDI)  
**AP**: 2.5 mg in 3cc NS via nebulizer  
May initiate continuous nebulizer for persistent distress. Do not exceed 15mg/hr |
| Contraindications: | Known hypersensitivity  
Tachycardia (relative) |
| Pediatric Considerations: | 2.5-10 mg as per Broselow tape |
| Precautions: | Cardiovascular disease  
Diabetes mellitus  
Hyperthyroidism |
| Adverse Effects: | Tachycardia  
Palpitations  
Dysrhythmias  
Nausea  
Hypertension  
Dizziness  
Restlessness |
| Onset/Duration: | 5 minute onset  
3-4 hour duration |
| Classification: | Bronchodilator |
| Action: | Relaxes bronchial smooth muscle by stimulating beta2 receptors resulting in bronchodilation |
| Drug : Drug interactions | Beta Blockers: Pt may not respond as effectively to medication  
Sympathomimetivc: additive effects |

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## Amiodarone (Cordarone)

<table>
<thead>
<tr>
<th>Indications:</th>
<th>VF/pulseless VT; pulsed wide-complex tachycardia; monomorphic sustained VT; SVT.</th>
</tr>
</thead>
</table>
| ADULT Dose: | VF/pulseless VT:  
300mg IVP (dilute in NS/D5W 20cc). May repeat 150mg IVP x 1 in 5-10min. Max 450mg.  
VT, wide-complex tachycardia:  
150mg IV piggyback over 10min (mix in NS/D5W 100cc). |
| Contraindications: | Known hypersensitivity; cardiogenic shock; bradycardia with ventricular escape beats; marked sinus bradycardia; 2nd or 3rd-degree AV blocks. Antiarrhythmics are not indicated for prophylactic treatment of ectopy or as a prophylactic post-arrest. Do not use with medications that prolong QT interval (procainamide). Do not use lidocaine if amiodarone is being used. |
### Amiodarone (Cordarone) - continued

| **Pediatric Considerations:** | **VF/pulseless VT:**  
5mg/kg IV/IO (dilute in NS/D5W 15cc). May repeat q 5-10min to max 15mg/kg.  
**VT, wide-complex tachycardia:**  
5mg/kg IV/IO piggyback over 20-60min (mix in NS/D5W 100cc), run dose in by time:  
20min = 4gtts/sec = 300gtts/min  
33min = 3gtts/sec = 180gtts/min  
50min = 2gtts/sec = 120gtts/min  
60min = 1gtt/sec = 60gtts/min. (Do not repeat without medical control order.) |
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<tbody>
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<td><strong>Indications:</strong></td>
<td><strong>VF/pulseless VT; pulsed wide-complex tachycardia; monomorphic sustained VT; SVT.</strong></td>
</tr>
</tbody>
</table>
| **ADULT Dose:** | **VF/pulseless VT:**  
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**VT, wide-complex tachycardia:**  
150mg IV piggyback over 10min (mix in NS/D5W 100cc). |
| **Contraindications:** | Known hypersensitivity; cardiogenic shock; bradycardia with ventricular escape beats; marked sinus bradycardia; 2nd or 3rd-degree AV blocks. Antiarrhythmics are not indicated for prophylactic treatment of ectopy or as a prophylactic post-arrest. Do not use with medications that prolong QT interval (procaainamide). Do not use lidocaine if amiodarone is being used. |
| **Pediatric Considerations:** | **VF/pulseless VT:**  
5mg/kg IV/IO (dilute in NS/D5W 15cc). May repeat q 5-10min to max 15mg/kg.  
**VT, wide-complex tachycardia:**  
5mg/kg IV/IO piggyback over 20-60min (mix in NS/D5W 100cc), run dose in by time:  
20min = 4gtts/sec = 300gtts/min  
33min = 3gtts/sec = 180gtts/min  
50min = 2gtts/sec = 120gtts/min  
60min = 1gtt/sec = 60gtts/min. (Do not repeat without medical control order.) |
<p>| <strong>Precautions:</strong> | Dosing varies for specific arrhythmias, pay attention to dosing/concentration for specific patient age and clinical presentation. Lidocaine should be used for pulsed patients. If allergic to lidocaine or if lidocaine is not carried or if amiodarone has already been given, then administer amiodarone. May potentiate effects of oral anticoagulants, digoxin, antiarrhythmics and cyclosporine. |</p>
<table>
<thead>
<tr>
<th><strong>Amiodarone (Cordarone) continued</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adverse Effects:</strong> Flushing; N/V; HA; tinnitus; blurred vision; dizziness; restlessness; confusion; tremors; numbness; hypotension; edema; CHF; dysrhythmias; SA node dysfunction; bradycardia (may be resistant to atropine and require pacing); Q-T prolongation; heart block; sinus arrest; abdominal pain; muscle twitching; seizures, respiratory depression. Phlebitis may occur at IV site with higher concentrations. May cause grayish-blue skin discoloration. Discontinue if significant adverse effects occur.</td>
</tr>
<tr>
<td><strong>Onset/Duration:</strong> Onset via IV 15min/half-life 40 days.</td>
</tr>
<tr>
<td><strong>Classification:</strong> Antiarrhythmic Class III; has effects in all four classes. Class I – sodium channel blockade; Class II – noncompetitive alpha and beta-adrenergic inhibition; Class III – prolonged repolarization and refractoriness by increased action potential duration; and Class IV – slight calcium channel blockade.</td>
</tr>
<tr>
<td><strong>Action:</strong> Suppresses ventricular ectopy, increases ventricular fibrillation threshold; increases cardiac refractory period without influencing resting membrane potential; relaxes vascular smooth muscle, reduces peripheral vascular resistance, and slightly increases cardiac index.</td>
</tr>
<tr>
<td><strong>Notes:</strong> Amiodarone will form precipitate in IV lines if combined with aminophylline, heparin sodium or sodium bicarbonate. If sodium bicarbonate needs to be administered, after amiodarone flush IV line with NS 10-20cc. Also precipitates with cefamandole nafate, cefazolin sodium and mezlocillin sodium. Amiodarone leeches plasticizers from IV tubing and IV bags; bags should be mixed and run when needed. Do not premix or save unused mixed bags.</td>
</tr>
</tbody>
</table>
| **Indications:** | Symptomatic bradycardia  
| | Pulseless electrical activity HR < 60 (PEA)  
| | Organophosphate poisoning (OPP)  
| **ADULT Dose:** | Bradycardia: 0.5-1 mg IV / IO q 3-5 min to maximum of 3 mg  
| | PEA HR < 60: 1 mg IV / IO q 3-5 minutes to maximum of 3 mg  
| | Organophosphate Poisoning: 2 mg IV / IO q 3-5 minutes until heart rate >60 BPM or symptoms clear  
| **Contraindications:** | Non symptomatic bradycardia (Relative: Asthma, Myasthenia Gravis, narrow angle glaucoma)  
| **Pediatric Considerations:** | RSI: 0.02 mg/kg IV/IO 0.1mg min. dose  
| | Contraindicated in neonates  
| **Precautions:** | Use with caution in patients with suspected acute myocardial infarction (AMI)  
| | Will not be effective for Type II AV Block and new Third Degree Block with wide QRS complexes (In these patients may cause paradoxical slowing. Be prepared to pace).  
| **Adverse Effects:** | Tachycardia  
| | Increased myocardial 02 demand  
| | Palpitations  
| | Nausea/vomiting  
| | Dilated pupils  
| | Increased intraocular pressure  
| **Onset/Duration:** | 2-5 minute onset  
| | 20 minute duration  
| **Classification:** | Parasympathetic blocker (Anticholinergic)  
| | Antidysrhythmic agent  
| **Action:** | Blocks acetylcholine receptors, Decreases vagal tone resulting in increased heart rate and AV conduction, Dilates bronchioles and decreases respiratory tract secretions, Decreases gastrointestinal secretions and motility
### Calcium Chloride (CaCl₂)

**Indications:**
- Hyperkalemia
- Specific arachnid envenomation
- Overdose of calcium channel blockers
- Hypermagnesemia
- Crush Syndrome

**ADULT Dose:**
- 10 to 20 mg/kg slow IV/IO

**Contraindications:**
- VF (unless due to hyperkalemia)
- Hypercalcemia
- Renal calculi

**Pediatric Considerations:**
- DOSE: 10 mg/kg IV/IO

**Precautions:**
- Causes tissue necrosis if injected into interstitial space
- Precipitates with sodium bicarbonate
- May increased dig toxicity
- Clear IV with 20cc NS before and after administration

**Adverse Effects:**
- Bradycardia, hypotension, syncope

**Onset/Duration:**
- 5 to 15 minute onset
- Duration is dose dependent, effects may persist for up to 4 hrs

**Classification:**
- Inotropic agent

**Action:**
- Couples electrical and mechanical events of the myocardium
- Increases myocardial contractility
- Increases ventricular irritability

**Notes:**
- 200mg IV prophylactic to diltiazem admin in elderly dehydrated or drug-induced hypotension

### Dexamethasone (Decadron)

**Indications:**
- Counteract allergic anaphylactic shock
- Upper airway burns
- Reactive airway disease exacerbations

**ADULT Dose:**
- 4 to 10 mg intravenously

**Contraindications:**
- Hypersensitivity to the product

**Pediatric Considerations:**
- 0.6 mg./kg. IV/IO/IM/PO. Maximum dose 10 mg.

**Precautions:**
- Use cautiously with renal or hepatic disease; hypothyroidism, ulcerative colitis with impending perforation; diverticulitis; active or latent peptic ulcer; inflammatory bowel disease; CHF, hypertension, thromboembolic disorders; osteoporosis; seizure disorders; diabetes mellitus; lactation.

**Adverse Effects:**
- Stomach upset, headache, dizziness

**Onset/Duration:**
- 4-8 hours onset
- 24 - 72 hours duration

**Classification:**
- Is a potent synthetic member of the glucocorticoid class of steroid drugs. It acts as an anti-inflammatory and immunosuppressant.

**Action:**
- Enters target cells and binds to specific receptors, initiating many complex reactions that are responsible for its anti-inflammatory and immunosuppressive effects.
Dextrose / D50W / D25W (DGlucose)

| Indications: | Hypoglycemia  
Hyperkalemia with concurrent insulin administration  
Altered level of consciousness due to suspected or confirmed hypoglycemia |
|-------------|--------------------------------------------------|
| ADULT Dose: | 12.5 to 25 g IV / IO repeat dose to maximum of 50 g  
Consider administration with 100 mg of thiamine |
| Contraindications: | Hyperglycemia |
| Pediatric Considerations: | DOSE: 0.5gm/kg D25%  
DILUTE D50% 1:1 to D25% with NS |
| Precautions: | Causes tissue necrosis if injected into interstitial space  
May increase cerebral ischemia in CVA  
Caution with intracranial hemorrhage |
| Adverse Effects: | Thrombophlebitis  
Osmotic Diuresis  
Pulmonary Edema  
May worsen Wernicke’s encephalopathy |
| Onset/Duration: | 30 to 60 seconds onset  
duration depends on severity of hypoglycemia |
| Classification: | Hyperglycemic agent  
Hypotonic solution |
| Action: | Provide immediate source of glucose for rapid utilization for cellular metabolism |
| Notes: | Follow with complex carbohydrate if leaving patient at home |
### Diazepam (Valium)

<table>
<thead>
<tr>
<th>Indications:</th>
<th>Major motor seizures, status epilepticus, premedication for painful procedures, combative patients</th>
</tr>
</thead>
</table>
| **ADULT Dose:**       | **Sedation and pain management**  
2-5 mg IV for procedural  
**Seizures**  
5 mg IV over 2 minutes, 10 mg PR, or 2-5 mg IM  
**Eclamptic seizures**  
2 mg IV q5min for effect or 10 mg PR  
**Nerve Agent Exposure with Convulsions**  
2-10 mg IV or 10 mg IM titrated to effect |
| **Contraindications:** | Respiratory depression  
Hypotension |
| **Pediatric Considerations:** | **Sedation and pain management**  
0.1 mg/kg IV/IO  
**Seizures**  
0.1 mg/kg IV over 2 minutes, or 0.5 mg/kg PR  
**Nerve Agent Exposure with Convulsions**  
0.1 mg/kg IV/IM  
MAX DOSES: 5 mg in children and 10 mg in adolescents |
| **Precautions:**      | Inject slowly, do not use small veins. Should not administer to patients in shock, coma or in acute alcoholic intoxication with depression of vital signs. Use caution in elderly patients. |
| **Adverse Effects:**  | Hypotension  
Respiratory depression |
| **Onset/Duration:**   | IV 1-5 minute onset, 15-60 minute duration  
IM 15-30 minute onset, 15-60 minute duration |
| **Classification:**   | Benzodiazepine |
| **Action:**           | Suppresses spread of seizure activity through the motor cortex, skeletal muscle relaxant, reduces anxiety and causes sedation |
| **Notes:**            | Intramuscular administration leads to widely variable absorption and should be avoided if possible.  
**Diastat - EMT’s may administer patients own prescription ONLY** |
**Diltiazem (Cardizem)**

