REGION I
EMERGENCY
MEDICAL SERVICES

Standing Medical Orders

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

PROCEDURE: 12-Lead ECG Acquisition

**Overview:** Obtaining a 12-Lead ECG in the prehospital setting for the patient with a suspected acute cardiac event can be one of the most valuable pieces of information for the receiving Emergency Department to determine the clinical path for that patient. It remains essential that the provider avoids unnecessary extension of scene times to accomplish this acquisition.

EMT-Basic (BLS) services will be allowed to acquire and transmit 12-Lead ECGs. EMT-Basics will not be expected to interpret the ECG findings but will be expected to report the computerized interpretation to Medical Control.

**INFORMATION NEEDED**
- Level of the patient’s chest pain
- Patient vital signs
- Time of onset
- Pertinent medical history

**OBJECTIVE FINDINGS**
- Chest pain
- Shortness of breath
- Atypical chest pain symptoms such as epigastric, jaw, left arm pain, etc.
- Syncope
- Diaphoresis
- Nausea or nonspecific weakness in diabetes
- Previous MI unless a totally unrelated complaint
- At the EMT’s discretion—does not meet any of the criteria but the EMT feels that a 12-Lead ECG may be helpful

**PROCEDURE**
- The acquisition of a 12-Lead strip is targeted to be achieved within 10 minutes of the initial patient contact. Although there may be situations where this may not be possible, the 10 minute acquisition is optimal.
- Prepare the patient’s skin for ECG electrode attachment. This may include the shaving of excess hair, cleaning oily skin and/or drying diaphoresis at the electrode attachment sites.
- Attach the ECG patient cable leads to the patches on the patient’s skin. The diagram at the end of this SMO provides direction for lead placements.
- Encourage the patient to remain as still as possible. You may need to support the patient’s arms during acquisition.
- Acquire the 12-Lead ECG as directed by the manufacturer of the monitor.
PROCEDURE – continued

__If the monitor detects signal “noise” possibly caused by patient movement, poor electrode contact, or a disconnected electrode, take appropriate corrective actions to eliminate the “noise”.

__Establish contact with Medical Control. Give a brief patient assessment, condition and treatment report. If transmission is feasible alert Medical Control receiving hospital that you will be transmitting the patient’s 12-Lead ECG. EMT-Basic (BLS) services will be expected to report the 12-Lead computerized interpretation. EMT-Intermediate (ILS) and EMT-Paramedic (ALS) services will be expected to interpret and report as to whether they feel that the ECG represents a STEMI or non-STEMI.

__Verify that Medical Control has received the 12-Lead transmission. It is important to remember that this 12-Lead strip can be electronically sent to Medical Control while the transporting vehicle is moving.

__If 12 Lead ECG shows an inferior MI (elevation in II, III, and AVF) obtain right-sided leads if time permits.

__Attach a copy of the 12-Lead printed strip to the EMS Patient Care Report and leave the report with the receiving hospital RN or MD

__If patient condition changes consider repeating ECG

**Documentation of adherence to SMO**

__Documentation of objective findings

__Documentation of acquisition of 12-Lead ECG and transmission to Medical Control

__Documentation of STEMI ALERT

**MEDICAL CONTROL CONTACT CRITERIA**

__Contact Medical Control to transmit 12-Lead as soon as possible after acquisition.

__Communicate “STEMI ALERT” for ST Elevation MI (STEMI) early in radio transmission to the receiving hospital or Medical Control.

**PRECAUTIONS AND COMMENTS**

- Care must be taken to avoid any unnecessary extension of time at the scene.
- Patients who have a prehospital 12-Lead ECG performed should be taken to the hospital.
Standard 12 Lead

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<th>Heart Surface Viewed</th>
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<tr>
<td>$V_1$</td>
<td>Right side of sternum, fourth intercostal space</td>
<td>Septum</td>
</tr>
<tr>
<td>$V_2$</td>
<td>Left side of sternum, fourth intercostal space</td>
<td>Septum</td>
</tr>
<tr>
<td>$V_3$</td>
<td>Midway between $V_2$ and $V_4$</td>
<td>Anterior</td>
</tr>
<tr>
<td>$V_4$</td>
<td>Left midaxillary line, fifth intercostal space</td>
<td>Anterior</td>
</tr>
<tr>
<td>$V_5$</td>
<td>Left anterior axillary line; same level as $V_4$</td>
<td>Lateral</td>
</tr>
<tr>
<td>$V_6$</td>
<td>Left midaxillary line; same level as $V_4$</td>
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Right Side 12 Lead

Localizing ECG Changes
12 Lead Limb Placement

RA = Right Arm
LA = Left Arm
RL = Right Leg
LL = Left Leg

RA - White
LA - Black
RL - Green
LL - Red
SMO: Acute Abdominal Pain

Overview: Abdominal pain may vary from minor discomfort to acute pain. Abdominal pain may indicate inflammation, hemorrhage, perforation, obstruction and/or ischemia of an internal organ. Correct management of the patient with abdominal pain depends on recognizing the degree of distress the patient is suffering and identifying the possible etiology of the distress.

INFORMATION NEEDED

- Discomfort: location, quality, severity, onset, duration, aggravation or alleviation, radiation
- Associated symptoms: “indigestion”, fever or chills, nausea, vomiting, diarrhea, diaphoresis, dizziness
- Gastrointestinal: time and description of last meal, description of vomit if any, time of last bowel movement and description of feces (color, consistency, unusual odor, presence of blood, etc.)
- Urination: difficulty, pain, burning, frequency and description (color, consistency, unusual odor, presence of blood, etc.)
- Gynecological: last menstrual period, vaginal bleeding or discharge, sexual activity or trauma, and possibility of pregnancy
- Medical history: surgery, related diagnoses (e.g., infection, PID, hepatitis, gallstones, kidney stones, etc.) medications (OTC and prescribed) and other self-administered remedies (baking soda, Epsom salts, enemas, etc.)

OBJECTIVE FINDINGS

- General appearance: level of distress, skin color, diaphoresis
- Abdominal tenderness (guarding, rigidity, distention)
- Quality and symmetry of femoral pulses
- Cardiac rhythm/12 lead ECG, if indicated

TREATMENT

- Routine Medical Care
- Nothing by mouth (NPO)
- Consider ILS/ALS intercept
- 12 lead ECG, Cardiac monitor
- IV access
- If hypotensive (SBP<90 and signs of poor perfusion): fluid bolus, reassess and repeat if indicated
- Ondansetron for nausea and vomiting
- Pain Management per SMO
Documentation of adherence to SMO

- Abdominal physical exam
- Repeat vital signs
- IV access and fluid bolus if SBP<90 mmHg w/signs of poor perfusion
- Medication response
- 12 lead results and cardiac rhythm

Medical Control Contact Criteria

- Contact Medical Control whenever a question exists as to the best treatment course for the patient

PRECAUTIONS AND COMMENTS

- If Primary or Secondary Assessment indicate signs of shock, initiate transport early.
- Upper abdominal pain or “indigestion” may reflect cardiac origin. (See Chest Pain of Suspected Cardiac Origin SMO).
- Monitor for respiratory depression when administering narcotics.
- Give special attention to female patients of childbearing years. Acute abdominal pain should be considered to be an ectopic pregnancy until proven otherwise.
- Consider possible etiologies and obtain a detailed history & physical exam:
  - Inflammation = slow onset of discomfort, malaise, anorexia, fever and chills.
  - Hemorrhage = steady pain, pain radiating to the shoulders, signs & symptoms of hypovolemia.
  - Perforation = acute onset of severe symptoms and steady pain with fever.
  - Obstruction = cramping pain, nausea, vomiting, decreased bowel activity and upper quadrant pain.
  - Ischemia = acute onset of steady pain (usually no fever noted).
- Signs and symptoms of renal calculi (i.e. kidney stones) include: acute & severe flank pain that starts in the back and radiates to the groin, extreme restlessness, hematuria, and previous history of kidney stones (in patients over 60 with no previous history of kidney stones keep heightened awareness of Abdominal Aortic Aneurysm).

MEDICATION ADMINISTRATION CHART

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Original SMO Date: 07/04
Reviewed:
Last Revision: 06/17

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**SMO: Abuse: Domestic/Geriatric**

**Overview:** The severity of abuse may range from minor injuries to lethal acts. Elder neglect and abuse includes any conditions, situations, or physical evidence which cause suspicion that an elderly person has been mistreated, cared for inadequately, or exploited. Neglect or abuse may be of a physical, emotional, psychological, sexual or financial nature.

**INFORMATION NEEDED**
- History of abuse
- Primary assessment of patient
- Secondary assessment of patient

**OBJECTIVE FINDINGS**

Possible Indicators of abuse:
- Bruises/welts/lacerations
- Injuries that are unexplained/poorly explained/incompatible with the explanation
- Burns shape and size often reflect object used to burn
- Repeated injuries
- Frequent hospitalization
- Repeated use of Emergency Department services for injury
- Discrepancies between history and presenting illness
- Time delay between injury and coming to hospital (1-2 days)
- Reluctance to discuss circumstances surrounding injury
- Unexplained injuries
- Alleged third party inflicted injuries

**TREATMENT**
- Scene safety, notify law enforcement if needed
- **Routine Medical Care** and/or **Routine Trauma Care**
- Treat injuries see appropriate SMO, such as **Pain Management SMO**
- Should patient refuse care, resource assistance information should be provided
- Attempt to preserve evidence

**Documentation of adherence to SMO**
- Types of injuries sustained
- If local law enforcement were called
- Resource information given patient
### Medical Control Contact Criteria

- Contact Medical Control if any questions arise regarding the best treatment options for the patient
- Contact Medical Control for patient refusal

### PRECAUTIONS AND COMMENTS

- Information about shelter and alternatives is available 24 hours per day by calling the Domestic Violence Hotline (1-800-799-7233).

**Elder Abuse (All persons 60 years of age or older) must be reported**

- Illinois Department of Aging Hotline, 1-800-252-8966.
- In Winnebago and Boone counties, the Visiting Nurse Association of Rockford (VNA) is designated by the Department of Aging to investigate all possible elder abuse cases. A report can be made directly to VNA at (815) 971-3550, 24 hours a day, 7 days a week.

**Nursing Home Abuse**

- Suspected victims of nursing home abuse or neglect are to be reported to the proper authority as mandated by Illinois State Law PA 82-120, “The Abused and Neglected Long Term Care Facility Residents Reporting Act”. This authority is the Division of Enforcement, Illinois Department of Public Health: call 1-800-252-4343.

**Adult Protective Services**

- To report financial exploitation or neglect of an older person or a person with disabilities, ages call Adult Protective Services hotline number 1-866-800-1409.

**Supportive Living Facilities**

- For residents who live in Supportive Living Facilities call the Illinois Department of Healthcare and Family Services Complaint Hotline at 1-800-226-0768.
Overview: Managing a patient’s airway may be necessary due to upper or lower airway obstruction, inadequate ventilation, impairment of the respiratory muscles, ventilation-perfusion mismatching, diffusion abnormalities, or impairment of the nervous system. Dyspnea often is associated with hypoxia.

INFORMATION NEEDED
__ Scene survey
__ Chief complaint
__ History of foreign body airway obstruction, respiratory distress, etc. (see Primary Assessment)
__ Medical History (see Secondary Assessment)

OBJECTIVE FINDINGS
__ Mental status (AVPU)
__ Airway patency (head-tilt chin lift OR modified jaw thrust for unconscious patient or if C-spine trauma is a possibility)
__ Oxygenation and Circulatory status (pulse oximetry, vital signs)

TREATMENT
__ Assess airway patency utilizing adjuncts as indicated
__ Oxygen as indicated for patient condition. Maintain SpO2 levels in the 94% to 99% if possible.
   • Nasal cannula (2-6 L/min) for awake, oriented, stable patients without evidence of hypoperfusion
   • High flow via non-rebreather mask (10-15 L/min)
   • CPAP as indicated
   • Assist ventilations with BVM and 100% oxygen if indicated.
   • If EtCO2 is in place, attempt to maintain a reading between 35-45 mmHg.
__ Manage Foreign Body Airway Obstruction per American Heart Association standards
   __ Consider NG tube for gastric decompression
__ Assess airway patency utilizing adjuncts as indicated:
   • OPA
   • NPA
   • Supraglottic airway per EMS System approval according to manufacturer’s guidelines
   • Endotracheal Intubation
   • Needle Cricothyrotomy
   • Surgical Cricothyrotomy
   • Commercial cricothyrotomy device with prior Medical Director approval (prior to Medical Directors’ approval training must be submitted to IDPH with plans to assure ongoing competency)
TREATMENT (continued)

__ Confirm advanced airways and document with a minimum of three of the following:
- With EtCO₂ if available (most preferred method)
- Colorimetric device
- Visualization
- Auscultation
- Absence of gastric sounds
- Misting in the tube
- Bougie confirmation
- Esophageal detector
- Bi-lateral chest rise

Documentation of adherence to SMO
__ Indications for airway management
__ Methods utilized
__ Three methods of confirmation (for intubation)
__ Patient condition reassessed

Medical Control Contact Criteria

__ Contact Medical Control whenever a question exists as to the best treatment course for the patient

PRECAUTIONS AND COMMENTS
- Utilize BLS methods for maintaining airway patency and good ventilations and reassess patient’s oxygenation and ventilatory status BEFORE utilizing ALS advanced airway methods, particularly in pediatric patients. Benefits of intubation not demonstrated well in pediatrics.
- Needle Cricothyrotomy and Surgical Cricothyrotomy are the airways of LAST RESORT when all other methods of establishing and maintaining the airway have been attempted and have failed.
- See Pediatric Airway Management for children 8 years old and younger

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Overview: Alcohol/substance abuse affects nearly every organ system in the body producing neurological disorders, nutritional deficiencies, fluid and electrolyte imbalances, gastrointestinal disorders, cardiac, and immune suppression.

INFORMATION NEEDED
__ Amount of alcohol ingested. Possibility of any other drugs involved.
__ Medical history: trauma, tranquilizers, anticonvulsants, diabetes, other medical problems

OBJECTIVE FINDINGS
__ Altered mental status
__ Unsteady gait
__ May encounter behavioral problems

TREATMENT
__ Routine Medical Care
__ Protect airway. Anticipate the possibility of respiratory arrest, seizures and/or vomiting.
__ \( \text{O}_2 \) at 100% by NRB mask if patient producing adequate volume or BVM if inadequate ventilatory effort (volume) noted. Consider the use of a NPA. Use an OPA with caution due to risk of vomiting.
__ Consider intubation if GCS < or = to 8.
__ Obtain IV access
__ If there is impending respiratory arrest and narcotic use is suspected or if patient unable to protect airway, consider Naloxone.
__ Obtain glucose check:
  - If <80 and if gag reflex is intact, consider Oral Glucose
  - If <80 give Dextrose IVP, see Dextrose Dosing Chart
  - If <80 and no IV give Glucagon IM
__ Follow appropriate SMO’s for:
  - Seizures:
    Adult Seizures/Status Epilepticus
    Pediatric Seizures/Status Epilepticus
  - Respiratory/ cardiac arrest:
    Asystole/PEA – Adult
    V-Fib/V-Tach – Adult
    Pediatric V-Fib/Pulseless V-Tach
    Pediatric Respiratory Distress/Arest
    Pediatric Neonatal Resuscitation
  - Hypoglycemia
  - Diabetic Emergencies
Documentation of adherence to SMO
__Airway patency documented. If not patent, airway therapy documented (i.e. intubation).
__Oxygenation status documented. Oxygenation therapy documented.
__Glucose check documented.
__Medications given
__Reassessment documented if therapy undertaken.
__Other medical problems encountered

Medical Control Contact Criteria

__ Contact Medical Control whenever a question exists as to the best treatment course for the patient

PRECAUTIONS AND COMMENTS
- Remember that there are several conditions which can mimic intoxication. Assess carefully for:
  - Hypoglycemia
  - Hypoxia
  - Head injury
  - Behavioral emergency
- Be alert that chronic alcoholism may precipitate susceptibility to bleeding problems.
- Use of Naloxone can unmask other illicit drugs such as PCP which may cause the patient to become violent. Closely monitor for behavioral changes. Priority is to protect self and other EMS providers.

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Altered Mental Status - Adult

Overview: The term altered mental status describes a change from the “normal” mental state. The term level of consciousness indicates a patient’s state of awareness.

INFORMATION NEEDED
- Surroundings: syringes, blood glucose monitoring supplies, insulin, etc.
- Change in mental status: baseline status, onset and progression of altered state, symptoms such as headache, seizures, confusion, trauma, etc.
- Medical history: psychiatric and medical problems, medications, and allergies

OBJECTIVE FINDINGS
- AVPU and neurological assessment
- Signs of trauma
- Pupil size and reactivity
- Needle tracks or other signs of abuse such as smell of ETOH, empty pill bottles etc.
- Medical information tags, bracelets or medallions
- Blood glucose
- Respiratory depression or arrest due to overdose

TREATMENT
- Routine Medical Care
- Oral Glucose for conscious patient with gag reflex intact and BS < 80 mg/dl. If you are unable to measure blood glucose level, assume hypoglycemia.
- IV access
- Dextrose IVP if blood glucose <80 mg/dl or if patient is known diabetic; repeat as indicated
- If unable to establish an IV to administer Dextrose, Dextrose Dosing Chart and patient is without gag reflex and BS less than 80mg/dl. Glucagon IM
- Advanced airway management as indicated
- Naloxone IN, IVP or IM for suspected opiate overdose with respiratory depression consisting of respirations < 12 and or very shallow respirations and/or signs of shock (titrate IV Naloxone to overcome respiratory depression and repeat as needed)
- Administer fluid bolus for hypotension

Original SMO Date: 07/04
Reviewed: 10/13
Last Revision: 10/13; 06/17

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**Documentation of adherence to SMO**
- Neurologic assessment documented
- Blood glucose checked
- If blood glucose <80 mg/dl, treatment given per SMO and response documented
- ECG strip/12 lead given to receiving hospital
- If known, document name of suspected or confirmed narcotic
- Respiratory status with oxygen administration method and liter flow
- Pulse oximetry readings before and after therapeutic intervention
- Neurologic status before and after Naloxone administration

**Medical Control Contact Criteria**

- Contact Medical Control whenever a question exists as to the best treatment course for the patient

**PRECAUTIONS AND COMMENTS**

- Always assess for treatable etiologies (hypoglycemia, opiate overdose, dysrhythmias, etc.) of the altered mental status before performing advanced airway procedures.
- **Naloxone** can precipitate acute withdrawal syndrome. Use ONLY if patient is unconscious or severely altered with respiratory depression and you suspect opiate overdose.
- Make sure IV is patent before and during administration of Dextrose
- If refusal for transport refer to Refusal of Medical Care or Transport SMO
- For pediatric patients see Pediatric Altered Mental Status

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SMO: Ambulance Diversion Status Changes

OVERVIEW:
All hospitals in the State of Illinois Region 1 provide care to all patients presenting to their emergency departments. However, it is recognized that hospital resources vary over time, depending upon patient care demands, equipment, staffing availability and status of facilities requiring the hospital to be placed on hospital diversion status.

Any critical patient lacking decision making capacity must be transported to the closest facility for stabilization in the emergency department. Admission or transfer of the stabilized patient is at the discretion of the receiving hospital, provided it complies with all applicable laws and regulation regarding the transfer of EMS patients.

These guidelines are to help EMS understand EMS’s role in the process of hospital diversion status changes.

GUIDELINES FOR DIVERSION
To best assure that pre-hospital triage decisions are made in the interest of the patient, the following guidelines have been developed:

___ If it is decided that resource limitations affect the ability of a hospital to provide optimum emergency department care, Medical Control may choose to divert the ambulance transporting the patient to the next closest hospital.

___ This diversion system is based on notification of resource limitations so that Medical Control can make an informed decision as to the receiving hospital for each patient, taking into account the nature of the patient’s problem, the acuity of need, receiving hospital resource availability, transportation time, and the relative risks versus benefits to the patient of ambulance diversion.

___ It is recommended that participating hospitals notify the appropriate agencies in their service area of the following resource limitations. When the appropriate guideline has been satisfied, permission for ambulance diversion can be granted. Examples of appropriate reasons for diversion include:

- No adult monitored beds
- Hospital internal disaster (i.e. Flood, Fire, etc.)
- Lack of specialized diagnostic capability, (i.e., C.T. scan or angiography)

**If three or more hospitals in a geographic area are on diversion then all must come off diversion. When an ambulance diversion situation has occurred, the resource hospital, EMS office must be notified for review and Q.A. **
**Documentation of adherence to SMO**
- Contact with Medical Control to establish state of hospital diversion status
- Orders received from Medical Control regarding patient destination

**Medical Control Contact Criteria**

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<td>Verification of hospital diversion status</td>
<td>Orders received from Medical Control regarding patient destination</td>
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**PRECAUTIONS AND COMMENTS**

- Be familiar with local System and State procedure regarding Hospital Diversion.
- Be advised to call Medical Control EARLY to determine patient destination.
- Currently, hospital personnel with access to the State Web Portal may view bypass status of any Illinois hospital.
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
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SMO: Amputated Parts

Overview: In the case of an amputation, it is imperative that the amputated part(s) is/are recovered and properly handled. This SMO will establish guidelines for the proper care and transport of the amputated part(s) when possible.

INFORMATION NEEDED
__ Patient complaint
__ Pertinent past medical history
__ Mechanism of injury
__ Current medications

OBJECTIVE FINDINGS
__ Physical signs of trauma
__ Assess extremities for PMS. Immobilize all fractures. Control bleeding
__ Assess for other associated injuries

TREATMENT
__ Routine Trauma Care
__ Recover all amputated or avulsed parts as possible.
__ Place amputated part in dry, sterile dressings, place in a sealed plastic bag, and place on top of ice or on cold packs.
__ IV / IO as indicated
__ See Pain Management SMO as needed
__ Transport as soon as possible

Documentation of adherence to SMO
__ Mechanism of injury
__ Interventions completed
__ Response to interventions

Medical Control Contact Criteria
__ Contact Medical Control whenever a question exists as to the best treatment course for the patient

PRECAUTIONS AND COMMENTS
- Recheck airway and breathing and circulation frequently

Original SMO Date: 07/04
Reviewed:
Last Revision: 06/17

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SMO: Adult Anaphylaxis and Allergic Reactions

**Overview:** Allergic reactions can vary in severity from a mild reaction consisting of hives and rash to a severe generalized allergic reaction termed anaphylaxis resulting in cardiovascular and respiratory collapse. Common causes of allergic reactions include: bee/wasp stings, penicillin or other drug allergies and seafood or nuts. Exposures can occur from ingestion, inhalation, injection or absorption through skin or mucous membranes. This SMO is intended to help the EMS responder assess and treat the spectrum of allergic reactions.

**INFORMATION NEEDED**
- Exposure to common allergens (bee stings, drugs, nuts, seafood, medications), prior allergic reactions
- Respiratory: wheezing, stridor, respiratory distress
- Skin: itching, hives, rash
- Other symptoms: nausea, weakness, anxiety

**OBJECTIVE FINDINGS—MILD ALLERGIC REACTION**
- Hives, rash

**TREATMENT Mild Allergic Reaction**
- **Routine Medical Care**
- Remove etiologic agent if possible or relocate patient
- Oxygen as indicated
- For extensive hives, administer **Diphenhydramine**
- Immediate transport

Original SMO Date: 07/04
Reviewed: 06/17
Last Revision: 08/18

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OBJECTIVE FINDINGS—MODERATE ALLERGIC REACTION
__Hives, rash
__Mild bronchospasm
__Normotensive

TREATMENT Moderate Allergic Reaction
__Routine Medical Care
__Remove etiologic agent if possible or relocate patient
__Oxygen as indicated
__**Albuterol / DuoNeb (Albuterol/Ipratropium Bromide)**
   • ADULTS - First medication dose of Albuterol or DuoNeb (Albuterol/Ipratropium Bromide) via nebulizer, repeat with Albuterol only prn until relief of symptoms.
__**IV access**
__**Diphenhydramine IM or IV**
__If no response and patient bronchospasm persists or worsens, Consult Medical Control for use of Epinephrine (1:1 ml) IM or Epi Auto Injector IM. Consult Medical Control to repeat in 5 minutes one time
__**Methylprednisolone**
__Immediate transport

OBJECTIVE FINDINGS—SEVERE ALLERGIC REACTION (ANAPHYLAXIS)
__Altered mental status
__Hypotension (SBP < 90 and evidence of hypoperfusion)
__Bronchospasm and/or angioedema

TREATMENT Severe Allergic Reaction (Anaphylaxis)
__Routine Medical Care
__Remove etiologic agent if possible or relocate patient
__IV access
__**Epinephrine (1:10 ml)** slow IVP. If no IV access, Epinephrine (1:1 ml) IM OR Epi Auto Injector IM
__**Diphenhydramine** IV (or IM if can’t establish IV access)
__**Albuterol / DuoNeb (Albuterol/Ipratropium Bromide)**
   • ADULTS - First medication dose of Albuterol or DuoNeb Albuterol/Ipratropium Bromide and via nebulizer, repeat with Albuterol only prn until relief of symptoms
__**Fluid bolus**, reassess and repeat if indicated
__Advanced airway management as indicated
__**Methylprednisolone**
__Immediate transport

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**Documentation of adherence to SMO**

- Oxygen given
- Initial level of respiratory distress assessed and noted on chart (mild, moderate or severe)
- Medications administered and response to treatment

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<td>Contact Medical Control for permission to administer <strong>Epinephrine</strong> in patients who are not in anaphylactic shock</td>
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**PRECAUTIONS AND COMMENTS**

- For pediatric patients see Pediatric Anaphylaxis and Allergic Reaction SMO

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STANDING MEDICAL ORDERS
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SMO: Adult Asystole/Pulseless Electrical Activity (PEA)

Overview: The successful resuscitation of patients in cardiac arrest is dependent on a systematic approach to resuscitation. ACLS medications are an important factor in successful resuscitation of the pulseless patient when the initial rhythm is not ventricular fibrillation (V. Fib) or in cases where defibrillation has been unsuccessful. It is important that BLS providers understand the value of effective CPR and an ALS intercept in providing the patient with ACLS therapy. Do not move patient while CPR is in progress unless a dangerous environment/ adverse climate or patient needs intervention not immediately available (trauma). CPR is better and has fewer interruptions when resuscitation is conducted where the patient is found. Continue resuscitation for at least 20 minutes (non-trauma) before moving or seeking order to cease resuscitation. See In-Field Termination SMO.

INFORMATION NEEDED
__Details of arrest
__Witnessed collapse: time down and preceding symptoms
__Unwitnessed collapse: time down and preceding symptoms if known
__Bystander CPR and treatments, including First Responder, AED or PAD defibrillation, given prior to arrival
__Past medical history: diagnosis, medications
__Scene: evidence of drug ingestion, hypothermia, trauma, valid DNR/POLST form, nursing home or hospice patient

OBJECTIVE FINDINGS
__Pulseless
__Apneic
__Organized Electrical Activity on the monitor (not VT, or V. Fib)
__Asystole on the monitor

Search for and treat possible contributing factors (H’s & T’s):
Hypoxia (ventilate/O2)
Hypothermia (core rewarm)
Hypovolemia (IVF boluses)
Hypo/Hyperkalemia (NaHCO3)
H ion (acidosis; NaHCO3)
Hypoglycemia (glucose)
Tamponade, cardiac (IVF)
Tension Pneumothorax (plural decompression),
Thrombosis - coronary/pulmonary
Toxins (opiate? Naloxone; TCA? NaHCO3)
TREATMENT

__Begin BLS care- All care is organized around 2 minute cycles of CPR in C-A-B priority unless arrest is caused by hypoxic event.
__Determine unresponsiveness; open airway (manually); assess for breathing/gasping; suction as needed; simultaneously Assess pulse; if not definitively felt in <10 sec.- begin quality CPR with compressions.
__Apply defib pads with chest compressions in progress as soon as AED (BLS)/ monitor (ALS) is available.
__Airway/Ventilation-
  • Check patency if choking suspected
  • Ventilating with BVM and oral airway increases aspiration risk. Supraglottic airway or ETT should be placed when possible without interrupting chest compressions.
__Establish vascular access IV or IO, initiate Normal Saline
__Epinephrine 1 mg IVP or IO, repeat every 3 to 5 minutes as long as CPR continues
__Administer fluid bolus if suspected hypovolemia
__Dextrose 50% for blood glucose < 80mg/dL Dextrose Dosing Chart
__Naloxone if suspected narcotic overdose. Repeat doses may be necessary.
__Calcium Gluconate IVP or IO for suspected hyperkalemia (history of renal failure, dialysis, or potassium ingestion)
__Sodium Bicarbonate for patients with prolonged downtime, diabetic patient with possibility of DKA, or tricyclic or phenobarbital overdose
__If ROSC occurs, acquire 12 lead ECG. If acute MI suspected, call STEMI alert.

Documentation for Adherence to SMO
__CPR performed
__Intubation or BLS airway management performed
__Medication administered and response to treatment
__If a cause is documented, appropriate treatment is given, e.g. Hypovolemia-fluid bolus
__Print and provide any rhythm strips to receiving hospital

PRECAUTIONS AND COMMENTS

- Treat the patient – not the monitor. A rhythm present on the monitor screen should NOT be used to determine a pulse. If the monitor shows a rhythm and the patient has no pulse, begin CPR (the patient is in PEA).
- Trauma patients in cardiac arrest should be evaluated for viability. If the patient is to be resuscitated, begin CPR, load and go.
- Medication administration is most effective in pulseless situations in the following descending order: IV/IO, IN, ET, IM. Intramuscular doses in a non-perfusing patient are unlikely to be absorbed. Additional doses IV/IO may be necessary.
- Resuscitation efforts and treatment decisions are based on the duration of the arrest, physical exam, and the patient’s medical history. Consider termination of resuscitation orders if indicated.
PRECAUTIONS AND COMMENTS (continued)

- Consider underlying etiologies and treat per appropriate SMO (e.g. airway obstruction, metabolic shock, hypovolemia, tension pneumothorax, central nervous system injury, anaphylaxis, drowning, overdose, poisoning, etc.).
- If the cardiac arrest is witnessed by EMS personnel, start CPR and defibrillate immediately after hands free defibrillation patches are placed for V-Fib/ Pulseless V-Tach.
- For pediatric patients see Pediatric Asystole/PEA

MEDICATION ADMINISTRATION CHART

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PROCEDURE: Automatic Implantable/Wearable Cardiac Devices

Overview:
- **Implantable Cardioverter Defibrillator (ICD)** – Is an implanted device that can detect rhythm of the heart, can deliver electrical shocks and sometimes Pace the heart as needed.
- **LifeVest** – This is not an implanted device but a wearable defibrillator. The LifeVest is generally uses until a determination is made that an ICD in needed or as a bridge until an ICD can be implanted.
- **Pacemaker** – when a heart’s natural pacemaker is defective an implanted pacemaker sends electrical impulses to help the heart beat in a regular rhythm.
- **Ventricular Assist Device (VAD)** – these devices may be used in patients with end-stage heart failure. They may be used as a bridge until a heart transplant in is found or as permanent therapy. These devices typically have internal and external components.

INFORMATION NEEDED
__ Type of device the patient is utilizing

OBJECTIVE FINDINGS
__ Assessment of patient
__ Any pertinent information from patient

TREATMENT of Patient with ICD
__ **Routine Medical Care**
__ **Cardiac monitor**
__ Treat dysrhythmias per standing SMO:
  - Adult Bradycardia
  - Adult Narrow Complex Tachycardia
  - Adult Wide Complex Tachycardia
  - Pediatric Bradycardia
  - Pediatric Tachycardia
__ Avoid direct placement of defib pads over the ICD unit as this could damage the unit
__ Any patient who has been shocked by his/her AICD should be strongly encouraged to seek medical attention regardless of the patient's current condition
__ Notify receiving hospital early in order to enable them to get magnet ready to deactivate AICD
__ If the AICD is malfunctioning and patient is hemodynamically stable and in pain from repeated shocks, see **Pain Management SMO**
**TREATMENT of Patient with LifeVest**

__Routine Medical Care__

When a patient is wearing a LifeVest be aware of the following:

- The LifeVest has an alert sequence that is initiated upon recognition of a treatable shock
- Listen to the voice prompts before making physical contact with the patient
- The EMS Provider can be shocked if in contact with the patient during treatment sequence of the LifeVest
- If the LifeVest has blue stains, the device has delivered a shock

In the event an EMS Provider needs to apply the defibrillator - the LifeVest can be disabled by removing the battery, located in the monitor unit. The EMS provider may then place their own monitor/defibrillator on the patient

__Cardiac monitor__

Treat dysrhythmias per standing SMO:

- Adult Bradycardia
- Adult Narrow Complex Tachycardia
- Adult Wide Complex Tachycardia
- Pediatric Bradycardia
- Pediatric Tachycardia

Any patient who has been shocked by his/her LifeVest should be strongly encouraged to seek medical attention regardless of the patient's current condition

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**TREATMENT of Patient with Pacemaker**

__Routine Medical Care__

Cardiac monitor – Note when the pacemaker “fires” a pacer spike may or may not be visible on the monitor.

Treat dysrhythmias per standing SMO:

- Adult Bradycardia
- Adult Narrow Complex Tachycardia
- Adult Wide Complex Tachycardia
- Pediatric Bradycardia
- Pediatric Tachycardia

Avoid direct placement of defib pads over the pacemaker unit as this could damage the unit
**TREATMENT of Patient with VAD**

__Routine Medical Care__

__Contact Implant Coordinator__
- Patient should have information sheet with number
- They may be the best resource

__There are multiple devises in use, internal and external__

__Blood flow may be continuous__
- Patient may not have a palpable pulse
- Look at other indication such as: LOC, shortness of breath, light headedness, skin
- Non-invasive BP may or may not work
- Pulse Ox will not be accurate

__No chest Compressions – unless approved by Implant Coordinator__

__Defibrillation - standard method, do not put PADS over hardware__

__VAD generally have two alarms__
- Yellow – advisory
- Red – critical

__If patient hypotensive – fluids may be useful to increase preload but be cautious to not overload__

__Nitrates may be detrimental due to the reduction in preload__

__Patients are typically on anticoagulant/antiplatelet medication__

__Patient could be in VF and awake if the pump is working__

**Documentation of adherence to Procedure**

__Report of patient’s complaint__

__Type of device patient has__

__Assessment and treatment__

---

**Medical Control Contact Criteria**

__Contact Medical Control whenever a question exists as to the best treatment course to the patient__

---

**PRECAUTIONS AND COMMENTS**

- Personnel in contact with the patient at the time of AICD firing will receive a shock of approximately 3 joules. This energy level constitutes NO DANGER to pre-hospital personnel (may feel a slight tingling).
Overview: “Normal” behavior is generally considered to be adaptive behavior that is accepted by society. This idea is also defined by society when the behavior:

- Deviates from society’s norms and expectations
- Interferes with well-being and ability to function
- Is harmful to the individual or group

A behavior emergency can be defined as a change in mood or behavior that cannot be tolerated by the involved person or others and requires intervention.

INFORMATION NEEDED

- Significant stressors identified by the patient and/or family
- Any alcohol or other drugs involved
- Medical history: trauma, tranquilizers, anticonvulsants, diabetes, other medical problems
- Any injuries noted to patient
- Does patient have plans to hurt self or others?

OBJECTIVE FINDINGS

- Altered mental status
- Behavioral range from hostility and anxiety to withdrawn
- Search for medical alert bracelet or card
- Injuries to patient if has self-destructive behavior

TREATMENT

- Scene safety—STAY ALERT
- Contact Resource Hospital, police, and/or Fire Department back-up as appropriate
- Routine Medical Care or Routine Trauma Care
- Identify yourself clearly
- Approach patient in a calm and professional manner. Talk to patient alone—request bystanders to wait in another area. Show concern for family members as well. Allow patient to verbalize his problem in his own words. Reassure patient that help is available.
- Get patient’s permission to do your assessment before touching patient
- Transport female with another non-threatening female bystander or relative if possible
- In the case of suicide attempt, be prepared to:
  - Treat any injuries
  - If drug or poison was ingested, transport agent with patient to hospital if the agent can be safely transported. A photo of the agent / label may also be helpful.
  - Place on cardiac monitor.
  - Consider the use of Naloxone if narcotic overdose suspected and patient has significant respiratory depression

Original SMO Date: 07/04
Reviewed:
Last Revision: 06/17

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Documentation of adherence to SMO

- Patient’s presenting demeanor
- Reinforcements called and on scene
- Verbalizations in patient’s words using quotations when possible
- Any more advanced medical interventions that were necessary

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PRECAUTIONS AND COMMENTS

- Remember that abnormal emotional behavior could be the result of injuries or disease. Initiate treatment as required. Consider and attempt to evaluate for possible causes of behavioral problems:

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<tr>
<th>Hypoxia</th>
<th>Stroke/CVA</th>
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<td>Hypotension</td>
<td>Seizures/postictal state</td>
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<td>Hypoglycemia</td>
<td>Electrolyte imbalance</td>
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<td>Trauma (head injury)</td>
<td>Infections/fever</td>
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<td>Alcohol/Drug Intoxication or Reaction</td>
<td>Dementia (acute or organic brain syndrome)</td>
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<td>Excited Delirium</td>
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- At all times, EMT’s should avoid placing themselves in danger; at times this may mean a delay in the initiation of treatment until the personal safety of the EMT is assured
- Use of Naloxone may unmask other illicit drugs such as PCP which could cause the patient to become violent. Use Naloxone with caution if suspected polysubstance abuse. Priority is to protect self or other Providers
- If the patient is judged to be either suicidal or lacking decision making capacity and dangerous to self or others, the treatment and transport should be carried out in the interest of the patient’s welfare.
- If the patient resists police involvement is necessary. The use of reasonable force may be used to restrain the patient from doing further harm to self or others. See procedure for Restraints.
- If it is necessary to transport a patient against their will, an IDPH Form 5 needs to be completed.
- It may be necessary to get contact information from a family member for forms to be completed by EMS/Police/Hospital staff.

MEDICATION ADMINISTRATION CHART

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Overview: An insect, animal or human bite or sting frequently is a combination of puncture, laceration, avulsion and crush injuries. Complications are common—all patients who have been bitten/ stung should seek physician evaluation.

INFORMATION NEEDED
__Type of animal or insect: time of exposure
__History of previous exposures, allergic reactions, any known specific allergen

OBJECTIVE FINDINGS
LOCALIZED REACTION
__ Puncture marks, lacerations, avulsions, or crush injuries at site
__ Rash, hives
__ Localized erythema and/or edema
__ Decreased pain or touch sensation

SYSTEMIC REACTION
__ ANY or ALL of the localized finding PLUS:
  __ Respiratory distress, wheezing, stridor
  __ Diaphoresis (out of proportion to air temperature)
  __ Hypotension, tachycardia, tachypnea

TREATMENT
__ Routine Medical Care
__ See Adult Allergic Reaction SMO or Pediatric Allergic Reaction SMO as needed
__ If patient is hypotensive, treat for shock:
  • Consider IV fluid bolus
  • Consider Dopamine after adequate fluid resuscitation
__ Scrape off any remaining stinger or tentacles
__ Clean the affected area with saline, cover with sterile dressing
__ Do not perform any of the following:
  • Tourniquets or constricting bands above or below the site
  • Incision and / or suction
  • Application of cold for snake or spider bites
__ Pain Management SMO
**Documented adherence to SMO**
- Description of injury site and/or rash
- Removal of stinger if present
- Treatment given

### Medical Control Contact Criteria

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**PRECAUTIONS AND COMMENTS**
- Assess for signs and symptoms of local and systematic impact of the toxin.
- Patient may still have an imbedded sting, tentacle or barb which may continue to deliver toxins if left imbedded.

**MEDICATION ADMINISTRATION CHART**

Original SMO Date: 07/04
Reviewed:
Last Revision: 06/17

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OVERVIEW: Body substance exposure is a significant risk for pre-hospital care providers. This SMO serves as a guideline for exposure reporting in EMS Region 1. For specific information, review the receiving hospital specific procedure for reporting, treatment and follow-up care.

INFORMATION NEEDED
__Date and time of exposure
__Host patient
__Type of exposure
__BSI used by pre-hospital provider

OBJECTIVE FINDINGS
__A significant exposure is blood, body fluids on or in non-intact skin or mucous membranes
__A non-significant exposure would be identified as blood or body fluids on intact skin or clothes, or BSI equipment

RECOMMENDATIONS
__Each hospital has specific procedures for the pre-hospital exposure. Consult with the ED Nurse Manager for specific response to reporting, treatment and follow-up care.
__If a pre-hospital provider, (EMT, Firefighter, Police Officer, etc), has a significant exposure, (e.g. blood or body fluid on non-intact skin, contact with mucous membranes or a needle stick), they should report to the emergency department who is receiving the patient. The person that has the exposure should notify the charge nurse of the receiving hospital emergency department and advise that a potential significant exposure has occurred.
__The appropriate hospital, system and department incident reports must be completed. Some departments require additional notification paperwork be completed). Once the appropriate forms are completed, they will be turned into the receiving hospitals Emergency Department Charge Nurse and appropriate agency / department officer.
__An EMS system form must be completed and returned to the resource hospital of the agency involved (e.g., an exposure happens to an EMT on XYZ department in Anywhere. A form must be filled out for Anywhere Hospital, XYZ department and the EMS Resource Hospital of XYZ department)
__The appropriate person in the receiving hospitals emergency department will evaluate the exposure to determine if a significant exposure has occurred.
**RECOMMENDATIONS (continued)**

—if a significant exposure has occurred or is suspected the receiving hospitals Emergency Department Charge Nurse or appropriate designee will implement the hospital specific response procedure. This procedure will include but not be limited to baseline blood test on the EMS provider and host patient, interview and counseling of risks to EMS provider, follow-up information and / or referral which may or may not include prophylaxis.

—the response action will be documented on the incident report forms and forwarded to the EMS provider, receiving facility infection control provider, provider’s department officer (if applicable, and the provider’s EMS System Resource Hospital.

—follow-up notification of test results is the responsibility of the receiving hospital infectious disease provider. The EMS Systems Coordinator will follow up within 48 hours of receipt of incident report to clarify procedure has been accomplished and notification and follow-up has occurred.

—if the exposure is identified as non-significant the EMS provider will be advised of same and further testing will per EMS Agency policy. The EMS provider will be counseled on proper use of BSI in the pre-hospital environment.

—the non-significant exposure will be documented on the incident report and forwarded to the chain of command of the provider and the EMS Resource Hospital System Coordinator.

**Documentation of adherence to SMO**

Complete and accurate information regarding:

- Exposure type
- Host patient
- EMS provider
- Receiving hospital
- Description of event
- Results and follow-up care and notification

- It is imperative that the EMS provider who has a potential exposure report to the receiving hospital’s emergency department at the time of exposure. Delay in reporting could result in hospital and staff’s inability to attain host blood for testing and effectively provide counseling, intervention or follow-up. The provider should initiate this as soon as possible.

Follow any additional agency specific policies and/or procedures.

- The best response to an exposure is not to have one. Use proper BSI precautions in every patient encounter.

- If there are questions regarding BSI precautions, vaccinations, or proper reporting contact the local hospital, host agency / Department Chief or EMS Officer or the EMS Systems Coordinator at the EMS Resource Hospital.
PROCEDURE: Body Substance Isolation (Universal Precautions)

Overview: Body substance isolation should be used for all patient contacts if the pre-hospital provider may be exposed to blood or other body fluids. Gloves should be worn when handling blood, body fluids, mucous membranes, non-intact skin, body tissues, and medications/drugs/illicit substances.

INFORMATION NEEDED
- Assume all patients are carriers of infectious / contagious disease
- If specific contagion is identified respond with appropriate BSI protection (e.g. TB appropriate fitted mask with filtration system, gown, and gloves)
- If disease etiology dictates, mask and cover patient appropriate to minimize exposure
- Review patient chart for specifics to contagion
- Make sure annual testing and prophylaxis is accomplished
- Make sure proper testing and BSI equipment is available for use prior to patient response

Use BSI:
- Potential respiratory contagion in a closed ambulance environment
- Potential contagion from blood and body fluids
- Potential contagion during an invasive skill (e.g. needle stick)
- When handling blood, body fluids, mucous membranes, non-intact skin, body tissues, and medications/drugs/illicit substances

RECOMMENDATIONS
- Gloves should be worn when handling blood, body fluids, mucous membranes, non-intact skin, body tissues, and medications/drugs/illicit substances. Double glove if necessary.
- New gloves should be worn for each patient contact. Hands must be washed (wet or dry wash) after glove removals and between patient contacts.
- If splash of blood or body fluid is anticipated a full face shield or goggles and facemask should be worn.
- If emergency ventilatory support is anticipated a resuscitation mask with one-way valve and filter or bag valve mask should be used.
- Do not recap needles. Promptly place sharps in a designated puncture resistance, protected lid container.
- Place all soiled linen in a properly marked laundry bag before sending in to laundry or leaving at hospital.
- Do not launder contaminated clothes with regular laundry. Wash separately then rinse washer with at least a 1-10 bleach solution.
- Use a solution of 1-part bleach to 10 parts water (or equivalent solution) to clean equipment, clean spills, and decontaminate walls, floors, and other objects soiled with blood or body fluids.
RECOMMENDATIONS (continued)

__If pre-hospital provider has a skin break (cut, abrasion, dermatitis, etc) use gloves and clothing to protect from exposure with blood or body fluids
__Keep vaccinations current and have proper annual testing
__Significant exposure to and possible contamination from blood or body fluids should be reported immediately (ask for receiving hospital’s Exposure Report Form)
__Patients should be asked if they are allergic to latex. Non-latex equipment should be used on all patients that have latex allergies.

Documentation of adherence to Procedure

__ BSI used
__ Documentation of situation in which potential exposure or exposure occurred
__ Nature of contagion
__ Person or agency exposure reported to and additional information regarding origination of transfer, number of people potential exposed, duration of exposure and receiving facility.

PRECAUTIONS AND COMMENTS

- Make sure that proper BSI equipment is available prior to patient encounter
- Since there is no reliable, immediate means to identify infected patients, pre-hospital care providers should be equally cautious when caring for all patients.
Overview: Adult Bradycardia is defined as a patient having a pulse rate of <60. Well trained athletes may have low pulse rates as well as patients on certain medications. As long as the patient is tolerating the slow heart rate well, treatment of the slow rhythm is not necessary. This SMO is intended to define “symptomatic bradycardia” and its treatment.