<table>
<thead>
<tr>
<th>Indications:</th>
<th>A fib</th>
<th>A flutter</th>
<th>PSVT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADULT Dose:</td>
<td>10-25 mg IV/IO may repeat dose</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contraindications:</td>
<td>Concurrent use of IV beta-blockers</td>
<td>Wide complex tachycardia of unknown etiology</td>
<td>Sick Sinus Syndrome</td>
</tr>
<tr>
<td>Precautions:</td>
<td>May precipitate with use of furosemide</td>
<td>Use cautiously in elderly patients</td>
<td>Congestive Heart Failure</td>
</tr>
<tr>
<td>Adverse Effects:</td>
<td>Arrhythmias</td>
<td>Bradycardia</td>
<td>Hypotension</td>
</tr>
<tr>
<td>Onset/Duration:</td>
<td>2 to 10 minute onset</td>
<td>1-3 hour duration</td>
<td></td>
</tr>
<tr>
<td>Classification:</td>
<td>Calcium channel blocker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Action:</td>
<td>Inhibit calcium ion passage across cell membrane</td>
<td>Slows SA and AV node conduction velocity</td>
<td>Decreases myocardial contractility</td>
</tr>
<tr>
<td>Drug: Drug Interactions</td>
<td>Potentiates with Beta-Blocker, Lithium, Tegretol, cyclosporins</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Diphenhydramine (Benadryl)**

<table>
<thead>
<tr>
<th>Indications:</th>
<th>Anaphylaxis</th>
<th>Allergic reactions</th>
<th>Dystonia</th>
<th>Sedation</th>
<th>Nausea</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADULT Dose:</td>
<td>12.5 to 50 mg IV/IO/IM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contraindications:</td>
<td>Known hypersensitivity</td>
<td>Newborns</td>
<td>Acute asthma</td>
<td>COPD exacerbation</td>
<td>Relative: narrow angle glaucoma</td>
</tr>
<tr>
<td>Pediatric Considerations:</td>
<td>DOSE: 1 mg/kg IV/IO/IM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Precautions:</td>
<td>Reduce dose for elderly</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adverse Effects:</td>
<td>Seizures</td>
<td>Sedation</td>
<td>Thickening of Bronchial Secretions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onset/Duration:</td>
<td>IV administration has immediate onset</td>
<td>6 to 8 hour duration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classification:</td>
<td>Antihistamine</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Action:</td>
<td>Prevents but does not reverse histamine mediated responses</td>
<td>suppresses cough reflex</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drug: Drug Interactions</td>
<td>Potentiates CNS depressants</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Droperidol (Inapsine)

<table>
<thead>
<tr>
<th><strong>Indications:</strong></th>
<th>Chemical restraint, nausea and vomiting, migraine headache</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADULT Dose:</strong></td>
<td>0.625-5.0 mg IV/IM/IN</td>
</tr>
<tr>
<td><strong>Contraindications:</strong></td>
<td>Renal impairment, hepatic disease</td>
</tr>
<tr>
<td><strong>Pediatric Considerations:</strong></td>
<td>0.05 mg/kg IV/IM /IN max 0.1mg</td>
</tr>
<tr>
<td><strong>Precautions:</strong></td>
<td>In use in elderly, debilitated, and other poor-risk patients; and patients with Parkinson’s disease, hypotension, liver, kidney, cardiac disease bradydysrhythmias.</td>
</tr>
<tr>
<td><strong>Adverse Effects:</strong></td>
<td>Dystonia, hypotension, tachycardia, apnea, dizziness, anxiety</td>
</tr>
<tr>
<td><strong>Onset/Duration:</strong></td>
<td>Onset 3-10 min; peak effect in 30 minutes Duration is 2-4 hours</td>
</tr>
<tr>
<td><strong>Classification:</strong></td>
<td>Antiemetic, Butyrophenone derivative</td>
</tr>
<tr>
<td><strong>Action:</strong></td>
<td>Produces marked sedation by directly blocking subcortical receptors. Also blocks CNS receptors at the chemoreceptor triggering zone, producing an antiemetic effect.</td>
</tr>
<tr>
<td><strong>Notes:</strong></td>
<td>Use a reduced dose for elderly and debilitated patients. Consider use of Diphenhydramine with Droperidol. These medications can be given as a single injection.</td>
</tr>
<tr>
<td>Indications:</td>
<td>Cardiopulmonary arrest:</td>
</tr>
<tr>
<td></td>
<td>ventricular fibrillation</td>
</tr>
<tr>
<td></td>
<td>pulseless ventricular</td>
</tr>
<tr>
<td></td>
<td>tachycardia</td>
</tr>
<tr>
<td></td>
<td>pulseless electrical activity</td>
</tr>
<tr>
<td>ADULT Dose:</td>
<td>Cardiopulmonary arrest:</td>
</tr>
<tr>
<td></td>
<td>1 mg 1:10,000 q 3 to 5 minutes IV / IO</td>
</tr>
<tr>
<td>Anaphylaxis:</td>
<td>0.1-0.3 mg of 1:1000 IM q 10 to 20 minutes X 2</td>
</tr>
<tr>
<td>Status Asthmaticus:</td>
<td>0.3 mg of 1:1000 SQ q 20 minutes X 2</td>
</tr>
<tr>
<td>Profound Refractory Hypotension:</td>
<td>2-10 mcg/min IV infusion</td>
</tr>
<tr>
<td></td>
<td>mix one milligram of 1:1000 epinephrine in 250 cc normal saline for</td>
</tr>
<tr>
<td></td>
<td>a concentration of 4mcg/cc</td>
</tr>
<tr>
<td>Pediatric Considerations:</td>
<td>Dose 0.01 mg/kg 1:1000 IM/IV/IO max 0.3mg</td>
</tr>
<tr>
<td></td>
<td>Nebulized for respiratory emergencies see pediatric protocols</td>
</tr>
<tr>
<td>Precautions:</td>
<td>Use caution when given IV in anaphylactic shock as myocardial</td>
</tr>
<tr>
<td></td>
<td>ischemia and or cardiac arrest may occur.</td>
</tr>
<tr>
<td>Adverse Effects:</td>
<td>Hypertension</td>
</tr>
<tr>
<td></td>
<td>Tachycardia</td>
</tr>
<tr>
<td></td>
<td>Increased myocardial oxygen demand</td>
</tr>
<tr>
<td>Onset/Duration:</td>
<td>Onset: Immediate if given IVP / 5-10 minutes SQ/IM</td>
</tr>
<tr>
<td></td>
<td>Duration: 3-5 minutes IVP / 20 minutes SQ/IM</td>
</tr>
<tr>
<td>Classification:</td>
<td>Sympathomimetic agent (catecholamine)</td>
</tr>
<tr>
<td>Action:</td>
<td>Beta effect is more profound than Alpha effect</td>
</tr>
<tr>
<td>Notes:</td>
<td>Epinephrine is the pressor of choice in the case of pediatric shock</td>
</tr>
<tr>
<td></td>
<td>states. Dopamine may be ineffective.</td>
</tr>
<tr>
<td></td>
<td>1 mg epinephrine 1:1000 in 250 cc = 4 mcg/ cc use 60gtt tubing</td>
</tr>
<tr>
<td>Mcg/ min</td>
<td>2</td>
</tr>
<tr>
<td>administer</td>
<td>30 gtt/min</td>
</tr>
</tbody>
</table>
### Etomidate (Amidate)

<table>
<thead>
<tr>
<th>Indications:</th>
<th>Induce sedation to facilitate intubation. Cardioversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADULT Dose:</td>
<td>0.1-0.3 mg/kg IV over 15-30 seconds</td>
</tr>
</tbody>
</table>
| Contraindications: | Hypersensitivity  
| | Pregnancy |
| Pediatric Considerations: | 0.3 mg/kg IV over 15-30 seconds |
| Precautions: | Do not re-dose with etomidate. Long term use can cause decreased corticosteroid production. |
| Adverse Effects: | Myoclonic skeletal muscle movement, apnea, hyperventilation, laryngospasm, dysrhythmias, nausea, vomiting, eye movement, hiccups, snoring, seizures |
| Onset/Duration: | 15-20 seconds onset  
| | 3-5 minutes duration  
| | * short ½ life. |
| Classification: | Hypnotic, non sedative, non narcotic, non analgesic |
| Action: | Ultra short acting, nonbarbituate hypnotic. Produces rapid induction of anesthesia with minimal cardiorespiratory effects. Rapidly distributed following iv injection/ rapidly metabolized and excreted. (note extremely short duration) |
| Notes: | MUST Use sedative (ativan/ versed) for intubation maintenance. |

<table>
<thead>
<tr>
<th>Wt. in lbs.</th>
<th>100</th>
<th>110</th>
<th>120</th>
<th>130</th>
<th>140</th>
<th>150</th>
<th>160</th>
<th>170</th>
<th>180</th>
<th>190</th>
<th>200</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT. in kg</td>
<td>45</td>
<td>50</td>
<td>54</td>
<td>59</td>
<td>64</td>
<td>68</td>
<td>73</td>
<td>77</td>
<td>82</td>
<td>86</td>
<td>91</td>
</tr>
<tr>
<td>Dose in mg</td>
<td>13 mg</td>
<td>15 mg</td>
<td>16 mg</td>
<td>18 mg</td>
<td>19 mg</td>
<td>20 mg</td>
<td>22 mg</td>
<td>23 mg</td>
<td>25 mg</td>
<td>26 mg</td>
<td>27 mg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wt. in lbs.</th>
<th>210</th>
<th>220</th>
<th>230</th>
<th>240</th>
<th>250</th>
<th>260</th>
<th>270</th>
<th>280</th>
<th>290</th>
<th>300</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT. in kg</td>
<td>95</td>
<td>100</td>
<td>104</td>
<td>109</td>
<td>113</td>
<td>118</td>
<td>122</td>
<td>127</td>
<td>132</td>
<td>136</td>
</tr>
<tr>
<td>Dose in mg</td>
<td>28 mg</td>
<td>30 mg</td>
<td>31 mg</td>
<td>33 mg</td>
<td>34 mg</td>
<td>35 mg</td>
<td>37 mg</td>
<td>38 mg</td>
<td>40 mg</td>
<td>41 mg</td>
</tr>
</tbody>
</table>
### Fentanyl (Sublimaze)

<table>
<thead>
<tr>
<th><strong>Indications:</strong></th>
<th>Analgesia, Pulmonary Edema, Acute MI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADULT Dose:</strong></td>
<td>25-50 mcg IV/IO/IM</td>
</tr>
<tr>
<td><strong>Contraindications:</strong></td>
<td>Known hypersensitivity</td>
</tr>
<tr>
<td><strong>Pediatric Considerations:</strong></td>
<td>DOSE: 1-2 mcg/kg IV/IM</td>
</tr>
<tr>
<td><strong>Precautions:</strong></td>
<td>Head injuries, COPD, ALOC, Hypotension</td>
</tr>
<tr>
<td><strong>Adverse Effects:</strong></td>
<td>CNS depression, resp. depression, hallucinations, hypotension, hypertension, arrhythmias, n/v, constipation, Chest wall rigidity</td>
</tr>
<tr>
<td><strong>Onset/Duration:</strong></td>
<td>Onset- 1-2min IV, 7-15min IM</td>
</tr>
<tr>
<td></td>
<td>Duration- ½ - 1hr IV, 1-2hr IM</td>
</tr>
<tr>
<td><strong>Classification:</strong></td>
<td>Opioid agonist/ narcotic analgesic</td>
</tr>
<tr>
<td><strong>Action:</strong></td>
<td>Binds to opiate receptors as an agonist to alter pt.'s perception of painful stimuli.</td>
</tr>
<tr>
<td><strong>Notes:</strong></td>
<td>CNS and resp. depressant effects are similar to Morphine. Drug has little hypnotic activity and rarely causes histamine release.</td>
</tr>
</tbody>
</table>

### Glucagon

<table>
<thead>
<tr>
<th><strong>Indications:</strong></th>
<th>Hypoglycemia, Beta-blocker OD, Calcium channel blocker OD Symptoms of esophageal obstruction</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADULT Dose:</strong></td>
<td>Hypoglycemia- 1.0mg IM / IN Ca++ and beta-blocker OD- 3-5mg IV/ IM / IN</td>
</tr>
<tr>
<td><strong>Contraindications:</strong></td>
<td>None in emergency setting</td>
</tr>
<tr>
<td><strong>Pediatric Considerations:</strong></td>
<td>Dose: 0.1mg/kg up to 1mg IM</td>
</tr>
<tr>
<td><strong>Precautions:</strong></td>
<td><strong>Do not dilute with saline solutions, will form a precipitate.</strong></td>
</tr>
<tr>
<td><strong>Adverse Effects:</strong></td>
<td>Nausea &amp; Vomiting, hyperglycemia, hypersensitivity reactions</td>
</tr>
<tr>
<td><strong>Onset/Duration:</strong></td>
<td>Onset is 5-20 minutes, peak effect at 30 minutes. Duration is 1-1.5 hours</td>
</tr>
<tr>
<td><strong>Classification:</strong></td>
<td>Polypeptide hormone</td>
</tr>
<tr>
<td><strong>Action:</strong></td>
<td>Accelerates liver glycogenolysis and inhibits glycogen synthetase resulting in blood glucose elevation. Stimulates hepatic gluconeogenesis and causes an inotropic myocardial effect. Relaxes GI smooth muscle</td>
</tr>
<tr>
<td><strong>Notes:</strong></td>
<td>Reconstitute powdered solution with supplied diluent only If given IV, flush line with D-5% instead of NS solution.</td>
</tr>
</tbody>
</table>
### Glucose Oral (Glucose Paste)

<table>
<thead>
<tr>
<th>Indications:</th>
<th>Hypoglycemia in conscious pt that is able to swallow.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADULT Dose:</td>
<td>One tube PO- between cheek and gum</td>
</tr>
<tr>
<td>Contraindications:</td>
<td>Unconsciousness, inability to swallow, hyperglycemia</td>
</tr>
<tr>
<td>Pediatric Considerations:</td>
<td>One tube PO</td>
</tr>
<tr>
<td>Precautions:</td>
<td>Not tasty, watch for spitting</td>
</tr>
<tr>
<td>Adverse Effects:</td>
<td>Choking if not properly administered</td>
</tr>
<tr>
<td>Classification:</td>
<td>Carbohydrate</td>
</tr>
<tr>
<td>Action:</td>
<td>Rapidly metabolized source of calories in pt’s with inadequate oral intake.</td>
</tr>
<tr>
<td>Notes:</td>
<td>Perform glucose check before and after administration of Glucose. Follow with complex carbohydrate if leaving patient at home.</td>
</tr>
</tbody>
</table>

### Heparin Sodium

<table>
<thead>
<tr>
<th>Indications:</th>
<th>STEMI confirmed with Medical Control authorization required</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADULT Dose:</td>
<td>60U/kg IV bolus to max 4,000U (if &gt;100kg max 5,000U); 12U/kg/hr IV drip to max 1,000U/hr.</td>
</tr>
<tr>
<td>Contraindications:</td>
<td>Allergy to heparin, thrombocytopenia, hemophilia</td>
</tr>
<tr>
<td>Precautions:</td>
<td>Increased risk of bleeding w/ bleeding/clotting disorders (hemophilia), GI ulceration, bacterial endocarditis Recent surgery Derived from porcine intestinal mucosa, avoid if allergic to pork</td>
</tr>
<tr>
<td>Adverse Effects:</td>
<td>Bleeding, Heparin induced thrombocytopenia, Hyperkalemia (5-10%)</td>
</tr>
<tr>
<td>Onset/Duration:</td>
<td>onset immediate duration 1.5 hours</td>
</tr>
<tr>
<td>Classification:</td>
<td>Injectable anticoagulant</td>
</tr>
<tr>
<td>Action:</td>
<td>Binds to and activates antithrombin III which binds to and inactivates thrombin. This inhibits further clot formation.</td>
</tr>
<tr>
<td>Notes:</td>
<td>Invert infusion solution periodically to prevent pooling Do not mix in same line with droperidol</td>
</tr>
</tbody>
</table>
### Ipratropium (Atrovent / Ipramide)

<table>
<thead>
<tr>
<th><strong>Indications:</strong></th>
<th>Bronchospasm due to reactive airway diseases Organophosphate poisoning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADULT Dose:</strong></td>
<td>0.5 mg via nebulizer q 6-8 hours</td>
</tr>
<tr>
<td><strong>Contraindications:</strong></td>
<td>Known Hypersensitivity</td>
</tr>
<tr>
<td><strong>Pediatric Considerations:</strong></td>
<td>0.25 mg SVN</td>
</tr>
<tr>
<td><strong>Precautions:</strong></td>
<td>Should be used with caution in patients with narrow-angle glaucoma.</td>
</tr>
<tr>
<td><strong>Adverse Effects:</strong></td>
<td>Anxiety, Nausea/vomiting, Palpitations</td>
</tr>
<tr>
<td><strong>Onset/Duration:</strong></td>
<td>15-30 minute onset, 5-7 hour duration</td>
</tr>
<tr>
<td><strong>Classification:</strong></td>
<td>Anticholinergic bronchodilator</td>
</tr>
<tr>
<td><strong>Action:</strong></td>
<td>Blocks acetylcholine receptors, Dries respiratory tract secretions, Reduces bronchospasm</td>
</tr>
</tbody>
</table>
### Indications:

**Induction agent for rapid sequence intubation (RSI),** when standard agents not available. This drug can be used as first line for induction without restriction in Kitsap & Clallam Counties.

**Treatment for Excited Delirium** A condition that manifests as a combination of delirium, psychomotor agitation, anxiety, hallucinations, speech disturbances, disorientation, violent and bizarre behavior, insensitivity to pain, elevated body temperature and superhuman strength. As the EDC patient may have hyperthermia, which can be made worse with Ketamine, you must immediately address the hyperthermia as soon as you have control of the patient with the Ketamine.

**Inter-facility transport** for pain control with initial doses and guidelines for repeat doses set by the hospital staff to include guidelines for epidural doses.

**Pain control** via epidural or IV should be a just in time training via the anesthetist. Doses should be started and adjusted per the transferring physician recommendations.

**Reactive Airway**

### ADULT Dose:

<table>
<thead>
<tr>
<th></th>
<th>RSI: 1-2 mg/kg IV push; 4-5 mg IM</th>
<th>Excited Delirium: 5-10 mg/Kg IM</th>
</tr>
</thead>
</table>

### Contraindications:

**RSI:** Severe Hypertension, Severe Hyperthermia...be prepared to cool immediately

### Pediatric Considerations:

**RSI:** 1.5 mg/kg IV over one minute; 4-5 mg IM

### Precautions:

**RSI:** Increased blood pressure due to catecholamine release. Reemergence phenomenon. As with any intubated patient, continued sedation must be provided before the induction agent has worn off. Increased intracranial pressure (ICP) has been a theoretical concern, however studies have not shown a significant increase in ICP with the use of ketamine and therefore it is felt to be an appropriate induction agent for patients with possible increased ICP, unless they have markedly elevated blood pressure.

### Adverse Effects:

**Excited Delirium:** Laryngospasm, hyper salivation, nausea/vomiting, arrhythmias, emergence delirium, hallucinations, elevated BP, hypotension, documentation or observation of worsening hyperthermia

### Onset/Duration:

**Excited Delirium:** Adults: IV 30 sec; duration 5-10 min for 2 mg/kg; IM 3-4min, duration 12-25 min; Pediatrics: IV 30-120 sec; duration 20-60 min; IM 5-10 min, duration 30-90 min

### Classification:

General dissociative anesthetic
### Indications:

Induction agent for rapid sequence intubation (RSI), when standard agents not available. This drug can be used as first line for induction without restriction in Kitsap & Clallam Counties.

**Treatment for Excited Delirium**

A condition that manifests as a combination of delirium, psychomotor agitation, anxiety, hallucinations, speech disturbances, disorientation, violent and bizarre behavior, insensitivity to pain, elevated body temperature and superhuman strength. As the EDC patient may have hyperthermia, which can be made worse with Ketamine, you must immediately address the hyperthermia as soon as you have control of the patient with the Ketamine.

Inter-facility transport for pain control with initial doses and guidelines for repeat doses set by the hospital staff to include guidelines for epidural doses.

Pain control via epidural or IV should be a just in time training via the anesthetist. Doses should be started and adjusted per the transferring physician recommendations.

**Reactive Airway**

### ADULT Dose:

<table>
<thead>
<tr>
<th></th>
<th>RSI: 1-2 mg/kg IV push; 4-5 mg IM</th>
<th>Excited Delirium: 5-10 mg/Kg IM</th>
</tr>
</thead>
</table>

### Contraindications:

<table>
<thead>
<tr>
<th></th>
<th>RSI: Severe Hypertension, Severe Hyperthermia...be prepared to cool immediately</th>
</tr>
</thead>
</table>

### Pediatric Considerations:

<table>
<thead>
<tr>
<th></th>
<th>RSI: 1.5 mg/kg IV over one minute; 4-5 mg IM</th>
</tr>
</thead>
</table>

### Precautions:

<table>
<thead>
<tr>
<th></th>
<th>RSI: Increased blood pressure due to catecholamine release. Reemergence phenomenon. As with any intubated patient, continued sedation must be provided before the induction agent has worn off. Increased intracranial pressure (ICP) has been a theoretical concern, however studies have not shown a significant increase in ICP with the use of ketamine and therefore it is felt to be an appropriate induction agent for patients with possible increased ICP, unless they have markedly elevated blood pressure.</th>
</tr>
</thead>
</table>

### Adverse Effects:

<table>
<thead>
<tr>
<th></th>
<th>Excited Delirium: Laryngospasm, hyper salivation, nausea/vomiting, arrhythmias, emergence delirium, hallucinations, elevated BP, hypotension, documentation or observation of worsening hyperthermia</th>
</tr>
</thead>
</table>

### Onset/Duration:

<table>
<thead>
<tr>
<th></th>
<th>Excited Delirium: Adults: IV 30 sec; duration 5-10 min for 2 mg/kg; IM 3-4min, duration 12-25 min; Pediatrics: IV 30-120 sec; duration 20-60 min; IM 5-10 min, duration 30-90 min</th>
</tr>
</thead>
</table>

### Classification:

<table>
<thead>
<tr>
<th></th>
<th>General dissociative anesthetic</th>
</tr>
</thead>
</table>


**Ketamine - continued**

| Action | Dissociative anesthetic agent, structurally similar to phencyclidine (PCP), which interrupts the connection between the thalamo-neocortical tracts and the limbic system. In addition, it stimulates many different receptors, including the opioid and catecholamine receptors. It is unique among sedative agents in that it also provides analgesia in addition to the amnestic and sedative effects. The sympathomimetic effects cause an increase in heart rate, blood pressure, and cardiac output. It is also a bronchodilator, and thus may be beneficial in patients with bronchospasm requiring intubation. |
| Notes | When elevated ICP is suspected, consider using a lower dose along with midazolam. Avoid in patients with severely elevated blood pressure; May increase respiratory secretions. Consider adjuvant use of anti-sialagogue such as atropine minimum dose 0.1mg |

**Ketorolac (Toradol)**

| Indications | Renal colic/calculi (abdominal/flank pain)  
Muscular skeletal pain |
| ADULT Dose | Renal colic/calculi 30-60 mg IM 15-30 mg IV  
½ dose for >65 years old |
| Contraindications | Documented hypersensitivity to ASA or other NSAID’s, bleeding disorders, renal impairment, active peptic ulcer, nursing mothers, labor & delivery. Suspected or possible dissecting AAA. Any on Anti-coagulant. |
| Precautions | Patients that are > 65 y/o or < 50 kg should receive ½ dose. Use extreme caution in elderly and hepatic dysfunction pts. |
| Adverse Effects | Possible anticoagulation effects, anaphylaxis, drowsiness, sweating/diaphoresis, nausea, pain at injection site. |
| Onset/Duration | IM: 45-60 minutes onset  
4-6 hours duration |
| Classification | NSAID, analgesic, antipyretic |
| Action | Inhibits synthesis of prosta
glandins |
### Lidocaine (Xylocaine)

<table>
<thead>
<tr>
<th>Indications:</th>
<th>First line antiarrythmic in pregnancy</th>
<th>symptomatic PVCs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VT/VF</td>
<td>RSI with suspected</td>
</tr>
<tr>
<td></td>
<td>VT with pulse</td>
<td>closed head injuries</td>
</tr>
</tbody>
</table>

| ADULT Dose: | VF/VT- 1.5mg/kg IV / IO q 5-10 min. Max 3 mg/kg. |
|            | VT w/ pulse- 1 -1.5mg/kg IV/ IO, then 0.5-0.75mg/kg q 5-10 min. up to 3 mg/kg. |
|            | Run of 6 or more Symptomatic PVC’s- 0.5-1.5mg/kg IV/IO then 0.5-0.75mg/kg q 5-10min up to 3 mg/kg. |
|            | RSI- 1 -1.5mg/kg IV/IO |

| Contraindications: | High degree heart blocks | WPW |
|                   | Stokes-Adams syndrome    | SVT |
|                   | hypotension              | Bradycardias |

| Pediatric Considerations: | VF/VT- 1mg/kg IV / IO q 10 min. Max 3 mg/kg |
|                          | VT w/ pulse- 1mg/kg IV/ IO, q 10 min. up to 3 mg/kg |
|                          | Drip 2-4mg/min following conversion |
|                          | RSI- 1mg/kg IV/IO |

| Precautions: | Caution in use with pts >70 y/o or with liver or renal disease, CHF, resp depression, shock. |
|             | Reduce maintenance infusion by 50% |

| Adverse Effects: | Seizures, slurred speech, altered mental status |

| Onset/Duration: | Onset- 45-90 seconds |
|                | Duration- 10-20 minutes |

| Classification: | Amide derivative, antiarrythmic |

### Action:
As an antiarrythmic, it suppresses automaticity and shortens the effective refractory period and action potential duration of His-Purkinje fibers and suppresses spontaneous ventricular depolarization during diastole by altering sodium permeability through cellular fast channel membranes. The drug acts preferentially on diseased or ischemic myocardial tissue, exerting its effect on the conduction system by inhibiting re-entry mechanisms and halts ventricular arrhythmias.