INFORMATION NEEDED
- Presenting symptoms: time of onset, gradual or sudden
- Associated signs / symptoms: discomfort (pain, location, quality, radiation, severity, and previous occurrences), palpitations, dizziness, syncope, dyspnea, nausea, vomiting, fever, and cough
- Medical history: dysrhythmias, cardiac disease, stress, drug abuse, diabetes mellitus, renal failure, pacemaker

OBJECTIVE FINDINGS
The definition of symptomatic bradycardia is a patient with a pulse rate <60 bpm and any one or more of the following serious signs or symptoms:
- SBP less than 90 and/or signs of hypoperfusion
- Altered mental status, syncope or near syncope, due to a decrease in cerebral perfusion
- Signs/symptoms of CHF (dyspnea, crackles, pitting edema)
- Ischemic chest pain

TREATMENT
- Routine Medical Care
- Attach monitor, 12 lead ECG if available (do not delay therapy)
- IV/ IO of Normal Saline
- Consider fluid bolus
- Perform 12 lead
  A) If STEMI or LBBB, use caution when considering Atropine administration (See Precautions and Comments)
  B) If Non-STEMI then may proceed to administer Atropine. May repeat every 3-5 minutes (See Precautions and Comments)
- Transcutaneous pacing (TCP)
- Use Diazepam OR Midazolam IVP for sedation prior to TCP if patient conscious and Systolic BP >100

* For pain and sedation doses:
  Start dose low – slowly increase –
  Titrate to effect up to listed dose

Original SMO Date: 07/04
Reviewed:
Last Revision: 02/07; 07/11; 11/11; 06/17

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Follow Pain Management SMO as appropriate

If the heart rate normalizes but hypotension persists:
- Repeat fluid bolus
- Dopamine titrated to SBP>90 mm Hg.

**Documentation of adherence to SMO**
- Vital signs taken and monitored appropriately
- Documentation of medications given and response to medication
- Transcutaneous pacing (TCP) results in HR>60

**Medical Control Contact Criteria**
- Contact Medical Control whenever a question exists as to the best treatment course for the patient

**PRECAUTIONS AND COMMENTS**
- Use caution before administering Atropine for patients with STEMI or cardiac ischemia present on 12 lead as resultant tachycardia could worsen ischemia
- If utilizing TCP, verify mechanical capture and patient tolerance. Utilize sedation and pain management as needed, but use with caution in the hypotensive patient.
- If the patient is symptomatic and IV/IO cannot be established consider going directly to transcutaneous pacing (TCP).
- For pediatric patients see Pediatric Bradycardia SMO

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Original SMO Date: 07/04
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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Acute Bronchospasm

Overview: Respiratory distress with acute bronchospasm can be seen in patients as a result of many causes including asthma, COPD, bronchitis, and allergic reaction. Treatment must be concentrated on airway patency and ventilation.

INFORMATION NEEDED
__ History: Previous episodes, previous hospitalizations, intubations, fever, sputum production, medications (bronchodilators), exposure (allergens, toxins, fire/smoke), trauma (blunt / penetrating)
__ Symptoms: chest pain, shortness of breath

OBJECTIVE FINDINGS
__ Mental status, skin signs, perfusion
__ Respiratory rate, rhythm, pattern and work of breathing
__ Lung sounds
__ Blood pressure, heart rate and rhythm
__ Oxygen saturation
__ Rash, urticaria
__ Evidence of trauma

TREATMENT
__ Routine Medical Care
__ ADULTS:
  - First medication dose of DuoNeb (Albuterol/Ipratropium Bromide) via nebulizer, repeat with Albuterol only prn until relief of symptoms.

  PEDIATRIC:
  - Use adult dosing for children over 36 kg
  - For under 36 kg see Medication Administration Chart: Albuterol prn until relief of symptoms

__ For patients with severe refractory bronchospasm and a history of coronary artery disease or hypertension:
  - Consult Medical Control for permission for use of Epinephrine
    - Adults- Epi Auto Injector
    - Pediatric- Epi Auto Injector JR
    - Or Epinephrine (1:1 ml)

__ For persistent bronchospasm, consider:
  - Magnesium Sulfate – see Magnesium Sulfate Administration Chart
  - Methylprednisolone (anticipated onset of effect approximately 1 hour)

__ Rapid transport
Documentation of adherence to SMO
- Physical finding of wheezing, decreased lung sounds
- Administration of oxygen
- Administration of medications and response to medications

Medical Control Contact Criteria

- Permission for use of **Epinephrine** for patients with known history of coronary artery disease or hypertension
- Contact Medical Control whenever a question exists as to the best treatment course for the patient

PRECAUTIONS AND COMMENTS
- Supplemental oxygen should not be withheld in COPD or chronic upper airway obstruction, but it may decrease respiratory rate.
- **Epinephrine** may cause: anxiety, tremor, palpitations, tachycardia, hypertension and headache. In elderly patients, **Epinephrine** administration may precipitate AMI, hypertensive crisis, intracranial hemorrhage and/or dysrhythmias.

MEDICATION ADMINISTRATION CHART

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Original SMO Date: 07/04
Reviewed:
Last Revision: 05/12; 06/17

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Burns - Adult

Overview: Burns can be of varying severity as well as having several causes including thermal, chemical, and electrical. This SMO is intended to help the EMS responder assess and treat the wide spectrum of burns they may encounter.

INFORMATION NEEDED
__Type and source of burn (thermal, chemical, electrical, or steam)
__Injuries associated with the burn event
__Mechanism of injury
__Current medications

OBJECTIVE FINDINGS
__Evidence of inhalation injury or toxic exposure (e.g. carbonaceous sputum, hoarseness, or singed nasal hairs
__Extent of burns (depth – full or partial thickness, and Total Body Surface Area [TBSA] affected).
  - Use rule of nines or the surface area covered by one of the palm of the patient’s hand equals one percent of their TBSA (see Burn Chart in Appendix).
__Entrance and/or exit wounds if electrical or lightning strike
__Associated trauma from explosion, electrical shock, or fall
__Type of chemical for surface chemical burn including length of exposure and what was done to clean victim off prior to arrival

TREATMENT
__Prepare for rapid transport
__Routine Trauma Care
__Frequent evaluation and re-dosing of pain medications is appropriate for burn victims – see Pain Management SMO

Return to Table of Contents
Thermal
- Stop the burning process if needed. Flush with cool water but do not immerse in ice.
- Remove jewelry and non-adhered clothing, do not break blisters
- Cover affected body surface with dry dressing
- Prevent hypothermia
- Control airway. Use appropriate oxygen and airway adjuncts as needed. Early intubation for patients with evidence of inhalation injury should strongly be considered.
- Cover other open wounds with sterile, dry dressings
- Reassess airway frequently
  - IV access. If partial or total thickness burns >10% TBSA, fluid bolus. Repeat if indicated.
- Monitor lung sounds
- Treat pain (see Pain Management SMO)
- Transport as soon as possible, consider paramedic intercept

Chemical
- Scene safety
- Decontamination and HazMat procedures, refer to MSDS
- Stop the burning process. Remove jewelry, contact lens, and clothing
- Brush off powder, if present
- Irrigate with copious amounts of water for at least 20 minutes continuing irrigation enroute
- Prevent hypothermia
- Cover other open wounds with sterile dressings.
  - Pain Management SMO

Electrical
- Make sure scene is safe and electricity is off. Make sure fire is out. Stop the burning process
- Remove jewelry and non-adhered clothing. Do not break blisters
- Dressing on any exposed, injured areas
- Prevent hypothermia
- Cover other open wounds with sterile dressings.
- Consider C-spine and spinal precautions
- Prepare to use defibrillator as needed
- Reassess airway frequently
  - IV access. If partial or total thickness burns >10% TBSA, fluid bolus. Repeat if indicated.
- Monitor lung sounds
- Treat pain (see Pain Management SMO)
- Transport as soon as possible, consider paramedic intercept
**Documentation of adherence to SMO**

- Mechanism of injury
- Estimation of % of TBSA affected by burn (see Burn Chart in Appendix)
- Interventions completed
- Response to interventions

**Medical Control Contact Criteria**

- Contact Medical Control whenever a question exists as to the best treatment course for the patient

**PRECAUTIONS AND COMMENTS**

- For pediatric burns see Pediatric Burns SMO
- Recheck airway and breathing and circulation frequently.
- Inhalation injuries may cause delayed but severe airway compromise.
- Do not apply ice directly to skin surfaces as additional injury will result.
- Dry dressings should be used for TBSA burns > 10%. Moist may be used for smaller burns.
- Assume presence of associated multi-system trauma if patient presents with signs and symptoms of hypo-perfusion.
- Extremes of age (<12 or >55 years) may need trauma center.
- Spinal precautions may be warranted for electric shock and severe muscle spasms may cause neuro- spinal injuries.
- The Parkland Formula is the standard calculation for fluid administration in burn victims. The formula is as follows: 4 ml X % burn area X body weight (kg) = isotonic fluid infusion within 24 hours. One half of this should be administered within the first 8 hours.
  - Parkland Formula Prehospital: 0.25 ml x % burn area x body weight (kg)
- Definition of major burns (see Inbound Report and Alert SMO):
  - Full thickness: > 10% of TBSA
  - Partial thickness: > 20% of TBSA
  - Burns of airway, face, eyes, hands, feet or genital area
  - Chemical inhalation or electrical burns

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Original SMO Date: 07/04
Reviewed: Last Revision: 06/17
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

PROCEDURE: Capnography

Overview: Capnography is the non-invasive, continuous measurement of exhaled carbon dioxide (CO₂) in the breath. End-tidal CO₂ is the maximum CO₂ concentration in the breath at the end of exhalation. Capnography should be used (if available) in patients with an advanced airway or on spontaneously breathing patients. It provides a numerical value for the EtCO₂, a CO₂ waveform for each breath and a respiratory rate. Capnography can provide information about three physiological functions: metabolism, perfusion and ventilation.

OBJECTIVE FINDINGS
__ In order for EtCO₂ to be present the following must be taking place.
  1. Metabolism
  2. Perfusion
  3. Ventilation
__ EtCO₂ value, respiratory rate and waveform = airway status
__ If EtCO₂ is low and not related to airway status consider perfusion (see Shock SMO)

PROCEDURE
__Attach the appropriate capnography sensor for a patient with an advanced airway or a spontaneously breathing patient
__Note the EtCO₂ level, respiratory rate and waveform
__EtCO₂ levels:
  • Normal 35 – 45
  • If EtCO₂ is low and not related to airway status think perfusion (shock)
  • In Cardiac arrest EtCO₂ may be low due to poor perfusion and/or metabolism. In arrest if EtCO₂ is below 10 ensure high quality CPR is being performed.
  • In an arrest a sudden increase on EtCO₂ may indicate ROSC.
  • In patients with possible increased intracranial pressure attempt to maintain an EtCO₂ of approximately 35.
__When EtCO₂ is NOT detected three factors must be quickly assessed:
  • Loss of airway - apnea? Esophageal endotracheal tube placement/migration? Obstruction?
  • Circulatory collapse - cardiac arrest? Massive pulmonary embolism? Exsanguination?
  • Equipment failure - disconnected or malfunctioning bag-valve or ventilator?
__A waveform with a “shark fin” pattern may indicate bronchospasm
__EtCO₂ should be monitored as any other vital sign when assessing a patient.
Documentation of adherence to SMO

- EtCO₂ value
- Respiratory rate
- Waveform

Medical Control Contact Criteria

- Contact Medical Control whenever a question exists as to the best treatment course to the patient

PRECAUTIONS AND COMMENTS

- Capnography is the most reliable means of confirming and monitoring an advanced airway.
- Capnography gives rapid feedback on the patient’s clinical status.
- Capnography is one of the earliest indicators of adverse airway and respiratory events and allows the provider to intervene early when needed.

Understanding the Waveform

A-B: Anatomical dead space - no CO₂ in breath
B-C: Rapid rise in CO₂ – middle part of exhalation
C-D: Alveolar plateau – CO₂ at steady state; alveolar emptying
D: End exhalation or end of the tidal breath (EtCO₂)
D-E: Inhalation

PRECAUTIONS AND COMMENTS

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Normal waveform

![Normal waveform graph](image)

Hyperventilation

![Hyperventilation graph 1](image)

Hyperventilation

![Hyperventilation graph 2](image)
**Hypoventilation**

![Graph of Hypoventilation](image)

**Apnea** – dislodged or obstruction of advanced airway, respiratory arrest or equipment malfunction

![Graph of Apnea](image)

**Bronchoconstriction**

![Graph of Bronchoconstriction](image)
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Carbon Monoxide Exposure

Overview: Carbon monoxide is a colorless, odorless, tasteless gas produced by incomplete combustion of carbon-containing fuels. Carbon monoxide does not physically harm lung tissue, but it causes a reversible displacement of oxygen in the hemoglobin. The result is low circulating volumes of oxygen. Tissues become hypoxic before oxygen is released from the hemoglobin to fuel the cells.

INFORMATION NEEDED
___ Type of exposure to patient
___ Scene is safe
___ Patient respiratory symptoms

OBJECTIVE FINDINGS
___ Headache
___ Irritability
___ Vomiting
___ Chest pain
___ Loss of coordination
___ Loss of consciousness
___ Cherry red skin color (late sign)

TREATMENT
___ Remove patient from source to fresh air
___ Assess patient’s CO level (if available)
___ Routine Medical Care
   Administer 100% oxygen regardless of patients’ O₂ saturation
___ Keep patient quiet as possible to decrease oxygen requirements
___ Treat per appropriate SMO for:
   - Cardiac Arrest:
     Asystole/PEA – Adult
     V-Fib/V-Tach – Adult
     Pediatric Arrest: Asystole/PEA
     Pediatric V-Fib/Pulseless V-Tach
     Pediatric Respiratory Distress/Arrest
     Pediatric Neonatal Resuscitation
   - Cardiac Dysrhythmia
     Adult Bradycardia
     Adult Narrow Complex Tachycardia
     Adult Wide Complex Tachycardia
     Pediatric Bradycardia
     Pediatric Tachycardia
   - Pulmonary Edema
     Pulmonary Edema SMO

Original SMO Date: 07/04
Reviewed: Last Revision: 11/07; 06/17

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Documentation of adherence to SMO
- Patient removed from CO environment
- 100% oxygen administered to patient

PRECAUTIONS AND COMMENTS
- Pulse oximeter gives false elevated readings in CO poisoning.
- Don’t assume levels of CO are always consistent with the patient’s smoking or occupational history.
- You should primarily be looking for altered levels of consciousness and flu-like symptoms

<table>
<thead>
<tr>
<th>% COHb</th>
<th>MANIFESTATIONS</th>
<th>TREATMENT AND TRANSPORT DECISION</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Mild headache</td>
<td>100% O₂</td>
</tr>
<tr>
<td>10</td>
<td>Mild headache, shortness of breath with vigorous exertion</td>
<td>100% O₂</td>
</tr>
<tr>
<td>10 - 20</td>
<td>Mild headache, shortness of breath with moderate exertion</td>
<td>100% O₂</td>
</tr>
<tr>
<td>20 - 30</td>
<td>Worsening headache, nausea, dizziness, fatigue</td>
<td>*Hyperbaric O₂</td>
</tr>
<tr>
<td>30 - 40</td>
<td>Severe headache, vomiting, vertigo, altered judgment</td>
<td>Hyperbaric O₂</td>
</tr>
<tr>
<td>40 - 50</td>
<td>Confusion, syncope, tachycardia</td>
<td>Hyperbaric O₂</td>
</tr>
<tr>
<td>50 - 60</td>
<td>Seizures, shock, apnea, coma</td>
<td>Hyperbaric O₂</td>
</tr>
<tr>
<td>60 - 70</td>
<td>Seizures, coma, cardiac arrhythmias, death</td>
<td>Hyperbaric O₂</td>
</tr>
<tr>
<td>&gt; 70</td>
<td>Death within minutes</td>
<td>Hyperbaric O₂</td>
</tr>
</tbody>
</table>

* Hyperbaric treatment is not available in Region 1. Transport to closest hospital.

COHb Levels in Persons 3-74 Years of Age

<table>
<thead>
<tr>
<th>Smoking Status</th>
<th>COHb % (mean ± SD)</th>
<th>COHb % (98th percentile)</th>
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</thead>
<tbody>
<tr>
<td>Nonsmokers</td>
<td>0.83 ± 0.67</td>
<td>≤ 2.50</td>
</tr>
<tr>
<td>Current Smokers</td>
<td>4.30 ± 2.55</td>
<td>≤ 10.00</td>
</tr>
<tr>
<td>All smoking statuses combined</td>
<td>1.94 ± 2.24</td>
<td>≤ 9.00</td>
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</table>
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Cardiogenic Shock

Overview: Cardiogenic shock is the most extreme form of pump failure. It occurs when left ventricular function is so compromised that the heart cannot meet the metabolic needs of the body. Even with aggressive therapy, cardiogenic shock has a mortality rate of 70% or higher.

INFORMATION NEEDED
__ Presence of chest pain
__ Presence of crackles

OBJECTIVE FINDINGS
__ Profound hypotension (systolic blood pressure usually less than 80 mm Hg)
__ Pulmonary congestion (crackles)
__ Hypoxemia
__ Acidosis
__ Altered level of consciousness
__ Sinus tachycardia or other dysrhythmias
__ Cool, clammy, cyanotic or ashen skin
__ Tachypnea

TREATMENT
__ Routine Medical Care
__ Oxygen as indicated
__ Cardiac monitor
__ IV of Normal Saline
__ Treat underlying dysrhythmias per appropriate SMO
__ **Fluid bolus** may be considered in patients with clear lungs. Reassess patient lung sounds after administering 250 ml. May continue fluid bolus if lung sounds remain clear and systolic blood pressure < 90.
__ Determine body weight; start **DOPAMINE DRIP**. Individual dosage requirements may vary widely
__ Rapid transport

Original SMO Date: 07/04
Reviewed:
Last Revision: 06/17

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**Documentation of adherence to SMO**

- Oxygen administration
- Signs and symptoms
- Cardiac rhythm and associated treatment/management
- Administration of **Dopamine** and response to medication

**PRECAUTIONS AND COMMENTS**

- Monitor **Dopamine** closely
- Do not run **Dopamine** wide open

**MEDICATION ADMINISTRATION CHART**

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Original SMO Date: 07/04
Reviewed: Last Revision: 06/17

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PROCEDURE: Cardioversion

Overview: Cardioversion is the use of direct current electricity to convert a cardiac dysrhythmia to a sinus mechanism. The use of electrical current to terminate ventricular fibrillation is termed defibrillation and is not covered in this SMO. Cardioversion is performed with the aid of a synchronizer, which assures a timed discharge of electrical current during a specific phase of the cardiac cycle. (In defibrillation, electrical current is immediately discharged asynchronously, that is, regardless of the underlying chaotic cardiac activity.

Cardioversion is reserved for patients in an abnormal rhythm (Ventricular Tachycardia, Atrial Flutter, Atrial Fibrillation and Supraventricular Tachycardia) with demonstrated hemodynamic instability. Please see these SMO’s for specifics of when to administer cardioversion.

INFORMATION NEEDED
- Identify Patient’s cardiac rhythm – Ventricular Tachycardia, Atrial Flutter, Atrial Fibrillation, Supraventricular Tachycardia.
- Patient’s code status: in the presence of a valid DNR/POLST perform cardioversion in accordance with their advanced directive
- Presence of comorbid conditions such as renal failure, drug overdose – if suspected call Medical Control prior to administering cardioversion as digitalis toxicity and other medications may be relative contraindications to cardioversion

OBJECTIVE FINDINGS
- Evidence of Hemodynamic Instability in the presence of specific dysrhythmia
  - Hypotension with SBP 100mmHg or less
  - Evidence of Congestive Heart Failure: crackles, JVD, peripheral edema
  - Chest pain suggestive of myocardial ischemia
  - Evidence of neurologic dysfunction suggestive of neurologic ischemia
TREATMENT

If patient is conscious and time permits, sedate patient with **Diazepam IVP** or **Midazolam IVP**

__Turn on defibrillator__
__Apply limb leads__
__Apply defibrillation pads to appropriate positions on chest wall__
__Select appropriate energy level for clinical situation__
__Press synchronizer switch/button__
__Assure machine sensing of R wave__
__Place defibrillation pads on the chest and (if paddles are used apply firm pressure). Make sure leads to defibrillator are connected properly__
__Select appropriate energy level__
__Charge defibrillator__
__CLEAR patient__
__Press discharge button and hold button until delivery of shock occurs__
__Reassess patient and proceed as indicated by patient condition__
__If repeat shock is indicated, ensure sync mode is activated__

**Documentation of adherence to this Procedure**
__Documentation of objective findings__
__Documentation of patient’s cardiac rhythm__

**Medical Control Contact Criteria**
__Contact Medical Control if any questions arise regarding the best treatment options for the patient__

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Original SMO Date: 07/04
Reviewed:
Last Revision: 06/17

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Current Version: 2018.1
Issued: 08/18
EMS/Region1 SMO
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
ALS

PROCEDURE: Central Line/ Imported Port Access

Overview: An increasing number of patients are presenting to EMS with IV central lines/ implanted ports. This procedure is to provide emergency vascular access through a central line/ implanted port when IV access is essential. Some patients may request that vascular access be obtained in this manner due to history of poor vascular access or other chronic medical condition.

INFORMATION NEEDED
__Patient’s type of central line/ implanted port and compatibility of needle

EQUIPMENT NEEDED: (found in the central line kit)
__Central line dressing change tray
__Gripper Port-A-Cath Needle with ¾” needle
__10 or 12 ml syringe
__18-gauge, 1” needle
__10 ml of Normal Saline

PROCEDURE

IMPLANTED PORT ACCESS (Port-a-Cath, etc.):
__Apply clean gloves
__Open the central line dressing change tray package in a sterile manner – try to keep this procedure as clean as possible
__Prepare the portal site for sterile needle insertion – cleansing three times, from the insertion site outward in a circular motion and allow to air dry
__Remove the needle guard and flush the port-a-cath gripper needle set with Normal Saline
__Leave the syringe attached to the set with 10 ml of Normal Saline remaining in the syringe
__Stabilize the implanted port between two gloved fingers
__Grasp the GRIPPER tab and insert the needle into the center of the port. Remove the GRIPPER tab.
__Pull back on the attached syringe and obtain a blood return from the port and insert the 10 ml of Normal Saline from the syringe.
__Place a transparent dressing over the GRIPPER base, ensuring that a minimum 4 cm area surrounding the base is covered
__Remove the syringe (making sure that the tube is clamped) and attach IV fluid. Open clamp. Infuse IV fluids as needed.
CENTRAL LINE ACCESS:
__Apply clean gloves
__Cleanse the central line catheter three times
__Attach 10 ml syringe filled with 10 ml of Normal Saline to an 18G lumen on the central catheter line and pull back on the attached syringe to obtain a blood return.
__When a blood return is obtained from the central catheter line placement is confirmed, then flush with 10 ml of Normal Saline.
__Carefully remove the syringe from the central catheter line (making sure that the central catheter line is clamped) and screw IV tubing into the central catheter line.
__Open clamp. Infuse IV fluid as needed.

Documentation of adherence to Procedure
__Patient’s type of central line/ implanted port
__Adherence to aseptic technique
__Any change in patient condition

PRECAUTIONS AND COMMENTS
__If central line or central port does not flush easily do not force fluid through port
SMO: Chest Pain of Suspected Cardiac Origin

Overview: Patients with acute non-traumatic chest pain are among the most challenging patients cared for in EMS. They may appear seriously ill or completely well and yet remain at significant risk of sudden death or acute myocardial infarction. Sorting out which patient is experiencing chest pain of cardiac origin represents a tremendous challenge. This SMO should be utilized whenever cardiac chest pain is suspected. Whenever there is question as to whether or not you should utilize this SMO, contact Medical Control for further guidance.

INFORMATION NEEDED
- Discomfort or pain: OPQRST, previous episodes
- Associated symptoms: Weakness, nausea, vomiting, diaphoresis, dyspnea, dizziness, palpitations, “indigestion”
- Medical history (cardiac history, other medical problems, including hypertension, diabetes or stroke)

OBJECTIVE FINDINGS
- General appearance: level of distress, skin color, diaphoresis
- Signs of CHF (peripheral edema, respiratory distress, distended neck veins)
- Lung sounds
- Interpretation of ECG rhythm
- Assessment of pain
- Vital Signs

TREATMENT
- Routine Medical Care
- Reassure patient and place in position of comfort, or supine if patient’s systolic BP is < 90
- Cardiac Monitor, 12 lead ECG, if available, as soon as possible
- **Aspirin**
- **NTG** by EMTs for systolic > 100 mmHG
  - For patients with coronary artery disease and a prescription of **NTG** may administer initial dose from EMS supply (offline medical control). Contact Medical Control for further dosing
  - Reassess blood pressure
  - **NTG** (for patients who have not been prescribed NTG) may administer with an order from Medical Control (online medical control)
- **IV Normal Saline** at TKO rate – consider **fluid bolus** if hypotensive or inferior MI suspected
- **NTG** (IV not required prior to 1st dose of **NTG** administration but IV should be started before subsequent doses of **NTG** if possible)
- If inferior MI is suspected consider a **fluid bolus** and contact Medical Control prior to giving **NTG**
- If right-sided MI is confirmed, **NTG** is contraindicated
- If discomfort persists pain may be treated per **Pain Management SMO**
TREATMENT (continued)

___ Metoprolol should only be considered in patients with STEMI on 12 lead AND:

- Heart rate greater than 100 beats per minute **OR**
- Patient is hypertensive – SBP greater than 160 mmHg or DBP greater than 100 mmHg

___ If hypotension develops consider fluid bolus, and/or Dopamine - see Cardiogenic Shock SMO

Documentation for adherence to SMO

___ Presence of PQRST history
___ Vital signs before/after NTG administration
___ Cardiac rhythm documentation including printed strips (provided to receiving facility)
___ Correct doses of medications administered if indicated
___ Treatments rendered and any change in patient condition

Medical Control Contact Criteria

___ STEMI Alert called as early as possible
___ Contact Medical Control if any question exists as to whether or not this SMO should apply i.e. atypical sounding chest discomfort
___ Contact Medical Control whenever a question exists as to the best treatment course for the patient
___ Additional treatment for ongoing pain when BP<100

PRECAUTIONS AND COMMENTS

- Minimize scene time and notify the receiving hospital as soon as possible.
- Suspicion of Acute Coronary Syndrome (ACS) is based upon patient history. Be alert to patients likely to present with atypical symptoms or “silent AMI’s”: women, elderly and diabetics.
- BLS providers may acquire and transmit 12 lead
- **Nitroglycerin** is contraindicated in patients who have taken Phosphodiesterase –S enzyme inhibitors, such as Viagra, Cialis, or Levitra within the past 24 hours.
- **Metoprolol** is contraindicated in bradycardia (less than 60 BPM) or hypotension SBP less than 100 mmHg.
- Consider other potential causes of chest pain: pulmonary embolus, pneumonia, aortic aneurysm and pneumothorax.
- If suspected inferior MI consider **Right-sided 12 lead** as time permits.

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Original SMO Date: 07/04
Reviewed:
Last Revision: 06/17

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Child Abuse / Neglect

Overview: Various forms of child abuse and neglect can result in physical or emotional impairment, including physical injury, sexual exploitation, infliction of emotional pain and neglect. The severity of abuse may range from minor injuries to lethal acts. Neglect is the most common form of child abuse. Many children suffer more than one type of maltreatment. Neglect may be the failure to provide physical care including medical care, nutrition, shelter and clothing. Neglect may also be the failure to provide emotional care.

INFORMATION NEEDED
__History of abuse
__Initial assessment of patient
__Focused assessment of patient
__Other children in the home

OBJECTIVE FINDINGS
Physical Indicators of child abuse:
__Bruises/welts/lacerations
__Injuries that are unexplained/poorly explained/incompatible with explanation
__Burns; shape and size often reflect object used to burn
__Repeated injuries
__Frequent hospitalizations
__Repeated use of Emergency Department services for injury
__Discrepancies between history and presenting illness
__Time delay between injury and seeking medical treatment
__Reluctance to discuss circumstances surrounding injury
__Unexplained injuries
__Alleged third party inflicted injuries

Psychological Indicators of the abused child:
__A child less than 6 years of age who is excessively passive
__A child over 6 years of age who is excessively aggressive
__A child that doesn’t mind if the parents leave the room
__A child that cries hopelessly during treatment or cries very little
__A child that doesn’t look at parents for reassurance
__A child that is very wary of physical contact
__A child that is extremely apprehensive
__A child that appears constantly on the alert for danger
__A child that constantly seeks favors, food, or things

Original SMO Date: 07/04
Reviewed:
Last Revision: 06/17

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TREATMENT
__Scene safety, notify law enforcement if needed
__Routine Pediatric Care
__Treat any injuries
__If the parent or caregiver refuses to allow you to transport the child, notify the police and stay on
the scene until they arrive
__Attempt to preserve evidence
__If child abuse is suspected it must be reported to the appropriate state agency

Documentation of adherence to SMO
__Types of injuries sustained
__If local law enforcement was contacted

PRECAUTIONS AND COMMENTS
- If child abuse is suspected it must be reported to the appropriate state agency
- Limit the questions to the child to what is necessary to treat the child’s immediate needs
- DCFS reporting number is 1-800-25 ABUSE (1-800-252-2873)

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Overview: Delivering an infant usually progresses independently of prehospital providers. The critical question is whether delivery is imminent, indicated by crowning of the head or bulging of the perineum or rectum. The focus of care is to control delivery and prevent injury from expulsive forces that cause tearing of maternal perineal and pelvic tissues, injury of the infant’s head, or inadvertently dropping the infant. However, make no attempt to stop an imminent delivery.

INFORMATION NEEDED
__ History of prenatal care
__ Estimated due date
__ Known high risk pregnancy
__ Anticipated problems (multiple fetuses, premature delivery, placenta previa, abruption placenta, lack of prenatal care, use of narcotics or stimulants, etc.)
__ Gravida/para
__ Onset of regular contractions
__ Rupture of membranes, fluid color, time of rupture
__ Frequency and duration of contractions
__ Urge to bear down or have a bowel movement

OBJECTIVE FINDINGS
__ Inspect the perineal area for:
   __ Fluid or bleeding
   __ Crowning (check during contractions)
   __ Abnormal presentation (breech, extremity, cord)

TREATMENT
__ Routine Medical Care
__ If birth is not imminent, place patient in left lateral position
__ IV access

Documentation of adherence to SMO
__ Record time and duration of contractions
__ Record scheduled due date
__ Record delivery presentation and any complications or abnormalities (breech, cord around the neck, meconium staining, limb presentation, multiple fetuses, etc.)
__ Record time of delivery
__ Documents time of delivery plus 1 minute APGAR score
__ Document 5 minute APGAR score
### Normal Delivery
- Assist with delivery
- Sterile technique
- Control and guide delivery of baby’s head. After the head delivers, use bulb syringe to suction the infant’s mouth first, then nares. This is critical if meconium is present, because aspiration causes significant lung injury.
- Check for nuchal cord – slide over head if possible. If tight, clamp and cut, unwind, and deliver baby quickly
- Proceed to control and guide delivery of the body
- Suction mouth first, then nares
- Clamp and cut cord – clamps should be placed at approximately 6 inches and 9 inches from baby, then cut between clamps
- Dry and wrap infant for warmth (especially the head); if possible, place with mother for shared body heat
- Note time of delivery
- Assess infant’s status using APGAR score at 1 and 5 minutes post-delivery (see Precautions and Comments)
- Evaluate mother post-delivery for evidence of shock due to excessive bleeding (see Obstetric Emergency: Hemorrhage SMO)
- Do not hasten delivery of placenta. Do not pull on cord. May deliver spontaneously enroute if necessary

### Pre-partum Hemorrhage – near term
- Assume placenta previa (painless bleeding) or abruption placenta (sharp pain)
- Check for crowning but DO NOT attempt vaginal exam
- Treat for shock (see Obstetric Emergency: Hemorrhage SMO)
- Do not pack the vagina with any material to stop bleeding. An externally placed dressing or pad should be used to absorb flow

### Post-partum Hemorrhage
- Fundal massage
- Immediate transport to nearest hospital
- Do not pack the vagina with any material to stop bleeding. An externally placed dressing or pad should be used to absorb flow

### Breech Delivery
- Contact Medical Control for breech delivery
- Provide airway with gloved hand for baby if needed
- If unable to deliver, left lateral Trendelenburg position and rapid transport

### Prolapsed Cord
- Left lateral Trendelenburg position, elevate hips, if possible or knee-chest position
- If cord is present, manually displace presenting part off cord and maintain displacement
- Rapid transport
PRECAUTIONS AND COMMENTS

- Spontaneous abortion of fetus (>20 weeks) gestational age should be considered a neonatal resuscitation. See Neonatal Resuscitation SMO.
- Consider ruptured ectopic pregnancy in a woman of childbearing age with signs of shock.

BLOOD LOSS ESTIMATION GUIDE

250 ml = 1 cup or clot mass size of an orange
355 ml = 12 oz soda can
500 ml = 2 cups or clot mass size of a softball

Floor spill
500 ml = 20 inches diameter
1000 ml = 30 inches diameter
1500 ml = 40 inches diameter

APGAR SCORE:

<table>
<thead>
<tr>
<th>Appearance (skin color)</th>
<th>0=Body and extremities blue, pale</th>
<th>1=Body pink, extremities blue</th>
<th>2=Completely pink</th>
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<tr>
<td>Pulse</td>
<td>0=Absent</td>
<td>1=Less than 100/min</td>
<td>2=100/min and above</td>
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<td>Grimece (Irritability)</td>
<td>0=No response</td>
<td>1=Grimace</td>
<td>2=Cough, sneeze, cry</td>
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<tr>
<td>Activity (Muscle tone)</td>
<td>0=Limp</td>
<td>1=Some flexion of the extremities</td>
<td>2=Active motion</td>
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<tr>
<td>Respiration</td>
<td>0=Absent</td>
<td>1=Slow and irregular</td>
<td>2=Strong cry</td>
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Original SMO Date: 11/07
Reviewed: 07/13
Last Revision: 05/12; 12/12; 06/17

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Firearm Concealed Carry Act

Overview: Illinois has implemented the Firearm Concealed Carry Act allowing registered individuals to possess a concealed firearm on a daily or routine basis. This SMO will be a common sense guide for the EMS provider in dealing with the firearm during patient care procedures. While it is not an exhaustive list of possible situations, it will give guidance during most situations.

INFORMATION NEEDED
Consider that the safest place for the firearm in any of these situations is in the accompanying holster. EMS providers will now need to ask if the patient is armed before making the decision to start an evaluation. It may be necessary to remind the patient that State law prohibits firearms on a hospital campus. When approaching a scene where the patient may be carrying a concealed handgun, several scenarios are possible and should be handled in one of the following manners:

1. The patient is at their private residence. Ask or assist the patient in removing the firearm and holster as one unit and leave it at the residence in their previously designated location (ideal situation).

2. If law enforcement is at the scene during situations such as a traffic accident or public encounter, have the officer secure and take custody of the firearm.
   a. If the patient is unable to remove the holstered firearm due to significant mechanism of injury and a full body assessment is needed, cut the holster straps and remove the holstered firearm from the patient as a unit and give to law enforcement.
   b. If the holster is contaminated with blood or bodily fluid, have the officer don gloves before touching the holstered firearm. Provide a plastic or biohazard bag if necessary.
   c. If the patient has an altered level of consciousness and is unable to comply with the request to remove the holstered firearm, safely remove the holstered firearm by whatever means necessary (cut holster straps, unbuckle straps, etc.) and give to law enforcement when available, or have the officer assist with safe removal of the firearm. Belligerent, combative, or uncooperative patients that are known to have a firearm should not be approached until law enforcement arrives or the scene is otherwise made safe.

3. If law enforcement is not on scene to take custody of the firearm, place the holstered firearm in the lockable firearm transport (see IDPH recommendation).
4. If the hospital has a secure location, such as a gun safe currently used by law enforcement, place the firearm, holstered if possible, in the gun safe and notify law enforcement or a qualified hospital security agent.
5. Make arrangements for law enforcement to meet the ambulance at the hospital and take custody upon arrival in the ambulance bay or parking area.
6. Women may carry the firearm in a purse rather than a holster. The safest approach is to leave the firearm in the purse, turning it and the contents over to law enforcement to secure the firearm. The purse can be returned to the patient once the firearm is removed and secure.
7. If the patient has the firearm in a pocket without a holster, use extreme caution in retrieving it from the clothing, handling it only by the handle. Never attempt to unload the firearm or handle the trigger area. Avoid trying to manipulate or change the safety on a firearm. Have one crewmember place the gun in a safe or secure location in the home or lockable firearm transport box in the ambulance until law enforcement arrives.

8. If the patient is to be transported by helicopter from the scene or a rendezvous point, leave the firearm with first arriving law enforcement or notify local law enforcement of the situation. Do not send the firearm in the helicopter.

9. It may be considered a refusal of care if a patient will not remove or relinquish their firearm. Contact Medical Control for any situation of this type.

PRECAUTIONS AND COMMENTS

- If the EMS provider feels threatened or that the scene is unsafe, then follow standard policies and procedures for scene safety.
- EMS providers should never attempt to unload a firearm, regardless of their experience with it.
- Providers should make arrangements with state, county, and local law enforcement to assist with these situations.
- Relinquish firearm only to law enforcement, security personnel, or other qualified person.
- At no time should patient care be compromised in a safe situation due to there being a firearm. This includes transporting to the hospital where law enforcement can rendezvous with EMS to take custody of the firearm.
- Receiving hospitals should allow an ambulance on the premises with a secured firearm to facilitate optimal patient outcomes, as long as arrangements are pending for law enforcement to take custody of the firearm.
- A chain of custody form may be necessary to reduce the potential of losing the firearm or ammunition while patient care is being administered. Consult local authorities or your hospital for such a form.

Medical Control Contact Criteria

Contact Medical Control whenever a question exists as to the best treatment course for the patient.
Overview: CPAP is the application of positive end expiratory pressure by facemask for relief of hypoxemia that does not respond to conventional therapy. Patient must be able to adequately ventilate spontaneously. The increase in airway pressure allows for better diffusion of gases and re-expansion of collapsed alveoli, resulting in improved gas exchange and reduction in the work of breathing.

The objectives for the use of CPAP are:
- To relieve hypoxemia that does not respond to conventional therapy
- To reduce the need for endotracheal intubation and shorten hospital stay

Indication for CPAP
Respiratory distress associated with:
- Congestive heart failure / pulmonary edema
- COPD / asthma
- Pneumonia
- Near drowning
- Other causes of respiratory distress

INFORMATION NEEDED
- Patient history
- Respiratory rate and use of accessory muscles
- Pulse oximeter

OBJECTIVE FINDINGS
Respiratory Distress – two or more of the following:
- Retraction or use of accessory muscles
- Respiratory rate greater than 25
- Pulse oximeter less than 92%

TREATMENT
- Routine Medical Care – with continuous pulse ox monitoring
- Refer to Pulmonary Edema SMO and Bronchospasm SMO as necessary
- 100% O₂ by non-rebreather mask – while preparing for CPAP
- Apply CPAP per device recommendations
- Coach patient to place mask over their mouth and nose, then firmly attach mask
- If wheezing, perform in-line Albuterol/Ipratropium Nebulizer Duo Neb treatment
- If patient deteriorates, remove CPAP, ventilate with BVM and consider airway insertion
**Documentation of adherence to Procedure**
- Document indication for CPAP
- Vital signs and pulse oximeter before and during CPAP
- Document assessment of respiratory distress before CPAP
- Time CPAP started
- Patient tolerance
- Effects / adverse reaction

**Medical Control Contact Criteria**
- Contact Medical Control if any questions arise regarding the best treatment options for the patient

**PRECAUTIONS AND COMMENTS**
- If a sublingual medication, such as Nitroglycerin, has been administered assure the tablet is fully dissolved prior to resuming CPAP.

**Contraindications**
- Systolic blood pressure less than 90 mmHg
- Respiratory or Cardiac Arrest
- Inability to maintain patent airway
- Major trauma
- Vomiting or active GI bleeding
- Pneumothorax

**Complications**
- Barotrauma (very rare)
- Claustrophobia

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*Original SMO Date: 06/10*  
*Reviewed:*
*Last Revision: 07/11; 06/17*
Overview:

**Crush Syndrome** may occur when a patient is trapped under a crushing weight for a significant amount of time (often exceeding 4 hours). Due to this weight, cells are damaged, circulation is decreased to the affected area, and anaerobic metabolism results. Additionally, cells begin to die, and toxic substances are dumped from the cells into surrounding tissues. When the weight is released, blood flow is returned and these toxins can spread throughout the body.

**Suspension trauma** may occur when the body is held upright for a period of time without any movement. If a person is immobile for a period of time and suspended in a harness (or tied to an upright object), they will eventually suffer the central ischemic response (commonly known as fainting). When a person faints but remains vertical, there is a risk of death due to one's brain not receiving oxygen.

**INFORMATION NEEDED**

- Time the patient has been immobilized and/or trapped
- Check for: Pain – Paresthesia – Paralysis – Pallor – Pulselessness (Not needed but good indicators)

**OBJECTIVE FINDINGS**

- Time the patient has been immobilized and/or trapped
- Estimated time for extrication
- Trauma assessment
- Pertinent medical history

**TREATMENT**

- *Routine Trauma Care*
- Consider Spinal Restriction ([Spinal Restriction SMO](#))
- **For Suspension Trauma** - Do not lay patient flat or allow patient to stand up, keep patient in a sitting position during transport for a minimum of at least 30 minutes
- **For Crush Trauma** – consider placing tourniquets in a ready position before lifting the weight from patient in the event of excessive bleeding
- Cardiac monitor as soon as possible
- Pain Management as needed ([Pain Management SMO](#))
- IV Normal Saline
- **Albuterol**
- If hyperkalemia suspected due to abnormal ECG rhythm – peaked t-waves or widened QRS, Calcium Gluconate bolus

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**Return to Table of Contents**
Documentation for adherence to SMO
___ Mechanism of injury
___ Estimated time patient was trapped
___ Treatment of patient

**Medical Control Contact Criteria**

___ Contact Medical Control whenever a question exists as to the best treatment course to the patient

**PRECAUTIONS AND COMMENTS**
- Symptoms of hyperkalemia may include abnormal heart rhythm, slow heart rate and weakness
- Abnormal ECG rhythm may include tall peaked t-waves and widened QRS

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PROCEDURE: Delayed Sequence Airway Management/Intubation (DSI) – Formerly Rapid Sequence Intubation (RSI)

Overview: The primary goal is to manage the airway and this may or may not include endotracheal intubation. This advanced airway technique involves the use of rapidly inducing anesthesia to gain control of the airway and aid in stabilizing and securing the patient. It includes administration of sedation medications and/or neuromuscular blocking agents to induce unconsciousness and motor paralysis for the purpose of facilitating endotracheal intubation/airway management. Delayed Sequence Airway Management (DSI) is indicated in patients who require an airway with endotracheal intubation due to potential or actual airway compromise. If factors make endotracheal intubation not possible movement to an alternative airway (supraglottic airway) is recommended.

***DSI to be used by approved Providers only***

Approved provider/EMS Agency is determined by the Medical Director of their EMS System.

OBJECTIVES
__To achieve airway control necessitating induction of anesthesia and muscle relaxation
__To facilitate airway management in the following difficult situations:
  __Combative / agitated / uncooperative patients
  __Patients with altered mental status with clenched jaws
  __Patients with significant airway burns / inhalation injury who need prophylactic airway protection
__To establish a patent, secure airway
__To provide adequate oxygenation and ventilation
__To prevent aspiration
__To minimize the adverse effects of intubation, including systemic and intracranial hypertension

INFORMATION NEEDED
__Initial assessment
__History of present event

For pain and sedation doses:
Start dose low – slowly increase –
Titrate to effect up to listed dose
OBJECTIVE FINDINGS
__Observe the patient’s respiratory rate, depth of respirations, skin color and auscultate lung, fields, assess LOC and GCS. Intubation/airway management may be indicated if assessment reveals one or more of the following:
__Respiratory rate < 10 or > 30
__GCS of 8 or less (depressed sensorium or head injury)
__Burns that involve face or neck, or suspected inhalation injury with airway damage and swelling / compromise
__Acute or impending airway loss or inability to protect the airway (facial trauma with bleeding)
__Assess patient combativeness and spinal cord stability

Contraindication
__Due to the fact that DSI may result in a patient who is difficult to ventilate using a BVM or intubate after complete paralysis, in order to obtain an airway after unsuccessful DSI, the operator may be required to attempt an airway using one of the following: BVM supraglottic airway device or a surgical cricothyrotomy. Therefore, if endotracheal intubation would be difficult to obtain (neck expanding hematoma, neck swelling, congenital anomalies, epiglottis, etc.) then caution should be used when deciding to paralyze these patients.
__Hyperkalemia (dialysis patients)
__Penetrating eye injuries
__Known hypersensitivity to the drugs being considered
__In addition to above Succinylcholine, has several contraindications, and should not be used in patients with the following conditions:
__Five (5) days or more post-burn
__Five (5) days or more post major trauma

Equipment
__DSI Bag
__Syringes and needles
__Calculator
__DSI drug dosages / indications list
__Drugs:
__Consider pre-medications for DSI:
  __Lidocaine in the patient with suspected hyperkalemia or increased intracranial pressure
  __Atropine for persistent bradycardia
__Sedation Medication: Etomidate or Ketamine

If needed, and approved for paralytics:
__Paralytic Medications: Succinylcholine
__Bag-Valve-Mask (with reservoir bag and oxygen inlet)
__Oxygen Delivery System
__Suction equipment (with connecting tubing and tips)
__Laryngoscope handle with functioning batteries
__Laryngoscope blades

Equipment continued next page…
Equipment (continued)
__ ET tubes (of various sizes)
__ Lubricant
__ 10ml syringe
__ Tape
__ Stylets/Bougie
__ McGill Forceps
__ End Tidal CO2
__ Pulse Ox
__ Oral and Nasal Airways (of various sizes)
__ Supraglottic airway and Cricothyrotomy Kit for back-up airway

Procedure
STEP 1: PREOXYGENATE:
__ Position the patient and pre-oxygenate with high flow oxygen by mask for 2 – 5 minutes - consider CPAP or BiPAP per SMO
__ Use BVM to provide respiratory support if needed

STEP 2: PREPARE
__ Prepare equipment
  __ Suction
  __ ET tube (at least 2 sizes and check bag)
  __ Stylet (should not extend past end of tube)
  __ Bougie
  __ Laryngoscope- check that functions appropriately
  __ Have Surgical Cricothyroid equipment readily available
__ IV Normal Saline
__ Cardiac Monitor
__ Oxygen saturations
__ Capnography

STEP 3: PREMEDICATION:
__ Consider pre-medications for DSI:
  __ Lidocaine in the patient with suspected hyperkalemia or increased intracranial pressure
  __ Atropine for persistent bradycardia

STEP 4: INDUCTION:
__ Sedation: Etomidate or Ketamine or Midazolam
__ Continue pre-oxygenation
__ If provider/EMS agency is not approved for paralytics, skip to STEP 6
STEP 5: **If needed, and approved for paralytics:**
PARALYSIS, then INTUBATE: **Succinylcholine** (alternate **Rocuronium** when Succinylcholine is not available)

- If fasciculation occurs, wait for them to stop then assess for apnea, jaw relaxation, and decreased resistance to bag / mask ventilations indicating that the patient is sufficiently relaxed to proceed with intubation.
- Intubate, check tube placement, secure tube and continue to assist respirations.
- If an extended transport time is probable additional doses of sedation may be required.