### Drip – mix 1G/250ml D5W using 60gtt set

<table>
<thead>
<tr>
<th>4mg/ml:</th>
<th>1mg</th>
<th>2mg</th>
<th>3mg</th>
<th>4mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>gtt/min:</td>
<td>15gtt</td>
<td>30gtt</td>
<td>45gtt</td>
<td>60gtt</td>
</tr>
</tbody>
</table>
### Lorazepam (Ativan)

<table>
<thead>
<tr>
<th>Indications:</th>
<th>Seizures</th>
<th>Anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sedation</td>
<td>Intubation maintenance</td>
</tr>
<tr>
<td>ADULT Dose:</td>
<td>1 - 2 mg IV/IN/IM. May repeat PRN</td>
<td></td>
</tr>
<tr>
<td>Contraindications:</td>
<td>Narrow angle glaucoma, pregnancy</td>
<td></td>
</tr>
<tr>
<td>Pediatric</td>
<td>0.1 mg/kg IV/IO/IM</td>
<td></td>
</tr>
<tr>
<td>Considerations:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Precautions:</td>
<td>Caution in use with pt's with renal or hepatic impairment. Increased CNS depression in pts intoxicated or on other depressant type drugs.</td>
<td></td>
</tr>
<tr>
<td>Adverse Effects:</td>
<td>Orthostatic hypotension, drowsiness, respiratory depression, Tachycardia, confusion</td>
<td></td>
</tr>
<tr>
<td>Onset/Duration:</td>
<td>Onset 1-5 minutes IV, 15-30 minutes IM Duration 12-24 hours</td>
<td></td>
</tr>
<tr>
<td>Classification:</td>
<td>CNS depressant via facilitation of inhibitory neurotransmitter gamma-aminobutyric acid (GABA) at benzodiazepine receptor sites in the ascending reticular activating system. Effects include muscle relaxation, anticonvulsant activity and emotional behavior anxiolytic effects.</td>
<td></td>
</tr>
<tr>
<td>Action:</td>
<td>CNS depressant via facilitation of inhibitory neurotransmitter gamma-aminobutyric acid (GABA) at benzodiazepine receptor sites in the ascending reticular activating system. Effects include muscle relaxation, anticonvulsant activity and emotional behavior anxiolytic effects.</td>
<td></td>
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<tr>
<td>Notes:</td>
<td>Very viscous solution, dilute when giving IV</td>
<td></td>
</tr>
</tbody>
</table>

### Magnesium Sulfate (MgSO4)

<table>
<thead>
<tr>
<th>Indications:</th>
<th>Eclamptic seizures refractory VF/VT</th>
<th>Torsades de Pointes refractory bronchospasm</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADULT Dose:</td>
<td>TdP/VF/VT: 2g IVP</td>
<td>Eclamptic SZ: 4g IVP</td>
</tr>
<tr>
<td></td>
<td>Breathing diff/RAD: 2g/100cc NS/D5W</td>
<td></td>
</tr>
<tr>
<td>Contraindications:</td>
<td>Renal disease, heart block, hypermagnesemia</td>
<td></td>
</tr>
<tr>
<td>Precautions:</td>
<td>Caution should be used in patients receiving digitalis as it may cause severe hypotension or cardiac arrest. Calcium chloride should be readily available as an antidote if respiratory depression results from treatment.</td>
<td></td>
</tr>
<tr>
<td>Adverse Effects:</td>
<td>hypotension, respiratory depression, bradycardia, dysrhythm-mias, cardiac arrest, CNS depression, flushing, sweating</td>
<td></td>
</tr>
<tr>
<td>Onset/Duration:</td>
<td>1-5 min onset approximately 30 min duration</td>
<td></td>
</tr>
<tr>
<td>Classification:</td>
<td>Electrolyte, anticonvulsant, antidysrhythmic</td>
<td></td>
</tr>
<tr>
<td>Action:</td>
<td>Decreases acetylcholine at neuromuscular junction (motor end plate), which is responsible for anticonvulsant properties; reduces SA node impulse formation and prolongs conduction time in the myocardium; Attracts and retains water in the intestinal lumen which distends the bowel to promote mass movement and relieve constipation</td>
<td></td>
</tr>
<tr>
<td>Drug : Drug interaction</td>
<td>Potentiates neuromuscular blockade produced by nondepolarizing paralytics (rocuronium/Zemuron, vecuronium/ Norcuron)</td>
<td></td>
</tr>
<tr>
<td><strong>Indications:</strong></td>
<td>Allergic reaction</td>
<td>Anaphylaxis</td>
</tr>
<tr>
<td></td>
<td>Upper airway burns</td>
<td>Reactive airway disease</td>
</tr>
<tr>
<td></td>
<td>COPD exacerbations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>History of adrenal insufficiency associated with either serious trauma/illness or shock unresponsive to conventional therapy</td>
<td></td>
</tr>
<tr>
<td><strong>ADULT Dose:</strong></td>
<td>125 mg IV / IO / IM</td>
<td></td>
</tr>
<tr>
<td><strong>Contraindications:</strong></td>
<td>Preterm infants, Newborn, systemic fungal infections</td>
<td></td>
</tr>
<tr>
<td><strong>Pediatric Considerations:</strong></td>
<td>2 mg/kg IV / IO / IM</td>
<td></td>
</tr>
<tr>
<td><strong>Precautions:</strong></td>
<td>Use with caution in patients with G.I. bleeding, diabetes mellitus &amp; severe infection</td>
<td></td>
</tr>
<tr>
<td><strong>Adverse Effects:</strong></td>
<td>Alkalosis, CHF, headache, hypertension, hypokalemia, seizures, nausea and vomiting</td>
<td></td>
</tr>
<tr>
<td><strong>Onset/Duration:</strong></td>
<td>Onset: 20 minutes-2 hours</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Duration: 18-36 hours</td>
<td></td>
</tr>
<tr>
<td><strong>Classification:</strong></td>
<td>Corticosteroid, glucocorticoid steroid, anti-inflammatory</td>
<td></td>
</tr>
<tr>
<td><strong>Action:</strong></td>
<td>Decreases inflammation by depressing migration of polymophonuclear leukocytes and activity of endogenous mediators of inflammation. Potentiates vascular smooth muscle relaxation by beta adrenergic agonists.</td>
<td></td>
</tr>
<tr>
<td><strong>Notes:</strong></td>
<td>Hypoglycemic responses to insulin and oral hypoglycemic agents may be blunted. Potassium depleting agents may potentiate hypokalemia induced by corticosteroids.</td>
<td></td>
</tr>
</tbody>
</table>
### Metoprolol (Lopressor)

<table>
<thead>
<tr>
<th>Indications:</th>
<th>AMI</th>
<th>Dysrhythmias</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADULT Dose:</strong></td>
<td>2.5 - 5mg slow IV q 5min; to a maximum dose of 15 mg</td>
<td></td>
</tr>
<tr>
<td><strong>Contraindications:</strong></td>
<td>Documented hypersensitivity</td>
<td>Uncompensated congestive heart failure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cardiogenic shock</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AV conduction abnormalities</td>
</tr>
<tr>
<td><strong>Precautions:</strong></td>
<td>During IV administration, carefully monitor blood pressure, heart rate, and ECG. Goal of treatment is to reduce heart rate to 60-90 beats/min.</td>
<td></td>
</tr>
<tr>
<td><strong>Adverse Effects:</strong></td>
<td>Hypotension, CHF, Dizziness, chest pain, headache, Bronchospasm, Bradycardia</td>
<td></td>
</tr>
<tr>
<td><strong>Onset/Duration:</strong></td>
<td>Onset immediate, peaks in 20 minutes IV / Duration 5-8 hours</td>
<td></td>
</tr>
<tr>
<td><strong>Classification:</strong></td>
<td>Beta-blocker</td>
<td></td>
</tr>
<tr>
<td><strong>Action:</strong></td>
<td>Selective beta-1-adrenergic receptor blocker that decreases the automaticity of contractions (and thus heart rate). Negative inotropic and chronotropic effects are manifested by slowed AV conduction, antidysrhythmic effects, and decreased myocardial oxygen demand.</td>
<td></td>
</tr>
<tr>
<td><strong>Notes:</strong></td>
<td>Use of Calcium channel blockers may potentiate side effects/adverse effects; toxicity of metoprolol may increase with coadministration of phenothiazines and calcium channel blockers; metoprolol may increase toxicity of digoxin, flecainide, clonidine, epinephrine, nifedipine, prazosin, verapamil, and lidocaine</td>
<td></td>
</tr>
</tbody>
</table>
## Midazolam (Versed)

<table>
<thead>
<tr>
<th><strong>Indications:</strong></th>
<th>RSI induction</th>
<th>Seizure</th>
<th>Chemical restraint</th>
</tr>
</thead>
</table>
| **ADULT Dose:**  | RSI: 2.5-10mg IV/IO over 2 minutes  
Chemical restraint: 2.5-5mg IM/IV/IN over 2 min, repeat PRN  
Seizure: 2.5-5mgIV/IM/IO/IN |         |                    |
| **Contraindications:** | Hypersensitivity, OD of alcohol or other CNS depressants, depressed vital signs / hypoperfusion, acute narrow angle glaucoma, Pregnancy |         |                    |
| **Pediatric Considerations:** | 6 months to 5 years of age: Initial dose 0.05 to 0.1 mg/kg. A total dose up to 0.6 mg/kg  
6 to 12 years of age: Initial dose 0.025 to 0.05 mg/kg; total dose up to 0.4 mg/kg may be needed to reach the desired endpoint but usually does not exceed 10 mg total. |         |                    |
| **Precautions:** | Use caution in patients with renal impairment, history of COPD; may wish to double the IV dose when administering IM |         |                    |
| **Adverse Effects:** | Respiratory depression or arrest, Hypotension, bradycardia, HA, N/V, pain at injection site, hiccups |         |                    |
| **Onset/Duration:** | Onset IV/ IO: 1-3 min  
IM: approx 10-20 min  
duration of action is dose dependent |         |                    |
| **Classification:** | Benzodiazepine, CNS depressant, anticonvulsant, amnestic, muscle relaxant |         |                    |
| **Action:** | Potentiation of gamma aminobutyric acid (GABA) by binding to specific benzodiazepine receptors in the CNS; may act on limbic system and on the reticular formation |         |                    |
| **Notes:** | Sedative effect potentiated by barbiturates, alcohol, and narcotics |         |                    |
### Morphine

<table>
<thead>
<tr>
<th>Indications:</th>
<th>Pain management, Pulmonary edema, Procedural sedation, Analgesia, Acute Myocardial Infarction</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADULT Dose:</td>
<td>2-4 mg IV/In/IM titrated, 1-3 mg q 2 min to 20 mg max</td>
</tr>
<tr>
<td>Contraindications:</td>
<td>Head injury, exacerbated COPD, depressed respiratory drive, hypotension, ALOC</td>
</tr>
<tr>
<td>Pediatric Considerations:</td>
<td>0.1 mg/kg IV/IN/IO</td>
</tr>
<tr>
<td>Precautions:</td>
<td>Patients with acute bronchial asthma, chronic pulmonary diseases, severe respiratory depression, and pulmonary edema induced by chemical irritants.</td>
</tr>
<tr>
<td>Adverse Effects:</td>
<td>Respiratory depression, hypotension, ALOC, nausea &amp; vomiting</td>
</tr>
<tr>
<td>Onset/Duration:</td>
<td>IV immediate onset, peak effect 20 min. IM/SQ 15-30 min. , peak effect 30-60 min. Duration 2-7 hours</td>
</tr>
<tr>
<td>Classification:</td>
<td>Narcotic analgesic</td>
</tr>
<tr>
<td>Action:</td>
<td>Narcotic agonist with activity at u-receptors (supraspinal analgesia, euphoria, respiratory and physical depression), K-receptors (sedation and myosis), and delta-receptors (dysphonia, hallucinations, respiratory and vasomotor stimulation)</td>
</tr>
<tr>
<td>Notes:</td>
<td>Naloxone and respiratory equipment should be immediately accessible.</td>
</tr>
</tbody>
</table>

### Naloxone (Narcan)

<table>
<thead>
<tr>
<th>Indications:</th>
<th>Suspected or Known narcotic overdose Altered level of consciousness</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADULT Dose:</td>
<td>0.4 - 2mg IM/IV/IO/IN/SQ/SVN</td>
</tr>
<tr>
<td>Contraindications:</td>
<td>None in the emergent setting</td>
</tr>
<tr>
<td>Pediatric considerations:</td>
<td>Dose : 0.1 mg/kg Max dose 2 mg Use caution in newborns</td>
</tr>
<tr>
<td>Precautions:</td>
<td>Rapid reversal of narcotic effects may lead to combative behavior and vomiting May not reverse hypotension For patients with chronic pain issues administer 0.4 mg increments until respirations improve</td>
</tr>
<tr>
<td>Adverse Effects:</td>
<td>Hypertension, Nausea, Vomiting, Tremors, Dysrhythmias</td>
</tr>
<tr>
<td>Onset/Duration:</td>
<td>IV/IO immediate SQ/ IM 5-10 minutes 20-30 minute duration</td>
</tr>
<tr>
<td>Classification:</td>
<td>Narcotic Antagonist</td>
</tr>
<tr>
<td>Action:</td>
<td>Competitively binds with opiate receptor sites in the CNS</td>
</tr>
</tbody>
</table>
**Nitroglycerin** *(NitroStat /NitroQuick)*

<table>
<thead>
<tr>
<th><strong>Indications:</strong></th>
<th>ACS, Acute angina, MI, CHF with pulmonary edema</th>
</tr>
</thead>
</table>
| **ADULT Dose:** | 0.4 mg SL q 3-5 minutes SBP >100 and patient is symptomatic  
Drip: Start at10mcg/min increase q 4-5 min titrate to effect to max 100 mcg/min  
Paste; 1-2 inches PRN |
| **Contraindications:** | SBP <100, Intracranial bleeding/head trauma  
Within 24 hours of erectile dysfunction or pulmonary hypertension  
medication Suldenafil (Viagra/Revation) or Vardenafil (Levitra)  
Within 48 hours of erectile dysfunction medication Tadalafil (Cialis) |
| **Precautions:** | Will cause severe loss of blood pressure if administered to a patient experiencing an inferior MI |
| **Adverse Effects:** | Hypotension, HA, syncope, reflex tachycardia, skin flushing |
| **Onset/Duration:** | Onset immediate, 0-3 minutes duration up to 30 minutes |
| **Classification:** | Nitrate |
| **Action:** | Causes relaxation of the vascular smooth muscle via stimulation of intracellular cyclic guanosine monophosphate production. This results in decreased preload, afterload, blood pressure, left ventricular workload and myocardial oxygen demand. Relaxes esophageal smooth muscle. |
| **Notes:** | Aspirin may increase nitrate serum concentrations; marked symptomatic hypotension may occur with co-administration of calcium channel blockers or beta-blockers (dose adjustment of either agent may be necessary) |

**Nitrous Oxide** *(Nitronox)*

| **Indications:** | Acute pain due to orthopedic trauma (i.e. soft tissue injury or suspected fracture), renal colic, burns, abdominal pain (not due to suspect bowel obstruction), moderate to severe pain, anxiety, apprehension |
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### Norepinephrine Bitartrate (Levophed)

**Indications:**

**ADULT Dose:**
Mix 2 AMPS or 8mg in 250cc of D5W then titrate to effect. Adjust rate of flow to establish and maintain low normal BP (80-100mmHg systolic) sufficient to maintain vital organ circulation. In previously HTN pt, recommend BP rise no higher than 40mmHg below preexisting systolic BP. Turn drip off if blood pressure maintains at normal levels. Monitor BP q 2min until reach desired BP, then q 5min with continued infusion. Rate of flow watched constantly; pt never left unattended.

**Contraindications:**
Sulphite allergy. Hypotensive states due to hypovolemia from blood volume deficits except emergency measure to maintain coronary and cerebral artery perfusion until blood volume replacement therapy completed. Mesenteric or peripheral vascular thrombosis.

**Pediatric Considerations:**
0.01-0.5mcg/kg/minute IV drip only (rarely used).

**Precautions:**
Can be deactivated by alkaline solutions. Infusion site in upper extremity large vein, AC if possible. Extravasation can cause tissue necrosis. Caution with occlusive vascular disease, elderly. Infusion site checked frequently for free flow. Blanching along course of infused vein, sometimes without obvious extravasation, attributed to vasa vasorum constriction with increased permeability of vein wall, permitting leakage. Extreme caution with MAOI or antidepressant triptyline or imipramine types per severe, prolonged hypertension. If continuous admin to maintain BP in absence of blood volume replacement, following may occur: severe peripheral, visceral vasoconstriction; decreased renal perfusion, urine output; poor systemic blood flow despite “normal” BP; tissue hypoxia; lactate acidosis. Avoid abrupt withdrawal.

**Adverse Effects:**
Anxiety, palpitations, hypertension, reflex bradycardia. VT/VF in pts with profound hypoxia or hypercarbia. Conventional dose with hypersensitive pt. (hyperthyroid) or overdose may cause severe HTN, violent HA, photophobia, stabbing retrosternal px, pallor, intense sweating, vomiting.

**Onset/Duration:**
Rapid/1-2min following discontinuation of infusion.

**Classification:**
Sympathomimetic

**Action:**

**Notes:**
Elderly pt dose start at lower end, reflecting greater frequency of decreased hepatic, renal, and cardiac function.
Admin in saline solution alone not recommended.

<table>
<thead>
<tr>
<th>Dose (mcg/min)</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate (mL/hr.)</td>
<td>3.8</td>
<td>6</td>
<td>8</td>
<td>9</td>
<td>11</td>
<td>13</td>
<td>15</td>
<td>17</td>
<td>19</td>
<td>21</td>
<td>23</td>
<td>24</td>
<td>26</td>
<td>28</td>
<td>30</td>
<td>32</td>
<td>34</td>
</tr>
</tbody>
</table>

Mix 4mg into 250mLD5W Usual dose range 2-16mcg/min Final Concentration 32mcg/mL Maximum dose 20mcg/min
### Ondansetron (Zofran)

<table>
<thead>
<tr>
<th>Indications:</th>
<th>Nausea/vomiting</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADULT Dose:</strong></td>
<td>4-8mg IV/IM/PO/SL Slow IV or IM</td>
</tr>
<tr>
<td><strong>Contraindications:</strong></td>
<td>Hypersensitivity, liver disease (reduce dose)</td>
</tr>
<tr>
<td><strong>Pediatric Considerations:</strong></td>
<td>0.15 mg/kg IV/IM/PO Recommended for use in children greater than 2 years of age</td>
</tr>
<tr>
<td><strong>Precautions:</strong></td>
<td>Maintain lower dose with amiodarone</td>
</tr>
<tr>
<td></td>
<td>Maintain lower dose with liver disease</td>
</tr>
<tr>
<td><strong>Adverse Effects:</strong></td>
<td>Rare hypersensitivity, fatigue, pyrexia, dizziness, headache, constipation, unirary retention.</td>
</tr>
<tr>
<td><strong>Onset/Duration:</strong></td>
<td>Rapid onset duration 5 hours</td>
</tr>
<tr>
<td><strong>Classification:</strong></td>
<td>Antiemetic</td>
</tr>
<tr>
<td><strong>Action:</strong></td>
<td>Selective serotonin blocking agent</td>
</tr>
<tr>
<td><strong>Notes:</strong></td>
<td>May precipitate with Sodium bicarbonate.</td>
</tr>
</tbody>
</table>

### Oxymetazoline (Afrin)

<table>
<thead>
<tr>
<th>Indications:</th>
<th>Pre-medication for nasal intubation, Epistaxis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADULT Dose:</strong></td>
<td>2-3 puffs each nostril (on inhalation)</td>
</tr>
<tr>
<td><strong>Contraindications:</strong></td>
<td>Known hypersensitivity</td>
</tr>
<tr>
<td><strong>Pediatric Considerations:</strong></td>
<td>Children under 12 require diluted concentration</td>
</tr>
<tr>
<td><strong>Precautions:</strong></td>
<td>Hyperthyroidism, Cardiac Disease Hypertension, Diabetes mellitus, Simultaneous use of MAOI and ephedrine may result in Hypertensive crisis</td>
</tr>
<tr>
<td><strong>Adverse Effects:</strong></td>
<td>Cardiovascular collapse Hypertension palpitations</td>
</tr>
<tr>
<td><strong>Onset/Duration:</strong></td>
<td>Immediate onset 30min-4hour duration</td>
</tr>
<tr>
<td><strong>Classification:</strong></td>
<td>vasoconstrictor</td>
</tr>
<tr>
<td><strong>Action:</strong></td>
<td>Local vasoconstriction of dilated arterioles causing reduction of blood flow and reduction of nasal congestion</td>
</tr>
</tbody>
</table>
### Oxytocin (Pitocin)

<table>
<thead>
<tr>
<th>Indications:</th>
<th>Control of postpartum hemorrhage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADULT Dose:</strong></td>
<td>10 units IM then mix 20 units in 1000cc NS administered IV at 50-1000cc/hr to control postpartum hemorrhage</td>
</tr>
<tr>
<td><strong>Contraindications:</strong></td>
<td>Hypersensitivity</td>
</tr>
<tr>
<td></td>
<td>Toxemia of pregnancy</td>
</tr>
<tr>
<td></td>
<td>Undelivered placenta</td>
</tr>
<tr>
<td></td>
<td>Undelivered baby</td>
</tr>
<tr>
<td><strong>Precautions:</strong></td>
<td>Status post cervical or uterine surgery, uterine sepsis, primipara after age 35</td>
</tr>
<tr>
<td><strong>Adverse Effects:</strong></td>
<td>HTN, subarachnoid hemorrhage, anxiety, dysrhythmias, tetany, uterine rupture, hyponatremia</td>
</tr>
<tr>
<td><strong>Onset/Duration:</strong></td>
<td>Onset IV: 1 min, IM: 3-7 min</td>
</tr>
<tr>
<td></td>
<td>Duration IV: 30 min with half-life of 12-17 min</td>
</tr>
<tr>
<td></td>
<td>IM: 60 min with half-life of 12-17 min</td>
</tr>
<tr>
<td><strong>Classification:</strong></td>
<td>Hormone</td>
</tr>
<tr>
<td><strong>Action:</strong></td>
<td>A synthetic water-soluble protein pharmacologically identical to the naturally-occurring oxytocin secreted by the posterior pituitary. Directly produces phasic uterine contractions characteristic of normal labor and delivery and to treat uterine atony.</td>
</tr>
<tr>
<td><strong>Notes:</strong></td>
<td>Additive effects with other vasopressors and ephedra, amphetamine or methamphetamines resulting in severe hypertension; rule out multiple fetuses.</td>
</tr>
</tbody>
</table>

### Prednisone

<table>
<thead>
<tr>
<th>Indications:</th>
<th>Reactive airway disease</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADULT Dose:</strong></td>
<td>60 mg PO</td>
</tr>
<tr>
<td><strong>Contraindications:</strong></td>
<td>Systemic fungal infections</td>
</tr>
<tr>
<td><strong>Pediatric Considerations:</strong></td>
<td>1 – 2 mg/kg PO</td>
</tr>
<tr>
<td><strong>Adverse Effects:</strong></td>
<td>Prolonged wound healing, nausea &amp; vomiting</td>
</tr>
<tr>
<td><strong>Classification:</strong></td>
<td>Glucocorticoid</td>
</tr>
<tr>
<td><strong>Action:</strong></td>
<td>Decreases inflammation by depressing migration of polymorphonuclear leukocytes and activity of endogenous mediators of inflammation.</td>
</tr>
<tr>
<td><strong>Notes:</strong></td>
<td>Attempt to administer medication with pudding or other palatable substance</td>
</tr>
</tbody>
</table>
## Procainamide (Pronestyl)