STEP 6: **INTUBATE**, then airway management

- Insert laryngoscope and visualize glottic opening
- Suction if necessary
- Pass ET tube plus inflate cuff
- Remove stylet, ventilate, with 100% oxygen
- Confirm tube placement: (see **Airway Management SMO**)
  - With EtCO₂ if available (most preferred method)
  - Colorimetric device
  - Visualization
  - Auscultation
  - Absence of gastric sounds
  - Misting in the tube
  - Bougie confirmation
  - Esophageal detector
  - Bi-lateral chest rise
- Secure tube

**IF UNSUCCESSFUL**

- If unable to intubate during the first attempt, or if the oxygen saturation drops below 80%, stop and ventilate the patient with the BVM
- If inadequate relaxation is present, give a second dose if additional attempts fail ventilate the patient with the BVM until spontaneous ventilations return (usually 10-60 minutes). Re-evaluate the patient. If intubation is unsuccessful, ventilate the patient with BVM or supraglottic airway.

**Documentation of adherence to Procedure**

- Document of confirmed tube placement (see above) (see **Airway Management SMO**)
- Document medications used and dosages
- Document indication for intubation and outcome successful vs. unsuccessful – include any difficulty with procedure, condition of airway, number of attempts, and who performed procedure
- Document spinal restriction / in-line stabilization of C-spine for trauma patients
- Document ease of ventilation and the continued bagging of patient.
- Monitor end tidal CO₂ and pulse oximeter
- Document size of ET tube, #cm, at lips, end tidal CO₂ detector color change, pulse oximeter, lung sounds, chest expansion, and any complication

Original SMO Date: 07/04
Reviewed:
Last Revision: 02/06; 06/17

Return to Table of Contents
**Documentation (continued):**
- Document cardiac rhythm and vital signs
- Document status of tube at receiving faculty: breath sounds, oxygen saturation and clinical improvement / stability
- Document MD who confirms tube placement on patient record if possible
- A DSI QI form will be completed on each run that DSI is utilized and will be submitted to your EMS Medical Director

**Medical Control Contact Criteria**
- Contact Medical Control if any questions regarding the best treatment options for the patient

**PRECAUTIONS AND COMMENTS**
- Ensure adequate continued sedation in all paralyzed patients.
- Ensure that the BVM remains immediately accessible in the event of accidental extubation.
- If ETT position is ever in doubt, confirm position with direct inspection with laryngoscope.
- Patients receiving positive pressure ventilation may develop tension pneumothorax. Refer to Needle Decompression Procedure if any of the following:
  - Increased difficulty bagging patient
  - Tracheal shift
  - Decreased breath sounds
  - Tachycardia and hypotension

**Complications**
- Misplaced tube/ esophageal intubation, right mainstem intubation
- Hypoxia
- Cardiac dysrhythmias: bradycardia, PVC’s, V-fib
- Aspiration
- Injury to airway / pneumothorax / broken teeth
- Hypotension
- Increase intraocular, intracerebral and intragastric pressure

**MEDICATION ADMINISTRATION CHART**

<table>
<thead>
<tr>
<th>Peds</th>
<th>3 kg</th>
<th>4 kg</th>
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<tr>
<td>Standard Dosing</td>
<td>ILS/ALS</td>
<td>BLS</td>
<td>EMR</td>
<td>Dextrose</td>
<td>Dopamine</td>
<td>Mag Sulfate</td>
<td>Fentanyl IN</td>
<td>Midazolam IN</td>
<td>Formulary</td>
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</table>
Delayed Sequence Airway Management/Intubation (DSI)
Region I Quality Improvement Form

This Form will be completed whenever DSI is utilized by an approved provider and submitted to the Medical Director at your Resource Hospital with a copy of the run sheet attached within 48 hours of drug utilization.

PLEASE PRINT

Patient Name: ________________________________

Date: ________________________________________

Ambulance / Rescue Agency: _________________ Run #: ______________

Induction Agent and Dosage: _________________ Number of Times: ______________

Paralytic Agent and Dosage: _________________ Number of Times: ______________

Indications: ____________________________________________________________

Allergies: _____________________________________________________________

Contraindications: ______________________________________________________

Any complications encountered: ____________________________________________

Outcome of Patient: _____________________________________________________

Additional Comments: __________________________________________________

______________________________________________

Name of Paramedic administering medication: ______________________________

Send this completed form to EMS Medical Director, Your Resource Hospital within 48 hours of DSI event.

Original SMO Date: 11/05
Reviewed: ________________________________
Last Revision: 02/06; 06/17

Procedure: Delayed Sequence Intubation (DSI)
Page 6 of 6

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SMO: Diabetic Emergencies

Overview: Diabetic Emergencies can range from a mild reaction to a very severe life threatening condition depending on whether the cause is hypoglycemia or hyperglycemia. This SMO is intended to help the EMS Responder assess and treat the spectrum of diabetic emergencies.

INFORMATION NEEDED
- History of diabetes
- History of this episode (rapid or slow onset)
- Time of last meal
- Time last medication taken—oral hypoglycemic or insulin

OBJECTIVE FINDINGS
- Altered level of consciousness
- Combative
- Cold, clammy skin
- Seizure
- Dizziness, weakness
- Odor of breath
- Blood glucose level

TREATMENT
- Routine Medical Care
- Determine blood glucose level
- If patient with glucose <80 and/ or exhibiting signs of hypoglycemia:
  - **Oral Glucose** if patient is alert with intact gag reflex
  - Establish IV of **Normal Saline** at TKO rate.
  - If patient unresponsive or without gag reflex give **Dextrose, D-10** should be used in patients under 2 years of age. **D-10** can be considered as an alternative to **50% Dextrose** in any patients such as patients with fragile veins. **Dextrose Dosing Chart**
  - **Glucagon** if patient has altered mental status cannot follow directions, and limited or no gag reflex. If unable to establish IV give **Glucagon IM**.
- For suspected ketoacidosis run **fluid bolus**. Repeat as indicated.
- Reassess patient after medication is given. If no change in condition contact Medical Control for further orders.
**Documentation of adherence to SMO**
- Blood glucose level
- Level of consciousness
- Status of gag reflex
- Results of treatment provided

---

**Medical Control Contact Criteria**

- Contact Medical Control whenever a question exists as to the best treatment course for the patient

---

**PRECAUTIONS AND COMMENTS**

- Always assess for treatable etiologies
- Make sure airway is patent and gag reflex intact
- Make sure that IV site is patent before, during, and after drug administration  **Dextrose**

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**MEDICATION ADMINISTRATION CHART**

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Original SMO Date: 07/04
Reviewed:
Last Revision: 09/14; 06/17

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Overview: IDPH EMS Region 1 Medical Directors have adopted the Illinois Department of Public Health (IDPH) “Uniform Do-Not-Resuscitate (DNR) Advanced Directive” as mandated by (210 ILCS 50/) Emergency Medical Services Act.

This SMO is intended to honor a physician’s order that reflects an individual’s wishes about receiving cardiopulmonary resuscitation (CPR). It allows an individual, in consultation with their health-care professional, to make advanced decisions about CPR, in the event the individual’s breathing and/or heartbeat stops. When the patient has a valid DNR form, EMS personnel will not institute “Cardiopulmonary Resuscitation”. This has been defined by IDPH as various medical procedures, such as chest compressions, electrical shocks, and insertion of a breathing tube, used in an attempt to restart the patient’s heart and/or breathing.

The implementation of this SMO references subsection (d) of Section 65 of the Health Care Surrogate Act, 755 ILCS 40/65, provides:

“A health care professional or health care provider may presume, in the absence of knowledge to the contrary, that a completed Department of Public Health Uniform DNR Order or a copy of that form is a valid DNR Order. A health care professional or health care provider, or an employee of a health care professional or health care provider, who in good faith complies with a do-not-resuscitate order made in accordance with this Act is not, as a result of that compliance, subject to any criminal or civil liability, except for willful and wanton misconduct, and may not be found to have committed and act of unprofessional conduct.”

“DNR” or Do Not Resuscitate does not allow for the withholding routine treatment from a patient who has a pulse and respiration.

The sections below explain what is on the form, however, situations where hospice patients call 911 generally need to be transported.

Information Needed
__ Completed patient assessment.
__ Completed IDPH or Medical Control approved POLST/ Advanced Directive form
Objective Findings

Patient assessment to determine if the patient is presenting with:
- Full Cardiopulmonary Arrest
  - Cessation of heartbeat and respirations
- Pre-arrest Emergency
  - Breathing is labored or stopped
  - Heartbeat is still present

Completed IDPH approved POLST/ Advanced Directive form

Advance Directives

<table>
<thead>
<tr>
<th>IDPH POLST form</th>
<th>Practitioner Orders for Life Sustaining Treatment; provides guidance during life-threatening emergencies. Must be followed by all healthcare providers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power of Attorney for Healthcare</td>
<td>Names agent: rarely contains directions for authorized practitioner</td>
</tr>
<tr>
<td>Mental Health Treatment Declaration</td>
<td>Directions + Agent (for authorized practitioner)</td>
</tr>
<tr>
<td>Living Will</td>
<td>Directions for authorized practitioner (NOT EMS)</td>
</tr>
</tbody>
</table>

1. A valid, completed POLST form or previous DNR order does not expire. A new form voids past ones; follow instructions on most recent form. EMS is not responsible for seeking out other forms - work with form that is presented as truthful.
2. Original form NOT necessary - all copies of a valid form are also valid; form color does not matter.
3. SECTION A Cardiopulmonary Resuscitation: (no pulse and not breathing)
   a. If “Attempt Resuscitation” box is checked, start full resuscitation per SMO. Full treatment (section B) should be selected.
   b. If “Do Not Attempt Resuscitation/ DNR” box is checked; do not begin CPR.
4. SECTION B explains extent/intensity of treatment for persons found with a pulse and/or breathing.
   a. Full Treatment: Primary goal of sustaining life by medically indicated means. In addition to treatment described in selected treatment and comfort-focused treatment, use of intubation, mechanical ventilation, and cardioversion as indicated. Transfer to hospital if indicated.
   b. Selective Treatment: Primary goal of treating medical conditions with selected medical measures. In addition to treatment described in Comfort-focused Treatment, use medical treatment, IV fluids and IV medications as medically appropriate, and consistent with patient preference. Do not intubate. May consider less invasive airway support (CPAP/BiPAP). Transfer to hospital if indicated.
c. Comfort-Focused Treatment: Primary goal of maximizing comfort. Relieve pain and suffering through use of medications by EMS approved routes as needed; use oxygen, suction, manual treatment of airway obstruction. Do not use treatments listed in Full and Selected Treatment unless consistent with comfort goal. Transfer to hospital only if comfort needs cannot be met in current location.

5. COMPONENTS OF A VALID POLST form/ DNR order: Region I recognizes an appropriately executed IDPH POLST form and/or any other written document that has not been revoked; containing at least the following elements:
   a. Patient Name
   b. Resuscitation order (Section A)
   c. Date
   d. 3 Signatures
      i. Patient or Legal Representative Signature
      ii. Witness Signature
      iii. Authorized Practitioner Name & Signature (Physician, licensed resident (2nd year or higher), APN, PA)

6. If POLST or DNR form is valid: follow orders on form. If form is missing or inappropriately executed, contact Medical Control for guidance.

7. A patient, POA, or Surrogate that consented to the form may revoke it at any time. A POA or Surrogate should not overturn decisions made, documented, and signed by the patient.

8. If resuscitation begun prior to form presentation, follow form instructions after order validity is confirmed.

9. If orders disputed or questionable contact Medical Control and explain the situation, follow orders received.

**Power of Attorney for Healthcare (POA)/ Living Wills:**

If someone presents themselves as having POA to direct medical care for a patient and/or a Living Will is presented follow these procedures:

1. Contact Medical Control; explain situation and follow orders received.
2. Living Wills alone may not be honored by EMS personnel
3. If a Power of Attorney for healthcare document is presented by the agent, confirm that the document is in effect and covers the current situation
   a. If yes, the agent may consent to or refuse general medical treatment for the patient.
   b. A POA cannot rescind a DNR order consented to by the patient.
   c. A POA may rescind a DNR order for which they or another surrogate provided consent.
   d. If there is any doubt, continue treatment, contact medical control, explain the situation, and follow orders received.
4. Bring any documents received to the hospital.
Hospice patients not in cardiac/respiratory arrest:

1. If patient is registered in a hospice program and has a POLST form completed, follow patient wishes as specified in Box B.
2. Consult with hospice representatives if on scene re: other care options.
3. Contact Medical Control; communicate patient’s status; POLST selection; hospice recommendations; presence of written treatment plans and/or valid DNR orders. Follow Medical Control orders.
4. If hospice enrollment is confirmed but a POLST form is not on scene, contact Medical Control. A DNR order should be assumed in these situations; seek Medical Control approval to withhold resuscitation if cardiorespiratory arrest occurs.

Documentation of adherence to SMO

- Documentation of the patient assessment and condition
- Documentation of valid POLST/DNR form
- Document any issues or concerns with the call
- Document all contact with Medical Control
- Document whom the patient/deceased has been transferred to
<table>
<thead>
<tr>
<th>HIPAA PERMITS DISCLOSURE OF POLST TO HEALTH CARE PROFESSIONALS AS NECESSARY FOR TREATMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IDPH UNIFORM PRACTITIONER ORDER FOR LIFE-SUSTAINING TREATMENT (POLST) FORM</strong></td>
</tr>
<tr>
<td>For patients, use of this form is completely voluntary. Follow these orders until changed. These medical orders are based on the patient’s medical condition and preferences. Any section not completed does not invalidate the form and implies initiating all treatment for that section. With significant change of condition new orders may need to be written.</td>
</tr>
<tr>
<td><strong>Patient Last Name</strong></td>
</tr>
<tr>
<td><strong>Date of Birth (mm/dd/yy)</strong></td>
</tr>
<tr>
<td><strong>Address (street/city/state/zip code)</strong></td>
</tr>
</tbody>
</table>

**CARDIOPULMONARY RESUSCITATION (CPR)** If patient has no pulse and is not breathing.

- [ ] Attempt Resuscitation/CPR
- [ ] Do Not Attempt Resuscitation/DNR

(Selecting CPR means Full Treatment in Section B is selected)

**MEDICAL INTERVENTIONS** If patient is found with a pulse and/or is breathing.

- [ ] Full Treatment: Primary goal of sustaining life by medically indicated means. In addition to treatment described in Selective Treatment and Comfort-Focused Treatment, use intubation, mechanical ventilation and cardioversion as indicated. Transfer to hospital and/or intensive care unit if indicated.
- [ ] Selective Treatment: Primary goal of treating medical conditions with selected medical measures. In addition to treatment described in Comfort-Focused Treatment, use medical treatment, IV fluids and IV medications (may include antibiotics and vasopressors), as medically appropriate and consistent with patient preference. Do Not Intubate. May consider less invasive airway support (e.g., CPAP, BiPAP). Transfer to hospital, if indicated. Generally avoid the intensive care unit.
- [ ] Comfort-Focused Treatment: Primary goal of maximizing comfort. Relieve pain and suffering through the use of medication by any route as needed, use oxygen, suctioning and manual treatment of airway obstruction. Do not use treatments listed in Full and Selective Treatment unless consistent with comfort goal. Request transfer to hospital only if comfort needs cannot be met in current location.

Optional Additional Orders

**MEDICALLY ADMINISTERED NUTRITION** (If medically indicated) Offer food by mouth, if feasible and as desired.

- [ ] Long-term medically administered nutrition, including feeding tubes.
- [ ] Trial period of medically administered nutrition, including feeding tubes.
- [ ] No medically administered means of nutrition, including feeding tubes.

**DOCUMENTATION OF DISCUSSION** (Check all appropriate boxes below)

- [ ] Patient
- [ ] Agent under health care power of attorney
- [ ] Parent of minor
- [ ] Health care surrogate decision maker (See Page 2 for priority list)

**Signature of Patient or Legal Representative**

<table>
<thead>
<tr>
<th>Signature (required)</th>
<th>Name (print)</th>
<th>Date</th>
</tr>
</thead>
</table>

**Signature of Witness to Consent** (Witness required for valid form)

I am 18 years of age or older and acknowledge the above person has had an opportunity to read this form and have witnessed the giving of consent by the above person or the above person has acknowledged this signature or mark on this form is my signature.

<table>
<thead>
<tr>
<th>Signature (required)</th>
<th>Name (print)</th>
<th>Date</th>
</tr>
</thead>
</table>

**Signature of Authorized Practitioner** (Physician, licensed resident [second year or higher], advanced practice nurse or physician assistant)

Print Authorized Practitioner Name (required) | Phone ( ) ________ -

Authorized Practitioner Signature (required) | Date (required)
HIPAA PERMITS DISCLOSURE OF POLST TO HEALTH CARE PROFESSIONALS AS NECESSARY FOR TREATMENT

**THIS SIDE FOR INFORMATIONAL PURPOSES ONLY**

Use of the Illinois Department of Public Health (IDPH) Practitioner Orders for Life-Sustaining Treatment (POLST) Form is always voluntary. This order records your wishes for medical treatment in your current state of health. Once initial medical treatment is begun and the risks and benefits of further therapy are clear, your treatment wishes may change. Your medical care and this form can be changed to reflect your new wishes at any time. However, no form can address all the medical treatment decisions that may need to be made. The Power of Attorney for Health Care Advance Directive (POAH) is recommended for all capable adults, regardless of their health status. A POAH allows you to document, in detail, your future health care instructions and name a Legal Representative to speak for you if you are unable to speak for yourself.

Advance Directive Information

- Health Care Power of Attorney
- Living Will Declaration
- Mental Health Treatment Preference Declaration

Contact Person Name
Contact Phone Number

Preparer Name
Preparer Title
Phone Number
Date Prepared

Completing the IDPH POLST Form

The completion of a POLST form is always voluntary, cannot be mandated and may be changed at any time.

- A POLST should reflect current preferences of persons completing the POLST Form; encourage completion of a POAH.
- Verbal orders are acceptable with follow-up signature by authorized practitioner in accordance with facility/community policy.
- Use of original form is encouraged. Photocopies and faxes on any color of paper also are legal and valid forms.

Reviewing a POLST Form

This POLST form should be reviewed periodically and if:

- The patient is transferred from one care setting or care level to another, or
- there is a substantial change in the patient’s health status, or
- the patient’s treatment preferences change, or
- the patient’s primary care professional changes.

Voiding or revoking a POLST Form

- A patient with capacity can void or revoke the form, and/or request alternative treatment.
- Changing, modifying or revoking a POLST form requires completion of a new POLST form.
- Draw line through sections A through E and write ‘VOID’ across page if any POLST form is replaced or becomes invalid.
- Beneath the written "VOID" write in the date of change and re-sign.
- If included in an electronic medical record, follow all voiding procedures of facility.

Illinois Health Care Surrogate Act (755 ILCS 40/25) Priority Order

1. Patient’s guardian of person
2. Patient’s spouse or partner of a registered civil union
3. Adult child
4. Parent
5. Adult sibling
6. Adult grandchild
7. A close friend of the patient
8. The patient’s guardian of the estate

For more information, visit the IDPH Statement of Illinois law at:
http://dph.illinois.gov/topics-services/health-care-regulation/nursing-homes/advance-directives

HIPAA (HEALTH INSURANCE PORTABILITY AND ACCOUNTABILITY ACT of 1996) PERMITS DISCLOSURE TO HEALTH CARE PROFESSIONALS AS NECESSARY FOR TREATMENT

Original SMO Date: 02/07
Reviewed: 05/09
Last Revision: 03/10; 06/17

Return to Table of Contents
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Adult Drowning – Near Drowning

Overview: Drowning and near drowning patients may have severe, delayed fluid and electrolytes imbalances which may have a fatal effect. Near drowning is defined as survival after suffocation caused by submersion in water or another fluid. **ALL** near drowning patients should be transported to the hospital.

**INFORMATION NEEDED**
- Scene survey completed
- Medical history (ex. history of respiratory problem, shock, cardiovascular disease, congenital heart defect, blunt chest trauma, seizures)
- History of present event (ex. complaints prior to arrest, possibility of choking, allergic reaction, seizure, etc)
- A complete **Primary Assessment** of the patient
- Pertinent **Secondary Assessment** of the patient
- Description and temperature of fluid in which submerged
- Length of time submerged
- Possibility of alcohol or other drugs / medications involved

**OBJECTIVE FINDINGS**
- Assessment of LOC and ABCs
- Significant mechanisms of injury / nature of illness
- Evidence of head / or neck trauma and other associated injuries, consider spinal restriction
- Neurological status: monitor on a continuous basis.
- Respiratory: crackles or signs of pulmonary edema, respiratory distress
- Mental status (AVPU)
- Airway patency
- Ventilatory status (rate and depth of respirations, work of breathing)
- Oxygenation and Circulatory status (pulse oximetry, vital signs)

**TREATMENT**
- Routine Medical Care
- If pulseless, start high quality CPR per AHA guidelines
- AED or **Cardiac Monitoring** - treat per appropriate SMO
- If hypothermic, see **Hypothermia SMO**
- Evaluation for possibility of neck injury, see **Spinal Restriction SMO**
- If other trauma is suspected refer to appropriate trauma SMO or **Routine Trauma Care**
- BLS/ALS maneuvers to remove Foreign Body Airway Obstruction if indicated
- Reassess BLS/ALS methods to maintain airway patency and good ventilation
- IV access
Documentation of adherence to SMO
__ Time CPR started
__ Time AED or Cardiac Monitor applied

Medical Control Contact Criteria

__ Mandatory contact with Medical Control for any refusals
__ Contact Medical Control whenever a question exists as to the best treatment course for the patient

PRECAUTIONS AND COMMENTS
- All near drowning or submersion should be transported. These patients can deteriorate rapidly.
- Remember scene safety in regards to defibrillation in wet conditions (water, ice, etc.)
- Ensure trained water rescuers are on scene if necessary.
- For in-field termination or declaration of death, refer to In-Field Termination SMO.
- Utilize BLS / ALS methods for maintaining airway patency and good ventilations and reassess patient’s oxygenation and ventilatory status.
- For pediatric patients see Pediatric Drowning/Near Drowning SMO

MEDICATION ADMINISTRATION CHART

<table>
<thead>
<tr>
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Original SMO Date: 07/04
Reviewed: 06/17
Last Revision: 06/17

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PROCEDURE: Emergency Incident Rehabilitation

Overview: Emergency Incident Rehabilitation (EIR) SMO is to provide guidance on the implementation and use of a rehabilitation process as a tactical requirement of the incident management system (IMS) at the scene of an emergency incident or training exercise. It will ensure that emergency responders whom might be suffering the effects of metabolic heat buildup, dehydration, physical exertion, and / or extreme weather receive medical monitoring, rest, rehydration and rehabilitation during emergency operations.

INFORMATION NEEDED
__ Amount of work time completed
__ Number and type of SCBA used
__ Any SCBA failure
__ Any complaints of weakness, dizziness, muscle cramps, nausea, vomiting, headache, or any injuries

OBJECTIVE FINDINGS
__ RPE (Rating of Perceived Exertion)
__ Respiratory assessment
__ Pulse assessment
__ Blood pressure assessment
__ Skin assessment
__ SpCO ** if available **
__ SpO₂ ** if available **

EXCLUSIONS:
__ Bystanders: “Non-emergency responders”
__ Any and all emergency responders requiring any form of treatment (over vital signs) will be transferred to EMS evaluation / transport division
MEDICAL MONITOR
__Ensure personal safety
__Perform a visual check of an individual
__Perform a LOC assessment
__Evaluate the emergency responders RPE / Borg scale
__Perform and record vital signs
__Perform and record SpCO ** if available **
__Perform and record SpO₂ ** if available **
__Repeat process based on the individuals’ medical monitor results- refer to the Region 1 EMS – EIR Medical Monitoring Flow Chart

Documentation of adherence to Procedure
__Emergency Incident Rehabilitation Report
__Rehab Sector – Company check in / out sheet

Medical Control Contact Criteria
__Contact Medical Control for any questions regarding transportation or refusal / release of services

PRECAUTIONS AND COMMENTS:
• Treatment is defined as any other care beyond vital signs in this Standing Medical Order
• Refusal / Release of Service is not required unless treatment is done
• No treatment can be performed as part of this Standing Medical Order
• If treatment is required, the emergency responder must be transferred to the treatment / transportation division where regional / local SMOs and standard documentation process will be followed

Rate of Perceived Exertion Scale

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*photo per SB Fitness Magazine @ https://www.sbfitnessmagazine.com/articles/rate-perceived-exertion-scale/
Emergency Incident Rehabilitation Flowchart

Body Temperature >100.6
  NO
  Yes

Respirations <10 or >20
  NO
  Yes

Heart Rate > 110
  NO
  Yes

Blood pressure < 90 systolic or > 130 systolic
  NO
  Yes

SpO2 < 95%
  YES

SpCO > 10%
  YES

10 MINUTE – “Time Out”
  “Cool” or “Warm” them
  Hydrate
  Give nourishment

“Re-Assessment”

Temp: > 98.5 F
Resp: < 10 or > 20
Pulse: > 100
BP: Systolic < 90 or > 160
Diastolic > 90
SpO2: < 95%
SpCO: > 10%

Return to “Staging” or light duty

Repeat 20 minute rehab or consider re-assignment to “Treatment / Transport” division

Approved: 08/07
Revised: 06/17
Region 1 (EMR SMO)

Original SMO Date: 08/07
Reviewed:
Last Revision: 09/14; 06/17

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## EMERGENCY INCIDENT REHABILITATION REPORT

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<th>TEMP</th>
<th>RESP</th>
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**Medical Monitoring Reference**
- Body Temperature < 100.6
- Heart Rate < 110
- Respiration 10 to 20
- SpO₂ > 95 / SpCO < 10
- Blood Pressure: **INITIAL**
  - Syst: >90 & <190
  - Diast: <100
- Re-Assessment
  - Syst: ≥60 / <160
  - Diast: <50

Original SMO Date: 08/07
Reviewed:
Last Revision: 09/14; 06/17

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**REGION I EMERGENCY MEDICAL SERVICES**
**STANDING MEDICAL ORDERS**
**BLS, ILS, ALS**

**SMO: Excited Delirium – Extremely Agitated Patients**

**Overview:** *Excited delirium* is a condition that manifests as a combination of delirium, psychomotor agitation, anxiety, hallucinations, speech disturbances, disorientation, violent and bizarre behavior, insensitive to pain, elevated body temperature, and superhuman strength. Excited delirium is sometimes called *excited delirium syndrome* if it results in sudden death (usually via cardiac or respiratory arrest), an outcome that is sometimes associated with the use of physical control measures, including police restraint and tasers. Excited delirium arises most commonly in male subjects with a history of serious mental illness and/or acute or chronic drug abuse, particularly stimulant drugs such as cocaine. Alcohol withdrawal or head trauma may also contribute to the condition.

- **N** – Patient is **naked** and sweating from hyperthermia
- **O** – Patient exhibiting violence against **object**, especially glass
- **T** – Patient is **tough** and unstoppable, with superhuman strength and insensitivity to pain
- **A** – Onset is **acute** (e.g. witness says the patient “just snapped”)
- **C** – Patient is **confused** regarding time, place, purpose and perception
- **R** - Patient is **resistant** and won’t follow commands to desist
- **I** – Patient’s speech is **incoherent**, often with loud shouting and bizarre content
- **M** – Patient exhibits **mental** health conditions or makes you feel uncomfortable
- **E** – EMS should request early backup and rapid transport to the ED

**INFORMATION NEEDED**

*Events leading to EMS dispatched - needs to be cooperative effort between Police, Fire, and EMS*

**OBJECTIVE FINDINGS**

- **Physical Signs**
  - Unusual agitation or excitement
  - Profuse sweating
  - High body temperature
  - Skin discoloration
  - Foaming at the mouth
  - Uncontrollable shaking
  - Respiratory distress

*For pain and sedation doses:*
- Start dose low – slowly increase –
- Titrate to effect up to listed dose
OBJECTIVE FINDINGS

Behavioral Signs
- Intense paranoia
- Demonstrates extreme agitation
- Hallucinating
- Delusional screaming for no apparent reason
- Aggression towards inanimate objects such as glass
- Naked or partially disrobed-attempt to cool body
- Resists violently during capture
- Diminished sense of pain

TREATMENT

- Have enough provider/police on the scene to handle the situation
- **Routine Medical Care**
- **Involve police to restrain patient when needed**
- **Use restraints if the patient is a threat to himself or others (see Restraints Procedure)**
- **Sedate the patient by administering Ketamine OR Midazolam**
- **Obtain vital signs, pulse oximetry, capnography, and body temperature if possible, and repeat frequently**
- **If hyperthermia signs are present, cool patient by applying cooling packs to neck, axilla, and groin**
- **Once patient is calm establish IV access with fluid at TKO**
- **Apply cardiac monitor to assess rhythm and rate**
- **Obtain 12 lead ECG. Address and treat signs of hyperkalemia:**
  - **Albuterol Nebulizer** *(not Duo-Neb)*
  - **Sodium Bicarbonate**
  - **Calcium Gluconate IV/IO**
  - **Fluid bolus** to hasten the reversal of metabolic acidosis and prevent potentially life threatening levels of potassium

Documentation of adherence to SMO

- Need for use of restraints
- Skin parameters
- Body temperature
- Cardiac rhythm

Medical Control Contact Criteria

- **Contact Medical Control whenever a question exists as to the best treatment course for the patient**
PRECAUTIONS AND COMMENTS

- Remember that abnormal emotional behavior could be the result of injuries or disease. Initiate treatment as required. Consider and attempt to evaluate for possible causes of behavioral problems:
  - Hypoxia
  - Hypotension
  - Hypoglycemia
  - Trauma (head injury)
  - Alcohol/Drug Intoxication or Reaction
  - Electrolyte Imbalances
  - Infection/fever

- At all times, EMT’s should avoid placing themselves in danger, at times this may mean a delay in the initiation of treatment until the personal safety of the EMT is assured.

- If the patient is judged to be either suicidal or incompetent and dangerous to self and others the treatment and transport should be carried out in the interest of the patient’s welfare. If the patient resists, police involvement is necessary and the use of reasonable force may be used to restrain the patient from doing harm to self and others.

MEDICATION ADMINISTRATION CHART

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Original SMO Date: 06/13
Reviewed:
Last Revision: 06/17

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Gynecological Emergencies: Hemorrhage

Overview: Assessment and history to identify treatable causes cannot be over emphasized. The anatomical and physiological differences of pregnancy can mask severe problems. All gynecological emergency patients should be transported to the hospital.

INFORMATION NEEDED

- Patient age
- Medical history
- Last menstrual period and possibility of pregnancy
- Duration and amount of bleeding
- If pregnant, gestational age of fetus, gravida/para, and anticipated problems (placenta previa, pre-eclampsia, prenatal care, drug/alcohol abuse)
- Presence of contractions, cramping or discomfort
- If trauma, mechanism of injury

OBJECTIVE FINDINGS

- Attempt to estimate vaginal blood loss (number of pads, towels, or other absorbent items used, or area of pooled blood). See blood loss estimation guide next page.
- Visualize the perineal area if necessary to confirm bleeding. DO NOT PERFORM A DIGITAL INSPECTION.
- Suspected spontaneous abortion: if possible bring material to hospital for evaluation
- If blurred vision or spots before the eyes, headache, seizures, or hypertension consider pre-eclampsia or eclampsia
- Check for hyper-reflex and/or fluid collection in lower extremities (edema)

TREATMENT

- Routine Medical Care
- Suspected trauma, consider spinal restrictions
- Care for other trauma as indicated in appropriate trauma SMO
- Place patient in position of comfort
- IV access with Normal Saline and consider a fluid bolus if SBP < 100 and patient is symptomatic (dyspneic, tachycardic, altered mental status)
- Apply cardiac monitor
- Control bleeding with pad or bulky dressing applied externally
- Transport as soon as possible

Original SMO Date: 11/07
Reviewed:
Last Revision: 05/12; 12/02; 06/17

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**Documentation and adherence to SMO**

- Estimated blood loss (number of pads, towels, or absorbent items used, or area of pooled blood)
  (See guide below)
- Vitals as indicated including blood pressure trending
- Method used to control bleeding

**Medical Control Criteria**

- Contact Medical Control if seizures occur
- Contact Medical Control whenever a question exists as to the best treatment course for the patient

**PRECAUTIONS AND COMMENTS**

- Spontaneous abortion of fetus (>20 weeks) gestational age should be considered a neonatal resuscitation. See [Neonatal Resuscitation SMO](#).
- Consider ruptured ectopic pregnancy in a woman of childbearing age with signs of shock.
- Do not pack the vagina with any material to stop bleeding.

**BLOOD LOSS ESTIMATION GUIDE**

- 250 ml = 1 cup or clot mass size of an orange
- 355 ml = 12 oz soda can
- 500 ml = 2 cups or clot mass size of a softball

- Floor spill
- 500 ml = 20 inches diameter
- 1000 ml = 30 inches diameter
- 1500 ml = 40 inches diameter

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Original SMO Date: 11/07
Reviewed: [details] Last Revision: 05/12; 12/02; 06/17

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Hypertensive Crisis

Overview: A condition in which an increase in blood pressure leads to significant, irreversible end-organ damage (most likely effects the heart, kidneys, and brain) within hours if not managed. End organ damage with neurological changes is evidenced by (headache, confusion, seizures, visual disturbances, lethargy or chest pain) and diastolic BP > 110 mm Hg.

INFORMATION NEEDED
__ History of hypertension
__ Medications taken for hypertension, compliance of medication regime, and last dose

OBJECTIVE FINDINGS
__ Shortness of breath
__ Altered mental status, vertigo
__ Headache
__ Epistaxis
__ Tinnitus
__ Changes in visual acuity
__ Nausea and vomiting
__ Seizures
__ ECG changes
__ Stroke assessment; if positive, contact Medical Control prior to treating blood pressure

TREATMENT
__ Routine Medical Care
__ IV access
__ Cardiac monitor
__ Contact Medical Control for Metoprolol
__ Observe for seizures, altered mental status, chest pain, headache, or respiratory difficulties
__ Rapid transport

Documentation of adherence to SMO
__ Respiratory status and interventions
  __ BP readings and medication interventions; reassessment after interventions
__ Cardiac rhythm
__ Observance of any seizure activity, altered mental status, nausea and vomiting, headache, epistaxis, etc

Original SMO Date: 07/04
Reviewed:
Last Revision: 06/17

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### Medical Control Contact Criteria

- Contacting Medical Control if positive stroke assessment prior to treating blood pressure
- Contact Medical Control whenever a question exists as to the best treatment course for the patient

### PRECAUTIONS AND COMMENTS

- It is not uncommon for blood pressure readings to range from 220/120 to 240/140mm Hg in hypertensive crisis.
- Blood pressure should be lowered by 5% - 20% to avoid permanent organ damage.
- Maintaining cerebral perfusion pressure is a priority in stroke patients. Use caution prior to treating blood pressure.

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Original SMO Date: 07/04
Reviewed: 06/17
Last Revision: 06/17

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Hyperthermia

Overview: Heat illness results from one of two basic causes:
- Normal mechanisms that regulate the body’s thermostat are overwhelmed by environmental conditions such as heat stress or increased exercise in moderate to extreme environmental conditions.
- Failure of the body’s regulatory mechanisms especially in older adults, young children, babies and ill or debilitated patients.

INFORMATION NEEDED
- Patient activity
- Medications: tranquilizers, alcohol, diuretics, antidepressants, amphetamines, cocaine, and other illicit (street) drugs
- Associated symptoms: chest pain, cramps, headache, orthostatic symptoms, nausea, weakness
- Air temperature and humidity; presence of excess clothing

HEAT CRAMPS
OBJECTIVE FINDINGS
- Temperature – Usually normal
- Mental Status – Alert
- Skin signs – may be warm or cool to touch
- Ability to perspire—present or absent?
- Neuro exam - Normal except for muscle cramps (usually legs)

TREATMENT Heat Cramps
- Routine Medical Care
- Note patient’s temperature if possible
- Remove excess clothing
- Move patient to cool area—protect patient from shivering by protecting with light covering
- Give cool/cold liquids PO as tolerated
- Consider glucose check; if hypoglycemic, see Diabetic Emergencies SMO.
- Stretch cramped muscles to reduce pain
**HEAT EXHAUSTION**

**OBJECTIVE FINDINGS**

- Temperature – Normal to slight elevation
- Mental Status – Alert to slight confusion
- Skin signs – usually hot to touch
- Ability to perspire—present or absent?
- Neuro exam – No loss of control of extremities, but feels very weak, maintains normal neuro function

**TREATMENT Heat Exhaustion**

- **Routine Medical Care**
  - Note patient’s temperature if possible
  - Remove excess clothing
  - Move patient to cool area—protect patient from shivering by protecting with light covering
- **Cardiac monitor**
- **IV Normal Saline**
  - Give cool/cold liquids PO as tolerated
  - Consider glucose check; if hypoglycemic, see Diabetic Emergencies SMO.
  - Oxygen as indicated

**HEAT STROKE**

**OBJECTIVE FINDINGS**

- Temperature – Core temperature usually 104 degrees Fahrenheit or greater
- Mental Status – Altered
- Skin signs – Usually flushed, hot; may or may not be moist if exercise induced
- Ability to perspire—present or absent?
- Neuro exam - May have active persistent seizures

**TREATMENT Heat Stroke**

- **Routine Medical Care**
  - Note patient’s temperature if possible
  - Remove excess clothing
  - Move patient to cool area—protect patient from shivering by protecting with light covering
  - Spray or sprinkle tepid water and use fan to cool
- **Cardiac monitor**
- **IV access with large bore IV Normal Saline**
  - If hypotensive (SBP<90 or signs of poor perfusion): fluid bolus (reassess and repeat if indicated)
- Continue COOLING measures during transport
- Consider glucose check; if hypoglycemic, see Diabetic Emergencies SMO.
- Transport to closest facility

Original SMO Date: 07/04
Reviewed:
Last Revision: 06/17
**Documentation of adherence to SMO**

- Skin signs
- Mental status
- If skin flushed, hot and altered mental status present: IV and cooling measures started

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**Medical Control Contact Criteria**

- Contact Medical Control if any questions arise regarding the best treatment options for the patient

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**PRECAUTIONS AND COMMENTS**

- Persons at great risk of hyperthermia are the elderly, individuals in endurance athletic events, and persons on medications which impair the body’s ability to regulate heat.
- Be aware that heat exhaustion may progress to heat stroke.
- Do not use ice water or cold water to cool patient due to potential vasoconstriction.
- Do not place towels or blankets on the patient as they may increase core temperature.
- Be alert for signs of trauma, e.g. falls, and institute appropriate treatment if suspected.

**MEDICATION ADMINISTRATION CHART**

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Overview: Core body temperature less than 95 °F [35º C] can result from a decrease in heat production, an increase in heat loss, or a combination of the two factors. Most common cause is exposure to extreme environmental conditions. Classified as Mild (CBT of 96.8º F to a CBT of 93.2º F [36-34º C]), Moderate (CBT of 86º F [30ºC]), and Severe (CBT of < 86.0º F [<30ºC]).

INFORMATION NEEDED
- Length of exposure
- Air temperature, water temperature, patient wet or dry
- Medical history: trauma, alcohol, tranquilizers, anticonvulsants, medical problems (such as diabetes)

OBJECTIVE FINDINGS
MILD HYPOTHERMIA
- Alert to impaired judgment
- Possible slurred speech
- Shivering
- Evidence of local injury; blanching, blistering, erythema of extremities, ears, nose

MODERATE HYPOTHERMIA
All of the above PLUS:
- Respiratory depression
- Myocardial irritability
- Bradycardia
- Atrial Fibrillation

TREATMENT Mild or Moderate Hypothermia
- Routine Medical Care
- Note patient’s temperature if possible
- Remove all clothing: dry patient, cover with blankets to prevent further heat loss
- Maintain warm environment
- IV access
- Encourage transport for evaluation of injuries/hypothermia
OBJECTIVE FINDINGS
SEVERE HYPOTHERMIA (PROBABLE CARDIAC ARREST)
__ Cold skin, skin color changes
__ Altered mental status
__ No shivering
__ Fixed and dilated pupils
__ Weak, thready pulse - possible cardiac arrest
__ Spontaneous ventricular fibrillation

TREATMENT Severe Hypothermia
__ Assess breathing and pulse for full 30-45 seconds
__ If not breathing and/ or pulseless, start CPR
__ Apply AED or cardiac monitor: If the patient is in V-fib or pulseless V-Tach, defibrillate up to a maximum of 3 shocks
__ Ensure adequacy of CPR
__ Obtain IV access—administer Normal Saline
__ Follow appropriate ACLS SMOs with one administration of each medication. Do not repeat until patient is warmed. Medications are usually not effective with temperature < 89º F. For temperatures > 89º F medications should be given at standard doses but longer intervals between doses. This prevents toxic accumulation of the drug. Contact Medical Control for further assistance in medication administration in these patients.
__ Apply warm packs to central pulse areas (carotid, axilla, femoral). Avoid peripheral warming.
__ Rapid transport
** TRIPLE ZERO/INFIELD PRONOUNCEMENT CANNOT BE CONFIRMED FROM THE FIELD ON THESE PATIENTS **

Documentation of adherence to SMO
__Passive or active external rewarming (clothing removed, covered with blankets, apply heat packs)
__ If not breathing and/or pulseless CPR initiated
__ If patient noted to be in V-fib or pulseless V-Tach, defibrillation of up to 3 times
__ Mental status documented; if Adult Altered Mental Status/Pediatric Altered Mental Status, IV initiated
PRECAUTIONS AND COMMENTS

- Note that infants and children are more susceptible to heat loss and special care should be taken to prevent heat loss in these patients.
- Medications known to impair thermoregulation include alcohol, antidepressants, psychiatric medications, sedatives, and pain medications (Aspirin, NSAIDS, and acetaminophen).
- May need prolonged palpation/observation to detect pulse and respirations.
- Bradycardia is normal and should not be treated. Even very slow rates may be sufficient for metabolic demands. CPR is indicated for confirmed pulseless patient but may not be effective until patient is rewarmed.
- Hypothermia patient should not be determined “dead” until rewarmed or determined dead by other criteria.
- Heat packs with temperature greater than 110 degrees Fahrenheit should not be used to rewarm patient because of risk of burning skin. Avoid peripheral warming.
- Excessive movement of the patient may precipitate ventricular fibrillation: Gentle movement is important.
- Frost bite: Do NOT rub area or apply hot packs in the field situation. Avoid thaw and refreeze.

MEDICATION ADMINISTRATION CHART

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Procedure: Inbound Report and Alert Notification

Overview: Inbound radio reports are utilized to notify receiving facilities about incoming patients. Information conveyed should be concise to facilitate the ED triage/bed assignment process. The abbreviated radio report will provide guidelines on what should be considered “triage essential information.” If the patient condition is complex, evolving, or further treatments are requested detailed report format should be utilized.

When the patient condition warrants it an alert notification should be made as soon as possible in order to improve the time to definitive care at the hospital.

A radio report may be in one of the following formats:

- **Heads-up report** – this is an initial report given early in order to give the receiving hospital as much time as possible to prepare for the patient.
- **Abbreviated radio report** – this is the type of report to be used on most routine transports, with the essential triage information.
- **Detailed radio report** – This report type of report should be used when guidance from Medical Control is needed.