<table>
<thead>
<tr>
<th><strong>Indications:</strong></th>
<th>Consider as adjunct to other anti-arrhythmic (amiodarone, Lidocaine) for perfusing VT, or wide-complex tachycardia of unknown origin, WPW</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADULT Dose:</strong></td>
<td>Perfusing rhythm: loading dose 20mg/min IV infusion up to 17mg/kg followed by drip of 1-4mg/min (mix 2Grams/250cc NS for 8mg/cc). Maximum total dose 10 mg. <strong>Stop</strong> if hypotension occurs or if QRS widens by 50%</td>
</tr>
</tbody>
</table>
| **Contraindications:** | 2nd & 3rd AV block  
Bradycardias  
Torsades  
Prolonged QT  
Lupus |
| **Pediatric Considerations:** | 2-6mg/kg slow IV at 25 to 50mg/min |
| **Precautions:** | May exacerbate arrhythmias or produce paradoxical VT in Afib/Aflutter patients |
| **Adverse Effects:** | Anxiety, nausea, seizures, widening QRS, hypotension, CNS toxicity |
| **Onset/Duration:** | 30 min – 2 hours onset  
18-36 hours duration |
| **Classification:** | Anti-arrhythmic |
| **Action:** | Class 1A membrane stabilizer inhibits recovery after repolarization resulting in decreasing myocardial excitability and conduction velocity. |
| **Notes:** | Caution with concomitant use of other class 1A antiarrhythmics (Quinidine, TCAs), digoxin |
**Promethazine** *(Phenergan)*

<table>
<thead>
<tr>
<th><strong>Indications:</strong></th>
<th>Nausea /vomiting</th>
<th>Analgesic potentiation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADULT Dose:</strong></td>
<td>6.25-12.5 mg slow IV/IO/deep IM (if $\geq$ 60 y/o 12.5 mg IV/IO/IM) start at 6.25 mg and titrate dose to desired effect <strong>Must be diluted</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Contraindications:</strong></td>
<td>Documented hypersensitivity Comatose patients Debilitated patients (signs of dehydration and weakness) Glaucoma Concomitant CNS depressant use/administration Children under age 2</td>
<td></td>
</tr>
<tr>
<td><strong>Precautions:</strong></td>
<td>Avoid SQ administration <strong>Give slowly</strong>-rapid administration can cause vein irritation, phlebitis and sclerosis Avoid concomitant use with epinephrine as it may result in hypotension Watch for signs/symptoms of excessive sedation. Dystonic reaction (treat with Diphenhydramine)</td>
<td></td>
</tr>
<tr>
<td><strong>Adverse Effects:</strong></td>
<td>Reduces seizure threshold May reduce seizure threshold in heatstroke patients. Drowsiness, sedation, ALOC, allergic reaction, dysrhythmia, nausea and vomiting, hyperexcitability, dystonic (extrapyramidal) reaction and hypertension. <strong>Use in children may cause hallucinations, convulsions and sudden death.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Onset/Duration:</strong></td>
<td>Onset: IV, 5 minutes; IM, 20 minutes Duration: 4-6 hours</td>
<td></td>
</tr>
<tr>
<td><strong>Classification:</strong></td>
<td>Anti-emetic, phenothiazine, antihistamine, H\textsubscript{1} receptor antagonist, anti-vertigo agent and antitussive</td>
<td></td>
</tr>
<tr>
<td><strong>Action:</strong></td>
<td>Blocks cholinergic receptors in the vomiting center, which mediate nausea and vomiting; competes with histamine for the H\textsubscript{1} receptor site.</td>
<td></td>
</tr>
<tr>
<td><strong>Notes:</strong></td>
<td>In case of dystonic reaction, treat with diphenhydramine. Promethazine decreases the effects of anticoagulation therapy.</td>
<td></td>
</tr>
</tbody>
</table>
### Rocuronium (Zemuron)

<table>
<thead>
<tr>
<th>Indications:</th>
<th>Need for aggressive airway control and maintenance using RSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADULT Dose:</td>
<td>0.6-1.2 mg/kg IV</td>
</tr>
<tr>
<td>Contraindications:</td>
<td>Muscular disorders, Known hypersensitivity</td>
</tr>
<tr>
<td>Pediatric Considerations:</td>
<td>1 mg/kg IV</td>
</tr>
<tr>
<td>Precautions:</td>
<td>Not recommended for RSI in Caesarean patients or those over 65 years of age.</td>
</tr>
<tr>
<td>Adverse Effects:</td>
<td>Hypotension, Altered mental status, Increases pulmonary resistance</td>
</tr>
<tr>
<td>Onset/Duration:</td>
<td>Onset: 60-70 seconds, Duration: 20+ minutes</td>
</tr>
<tr>
<td>Classification:</td>
<td>Nondepolarizing neuromuscular blocker</td>
</tr>
<tr>
<td>Action:</td>
<td>Neuromuscular blockade (Paralysis)</td>
</tr>
<tr>
<td>Notes:</td>
<td>Airway control equipment must be readily available. Intubation conditions expected in 1-2 minutes after injection. Consider lower doses in extremely debilitated patients.</td>
</tr>
</tbody>
</table>

### Sodium Bicarbonate

<table>
<thead>
<tr>
<th>Indications:</th>
<th>Cardiac arrest 2° to preexisting hyperkalemia or TCA OD with ECG changes of prolonged QT or QRS, or with seizures. Consider in prolonged arrest.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADULT Dose:</td>
<td>8.4% - 1 mEq/kg IV, then 25 mEq in 250ml NS and run 250 ml/hr</td>
</tr>
<tr>
<td>Pediatric Considerations:</td>
<td>4.2% - 1 mEq/kg IV/IO</td>
</tr>
<tr>
<td>Precautions:</td>
<td>Do not administer in the same IV with calcium chloride, Prepare to ventilate patient.</td>
</tr>
<tr>
<td>Adverse Effects:</td>
<td>Metabolic alkalosis, electrolyte imbalance, fluid overload</td>
</tr>
<tr>
<td>Onset/Duration:</td>
<td>Immediate if IV, onset is less than 15 min, Duration 1-2 hours</td>
</tr>
<tr>
<td>Classification:</td>
<td>Alkalizing agent</td>
</tr>
<tr>
<td>Action:</td>
<td>Agent that dissociates to provide bicarbonate ion to buffer hydrogen ions in order to raise the pH level to reverse acidosis. It has also been found beneficial in the event of drug overdose in order to force urine alkalinization/divresis, membrane stabilization of cardiac cells as well, and electrolyte balance restoration.</td>
</tr>
<tr>
<td>Notes:</td>
<td>Most catecholamines and vasopressors (dopamine, epinephrine) can be deactivated by alkaline solutions like sodium bicarbonate. When administered with calcium chloride, a precipitate may form that will clog the IV line.</td>
</tr>
</tbody>
</table>
**Succinylcholine (Anectine)**

<table>
<thead>
<tr>
<th>Indications:</th>
<th>An adjunct to general anesthesia, to facilitate tracheal intubation, and to provide skeletal muscle relaxation.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADULT Dose:</strong></td>
<td>1.5 mg/kg IV</td>
</tr>
<tr>
<td><strong>Contraindications:</strong></td>
<td>Hyperkalemia</td>
</tr>
<tr>
<td><strong>Pediatric Considerations:</strong></td>
<td>1-2 mg/kg IV/IM</td>
</tr>
<tr>
<td><strong>Precautions:</strong></td>
<td>Caution should be observed if succinylcholine is administered to patients during the acute phase of injury following major burns, multiple trauma, extensive denervation of skeletal muscle or upper motor neuron injury.</td>
</tr>
<tr>
<td><strong>Adverse Effects:</strong></td>
<td>Respiratory depression Apnea</td>
</tr>
<tr>
<td></td>
<td>Anaphylaxis Hypertension</td>
</tr>
<tr>
<td></td>
<td>Hypotension Renal Failure</td>
</tr>
<tr>
<td></td>
<td>Hyperkalemia Increased intraocular pressure</td>
</tr>
<tr>
<td></td>
<td>Dysrhythmias Malignant hyperthermia</td>
</tr>
<tr>
<td><strong>Onset/Duration:</strong></td>
<td>Onset: 1 minute Duration: 4-6 minutes</td>
</tr>
<tr>
<td><strong>Classification:</strong></td>
<td>Depolarizing neuromuscular blocking agent</td>
</tr>
<tr>
<td><strong>Action:</strong></td>
<td>Short-acting depolarizing-type, skeletal muscle relaxant</td>
</tr>
<tr>
<td><strong>Notes:</strong></td>
<td>Should not be mixed with alkaline solutions.</td>
</tr>
</tbody>
</table>

**Vasopressin (Pitressin)**

<table>
<thead>
<tr>
<th>Indications:</th>
<th>VT/VF arrested states</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADULT Dose:</strong></td>
<td>40 Units IV/IO one time dose Follow with the administration of Epi q 15 min in the presence of cardiac arrest</td>
</tr>
<tr>
<td><strong>Contraindications:</strong></td>
<td>Chronic Nephritis, none in the setting of cardiac arrest.</td>
</tr>
<tr>
<td><strong>Precautions:</strong></td>
<td>This drug should not be used in patients with vascular disease, especially disease of the coronary arteries, except with extreme caution. May produce water intoxication. The early signs of drowsiness, listlessness, and headaches should be recognized to prevent terminal coma and convulsions.</td>
</tr>
<tr>
<td><strong>Adverse Effects:</strong></td>
<td>Moderate to severe skeletal weakness, which may require artificial respiration. Malignant hyperthermia</td>
</tr>
<tr>
<td><strong>Onset/Duration:</strong></td>
<td>Onset unknown, Duration 2 to 8 hrs</td>
</tr>
<tr>
<td><strong>Classification:</strong></td>
<td>Posterior pituitary antidiuretic hormone</td>
</tr>
<tr>
<td><strong>Action:</strong></td>
<td>Produces vascular smooth muscle contraction and decreased urinary flow rate.</td>
</tr>
</tbody>
</table>
### Vecuronium (Norcuron)

<table>
<thead>
<tr>
<th><strong>Indications:</strong></th>
<th>Paralysis to facilitate intubation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADULT Dose:</strong></td>
<td>0.1mg/kg IV/IO</td>
</tr>
<tr>
<td><strong>Contraindications:</strong></td>
<td>Newborn infants, myasthenia gravis</td>
</tr>
<tr>
<td><strong>Pediatric Considerations:</strong></td>
<td>0.1mg/kg IV/IO</td>
</tr>
<tr>
<td><strong>Precautions:</strong></td>
<td>Patient must be sedated</td>
</tr>
<tr>
<td><strong>Adverse Effects:</strong></td>
<td>Apnea</td>
</tr>
<tr>
<td><strong>Onset/Duration:</strong></td>
<td>Onset 1-2 minutes/ Duration 30 minutes</td>
</tr>
<tr>
<td><strong>Classification:</strong></td>
<td>Nondepolarizing neuromuscular blocking agent</td>
</tr>
<tr>
<td><strong>Action:</strong></td>
<td>Prevents acetylcholine from binding to receptors on the motor end plate, thus blocking depolarization.</td>
</tr>
</tbody>
</table>
Drug Reference

**Equivalents:**
- 1L = 1000 ml
- 1kg = 2.2lb
- 1kg = 1000 gm
- 1gm = 1000 mg
- 1mg = 1000 mcg

**Conversions:**
MULTIPLY to convert a larger unit into a smaller unit using the above table.
DIVIDE to convert a smaller unit into a larger unit using the above table.

**Dosage Calculations:**
To calculate the amount of drug to be drawn up or administered, use the following formula:

\[
\frac{\text{WHAT} \times \text{QUANTITY}}{\text{HAVE}} = \text{Amount to be administered}
\]

**IV Rate:**
To calculate an IV drip rate based on the volume of fluid to be infused over time. (Make sure the unit measurement of the concentration and the dosage are the same. [e.g. both in milligrams])

\[
\text{Drops per minute} = \frac{\text{VOLUME to be infused in cc} \times \text{Drop factor of IV set}}{\text{Time in minutes}}
\]

To calculate an IV drip rate for a medication that is administered based on a specified dosage to be infused per minute.

\[
\text{Drops per minute} = \frac{\text{Dosage per minute to be administered} \times \text{Drop factor (60)}}{\text{Concentration of medication per ml}}
\]

To calculate an IV drip rate for a medication that is administered based on a specified dosage per kilogram of body weight per minute.

\[
\text{Drops per minute} = \frac{\text{Desired dosage per minute} \times \text{Weight in Kg} \times \text{Drop factor of IV set}}{\text{Concentration of medication per ml}}
\]
Air Ambulance Transports

An air ambulance will be activated based on the Washington State Trauma Triage Procedures by the on scene EMS provider or Incident Commander. Whenever possible, providers will contact Medical Control prior to activating an air ambulance. The decision process as to when to mobilize an air ambulance should take into consideration: site resuscitation, stabilization capabilities and ground transport time. Dispatch may assist in contacting an air ambulance service for activation as soon as the need for air transport is identified.

Every attempt should be made to stabilize the patient prior to transport, including IV, airway, chest decompression or stabilization, control of external hemorrhage, and spine immobilization. Trauma associated cardiac arrest patients should not be transferred by air ambulance. Transfer of care to air ambulance personnel will optimally occur at designated landing sites. Deviation from designated landing sites should be briefly discussed with Medical Control.

Information to have available regarding airlift transport:
- Map coordinates - township, range and section
- Location of nearest landing zone
- Capability to transport to landing zone
- How landing zone is marked
- Any obstructions near landing zone
- Relevant weather information

Physician Present at the Scene

The prehospital care provider functions under the direction of the on-duty Medical Control physician. With Medical Control permission, a physician, physician's assistant or nurse practitioner on scene may participate in the care of a patient at the scene of any emergency in one of the following ways:

1. Take total responsibility for management of the patient(s). If so he/she must accompany the patient(s) to the hospital. The physician, physician's assistant or nurse practitioner on scene must supply proof of being a MD or DO prior to initiation of any patient care direction or treatment.

2. Offer assistance in caring for the patient(s), allowing the prehospital care provider to remain under the control of the Medical Control Physician and within the prehospital provider's scope of practice.

In all cases, the Medical Control Physician must be contacted to specifically delegate authority to any on-scene physician. Access to communication with the Medical Control should be provided to any on-scene physician on request. Notation of Physician's identification and directive from Medical Control must be documented on the Medical Incident Report.
Emergency at a Physician’s office

At a private Physician’s, physician’s assistant or nurse practitioner’s office, the individual physician maintains the responsibility for the treatment and management decisions for the patient. During transport, treatment rendered by the prehospital provider must remain within the provider’s scope of practice.

Patient Care Reports (PCR)

A copy of the ECG tracing **MUST** be attached to all copies of the PCR when **ANY** dysrhythmia or ischemic ST segment changes are encountered in the field. Per WAC requirements all PCR must be available at the Emergency Department within 24 hours of patient arrival.

The prehospital contact report is to include:

a. Unit identification  
b. Age and sex of patient  
c. Severity  
d. Chief complaint  
e. Relevant medical history  
f. Vital signs  
g. Treatment given, and response to treatment  
h. ETA  
i. Request for additional information or treatment
## Ten Critical Steps for Handling Possible Bioterrorism Events

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 – Maintain an index of suspicion.</strong></td>
<td>In an otherwise healthy population, some associations are very suggestive, especially when seen in clusters, high numbers, or unusual presentations.</td>
</tr>
<tr>
<td></td>
<td><strong>“Clustered” Symptoms</strong></td>
</tr>
<tr>
<td>Hemoptysis</td>
<td>Plague</td>
</tr>
<tr>
<td>Flaccid Paralysis</td>
<td>Botulism</td>
</tr>
<tr>
<td>Purpura</td>
<td>Viral Hemorrhagic Fevers (VHF)</td>
</tr>
<tr>
<td>Wide mediastinum</td>
<td>Anthrax</td>
</tr>
<tr>
<td>Centripetal rash</td>
<td>Smallpox</td>
</tr>
<tr>
<td><strong>2 – Protect yourself and your patients.</strong></td>
<td>Use appropriate personal protection equipment (PPE). Prophylaxis; vaccines, if available; or antibiotics, if risks are known.</td>
</tr>
</tbody>
</table>
| **3 – Adequately assess the patient.** | Review and assess the patient’s history. Also, ask:  
- Are others ill?  
- Were there any unusual events?  
- Was there an uncontrolled food source or other environmental factor?  
- Was there vector exposure?  
- Has the patient been traveling?  
- What is the patient’s immunization record?  
Perform a physical examination with special attention to the respiratory system, nervous system, skin condition and hematologic and vascular status. |
| **4 – Decontaminate as appropriate.** | Do not use bleach on exposed people. Soap, water and shampoo are perfectly adequate for all biological and most chemical agents. Chemically contaminated clothes should be removed and discarded safely. Biologically contaminated clothes can be laundered with soap, water and perhaps, bleach. |
| **5 – Establish a diagnosis.** | Think clinically and epidemiologically; always send specimens for culture. |
| **Symptom (individuals)** | **Possible Diagnosis** |
| Pulmonary | Tularemia, plague, staph enterotoxin B (SEB) |
| Neuromuscular | Botulism, Venezuelan equine encephalitis (VEE) |
| Bleeding/purpura | VHF, ricin, plague (late) |
| Rash (various types) | VHF, T2 mycotoxin, smallpox, plague |
| Flu-like symptoms | Varies |
| Immediate Symptoms (large numbers) | Possible Diagnosis |
| Pulmonary | SEB, mustard, Lewisite, phosgene, cyanide |
| Neurologic | Nerve gases, cyanide |
| Delayed Symptoms (large numbers) | Possible Diagnosis |
| Pulmonary | Biologic agents, mustard, |
| 6 – Render prompt treatment. | **phosgene**  
Neurologic  
Botulism, VEE, other encephalitis |
| 7 – Provide good infection control. | **A** irway, **B** reathing, **C** irculation.  
- Gown, gloves, mask and hand washing, and eyewear if necessary, are sufficient.  
- Recommended isolation precautions for biologic agents include:  
  - Standard Precautions – for all individuals/patients  
  - Contact Precautions – Viral Hemorrhagic Fevers  
  - Droplet Precautions – Pneumonic Plague and Tularemia  
  - Airborne Precautions - Smallpox |
| 8 – Alert the proper authorities. | **CALL FIRST:** Your local law enforcement agency; call either 911 or your local phone number for law enforcement.  
**CALL SECOND:** Your area FBI office  
  - Western WA: 206-622-0460  
  - Eastern WA: 509-747-5196  
  - After hours statewide in WA: 206-622-0460  
**CALL THIRD:** Your local emergency management agency, or if unavailable, the WA state EM Duty Officer at: 1-800-258-5990 |
| 9 – Assist in the epidemiologic investigations. | Steps in an epidemiologic investigation so as to determine who may be at risk  
- Count cases;  
- Relate to the at-risk population;  
- Make comparisons;  
- Develop hypotheses;  
- Test hypotheses;  
- Make inferences;  
- Conduct studies;  
- Interpret and evaluate. |
| 10 – Know and spread this information. | *This material is the original property of the San Diego County Medical Society. With their permission, it has been adapted, reprinted, and distributed by the Washington state Department of Health for the educational use of Washington state EMS personnel.* |
Initial questioning

Is there someone with you who speaks English?
¿Hay alguien con usted que hable inglés?
Ah-ee ahl-gee-ehn hohn oss-tehd keh ah-bleh enn-glehhs?

I speak a little Spanish. Please answer yes or no to the following questions.
Hablo un poco de español. Por favor conteste si o no a las siguientes preguntas.
Ah-bloh oon pohr-fah-borg kohn-tehs-the see oh noh ah lahs see-ghee-ehn-tehs preh-goohn tahs.

Speak slowly, please.
Hable despacito, por favor.
Ah-bleh dehs-pah-see-oh, pohr fah-bohr.

What is your name?
¿Cómo se llama?
Koh-moh she yah-mah?

How old are you?
¿Cuántos años tiene?
Kwahn-tohs ah-nyohs tee-eh-neh?

What did the problem start?
¿Cuándo empezó el problema?
Kwahn-doh ehm-peh-soh ehl prog-bleh-mah?

What medicine do you take?
¿Qué medicina toma?
Keh meh-dee-see-nah toh-mah?

Numbers

| 1. uno | 11. once | 21. viento uno |
| 2. dos | 12. doce | 22. viento doce |
| 3. tres | 13. trece | 23. veintitrés |
| 4. cuatro | 14. catorce | 24. veinticuatro |
| 5. cinco | 15. quince | 25. veinticinco |
| 6. seis | 16. dieciséis | 26. veintiséis |
| 7. siete | 17. diecisiete | 27. veintisiete |
| 8. ocho | 18. dieciocho | 28. veintiocho |
| 9. nueve | 19. diecinueve | 29. veintinueve |
| 10. diez | 20. viente | 30. treinta |

Days of the week

Lunes: Monday
Viernes: Friday
Martes: Tuesday
Sábado: Saturday
Miércoles: Wednesday
Domingo: Sunday
Jueves: Thursday

Common Medical Questions/Terms

How do you feel?
¿Cómo se siente?
Koh-moh she see-ehn-the?

What is the problem?
¿Cuál es el problema?
Kwahl ehs ehl proh-bleh-mah?

Have you had this problem before?
¿Ha tenido este problema antes?
Ah the-nee-doh ehs-the proh-bleh-mah ahh-tehs?

Do you have nausea or vomiting?
¿Tiene nauseas o vómitos?
Tee-eh-neh nah-oo-she-ah oh boh-meh-toh?

Don't move
No se mueva
Noh she mweh-bah

We are going to give you an IV
Vamos a ponerle suero intravenoso.

Do you have a fever?
¿Tiene fiebre?
Tee-eh-neh fee-eh-breh?

Calm down
Cálmese
Kahl-meh-sah
### Common Medical Questions/Terms (continued)

<table>
<thead>
<tr>
<th>Question</th>
<th>Spanish Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where does it hurt?</td>
<td>¿Dónde le duele?</td>
</tr>
<tr>
<td>¿Donde le duele?</td>
<td>Dohn-deh leh dweh-leh?</td>
</tr>
<tr>
<td>Show me</td>
<td>Enséñeme</td>
</tr>
<tr>
<td>¿Cómo?</td>
<td>Koh-moh?</td>
</tr>
<tr>
<td>For how long?</td>
<td>¿Por cuánto tiempo?</td>
</tr>
<tr>
<td>¿Por cuánto tiempo?</td>
<td>Pohr kwahn-toh tee-ehm-poh?</td>
</tr>
<tr>
<td>Why?</td>
<td>¿Por qué?</td>
</tr>
<tr>
<td>¿Le viaja el dolor a otro lugar?</td>
<td>Leh vee-ah-hah ehl doh-lohr ah oh-troh loo-gahr?</td>
</tr>
<tr>
<td>How long does the pain last?</td>
<td>¿Cuánto tiempo le dura el dolor?</td>
</tr>
<tr>
<td>¿Por cuánto tiempo le dura el dolor?</td>
<td>Kwahn-toh tee-ehm-poh leg doo-rah ehl doh-lohr?</td>
</tr>
<tr>
<td>Does the pain travel to another place?</td>
<td>¿Le viaja el dolor a otro lugar?</td>
</tr>
<tr>
<td>¿Le viaja el dolor al hombre (brazo) izquierdo?</td>
<td>Leh bee-ah-hah ehl doh-lohr ah ohm-broh (brah-soh) ees-kee-her-doh?</td>
</tr>
<tr>
<td>Is it the same since it started?</td>
<td>¿Es el dolor igual desde que empezó?</td>
</tr>
<tr>
<td>Is it severe?</td>
<td>¿Es severo?</td>
</tr>
<tr>
<td>¿Es adolorido?</td>
<td>Ehs ah-doh-loh-ree-doh?</td>
</tr>
<tr>
<td>Is it like pressure?</td>
<td>¿Es opresivo?</td>
</tr>
<tr>
<td>¿Es punzante?</td>
<td>Ehs poon-sahn-the?</td>
</tr>
<tr>
<td>Does it travel to your left shoulder (arm)?</td>
<td>¿Le viaja el dolor al hombre (brazo) izquierdo?</td>
</tr>
<tr>
<td>¿Le viaja el dolor al hombre (brazo) izquierdo?</td>
<td>Leh bee-ah-hah ehl doh-lohr ah ohm-broh (brah-soh) ees-kee-her-doh?</td>
</tr>
<tr>
<td>Is it piercing?</td>
<td>¿Es punzante?</td>
</tr>
<tr>
<td>Is it like pressure?</td>
<td>¿Es opresivo?</td>
</tr>
<tr>
<td>Is the pain the same since it started?</td>
<td>¿Es el dolor igual desde que empezó?</td>
</tr>
<tr>
<td>chest pain</td>
<td></td>
</tr>
<tr>
<td>Chest Pain</td>
<td></td>
</tr>
<tr>
<td>Pain in the chest?</td>
<td>¿Dolor del Pecho?</td>
</tr>
<tr>
<td>¿Dolor del Pecho?</td>
<td>Doh-lohr dehl peh-choh?</td>
</tr>
<tr>
<td>Point to where the pain is, please.</td>
<td>Apunte dónde tiene el dolor, por favor.</td>
</tr>
<tr>
<td>¿A punte donde tiene el dolor, por favor.</td>
<td>Ah-poon-the dohn-deh tee-eh-neh ehl doh-lohr.</td>
</tr>
<tr>
<td>Are you having contractions?</td>
<td>¿Tiene contracciones?</td>
</tr>
<tr>
<td>¿Tiene contracciones?</td>
<td>Tee-eh-neh kohn-track-see-ohn-ehs?</td>
</tr>
<tr>
<td>(Don't) push.</td>
<td></td>
</tr>
<tr>
<td>(No) Empuje.</td>
<td></td>
</tr>
<tr>
<td>(Noh) Ehm-poo-heh</td>
<td></td>
</tr>
<tr>
<td>OB / GYN</td>
<td></td>
</tr>
<tr>
<td>How many minutes do the contractions last?</td>
<td>¿Cuántos minutos le duran las contracciones?</td>
</tr>
<tr>
<td>¿Cuántos minutos le duran las contracciones?</td>
<td>Kwahn-toh mee-noo-tohs leh doo-rahn lahs kohn-trakh-see-ohn-ehs?</td>
</tr>
</tbody>
</table>
# MNEMONICS