INFORMATION NEEDED

__ Age  
__ Sex  
__ Complaint/Injury  
__ SMO being utilized  
__ Triage category based upon vital signs, LOC and response to treatments.  
__ Alert notifications in the following critical / time sensitive patients:  
  - STEMI  
  - Stroke  
  - Trauma  
  - Burns  
  - Unstable Pediatric  
  - Sepsis
OBJECTIVE FINDINGS
__ Mechanism of Injury/Pathology of Complaint (Cardiac, Respiratory, OB, etc)
__ Level of Consciousness (AVPU and GCS)
__ Stability of vital signs
__ Initiation of proper SMO/Treatment and the patient’s response

Alert Notifications
__ STEMI Alert should be called:
  • When the EMS provider identifies a STEMI
  • The EMS provider should call in the STEMI Alert and transmit the ECG if possible
__ Stroke Alert should be called:
  • When Stroke Screening checklist/FAST Exam is positive
  • Give last known well time
__ Trauma Alert should be called:
  • Category I and II Trauma (see In-Field Trauma Triage Criteria)
  • Adult Trauma Score of 10 or less or Pediatric Score of 8 or less
  • Airway difficulties
  • Trauma with altered respiratory rate > 35/minute or < 12/minute
  • Any trauma patient with signs of hypoperfusion (shock)
__ Burns Alert should be called:
  • Full thickness: > 10% of TBSA
  • Partial thickness: > 20% of TBSA.
  • Burns of airway, face, eyes, hands, feet or genital area.
  • Chemical inhalation or electrical burns.
__ Unstable Pediatric Alert should be called:
  • Altered LOC
  • Airway difficulties
  • Signs of hypoperfusion (shock)
__ Sepsis Alert should be called:
  • When the Sepsis Screening Tool is positive

Heads-up Radio Report: PROCEDURE
__ Transporting unit identification
__ Type of patient, any alert notification
__ This may be as short as “we have a _______ patient, ETA ______ minutes, details to follow
__ Additional information to follow
__ This report may be given by someone other than the providers involved in patient care or very early in patient care so information may be limited.
Abbreviated Radio Report: PROCEDURE
____Transporting unit identification
____Age, sex and complaint
____SMO utilized, treatments given, and response
____Triage category (Red, Yellow or Green)
____ETA

Detailed Radio Report: PROCEDURE
____Identify the ambulance’s call letters and level of care of the ambulance (BLS, ILS, or ALS)
____Patient’s age, sex, and estimated weight
____Chief Complaint
  ▪ Symptoms - degree of distress, level of consciousness
  ▪ Findings from observation of patient and environment
____Vital Signs
  ▪ Pulse - rate, quality, regularity
  ▪ Blood Pressure - auscultated or palpated
  ▪ Respirations - rate, pattern, depth
  ▪ Skin - color, temperature, moisture, turgor, pulse oximeter reading
____Medical History
  S - Symptoms
  A - Allergies
  M - Medications - bring all meds to ED
  P - Past history of pertinent illness/injury
  L - Last oral intake (food or fluid), if known
  E - Events surrounding incident
____Physical examination - ECG findings, Level of Consciousness, Vital Signs, Use AVPU for patients with altered level of consciousness
____Treatments rendered at time of transmission and response to treatment
____EMS personnel are to inquire as to any EMS Medical Control additional orders and/or direction and confirm any orders/direction by voice
____Provide an ETA to the receiving hospital

PRECAUTIONS AND COMMENTS
- This SMO is to be used as a guideline. Transporting units may add information that may be pertinent to the triage process (“The patient is on CPAP and is not responding well” “Fall on blood thinners”, etc)
- Medical Control may request additional information
- The term “radio report” in this SMO is used it include radio and phone report
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: In Field Termination

Overview: This SMO addresses those situations that involve ADULT patients that do not respond to treatment of non-traumatic Cardiac Arrest, or when you are presented a valid DNR/POLST order. At present most codes are transported to the hospital, however there are circumstances when in-field termination and non-transport is appropriate. Medical Control must be contacted as an order of a physician is required before discontinuing treatment.

SPECIAL SITUATIONS
___ Patient with DNR/POLST (follow DNR/POLST SMO)
___ Patient with definitive signs of death include at least one of the following:
   • rigor mortis
   • dependent lividity
   • decomposition of body tissues
   • fatal/unsurvivable injury(s)-an injury clearly incompatible with life:
     o decapitation
     o incineration
     o separation of vital internal organs from the body or total destruction of organs
     o gunshot wound to the head that clearly crosses the midline (entrance and exit)
___ Patients meeting the above conditions do not require Medical Control contact prior to calling Coroner.

IN-FIELD TERMINATION OF RESUSCITATION EFFORTS
INFORMATION NEEDED:
___ Length of time patient down before your arrival
___ History of patient
___ Specific treatment provided to patient prior to Medical Control Contact
___ DNR/POLST provided after treatment initiated
___ Care provided

Original SMO Date: 07/04
Reviewed: 
Last Revision: 06/17

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OBJECTIVE FINDINGS

__Patient has a valid DNR/POLST where resuscitation efforts where initiated prior to knowledge of resuscitation status. All providers, when presented with a valid DNR/POLST after initiating CPR, should contact Medical Control prior to ending resuscitation efforts.

__Prolonged resuscitation efforts beyond 20 minutes with full ACLS without a return of spontaneous circulation or shockable rhythm and/or capnography has remained below 10 throughout arrest it may be appropriate to terminate in the field.

__If cardiac arrest is compounded by hypothermia, submersion in cold water, or if there has been transient ROSC or continued shockable rhythm transport is indicated.

__Correctable causes or special resuscitation circumstances have been considered and addressed.

__Family requests for termination should be relayed to Medical Control

TREATMENT

__CPR initiated
__Airway Management per Airway Management SMO
__AED/cardiac monitor applied
__AHA Guidelines followed for a minimum of 20 minutes
__Decision to transport or contact Medical Control for termination
__Any/all equipment that was used to treat the patient such as ET tubes, airway adjuncts, IVs, IOs etc should not be removed from the patient and be left in position that they were in at the time the patient was pronounced
__If termination is approved contact Coroner (see Notification of Coroner SMO)

Documentation of adherence to SMO

__Patient assessment findings
__Following patient assessment; CPR is initiated
__Airway management
__Application of AED/cardiac monitor
__Information regarding DNR/POLST
__Appropriate AHA treatments provided
__Contact with Medical Control and name of physician
__Time of death

Medical Control Contact Criteria

__When presented with a valid DNR/POLST after initiating CPR, should contact Medical Control prior to ending resuscitation efforts
__For other extenuating circumstances where resuscitation may not be indicated Medical Control should be contacted for specific orders

PRECAUTIONS AND COMMENTS

- Patients without definitive signs of death must receive resuscitation unless a properly executed DNR/POLST documentation is presented
- Time of death must also be noted when Medical Control orders termination of efforts

Original SMO Date: 07/04
Reviewed: 06/17

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PROCEDURE: In-line Nebulizer Treatment

Overview: In-line breathing treatments may be indicated for the patient who is intubated or receiving CPAP therapy and in need of bronchodilator therapy. This may include the treatment of severe asthma, COPD, or anaphylactic reaction.

CONTRAINDICATIONS
__ Medication allergy

INFORMATION NEEDED
__ Intubated patient in respiratory distress, including wheezing, and in need of bronchodilator therapy
__ Patient vital signs - especially note patient’s heart rate

PROCEDURE
__ Use pre-packaged nebulizer set-up and assemble per instructions
__ See diagram below
__ For use with CPAP, follow manufacturer’s instructions

Documentation of adherence to SMO
__ Evidence of respiratory distress including wheezing or shortness of breath that would benefit by bronchodilator therapy
__ Patient respiratory status post-intervention

Medical Control Contact Criteria
__ Contact Medical Control if any questions arise regarding the best treatment options for the patient

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PRECAUTIONS AND COMMENTS

- Bronchodilators may cause tachycardia and other dysrhythmias. Treatment should be discontinued if patient exhibits any severe cardiac symptoms.

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Intercept Criteria

Overview: Although BLS care is at the heart of all emergency care, it is clear that there are patients that will also be in need of ILS/ALS care. It is in these instances that BLS Providers must consider and determine the availability of an ILS/ALS intercept. The decision to utilize an ILS/ALS upgrade needs to take into account time to transport to receiving hospital versus time to upgrade. If there is a question as to whether the benefits of upgrade outweigh direct transport to the hospital contact Medical Control.

INFORMATION NEEDED
__ EMT’s general impression of the patient
__ Vital signs and level of consciousness
__ Medical history/ history of present illness or event

OBJECTIVE FINDINGS—ALS care should be initiated according to the following guidelines
__ Patient with abnormal vital signs—use assessment skills and common sense. The following guidelines for adults:
  ▪ Pulse < 60 or > 130; or irregularity
  ▪ Respirations <10 or > 28; or irregularity
  ▪ Systolic BP < 90 or diastolic > 110
  ▪ Pulse oximeter reading < 90
__ Any patient with a potentially life-threatening condition which exists or might develop during transport. Examples of situations in which ALS care is usually indicated include, but are not limited to:
  ▪ Altered mental status and/or unconsciousness
  ▪ Chest pain
  ▪ Ongoing seizures
  ▪ Neurologic deficit/ stroke
  ▪ Syncope
  ▪ Abdominal pain
  ▪ Shortness of breath
  ▪ Signs of impending hypovolemic shock
  ▪ Complication of pregnancy or emergency childbirth
  ▪ GI bleeding
  ▪ Significant trauma patient (Category I or II)
  ▪ Overdose/ Poisoning
__ Call for ILS/ALS intercept EARLY. NEVER discontinue ILS/ALS care once initiated.
PROCEDURE
__Upon request of BLS for assistance, an ILS/ALS crew may board the BLS vehicle and begin care of the patient.
__All ILS/ALS equipment must be transferred to the BLS ambulance to render a higher level of care.
__The ILS/ALS provider will assume responsibility from the EMT’s for the care and treatment of the patient.
__EMT’s should assist the ILS/ALS provider enroute and on the scene, and work together as a team to provide the best patient care possible.
__The BLS ambulance will be approved by the Department to function as an ILS/ALS ambulance for the transport.
__Report to Medical Control will be the responsibility of the ILS/ALS provider.

Documentation of adherence to SMO
__Supportive documentation leading to decision for the ILS/ALS intercept (see objective findings)
__Name of ILS/ALS provider(s) that responded
__Documentation of patient care rendered both before intercept (responsibility of the BLS Provider) and after the intercept (responsibility of the ILS/ALS Provider)
__Unavailability of the ILS/ALS Provider for intercept, if applicable

Medical Control Contact Criteria
__Contact Medical Control whenever a question exists as to the best treatment course for the patient

PRECAUTIONS AND COMMENTS
- No request from the field for ILS/ALS intercept will be denied.
- Be familiar with local System procedure regarding calling for an ILS/ALS intercept (i.e. who contacts the ILS/ALS intercept, how connections are made regarding location of the patient/ BLS ambulance while enroute, etc.)
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Interhospital/Interfacility Transport

Overview: Frequently, patients need to be transported between hospitals for higher level of care or more specific care procedures. Patients are to be treated during transport in accordance with existing standing operating procedures and policies & procedures. EMS personnel are to maintain ongoing care of the patient until responsibility is assumed by appropriate personnel at the receiving facility.

INFORMATION NEEDED
__ Diagnosis of patient that is being transported between facilities
__ Skills required to appropriately care for that patient.
__ Additional personnel (i.e. physician, RN, respiratory therapist) required for the transport.
__ Medications/ skills that are within the scope of practice of the transporting agency/personnel

PROCEDURE
__ Interhospital / interfacility transports do not routinely need to be approved by Medical Control. If there are any questions concerning the patient to be transported or concerns over medical care enroute, contact should be established with Medical Control.
__ The Medical Control should be contacted in the following circumstances:
  • Change in patient status where guidance by Medical Control is needed.
  • Medical-legal issues needing immediate clarification and documentation;
  • Concerns between transferring/transporting physician orders and SMO’s or policies and procedures
__ Documentation should be followed as per routine SMO for any patient contact by EMS. In addition, document names of transferring and receiving physicians and reasons for transfer.
__ Interhospital / interfacility transfer of patients requiring skills for which EMS personnel are not trained to perform (excluding home care devices) will require either a registered nurse and/or physician, a certified respiratory therapist or other appropriate health care provider experienced with the specific skills in question, to be in attendance of the patient throughout the transport.

Documentation of adherence to SMO
__ Diagnosis of patient that is being transported between facilities
__ Additional personnel (i.e. physician, RN, respiratory therapist) accompanying on the transport
__ Care rendered
__ Any problems encountered
__ Status of patient pre- and post- transport
Medical Control Contact Criteria

__ Contact Medical Control whenever a question exists as to the best treatment course for the patient

PRECAUTIONS AND COMMENTS
- An EMS agency / provider may be approved as a Critical Care Provider – Tier I, II or III. These agencies / providers may have additional SMO and policies for interhospital / interfacility transports
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Intranasal Medication - Mucosal Atomization Device (MAD)

Overview: In the absence of an established IV, intranasal is a rapid route offering high level of bioavailability of the medication being administered. The intranasal route can reduce the risk of needle sticks while delivering effective medication levels.

The rich vasculature of the nasal cavity provides a direct route into the bloodstream for medications that easily cross the mucous membranes. Due to this direct absorption into the bloodstream, rate and extent of absorption are relatively comparable to IV administration.

CONTRAINDICATIONS
___ Epistaxis (nosebleed)
___ Nasal Trauma
___ Nasal septal abnormalities
___ Nasal congestion / discharge

Medication that may be used via MAD device and dosing:
___ Naloxone – Adults use 2 mg. Pediatric, use IV dose.
___ Midazolam – See weight-based chart for IN.
___ Morphine * - See weight-based chart for IV.
___ Fentanyl * - See weight-based chart for IN.

*Fentanyl is the preferred analgesic agent for intranasal delivery due to absorption and bioavailability concerns with Morphine

PROCEDURE
___ Attach MAD tip to syringe
   • Intranasal doses are listed in the Medication Administration Chart
   • Do not exceed 0.5 – 1.0 ml per nostril
___ Remove air from syringe
___ Place MAD tip into nostril
___ Timing with respirations, depress the plunger rapidly when patient fully exhales and before inhalation
___ Evaluate the effectiveness of the medication, if desired effect has not been achieved, consider repeating and/or changing route of administration

Documentation of adherence to SMO
___ Dose and time of medication administered
___ Vitals before and after administration of medication

Original SMO Date: 11/07
Reviewed:
Last Revision: 12/13; 06/17

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Medical Control Contact Criteria

Contact Medical Control whenever a question exists as to the best treatment course to the patient.

PRECAUTIONS AND COMMENTS

- Indication, contraindications, actions and side effects are the same when given intranasal as they would be if the medication were given IV /IM.
- The ideal volume for intranasal administration is 0.2-0.3ml and the maximum recommended volume per nostril is 1ml. If dose is greater than 0.5ml, apply it in two separate doses allowing 5-10 minutes apart for each dose. The spacing allows the former dose to absorb.
- The MAD® atomizer has a dead space of 0.1ml, so particularly for doses less than 0.9ml be sure to take the dead space into account by adding 0.1ml to the final volume (i.e. volume of dose + 0.1ml)

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
ILS, ALS

PROCEDURE: Intraosseous Access

Overview: In critical situations it may be difficult to establish an IV for the administration of fluids and/or medications. Intraosseous (IO) access is an alternative to standard IVs and once established will deliver fluids and medications to the central circulation in the same concentration and at equivalent speeds as IV medications.

Indications
- Peripheral IV is unavailable
  - and patient exhibits one or more of the following:
    - Cardiac arrest
    - Hemodynamic instability
    - Patient in immediate need of medication and/or fluids

Contraindications
- Fracture of the bone selected for IO site (consider alternate site)
- Excessive tissue at insertion site with the absence of anatomical landmarks (consider alternate site)
- Local infection at the IO site (consider alternate site)
- Previous significant orthopedic procedures, including IO within 24 hours (consider alternate site)
- Bone disorders: osteogenesis imperfecta

Locating Appropriate Insertion Sites

Proximal Tibia
The proximal tibia insertion site is approximately 2 cm below the patella and approximately 2 cm medial to the tibial tuberosity (depending on patient anatomy).

Proximal Humerus
The proximal humerus insertion site is located directly on the most prominent aspect of the greater tubercle. Ensure that the patient’s hand is resting on the abdomen and that the elbow is adducted (close to the body). Slide thumb up the anterior shaft of the humerus until you feel the greater tubercle, this is the surgical neck. Approximately 1 cm (depending on patient anatomy) above the surgical neck is the insertion site. Proximal humerus should not be used in pediatric patients unless the landmarks can be clearly identified.
**PROCEDURE**

___BSI/Universal Precautions
___Prepare equipment to be used
___Identify the landmark for venipuncture, preferably the anteromedial aspect of the proximal tibia, approximately 1 to 3 cm below the tibial tuberosity
___Cleanse the puncture site
___Insert IO needle per manufacturer’s recommendations
___Remove the stylet
___Flush the intraosseous needle and observe for infiltration.
___Attach the IV and adjust the flow rate. Note IO may not run by gravity, pressure may be needed.
___Secure the IO needle
___Following the administration of a medication, 10 ml of saline should be administered to expedite absorption into the circulatory system.
___Monitor the site and attempt alternative IV access as soon as patient’s condition allows.

**Pain Management**
___IO infusions for conscious patients has been noted to cause severe discomfort
___**Lidocaine 2%** may be administered to conscious patient for pain control before continuous IO infusion
___Ensure patient has no contraindication for **Lidocaine** (e.g. third degree heart block)
___Adult patients slowly administer 20 – 40 mg **Lidocaine 2%**
___Pediatric patients slowly administer 0.5 mg/kg **Lidocaine 2%** (not to exceed 20 mg)

**Documentation of adherence to Procedure**
___Site inserted
___Change in patient condition, if any
___**Lidocaine** dosage if used
___Volume of fluids infused

**Medical Control Contact Criteria**

___Contact Medical Control if any questions arise regarding the best treatment options for the patient

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PRECAUTIONS AND COMMENTS

- The Proximal Tibia is the preferred site as the Humeral Head may be difficult to locate exact position
- Ensure the administration of a rapid and vigorous 10 ml flush with normal saline prior to infusion “NO FLUSH = NO FLOW”

**Proximal Tibia**

1. Locate the tibial tuberosity
2. Move 1 – 2 cm medially
3. Then move 1 – 2 cm distally

**Humeral Head**

1. The shoulder should be adducted
2. The palm placed on the umbilicus

1. Draw imaginary line connecting Acromion and Coracoid Process
2. From midpoint of the line, go 2 fingers distally
3. This is the Humeral Head

1. In some patient the area where the Humeral Head is closest to the skin is one finger Anteriorly (Toward the Chest)
2. Feel the Greater Tubercle

1. Once site is located
2. Confirm the exact position by verifying the greater Tubercle’s outer margins
PROCEDURE: Intubation - Adult

Overview: Guidelines for placement of an endotracheal tube for the purpose of isolating the trachea and facilitating assisted ventilation and respiratory suctioning in an adult patient.

INFORMATION NEEDED
___ Respiratory disease history
___ Previous airway management interventions
___ Head trauma
___ Recent ingestions / potential allergic reactions
___ Identified trauma
___ Possibility of exposure to super-heated air or smoke (e.g. fire)

OBJECTIVE FINDINGS
One or more of the following identified:
___ Apnea
___ Respiratory distress or compromise
___ Inability to otherwise establish or maintain airway or ventilation
___ Evidence of head injury, especially facial trauma with airway compromised potential
___ Decreased mental status (GCS < 8)
___ Objective findings raising concern of airway burn

PROCEDURE

Prepare
___ Pre-oxygenate

- High flow O2/assist with BVM if hypoventilation (avoid excessive rate and pressure)
- Consider CPAP

___ Prepare Equipment

- Suction
- ET tube (at least 2 sizes and check bag)
- Stylet (should not extend past end of tube)
- Bougie
- Laryngoscope- check that functions appropriately
- Have Surgical Cricothyroid equipment readily available.
- IV Normal Saline
- Cardiac monitor
- Oxygen saturations
- Capnography

Original SMO Date: 07/04
Reviewed: 
Revised: 06/17

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PROCEDURE (continued)

- Insert laryngoscope and visualize glottic opening
- Suction if necessary
- Pass ET tube plus inflate cuff
- Remove stylet, ventilate, with 100% oxygen

Three methods of confirmation:

- With EtCO₂ if available (most preferred method)
- Colorimetric device
- Visualization
- Auscultation
- Absence of gastric sounds
- Misting in the tube
- Bougie confirmation
- Esophageal detector
- Bi-lateral chest rise

- Secure tube

Documentation of adherence to procedure

- Respiratory exam
- Indications for intubation
- Evaluation for possibility of trauma, if present spinal restriction
- Oxygen saturation
- Number of attempts (passage of ETT past teeth)
- Confirmation of tube placement with three verification methods
- Patient condition reassessed
- Failure of BLS airway maneuvers to successfully ventilate

PRECAUTIONS AND COMMENTS

- Intubation attempts should not be protracted or persisted with if unsuccessful. The provider team should make no more than 3 attempts before relying on good BVM ventilation until arrival at the hospital or resorting to a rescue airway for adults (needle or surgical cricothyrotomy).
- If suctioning is necessary, maintain oxygenation and ventilation between suction attempts. Each suction attempt should last no more than 10 seconds.
- Strongly consider needle decompression in any patient receiving positive pressure ventilation who deteriorates or remains unimproved.
**REGION I EMERGENCY MEDICAL SERVICES**  
**STANDING MEDICAL ORDERS**  
**ILS, ALS**

**SMO: Adult Narrow Complex Regular Tachycardia**

**Overview:** Treatment of tachyarrhythmias is separated into narrow complex and wide complex tachycardias. The urgency with which tachyarrhythmias require treatment is guided by two considerations: (1) evidence of hypoperfusion (shock, altered mental status, anginal chest pain or pulmonary edema) and (2) the potential to degenerate into a more serious arrhythmia or cardiac arrest. This SMO divides the approach to the patient with narrow complex tachycardia into 1) stable and 2) unstable with criteria defining each. Please note that a patient can deteriorate in status and will require frequent reassessments.

**INFORMATION NEEDED**
- Past medical history: diagnosis, medications, stimulant use
- Evidence of drug ingestion

**OBJECTIVE FINDINGS**
- Mental status
- Blood pressure
- Evidence of CHF
- Heart rate

**STABLE-defined as:**
- Normal mental status AND/OR signs of normal or mildly decreased perfusion

**TREATMENT - Stable**
- Routine Medical Care
- Pulse oximetry
- Shock position
- Regular reassessment of vital signs and signs of perfusion
- Obtain 12 Lead ECG and print rhythm strips for receiving hospital
- Consider vagal maneuvers (Valsalva, cough or breath holding)
- IV access, large bore proximal location
- **Adenosine** flushed with 20 ml **Normal Saline** or dilute to a volume of 20 ml with Normal Saline, then push
- If dysrhythmia persists 1-2 minutes after initial dose repeat **Adenosine (increased dose)** flushed with 20 ml **Normal Saline**.
- If dysrhythmia persists 1-2 minutes after repeat dose contact Medical Control.

*For pain and sedation doses:  
Start dose low – slowly increase –  
Titrate to effect up to listed dose*
UNSTABLE-defined as:
___ Signs of poor perfusion:
___ Decreased level of consciousness
___ SBP<90 (with signs/symptoms of hypoperfusion)
___ CHF (rales)
___ Moderate to severe chest pain

TREATMENT - Unstable
___ Routine Medical Care
___ Regular reassessment of vital signs and signs of perfusion
___ Diazepam IVP or Midazolam IVP for sedation prior to cardioversion if patient SBP ≥100 mmHg
   May repeat dose up to maximum of 10 mg.
___ Synchronized cardioversion:
   ___ Narrow Regular - 50-100 J
   ___ Narrow Irregular 120-200J
   ___ Wide Regular 100 J, biphasic
___ Fentanyl or Morphine Sulfate IVP for pain control if needed if patient SBP ≥ 100 mm Hg. (see Pain Management SMO)
___ Obtain 12 Lead ECG and print rhythm strips for receiving hospital

Documentation of Adherence to SMO
___ Stability documented (chart contains word “stable” or “unstable” and the criteria on which that determination was made)
___ Stable patients receive either Valsalva maneuver or Adenosine
___ Cardioverted patients receive sedation as indicated and SBP ≥ 100.
___ Correct doses of medications administered

PRECAUTIONS AND COMMENTS
- A narrow QRS complex is defined as less than 0.12 seconds, Wide Complex if greater than 0.12 seconds.
- If the rate is less than 150 bpm, consider sinus tachycardia. Sinus tachycardia is most likely secondary to some other factor such as hypoxia, hypovolemia, pain, fever, etc.
- Adenosine administration is associated with flushing, dyspnea and chest pain, which resolves within 1 to 2 minutes in most patients. These symptoms may be alarming and patients should be advised accordingly.
- Do not use Adenosine on a patient with a known history of Wolff-Parkinson-White (WPW) syndrome.
- Adenosine is indicated for regular narrow complex tachycardia and is unlikely to convert when underlying atrial fibrillation/flutter is present.
- For pediatric patients see Pediatric Tachycardia

MEDICATION ADMINISTRATION CHART

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Original SMO Date: 07/04
Reviewed: 06/17

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STANDING MEDICAL ORDERS
ALS

PROCEDURE: Needle Cricothyrotomy

Overview: To relieve life-threatening upper airway obstructions in situations where manual maneuvers to establish an airway and attempts at ventilation have failed and when endotracheal intubation is not feasible.

OBJECTIVE FINDINGS

- Patient unconscious
- Unable to ventilate despite attempts to relieve obstruction
- Patient’s skin color may be pale, cyanotic, and/or ashen
- Possible facial trauma restricting normal intubation as an option

EQUIPMENT NEEDED:

- BSI for blood and body fluid exposure
- Antiseptic solution
- 14 gauge or larger catheter-over-needle IV device
- Adapter from 3.0 mm ET tube
- 10 ml syringe with 5 ml Normal Saline
- Pediatric BVM Device

PROCEDURE

- Unless contraindicated by trauma, place a small roll under patient's shoulder to slightly extend neck
- Locate cricothyroid membrane by tilting patient's head back and palpating for the V-notch of the thyroid cartilage (Adams Apple)
- Prepare the skin with antiseptic solution and maintain aseptic technique
- Stabilize the thyroid cartilage between thumb and middle finger of one hand
- Press index finger of same hand between the thyroid and cricoid cartilage to identify cricothyroid membrane
- Using index finger as a guide, rest middle or ring finger of hand holding needle/cannula on the skin to stabilize and prevent needle from penetrating membrane too deeply
- Make a puncture in the midline with a smooth motion
- Insert cannula at a 45 - 60° angle
- After entry into trachea, begin removing needle and advancing cannula into place
- Advance cannula into trachea at 45° angle with tip toward patient's feet; care must be taken not to kink the catheter when removing the needle and syringe.
- Draw back on the syringe to aspirate an air bubble to confirm placement in the trachea
- Tape cannula securely in place and hold the hub of the catheter to prevent accidental dislodgement while providing ventilation
- Attach 3.0 mm ETT adaptor to end of catheter

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PROCEDURE (continued)

__Ventilate with 100% oxygen using the pediatric BVM via the ETT adaptor; allow for exhalation after each ventilation. The ratio of inhalation to exhalation should be 1:4 (a second needle can be inserted into the membrane to aid in exhalation).
__Further check airway placement by ventilating and watching chest rise as well as listening for air exchange at site and observing patient for improved color and respiratory condition
__Continue to assess for adequate air exchange
__Provide update of patient's status to hospital and transport immediately

Documentation of adherence to Procedure
__Reason for procedure including physical findings
__Attempts to secure the airway by less invasive means (if applicable). If you did not make any attempts to secure the airway with any other means document why not.
__Size catheter used
__Method of ventilation and O2 liter flow
__Additional catheters placed to assist exhalation (if applicable)
__Results of procedure including patient’s physical condition
__Total length of time the transtracheal catheter served as the only airway

PRECAUTIONS AND COMMENTS
__Complications:
- False placement
- Bleeding
- Damage to larynx and vocal cords
- Subcutaneous emphysema
- Mediastinal emphysema
- Esophageal perforation
- Thyroid perforation, hematoma (placement of need has been distal to cricothyroid membrane too low)

__This method of ventilation cannot be used for more than 20-30 minutes. If patient’s transport time will exceed this time frame, or if the patient shows signs of hypoxia, consider Surgical Cricothyroidotomy.
PROCEDURE: Needle Decompression of the Chest

Overview: Thoracic decompression is placement of a needle through the chest wall of a critical patient who has a life-threatening tension pneumothorax and is rapidly deteriorating due to increasing intra-thoracic pressure. Patients at risk of developing a tension pneumothorax include: penetrating chest trauma, blunt chest trauma, patients receiving positive pressure breathing i.e. intubated or receiving BVM assisted ventilation, patients with COPD.

INDICATIONS: A patient suffering from a tension pneumothorax. Signs and symptoms may include: restlessness and agitation, severe respiratory distress, increased airway resistance on ventilating patient (patient becomes hard to bag / ventilate), JVD, abdominal rigidity, tracheal deviation, subcutaneous emphysema, unequal breath sounds, absent on the affected side, hyper resonance to percussion on the affected side, hypotension, cyanosis, respiratory arrest.

OBJECTIVE FINDINGS
- Signs of restlessness/agitation
- Cyanosis
- Severe Respiratory distress
- Increased airway resistance on ventilating the patient
- JVD
- Tracheal Deviation
- Subcutaneous Emphysema
- Unequal Breath sounds
- Hypotension
- Respiratory arrest
- Traumatic Cardiac Arrest

EQUIPMENT NEEDED:
- Adult- 14 or larger gauge 3.25” angiocath
- Pediatrics- 18 gauge 1.88” angiocath
- 12-20 ml syringe
- Antiseptic solution
PROCEDURE

- Identify probable pneumothorax. Observe Universal Precautions. Use sterile gloves if possible.
- Locate the 2nd intercostal space in the midclavicular line on the side of the pneumothorax
- Cleanse the site with antiseptic solution and maintain as much of a sterile field as possible.
- Attach a 12-20 ml syringe to the appropriate angiocath
- Puncture the skin perpendicularly, just superior to the 3rd rib and into the thoracic cavity. A “pop” should be felt as well as a “rush of air” along with the plunger of the syringe moving outward.
- Advance the catheter
- Remove the needle and syringe
- Secure the catheter in the chest wall with a dressing and tape
- If tension re-occurs, repeat procedure
- Monitor the patient closely, continue to reassess, and continue trauma care, transport ASAP.

Documentation of adherence to procedure

- Presence of respiratory distress
- Presence of notably decreased or absent breath sounds on affected side
- Other signs and symptoms present - JVD, tracheal deviation, etc.
- Response to decompression

PRECAUTIONS AND COMMENTS

- Strongly consider needle decompression in any patient receiving positive pressure ventilation who deteriorates or remains unimproved
- Nerve bundles and blood vessels are located under the ribs and puncturing them could cause nerve damage and excessive bleeding. Ensure that the puncture is being made over the top of the 3rd rib.
- If you needle decompress a chest, leave any and all needle decompression catheters in place even if attempt did not result in clinical improvement. Be sure to report to ED staff the number and placement of attempts.
- Should a decompression needle become dislodged replace only if the patient’s clinical condition warrants it. You must report any/all dislodged needle decompression attempts to ED staff.
Overview: Certain patient death situations require notification of a Coroner for investigation into that death. Deaths that occur in EMS Region 1 will be reported to the coroner of the county affected. There should be no transport of a deceased patient across county boundaries.

Coroner Notification:
- Out of hospital deaths that are not transported to the hospital

Resuscitation is not indicated in the following situations:
- The patient has been declared dead by a coroner or patient’s physician
- Patient has a valid DNR/POLST order
- Obvious signs of death

Obvious signs of death include:

**ALL of the following:**
- Unresponsive
- Apnea
- Pulseless
- Fixed dilated pupils

**AND at least one of the following:**
- Rigor mortis without profound hypothermia
- Decomposition
- Decapitation
- Incineration
- Profound dependent lividity
- Skin deterioration or decomposition
- Trauma to the head, neck or chest inconsistent with life
- Blunt trauma with no signs of life
- Penetrating trauma with no signs of life on arrival
**PROCEDURE:**
__ Confirm signs of death, note time
__ Notify Coroner
__ EMS should remain on scene until relieved by coroner or law enforcement or other appropriate professional

**Documentation of adherence to SMO**
__ Document time of pronouncement/decision to not initiate treatment
__ Document all hand-offs and/or transfer of custody of the body

## Medical Control Contact Criteria

__ Contact Medical Control for any questions regarding this SMO

## PRECAUTIONS AND COMMENTS
- Do not transport patient who is dead at scene unless otherwise directed by the coroner
SMO: Ophthalmic Trauma

Overview: Common causes of eye injury are blunt and penetrating trauma from motor vehicle crashes, sport and recreational activities, and violent altercations; chemical exposure from household and industrial accidents; foreign bodies; and animal bites and scratches. It is important to keep in mind that assessment and treatment of these injuries is crucial to possible saving of the patient’s future vision abilities.

INFORMATION NEEDED
- Patient complaint
- Mechanism of injury
- Vision changes
- Use of eye medications
- Use of corrective glasses or contact lenses
- Presence of ocular prostheses
- Duration of symptoms and treatment interventions that may have been attempted before EMS arrival

OBJECTIVE FINDINGS
Physical signs of trauma:
- Deformity
- Open wounds
- Swelling
- Ecchymosis
- Contusions, tenderness, crepitus
- Abnormal pupillary reaction to stimuli, double vision or altered extra-ocular movement
- Visual changes
- Tearing or spasm of the eyelids
- Obvious trauma to the periorbital areas of either or both eyes
- Obvious trauma to the eye

General Approach
Special considerations:
- Quickly obtain gross visual acuity in each eye: light perception / shapes / motion / read name badge
- Assess tearing, spasm of lids
- Assess cornea, conjunctiva, and sclera for signs of injury / clouding.
- Discourage patient from sneezing, coughing, straining, bending at waist or defecating.
- Vomiting precautions
Chemical Splash / Burn

- **0.5% TETRACAINE** 2 gtt each affected eye. May repeat until pain relief is achieved.
- Thoroughly and continuously irrigate affected eye(s) using copious amounts of saline instilled through IV tubing. Start irrigation as soon as possible and continue while enroute to the hospital.

Corneal Abrasions

- Observe for profuse tearing, severe pain, redness, spasm of eye lid
- No signs of penetrating injury
- Shade patient’s eyes from light

Penetrating Injury/Ruptured Globe

- Observe for signs of penetration: tear drop shaped pupil, excessive edema of conjunctive (chemosis), subconjunctival hemorrhage, blood in anterior chamber (hyphema), defect on sclera or cornea (vitreous humor or black defect), foreign body/impaled object.
- Do not remove impaled object; do not irrigate eye.
- Avoid all pressure on injured eye. Cover with cup or metal/plastic protective patch over injured eye. May patch both eyes.
- Elevate head of stretcher to 45° angle.

Documented adherence to SMO

- Patient’s complaint
- Mechanism of injury
- Pain medications administered
- Oxygen provided

Medical Control Contact Criteria

- Contact Medical Control whenever a question exists as to the best treatment course for the patient

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**REGION I EMERGENCY MEDICAL SERVICES**

**STANDING MEDICAL ORDERS**

**BLS, ILS, ALS**

SMO: Pain Assessment and Management

**Overview:** Pain is the most frequent reason people seek healthcare. Pain is an individual and unique experience, changing not only from person to person, but from minute to minute. Fear and anxiety associated with injury and illness are intensified by the presence of pain. Pain management is a desired goal of treatment. Pain relief can decrease patient anxiety and provide for comfort. Care must be taken to ensure that the treatment of pain does not result in masking of important symptoms or result in deterioration of the patient.

**Conditions:**

1. Abdominal Pain – *Acute Abdominal Pain SMO*
2. Abuse: Domestic and Geriatric – *Abuse: Domestic and Geriatric SMO*
3. Amputations – *Amputated Parts SMO*
4. Automatic Implantable/Wearable Devices – *Automatic Implantable/Wearable Devices Procedure*
5. Adult Bradycardia – *Adult Bradycardia SMO*
6. Adult and Pediatric Burns – *Adult Burns SMO Pediatric Burns SMO*
7. Chest Pain due to acute coronary syndrome – *Chest Pain of Suspected Cardiac Origin SMO*
8. Crush Syndrome/Suspension Trauma – *Crush Syndrome/Suspension Trauma SMO*
9. Any trauma patient - *Routine Trauma Care*

**INFORMATION NEEDED**

_ Patient Age
_ Pertinent Medical History
_ Pain Assessment: One of the best pain assessment techniques for gathering and recording information is by the use of the pneumonic O-P-Q-R-S-T:
  * Onset – when did the pain start?
  * Provokes - what brings on the pain?
  * Quality - what does it feel like?
  * Region / Radiation where is it? Where does it go?
  * Severity - how bad is it? (Rated on a consistently used scale) (1-10 grading scale)
  * Timing - when did it start/end? How long does it last? How long have you had it?

**OBJECTIVE FINDINGS**

_ General appearance
_ Mental status (AVPU), skin condition, perfusion status
_ Respiratory rate, rhythm and pattern and work of breathing (patient positioning such as tripoding)
_ Hemodynamic state blood pressure, perfusion status

* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose

Original SMO Date: 07/04
Reviewed:
Last Revision: 06/17
TREATMENT

__ Perform patient assessment and record vital signs, level of consciousness and oxygen saturation.
__ Reassure and comfort patient.
__ Provide care based on other SMOs related to the patient’s presenting complaint.
__ Place the patient in position of comfort. If risk of spine injury, institute spinal restrictions.
__ Coach the patient’s breathing – calm, deep inhalations and slow relaxed exhalations.
__ Distract patient or encourage them to focus on something other than their injury or pain.
__ IV with Normal Saline at TKO
__ Consider Ondansetron prior to narcotic administration

__ Administer for mild to moderate pain:
  - Consider Ketorolac for mild to moderate pain or in patients with a known history of narcotic abuse and/or treatment program for narcotic abuse.
  - Consider Ketorolac for pain from gallstones or kidney stones.
  - Repeat assessment, including vital signs, level of consciousness, oxygen saturation, and effect after each dose.

__ For severe pain administer Morphine, Fentanyl or Ketorolac if patient’s systolic BP > 100 mmHg and respirations ≥ 12 per minute. Titrate to effect per Medication Administration Chart. Contact Medical Control if higher dose is required.
  - Ketamine IM for extreme pain unresponsive to narcotics.
  - Repeat assessment, including vital signs, level of consciousness, oxygen saturation, and effect after each dose.
  - If signs of narcotic over dosage develop (i.e. respiratory depression, significantly diminished mental status) administer Naloxone.
  - NOTE: all patients receiving narcotics and/or Naloxone must be transported to the hospital. Patients who have received narcotics are NOT considered competent to sign refusal. In those patients who receive Naloxone the coma/depressed respirations may reoccur when the Naloxone wears off.

__ Paramedics may consider one of the following as an alternative to the medications listed above:
  - Diazepam or Midazolam for musculoskeletal type pain.

Documentation of adherence to SMO

__ Patient’s presenting signs and symptoms, including vital signs, level of consciousness and oxygen saturation. Oxygen administration
__ Indication for SMO use
__ Documentation of measures utilized to make patient more comfortable i.e. reassurance, position of comfort etc.
__ Dose and time for each medication used and resulting clinical effects.
__ Repeat assessment and vital signs as indicated.
__ Changes from baseline, if any, that occur during treatment or transport
__ Amount of medication discarded, if any.
__ Signature and license number of EMT performing care. A second signature is required from other crew member or ED RN, witnessing discarding of unused medication (if applicable).
PRECAUTIONS AND COMMENTS

- **Morphine**, **Fentanyl**, and **Ketamine** are potent narcotic pain medications with significant potential for abuse and addiction. EMS agencies must have a mechanism to secure and account for all narcotics.
- Monitor patient’s respiratory effort and effectiveness. If needed assist ventilations and use airway adjuncts as necessary.
- Monitor pulse oximetry and EtCO\textsubscript{2} if available.
- All patients receiving narcotics and or **Naloxone** should be transported to the hospital. Patients who have received sedation are considered not competent to sign refusal (see Refusal of Medical Care SMO). In those patients who receive **Naloxone**, the coma/depressed respirations may reoccur when the **Naloxone** wears off.
- The EMS Medical Director will decide if a provider stocks one or both of **Morphine** and **Fentanyl**.

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Original SMO Date: 07/04
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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Pediatric Airway Management

Overview: Respiratory arrest is the common reason for codes. Bradycardia is often the result of hypoxia. This makes optimizing a pediatric patient’s oxygenation and ventilation of primary importance. Fortunately, most pediatric patients are able to be successfully BVM ventilated. Utilization of pediatric supraglottic airways are preferred airway adjuncts.

INFORMATION NEEDED
__ Scene survey
__ Chief complaint
__ History of foreign body airway obstruction, respiratory distress, etc. (see Primary Patient Assessment SMO)
__ Medical History (see Secondary Patient Assessment SMO)

OBJECTIVE FINDINGS
__ Mental status (AVPU)
__ Airway patency (head-tilt chin lift OR modified jaw thrust for unconscious patient or if C-spine trauma is a possibility)
__ Oxygenation and Circulatory status (pulse oximetry, vital signs)

TREATMENT
__ Routine Pediatric Care
__ Manage Foreign Body Airway Obstruction per American Heart Association standards
__ Consider NG tube for gastric decompression
__ Assess airway patency utilizing adjuncts as indicated
  • OPA
  • NPA
  • Supraglottic Airway per EMS System approval following manufacturer’s guidelines
  • Pediatric intubation for patients < 30 kg has been eliminated based on evidence based studies showing aggressive airway management without intubation results in improved outcomes
    If EtCO2 is in place, attempt to maintain a reading between 35-40 mmHg.
__ Confirm advanced airways and document with a minimum of three of the following:
  • __With EtCO2 if available (most preferred method)
  • __Colorimetric device
  • __Visualization
  • __Auscultation
  • __Absence of gastric sounds
  • __Bi-lateral chest rise

Original SMO Date: 06/17
Reviewed:
Last Revision:

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Documentation of adherence to SMO

Indications for airway management

Methods utilized

Three methods of confirmation for advanced airway:

- With EtCO₂ if available (most preferred method)
- Colorimetric device
- Visualization
- Auscultation
- Absence of gastric sounds
- Bi-lateral chest rise

Patient condition reassessed

Medical Control Contact Criteria

Contact Medical Control whenever a question exists as to the best treatment course for the patient

PRECAUTIONS AND COMMENTS

- Utilize BLS methods for maintaining airway patency and good ventilations and reassess patient’s oxygenation and ventilatory status BEFORE utilizing ALS advanced airway methods. Benefits of intubation are not demonstrated well in pediatrics.
- Pediatric intubation for patients < 30 kg has been eliminated based on evidence based studies showing aggressive airway management without intubation results in improved outcomes.
- For adults or pediatric patients > 30 kg (from AHA guidelines 6.5 cuffed ET tube is used for 30 kg). See Adult Airway Management.

MEDICATION ADMINISTRATION CHART

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Overview: Allergic reactions can vary in severity from a mild reaction consisting of hives and rash to a severe generalized allergic reaction termed anaphylaxis resulting in cardiovascular and respiratory collapse. Common causes of allergic reactions include: bee/wasp stings, penicillin or other drug allergies and seafood or nuts. Exposures can occur from ingestion, inhalation, injection or absorption through skin or mucous membranes. This SMO is intended to help the EMS responder assess and treat the spectrum of allergic reactions.

ALLERGIC REACTION
INFORMATION NEEDED
__Exposure to common allergens (bee stings, drugs, nuts, seafood, medications), prior allergic reactions
__Respiratory: wheezing, stridor, respiratory distress
__Skin: itching, hives, rash
__Other symptoms: nausea, weakness, anxiety

OBJECTIVE FINDINGS
MILD
__Hives, rash

TREATMENT - MILD
__Routine Pediatric Care
__Remove etiologic agent if possible or relocate patient
__For extensive hives, Give Diphenhydramine
__Immediate transport
OBJECTIVE FINDINGS

MODERATE
__Hives, rash
__Mild bronchospasm
__Normotensive for age, tachycardic, SaO2 >95%

TREATMENT - Moderate
__Routine Pediatric Care
__Remove etiologic agent if possible or relocate patient
__Albuterol in a nebulizer
__Diphenhydramine
__Consult Medical Control for use of Epinephrine

BLS
- **Epi Auto Injector - JR**, for children weighing 33 pounds (15 kg) to 66 pounds (30kg)
- **Epi Auto Injector** for children greater than 66 pounds (30kg)
- Consult Medical Control to repeat Epinephrine in 15 minutes (one time dose)
- Call Medical Control for children less than 33 pounds

ILS / ALS
- **Epi Auto Injector** or Epinephrine (1:1 ml). May repeat in 15 minutes one time (see Precautions and Comments)
__Fluid bolus, reassess and repeat prn to 60 ml/kg
__Immediate Transport

OBJECTIVE FINDINGS

SEVERE (ANAPHYLAXIS)
__Angioedema (swollen or protruding tongue, swollen lips)
__Abnormal appearance (agitation, restlessness, somnolence)
__Signs of diminished perfusion including weak brachial pulse, delayed capillary refill, pale or cool skin
__Respiratory failure (grunting, flaring, severe retractions)
__Stridor
__Bradycardia
__SaO2 < 95% on room air
TREATMENT - Severe

- Routine Pediatric Care
- Remove etiologic agent if possible or relocate patient
- IV access
- **Epinephrine** (see Precautions and Comments):
  - **BLS**
  - *Epi Auto Injector - JR*, for children weighing 33 pounds (15 kg) to 66 pounds (30kg)
  - *Epi Auto Injector* for children greater than 66 pounds (30kg)
  - Consult Medical Control to repeat Epinephrine in 15 minutes one time
  - Call Medical Control for children less than 33 pounds
- **ILS / ALS** – may use **Epi Auto Injector** or
  - IM: If no ET or IV access *Epinephrine (1:1 ml)*, repeat in 15 minutes one time prn, maximum single dose 0.3 mg
  - INTRAVENOUS: *Epinephrine (1:10 ml)*: may repeat one time in 5 minutes as level of distress indicates.
  - ENDOTRACHEAL: If patient intubated and no IV access, *Epinephrine (1:1 ml)* ET may repeat one time in 5 minutes.

- **Diphenhydramine**
- **Albuterol** in a nebulizer
- **Fluid bolus** reassess and repeat prn to 60 ml/kg if indicated
- **Advanced airway management as indicated**
- **Immediate transport**

**Documentation of adherence to SMO**

- Oxygen given
- Initial level of respiratory distress assessed and noted on chart (mild, moderate or severe)
- Medications administered

**PRECAUTIONS AND COMMENTS**

- Use Medication chart or length-based tape to double check drug dose.
- Ensure proper concentration and dosage of *Epinephrine* for route of administration; utilize with caution and only in severe allergic reactions.
- Intravenous *Epinephrine* must be diluted with NS to volume of 10 ml to avoid cardiovascular side effects such as coronary vasoconstriction and life threatening dysrhythmias (i.e. ventricular fibrillation).
- Ensure airway patency, oxygenation and ventilation. If tidal volume is decreased or decreased level of consciousness consider use of BVM early.
- Edema of any of the soft structures of the upper airway can severely compromise the pediatric patient’s airway. Observe closely and be prepared for early intubation.
- Note that a patient may change rapidly and frequent reassessment is necessary. Inform medical control of significant changes in patient status.
PRECAUTIONS AND COMMENTS (continued)

- **Epinephrine** may cause: anxiety, tremor, palpitations, tachycardia, and headache. These may be particularly severe if given IV.
- Note: Intravenous administration of **Epinephrine** is to only be used for severe allergic reactions.
- Edema of any of the soft structures of the upper airway may be lethal. Observe closely, and be prepared for early intubation before swelling precludes this intervention (See Pediatric Airway Management SMO).
- Note that if a patient worsens and advances to a more severe category of allergic reaction, i.e. moves from a moderate allergic reaction to a severe one, repeated doses beyond maximum limits of medication are not to be exceeded without permission from medical control (i.e. if the patient receives two doses of **Epinephrine** under the moderate severity SMO and then advances to a severe reaction, the patient should not receive additional **Epinephrine** unless given permission from Medical Control.
- For adult anaphylaxis/allergic reaction see Adult Anaphylaxis/Allergic Reaction SMO.