<table>
<thead>
<tr>
<th>Patient Assessment</th>
<th>Newborn Assessment</th>
<th>Medical:</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Airway</td>
<td>A: Appearance</td>
<td>M: Morphine</td>
</tr>
<tr>
<td>B: Breathing</td>
<td>P: Pulse Rate</td>
<td>O: Oxygen</td>
</tr>
<tr>
<td>C: Circulation</td>
<td>G: Grimace (facial actions)</td>
<td>N: Nitrates</td>
</tr>
<tr>
<td>D: Disability</td>
<td>A: Activity</td>
<td>A: Aspirin</td>
</tr>
<tr>
<td>E: Expose</td>
<td>R: Respirations</td>
<td></td>
</tr>
</tbody>
</table>

### History:

<table>
<thead>
<tr>
<th>S: Signs and symptoms</th>
<th>P: Progression of symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Allergies</td>
<td>A: Associated chest pain</td>
</tr>
<tr>
<td>M: Medications</td>
<td>S: Sputum productions, speech, word sentences</td>
</tr>
<tr>
<td>P: Pertinent past medical history</td>
<td>T: Temperature, tiredness</td>
</tr>
<tr>
<td>L: Last oral intake</td>
<td>M: Medications the patient is currently taking</td>
</tr>
<tr>
<td>E: Events leading to injury or illness</td>
<td>E: Exercise/Exertion normally tolerated</td>
</tr>
<tr>
<td></td>
<td>D: Diagnosis (previous)</td>
</tr>
</tbody>
</table>

### Trauma Assessment:

<table>
<thead>
<tr>
<th>Scene safety</th>
<th>V: Vitals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spinal Stabilization</td>
<td>O: Oxygen</td>
</tr>
<tr>
<td>LOC</td>
<td>M: Monitor</td>
</tr>
<tr>
<td>Airway</td>
<td>I: IV/Information</td>
</tr>
<tr>
<td>Breathing</td>
<td>T: Transport decision</td>
</tr>
<tr>
<td>Oxygen</td>
<td>H: History</td>
</tr>
<tr>
<td>Circulation</td>
<td>A: Allergies</td>
</tr>
<tr>
<td>Arterial Bleeds</td>
<td>M: Medications</td>
</tr>
<tr>
<td>Bare the Body</td>
<td></td>
</tr>
</tbody>
</table>

### Trauma or Pain Questions:

<table>
<thead>
<tr>
<th>O: Onset</th>
<th>D: Deformities</th>
</tr>
</thead>
<tbody>
<tr>
<td>P: Provocation, progression</td>
<td>C: Contusions</td>
</tr>
<tr>
<td>Q: Quality, pain type?</td>
<td>A: Abrasions</td>
</tr>
<tr>
<td>R: Radiation</td>
<td>P: Punctures</td>
</tr>
<tr>
<td>S: Severity</td>
<td></td>
</tr>
<tr>
<td>T: Time, duration</td>
<td>B: Burns</td>
</tr>
<tr>
<td></td>
<td>T: Tenderness</td>
</tr>
<tr>
<td></td>
<td>L: Lacerations</td>
</tr>
<tr>
<td></td>
<td>S: Swelling</td>
</tr>
</tbody>
</table>
### Causes of Pulseless electrical Activity (PEA) – “5” H’s and T’s:

<table>
<thead>
<tr>
<th>H:</th>
<th>Hypovolemia</th>
</tr>
</thead>
<tbody>
<tr>
<td>H:</td>
<td>Hypoxia</td>
</tr>
<tr>
<td>H:</td>
<td>Hydrogen ion – acidosis</td>
</tr>
<tr>
<td>H:</td>
<td>Hypo- / Hypekalemia</td>
</tr>
<tr>
<td>H:</td>
<td>Hypoglycemia</td>
</tr>
<tr>
<td>H:</td>
<td>Hypothermia</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>T:</th>
<th>Toxins</th>
</tr>
</thead>
<tbody>
<tr>
<td>T:</td>
<td>Tamponade, cardiac</td>
</tr>
<tr>
<td>T:</td>
<td>Tension Pneumothorax</td>
</tr>
<tr>
<td>T:</td>
<td>Thrombosis, (Coronary or Pulmonary)</td>
</tr>
<tr>
<td>T:</td>
<td>Thrombosis, (hypovolemia increased ICP)</td>
</tr>
</tbody>
</table>

### Altered Mental Status (ALOC):

<table>
<thead>
<tr>
<th>A:</th>
<th>Alcohol, Drugs</th>
</tr>
</thead>
<tbody>
<tr>
<td>E:</td>
<td>Endocrine (glands)</td>
</tr>
<tr>
<td>I:</td>
<td>Insulin, Infection</td>
</tr>
<tr>
<td>O:</td>
<td>Overdose</td>
</tr>
<tr>
<td>U:</td>
<td>Uremia (2° kidney insufficiency)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>T:</th>
<th>Trauma</th>
</tr>
</thead>
<tbody>
<tr>
<td>I:</td>
<td>Infection</td>
</tr>
<tr>
<td>P:</td>
<td>Psychiatric</td>
</tr>
<tr>
<td>S:</td>
<td>Shock</td>
</tr>
</tbody>
</table>

### Triage: Charting:

<table>
<thead>
<tr>
<th>A:</th>
<th>Alert</th>
</tr>
</thead>
<tbody>
<tr>
<td>P:</td>
<td>Responsive to Verbal</td>
</tr>
<tr>
<td>V:</td>
<td>Responsive to Pain</td>
</tr>
<tr>
<td>U:</td>
<td>Unresponsive</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>S:</th>
<th>Subjective</th>
</tr>
</thead>
<tbody>
<tr>
<td>O:</td>
<td>Objective</td>
</tr>
<tr>
<td>A:</td>
<td>Assessment</td>
</tr>
<tr>
<td>P:</td>
<td>Plan</td>
</tr>
</tbody>
</table>
# PHONE NUMBERS

<table>
<thead>
<tr>
<th>HOSPITALS</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bremerton Naval Hospital</td>
<td>(360) 475-5678 Medical Reports</td>
<td>(360) 475-4286 (UCC)</td>
</tr>
<tr>
<td>Children’s Hospital Medical Center</td>
<td>(206) 987-2222 Medical Reports</td>
<td>(206) 987-2000 Main</td>
</tr>
<tr>
<td>Forks Community Hospital</td>
<td>(360) 374-6271 Main (ER ext. 190)</td>
<td></td>
</tr>
<tr>
<td>Harborview Medical Center</td>
<td>(206) 731-3074 Medical Reports</td>
<td>(206) 731-3000 Main</td>
</tr>
<tr>
<td>Harrison Medical Center – Bremerton</td>
<td>(360) 377-9111 Medical Reports</td>
<td>(360) 377-3911</td>
</tr>
<tr>
<td>Harrison Medical Center – Silverdale</td>
<td>(360) 744-8800 Main</td>
<td></td>
</tr>
<tr>
<td>Jefferson Healthcare</td>
<td>(360) 385-7617 Medical Reports</td>
<td>(360) 385-2200 Main</td>
</tr>
<tr>
<td>Madigan Army Medical Center</td>
<td>(253) 968-1396 Medical Reports</td>
<td>(253) 968-1390 Main (ER)</td>
</tr>
<tr>
<td>Mary Bridge Children’s Hospital</td>
<td>(253) 403-1476 Medical Reports</td>
<td>(253) 403-1418 Main (ER)</td>
</tr>
<tr>
<td>Mason General Hospital</td>
<td>(360) 426-8171 Medical Reports</td>
<td>(360) 426-1611 Main</td>
</tr>
<tr>
<td>Olympic Medical Center</td>
<td>(360) 417-7381 Medical Reports</td>
<td>(360) 417-7000 Main</td>
</tr>
<tr>
<td>St. Anthony’s</td>
<td>(253) 530-2100 Medical Reports</td>
<td>(253) 530-2000 Main</td>
</tr>
<tr>
<td>St. Peters Hospital</td>
<td>(360) 493-7289 (ER)</td>
<td></td>
</tr>
<tr>
<td>St. Josephs</td>
<td>(253) 426-6769 Medical Reports</td>
<td>(253) 627-4101 Main</td>
</tr>
<tr>
<td>Swedish 1st Hill</td>
<td>(206) 386-2573 Medical Reports</td>
<td>(206) 386-6000</td>
</tr>
<tr>
<td>Swedish Cherry Hill</td>
<td>(206) 320-2111 Medical Reports</td>
<td>(206) 320-2000</td>
</tr>
<tr>
<td>Tacoma General Hospital</td>
<td>(253) 627-8500 Medical Reports</td>
<td>(253) 403-1050 Main (ER)</td>
</tr>
<tr>
<td>University of Washington Medical Center</td>
<td>(206) 598-3300 Main</td>
<td>(206) 598-2000 Report line</td>
</tr>
<tr>
<td>Virginia Mason Seattle</td>
<td>(206) 583-6433 ED</td>
<td>(206) 624-1144 Main</td>
</tr>
<tr>
<td>COMMUNICATION CENTERS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-----------------------------</td>
<td></td>
</tr>
<tr>
<td>Airlift Northwest</td>
<td>(800) 426-2430</td>
<td></td>
</tr>
<tr>
<td>Clallam County (PENCOM)</td>
<td>(360) 452-4545</td>
<td></td>
</tr>
<tr>
<td>Jefferson County</td>
<td>(360) 385-3831</td>
<td></td>
</tr>
<tr>
<td>Kitsap County (CENCOM)</td>
<td>(360) 308-5400</td>
<td></td>
</tr>
<tr>
<td>Mason County</td>
<td>(360) 426-5533 or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(360) 426-4441 (Shel-com)</td>
<td></td>
</tr>
<tr>
<td>Olympic Ambulance</td>
<td>(800) 445-2257</td>
<td></td>
</tr>
<tr>
<td>INFORMATION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chem Trek</td>
<td>(800) 424-9300</td>
<td></td>
</tr>
<tr>
<td>Coast Guard Group Seattle</td>
<td>(206) 217-6001</td>
<td></td>
</tr>
<tr>
<td>Diver's Alert network (DAN)</td>
<td>(877) 595-0625</td>
<td></td>
</tr>
<tr>
<td>Department of Ecology</td>
<td>(425) 649-7000</td>
<td></td>
</tr>
<tr>
<td>National response &amp; Terrorist Hotline</td>
<td>(800) 424-8802</td>
<td></td>
</tr>
<tr>
<td>Poison Control</td>
<td>(800) 222-1222</td>
<td></td>
</tr>
<tr>
<td>WA State Ferries Office-Operations</td>
<td>(206) 515-3456 (watch officer)</td>
<td></td>
</tr>
<tr>
<td>WA State Patrol Dispatch</td>
<td>(360) 405-6650 (not for public use)</td>
<td></td>
</tr>
</tbody>
</table>
Personal Information:

Name: ____________________________________________

Address: __________________________________________

City: _________ State: _____ Zip: ______

Home: ____________________________________________

Cell: _____________________________________________

Work: _____________________________________________

Agency: ____________________________________________

Medical Information: ____________________________________________

________________________________________________________________________

________________________________________________________________________