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**REGION 1 EMERGENCY MEDICAL SERVICES**
**STANDING MEDICAL ORDERS**
**BLS, ILS, ALS**

**SMO: Pediatric Altered Mental Status**

**Overview:** Performing a neurologic examination on an infant or child is more difficult than examining an adult. Pediatric patients often cannot or will not cooperate with the examiner. Parents and guardians can confirm whether the infant or child’s reaction to verbal or tactile stimuli is baseline or changed.

**INFORMATION NEEDED:**
- Change in mental status: baseline status, onset and progression of altered mental state (Use [Glasgow Coma Scale](#) for Infant or Adult as appropriate)
- Antecedent symptoms such as fever, respiratory distress, headache, nuchal rigidity, seizures, confusion, trauma, nutritional intake/output
- Primary Assessment ABCDE
- Nature of illness/mechanism of injury-SAMPLE, OPQRST, or DCAP-BTLS (see acronym descriptions in Appendix)
- Secondary Assessment
- Ongoing Assessment
- Contributing factors: (AEIOU-TIPS) Alcohol, Epilepsy, Infection, Overdose, Uremia, Trauma, Insulin, Poisoning, Stroke

**OBJECTIVE FINDINGS**
- Appearance
- Level of consciousness and neurologic status-AVPU and Glasgow Coma Scale
- Signs of trauma
- Pupil size, equality and reactivity
- Medical information bracelets; medallions; or medical records for special needs or Children with Special Healthcare Needs (CSHN)
- Blood glucose level
- Vital signs, pulse oximetry, and temperature

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**TREATMENT**

__Routine Pediatric Care__

__Check blood glucose__

__Blood glucose level less than 80 mg/dl child or less than 40 mg/dl newborn__

- Administer **Oral glucose** if patient is able to swallow, maintain their airway, and follow commands

__Establish IV/IO of **Normal Saline** at TKO rate__

__If patient unresponsive or without gag reflex__

- Age greater than 2 years: **Dextrose IV** per **Dextrose Dosing Chart**
- Age less than 2 years **D-10 IV** per **Dextrose Dosing Chart**
- If unable to establish IV consider **Glucagon IM** per **Medication Administration Chart**.

__Airway management as indicated – see Pediatric Airway Management SMO__

__Consider **Naloxone** if suspected or possible overdose with respiratory depression__

__Administer **Naloxone** as indicated__

__Administer **fluid bolus** for hypotension. Reassess and repeat to desired systolic B/P: 80-90 + 2 (age in years)__

**Documentation of adherence to SMO**

__Assessment findings including SAMPLE history, OPQRST, or DCAP-BTLS as indicated__

__Pulse oximetry reading__

__Blood glucose reading__

__Oral glucose administration dose, route, and time__

__Glucagon administration dose, route, and time__

__Reassessment and patient status after treatment__

---

**Medical Control Contact Criteria**

__Contact Medical Control whenever a question exists as to the best treatment course for the patient__

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**PRECAUTIONS AND COMMENTS**

- Consider **Oral glucose** or **Glucagon** for an altered mental status and a blood glucose reading less than 80 mg/dl
- Be attentive for excessive secretions, vomiting, or inadequate tidal volume
- Consider child maltreatment (see **Child Abuse/Neglect SMO**) and/or occult head trauma in patients with new onset of seizures and utilize pediatric trauma SMOs.
- Report all suspected maltreatment to appropriate agency.
- For adults see **Adult Altered Mental Status**
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**Overview**
When rhythm disturbances occur in children, they are usually the result of hypoxia, acidosis, hypotension, or structural heart disease. Assessment and history to identify treatable causes cannot be over emphasized.

**INFORMATION NEEDED**
- Patient age
- Witnessed or unwitnessed arrest
- Presence or absence of biological death signs (lividity, rigor, and/or decomposition)
- Medical history (congenital heart defect, cardiovascular disease, respiratory diseases, trauma, diabetes)
- History of present event (prior complaints including choking, allergic reaction, suffocation, drowning, etc)
- Patient’s weight charted in kilograms (based on current Broselow tape measurement)

**OBJECTIVE FINDINGS**
- Pulseless and apneic
- Use a Broselow tape or similar device to determine treatment doses and devices
- Heart rate less than 60 with poor perfusion despite oxygenation and ventilation
- Bystander or Emergency Medical Responder CPR initiated
- ECG interpretation confirms asystole or PEA
- Identification of treatable causes (H’s and T’s)

**TREATMENT**
- Start or continue high quality CPR per AHA guidelines
- Attach AED or monitor/defibrillator and analyze
- Administer oxygen via bag-valve-mask device airway adjuncts as indicated; see Pediatric Airway Management SMO
- Reassess patient every two minutes to assure adequacy of compressions and ventilations
- **Epinephrine:** See current Medication Administration Chart or Broselow for pre-calculated dosing:
  - IV/IO: (1:10 ml) - repeat every 3-5 minutes
  - IV fluid bolus of 20 ml/kg for suspected hypovolemia; repeat as needed.
- If shockable rhythm continues /returns administer shocks according to AHA guidelines and revert to appropriate rhythm specific algorithm
- Treat as appropriate any reversible causes that are identified (H’s and T’s)
- If ROSC (return of spontaneous circulation), analyze pulse, blood pressure, and respiratory status
- If in respiratory failure or arrest only ventilate once every 3-5 seconds

Original SMO Date: 12/12
Reviewed:
Last Revision: 03/14; 06/17

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Documentation of adherence to SMO

- Confirmation of apnea, pulselessness
- Proper BLS airway management and subsequent ALS airway management if necessary, including confirmation of adequate chest rise and fall
- Proper CPR compression to ventilation ratio

- Confirm advanced airways and document with a minimum of three of the following:
  - With EtCO₂ if available (most preferred method)
  - Colorimetric device
  - Visualization
  - Auscultation
  - Absence of gastric sounds
  - Bi-lateral chest rise

- Rhythm analysis after each treatment
- Patient status checks every two minutes and after medication or fluid administration
- IV or IO flow rates for fluid
- Epinephrine dosing including route and concentration

Medical Control Contact Criteria

- Contact Medical Control whenever a question exists as to the best treatment course for the patient

PRECAUTIONS AND COMMENTS

- An AED with pediatric pads is preferred on pediatric patients up to puberty. If this is not available adult pads may be used with anterior/posterior placement.
- Energy for defibrillation is 360 J for Monophasic, manufacturer recommendation for Biphasic (generally initial dose 120-200 J, if unknown use the max available. Second and subsequent doses should be the same or higher)
- For adults see Adult Asystole/PEA

Reversible causes H’s and T’s

- Hypovolemia
- Hypoxia
- Hydrogen ion (acidosis)
- Hypo/hyperkalemia
- Hypothermia
- Tension Pneumothorax
- Tamponade – cardiac
- Toxins
- Thrombosis – pulmonary
- Thrombosis - coronary

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## SMO: Pediatric Bradycardia

**Overview:** Bradycardia in children is a serious sign. The most common cause of bradycardia in children is hypoxia so EARLY airway and ventilation intervention is crucial. This SMO is intended to guide EMS Responders through the assessment and treatment of these children.

### INFORMATION NEEDED
- History, onset and duration of symptoms, appearance, and neurological baseline
- History of respiratory insufficiency, failure, obstruction, or respiratory arrest
- History of cardiac disease or etiology, previous episodes, treatment required, medications or possibility of ingestion
- Antecedent symptoms; dizziness, syncope, or other related chief complaint

### OBJECTIVE FINDINGS

<table>
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<tr>
<th>Clinical signs of respiratory distress or Failure/hypoxemia</th>
<th>Signs of decreased perfusion</th>
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<tbody>
<tr>
<td>Apnea</td>
<td>AMS/Abnormal appearance</td>
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<tr>
<td>Slowed or absent capillary refill &lt; 3 seconds)</td>
<td>Inequality of central and distal pulses</td>
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<tr>
<td>Hypotension</td>
<td>Loss of distal pulses</td>
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<td>Retractions, flaring or grunting</td>
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### TREATMENT

- **Routine Pediatric Care**
- **ABC’s**—oxygenation and ventilation, Oxygen high flow by NRB mask; if no response assist ventilations using BVM and 100% oxygen
- **Heart rate < 60/min with poor perfusion despite oxygenation and ventilation, begin high quality CPR per AHA guidelines**
- **Cardiac Monitor**
- **Advanced airway if ventilations are inadequate (see Pediatric Airway Management SMO)**
- **IV or IO access**
  - **Epinephrine:** See current Medication Administration Chart or Broselow for pre-calculated dosing: IV/IO: (1:10 ml); repeat every 3-5 minutes
  - **Consider Atropine IV or IO** for increased vagal tone or primary AV Block may repeat once
Documentation of adherence to SMO
__ Respiratory status—airway treatment provided as needed
__ Perfusion status—color, pulses, capillary refill
__ Response to treatment
__ Identify medications given and response

Medical Control Contact Criteria

__ Contact Medical Control whenever a question exists as to the best treatment course for the patient

PRECAUTIONS AND COMMENTS
- In children, Bradycardia almost always means HYPOXIA. Treat for hypoxia FIRST then proceed to medications.
- **Atropine** is rarely effective in treating pediatric bradycardia. Be sure that the patient is adequately oxygenated and ventilated.
- For adults see **Adult Bradycardia**

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Original SMO Date: 07/04
Reviewed: Last Revision: 06/17

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SMO: Pediatric Burns

Overview: There are several causes of burns and they may have varying degrees of severity. This SMO will provide guidance in the assessment and treatment of burns.

INFORMATION NEEDED
___ Burn type and source: Thermal (flame, scald, steam), electrical, chemical, radiation
___ Complicating or contributing factors: confined space, length of exposure, alcohol or drug involvement
___ Primary Assessment ABCDE
___ Nature of illness/Mechanism of injury-SAMPLE, OPQRST, or DCAP-BTLS
___ Secondary Assessment findings
___ Ongoing Assessment findings
___ Consider abuse and/or neglect; if present contact proper authorities

OBJECTIVE FINDINGS
- Evidence of inhalation injury or toxic exposure: carbonaceous sputum, hoarseness, singed nasal hair, dyspnea, wheezing, stridor, etc.
- Total Body Surface Area (TBSA) involved using Rule of Nines for large burn area or Rule of Palm (1% TBSA) for small area (See Burn Chart)
- Depth of burn: superficial (redness), partial thickness (blistering), full thickness (charring)
- Electrical/lightening burn entrance and exit wounds
- Associated trauma from explosion, electrocution, or fall
- Associated signs and symptoms of exposure caused by chemical burn
- Resuscitation information based on a Broselow Tape or similar device

TREATMENTS
___ Routine Trauma Care
___ Aggressive pain management may be required (see Pain Management SMO)
   Initiate fluid bolus

THERMAL
___ Manage the airway using manual methods and mechanical devices
___ If inhalation is suspected a false positive pulse oximetry reading may present. Use a RAD 57 analyzer, if available to confirm potential carbon monoxide or other chemical inhalation
___ Stop the burning process: Remove burning or smoldering clothing or jewelry and cool skin that is still hot to the touch. Do not break blisters. Cooling should take no more than 1-2 minutes with room temperature water.
___ Cover affected body surface area with DRY sterile dressing or sheet
___ Prevent hypothermia
   Establish IV or IO access if a site is available
CHEMICAL
__ Follow decontamination and HAZMAT procedures at the scene if possible. Brush off excess dry chemical contaminant prior further decontamination. If the patient must be transported prior to decontamination and presents a potential contaminant risk to the hospital and staff, advise the receiving hospital and present patient to a stationary or portable decontamination unit. DO NOT enter the receiving hospital with the contaminated patient, regardless of health status.
__ Small amounts of contaminant may be irrigated away with a clean water source.
__ Contaminant in the eyes should be flushed for a minimum of 20 minutes. If only one eye is contaminated, turn the patient’s head to that side and irrigate from the bridge of the nose toward the affected eye. If spinal motion restriction is in place, maintain spinal restriction and follow the same irrigation procedure. Continue irrigation enroute if necessary.
__ Manage the airway using manual methods and mechanical device as indicated for patient.

ELECTRICAL
__ Scene Safety. Do not approach patient if live electrical current is still present. Do not attempt to move or remove electric lines unless specifically trained in the procedure. Turn off power at the source or call the power company.
__ Immediately check respiratory and circulatory status. If patient is in cardio-pulmonary arrest, follow AHA guidelines for resuscitation including high quality CPR.
__ Manage the airway using manual methods and mechanical devices as indicated.
__ Treat associated thermal burns according the THERMAL BURN procedure, including any entrance or exit wounds.
__ Apply spinal motion restriction for victims of serious electrical burns or other musculoskeletal trauma associated with the electrocution.
  __ Initiate IV or IO access for treatment of potential Rhabdomyolysis.
__ Burns from biting on electrical cords always need emergency medical care.

LIGHTNING STRIKE
__ Scene Safety
__ Immediately check respiratory and circulatory status. If patient is in cardio-pulmonary arrest, follow AHA guidelines for resuscitation including high quality CPR.
__ Manage the airway using manual methods and mechanical devices.
__ Apply spinal motion restriction for victims of musculoskeletal trauma associated with the electrocution
__ See Precautions and Comments regarding multiple casualty lightning strikes and triage criteria
__ Initiate IV or IO access.
RADIATION
__ Scene Safety. If the patient is contaminated with radioactive material, they will need decontamination by a HAZ-MAT team specifically trained to scan and decontaminate radioactive material.
__ Non-contaminated patients will present with injuries similar to thermal burns and should be treated according to THERMAL BURN procedures.
__ Exposed victims do not present a hazard to responders unless they have radioactive contamination present.

Documentation of adherence to SMO
__ Assessment findings including SAMPLE history, OPQRST, or DCAP-BTLS as indicated
__ Pulse oximetry reading or RAD 57 reading for suspected carbon monoxide exposure
__ TBSA burned based on Rule of Nines (see Chart) or Rule of Palm (1% TBSA)
__ Airway status and oxygenation
__ Method of airway management
__ IV or IO site and total fluid volume infused

PRECAUTIONS AND COMMENTS
- For adults see Adult Burns.
- Inhalation injuries may cause delayed but severe airway compromise. Be prepared for early airway management using nasopharyngeal airway, oropharyngeal airway, or size appropriate blind airway device.
- Do not apply ice or ice water directly to skin surfaces as additional injury will result.
- Lightning injuries may cause prolonged respiratory arrest but have a higher probability of successful resuscitation.
- Because lightning strikes can occur at outdoor gatherings or sporting events, be prepared for a multiple casualty incident. Since these victims have a higher probability of successful resuscitation conventional triage of dead victims should not be applied.
- Patients under the age of 12 may require EDAP, SEDP, or Trauma Center care.
- Be alert for signs of abuse - 20% of all child abuse cases involve burns.
- The Parkland Formula is the standard calculation for fluid administration in burn victims. The formula is as follows: $4 \text{ ml} \times \% \text{ burn area} \times \text{ body weight (kg)} = \text{ isotonic fluid infusion}$ within 24 hours. One half of this should be administered within the first 8 hours.
  - Parkland Formula Prehospital: $0.25 \text{ ml} \times \% \text{ burn area} \times \text{ body weight (kg)}$
- Burns that would benefit from care at a burn center:
  - Partial-thickness burns greater than 10% TBSA
  - Burns that involve the face, hands, feet, genitalia, perineum, or major joints
  - Full thickness burns in any age group
  - Electrical burns, including lightening injury
  - Chemical burns
  - Inhalation injury
  - Burn injury in patients with pre-existing medical disorders that would prolong recovery
  - Burns with concomitant trauma
  - Burned children in hospitals without PICU, EDAP, or SEDP qualifications
  - Burned patients who will require special social, emotional, or long-term rehabilitative care
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### RULE OF NINES CHART

![Rule of Nines Chart](chart.png)

Original SMO Date: 12/12
Reviewed:
Last Revision: 03/14; 06/17

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# SMO: Pediatric Drowning / Near-Drowning

**Overview:** When drowning or near drowning occurs in children, it is generally the result of respiratory failure and hypothermia. Assessment and history to identify treatable causes cannot be over emphasized. Drowning and near drowning patients may have severe, delayed fluid and electrolytes imbalances which may have fatal effect. **ALL** near drowning patients should be transported to the hospital.

### INFORMATION NEEDED

- Patient age
- Medical history (e.g., history of respiratory problem, shock, cardiovascular disease, congenital heart defect, blunt chest trauma, seizures)
- History of present event (e.g., complaints prior to arrest, possibility of choking, allergic reaction, seizure, etc)
- Scene survey completed
- A complete Primary Assessment of the patient
- Pertinent Secondary Assessment of the patient
- Description and temperature of fluid in which submerged
- Length of time submerged

### OBJECTIVE FINDINGS

- Assessment of LOC and ABCs
- Significant mechanisms of injury / nature of illness
- Evidence of head / or neck trauma and other associated injuries, consider spinal restriction
- Neurological status: monitor on a continuous basis.
- Respiratory: rales or signs of pulmonary edema, respiratory distress
- Mental status (AVPU)
- Airway patency
- Ventilatory status (rate and depth of respirations, work of breathing)
- Oxygenation and Circulatory status (pulse oximetry, vital signs)

### TREATMENT

- **Routine Pediatric Care**
- If pulseless start high quality CPR per AHA guidelines
- AED or **Cardiac Monitoring** - treat per appropriate SMO
- If hypothermic, see **Hypothermia SMO**
- If other trauma is suspected refer to appropriate trauma SMO
- BLS/ALS maneuvers to remove Foreign Body Airway Obstruction if indicated
- Reassess BLS/ALS methods to maintain airway patency and good ventilation
**Documentation of adherence to SMO**

- Time CPR started
- Time defibrillator applied

**Medical Control Contact Criteria**

- Mandatory contact with Medical Control for any refusals
- Contact Medical Control whenever a question exists as to the best treatment course for the patient

**PRECAUTIONS AND COMMENTS**

- All near drowning or submersions should be transported. Any patient can deteriorate rapidly.
- Remember scene safety in regards to defibrillation in wet conditions (water, ice, etc.)
- Ensure trained water rescuers are on scene if necessary
- Utilize BLS / ALS methods for maintaining airway patency and good ventilations and reassess patient’s oxygenation and ventilatory status
- For adults see [Adult Drowning/Near Drowning](#)

**MEDICATION ADMINISTRATION CHART**

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<tr>
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**Original SMO Date:** 07/04  
**Reviewed:**  
**Last Revision:** 06/17

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Current Version: 2018.1  
Issued: 08/18  
EMS/Region1 SMO
**REGION I EMERGENCY MEDICAL SERVICES**
**STANDING MEDICAL ORDERS**
**BLS, ILS, ALS**

**SMO: Pediatric Dysrhythmias: Tachycardia**

**Overview:** Tachycardia in children may be a serious symptom of an underlying problem. This SMO is intended to give EMS providers response guidelines through the identified assessment and treatment parameters for these children.

**INFORMATION NEEDED**

- History, onset and duration of symptoms, fluid loss, fever, nausea, vomiting, trauma, appearance, and neurological baseline
- History of cardiac disease, surgery, previous episodes, previous treatment required, medications currently prescribed or possibility of ingestion
- History of respiratory insufficiency, failure, obstruction, or respiratory arrest
- Antecedent symptoms; dizziness, syncope, or other related chief complaint

**OBJECTIVE FINDINGS**

* Signs of decreased perfusion, CHF, and or tachyarrhythmia

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<th>Sinus Tachycardia:</th>
<th>SVT</th>
<th>Ventricular Tachycardia</th>
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<tr>
<td>• Onset</td>
<td>• Onset</td>
<td>• Onset, sudden</td>
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<tr>
<td>• Progression</td>
<td>• Rate: infant usually &gt;220 bpm</td>
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<tr>
<td>• Fluid loss</td>
<td>• child usually &gt; 180 bpm</td>
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<tr>
<td>• Trauma</td>
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<tr>
<td>• Rate: infant usually &lt;220 bpm, child usually &lt; 180 bpm</td>
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**Signs of Unstable Patient**

**Clinical signs of resp. distress or failure/hypoxemia**

- Apnea
- Retractions, flaring or grunting

**Signs of decreased perfusion**

- AMS/Abnormal appearance
- Inequality of central and distal pulses
- Slowed or absent capillary refill<3 sec
- Hypotension and loss of distal pulses

**TREATMENT**

- **Routine Pediatric Care**, Rapid Transport
- IV/IO access as needed
- Identify and treat underlying cause
- **Fluid bolus 20 ml/kg**, repeat times 3 as indicated
- Reassess, if signs of hypovolemic shock, refer to Pediatric Shock SMO

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* For pain and sedation doses:  
  Start dose low – slowly increase –  
  Titrate to effect up to listed dose

Original SMO Date: 07/04
Last Revision: 06/17

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TREATMENT (continued)

Stable SVT
__ Attempt vagal maneuvers (See Precautions and Comments)
__ Diminished perfusion, but patient is responsive, **Adenosine**

Unstable SVT
__ Synchronized cardioversion, 0.5 - 1.0 joule/kg. Reassess and repeat if not effective, increased to 2 joule/kg
__ Consider sedation of patient prior to cardioversion, **Diazepam** or **Midazolam**
__ Consider **fluid bolus of 20 ml/kg**

Stable Ventricular Tachycardia
__ Consider **Adenosine** if rhythm regular and QRS monomorphic
__ Contact Medical Control for administration of **Lidocaine** or **Amiodarone**

Unstable Ventricular Tachycardia
__ Synchronized cardioversion, 0.5 - 1.0 joule/kg. Reassess and repeat if not effective, increased to 2 joule/kg
__ Consider sedation of patient prior to cardioversion, **Diazepam** or **Midazolam**
__ If ventricular tachycardia persists, per medical control, **Lidocaine** or **Amiodarone**
__ Consider **fluid bolus** of 20ml/kg

Documentation of adherence to SMO
__ Respiratory status—airway treatment provided as needed
__ Perfusion status—color, pulses, capillary refill
__ Medication administration
__ Cardioversion
__ Rhythm analysis
__ Response to treatment

Medical Control Contact Criteria

__ Contact Medical Control whenever a question exists as to the best treatment course for the patient
PRECAUTIONS AND COMMENTS
- In children, tachycardia almost always means poor perfusion and hypoxia
- Be prepared to support ventilations and oxygenation.
- Example of vagal maneuvers in the infant and pre-school patient is ice cold water to face (place cold washcloth over forehead and face without obstructing airway). In older children use valsalva maneuvers.
- Remember to use appropriate pads/paddles per manufacturers recommendations for cardioversion
- For adults see Narrow Complex Tachycardia or Wide Complex Tachycardia

MEDICATION ADMINISTRATION CHART

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Pediatric Head Trauma

Overview: Head injury is the most common cause of death in pediatric trauma victims. Larger head size and lack of neck muscle strength provide increased momentum and increase injury. Significant blood loss can occur through scalp lacerations, and such bleeding should be controlled immediately. Children have good compensatory mechanisms up to a point. When that point is reached they deteriorate very quickly. This SMO is intended to provide the EMS Provider with guidelines to treat a Pediatric trauma patient as soon as possible.

INFORMATION NEEDED
__ Patient age
__ Mechanism of injury
__ Signs and symptoms
__ Current weight (length based tape or equivalent preferred)

OBJECTIVE FINDINGS
__ General appearance
__ Mental status (AVPU), skin signs, perfusion status
__ Respiratory rate, rhythm and pattern and work of breathing (patient positioning such as head bobbing or tripoding)
__ Signs of trauma and increase intracranial pressure (e.g. ↑ BP, bradycardia, irregular respirations and bulging fontanel in infants).

TREATMENT
__ Routine Pediatric Care
__ Spinal Restriction as indicated
__ Maintain supine position. If signs of increase intracranial pressure consider elevation of head
__ Assess Pediatric Coma Score (see Appendix)

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TREATMENT (continued)

GCS < 12 (Moderate to Severe)
- Oxygen as indicated (see Pediatric Airway Management SMO)
- Support ventilation with BVM; assist to maintain adequate ventilations especially for suspected increased intracranial pressure. When ventilating patient maintain EtCO₂ at approximately 35 if possible.
- Establish vascular access IV/IO
- NS, administer 20ml/kg fluid bolus to maintain peripheral pulses
- Reassess Pediatric Coma Score
- EARLY notification of Medical Control to mobilize resources
- Rapid transport

GCS 13 – 15 (Mild)
- Oxygen as indicated
- Reassess Pediatric Coma Scale
- RAPID Transport

Documentation of adherence to SMO
- Assessment documented
- Administration of oxygen; interventions performed
- Spinal restriction
- Perfusion assessment documented
- Bleeding control and care documented
- IV access; Fluid bolus and reassessment

Medical Control Contact Criteria
- Contact Medical Control EARLY for a Pediatric Head Trauma patient
- Contact Medical Control whenever a question exists as to the best treatment course for the patient

PRECAUTIONS AND COMMENTS
- Use length based resuscitation tape to estimate child’s weight.
- Refer to Child Abuse/Neglect SMO for suspicions of child abuse/neglect
- If a pediatric patient who is properly secured in a car seat has been in a motor vehicle collision and the car seat is not damaged consider transporting the patient in the car seat if the patient’s condition can be managed appropriately

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MEDICATION ADMINISTRATION CHART

Original SMO Date: 07/04
Reviewed:
Last Revision: 06/17

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STANDING MEDICAL ORDERS  
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SMO: Neonatal Resuscitation

Overview: Assessment, airway and infant body temperature cannot be over emphasized. The anatomical and physiological differences that are present in a newborn can cause severe problems if not recognized. All neonatal emergency patients should be transported to the hospital (neonate is defined as less than 30 days old).

INFORMATION NEEDED
- Gestational age
- Infant is part of a multiple birth or NICU graduate
- Meconium stained during birth (See Meconium Staining section below)
- Mother use of drugs or alcohol
- Known infant history
- Presence of special need (e.g. apnea monitor, etc)
- If just born, time since birth

OBJECTIVE FINDINGS
- If just born 30 second cardiopulmonary assessment
  - Airway, breathing (respiratory rate, quality, work of breathing, presence of cry)
  - Circulation (skin color, temperature, pulses, capillary refill, mental status)
- If infant less than 30 days same arrest intervention as just born
- Airway interventions and keep baby warm

TREATMENT – MECONIUM STAINING NOTED
- As soon as head is delivered attempt to suction before baby starts to breath
- If thick meconium or secretion present and signs of respiratory distress thoroughly suction mouth, then nose
TREATMENT (NO MECONIUM STAINING NOTED)

__Assess patient, dry immediately if wet and stimulate
__Assess airway patency. Secure the airway.
__Suction mouth then nasopharynx.
__Cover head with stocking cap or equivalent
__Clamp and cut the cord if necessary
__Evaluate respirations. Assist with BVM ventilation with 40-60 breaths / min with 100% oxygen for severe respiratory depression; use mask with 100% oxygen for mild distress
__Check heart rate at base of umbilical cord or auscultate precordium as indicated. Further treatment depends on heart rate.
__If heart rate less than 60 bpm, continue assisted ventilations and begin chest compressions at 120 min
__If heart rate is 60-80 bpm then continue ventilations. If poor perfusion and no improvement after 30 seconds of ventilations with 100% oxygen, consider compressions at 120 min.
__If heart rate 80-100 bpm. Give 100% oxygen by BVM. Reassess heart rate after 15-30 seconds.
__If heart rate greater than 100 bpm, check skin color. If peripheral cyanosis give oxygen by mask.
__If unable to ventilate effectively with BVM consider supraglottic device.
__Confirm proper airway device placement and ventilate 30 times a minute with continued chest compressions.

Airway adjuncts per Pediatric Airway Management SMO

__Establish an IV or IO and give Epinephrine if heart rate below 60; reassess heart rate and respirations; may repeat in 3-5 minutes if indicated.
__If hypovolemia suspected, Normal Saline 10 ml/kg over 5 to 15 minutes
__Continue to reassess respiratory rate and heart rate while enroute

Documentation of adherence to SMO

__30-second cardiopulmonary assessment
__Administration of oxygen
__Document all cardiac interventions and response
__Medication administration
__Airway management

Medical Control Contact Criteria

__Contact Medical Control whenever a question exists as to the best treatment course for the patient
__Contact receiving hospital as soon as possible for a Neonatal Resuscitation patient

Original SMO Date: 07/04
Reviewed:
Last Revision: 06/17

Current Version: 2018.1
Issued: 08/18
EMS/Region1 SMO
PRECAUTIONS AND COMMENTS

- Perform chest compressions on the neonate per American Heart Association guidelines

MEDICATION ADMINISTRATION CHART

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**REGION I EMERGENCY MEDICAL SERVICES**
**STANDING MEDICAL ORDERS**
**BLS, ILS, ALS**

**SMO: Pediatric Respiratory Distress/Obstruction/Arrest**

**Definition:** Unlike adults cardiac arrest in children occurs secondary to respiratory insufficiency. Once the child proceeds to a cardiac event the likelihood of resuscitating that child is slim. Because of this rapid airway assessment and intervention is imperative in the prehospital setting. Several conditions manifest as respiratory distress in children. These include upper and lower foreign body airway obstruction, upper airway disease (croup, epiglottitis), and lower airway disease (asthma, bronchiolitis, and pneumonia).

**INFORMATION NEEDED**
- Onset, duration
- Foreign body aspiration
- Fever
- Drooling, sore throat
- Sputum production
- Medications
- History of asthma, exposures (allergens, toxins, smoke), trauma (blunt/penetrating)

**OBJECTIVE FINDINGS**
- Deteriorating level of consciousness
- Intercostal, subcostal, supraclavicular retractions
- Apnea or bradypnea/tachypnea
- Absent breath sounds
- Drooling with history of fever, sore throat
- Tripod position
- Pulse oximetry
- Abdominal breathing
- Tachycardia/bradycardia
- Cyanosis-central
- Nasal flaring
- Stridor
- Choking
- Grunting

**TREATMENT**
- Routine Pediatric Care

**Foreign Body Airway Obstruction**
- Relieve obstruction per AHA guidelines
- If BLS measures fails, proceed to Magill Forceps and Direct Laryngoscopy for purposes of removing foreign body

Original SMO Date: 07/04
Reviewed:
Last Revision: 06/17

SMO: Pediatric Respiratory Distress/Obstruction/Arrest

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Lower Airway (Wheezing)

**Albuterol:**
- Age 2 and older: **Albuterol** prn until relief of symptoms
- Under 2: refer to **Medication Administration Chart**

**Severe refractory bronchospasm:**
- BLS providers need to call Medical Control for **Epinephrine** administration
  - Adults: **Epi Auto Injector** 0.3mg IM >30kg (> 66lb)
  - Pediatric: **Epi Auto Injector - Junior** 0.15mg IM for 10-30kg (22-66lb)
  - Or **Epinephrine (1:1 ml)** IM

**Call Medical Control for persistent bronchospasm, considering:**
- Consider **Magnesium Sulfate** – see **Magnesium Sulfate Administration Chart**
- **Methylprednisolone** (anticipated onset of effect approximately 1 hour)

**Respiratory Compromise**
- Position of comfort
- Avoid invasive procedures or agitation
- Ensure proper airway positioning
- Ventilate and airway adjunct as needed
- Rapid transport

**Documentation of adherence to SMO**
- If obstruction suspected, BLS/ALS maneuvers to relieve obstruction
- Medications given

**Medical Control Contact Criteria**

- Contact Medical Control whenever a question exists as to the best treatment course for the patient
- BLS Providers contact Medical Control for permission to administer **Epinephrine**

**PRECAUTIONS AND COMMENTS**
- Upper airway obstruction can be a true life threatening condition. It is important to remember that it is often difficult to distinguish severe bacterial infections (e.g. tracheitis, abscess, diphtheria) from other conditions such as a croup, etc.
- The hallmark of upper airway obstruction is inspiratory stridor.
- In suspected severed bacterial infections, do not manipulate the airway for examination. **Allow child to assume their position of comfort** for breathing (do not force child to lay supine). Provide blow-by oxygen as tolerated. Arrange transport quickly to the closest EDAP facility.
### MEDICATION ADMINISTRATION CHART

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<th>Weight Range</th>
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**Formulary**
### SMO: Pediatric Seizures / Status Epilepticus

**Overview:** Seizure activity is a temporary alteration in behavior or consciousness caused by an abnormal electrical activity in the brain. Status epilepticus is defined as continuous seizure activity lasting > 30 minutes OR multiple seizures without regaining consciousness between seizures.

Generalized (tonic-clonic) seizure usually involves the entire body and usual loss of consciousness as well as bowel and/or bladder incontinence and oral trauma such as biting of the tongue. Partial (focal) seizure usually involves one part of the body or a particular sense such as taste or smell. Patients usually do not lose consciousness and can maintain a normal mental status but may lead to a generalized seizure.

**INFORMATION NEEDED**
- Medical history: psychiatric and medical problems including previous seizures, alcohol use, medications, allergies; antecedent symptoms such as headache, trauma, fever, history of stiff neck, history of loss of motor sensory or speech.
- Onset, duration, description of seizure
- Consider stroke as a possible etiology
- Consider drug overdose (e.g. tricyclic antidepressants or cocaine).

**OBJECTIVE FINDINGS**
- Surroundings: syringes, medications, blood glucose monitoring supplies, insulin, etc.
- LOC and neurological assessment
- Bowel and bladder incontinence
- Oral trauma such as biting of tongue
- Signs of trauma: witnessed onset?
- History or description of seizure from bystanders or family
- Pupil size and reactivity
- Medical information tags, bracelets or medallions
- Blood glucose level

* For pain and sedation doses:
  Start dose low – slowly increase –
  Titrate to effect up to listed dose

---

Return to Table of Contents
TREATMENT

__Routine Pediatric Care__
__Protect patient as necessary__
__Institute cooling measures as indicated by history/assessment. Place moistened towels in axilla and groin to reduce fever. Avoid shivering response. __Comfort and reassure patient/family if conscious__
__Transport in recovery position; consider spinal restriction as necessary__
__Obtain IV/IO access__
__Obtain blood glucose level. If patient with glucose < 80:__

- **Oral Glucose** if patient is alert with intact gag reflex
- Establish IV of **Normal Saline**
- If patient unresponsive or without gag reflex give **Dextrose, D-10** should be used in patients under 2 years of age. **D-10** can be considered as an alternative to **50% Dextrose** in any patients such as patients with fragile veins. **Dextrose Dosing Chart**
- **Glucagon IM** if patient has altered mental status, limited or no gag reflex, or unable to start an IV.
- Transport in recovery position; consider spinal restriction

__If opiate overdose is a possibility, give Naloxone__
Additional doses may be needed—contact Medical Control for additional doses.
__For generalized convulsive (tonic-clonic) seizure, Diazepam or Midazolam__

**Documentation of adherence to SMO**
__Airway patency/ interventions__
__Administration of O₂__
__If suspicion of trauma- restriction performed__
__Blood glucose level check performed__
__Medication administered__

**Medical Control Contact Criteria**
__Subsequent doses of medications if status epilepticus continues after administration of initial doses__
__Contact Medical Control whenever a question exists as to the best treatment course for the patient__

---

Original SMO Date: 07/04
Reviewed: 06/17
Last Revision: 06/17

Current Version: 2018.1
Issued: 08/18
EMS/Region1 SMO

Return to Table of Contents
PRECAUTIONS AND COMMENTS

- Anticonvulsant agents can cause respiratory depression or respiratory arrest. Monitor closely and be prepared to support ventilations and oxygenation.
- Always consider treatable etiologies (fever, hypoglycemia, hypoxia, narcotic overdose)
- Be attentive for excessive oral secretions, vomiting, and inadequate tidal volume.
- Avoid shivering response when instituting cooling measures. DO NOT place in ice bath, rub with alcohol.
- Treatment of seizures should be based on the severity and length of the seizure activity.
- Consider suspected child maltreatment and/or occult head trauma in patients with seizures and utilize pediatric trauma treatment SMOs.
- For adults see Adult Seizures/Status Epilepticus SMO

MEDICATION ADMINISTRATION CHART

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Original SMO Date: 07/04
Reviewed:
Last Revision: 06/17

Return to Table of Contents
SMO: Pediatric Shock

Overview: Children have good compensatory mechanisms up to a point. When that point is reached they decompensate very quickly. This SMO is intended to provide the EMS Provider with guidelines to treat shock in a pediatric patient as soon as possible.

INFORMATION NEEDED
- History of onset of symptoms, duration, fluid loss (nausea, vomiting, diarrhea), fever, infection, trauma, ingestion or history of allergic reaction, past history of cardiac disease or rhythm

OBJECTIVE FINDINGS

COMPENSATED
- Anxiety, agitation, restlessness
- Tachycardia, normotensive
- Capillary refill normal to delayed
- Symptoms of allergic reaction
- Pallor, mottling

DECOMPENSATED
- Decreased level of consciousness
- Tachycardia to Bradycardia
- Hypotensive
- Cyanosis
- Delayed capillary refill
- Inequality of central and distal pulses

TREATMENT
- Routine Pediatric Care or Routine Trauma Care
- Spinal Restriction as indicated
- Control external bleeding, shock position as indicated

Return to Table of Contents
**Hypovolemia**
- **Fluid bolus 20 ml/kg IV/IO** reassess, repeat prn to 60 ml/kg

**Distributive**
- **Fluid bolus 20 ml/kg IV/IO** reassess, repeat prn to 60 ml/kg
- If suspected anaphylaxis, see Pediatric Allergic Reaction and Anaphylaxis SMO

**Cardiogenic**
- If tachycardia or bradycardia consider: consider **fluid bolus 10-20 ml/kg/IV/IO**
- Go to appropriate pediatric dysrhythmia SMO – Pediatric Bradycardia or Pediatric Tachycardia

**Documentation of adherence to SMO**
- __Oxygen given__
- __Airway status__
- __Respiratory status__
- __Circulation status__
- __IV/IO established__
- __Pertinent findings__
- __Patient response to intervention__

**Medical Control Contact Criteria**
- __Contact Medical Control early for a Pediatric Shock patient__
- __Contact Medical Control whenever a question exists as to the best treatment course for the patient__

**PRECAUTIONS AND COMMENTS**
- Watch child closely for deterioration
- If dextrose stick less than 80mg/dl see Pediatric Altered Mental Status SMO

**MEDICATION ADMINISTRATION CHART**

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Original SMO Date: 07/04
Reviewed:
Last Revision: 06/17

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**REGION I EMERGENCY MEDICAL SERVICES**
**STANDING MEDICAL ORDERS**
**BLS, ILS, ALS**

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**SMO: Pediatric Toxic Exposure**

**Overview:** Pediatric poisoning and overdose can take several forms and patients may range from mildly ill to very critical. This SMO is intended to guide EMS Responders in providing care for these patients. Variances in condition occur due to amount of substance involved, time of incident, type of substance involved, and whether it is an overdose or actual poison.

**INFORMATION NEEDED**
- Surroundings and safety: check for syringes, containers, flammables, gas cylinders, etc. Note odors in house or surroundings.
- For drug ingestions: note drug(s), dosage(s), number remaining and date of prescription(s) and bring container(s) with patient.
- For other poisoning and exposures: if possible, note identifying information, warning labels or numbers on packaging.
- Duration of illness: onset and progression of present state, antecedent symptoms such as headache, seizures, confusion, etc.
- History of event: ingested substances, drugs, alcohol, toxic exposures, suicidal intention, and the work environment.
- Past medical history, psychiatric problems.
- If possible, corroborate information with family member or responsible bystander.

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**OBJECTIVE FINDINGS**
- Breath odor
- Needle tracks
- Medic alert tags/ bracelets/medallions
- Cardiac rhythm
- Blood glucose level
- Pulse oximetry
- Vital signs
- Pupil size
- Skin appearance, color temperature
- Lung sounds and airway secretions

**TREATMENT**

**GENERAL TREATMENTS**
- **Routine Pediatric Care**
- **IV / IO access as indicated**
- If hypotensive, administer **fluid bolus**, reassess and repeat as indicated.
### ANTIPSYCHOTICS WITH EXTRAPYRAMIDAL REACTION
- **Routine Pediatric Care**
- Collect information
  - **Diphenhydramine**

### NARCOTICS
- **Routine Pediatric Care**
- **Naloxone** if signs of respiratory depression (avoid Naloxone in the neonate).

### TRICYCLIC ANTIDEPRESSANTS (TCA)
- **Routine Pediatric Care**
- Collect information
- Consult Medical Control for administration of **Sodium Bicarbonate**, for hypotension, seizure, and/or QRS widening > 0.10 seconds
- After **Sodium Bicarbonate**, consult Medical Control for use of **Lidocaine** for ventricular dysrhythmias
- Treat seizures according to **Pediatric Seizure SMO**

### CALCIUM CHANNEL BLOCKER OR BETA BLOCKER TOXICITY
- **Routine Pediatric Care**
- Collect information
- In the setting of Bradycardia and/or hypotension caused by a Beta Blocker overdose, see **Pediatric Bradycardia SMO** and consider **Glucagon**

### ORGANOPHOSPHATES
**SLUDGE** (Salivation, lacrimation, urination, diaphoresis/diarrhea, gastric hypermotility, and emesis/eye [small pupils, blurry vision] characteristically seen.
- **Routine Pediatric Care**
- Collect information
- Consider HazMat precautions
- **Atropine** until SLUDGE symptoms subside

### UNKNOWN SUBSTANCE
- **Routine Pediatric Care**
- Collect information
- **Naloxone** if signs of respiratory depression (avoid Naloxone in the neonate).
- If rapid blood glucose test shows glucose less than 80 mg/dl for child; less than 40 mg/dl for newborn treat with:
  - **Oral glucose** administration if patient is able to maintain their airway and follow commands
  - **Glucagon** if patient is **unable** to maintain their airway and follow commands
Documentation of adherence to SMO

- All interventions completed
- Response to interventions
- Information regarding substances involved e.g. ingested, toxic exposure to suicidal thoughts, etc.

- If Naloxone given: AMS, respiratory depression documented

<table>
<thead>
<tr>
<th>Medical Control Contact Criteria</th>
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<tbody>
<tr>
<td>Consult Medical Control for administration of Sodium Bicarb or Lidocaine</td>
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<tr>
<td>Contact Medical Control whenever a question exists as to the best treatment course for the patient</td>
</tr>
</tbody>
</table>

PRECAUTIONS AND COMMENTS

- In suspected opiate overdoses, withhold advanced airway management until after the patient has received Naloxone.
- Significantly higher doses of Naloxone may be needed for treatment of overdoses with synthetic opioid compounds such as Demerol, Fentanyl, etc.
- Consider titrating Naloxone to achieve adequate respiratory effort and avoid a withdrawal reaction or combativeness.
- Caustic ingestions are usually caused by alkali (e.g. lye or Draino) or acids.
- Hydrocarbons include gasoline, kerosene, turpentine, Pine Sol, etc.
- Consider contacting Poison Control 1-800-222-1222 for further information
- For adults see Adult Toxic Exposure SMO (formerly Poisoning and Overdose)

MEDICATION ADMINISTRATION CHART

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Overview: Ventricular tachycardia (VT) and ventricular fibrillation (VF) are uncommon in children. Hypoxia and respiratory arrest is the most common cause of cardiac arrest in children. Other causes of VF / VT include congenital heart disease, cardiomyopathies, myocarditis, reversible causes (e.g., drug toxicity), metabolic causes (e.g., hypoglycemia), hypothermia and Commotio Cordis (blunt chest trauma). The goal EMS is early BLS, rapid defibrillation and early ALS care.

INFORMATION NEEDED
- Patient age
- Medical history (e.g., history of cardiovascular disease, congenital heart defect, respiratory disease, trauma, diabetes)
- History of present event (e.g., complaints prior to arrest, possibility of choking, allergic reaction, blunt chest trauma, etc)
- Weight of patient (length based tape may be used)

OBJECTIVE FINDINGS
- Patient is apneic and pulseless
- Monitor shows ventricular fibrillation or ventricular tachycardia

TREATMENT
- Routine Pediatric Care
- Assess patient and confirm pulselessness
- Start CPR using AHA standards BLS providers use AED per AHA standards
- Assure adequacy of ventilations and compressions, prevent and minimize CPR interruptions
- Confirm that patient is in V-Fib and pulseless.
- Defibrillate at 2 J/kg repeat every 2 minute at 4 J/kg
- IV/IO access
- Airway management per Pediatric Airway Management SMO
- **Epinephrine**
  - Amiodarone or Lidocaine
- If defibrillation is successful at any point, and normal sinus rhythm, sinus tachycardia, or another supraventricular rhythm with pulses results, administer Amiodarone or Lidocaine if it has not been administered
- If rhythm changes, check for pulses, and proceed to appropriate Pediatric Cardiac Arrest SMO (Pediatric Arrest: Asystole/PEA or Pediatric V-Fib/Pulseless V-Tach) or Pediatric Dysrhythmia SMO (Pediatric Bradycardia or Pediatric Tachycardia) as indicated
**Documentation of adherence to SMO**

– All interventions completed
– Response to interventions

**Medical Control Contact Criteria**

– Contact Medical Control whenever a question exists as to the best treatment course for the patient

**PRECAUTIONS AND COMMENTS**

- On pediatric patients up to puberty an AED with Pediatric pads are preferred. If this is not available adult pads may be used. Adult pads may be used with anterior/posterior placement
- Use length base resuscitation tape to estimate child weight
- For adults see **Adult V-Fib/Pulseless V-Tach SMO**

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**Original SMO Date:** 07/04
**Reviewed:**
**Last Revision:** 02/07; 06/17

[Return to Table of Contents]
Overview: When EMT’s have established patient contact, "a caregiver/patient" relationship has been established between the patient and EMSMD or designee. If a physician in on-scene they MAY assume responsibility for this patient if the following criteria are satisfied and documented:

- Physician can show a State of Illinois Medical license
- Physician also produces a picture ID
- Physician agrees to accompany patient to the hospital in the transporting vehicle

If any of these criteria are not met and the physician on scene insists on taking control of the situation, contact Medical Control for physician-to-physician communication. The EMT should employ the following as guidelines in interacting with a physician on the scene:

<table>
<thead>
<tr>
<th>PHYSICIAN ON SCENE</th>
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<tbody>
<tr>
<td>Contact the resource hospital as soon as possible. All treatment should be reported over the radio for purposes of documentation.</td>
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<tr>
<td>When, after consultation with the EMSMD or designee, it is determined that the physician's orders may be harmful to the patient, the EMT will:</td>
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<tr>
<td>- Explain to the physician on-scene the recognized deviation from SOPs and/or policies and procedures.</td>
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<tr>
<td>- Immediately put the physician at the scene in contact with Medical Control.</td>
</tr>
<tr>
<td>- The EMSMD or designee will explain system SOPs and policies and procedures and attempt to reach consensus on patient care. Patient management by the licensed physician to provide supervision and direction throughout the pre-hospital care and transport process will continue until responsibility for care of the patient can be turned over directly to a physician on duty at hospital emergency department.</td>
</tr>
<tr>
<td>- In cases where disagreements cannot be resolved, the EMSMD or designee will assume responsibility for patient care.</td>
</tr>
<tr>
<td>In cases where the patient's personal physician is physically present, Medical Control should respect the previously established doctor/patient relationship as long as acceptable medical care is being provided.</td>
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</table>
**RN or NON-AGENCY EMS PROVIDER ON SCENE**

- An RN or non-agency EMS provider on scene may assist to the level of First Aid. If additional skill are needed (e.g. IV initiation) Medical Control MUST be contacted for permission to utilize this person in an expanded role.
- An RN or non-agency EMS provider on scene must provide proof of State of Illinois licensure and a picture ID.
- He/she must agree to follow the directions of the EMSMD or his/her designee.

**Documentation of adherence to SMO**

- Notification of Medical Control as outlined above.
- Any deviation from SMO as discussed with Medical Control.
- Documentation of name, State of Illinois license number, and picture ID produced as outlined above.

**Medical Control Contact Criteria**

- Immediately upon scene physician’s request to assume responsibility at the scene.
- If any question exists as to best treatment option for the patient.

**PRECAUTIONS AND COMMENTS**

- The “caregiver/patient” relationship has been established between the patient and EMSMD when the EMT establishes patient contact.
- EMT’s act under medical direction of Medical Control for the management of the patient.
- On-scene physician, RN, or non-agency EMS Provider involvement should be established with caution and with close Region 1 Medical Control guidance.
EMS REGION 1

ON-SITE PHYSICIAN RESPONSIBILITY ACKNOWLEDGMENT

Thank you for your offer of assistance. Be advised the attending EMS Region 1 personnel are operating under the authority of Illinois law. No physician or other person may intercede in patient care without the EMS Region 1 Medical Director, or his or her appropriate designee, relinquishing responsibility of the scene or otherwise giving approval in accordance with EMS Region 1 SMOs.

IF YOU ARE A PHYSICIAN AND DESIRE TO ACCEPT RESPONSIBILITY FOR AND DIRECTION OF THE CARE OF THE PATIENT(S) AT THE SCENE:

1. You MUST show your medical license wallet card to the EMT and state your specialty.

2. You MUST accompany any patient whose care you direct to the medical facility in the ambulance or other attending medical vehicle.

3. Your direction of a case MUST be approved by the EMS Region 1 Medical Director or his or her appropriate designee.

Please print except for your signature:

I, ___________________________ M.D. / D.O., assume full responsibility for the pre-hospital direction of medical care of the patient(s) identified below during this ambulance call, and I will accompany the patient(s) to the medical facility. I understand that the Region 1 EMS Medical Director, or his or her appropriate designee, retains the right to resume responsibility for the medical care of such patient(s) at his or her discretion in accordance with Region 1 EMS SMOs at any time, and that the care of the patient(s) will be relinquished to the appropriate Region 1 personnel upon arrival at the medical facility.

Patient Identification (please initial and provide information as appropriate):

_______ All patients at the scene, OR

_______ The following patients:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

____________________________ / __________ / ______

Physician Signature (M.D. / D.O.) Date

Thank you for your interest.

Region 1 EMS Personnel to complete:
Date _____/_____/
Run Identification __________________
EMT Initials ________________

White: Chart
Yellow: EMS Office
Pink: Provider
Gold: Physician

Original SMO Date: 07/04
Reviewed: 
Last Revision: 06/17

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# SMO: Pre-eclampsia/ Eclampsia

**Overview:** Preeclampsia is a disease of unknown origin that primarily affects previously healthy, normotensive primigravidae. The disease occurs after 20 weeks gestation, often near term. It is characterized by vasospasm, endothelial cell injury, increased capillary permeability, and activation of the clotting cascade. Eclampsia is characterized by the same signs and symptoms with the addition of seizures or coma.

## INFORMATION NEEDED
- Patient complaint
- Mechanism of injury
- Gestational age, single or multi fetus
- Age of mother
- Number of pregnancies

## OBJECTIVE FINDINGS
- BP > 140/90
- Abnormal weight gain
- Edema of legs, arms and face
- Visual disturbances
- Seizures/coma
- Presence/absence of Fetal Heart Tones, if possible
- Fetal movement as reported by the mother

## TREATMENT
- Prepare for rapid transport
- **Routine Medical Care**
- Oxygen as indicated
- Seizure precautions
  - GENTLE HANDLING. Minimal CNS stimulation. Do NOT check pupillary reflexes.
  - Minimize external stimulation - avoid sirens, bright lights and loud music if possible.
- Position patient on left side or raise right side of backboard and transport as soon as possible
- If seizure occurs, protect patient from harming self; if possible, place nasopharyngeal airway as needed
  - If seizure occurs, Midazolam or Diazepam
  - Magnesium Sulfate (see Magnesium Sulfate Administration Chart) after initial dose of Midazolam or Diazepam for seizure

*For pain and sedation doses:
Start dose low – slowly increase –
Titrate to effect up to listed dose*
**Documentation of adherence to SMO**
- Oxygen administered at 100%; IV established
- Seizure precautions observed
- Medications for seizure activity
- Other care administered
- Transported on left side

**Medical Control Contact Criteria**
- Contact Medical Control whenever a question exists as to the best treatment course for the patient
- Notify Medical Control EARLY for OB/GYNE Eclampsic or Pre-Eclampsic patient

**PRECAUTIONS AND COMMENTS**
- GENTLE HANDLING. Minimal CNS stimulation. Do NOT check pupillary reflexes.

**MEDICATION ADMINISTRATION CHART**

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<tr>
<th>Peds</th>
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<td>Standard Dosing</td>
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<td>Formulary</td>
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Return to Table of Contents
Overview: Trauma in the pregnant patient holds the same priorities in assessing and managing that patient: adequate airway, ventilatory and circulatory support with spinal precautions, hemorrhage control. However, anatomical and physiological changes associated with pregnancy can alter the patient’s response to injury, requiring modifications in these strategies. Fetal survival is contingent on the mother’s status; therefore, the EMT must focus on the mother’s management.

INFORMATION NEEDED
__ Patient complaint
__ Mechanism of injury
__ Gestational age, single or multi fetus
__ Age of mother
__ Number of pregnancies
__ Presence of vaginal bleeding

OBJECTIVE FINDINGS
__ Fetal movement as reported by the mother
__ Uterine tenderness/contractions
__ Fundal height
__ Vaginal bleeding
__ Leaking amniotic fluid

TREATMENT
__ Routine Trauma Care
__ Prepare for rapid transport
__ Consider IV fluids based on mechanism of injury and patient condition to keep mother’s SBP>100. Be aware mother may appear stable but fetus may be in jeopardy.
__ If patient is in advanced pregnancy place patient left lateral or with head elevated, maintaining Spinal Restriction as appropriate
__ Notify receiving hospital early

TRAUMATIC ARREST IN PREGNANT PATIENT
__ Treat all life-threatening injuries as in non-pregnant patient.
__ CPR while manually displacing uterus to left side.
__ Notify receiving hospital EARLY in an effort to mobilize appropriate hospital personnel.
__ Fetus survival is dependent on aggressive trauma care

Original SMO Date: 07/04
Reviewed:
Last Revision: 06/17

Return to Table of Contents
**Documentation of adherence to SMO**
- Oxygen administered at 100%
- Fluids administered to sustain SBP > 100
- Other care administered
- Transported on left side

**Medical Control Contact Criteria**

- Contact Medical Control whenever a question exists as to the best treatment course for the patient

**PRECAUTIONS AND COMMENTS**

- Fetus may be in jeopardy while mother's vital signs remain stable.

### MEDICATION ADMINISTRATION CHART

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Acute Pulmonary Edema

Overview: Assessment and history to identify treatable causes cannot be over emphasized. Not all pulmonary edema is due to fluid overload. Assess the patient for JVD, and/or peripheral / pitting edema to determine fluid status.

INFORMATION NEEDED
__ Patient age
__ Medical history of AMI, CHF and or dialysis, or hypertension
__ Signs and symptoms: Chest pain, shortness of breath, dyspnea on exertion, orthopnea, cough, pink sputum, wet lung sounds
__ Current medications
__ Home oxygen use

OBJECTIVE FINDINGS
__ Mental status, skin signs, perfusion status
__ Respiratory rate, rhythm and pattern and work of breathing.
__ Lung sounds
__ Heart rate and rhythm and blood pressure trends
__ Pedal edema, JVD

TREATMENT
__ Routine Medical Care
__ Position of comfort, usually upright
__ Oxygen as indicated
__ If patient is wheezing see Bronchospasm SMO
__ IV Access
__ **NTG** by EMTs for systolic >100 mmHG
  - For patients with coronary artery disease and a prescription of **NTG** may administer initial dose from EMS supply (offline medical control). Contact Medical Control for further dosing.
  - Reassess blood pressure. **NTG** (for patients who have not been prescribed NTG) may administer with an order from Medical Control (online medical control)
__ **NTG** (IV not required prior to 1st dose of **NTG** administration but IV should be started before subsequent doses of **NTG** if possible)
__ CPAP (see CPAP Procedure) **Nitroglycerin** tablets must be fully dissolved before resuming CPAP.
__ If patient has signs of fluid overload consider **Furosemide**, may repeat one time if indicated. Do not use if pneumonia is suspected.
__ If systolic BP under 90, see Cardiogenic Shock SMO

Original SMO Date: 07/04
Reviewed:
Last Revision: 06/17

Return to Table of Contents
**Documentation of adherence to SMO**

- Blood pressure trending documented
- Lung sounds, JVD, edema
- Treatment given
- Any change in patient’s condition

**Medical Control Contact Criteria**

- Contact Medical Control whenever a question exists as to the best treatment course for the patient
- Contact Medical Control if more than three **NTG** doses are needed

**PRECAUTIONS AND COMMENTS**

- Severe fatigue may result in respiratory failure
- **Nitroglycerin** tablets must be fully dissolved before resuming CPAP.
- Patients with diminished level of consciousness may not be appropriate for CPAP. Be prepared to provide airway intervention.
- Not all pulmonary edema is due to fluid overload, assess for JVD, peripheral / pitting edema

**MEDICATION ADMINISTRATION CHART**

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Gynecologic Emergencies: Rape / Sexual Assault

Overview: Sexual assault is one of the fastest growing and serious crimes in America. Sexual assault refers to any genital, anal, oral, or manual penetration of the victim's body, by way of force or without the victim's consent

INFORMATION NEEDED
__ History of assault
__ Initial assessment of patient
__ Focused assessment of patient

OBJECTIVE FINDINGS
__ Victims may behave in a variety of ways
__ Some may be surprisingly calm and seem in control of their emotions
__ Others may be agitated, apprehensive, distraught, or tearful
__ After managing all threats to life, proceed with care by providing emotional support to the victim

TREATMENT
__ Routine Trauma Care where indicated
__ Victims of sexual assault should not be questioned in detail about the incident
__ Limit the history to elements necessary to provide emergency medical care
__ Take steps to preserve any evidence
   ▪ Do not allow the patient to urinate or defecate (if possible), douche, or bathe
   ▪ Do not remove evidence from any part of the body that was subjected to sexual contact
   ▪ Notify law enforcement personnel as soon as possible
   ▪ Be aware there will be a "chain of evidence" with specific requirements of proof

Documentation of adherence to SMO
__ Documentation of any preservation of evidence

PRECAUTIONS AND COMMENTS
▪ When possible an EMT of the same gender should provide any required medical care
▪ Do not leave the patient alone
▪ Document if patient requests to call someone

Original SMO Date: 07/04
Reviewed:
Last Revision: 06/17

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Overview:
This SMO relates to those cases in which EMS has been called and the patient/patients refuse to give their consent for assessment and/or treatment and/or transport and highlights the following:

- An adult patient with decision-making capacity has the right to refuse medical treatment. An adult patient with decision-making capacity, for the purpose of this SMO, is defined as:
  - Oriented to person, place, time, and event
  - No suspicion of being under the influence of drugs or alcohol
- An adult patient cannot refuse emergency treatment if that patient has decreased level of consciousness or, in EMS personnel’s judgment, cannot make competent decisions related to their emergency care.
- A patient is considered high risk for signing a refusal under the following circumstances:
  - Concern with decision-making capacity
  - A minor with no legal guardian available
  - Suspected high risk medical conditions, such as:
    - Chest pain
    - Syncope
    - Altered Mental Status
    - Stroke/TIA
    - Abnormal vital signs
    - EMS provider impression
- All patients who refuse care (whether BLS, ILS or ALS) must be encouraged to sign a Region One Prehospital Refusal form (or a form mandated by the agency’s EMS MD).

OBJECTIVE FINDINGS
- Adult patient is conscious and competent
- Patient injuries
- Vital signs
- SAMPLE history

Return to Table of Contents
Refusal of Treatment by Competent Adult Patients
__Patients have the right to refuse treatment and/or transport
__The patient will be informed of the risk of refusal of possibility of deterioration of medical condition, up to and including death
__Attempt to assess vital signs and SAMPLE history if possible
__For high risk refusals, as defined above:
  • Consider contacting Medical Control
  • Attempt to leave patient in care of a responsible party
  • Provide post refusal instructions as indicated
  • Inform patient to call back if conditions changes or decision to refuse treatment is reconsidered
__Once the allowed assessment is performed, and the patient persists in refusing care and/or transport, the patient will be asked to sign the Region One Prehospital Refusal form (or a form mandated by the agency’s EMS MD). The refusal form must also be signed by the EMT and by one other witness (preferably law enforcement or family) if available.

Multiple Victims Refusal of Consent for Treatment
__To ensure the efficient use of resources, if an incident is declared an MVI or Disaster by the on scene commander, a reasonable/common sense approach should be used and provider safety must be considered. If mechanism of the incident indicates the potential for victims or the Incident Commander has declared and MVI or Disaster, and the patients are refusing treatment, the Region One Multiple Victim Release Form may be completed in lieu of individual Patient Refusal Form.
__One EMS Run Report must be completed and a copy of the Multiple Victim Release form must be attached to the Run Report.

Minor in Need of Emergency Care who Refuses Treatment
__All reasonable attempts should be made to release a minor to a legal guardian. If a legal guardian cannot be located document attempts made to contact.
  • Minor may be turned over to local police or juvenile authority, or
  • Minor may be released if legal guardian is contacted by phone and consent for release is given. Document phone call, name of guardian, and witness.
__If the need for emergency care exists or if the behavior of the patient suggests a lack of capacity to make a refusal in a valid manner continue to render care, up to and including transport.

Post-Treatment Refusals
This section applies to when treatment has been given by EMS and the patient considers their condition improved to the point that they refuse transport, such as:
  • Hypoglycemic patient
  • Overdose patient
  • Asthma/respiratory
  • Chest pain
  • Syncope
  • Pain control
Important points to discuss with patient before obtaining refusal:

- EMS evaluation and/or treatment is not a substitute for medical evaluation and treatment by a doctor. EMS will advise the patient to see a doctor or go to a hospital. The patient will be given the Discharge Instruction form. EMS will circle the appropriate potential diagnosis with the patient and document this discussion on the refusal form.
- If patient’s condition was discussed with Medical Control on scene, inform them that this also does not substitute for medical evaluation.
- Patient’s condition may be worse than originally evaluated. Without treatment, patient’s condition or problem could become worse.
- If patient changes their mind or condition becomes worse, patient should be made aware that they may call 911 and EMS will respond as always.

Medical Control Contact Criteria

- Contact Medical Control whenever a question exists as to the best treatment course for the patient.
- Issues regarding decision-making capacity of patients should be managed directly with Medical Control.
- Contact Medical Control if there is a question regarding need for evaluation/treatment (based on mechanism of injury, etc.)

PRECAUTIONS AND COMMENTS

- Important points to discuss with patient before obtaining refusal:
  - EMS evaluation and/or treatment is not a substitute for medical evaluation and treatment by a doctor. EMS will advise the patient to see a doctor or go to a hospital. If patient’s condition was discussed with Medical Control on scene, inform them that this also does not substitute for medical evaluation.
  - Patient’s condition may be worse than originally evaluated. Without treatment, patient’s condition or problem could become worse.
  - If patient changes their mind or condition becomes worse, patient should be made aware that they may call 911 and EMS will respond as always.
- FOR MINORS: Instruct the patient’s legal guardian that in this situation, they are acting on behalf of the patient and they understand the above information regarding refusal of treatment or transport, and accept responsibility for the patient.
- Certain injuries, illnesses, ingestions, or injected substances can alter behavior and create a situation whereby the capacity to make a valid judgment by the patient no longer exists. It is better to treat and prevent any further harm to the patient who may not be able to judge his/her own condition.
- The State of Illinois permits Emancipated Minors to be treated as adults and therefore allows them to make the decision regarding consent for treatment or refusal of services.
Region One Prehospital Refusal Form

Region One Prehospital Refusal

Date:     Location of Call:     Type of Call:     
Time:     Dispatched:     Enroute:     Arrived:     Completed:     
Agency:     Unit #:     Call #:     

Patient Information

Name:     Guardian Name:     
Address:     City:     State:     Zip:     
D.O.B.:     Age:     Gender:     Male     Female     

Assessment of Patient

Medical Hx:     Allergies:     
Medications:     

BP:     Pulse:     Resp:     Skin:     Pupils:     R-     L-     Refused V/S     

Check appropriate response:     Draw an “X” through the most appropriate box – Y is yes and N is no

Is the patient oriented to:     Person [ ]  Place [ ]  Time [ ]  Situation [ ]
Suspicion of intoxication? [ ]
Medical Control Contacted? [ ]  M.D. / ECRN Name:     

Patient left in care of:     Phone Number:     

Release from Medical Responsibility

I, hereby release the Hospital, EMS System and it’s physicians, nurses and employees and the EMS Service and it’s EMTs of any responsibility and liability for the worsening of my condition. I acknowledge that I have been informed of the risks and I voluntarily assume all responsibilities in making this decision.

Adult Patient or Guardian initial next to the box(es) with the most appropriate statements:

[ ] I do not consider myself to be injured or ill and do not wish to receive medical services, treatment, or transport.
[ ] I have been advised to seek first aid or medical treatment, which I am refusing.
[ ] I have received emergency medical treatment and am now refusing further care or transport to a medical facility.
[ ] I have received emergency medical treatment and am consenting to transport to a medical facility but, I am refusing the following:

[ ] I am refusing transport to the nearest hospital.     Hospital. I have been informed that this facility lies outside the responding agency’s territorial range of transport. I am refusing transport to a hospital within this territorial range.

RISKS

All referrals of treatment have the inherent risks of threatening the health, medical safety and possible survival of the patient. All transfers have the inherent risks of traffic delays, accidents during transports, inclement weather, rough terrain, and the limitations of equipment and personnel present in the vehicle, all of which may be the potential threat to the health, medical safety and possible survival of the patient. Transfers to a more distant hospital may increase these risks. The following risks have been explained to the patient, the patient’s guardian and/or power of attorney for healthcare:

[ ] Deterioration of Medical Condition, up to and including death
[ ] Deterioration of Medical Condition of Pregnant and/or unborn Child/Delivery
[ ] I have received a “Refusal / Discharge Instruction” form.

Comments:

X     Signature of Guardian / #1 License #     X     Signature of Guardian / #2 License #
Print:     Agency Copy     Yellow:     EMS Copy     Pink:     Patient Copy

Original SMO Date: 07/04
Reviewed:
Last Revision: 02/06; 06/17

SMO: Refusal of Medical Care or Transport

Return to Table of Contents
### Refusal / Discharge Instructions

#### Universal Instructions:
- You have not received a complete medical evaluation. See a physician as soon as possible.
- If at any time after you have taken any medication, you have trouble breathing, start wheezing, get hives or rash, or have any unexpected reaction, call 911 immediately.
- If your symptoms worsen at any time, you should see your doctor, go to the emergency department or call 911.

#### Abdominal Pain:
- Abdominal pain is also called belly pain. Many illnesses can cause abdominal pain and it is very difficult for EMS to identify the cause.
- Take your temperature every 4 hours.
- Call or see a physician, go to the emergency department or call 911 immediately if:
  - Your pain gets worse or is not only in 1 area
  - You vomit (throw up) blood or find blood in your bowel movement
  - Your abdomen becomes distended or swollen
  - You have a temperature over 103°F
  - You have trouble breathing

#### Back Pain:
- Apply heat to the painful area to help relieve pain. You may use a warm heating pad, whirlpool bath, or warm, moist towels for 10 to 20 minutes every hour.
- Stay in bed as much as possible the first 24 hours.
- Begin normal activities when you can do them without causing pain.
- When packing things up, bend at the hips and knees. Never bend from the waist only.
- Call or see a physician, go to the emergency department, or call 911 immediately if:
  - You have shooting pains into your buttocks, groin, legs, or the arm pain increases
  - You have trouble urinating or lose control of your stools or urina
  - You have numbness or weakness in your legs, feet, arms, or hands.

#### Fever:
- Always take medications as directed. Tylenol and ibuprofen can be taken at the same time.
- If you are taking antibiotics, take them until they are gone, not until you are feeling better.
- Drink extra liquids (1 glass of water, soft drink or Gatorade per hour of fever for an adult).
- If the temperature is above 103°F, it can be brought down by a sponge bath with room temperature water. Do not use cold water, a fan, or an alcohol bath.
- Temperature should be taken every 4 hours.
- Call or see a physician, go to the emergency department, or call 911 immediately if:
  - Temperature is greater than 101°F for 24 hours
  - A child becomes less active or alert
  - The temperature does not come down with Acetaminophen (Tylenol) or Ibuprofen with the appropriate dose.

#### Head Injury:
- Immediately after a blow to the head, nausea, vomiting, and swelling may occur.
- Individuals who have sustained a head injury must be checked, and if necessary awakened every 2 hours for the first 24 hours.
- Ice may be placed on the injured area to decrease pain and swelling.
- Only clear fluids such as juices, soft drinks, or water the first 12 hours after injury.
- Acetaminophen (Tylenol) or Ibuprofen may only be used for pain.
- Call or see a physician, go to the emergency department, or call 911 immediately if:
  - The injured person has persistent vomiting or is not able to be awakened, has trouble walking or using an arm or leg, has a seizure, develops unequal pupils, has a clear or bloody fluid coming from the ears or nose, or has strange behavior.

#### Insect Bite/Sting:
- A bite or sting typically is a red lump which may have a hole in the center. You may have pain, swelling and a rash. Several stings may cause a headache and an upset stomach (vomiting).
- Some individuals will have an allergic reaction to a bite or sting. Difficulty breathing or chest pain is an emergency requiring medical care.
- Elevation of the injured area and ice (applied to the area 10 to 20 minutes each hour) will decrease pain and swelling.
- Diphenhydramine (Benadryl) may be used as directed to control itching and hives.
- Call or see a physician, go to the emergency department, or call 911 immediately if:
  - You develop any chest pain or difficulty breathing.
  - The area becomes red, warm, tender, and swollen beyond the area of the bite or sting.
  - You develop a temperature above 101°F.

#### Respiratory Distress:
- Respiratory Distress is also known as shortness of breath or difficulty breathing.
- Causes of Respiratory Distress include reactions to pollen, dust, animals, molds, foods, drugs, infections, smoke, and respiratory conditions such as Asthma and COPD. If possible avoid any causes which produce respiratory distress.
- If you have seen a physician for this problem, take all medications as directed.
- Call or see a physician, go to the emergency department, or call 911 immediately if:
  - Temperature is greater than 101°F.
  - The cough, wheezing, or breathing difficulty becomes worse or does not improve even when taking medications.
  - You have Chest Pain.
  - Sputum (phlegm) changes from clear to yellow, green, gray, or becomes bloody.
  - You are not able to perform normal activities.

#### Extremity Injury:
- Extremity Injuries may consist of cuts, scrapes, bruises, sprains, or broken bones (fractures).
- Apply ice on the injury for 15 to 20 minutes each hour for the first 1 to 2 days.
- Elevate the extremity above the heart as possible for the first 48 hours to decrease pain and swelling.
- Use the extremity as pain allows.
- Call or see a physician, go to the emergency department, or call 911 immediately if:
  - Temperature is greater than 101°F.
  - The body, swelling, or pain gets worse despite the treatment listed above.
  - Any problems listed on the Wound Care Instructions are noted.
  - You are unable to move the extremity if numbness or tingling is noted.
  - You are not improved in 24 to 48 hours or you are not normal in 7 to 10 days.

#### Vomiting/Diarrhea:
- Vomiting (throwing up) can be caused by many things. It is common in children, but should be watched closely.
- Diarrhea is most often caused by either a food reaction or infection.
- Dehydration is the most serious problem associated with vomiting or diarrhea.
- Drink clear liquids such as water, apple juice, soft drinks, or Gatorade for the first 12 hours or until things improve. Adults should drink 6 to 12 glasses of fluids per day with diarrhea.
- Children should drink 1 cup of fluid for each loose bowel movement.
- Call or see a physician, go to the emergency department, or call 911 immediately if:
  - Temperature is greater than 101°F.
  - Vomiting or Diarrhea lasts longer than 24 hours, gets worse, or blood is noted.
  - You cannot keep fluids down or no urination is noted in 8 hours.

#### Wound Care:
- Wounds include cuts, scrapes, bites, abrasions, or puncture wounds.
- If the wound begins to bleed, apply pressure over the wound with a clean bandage and elevate the wound above the heart for 5 to 10 minutes.
- Unless instructed otherwise, clean the wound daily with soapy water, and keep the wound dry. It is safe to take a shower but do not place the wound in bath or dish water.
- See a physician for a tetanus shot if it has been 10 years or more since your last one.
- Call or see a physician, go to the emergency department, or call 911 immediately if:
  - See the Extremity Injury Instructions.
  - Temperature is greater than 101°F.
  - Draining, swelling, or pain gets worse or bleeding is not controlled as directed above.
  - Any signs of infection, such as redness, drainage of yellow fluid or pus, red streaks extending from the wound, or a bad smell is noted.

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**Original SMO Date:** 07/04  
**Reviewed:**  
**Last Revision:** 02/06; 06/17  
**Return to Table of Contents**
### Refusal / Discharge Instructions

**UNIVERSAL INSTRUCTIONS:**
- If you have not received a complete medical evaluation, see a physician as soon as possible.
- If at any time after you have taken any medication, you have trouble breathing, start wheezing, get hives or a rash, or have any unexpected reaction, call 911 immediately.
- If your symptoms worsen at any time, you should see your doctor, go to the emergency department or call 911.

#### Chest Pain:
- There are many causes of chest pain.
- Some of the causes include: heart problems, heartburn, esophageal disorders, pneumonia, pleurisy, pulmonary embolism, panic attacks or inflammation in your chest.
- Some of these problems can be serious and life-threatening.
- Chest Pain should be evaluated by a physician.

**Call or see a physician, go to the emergency department, or call 911 immediately if:**
- Increase in pain or pressure in chest.
- Sweating.
- Unexplained weakness, dizziness, lightheadedness.
- Shortness of breath.
- Nausea or vomiting.
- Fast or irregular heart beat.

#### Syncope - Fainting:
- Fainting is a temporary loss of consciousness.
- There are many causes for fainting.
- Fainting usually occurs when your blood pressure drops suddenly and a decrease in blood flow to the brain results.
- Some of the causes include: heart problems, low blood sugar, certain medication, emotional distress, standing up too quickly, heat or dehydration.
- Syncope/ Fainting should be evaluated by a physician.

**Call or see a physician, go to the emergency department, or call 911 immediately if:**
- Unexplained weakness, dizziness, lightheadedness continues.
- Shortness of breath.
- Nausea or vomiting.
- Pain or pressure in the chest.
- Fast or irregular heart beat.

#### Hypertension – High Blood Pressure:
- High blood pressure is a common condition that may cause health problems, such as heart disease.
- You can have high blood pressure for years without any symptoms.
- Uncontrolled high blood pressure increases your risk of serious health problems including heart attack and stroke.
- High blood pressure is generally defined as a pressure over 140/90.
- Have your blood pressure checked regularly and see a physician if it is high.

**Call or see a physician, go to the emergency department, or call 911 immediately if:**
- You have other symptoms such as headache, dizziness, shortness of breath, chest pain or nosebleeds.

#### Low Blood Sugar:
- Causes of low blood sugar: too little food, too much insulin or diabetes pills and/or more active than usual.
- The onset is often sudden.
- Some Symptoms include: shaky, sweating, fast heartbeat, blurry vision, headache, irritable, weakness or fatigue.
- If you feel like your blood sugar is low, check your blood glucose. If you can't check your glucose, treat anyway.
- Treat by eating glucose tablets, candies, fruit juice or regular soda pop.
- Check blood glucose again.
- Eat something in addition to the sugar. Eat something with protein and/or carbohydrates to last longer.

**Call or see a physician, go to the emergency department, or call 911 immediately if:**
- If symptoms do not improve or stop.

#### High Blood Sugar:
- Causes of high blood sugar: too much food, too little insulin or diabetes pills, illness or stress.
- The onset often starts slowly.
- Some Symptoms include: extreme thirst, need to urinate often, dry skin, hungry, choky, slow healing of wounds.
- Check blood glucose.
- If your blood glucose is higher than your goal and you don’t know why call your healthcare provider.

**Call or see a physician, go to the emergency department, or call 911 immediately if:**
- If symptoms do not improve or stop.

#### Unsafe Situation:
- Are you currently in a relationship/situation where you feel unsafe or threatened?

**Information about shelter and alternatives is available 24 hours a day by contacting the Domestic Violence Hotline at:**
- Illinois hotline 877-786-3338
- National hotline 800-799-7233 / TTY 800-787-3224
- [http://www.ilcadv.org/](http://www.ilcadv.org/)

#### Narcan:
- You have received Narcan for an apparent Narcotic overdose. You were unconscious and breathing was compromised. Narcan was administered to save your life.
- We strongly recommend that you go to the hospital for additional medical care. The Narcan may wear off before the Narcoric is out of your system. If that happen you could die.
- We cannot take you against your will.
- We recommend that you do not do any more drugs or alcohol.

#### Refusing against EMS advice:
- Patients that have apparent decision making capacities have the right to refuse. We recommend the following:
  - You seek medical care.
  - You stay with a responsible adult who will observe you and call 911 if needed.
  - Please call 911 or seek medical attention if you change your mind.

---

**Original SMO Date:** 07/04
**Reviewed:**
**Last Revision:** 02/06; 06/17

**Return to Table of Contents**
Region One Multiple Patient Prehospital Refusal Form

Date: ___/___/___ Location of Call: ____________________________________________________________

Time: Dispatched: ______ Enroute: ______ Arrived: ______ Completed: ______

Agency: ___________________________ Unit #: __________ Call #: __________

Type of Incident: ________________________________________________________________

Medical Control Contacted?  Y  N  M.D. / ECRN Name: __________________________

RELEASE FROM RISKS OF MEDICAL RESPONSIBILITY

I, listed below, hereby release the Hospital, EMS System and its physicians, nurses, and employees and the EMS agency and its’ Personal of any responsibility and liability for the worsening of medical condition of multiple victims involved in this incident. I acknowledge that I have been informed of the risks and I voluntarily assume all responsibility. I acknowledge that all refusals carry the inherent risks of deterioration of medical condition up to and including death.

Print Name  Signature  DOB
1. ___________________________________________________________  __________
   Address________________________________________________________

2. ___________________________________________________________  __________
   Address________________________________________________________

3. ___________________________________________________________  __________
   Address________________________________________________________

4. ___________________________________________________________  __________
   Address________________________________________________________

5. ___________________________________________________________  __________
   Address________________________________________________________

6. ___________________________________________________________  __________
   Address________________________________________________________

7. ___________________________________________________________  __________
   Address________________________________________________________

Signature of EMS crew #1  Signature of EMS crew #2

If School Bus Accident, signature of authorized school designee: ___________________________

Return to Table of Contents
REGION 1 EMERGENCY MEDICAL ORDERS
STANDING MEDICAL ORDERS
BLS, ILS, ALS

PROCEDURE: Restraints

Overview: Patients will only be restrained if clinically necessary. The use of restraints is only utilized if the patient is violent and may cause harm to themselves or others. Physical and/or chemical restraints are a last resort in caring for the emotionally disturbed patient. Never apply physical restraints for punitive reasons, or in a manner that restricts breathing and circulation, or in places that restrict access for monitoring the patient.

PROCEDURE

Scene size-up:
- Assess the patient and surroundings for potential weapons.
- When dealing with an agitated and combative patient consider law enforcement to help gain control of the situation.
- If scene is unsafe, back out and call law enforcement.

Utilize verbal de-escalation methods whenever possible - consider physical restraints a last resort when verbal control is ineffective.

To safely restrain a patient use a minimum of 4 people, if possible.

Consider chemical restraint enroute - prepare and have medication ready to administer. Ketamine or Midazolam

Once restrained, place patient in semi-fowlers or recovery position to maximize breathing

Assess and address any medical conditions after the patient is safely restrained.

If law enforcement restrains a patient with handcuffs, an officer with a key must accompany the patient during transport (it is preferred that the officer accompanies in the ambulance, but in certain circumstances, possibly based on location in Region 1, the law enforcement may follow in their vehicle).

Documentation of adherence to SMO

Behavior noted as evidence that the patient is at risk of self-harm or harm to others.

Type of restraint used and if partial or full restraints were used

Constant observation of patient while restraints in place.

Neurovascular status check noted every 10 minutes while restraints in place.

If handcuffs are used by a law enforcement officer, officer that has the key to the handcuffs must accompany the patient (see above: may be in his/her own vehicle)

Time medical control was contacted
**PRECAUTIONS AND COMMENTS**

- At no point should the paramedics place themselves in danger. Additional manpower should be requested as needed.
- In emergency situations, a paramedic may initiate application of restraints in the absence of an order from Medical Control.
- Explain the procedure to the patient (and the family) if possible. The team leader should be the one communicating with the patient.
- If attempts at verbally calming the patient have failed and the decision is made to use restraints, do not waste time bargaining with the patient.
- Remember to remove any equipment from your person which can be used as a weapon against you (i.e. trauma shears).
- Approach the patient, keeping the team leader near the head to continue communications and at least one person on each side.
- Always keep the patient informed of why the restraints are being used.
- Soft, disposable restraints are preferred for EMS use.
- No hog-tying or hobble restraints allowed. No “sandwiching” with long boards or scoop stretchers.
- Do not attempt IV access until patient becomes cooperative.

**MEDICATION ADMINISTRATION CHART**

<table>
<thead>
<tr>
<th>Peds</th>
<th>3 kg</th>
<th>4 kg</th>
<th>5 kg</th>
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<td>Mag Sulfate</td>
<td>Fentanyl IN</td>
<td>Midazolam IN</td>
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</table>

**Return to Table of Contents**
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Routine Medical Care (RMC)

Overview: A routine medical assessment needs to be completed on all medical patients to identify and immediately correct life-threatening problems. This SMO is intended to provide the EMS Provider with guidelines to treat a medical patient as effectively and soon as possible. For the purpose of these SMOs, the Region 1 Medical Directors define the stable adult patient as a patient who is alert and oriented X3 with a systolic blood pressure of > 90mmHg, heart rate of 60-100 beats per minute, and respirations of 10-16 breaths per minute.

INFORMATION NEEDED
- Scene safety
- Body Substance Isolation
- ABCD assessment
- Patient’s chief complaint
- SAMPLE history

OBJECTIVE FINDINGS
- Status of airway, breathing, circulation
- Chief complaint
- Medications with special attention to patient prescription for blood thinners
- Allergies

TREATMENT
- Appropriate blood and body secretions precautions should be used at all times by all personnel
- Perform patient assessment and determine chief complaint
- If load and go situation is found, transport immediately. Depending on time of transport consider ILS/ALS intercept.
- Place patient in position of comfort unless contraindicated per Spinal Restriction SMO
  - Unconscious patients should be placed on their side, to prevent aspiration
  - If immobilized, tilt backboard if there is risk of aspiration
- When indicated administer oxygen:
  - For most patients maintain O2 sats 94% to 99%
    - If history of COPD sats 90% to 92% are preferred to avoid respiratory depression.
    - Don’t withhold high flow O2 from cyanotic, confused, or distressed patient because of a history of COPD.
  - O2 2-6 liters by nasal cannula
  - O2 10-15 liters by non-rebreather mask
  - CPAP as indicated
  - O2 100% by BVM and move to Airway Management SMO or Pediatric Airway Management
- EtCO2 as indicated (if available)
TREATMENT (continued)

__ Assess blood sugar as indicated
__ Evaluate cardiac rhythm/12-lead for typical or atypical cardiac symptoms, electrical injuries, syncope, all patients who appear critical, and otherwise as indicated. Transmit 12-lead to the receiving hospital. If STEMI is noted call Medical Control ASAP to initiate STEMI Alert.

__ Establish INT/IV/IO as indicated
__ **Fluid Bolus** if indicated
__ Two lines of **Normal Saline** are preferred for:
  - GI Bleed
  - Stroke
  - STEMI
  - Unstable vital signs
  - Sepsis

__ IV’s are indicated for patients who require immediate or potential fluid/volume replacement and/or medication administration prior to hospital arrival. Attempts to establish IV’s should **not delay** transport. One attempt should be made at scene or enroute. If unsuccessful, one additional attempt may be made enroute. **Maximum number of attempts will be no more than 2 attempts per Provider with a maximum of 4 attempts per patient.**

__ If patient conditions warrants or IV access unsuccessful, establish IO access
__ If significant nausea / vomiting administer **Ondansetron**
__ Repeat vital signs every 10 minutes for ALS patients, after administration of medications, and more frequently as needed
__ Assess response to interventions and medication (to include repeat vital signs)
__ Contact receiving hospital as soon as possible with patient assessment and treatment.
__ DO NOT delay transport. Treatment SMOs are guidelines, and are not intended to be completed while on the scene, but continued enroute. All possible effort should be made to minimize scene time.

**Documentation of adherence to SMO**
__ Status of airway, breathing, circulation
__ Patient’s chief complaint
__ Medications
__ Allergies
__ Interventions and response
__ When significant, print rhythm strip and provide to receiving facility

**Medical Control Contact Criteria**

__ Contact Medical Control whenever a question exists as to the best treatment course for the patient

**MEDICATION ADMINISTRATION CHART**

<table>
<thead>
<tr>
<th>Standard Dosing</th>
<th>Peds</th>
<th>Adult</th>
<th>Formulary</th>
</tr>
</thead>
<tbody>
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<td>50 + kg</td>
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</table>
SMO: Routine Pediatric Care

Overview: Pediatric patients account for about 10% or less of EMS emergency responses. Caring for these patients presents unique challenges related to size, physical and intellectual maturation, and diseases specific to neonates, infants, and children. It is important to maintain and improve knowledge and clinical skills for these patients through continuing education programs and clinical applications specific to this age group.

The importance of assessing and maintaining AIRWAY, BREATHING, & CIRCULATION (A-B-C) in the pediatric patient cannot be overemphasized.

INFORMATION NEEDED
- Patient age and weight
- Scene assessment
- Primary assessment
- Nature of illness/mechanism of injury
- Focused history/physical Assessment
- Ongoing assessment

General Approach to the Pediatric Patient
Assessments and interventions must be tailored to each child in terms of age, size, and development. Providers must be familiar with assessment algorithms for medical emergencies, assessment mnemonics such as DCAP-BTLS for trauma emergencies, and use the current edition of the Broselow tape for determining appropriate equipment sizes, IV fluid rates, and medication dosing.

Consider the following when performing a pediatric patient assessment:
- Smile if appropriate to the situation
- Keep voice at an even quiet tone
- Speak slowly using simple, age appropriate terms
- Use toys or penlight as distracters
- Keep small children with their caregiver(s), allowing the caregiver to hold the child and assist with the assessment if necessary. Child must be properly restrained during transport.
- Kneel down to the level of the child if possible
General Approach to Pediatric Patient (continued)

- Make as many of the following observations as possible prior to touching the child as physical contact may upset the child
  - Level of consciousness
  - General appearance, age appropriate behavior, malnourished or well-nourished appearance, purposeful eye movement, general mood, playing, using a pacifier or bottle
  - Obvious respiratory distress or extreme pain
  - Position of the child: upright, tripod, recumbent, semi-fowlers
  - Muscle tone: good vs. flaccid
  - Movement: spontaneous, purposeful, symmetrical
  - Skin color
  - Life-threatening injuries

- It may be necessary to interview an adolescent without a caregiver present to obtain accurate information about drug use, alcohol use, LMP, sexual activity, or abuse

**AIRWAY**

- Self-maintained
- Maintainable with positioning or assistance: held tilt/chin lift, jaw thrust, tripod, high fowlers
- Maintainable with adjuncts: Use Broselow tape for correct size
- Maintainable with suction
- Most pediatric patients can be successfully ventilated using BVM
- BVM, supraglottic are preferred airways for pediatric patients

**BREATHING**

- Rate - compare to normal for age. Rate greater than 60/min is critical in all ages
- Rhythm: regular; irregular; patterned, Cheyne-stokes, agonal, biots, Kussmaul
- Quality: work of breath; use of accessory muscles, head bobbing, see-saw breathing, retractions, nasal flaring
- Auscultate respiratory sounds for absence, presence, snoring, stridor, crackles, gurgling, wheezing, grunting
- Pulse oximetry and capnography
- Administer oxygen of 02 sat <94 and/or other signs of respiratory compromise
  - Blow by
  - Nasal cannula
  - Non-rebreather
  - BVM
CIRCULATION
- Heart rate – compare to normal for age.
- Central/truncal pulses (apical, femoral, carotid) – strong, weak, absent
- Peripheral pulses – present/absent, strong, weak, thready
- Skin/mucous membrane color
- Skin temperature – hot, warm, cool
- Blood pressure – use appropriate sized cuff: Use Broselow tape for correct size
- Use the Broselow Pediatric Trauma Score for B/P determination if appropriate cuff is unavailable or capillary refill time (children under age 3)
- Hydration status – infant anterior fontanel status, mucous membranes, skin turgor, tears, urine output history
  - IV/IO access as indicated
  - Fluid bolus 20 ml/kg as indicated: may repeat as indicated to a total of 60 ml/kg

DISABILITY
- Use AVPU to assess responsiveness.
- Assess pupil response
- Assess distal neurologic status – numbness or tingling

EXPOSURE
- Assess for hypo/hyperthermia (Hyperthermia SMO or Hypothermia SMO)
- Check for significant bleeding
- Check for petechiae or purpura (purple discolorations that do not blanch with skin pressure)
- Be aware of signs of child abuse and, if present, report to authorities

Documentation of adherence to SMO
- Primary Assessment
- Patient weight (based on Broselow tape)
PRECAUTIONS AND COMMENTS
Considerations for Children with Special Healthcare Needs (CSHN)
• Refer to child’s emergency care plan formulated by their medical providers, if available.
• Understanding the child’s baseline will assist in determining the significance of altered physical findings. Parents/caregivers are the best source of information on: medications, baseline vitals, functional/normal mentation, likely medical complications, equipment operation and troubleshooting, emergency procedures.
• It may be helpful to use the DOPE mnemonic to assess problems with ventilation equipment or long-term catheters for feeding tubes. DOPE stands for:
  • D – Dislodged tube
  • O – Obstructed tube
  • P – Pneumothorax
  • E – Equipment failure
• Assess in a systematic and thorough manner, regardless of underlying conditions. Use parents/caregivers as medical resources.
• Be prepared for differences in airway anatomy, physical development, cognitive development, surgical alterations, or mechanical adjuncts. Common home therapies include: respiratory support, nutritional therapy, intravenous therapy, urinary catheterization, dialysis, biotelemetry, ostomy care, orthotic devices, communication or mobility devices, or hospice care.
• Communicate with the child in an age appropriate manner. Maintain communication with and remain sensitive to the parents/caregivers and child.
• The most common emergency encountered with the pediatric patient is respiratory related and so familiarity with respiratory emergency interventions/adjuncts/treatment is appropriate.

MEDICATION ADMINISTRATION CHART

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<td></td>
</tr>
</tbody>
</table>
Pediatric Glasgow Coma Scale

Eye Opening:
4-Spontaneous
3-To Verbal Stimuli
2-To Painful Stimuli
1-None

Verbal Response:
5-Oriented/Infant coos or babbles
4-Confused/Infant has irritable cry
3-Inappropriate words/Infant cries in pain
2-Incomprehensible sounds/Infant moans in pain
1-No Response

Motor Response:
6-Obeys/Infant moves spontaneously or purposefully
5-Localizes pain/Infant withdraws to touch
4-Withdraws to pain
3-Flexion (decorticate posturing)
2-Extension (decerebrate posturing)
1-No response

NORMAL VITAL SIGNS

Respiratory Rates
Age          Breaths/min
Infant (< 1 year)  30 – 60
Toddler (1-3 years)  24 – 40
Preschool (4-5 years)  22 – 34
School age (6-12 years)  18 – 30
Adolescent (13-18 years)  12 – 16

Heart rates
Age          Awake Pulse/min   Mean   Sleeping Pulse/min
Newborn-3 months  85-205  140   80-160
3 months-2 years  100-190  130   75-160
2-10 years         60-140  80    60-90
> 10 years          60-100  75    50-90

Blood pressure
Age          Systolic          Diastolic
Female         Male    Female   Male
1 day          60-76   60-74  31-45   30-44
4 days         67-83   68-84  37-53   35-53
1 month        73-91   74-94  36-56   37-55
3 months       78-100  81-103 44-64   45-65
6 months       82-102  87-105 46-66   48-68
1 year         68-104  67-103 22-60   20-58
2 years        71-105  70-106 27-65   25-63
7 years        79-113  79-115 39-77   38-78
Adolescent (15 years)  93-127  95-131 47-85   45-85

Original SMO Date: 07/04
Reviewed:
Last Revision:  02/06; 06/17

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SMO: Routine Pediatric Care
## DEGREE OF DEHYDRATION ASSESSMENT

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<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
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<tr>
<td>Child</td>
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<tr>
<td>Fontanelle</td>
<td>Flat or depressed</td>
<td>Depressed</td>
<td>Significant depression</td>
</tr>
<tr>
<td>Mucous Membranes</td>
<td>Dry</td>
<td>Very dry</td>
<td>Parched</td>
</tr>
<tr>
<td>Skin Perfusion</td>
<td>Warm / normal color</td>
<td>Cool extremities / pale</td>
<td>Cold extremities</td>
</tr>
<tr>
<td>Heart Rate</td>
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<td>Moderate tachycardia</td>
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<td>Peripheral Pulse</td>
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<tr>
<td>Blood Pressure</td>
<td>Normal</td>
<td>Normal</td>
<td>&lt; 70 + 2x age in years</td>
</tr>
<tr>
<td>Sensorium</td>
<td>Normal-irritable</td>
<td>Irritable-lethargic</td>
<td>Unresponsive</td>
</tr>
</tbody>
</table>
Overview: A trauma assessment needs to be completed on all trauma patients to identify and immediately correct life-threatening problems in accordance with PHTLS and ITLS guidelines. Scene times should be kept to a minimum and the patient should be promptly transported to the trauma center. This SMO is intended to provide the EMS Provider with guidelines to treat a trauma patient as effectively and soon as possible.

1. Scene Assessment (Scene Size-up)
   - Assess scene safety and situation
   - Apply Personal Protection Equipment
   - Identify mechanism of injury and any special extrication needs
   - Call for additional resources
   - Minimal disturbance of crime scene should be considered

2. Assessment
   - Assess airway patency utilizing adjuncts as indicated (OPA, NPA). Secure the airway with C-spine precautions.
   - Spinal Restriction as indicated
   - Assess breathing, apply oxygen as indicated:
     o Oxygen via nasal cannula (2-6 L/min) for awake, oriented, stable patients without evidence of hypoperfusion or mental status changes.
     o High-flow via non-rebreather mask (10-15 L/min) if indicated. Assist ventilations with BVM and 100% oxygen if indicated
     o Prepare to suction or maintain Spinal Restriction while log rolling patient for vomiting
     o Airway management as indicated
   - EtCO₂ as indicated (if available).
   - Chest Trauma:
     o For open chest wounds utilize occlusive dressings
     o Needle Decompression if tension pneumothorax suspected
   - Immediately control external bleeding. Refer to Hemorrhage Control SMO
   - If load and go situation is found, transport immediately and activate the Trauma System per Field Triage SMO
   - IV access with Normal Saline as needed.
   - See Trauma/Shock Treatment SMO if SBP < 90 mmHg for patient management
   - Assess disability: AVPU, pupils and Glasgow Coma Scale.
   - If altered mental status, check blood sugar.
Assessment (continued):
- Remove clothing to expose injuries. Cover patient with a blanket to avoid hypothermia.
- Obtain SAMPLE history.
- Reassess airway patency and maintain good ventilation.
- Reassess ABC’s including patient’s color.
- Perform Secondary Assessment
- Assess for pelvic instability. If present, apply pelvic binder, commercial or improvised.
- For head trauma elevate head approximately 15-30 degrees.
- Splint fractures and bandage wounds, control bleeding. Re-check PMS.
- Reassessment of critical patients frequently

Documentation:
- Assessment, reassessment and vital signs documented
- Administration of oxygen
- Perfusion assessment documented
- Spinal Restriction documented
- Bleeding control and fracture assessment and care documented (including PMS).
- Mechanism of injury and use of protective devices and damage.
- Age of patient
- Pertinent SAMPLE history
- Intubation, IV access, needle decompression procedure and fluid bolus amount

Medications:

Medical Control Contact Criteria

Contact Medical Control whenever a question exists as to the best treatment course for the patient

MEDICATION ADMINISTRATION CHART

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Overview: A seizure is a temporary, abnormal electrical activity of the brain that results in a loss of consciousness, loss of organized muscle tone, and presence of convulsions. The patient will usually regain consciousness within 1 to 3 minutes followed by a period of confusion and fatigue (post-ictal state).

Multiple seizures in a brief time span or seizures lasting more than 5 minutes may constitute status epilepticus and require EMS intervention to stop the seizure. Causes of seizures include: epilepsy, stroke, head trauma, hypoglycemia, hypoxia, infection, a rapid change in core body temperature (e.g. febrile seizures), eclampsia, alcohol withdrawal, and overdose.

INFORMATION NEEDED
___ Medical history/ frequency/ type of seizures
___ Prescribed medication and patient compliance; amount and time of last dose
___ Onset, duration, description of seizure from bystanders or family
___ Recent of past head trauma; fall, predisposing illness/disease; recent fever, headache, or stiff neck
___ Consider stroke as a possible etiology
___ History of ingestion/ drug or alcohol abuse; time last used.

OBJECTIVE FINDINGS
___ Surroundings: syringes, medications, blood glucose monitoring supplies, insulin, etc.
___ LOC and neurological assessment
___ Bowel and bladder incontinence
___ Oral trauma such as biting of tongue
___ Signs of trauma: witnessed onset?
___ Pupil size and reactivity
___ Needle tracks
___ Medical information tags, bracelets or medallions
___ Blood glucose level

* For pain and sedation doses:
  Start dose low – slowly increase –
  Titrate to effect up to listed dose
TREATMENT

**Routine Medical Care**

- Assure patency of airway and be prepared with suction.
- Oxygen if indicated, assist ventilations with BVM as needed.
- C-spine restriction if any suspicion of head/spinal trauma.
- Protect patient from injury; do not restrain during tonic/clonic movements.

- Obtain blood glucose level. If glucose level < 80, administer Oral Glucose if patient is conscious or Glucagon IM if the patient is unresponsive or has a questionable gag reflex.
- Obtain IV or IO access and administer Dextrose IV, if glucose remains decreased.
- Transport in left lateral recumbent position if no C-spine injury is suspected.
- For generalized convulsive (tonic-clonic) seizure, Diazepam OR Midazolam.
- If unable to secure IV or IO, give Diazepam IM OR Midazolam IM/IN.

**Documentation of adherence to SMO**

- Airway patency/ interventions
- Administration of O₂
- If suspicions of trauma-- immobilization performed
- Blood glucose level check performed/ results/ administration of Oral Glucose/Glucagon.
- Medications administered and response.

### Medical Control Contact Criteria

- If status epilepticus continues after administration of initial doses of medications
- Contact Medical Control whenever a question exists as to the best treatment course for the patient.

**Precautions and Comments**

- Always consider treatable etiologies (hypoglycemia, hypoxia).
- Benzodiazepine administration takes priority over blood glucose determination in patients that are actively seizing.
- Treatment of seizures should be based on the severity and ongoing seizure activity.
- Focal seizures without mental status changes do not require prehospital pharmacological intervention.
- Be prepared for respiratory depression following medication administration and provide airway interventions as needed.
- For pediatric patients see Pediatric Seizure/Status Epilepticus SMO.

### Medication Administration Chart

<table>
<thead>
<tr>
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Original SMO Date: 07/04
Reviewed:
Last Revision: 06/17

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Overview: Sepsis is a potentially life-threatening complication of an infection. Sepsis occurs when chemicals released into the bloodstream to fight the infection trigger inflammatory responses throughout the body. This inflammation can trigger a cascade of changes that can damage multiple organ systems, causing them to fail.

If sepsis progresses to septic shock, blood pressure drops dramatically which may lead to death.

Anyone can develop sepsis, but it's most common and most dangerous in older adults or those with weakened immune systems. Early treatment of sepsis, usually with antibiotics and large amounts of intravenous fluids, improves chances for survival.

Early recognition and treatment of sepsis results in improved patient outcomes. The purpose of this SMO is to enhance early recognition, initiate early fluid resuscitation and alert the receiving hospital to patients that are potentially septic and allowing the ED to respond appropriately.

OBJECTIVE FINDINGS

All patients will be evaluated for sepsis if they exhibit any of the following infections:
- Pneumonia (cough/thick sputum)
- Urinary tract infection (painful urination, hematuria, change in urination)
- Altered mental status
- Blood stream/catheter related
- Abdominal pain, distention and/or diarrhea
- Wound infection, cellulitis
- Skin/soft tissue infection
- Device related infection

Any patient exhibiting signs of infection will be assessed for the following:
- Temperature > 100.4°F
- Temperature < 96.8°F
- Tachypnea > 20/min., PaCO2<32 mmHg; SpO2 ≤ 92%
- Tachycardia > 90 bpm
- Systolic BP < 90 mmHg
- MAP < 65
TREATMENT

Routine Medical Care / Routine Pediatric Care

__ Initiate IV fluid bolus
- 30 ml per kg bolus
- If history of CHF or pediatric patient reduce fluid bolus to 20 ml per kg
__ If after fluid bolus given and SBP < 90 mmHg or MAP remains less than 65, administer Dopamine drip

Documentation of adherence to SMO
All documentation must include the following criteria in the narrative:
- Supporting signs and symptoms relating to the infection
- Specific results of temperature, pulse, respirations, blood pressure and pulse oximeter readings
- Time the Sepsis Alert was called
- Amount of Normal Saline given

Precautions and Comments
- When giving fluid bolus frequently assess vital signs and lung sounds.

Medical Control Contact Criteria

__ If you have 2 or more signs of infection, a Sepsis Alert should be called via Merci or Telemetry and the appropriate SMO followed
__ Contact Medical Control whenever a question exists as to the best treatment course for the patient

General Information:
Mean Arterial Blood pressure is calculated as follows
\[
\text{MAP} = \frac{(2 \times \text{Diastolic Blood Pressure}) + \text{Systolic Blood Pressure}}{3}
\]

If BP = 90/40
\[
\text{MAP} = \frac{(2 \times 40) + 90}{3} = 57
\]

MEDICATION ADMINISTRATION CHART

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Original SMO Date: 06/17
Reviewed: 
Last Revision: 

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## SEPSIS SCREENING TOOL

Is the patient’s presentation suggestive of any of the following infections?

<table>
<thead>
<tr>
<th>Infection Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumonia (cough/thick sputum)</td>
<td>Abdominal pain, distension and/or diarrhea</td>
</tr>
<tr>
<td>Urinary tract infection</td>
<td>Wound infection, cellulitis</td>
</tr>
<tr>
<td>Altered mental status</td>
<td>Skin/soft tissue infection</td>
</tr>
<tr>
<td>Blood stream/catheter related</td>
<td>Device-related infection</td>
</tr>
</tbody>
</table>

Are any two of the following:

<table>
<thead>
<tr>
<th>Vital Sign</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature &gt; 100.4°F</td>
<td></td>
</tr>
<tr>
<td>Temperature &lt; 96.8°F</td>
<td></td>
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<td>Tachypnea &gt; 20/m, PaCO2 &lt; 32 mmHg; SpO2 ≤ 92%</td>
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</tr>
<tr>
<td>Tachycardia &gt; 90 bpm</td>
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<tr>
<td>Systolic BP &lt; 90 mm/Hg</td>
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</tr>
</tbody>
</table>

If presentation suggestive of infection and more than 2 the vital signs changes are positive, call a SEPSIS ALERT and follow SMO
Overview: This SMO will outline the identification and the pre-hospital management for a patient with traumatic shock.

1. Assess and treat patient utilizing Routine Trauma Care SMO. See Burn Treatment SMO or Pediatric Burn Treatment for treatment of burn shock.
2. Identify the type of shock

<table>
<thead>
<tr>
<th>Hypovolemic Shock</th>
<th>Non-hemorrhagic Shock</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compensated Shock</td>
<td>De-compensated Shock</td>
</tr>
<tr>
<td>De-compensated Shock</td>
<td>Neurogenic Shock</td>
</tr>
<tr>
<td>Obstructive (Cardiogenic) Shock</td>
<td></td>
</tr>
</tbody>
</table>

- **Skin temperature/quality**
  - White, cool, moist
  - White, cold, waxy
  - Warm, dry
  - Cool, clammy

- **Skin color**
  - Normal to Pale
  - Pale, cyanotic
  - Pink
  - Pale, cyanotic

- **Blood Pressure**
  - Normal
  - Decreased
  - Decreased
  - Decreased

- **Pulse**
  - Tachycardia
  - Tachycardia, that can progress to bradycardia
  - Bradycardia
  - Tachycardia

- **Level of consciousness**
  - Unaltered or slightly anxious
  - Altered-anxiety, confusion, or unresponsive
  - Unaltered, can be altered in head injury
  - Altered

- **Capillary Refill Time**
  - Normal
  - Delayed
  - Normal
  - Delayed

- **Pulse Pressure**
  - Normal or narrowed
  - Decreased
  - Decreased
  - Decreased

**TREATMENT**

- Prepare for rapid transport
- Assess patient, scene safety, mental status (AVPU)
- Control airway. See Airway Management SMO or Pediatric Airway Management.
- Control external bleeding with direct pressure, apply tourniquet, or place patient in pelvic binder as needed
- While not required, hemostatic agents and/or IT clamps may be utilized per manufacturer’s instructions per EMS System approval (prior to Medical Directors’ approval training must be submitted to IDPH with plans to assure ongoing competency)
- Spinal Restriction, if indicated
- Apply cardiac monitor
- IV/IO access (see fluid treatment below)
<table>
<thead>
<tr>
<th></th>
<th>Controlled Hemorrhage</th>
<th>Uncontrolled Hemorrhage</th>
<th>Neurogenic</th>
</tr>
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<tbody>
<tr>
<td>Fluid</td>
<td>20ml/kg <strong>Normal Saline</strong></td>
<td>Titrate to maintain goal SBP 80-90 mmHg or MAP of &gt;65 mmHg</td>
<td>Titrate to maintain goal SBP 90 mmHg or MAP between 65 to 90 mmHg</td>
</tr>
<tr>
<td>Blood Pressure Goal</td>
<td>SBP 80-90 mmHg</td>
<td>SBP 80-90 mmHg</td>
<td>SBP ≥90 mmHg</td>
</tr>
<tr>
<td>Medication Management</td>
<td></td>
<td>Consider <strong>TXA</strong> on patients with signs of hemorrhagic shock, tachycardia &gt; 110 and hypotension SBP &lt;100 and time less than 3 hour from injury.</td>
<td><strong>Dopamine</strong> 5-10 mcg/kg/min if bleeding controlled and volume replaced</td>
</tr>
</tbody>
</table>

- Patients with neurogenic shock can also have underlying hemorrhage. For patients with head trauma, manage hemorrhage to maintain perfusion to the brain.
- **Suspect obstructive shock (tension pneumothorax), perform Needle Decompression if present**
- Cover open wounds with sterile dressings.
- Reassess airway, breathing and circulation frequently
- Transport as soon as possible

**Documentation of adherence to SMO**
- Mechanism of injury
- Oxygen and airway interventions
- Trauma exam documented
- **Spinal Restriction**
- Hemorrhagic control, including method(s) utilized
- **IV, airway and Needle Decompression** interventions as accomplished. Document reassessment post intervention
- **Document medication administration**
- Provide documentation of assessment and notification of Medical Control for field categorization
Medical Control Contact Criteria

Contact Medical Control whenever a question exists as to the best treatment course for the patient

Mean Arterial Blood Pressure (MAP) is calculated as follows:

\[ 2 \times \text{Diastolic Blood Pressure} + \text{Systolic Blood Pressure} \]

\[ \frac{3}{3} \]

If BP = 90/40

\[ \text{MAP} = \frac{2 \times 40 + 90}{3} = 57 \]

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Original SMO Date: 07/04
Reviewed: Last Revision: 06/17

SMO: Trauma Hemorrhage/Shock Treatment

Current Version: 2018.1
Issued: 08/18
EMS/Region1 SMO
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Special Needs Patients

Overview: There are patients with a wide variety of special needs that may require additional support during transport. This includes patients with chronic illnesses who are dependent on medical devices. EMS providers will make every attempt to meet and maintain the additional support required for functional needs of these patients during the delivery of prehospital care.

Indication

_ Communication Barriers:
  - Language Barriers
    o Expressive and/or receptive aphasia
    o Nonverbal
    o Fluency in a different language than the EMS provider
  - Sensory Barriers
    o Visual Impairment
    o Auditory Impairment

_ Assistance Adjuncts:
  - Device examples include, but are not limited to:
    o Extremity prostheses
    o Hearing aids
    o Tracheostomy
    o Central Intravenous Catheters
    o CSF Shunt
    o Gastrostomy Tube (G-Tube or J-Tube)
    o Colostomy or Ileostomy
    o Ureterostomy or Nephrostomy Tube (or Foley Catheter)
  - Service Animals

OBJECTIVE FINDINGS

_ Identify the functional need from the patient, the patient’s family, bystanders, medic alert bracelets or documents, or the patient’s adjunct assistance devices
_ The performance of a physical examination should not intentionally be diminished during the assessment although the manner that the exam is performed may need to accommodate the specific needs of the patient
_ When possible, for patients with communication barriers, it may be desirable to obtain secondary confirmation of pertinent data (e.g., allergies) from the patient’s family, interpreters, or available written information
_ Presence of technology assisted devices, such as ventilators or central intravenous catheter and feeding tube pumps

Original SMO Date: 06/17
SMO: Special Needs Patients
Reviewed:
Last Revision:
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TREATMENT

__ Routine Medical Care or Routine Trauma Care
__ Bring care plans or Emergency Information Forms (EIF) to the hospital with the patient
__ Assess and communicate with the patient as much as possible. Do not make assumptions about
their level of understanding based on their appearance.
__ Bring necessary specialized equipment and medication with the patient, if possible

TRACHEOSTOMY

__ Assessment for displaced or obstructed tubes
__ Assessment for pneumothorax, pneumonia, reactive airway, and/or aspiration
__ Assessment for equipment issues such as ventilator malfunction, oxygen depletion, kinked tubing
__ Assessment for infection
__ If patient is on a ventilator, disconnect and attempt to oxygenate with bag using tracheostomy
  adaptor (if present) or mask over trach opening or stoma
__ If patient is not on a ventilator administer oxygen with bag or mask over trach as needed
__ Suction as needed, no more than 10 seconds. Insert no more than ¾ length of neck. If unable to
  suction because of thick secretions instill 2-3 ml NS, then suction
__ If inner cannula present request that the caregiver remove and clean with saline
__ If unable to ventilate cover opening and ventilate with bag and mask over mouth and nose
  (consider using a small pediatric mask even on adult patients)
__ If above does not work, remove tube and either reinsert new tube or use endotracheal tube of same
  approximate size.
__ If unable to find the opening, thread suction catheter through new tracheostomy tube or
  endotracheal tube and use catheter tip to probe opening, sliding tube over catheter into opening
  and then removing catheter. Attempt to ventilate and check breath sounds.

CENTRAL INTRAVENOUS CATHETER

__ Assessment for displaced or obstructed tubing
__ Assessment for pericardial tamponade
__ Assessment for pneumothorax, and/or pulmonary embolism
__ Assessment for infection
__ Assessment for equipment issues such as kinked or cracked tubing and infusion pump failure
__ For bleeding at site apply direct pressure
__ Clamp or tie the tubing if it is leaking
__ Refer to Central Line/Port-A-Cath Access SMO to access the central line
__ Administer IV/IO fluids for signs of shock

CSF SHUNT

__ Assessment for infection
__ Assessment for signs of increased intracranial pressure
__ Ventilate patient if signs of brain herniation (unresponsiveness with equal pupils, fixed, dilated, or
  unresponsive pupils, or increased blood pressure and decreased heart rate). Ventilation rate should
  be the higher end of normal or to an EtCO₂ of 35
COLOSTOMY OR ILEOSTOMY
- Assessment for infection, irritation/trauma, or peritonitis
- Direct pressure if bleeding at site
- Saline moistened sterile dressing covered by dry dressing if stoma is exposed
- Administer IV/IO fluids if signs of dehydration or shock

GASTROSTOMY (FEEDING) TUBE
- Assessment for displaced or obstructed tube
- Assessment for peritonitis or perforation of the stomach/bowel
- Assessment for equipment issues, such as kinked or cracked tubing or infusion pump failure
- Direct pressure if bleeding at the site
- Dry, sterile dressing over the area if tube is dislodged, or tape partially dislodged tube in place
- If tube is blocked (as noted by abdominal distension or vomiting) stop the feeding. Attach the connector to the tube and leave tube open and draining into a cup.
- Bring tubing with patient to the hospital for sizing purposes and reinsertion/replacement of the tube
- Administer IV/IO fluids if there are signs of dehydration or shock
- Transport patient on their right side or sitting up to avoid potential aspiration

URETEROSTOMY OR NEPHROSTOMY TUBE (OR FOLEY CATHETER)
- Assessment for infection, irritation/trauma, peritonitis, blocked urinary drainage
- Direct pressure if bleeding at site
- Saline moistened sterile dressing covered by dry dressing if stoma is exposed
- Administer IV/IO fluids if signs if dehydration/shock

FISTULA, SHUNT, OR ARTERIOVENOUS GRAFT (AV SHUNT)
- Blood pressure should not be taken in an arm with an AV Shunt
- IV should not be started in an arm with an AV Shunt
- Direct pressure to control bleeding at site

Documentation of adherence to SMO
- Documentation of the patient’s functional need and the avenues exercised to support the patient
- The patient’s primary language of fluency
- Identification of the person assisting with communication, if applicable
- The method the patient augments their communication skills
- Assistance adjuncts used by patient and adjuncts that accompanied patient during transport
- Results of treatments provided
- Attach any written communication between the EMS Provider and the patient
- Documentation of the complete and accurate transfer of information regarding the functional need to the receiving facility

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PRECAUTIONS AND COMMENTS

- If possible, consider transporting an individual who is fluent in the patient’s language with the patient. If this is not possible, consider the use of the following:
  - Medical translation cards
  - Online translation services
  - Any other translation service utilized by the individual agency

- Any written communication between the patient and the EMS provider becomes part of the medical record, even if it is written on a scrap of paper, and should be retained with the storage and confidentiality policies and procedures that are applicable to the written or electronic patient report.

- Patients with Down Syndrome, especially children, may have upper cervical instability and may be more prone to spinal cord injury. Consider spinal restriction in any mechanism of injury where there has been significant movement of the neck.

- If a caregiver is present, ask if there is a “best way” to move the patient.

- Service animals are not classified as a pet and should, by law, always be permitted to accompany the patient with the following exceptions:
  - The animal is out of control and the animal’s handler does not or cannot take effective action to control it.
  - The animal is not housebroken.

- Service animals are not required to wear a vest or a leash and it is illegal to make a request for special identification or documentation from the animal’s partner. EMS providers may only ask the patient if the service animal is required because of a disability and the form of assistance the animal has been trained to perform.

- EMS Providers are not responsible for the care of the service animal. If the patients is incapacitated and cannot personally care for the service animal a decision can be made whether or not to transport the animal with the patient.

- According to legislation in Illinois, any “EMR, EMT, EMT-I, A-EMT, or Paramedic may transport a police/arson dog injured in the line of duty to a veterinary clinic or similar facility if there are no persons requiring medical attention or transport at that time.”

- Should a service animal be transported by ambulance insure proper cleaning and decontamination of unit per Body Substance Isolation SMO.
SMO: Spinal Restriction

Overview: Spinal restriction should be considered on patients that have experienced a mechanism of injury. The purpose of this SMO is to give guidance on which patients should receive spinal restriction and how to accomplish this spinal restriction.

Indication
Any patient that experiences a mechanism of injury that creates the potential for a spine injury

OBJECTIVE FINDINGS
- Mental Status
- Neuro Assessment – LOC, pupils, and the ability to move and feel extremities

Selective Spinal Restriction

If any of the following is present or a spine injury is suspected then perform spinal restriction:
1. Any focal deficits noted in the neuro exam.
2. Patient age 65 or greater or less than 5 with a mechanism of injury.
3. Alteration in mental status.
4. Evidence of intoxication.
   - Evidence of intoxication may include: GCS less than 15, slurred speech, dilated pupils, flushed skin, unsteady gate, irregular behavior or presence of paraphernalia.
5. Inability of patient to communicate.
6. Distraction injury: any painful injury that may distract the patient from the pain of a spinal injury.
   - Examples of distracting injuries: long bone fractures, rib fractures, pelvic fractures, abdominal pain, large contusion, avulsion to the face or scalp, partial thickness burns greater than 10% TBSA or full thickness burns or any significantly painful injury.
7. Tenderness, swelling or deformity noted when the spine is palpated.
8. Pain to Range of Motion (ROM)
   A. ROM should not be assessed if any one of the above is present.
   B. To assess ROM have patient touch chin to chest, look up, and turn head from side to side. If any pain is noted stop this assessment.

If none of the above is present, spinal restriction is not required
## Spinal Restriction Techniques

### Assessment
1. Assess motor and sensory function before and after spinal restriction and regularly during transport.
2. Consider the use of $S_pO_2$ and $EtCO_2$ to monitor respiratory function

### Ambulatory patients
1. Alert cooperative patients may be allowed to self-limit movement but a cervical collar is and should be recommended
2. Apply appropriate sized cervical collar. If the cervical collar does not fit then, use alternate mode of stabilization.
3. Instruct patient to sit on the cot. Secure the patient in position of comfort. Limit the movement of the neck during this process.

### Non-ambulatory patients
1. Extricate patient as needed by the safest method available while limiting flexion, extension, rotation and distraction of the spine.
2. Tools such as pull sheets, scoop stretchers, KED, vacuum splints and backboards may be used.
3. Place the patient in the best position suited to protect the airway while applying appropriate spinal restriction.
4. If patient is transported on a hard device apply adequate padding

### Penetration trauma
Patients without spinal pain or neuro deficits do not need spinal restriction.

### Pediatric patients
1. Pediatric patients may not understand why they are being separated from their parent / guardian and are being placed in spinal restriction. Fighting with the pediatric patient may cause more harm to their spine. Consider leaving the child in their uncompromised car seat with added padding. If parent / guardian are available have them be involved in the child’s care. This may alleviate the need to force the patient into spinal restriction.
2. If child has been removed from the vehicle / car seat consider the use of pediatric restriction devices (or adult restriction with additional padding). If this causes increased agitation, movement and potential harm to the child consider placing the child in a car seat and pad to restrict movement.
3. During transport every effort should be made to safely restrain the pediatric patient.
Following is a list of acceptable methods / tools to achieve spinal restriction. This list is arranged from the least invasive to the most invasive.

1. Fowler’s, semi-fowler or supine positioning on cot with correctly sized cervical collar.
2. Supine position with vacuum splint from head to toe.
3. For pediatric patients, uncompromised child car seat with appropriate padding.
4. Supine position on scoop stretcher, secured with straps and appropriate padding including head blocks.
5. KED (vest type extrication device)
6. Supine position on long backboard, secured with straps and appropriate padding including head blocks

Documentation of adherence to SMO
- Mechanism of injury
- Neuro Assessment
- Spinal precaution completed
- Assessment findings before and after patient packaging

<table>
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<td>__ Contact Medical Control whenever a question exists as to the best treatment course for the patient</td>
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PRECAUTIONS AND COMMENTS
- Spinal precaution for at-risk patients is paramount. This is true whether or not a backboard is utilized. Minimal patient movement and the patient’s security to stretcher and /or backboard are necessary.
- Backboards should be used judiciously where the possible benefits outweigh the risks. Long backboards can cause discomfort and agitation in a patient, but the concerns and benefits of spinal restriction should take prevalence.
- In the event a patient is placed on a restriction device for extrication or before the arrival of the transporting unit a decision may be made by transporting unit whether the patient should be left on a restriction device for transport using guideline noted in this SMO.
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Stroke

Overview: Stroke, also known as cerebrovascular accident (CVA) is a sudden interruption in blood flow to the brain that results in neurological deficit. This interruption can be caused by ischemia (blockage) or hemorrhage (bleeding). It is the third leading cause of death in the United States and frequently leaves its survivors severely debilitated.

INFORMATION NEEDED
__ Presence of any of the stroke signs and symptoms
__ Completion of EMS Stroke Screening checklist

OBJECTIVE FINDINGS
__ Numbness or paralysis on one side of the body
__ Aphasia or slurred speech
__ Confusion or coma
__ Convulsions
__ Incontinence
__ Diplopia (double vision)
__ Headache
__ Dizziness or vertigo
__ Ataxia

TREATMENT
__ Routine Medical Care
__ Protect airway, suction as necessary (refer to Airway Management SMO or Pediatric Airway Management).
__ Seizure and vomiting precautions (refer to Adult Seizure SMO or Pediatric Seizure SMO)
__ Apply cardiac monitor; treat dysrhythmias according to appropriate SMO:
   Adult Bradycardia SMO
   Adult Narrow Complex Tachycardia SMO
   Adult Wide Complex Tachycardia SMO
   Pediatric Bradycardia SMO
   Pediatric Tachycardia SMO
__ Maintain head and neck in neutral alignment - do NOT flex the neck
__ If BP > 90 mmHg, elevate head of bed 15 - 30°

* For pain and sedation doses: Start dose low – slowly increase – Titrated to effect up to listed dose
TREATMENT – continued

- Initiate **IV Normal Saline** at TKO rate for normotensive patient
  - If altered sensorium, seizure, or focal neurological deficit, obtain and record blood sugar level.
    - If blood sugar < 80 administer **Glucagon** or **Dextrose IVP** and note response
  - If seizure activity, **Diazepam** or **Midazolam** (contact Medical Control for subsequent doses)
  - Monitor and record neurological status and any changes
  - Protect paralyzed limbs from injury.
  - RAPID transport per algorithm

**Documentation of adherence to SMO**
- Level of consciousness
- Blood glucose level
- Thorough completion of EMS Stroke Screening checklist
- Submit EMS Stroke Screening checklist with paper run sheet to receiving RN

---

**Medical Control Contact Criteria**

- Contact Medical Control whenever a question exists as to the best treatment course for the patient
- Contact EARLY to ready hospital for arrival of patient.
- For subsequent doses of **Diazepam** or **Midazolam** for seizure activity.

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**PRECAUTIONS AND COMMENTS**

- Caution should be exercised in patients with acute CVA’s and associated hypertension. Lowering of their blood pressure should be done gradually over several hours not minutes.
- Whenever possible, the EMT should establish the time of onset of stroke signs and symptoms.
- Use the EMS Stroke Alert Checklist

**MEDICATION ADMINISTRATION CHART**

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EMS Region 1 Suspected Stroke Patient Transport Algorithm

EMS called to patient with possible stroke symptoms

Stroke Screening Checklist/FAST Exam Positive

EMS to notify closest Acute Stroke Ready Hospital, Primary Stroke Center, or Comprehensive Stroke Center of potential Stroke Alert Patient enroute to their facility

Transport to ASRH, PSC, or CSC

Stroke Screening Checklist/FAST Exam Negative

Transport patient to hospital of choice or closest facility

**If patient is hemodynamically unstable or EMS notices deterioration of patient, notify medical control for direction and/or possible transport to closest hospital, REGARDLESS of hospital capabilities

Goal at ASRH, PSC, CSC:
tPA within 60 minutes of arrival

1. Door to MD ≤ 10 minutes
2. Door to Stroke Team ≤ 15 minutes
3. Door to CT time ≤ 25 minutes
4. Door to CT results ≤ 45 minutes
5. Door to Lab results ≤ 45 minutes
6. Check for contraindications for tPA
7. Administer tPA if no contraindications
8. Transfer to higher level of care if indicated (ASRH not capable of treating post tPA patient, patient need for intervention, etc)

ASRH: Acute Stroke Ready Hospital - a hospital that has been designated by IDPH as meeting the criteria for providing emergency stroke care
PSC: Primary Stroke Center - a hospital that has been certified by a Department-approved nationally recognized certifying body and designated by IDPH
CSC: Comprehensive Stroke Center - a hospital that has been certified by a Department-approved nationally recognized certifying body and designated by IDPH

Original SMO Date: 06/15
Reviewed: 06/17
Last Revision: 08/18

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Region 1 EMS Stroke Screening Checklist:

Date: ________________

Time Stroke Report sent via radio/phone from EMS to Receiving Hospital: ________________

Signs and Symptoms at time of event:

___ Sudden Numbness or weakness of face, arm, leg, especially one side
___ Sudden confusion, trouble speaking or understanding
___ Sudden trouble walking, dizziness, loss of balance or coordination
___ Sudden severe headache with no known cause
___ Sudden trouble with vision or seeing in one or both eyes

AND:

___ BGM/Glucose Level Checked: RESULT: ________________

DATE AND TIME PATIENT LAST KNOWN WELL: ___________________________

DATE AND TIME SYMPTOMS STARTED: ________________________________

CONTACT PERSON AND PHONE NUMBER: ______________________________

CINCINNATI PRE-HOSPITAL STROKE SCALE/FAST:

FACIAL DROOP: Ask the person to smile and/or show their teeth

___ Normal: Both sides of the face are equal, there is no droop noted to one side
___ ABNORMAL: One side the mouth or face is drooping, drooling or does not look the same

ARM DRIFT: Ask the person to hold both arms out in front of them for the count of 10

___ Normal: Both arms move equally
___ ABNORMAL: One arm drifts down or does not move at all, the other is normal

SPEECH: Have the person say a sentence (example: You can’t teach an old dog new tricks.)

___ Normal: Sentence sounds normal, no slurring words and person uses correct words
___ ABNORMAL: Patient unable to speak (mute), words are slurred, incorrect words used

TIME: If the time of Last Known Well is GREATER than 8 hours, then a stroke alert is NOT paged because the patient is outside of acute window.

If any of the above questions is scored abnormal, the chances are high that a stroke may be occurring. Notify Closest Emergent Stroke Ready Hospital or Primary Stroke Center Emergency Department with the above information to alert them of a potential stroke alert patient enroute to their facility.

YES / NO ___ Hospital (Receiving Facility) notified prior to arrival of possible stroke symptoms in patient.

EMS Personnel Signature: ______________________ Date: ______ Time: ______

Ambulance: __________________________

Original SMO Date: 06/15
Reviewed: 06/17
Last Revision: 08/18

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PROCEDURE: Surgical Cricothyrotomy

Overview: To provide emergency airway access. To relieve life-threatening upper airway obstruction in situations where manual maneuvers to establish an airway and attempts at ventilation have failed and endotracheal intubation cannot be performed.

OBJECTIVE FINDINGS

- Pt unconscious
- Unable to ventilate despite attempts to relieve obstruction
- Patient’s skin color may be pale, cyanotic, and/or ashen
- Possible facial trauma restricting normal intubation as an option

EQUIPMENT NEEDED

- Universal Precautions for blood and body fluid exposure
- Antiseptic solution
- Sterile 4 X 4’s
- Short scalpel
- Kelly forceps (optional)
- Airway catheter (Shiley trach tube) or ET tube
- BVM

PROCEDURE

- Unless contraindicated by trauma, place a small roll under patient's shoulders to slightly extend neck. In patients suspected of having a spinal injury, inline stabilization should be maintained throughout the procedure.
- Locate cricothyroid membrane by tilting patient's head back (if not contraindicated by possible spinal injury) and palpating for the V-Notch of the thyroid cartilage (Adams Apple)
- Prepare the skin with antiseptic solution and maintain aseptic technique
- Stabilize the thyroid cartilage between thumb and middle finger of one hand
- Press index finger of same hand between the thyroid and cricoid cartilage to identify cricothyroid membrane
- Using a short scalpel, make a 2cm vertical incision through the skin, to visualize the cricothyroid membrane.
- After identifying the cricothyroid membrane, make a horizontal incision using the short scalpel blade. An adequate incision eases the introduction of the trach tube.
- Maintain opening in cricothyroid membrane with finger/Bougie/ handle of scalpel
- Carefully insert the tracheostomy tube supplied in the surgical cricothyrotomy kit or ET tube (generally a size 6.0 for adults). Inflate the cuff.
PROCEDURE (continued)

- Provide ventilation by a bag-valve device with 100% oxygen
- Determine adequacy of ventilation through bilateral auscultation, epigastrum auscultation, and observation of rise and fall of the chest and adjust the tube if necessary.
- Securely fix the trach tube or ET tube in place, including manually guarding if necessary
- Provide update of patient's status to hospital and transport immediately

Documentation of adherence to Procedure

- Reason for procedure including physical findings
- Attempts to secure the airway by less invasive means (if applicable). If you did not make any attempt to secure the airway with any other way document why not.
- Type and size tube placed
- Results of procedure including physical findings
- If there was significant bleeding, include an estimate of the amount of blood lost and the method used to stop the bleeding

PRECAUTIONS AND COMMENTS

- Complications:
  - Incorrect placement
  - Bleeding
  - Damage to larynx and vocal cords
  - Pneumothorax/tension pneumothorax
  - Esophageal perforation
  - Thyroid injury
- Cautions:
  - Inability to identify anatomical landmarks
  - Underlying anatomical abnormality (e.g. tumor)
  - Use needle cricothyrotomy (transtracheal ventilation) for children under 10 years of age
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Syncope

Overview: Syncope is caused by a sudden decrease in cerebral perfusion. Various causes of syncope exist such as cardiac dysrhythmias, stroke, drug or alcohol intoxication, aortic stenosis, pulmonary embolism, and hypoglycemia.

INFORMATION NEEDED
__Duration of the syncopal episode
__Symptoms before syncopal episode (palpitation, seizure, incontinence, aura)
__Previous episodes of syncope
__Circumstances of occurrence (e.g. patient’s position before the event, severe pain, emotional stress)
__Other associated symptoms

OBJECTIVE FINDINGS
__Vital signs (especially pulse rate, quality, regularity)
__Other information as listed above

TREATMENT
CONSCIOUS, ALERT, ORIENTED WITH HISTORY OF SYNCOPAL EPISODE
__Routine Medical Care
Cardiac monitoring
__Obtain and record blood sugar level.
__Consider possible causes of syncope and/or altered sensorium:
  T - Trauma/Temperature
  I - Infection
  P - Psychiatric
  S - Stroke, Subarachnoid, Shock
  A - Alcohol and other Toxins
  E - Endocrine
  I - Insulin
  O - Oxygen/Opiates
  U - Uremia
TREATMENT
ALTERED SENSORIUM, UNCONSCIOUS, OR SIGNS OF HYPOPERFUSION AND/OR SYSTOLIC BP < 90

- Routine Medical Care
- Cardiac monitoring, 12 lead if capable
- IV access
- If blood sugar level < 80, administer:
  - Oral Glucose for conscious patient with gag reflex intact
  - Dextrose IVP; if blood glucose < 80 mg/dl Dextrose Dosing Chart
  - If unable to establish an IV to administer Dextrose and patient is without gag reflex Glucagon IM
- Naloxone IN, IVP or IM for suspected opiate overdose with respiratory depression consisting of respirations < 12 and/or very shallow respirations and/or signs of shock (titrate IV Naloxone to overcome respiratory depression and repeat as needed)
- Fluid bolus in 250 ml increments (20 ml/kg in Peds) with signs of hypotension

Documentation of adherence to SMO
- Cardiac rhythm
- Associated information such as duration of incident, blood sugar level and treatment given

PRECAUTIONS AND COMMENTS
- Because of the possible causes of syncope, encourage the patient with a syncopal episode to be transported for medical evaluation.

MEDICATION ADMINISTRATION CHART

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Original SMO Date: 07/04
Reviewed:
Last Revision: 06/17

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Adult Toxic Exposure formerly Poisoning and Overdose

Overview: Poisoning and overdose can take several forms and patients may range from mildly ill to very critical. This SMO is intended to guide EMS Responders in providing care for these patients. Variances in condition occur due to amount of substance involved, time of incident, type of substance involved, and whether it is an overdose or actual poison.

INFORMATION NEEDED

Surroundings and safety: check for syringes, containers, flammables, gas cylinders, etc. Note odors in house or surroundings.

For medication ingestion: bring container(s) with patient

For other poisoning and exposures: if possible, note identifying information, warning labels or numbers on packaging

Duration of illness: onset and progression of present state, antecedent symptoms such as headache, seizures, confusion, etc.

History of event: ingested substances, drugs, alcohol, toxic exposures, suicidal intention, and the work environment

Past medical history, psychiatric problems

If possible, corroborate information with family member or responsible bystander

OBJECTIVE FINDINGS

Breath odor

Needle tracks

Medic alert tags/ bracelets/medallions

Cardiac rhythm

Blood glucose level

Pulse oximetry

Vital signs

Pupil size

Skin appearance, color temperature

Lung sounds and airway secretions

Mucous membranes (dry or moist)

Respiratory depression or arrest due to overdose

TREATMENT

GENERAL TREATMENTS:

Routine Medical Care

Cardiac monitor

Advanced airway, if indicated

Original SMO Date: 07/04

Reviewed:

Last Revision: 06/17
TREATMENT (continued)

ANTIPSYCHOTICS WITH EXTRAPYRAMIDAL REACTION
__Collect information
   Potentially life threatening reactions include muscle tremors or stiffness, respiratory depression, cardiac compromise, and altered mental status
__Airway management as indicated
   **Diphenhydramine** IV or IM (repeat as needed)

NARCOTICS
__Ensure ABC’s, ventilation including oropharyngeal or nasal pharyngeal airways, supraglottic airway or intubation as indicated, suction prn (consider Naloxone before advanced airway)
   **Naloxone**, IN, IV or IM for altered mental status with severe respiratory depression or arrest; signs and symptoms of shock; or hypoventilation with a pulse oximetry reading < 94%

TRICYCLIC ANTIDEPRESSANTS (TCA)
__Collect information
__Airway management including pharyngeal airways, supraglottic airway or intubation as indicated
   **Sodium Bicarbonate** for hypotension, seizure, and/or QRS widening>0.10 seconds, repeat in 10 minutes.
   After total of 2mEq/kg **Sodium Bicarbonate**, consider **Lidocaine** OR **Amiodarone** over 10 minutes for ventricular dysrhythmias. Repeat as needed IV **Lidocaine** in 5-10 min. to a max total dose of 3mg/kg OR **Amiodarone** 150 mg over 10 minutes.
   Treat seizures according to **Seizure SMO**

CALCIUM CHANNEL BLOCKER OR BETA BLOCKER TOXICITY
__Collect information
__Airway management including oropharyngeal or nasal pharyngeal airways, supraglottic airway indicated
   In the setting of Bradycardia and/or hypotension caused by a Beta Blocker overdose high dose **Glucagon** may be needed for reversal. Follow standing **Bradycardia SMO**.

ORGANOPHOSPHATES SLUDGE (Salivation, lacrimation, urination, diaphoresis/diarrhea, gastric hypermotility, and emesis/eye [small pupils, blurry vision] characteristically seen)
__Collect information
__Airway Management including oropharyngeal or nasal pharyngeal airways, supraglottic airway
   Consider HazMat precautions
   **Atropine**: repeat q 2-5 min. until SLUDGE symptoms subside

---

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### UNKNOWN SUBSTANCE

- Collect information
- Airway management including oropharyngeal or nasal pharyngeal airways or supraglottic airway as indicated

If blood glucose ≤ 80mg/dl or if patient is known diabetic:
  - **Oral glucose** administration if patient is able to maintain their airway and follow commands
  - **Glucagon IVP or IM** if patient is *unable* to maintain their airway and follow commands

If glucose level is normal:
- Consider **Naloxone IN, IVP or IM** for altered mental status with severe respiratory depression or arrest; signs and symptoms of shock; or hypoventilation with a pulse oximetry reading < 94%
- Continuously monitor vital signs and cardiac rhythm during transport

### Documentation of adherence to SMO

- Airway management procedures as needed
- Oxygen provided as needed
- Information regarding substances involved: e.g. ingested, toxic exposure, suicidal thoughts, etc.
- Response to interventions
- Respiratory status with oxygen administration method and liter flow
- Pulse oximetry readings before and after therapeutic intervention
- Neurologic status after **Glucagon** or glucose administration
- Neurologic status after **Naloxone** administration

### Medical Control Contact Criteria

- Contact Medical Control whenever a question exists as to the best treatment course for the patient
PRECAUTIONS AND COMMENTS

- In suspected opiate overdoses, withhold advanced airway management until after the patient has received Naloxone.
- Significantly higher doses of Naloxone may be needed for treatment of overdoses with synthetic opioid compounds such as Demerol, Fentanyl, etc. After 4-6 mg of Naloxone with no response consider other causes. With the potential of potent synthetic opioid compounds like Carfentanil administer Naloxone; titrate to effect to a maximum dose of 10 mg.
- Consider titrating Naloxone to achieve adequate respiratory effort and avoid a withdrawal reaction or combativeness.
- Patients with TCA overdoses may experience rapid depression of mental status, sudden seizures, or worsening of vital signs.
- Caustic ingestions are usually caused by alkali (e.g. lye or Draino) or acids.
- Hydrocarbons include gasoline, kerosene, turpentine, Pine Sol, etc.
- Give nothing by mouth for hydrocarbon ingestion unless ordered by medical control.
- Poison Control 800-222-1222

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Return to Table of Contents
PROCEDURE: Transcutaneous Pacing

Overview: Transcutaneous pacing (TCP) stimulates the heart externally through the skin and muscles of the chest wall, causing the heart to contract and maintain cardiac output. TCP is a short-term intervention performed through large pacing electrodes positioned on the patient’s chest and back. TCP is indicated for symptomatic bradycardia.

**PROCEDURE**
- Explain procedure to patient
- IV / IO access
- Consider sedation
- Apply external pacer pads
- Turn on pacer
- Set the rate for pacing, start at 70 BPM, this may be adjusted for patient’s condition
- Slowly turn up the mA up until evidence of electrical capture occurs (pacer spike followed by a wide QRS on the monitor). Note: this is usually 50 - 150 mA. Use the lowest mA required for capture.
- Check for signs of mechanical capture – improvement in pulse, blood pressure, skin and increased EtCO₂
- If not present, increase mA until mechanical capture (palpable pulse) is evident.
- If procedure is unsuccessful follow the appropriate SMO as indicated by the presenting cardiac rhythm
- If procedure is successful, secure IV, O₂ and assist ventilations as indicated
- Continuously monitor patient enroute
- If patient deteriorates at any time proceed to appropriate SMO

**Documentation of adherence to Procedure**
- Patient’s presenting symptoms that necessitate pacing.
- Medications that were given to patient
- Documentation of both electrical capture and mechanical capture

**Medical Control Contact Criteria**
- Contact Medical Control whenever a question exists as to the best treatment course for the patient

**PRECAUTIONS AND COMMENTS**
- Be sure that patient has BOTH electrical capture and mechanical capture.
- Good skin contact is needed so may need to shave the hair on chest to ensure this.
- Electrical capture is usually characterized by a pacing spike before each QRS and by a widening of the QRS complex (looks like a PVC).

* For pain and sedation doses:
  - Start dose low – slowly increase –
  - Titrate to effect up to listed dose
**REGION I EMERGENCY MEDICAL SERVICES**
**STANDING MEDICAL ORDERS**
**BLS, ILS, ALS**

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**SMO: Transfer of Responsibility of Patient Care**

**Overview:** Patients entrust the medical community to care for them to the highest level possible. To that end, this policy is to delineate proper transfer of responsibility of patient care from the prehospital providers to hospital personnel.

**INFORMATION NEEDED**
- Level of care patient is currently receiving (BLS/ALS)
- Level of care to which patient is being transferred

**TRANSFER OF RESPONSIBILITY FOR PATIENT CARE**

**Emergency Department:**
- When a patient is transported to an emergency department, the transporting crew shall not leave the patient unattended in the department.
- Written or verbal acceptance of responsibility for the patient should be obtained.
- An ALS patient must be turned over to a registered nurse or physician.
- Care of a BLS patient may be turned over to Emergency Room Technician personnel.

**Other Hospital Departments or Medical Facilities (e.g., Nursing Homes):**
- When a patient is transported to a location in a hospital other than the emergency department or to a nursing home or other health care facility, the ambulance crew shall remain with the patient until a registered nurse, physician or appropriate healthcare provider accepts responsibility for the patient.
- Written or verbal acceptance of responsibility for the patient should be obtained.
- An ALS patient must be turned over to a registered nurse or physician.
- Care of a BLS patient may be turned over to an appropriate healthcare provider.

**Transfer of patient care to another prehospital care provider (in a situation other than a disaster or triage situation):**
- When the care of a patient is going to be transferred to another prehospital care provider, the ambulance crew shall remain with the patient until the second care provider arrives and accepts responsibility for the care of the patient.
- Written or verbal acceptance of responsibility for the patient should be obtained.
- The second provider shall not accept responsibility for the patient until the report is given. When care of patient is transferred to another prehospital provider, that provider must be of at least an equal, if not higher, degree of training (e.g., BLS crew must transfer to at least another BLS ambulance; care of the ALS patient may not be transferred to a BLS crew).

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Original SMO Date: 07/04
Reviewed: 
Last Revision: 06/17

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TRANSFER OF RESPONSIBILITY FOR PATIENT CARE (continued)

INTER-HOSPITAL TRANSFERS:
__ If a patient is receiving medications or is connected to medical equipment, and these medications and/or equipment are not within the scope of practice for this System’s Emergency Medical Services personnel, a nurse, physician or appropriate healthcare provider must be present on the transfer. A provider is prohibited from transferring such a patient without a nurse, physician or appropriate healthcare provider present during transfer.

Documentation of adherence to SMO
__ Document to whom the patient is being transferred to include level of licensure.

Medical Control Contact Criteria
__ Contact Medical Control whenever a question exists as to the best treatment course to the patient.

PRECAUTIONS AND COMMENTS
- Abandonment is defined as terminating medical care without legal excuse or turning care over to personnel who do not have training and expertise appropriate for the medical needs of the patient.
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Transport Template (Transporting to Other Than the Closest Hospital)

**Please note: Until this Template is completed and approved by EMS System and IDPH please utilize the SMO for Closest Hospital Transport**

Overview: This template may be completed by Provider agencies with a specific plan of which hospital to transport patients to. This plan must be coordinated with their EMS System and approved by their EMSMD. The plan will take into account local resources. It can be added to the providers system plan and then function as off-line medical control.

Name of Provider agency: _______________________________________________________

Provider Number: ____________________________________________________________________

EMS System: _______________________________________________________________________

<table>
<thead>
<tr>
<th>Hospitals the Provider Agency Transports to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of Hospital</td>
</tr>
<tr>
<td>------------------</td>
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</tbody>
</table>

* Average Transport Time – is time when leaving the scene until arrival at hospital. Unless otherwise noted this is calculated using 10 sequential runs to that hospital.

The Regional list of Hospitals and their resource will be added to this the provider should add any hospitals they transport to that are not on the list.
Hospital choice should be based on medical benefits and associated risks and should be made in accordance with:

- Patient request
  - Location of regular care, primary medical doctor and/or medical records
  - Insurance / HMO
- Patients medical condition:
  - Mechanism of injury / nature of illness (physiologic factors)
  - Perfusion status and assessment findings (anatomical factors)
  - Transport distance and time (environmental factors)
- Capacity of the nearest facility or facility of choice
- Available resources of the transporting agency
- Traffic and weather conditions

For the purpose of this SMO a stable patient is defined as:

- Alert and orientated times 4
- Patient has apparent decision-making capacity
- Vitals within normal limits

Patients may be transported as follows:

A. Stable patients that have apparent decision-making capacity may be taken to the following hospitals after informing them of the closest hospital and any relevant specialties at the other hospital in the area.

- ____________________________________________
- ____________________________________________
- ____________________________________________
- ____________________________________________
- ____________________________________________
- ____________________________________________
- ____________________________________________
- Any relevant additions to this category: __________________________________________________________
  __________________________________________________________
  __________________________________________________________
B. Unstable patients that have apparent decision-making capacity may be taken to the following hospitals after informing them of the closest hospital and any relevant specialties at the other hospital in the area. When the EMS provider has medical concerns with the patient’s decision, Medical Control should be contacted for additional direction.

- __________________________________________________________________________
- __________________________________________________________________________
- __________________________________________________________________________
- __________________________________________________________________________
- __________________________________________________________________________
- __________________________________________________________________________
- Any relevant additions to this category:

- __________________________________________________________________________

C. Stable patients that do not have apparent decision-making capacity: If family, preferably POA, or member of their health provider team is available their input may be considered in the transport decision. Transport time and relevant specialties should also be considered. The patient may be taken to the following hospitals.

- __________________________________________________________________________
- __________________________________________________________________________
- __________________________________________________________________________
- __________________________________________________________________________
- __________________________________________________________________________
- __________________________________________________________________________
- Any relevant additions to this category:
D. Unstable patients that do not have apparent decision-making capacity: If family, preferably POA, or member of their health provider team is available their input may be considered in the transport decision. Transport time and relevant specialties should also be considered. Medical Control should be contacted if additional transport time is a significant factor when transporting to other than the closest hospital. The patient may be taken to the following hospitals:

- _______________________________________
- _______________________________________
- _______________________________________
- _______________________________________
- _______________________________________
- _______________________________________
- _______________________________________
- Any relevant additions to this category:

- _______________________________________

E. In the following specialty care areas note how this impacts the providers transport decisions in any of the above situations.

1. Trauma Patients
2. Stroke Patients
3. Chest Pain / STEMI
4. EDAP/SEDP

**Documentation of adherence to SMO**

__Document the name of the hospital the patient requests transport to, their condition (stable/unstable) and if they have decision-making capacity

__Document information that was given to patient

**Medical Control Contact Criteria**

__Contact Medical Control whenever a question exists as to the best treatment course for the patient

This plan has been approved by:

<table>
<thead>
<tr>
<th>Provider agency signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS System Coordinator</td>
<td>Date</td>
</tr>
<tr>
<td>EMSMD</td>
<td>Date</td>
</tr>
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</table>
## Region One Hospitals

### Specialty Capabilities

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Location</th>
<th>Chest Pain Center</th>
<th>EDAP</th>
<th>EPH Resource Hospital</th>
<th>Stroke Center</th>
<th>Trauma Center</th>
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</thead>
<tbody>
<tr>
<td>Botsford Memorial Hospital</td>
<td>Butler, WI</td>
<td>Cash Lab</td>
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<td></td>
<td>Wisconsin Level II</td>
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<tr>
<td>CGH Medical Center</td>
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<td>Acute Stroke Ready Hospital</td>
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<td>Acute Stroke Ready Hospital</td>
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<tr>
<td>Mercy Hospital</td>
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<td>EDAP</td>
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<td>Mercy Medical Center</td>
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<td>Cash Lab</td>
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<tr>
<td>Mercy/Rehab</td>
<td>Rockford, IL</td>
<td>Chest Pain Center with Primary PCI</td>
<td>EDAP</td>
<td>Comprehensive Stroke Center</td>
<td>Illinois Level 1</td>
<td>Acute Stroke Ready Hospital</td>
</tr>
<tr>
<td>Midwest Medical Center</td>
<td>Oelwein, IL</td>
<td>No Cash Lab</td>
<td></td>
<td></td>
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</tr>
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<td>Monroe Clinic</td>
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<td>EDAP</td>
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<tr>
<td>Northwestern Medicine Oakwood Hospital</td>
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<td>EDAP</td>
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<td>Acute Stroke Ready Hospital</td>
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<tr>
<td>Northwestern Medicine Valley West Hospital</td>
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<td>Acute Stroke Ready Hospital</td>
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<tr>
<td>OSF Saint Francis Medical Center</td>
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<td>EDAP</td>
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<td>Illinois Level 1</td>
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<tr>
<td>Perry Memorial Hospital</td>
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<tr>
<td>Rockford Community Hospital</td>
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<td>Acute Stroke Ready Hospital</td>
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<tr>
<td>St Margaret’s Hospital</td>
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<td>EDAP</td>
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<td>Acute Stroke Ready Hospital</td>
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<td>Swedish American Hospital</td>
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<td>UnityPoint Health - Findlay Hospital</td>
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<td>Cash Lab</td>
<td>EDAP</td>
<td></td>
<td></td>
<td>Primary Stroke Center</td>
</tr>
</tbody>
</table>

### Definitions/Abbreviations:

- **Level I**: Versatile trauma center capable of performing any type of trauma care, including Level II and III. Also receives Level I transfers and provides the most comprehensive trauma care for the most severe injuries.
- **Level II**: Provides comprehensive care for all types of trauma, including management of severe injuries. Facilities are expected to be staffed to receive Level I transfers.
- **Level III**: Provides care for trauma patients with fewer complications and is capable of performing basic trauma care.
- **Level IV**: Provides basic trauma care and is capable of performing basic trauma care.
- **EDAP**: Emergency Department Approved for Pediatrics
- **SEDP**: Specialized Emergency Department for Pediatrics

### Additional Notes:
- **Acute Stroke Ready Hospital**: An Acute Stroke Ready Hospital meets specific requirements set by The Joint Commission to focus on emergency intervention and allow the patient to be treated and transferred.
- **Primary Stroke Center**: A Primary Stroke Center, in addition to emergency intervention, has a dedicated stroke unit that provides standardized care with a focus on patient outcome.
- **Comprehensive Stroke Center**: A Comprehensive Stroke Center, in addition to emergency intervention, has staff and specialized facilities that treat complex stroke cases such as large vessel occlusions.
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Closest Hospital Transport

**Overview:** All patients in EMS Region 1 should be transported by EMS Region 1 vehicles to the closest hospital except in one of the following situations (see flowchart):

**GUIDELINES**

A. **Stable Patients**

   If the patient is *stable* and the *medical benefits* to transport to other than the closest hospital outweigh the *risks* to the patient, the patient may be transported to the requested hospital if:

   1. The patient release form is completed
   2. Determined by the EMSMD or designee, after contacting Medical Control, transfer is appropriate

   In each of these situations the patient must be determined to be medically stable. The EMT, once the request is made known to them, should contact Medical Control and discuss the request with the EMSMD or designee. If it is determined that transporting the patient to a more distant medical center does not present undue risk after discussing the case with the EMSMD or designee, the EMSMD or designee will contact the receiving medical center and give them a full report on the patient's condition.

   Unless the receiving hospital is on bypass status, it will be assumed that they will have the capacity and willingness to treat such a patient since they will be open to receive any and all ambulance runs.

B. **Unstable Patients**

   If the patient is unstable and refusing to go to the closest hospital, this will be communicated to the EMSMD or designee at Emergency Department Medical Control. He/she will evaluate all risks and benefits and direct the EMTs as he/she sees appropriate. Sole responsibility of where the patient is transported rests with the EMSMD or designee through the Emergency Department Medical Control in such cases. Unstable patient bypasses must be documented on the telemetry log.

C. **Trauma Patients**

   Trauma patients should be brought to the closest trauma center based on IDPH and Region I Trauma recommendations.
Documentation of adherence to protocol:
__Contact with Medical Control to establish state of hospital diversion status
__Orders received from Medical Control regarding patient destination.

<table>
<thead>
<tr>
<th>Medical Control Contact Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>__ Verification of hospital diversion status</td>
</tr>
<tr>
<td>__ Orders received from Medical Control regarding patient destination</td>
</tr>
</tbody>
</table>

PRECAUTIONS AND COMMENTS
- Be familiar with local System and State procedure regarding Closest Hospital Transport.
- Be advised to call Medical Control EARLY to determine patient destination.
Patient Request to By-pass Closest Facility

Patient requests By-pass

Inform Medical Control of Patient Wishes and Provide Patient Report

Medical Control Approves By-pass?
Yes → Honor patient wishes
No → Inform patient of Medical Control Advice and explain risks

Patient or Guardian/POA agree with advice?
Yes → Transport to closest
No → Patient competent?
Yes → Explain Risks
  Complete Waiver
  Honor patient wishes

**NOTE:** Notification and permission from Medical Control will be done from the scene
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Traumatic Arrest

**Overview:** In the event of traumatic arrest safe and rapid transport is the priority. Care should be initiated and scene time should be limited.

**INFORMATION NEEDED**
- Witnessed trauma event and estimated down time
- Any bystander CPR and / or treatment prior to arrival
- Mechanism of injury (blunt versus penetrating trauma)

**OBJECTIVE FINDINGS**
- Physical signs of trauma and / or blood loss
- GCS = 3
- No respiratory effort
- No pulse

**TREATMENT**
- **Routine Trauma Care**
- Assess patient and confirm pulselessness
- If no signs of life consider pronouncement in the field ([Notification of Coroner SMO](#))
- Start CPR
- Attach defibrillator, check for pulses, and confirm rhythm
  - If V-Fib or PEA, follow [V-Fib and PEA SMO](#)
- If possible, control external bleeding with direct pressure
- **Needle Decompression** if tension pneumothorax suspected
- Obtain quick, resuscitation-oriented patient history
- Transport as soon as possible

**Documentation of adherence to SMO**
- Mechanism of injury
- Vital signs on arrival
- Time CPR started
- Time defibrillator applied
- Documentation of appropriate cardiac SMO procedure if indicated
- Advanced airway and **IV access interventions** documented

**PRECAUTIONS AND COMMENTS**
- Consider cardiac etiology in older patients with low probability - mechanism of injury
- Consider minimal disturbance of a potential crime scene

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**Original SMO Date:** 07/04  
**Reviewed:**  
**Last Revision:** 06/17

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REGION I EMERGENCY MEDICAL SERVICES
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SMO: Ventricular Fibrillation/ Pulseless Ventricular Tachycardia

Overview: Pulseless Ventricular Tachycardia is characterized by the presence of wide complexes of ventricular origin without the presence of a pulse. It is treated in the same manner as Ventricular Fibrillation.

Torsade’s de Pointes is an Atypical Ventricular tachycardia (Torsade’s de Pointes or twisting of the pointes) is where the QRS axis swings from a positive to a negative direction in a single lead. This rhythm is responsive to Magnesium Sulfate.

Ventricular Fibrillation is the totally disorganized depolarization and contraction of small areas of ventricular myocardium – there is no effective ventricular pumping activity. The ECG of ventricular fibrillation shows a fine to coarse zigzag pattern without discernible P waves or QRS complexes. V-Fib is never accompanied by a pulse or a blood pressure.

INFORMATION NEEDED
__History of arrest
__Witnessed collapse (time down and preceding symptoms)
__Unwitnessed collapse (time down and preceding symptoms if known)
__Bystander CPR and treatments, including First Responder, AED or PAD defibrillation, given prior to arrival
__Past medical history: diagnosis, medications
__Scene (evidence of drug ingestion, hypothermia, trauma, valid DNR/POLST form, nursing home, or hospice patient)
__Continue resuscitation for at least 20 minutes (non-trauma) before moving or seeking order to cease resuscitation (see In-Field Termination SMO)

OBJECTIVE FINDINGS:
__Confirm apnea, pulselessness
__Confirm V-Fib or V-Tach on monitor

TREATMENT
__Assess ABC’s
__CPR/AED per AHA guidelines
__Defibrillate at 360J for monophasic; OR equivalent biphasic (see Precautions and Comments)
__Resume CPR immediately, CPR and defibrillation is the primary treatment, the following should be added as soon possible however prevent and minimize CPR interruptions.
TREATMENT – continued

- IV or IO placement
- **Epinephrine**
- **Amiodarone OR Lidocaine**
- Advanced Airway Management; See Airway Management SMO
- If available, attach waveform capnography to ET tube for confirmation of ET tube placement and verification of high quality CPR. EtCO₂ reading > 10 mmHg is optimal.
- If Polymorphic VT (Torsade’s de Pointes) **Magnesium Sulfate** – **Magnesium Sulfate**
- **Calcium Gluconate** for suspected hyperkalemia (renal failure, dialysis, potassium ingestion), or tricyclic or phenobarbital overdose
- If patient is restored to a perfusing rhythm and an antiarrhythmic has not been given administer **Amiodarone** or **Lidocaine** to reduce the likelihood of ventricular fibrillation recurring (see Precautions and Comments)
- If patient is hypotensive (SBP < 90) consider fluid bolus and refer to Cardiogenic Shock SMO.
- If waveform capnography is in place, EtCO₂ readings between 35-45 mmHg are optimal.
- Perform 12 lead ECG if available

Medical Control Contact Criteria

- Contact Medical Control whenever a question exists as to the best treatment course for the patient

Documentation for Adherence to SMO

- Proper defibrillation (monophasic 360J or equivalent biphasic)
- Intubation with confirmation of proper placement
- IV placement

PRECAUTIONS AND COMMENTS

- Defibrillation energy levels vary according to the type of waveform, monophasic or biphasic.
  - Many devices used for public access defibrillation programs have a single energy setting.
  - For equivalent biphasic energy level use manufactures recommendations, typically 120 to 200 J, if unknown select 200 J.
- **Epinephrine, Atropine, Lidocaine, and Naloxone** may be administered via ETT. ET drug doses are double the standard IV dose. Maximum total doses of drugs are also doubled for ETT administration. Relative effectiveness of ET drug administration is in question. See Medication Administration Chart.
- If using **Amiodarone** drip, add 150 mg to 100ml bag with 60drip tubing and attach to existing line and run wide open (over 10 minutes).

MEDICATION ADMINISTRATION CHART

<table>
<thead>
<tr>
<th>Peds</th>
<th>3 kg</th>
<th>4 kg</th>
<th>5 kg</th>
<th>6-7 kg</th>
<th>8-9 kg</th>
<th>10-11 kg</th>
<th>12-14 kg</th>
<th>15-18 kg</th>
<th>19-23 kg</th>
<th>24-29 kg</th>
<th>30-36 kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult</td>
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<td></td>
<td><strong>50</strong> kg</td>
<td><strong>60</strong> kg</td>
<td><strong>70</strong> kg</td>
<td><strong>80</strong> kg</td>
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<td><strong>130</strong> kg</td>
<td><strong>140</strong> kg</td>
<td><strong>150 +</strong> kg</td>
</tr>
<tr>
<td>Standard Dosing</td>
<td>ILS/ALS</td>
<td>BLS</td>
<td>EMR</td>
<td>Dextrose</td>
<td>Dopamine</td>
<td>Mag Sulfate</td>
<td>Fentanyl IN</td>
<td>Midazolam IN</td>
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REGION I EMERGENCY MEDICAL SERVICES  
STANDING MEDICAL ORDERS  
ILS, ALS

SMO: Adult Wide Complex Tachycardia

Overview: Wide complex tachycardia is most often ventricular in origin but may be supraventricular tachycardia with aberrant conduction. A widened QRS complex is defined as greater than or equal to 0.12 seconds.

INFORMATION NEEDED
__History of arrest
__Witnessed collapse: time down and preceding symptoms
__Unwitnessed collapse: time down and preceding symptoms if known
__Bystander CPR and treatments, including First Responder, AED or PAD defibrillation, given prior to arrival
__Past medical history: diagnosis, medications
__Scene: evidence of drug ingestion, hypothermia, trauma, valid DNR/POLST form, nursing home, or hospice patient

OBJECTIVE FINDINGS-- STABLE
__No signs of poor perfusion
__Normal mental status

TREATMENT
__Routine Medical Care
__For regular monomorphic Wide Complex Tachycardia consider Adenosine
__For monomorphic Wide Complex Tachycardia administer Amiodarone OR Lidocaine
__For Polymorphic VT (Torsade’s de Points) Magnesium Sulfate (see Magnesium Sulfate Administration Chart); if refractory to Magnesium Sulfate does not convert, give Amiodarone or Lidocaine
__If at any time the patient becomes unstable proceed to unstable SMO and cardioversion

OBJECTIVE FINDINGS - UNSTABLE
__AMS
__Signs of poor perfusion (chest pain, dyspnea, rales, hypotension-systolic BP<90 related to the tachycardia

* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose

Original SMO Date: 07/04  
Reviewed:  
Last Revision: 06/17  
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**TREATMENT**

- **Routine Medical Care**

- Synchronized cardioversion (defibrillate for polymorphic): 100 J biphasic, if unsuccessful increase in a step-wise fashion. Consider Midazolam or Diazepam for sedation if patient is awake.

- Upon successful cardioversion, or if cardioversion fails use of one of the following:
  - Lidocaine
  - Amiodarone
  - Magnesium Sulfate (see Magnesium Sulfate Administration Chart) for Polymorphic VT (Torsade’s de Points)

**Medical Control Contact Criteria**

- Contact Medical Control whenever a question exists as to the best treatment course for the patient

**Documentation of adherence to SMO**

- Stability documented (chart contains the word “stable” or “unstable”)
- Unstable patients that receive cardioversion

**PRECAUTIONS AND COMMENTS**

- A widened QRS complex is defined as greater than or equal to 0.12 seconds.
- A wide complex tachycardia is most often ventricular in origin but may be supraventricular tachycardia with aberrant conduction.

**MEDICATION ADMINISTRATION CHART**

<table>
<thead>
<tr>
<th>Peds</th>
<th>3 kg</th>
<th>4 kg</th>
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<tbody>
<tr>
<td>Adult</td>
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Original SMO Date: 07/04
Reviewed:
Last Revision: 06/17
SMO’s that have been removed or renamed from the previous version:

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<td>Pediatric Trauma Pediatrics</td>
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<tr>
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<td>Renal Emergencies Adult Medical</td>
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<tr>
<td>Trauma - Chest and Abdomen Trauma</td>
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<tr>
<td>Trauma – Head and Facial Trauma</td>
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<tr>
<td>Trauma - Neck and Spinal Cord Trauma</td>
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</tr>
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</table>

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REGION I
EMERGENCY MEDICAL SERVICES

Appendices

As prepared by:

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Richard Robinson, SwedishAmerican Hospital EMS System
Anthony Woodson, Northwestern Medicine Kishwaukee Hospital EMS System

IDPH Approval
Date: December 6, 2017
## SMO: Region 1 Acceptable Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>A &amp; O x 4</td>
<td>Alert, oriented person to date, time, place</td>
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<tr>
<td>Abd</td>
<td>Abdomen</td>
</tr>
<tr>
<td>ALS</td>
<td>Advanced life support</td>
</tr>
<tr>
<td>AM or a.m.</td>
<td>Between 12 midnight and 12 noon</td>
</tr>
<tr>
<td>AMA</td>
<td>Against Medical Advice</td>
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<tr>
<td>AMI or MI</td>
<td>Acute Myocardial Infarction</td>
</tr>
<tr>
<td>AMP</td>
<td>Ampule</td>
</tr>
<tr>
<td>Approx</td>
<td>Approximate or Approximately</td>
</tr>
<tr>
<td>ASHD</td>
<td>Arteriosclerotic Heart Disease</td>
</tr>
<tr>
<td>Assist or asst</td>
<td>Assistance</td>
</tr>
<tr>
<td>BBB</td>
<td>Bundle Branch Block</td>
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<tr>
<td>Bilat</td>
<td>Bilateral</td>
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<tr>
<td>BLS</td>
<td>Basic life support</td>
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<tr>
<td>BM</td>
<td>Bowel Movement</td>
</tr>
<tr>
<td>BOW</td>
<td>Bag of Waters</td>
</tr>
<tr>
<td>BP</td>
<td>Blood Pressure</td>
</tr>
<tr>
<td>CA</td>
<td>Cancer</td>
</tr>
<tr>
<td>CAD</td>
<td>Coronary Artery Disease</td>
</tr>
<tr>
<td>C-collar</td>
<td>Cervical Collar</td>
</tr>
<tr>
<td>CHF</td>
<td>Congestive heart failure</td>
</tr>
<tr>
<td>cm</td>
<td>Centimeter</td>
</tr>
<tr>
<td>CMS</td>
<td>Circulation, Motion, Sensation</td>
</tr>
<tr>
<td>CNS</td>
<td>Central nervous system</td>
</tr>
<tr>
<td>C/O</td>
<td>Complains of</td>
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<tr>
<td>COPD</td>
<td>Chronic Obstructive Pulmonary Disease</td>
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<tr>
<td>C-section or C-sect</td>
<td>Cesarean Section</td>
</tr>
<tr>
<td>CSF</td>
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<tr>
<td>C-spine</td>
<td>Cervical spine</td>
</tr>
<tr>
<td>CVA</td>
<td>Cerebrovascular accident</td>
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<tr>
<td>DC or dc</td>
<td>Discontinue</td>
</tr>
<tr>
<td>Dept</td>
<td>Department</td>
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<tr>
<td>Dx</td>
<td>Diagnosis</td>
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<td>DTs</td>
<td>Delirium Tremens</td>
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<tr>
<td>D5W</td>
<td>5% Dextrose in water</td>
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<tr>
<td>ECG or EKG</td>
<td>Electrocardiogram</td>
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<tr>
<td>EDC</td>
<td>Expected date of confinement</td>
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<tr>
<td>ENT</td>
<td>Ears, Nose and Throat</td>
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<td>ED</td>
<td>Emergency Department</td>
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<tr>
<td>ET</td>
<td>Endotracheal</td>
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<tr>
<td>Exam</td>
<td>Examination</td>
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<td>Extr or EXT</td>
<td>Extremities</td>
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[Return to Table of Contents](#)
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>FB</td>
<td>Foreign Body</td>
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<td>FHT</td>
<td>Fetal Heart Tones</td>
</tr>
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<td>Fib</td>
<td>Fibrillation</td>
</tr>
<tr>
<td>Fx</td>
<td>Fracture</td>
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<td>GCS</td>
<td>Glasgow Coma Score</td>
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<tr>
<td>GI</td>
<td>Gastrointestinal</td>
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<tr>
<td>Gram</td>
<td>Gram</td>
</tr>
<tr>
<td>gr</td>
<td>Grain</td>
</tr>
<tr>
<td>gtt(s)</td>
<td>Drop(s)</td>
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<tr>
<td>GU</td>
<td>Genitourinary</td>
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<tr>
<td>H20</td>
<td>Water</td>
</tr>
<tr>
<td>HEENT</td>
<td>Head, Eyes, Ears, Nose and Throat</td>
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<tr>
<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
</tr>
<tr>
<td>H/O</td>
<td>History of</td>
</tr>
<tr>
<td>HPI</td>
<td>History of present illness</td>
</tr>
<tr>
<td>hr</td>
<td>Hour</td>
</tr>
<tr>
<td>HR</td>
<td>Heart rate</td>
</tr>
<tr>
<td>HTN</td>
<td>Hypertension</td>
</tr>
<tr>
<td>Hx</td>
<td>History</td>
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<td>Intermediate Life Support</td>
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<td>IM</td>
<td>Intramuscular</td>
</tr>
<tr>
<td>IN</td>
<td>Intranasal</td>
</tr>
<tr>
<td>irreg</td>
<td>Irregular</td>
</tr>
<tr>
<td>IV</td>
<td>Intravenous</td>
</tr>
<tr>
<td>JVD</td>
<td>Jugular vein distention</td>
</tr>
<tr>
<td>K</td>
<td>Potassium</td>
</tr>
<tr>
<td>kg</td>
<td>Kilogram</td>
</tr>
<tr>
<td>Lt</td>
<td>Left</td>
</tr>
<tr>
<td>L or l</td>
<td>Liter</td>
</tr>
<tr>
<td>lb</td>
<td>Pound</td>
</tr>
<tr>
<td>LLQ</td>
<td>Left lower quadrant</td>
</tr>
<tr>
<td>LMP</td>
<td>Last menstrual period</td>
</tr>
<tr>
<td>LOC</td>
<td>Loss of consciousness</td>
</tr>
<tr>
<td>LUQ</td>
<td>Left upper quadrant</td>
</tr>
<tr>
<td>mcg</td>
<td>micrograms</td>
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<tr>
<td>Med(s)</td>
<td>Medication(s)</td>
</tr>
<tr>
<td>mEq or meq</td>
<td>Milliequivalent</td>
</tr>
<tr>
<td>mg</td>
<td>Milligrams</td>
</tr>
<tr>
<td>mL</td>
<td>Milliliter</td>
</tr>
<tr>
<td>mod</td>
<td>Moderate</td>
</tr>
<tr>
<td>N &amp; V or N/V</td>
<td>Nausea and vomiting</td>
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<tr>
<td>N/A or NA</td>
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<td>NaHCO3</td>
<td>Sodium Bicarbonate</td>
</tr>
<tr>
<td>Neg</td>
<td>Negative</td>
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<td>Neuro</td>
<td>Neurology / Nervous system</td>
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<td>NKA</td>
<td>No known allergies</td>
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<td>Description</td>
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<tr>
<td>--------------</td>
<td>-------------</td>
</tr>
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<td>NPO</td>
<td>Nothing by mouth</td>
</tr>
<tr>
<td>NRB mask</td>
<td>Non-rebreather mask</td>
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<td>NS</td>
<td>Normal saline</td>
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<tr>
<td>NSR</td>
<td>Normal sinus rhythm</td>
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<tr>
<td>NTG</td>
<td>Nitroglycerin</td>
</tr>
<tr>
<td>O2</td>
<td>Oxygen</td>
</tr>
<tr>
<td>OB</td>
<td>Obstetric</td>
</tr>
<tr>
<td>OD</td>
<td>Overdose</td>
</tr>
<tr>
<td>P</td>
<td>Pulse</td>
</tr>
<tr>
<td>PAC</td>
<td>Premature atrial contraction</td>
</tr>
<tr>
<td>PASG</td>
<td>Pneumatic anti-shock garment</td>
</tr>
<tr>
<td>PAT</td>
<td>Paroxysmal atrial tachycardia</td>
</tr>
<tr>
<td>PE</td>
<td>Physical examination</td>
</tr>
<tr>
<td>PE</td>
<td>Pulmonary Embolism</td>
</tr>
<tr>
<td>PEDS</td>
<td>Pediatric</td>
</tr>
<tr>
<td>PERRL</td>
<td>Pupils equal, round and reactive to light</td>
</tr>
<tr>
<td>PMH</td>
<td>Past medical history</td>
</tr>
<tr>
<td>PJC</td>
<td>Premature junctional contraction</td>
</tr>
<tr>
<td>PM or p.m.</td>
<td>Between 12 noon and 12 midnight</td>
</tr>
<tr>
<td>PND</td>
<td>Paroxysmal nocturnal dyspnea</td>
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<tr>
<td>PRN</td>
<td>As occasion requires / as needed</td>
</tr>
<tr>
<td>Pt</td>
<td>Patient</td>
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<tr>
<td>PVC</td>
<td>Premature ventricular contraction</td>
</tr>
<tr>
<td>q</td>
<td>Every</td>
</tr>
<tr>
<td>R or resp</td>
<td>Respiration</td>
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<tr>
<td>Reg</td>
<td>Regular</td>
</tr>
<tr>
<td>RLQ</td>
<td>Right lower quadrant</td>
</tr>
<tr>
<td>RUQ</td>
<td>Right upper quadrant</td>
</tr>
<tr>
<td>Rx</td>
<td>Treatment, Take prescription</td>
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<tr>
<td>SL</td>
<td>Sublingual</td>
</tr>
<tr>
<td>SMO</td>
<td>Standing Medical Orders</td>
</tr>
<tr>
<td>SOB</td>
<td>Shortness of breath</td>
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<tr>
<td>Sub-Q or subq</td>
<td>Subcutaneous</td>
</tr>
<tr>
<td>Stat</td>
<td>Immediate</td>
</tr>
<tr>
<td>STD</td>
<td>Sexually transmitted disease</td>
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<tr>
<td>SVT</td>
<td>Supraventricular tachycardia</td>
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<tr>
<td>Temp</td>
<td>Temperature</td>
</tr>
<tr>
<td>TB</td>
<td>Tuberculosis</td>
</tr>
<tr>
<td>TKO</td>
<td>To keep open</td>
</tr>
<tr>
<td>URI</td>
<td>Upper respiratory infection</td>
</tr>
<tr>
<td>V-fib</td>
<td>Ventricular fibrillation</td>
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<tr>
<td>V-tach</td>
<td>Ventricular tachycardia</td>
</tr>
<tr>
<td>w/</td>
<td>With</td>
</tr>
<tr>
<td>w/o</td>
<td>Without</td>
</tr>
<tr>
<td>W/O</td>
<td>Wide open</td>
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<tr>
<td>WNL</td>
<td>Within normal limits</td>
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<table>
<thead>
<tr>
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<th>Description</th>
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<tr>
<td>Wt</td>
<td>weight</td>
</tr>
<tr>
<td>@</td>
<td>At</td>
</tr>
<tr>
<td>&gt;</td>
<td>Greater than</td>
</tr>
<tr>
<td>&lt;</td>
<td>Less than</td>
</tr>
<tr>
<td>ACLS</td>
<td>Advanced Cardiac Life Support</td>
</tr>
<tr>
<td>A/BDLS</td>
<td>Advanced/ Basic Disaster Life Support</td>
</tr>
<tr>
<td>AEIOUTIPS</td>
<td>Acidosis, alcohol; epilepsy; infection; overdose; uremia; tumor, trauma, toxin; insulin; psychosis, poison; stroke, seizure</td>
</tr>
<tr>
<td>AVPU</td>
<td>Alert, Verbal, Pain, Unresponsive</td>
</tr>
<tr>
<td>BTLS</td>
<td>Basic Trauma Life Support</td>
</tr>
<tr>
<td>DCAP-BTLS-IC</td>
<td>Deformities, Contusions, Abrasions, Penetrations or Punctures, Burns, Tenderness, Lacerations, Swelling, Instability, Crepitus</td>
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<tr>
<td>GEMS</td>
<td>Geriatrics Emergency Medical Services</td>
</tr>
<tr>
<td>Id-me</td>
<td>Immediate, Delayed, Minimal, Expectant</td>
</tr>
<tr>
<td>MASS</td>
<td>Move, Assess, Sort, Send</td>
</tr>
<tr>
<td>OPQRST</td>
<td>Onset, Provokes, Quality, Radiation, Severity, Time</td>
</tr>
<tr>
<td>PALS</td>
<td>Pediatric Advanced Life Support</td>
</tr>
<tr>
<td>PEPP</td>
<td>Pediatric Education Pre-hospital Provider</td>
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<td>PHTLS</td>
<td>Pre-Hospital Trauma Life Support</td>
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<tr>
<td>SAMPLE</td>
<td>Signs &amp; Symptoms, Allergies, Medications, Past medical history, Last oral intake, Events leading to incident</td>
</tr>
<tr>
<td>START</td>
<td>Simple Triage and Rapid Transport</td>
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</tbody>
</table>

**NOTE:** Based on JCAHO National Patient Safety Goals, these acceptable abbreviations are to minimize confusion when using abbreviations. Commonly used abbreviations such as MS, OU, OD, OS, and cc are not allowed to be utilized under Region1 EMS Acceptable Medical Abbreviations.
RULE OF NINES:

RULE OF PALMS: To measure the extent of irregular burns, the percentage of burned surface can be estimated by considering the palm of the patient’s hand as equal to 1% of the total body surface and then estimating the TBSA burned in reference to the palm.
## REGION I EMERGENCY MEDICAL SERVICES
**STANDING MEDICAL ORDERS**
**BLS, ILS, ALS**

### APPENDIX: Glasgow Coma Score/ Revised Trauma Score

### ADULT GLASGOW COMA SCORE

<table>
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<th>AREAS OF RESPONSE</th>
<th>DESCRIPTION</th>
<th>SCORING</th>
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<tbody>
<tr>
<td><strong>EYE OPENING</strong></td>
<td>Eyes open <em>Spontaneously</em></td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Eyes open in response to <em>Voice</em></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Eyes open in response to <em>Pain</em></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>No eye opening response</td>
<td>1</td>
</tr>
<tr>
<td><strong>VERBAL RESPONSE</strong></td>
<td><em>Oriented</em> (e.g., to person, place, time)</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td><em>Confused</em>, speaks but is disoriented</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td><em>Inappropriate</em> but comprehensible words</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><em>Incomprehensible</em> sounds but no words are spoken</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>None</td>
<td>1</td>
</tr>
<tr>
<td><strong>MOTOR RESPONSE</strong></td>
<td><em>Obeys Commands</em> to move</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td><em>Localized Painful</em> stimuli</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td><em>Withdraws</em> from painful stimulus</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td><em>Flexion</em>, abnormal <em>decorticate</em> posturing</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><em>Extension</em>, abnormal <em>decerebrate</em> posturing</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>No movement or posturing</td>
<td>1</td>
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### TOTAL POSSIBLE SCORE

<table>
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<tr>
<th>Injury Severity</th>
<th>SCORE</th>
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<tr>
<td>Severe Head Injury</td>
<td>≤ 8</td>
</tr>
<tr>
<td>Moderate Head Injury</td>
<td>9 - 12</td>
</tr>
<tr>
<td>Minor Head Injury</td>
<td>13 - 15</td>
</tr>
</tbody>
</table>

*Appendix: Glasgow Coma/Revised Trauma Score*
# ADULT TRAUMA SCORE

The Trauma Score is a numerical grading system for estimating the severity of injury. The score is composed of the Glasgow Coma Scale (reduced to approximately one-third value) and measurements of cardiopulmonary function. Each parameter is given a number (high for normal and low for impaired function). Severity of injury is estimated by summing the numbers. The lowest score is 0, and the highest score is 12.

<table>
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<th>RESPIRATORY RATE (spontaneous patient-initiated inspirations/ minute)</th>
<th>10 - 29 / minute</th>
<th>4</th>
</tr>
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<tr>
<td>greater than 29</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>6 - 9 minutes</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>1 - 5 / minute</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>0</td>
<td></td>
</tr>
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</table>

<table>
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<th>SYSTOLIC BLOOD PRESSURE</th>
<th>Greater than 89</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>76 - 89 mm Hg</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>50 - 75 mm Hg</td>
<td>2</td>
<td></td>
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<tr>
<td>1 - 49 mm Hg</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>No pulse</td>
<td>0</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>GLASGOW COMA SCALE (see above)</th>
<th>13 – 15</th>
<th>4</th>
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<tbody>
<tr>
<td>9 – 12</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>6 – 8</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>4 – 5</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td></td>
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</table>

| TOTAL POSSIBLE SCORE | 0 – 12 |
# PEDIATRIC GLASGOW COMA SCORE

<table>
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<th>AREAS OF RESPONSE</th>
<th>&gt;1 year</th>
<th>&lt; 1 year</th>
<th>GCS</th>
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<tbody>
<tr>
<td><strong>EYE OPENING</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spontaneously</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>To <strong>Verbal Command</strong></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>To <strong>Pain</strong></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>No eye opening response</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>MOTOR RESPONSE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Obeyes Commands</strong> to move</td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td><strong>Localized Painful</strong> stimuli</td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td><strong>Withdraws</strong> from painful stimulus</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td><strong>Flexion</strong>, abnormal <em>decorticate</em> posturing</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td><strong>Extension</strong>, abnormal <em>decerebrate</em> posturing</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>No movement or posturing</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>VERBAL RESPONSE</strong></td>
<td>&gt; 5 years</td>
<td>&lt; 2 – 5 years</td>
<td>0 - 23 months</td>
</tr>
<tr>
<td><strong>Oriented</strong> and converses</td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td><strong>Disoriented</strong> but converses <strong>Inappropriate</strong> words</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Incomprehensible</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>No response</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>TOTAL POSSIBLE SCORE</strong></td>
<td></td>
<td></td>
<td>3 - 15</td>
</tr>
</tbody>
</table>

*Note: *The table above summarizes the Pediatric Glasgow Coma Score, which includes areas of eye opening, motor response, and verbal response, with scores ranging from 1 to 6, totaling a possible score of 3 to 15. Each response is categorized based on age groups and specific actions or responses to stimuli. The score helps in assessing the level of consciousness in children who have suffered traumatic injuries.
# PEDIATRIC TRAUMA SCORE

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>+2</th>
<th>+1</th>
<th>-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>≥ 20 kg</td>
<td>10 – 20 kg</td>
<td>≤ 10 kg</td>
</tr>
<tr>
<td>Airway</td>
<td>Normal</td>
<td>Maintainable</td>
<td>Unable to maintain</td>
</tr>
<tr>
<td>CNS</td>
<td>Awake</td>
<td>Obtunded</td>
<td>Coma</td>
</tr>
<tr>
<td>Systolic BP</td>
<td>≥ 90 mm Hg</td>
<td>50 – 90 mm Hg</td>
<td>≤ 50 mm Hg</td>
</tr>
<tr>
<td>Open wound</td>
<td>None</td>
<td>Minor</td>
<td>Major</td>
</tr>
<tr>
<td>Skeletal Injuries</td>
<td>None</td>
<td>Closed fracture</td>
<td>Open or multiple fractures</td>
</tr>
</tbody>
</table>

## Revised Trauma Score

<table>
<thead>
<tr>
<th>Glasgow Coma Scale (GCS)</th>
<th>Systolic Blood Pressure (SBP)</th>
<th>Respiratory Rate (RR)</th>
<th>Coded Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>13-15</td>
<td>&gt;89</td>
<td>10-29</td>
<td>4</td>
</tr>
<tr>
<td>9-12</td>
<td>76-89</td>
<td>&gt;29</td>
<td>3</td>
</tr>
<tr>
<td>6-8</td>
<td>50-75</td>
<td>6-9</td>
<td>2</td>
</tr>
<tr>
<td>4-5</td>
<td>1-49</td>
<td>1-5</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

[Return to Table of Contents]
**AVPU**
The mnemonic AVPU refers to the basic scale of consciousness and identifies the following levels of consciousness:

A – The patient is awake and alert. This does not necessarily mean that they are orientated to time and place or neurologically responding normally.

V – The patient is not fully awake, and will only respond to verbal commands or become roused after verbal stimuli.

P – The patient is difficult to rouse and will only respond to painful stimuli, such as nail bed pressure or trapezius pain.

U – The patient is completely unconscious and unable to be roused.

**Sample History**
S - Signs and symptoms
A- Allergies
M- Medications
P- Past medical history or pertinent history
L- Last oral intake
E- Events leading to incident
Overview: Medication shortages, including controlled substances, occur in Region I on a regular basis. Region I EMS Providers may receive information regarding a shortage from any Region I hospital, but should confirm the shortage with their Resource Hospital to receive information on how a contingency plan will be carried out for their service.

Each agency may choose to sign up to receive updates from the Federal Drug Administration (FDA) via e-mail or RSS feed at [http://www.fda.gov/drugs/drugsafety/drugshortages/default.htm](http://www.fda.gov/drugs/drugsafety/drugshortages/default.htm) and direct any questions to the appropriate person at their Resource Hospital.

**INFORMATION NEEDED**

- Name of Region I Formulary medication on potential shortage
- Confirmation from Resource Hospital of medication shortage
- Name of alternative medication, if any, to be used during the shortage
- Instructions on how to administer any alternative medication
- Information on how alternative medication will be restocked

**PROCEDURE**

- When a Region I EMS Formulary medication is identified as being on shortage the appropriate representative at your Resource Hospital (i.e., Clinical Pharmacist) will contact the EMS Medical Director and/or EMS Coordinator providing further instructions regarding the shortage. Approval for the use of an alternative medication will be provided to the EMS Agencies in writing (e-mail, etc.) by the EMS Coordinator or his/her designee.

- If the use of an alternative medication is recommended the approval will remain in place for 30 days. At this time the use will be re-evaluated by the Resource Hospital to either continue with the alternative formulary or discontinue and return to the current SMO. This information will then be communicated to the EMS Agencies in writing.

- When instructions are received regarding the use of an alternative medication prepare informational communication to all members of your agency to include:
  - Name of medication on shortage
  - Name of alternative medication, if any
  - Instructions on how to administer the alternative medication
  - How the alternative medication will be restocked at receiving hospitals
  - Date of next review for continuation/discontinuation of the alternative medication

- When a Region I EMS Formulary medication is identified as no longer being on shortage by the Resource Hospital, information will be sent to the EMS Agencies, in writing, to return the usual SMO with the appropriate medication. Exchange of the alternate medication for the appropriate medication per SMO may not be immediately necessary. This direction will be provided by your Resource Hospital.
Documentation of adherence to SMO
__ Documentation of administration of any alternative medication as part of any treatment plan on each patient report
__ Documentation of the response to the medication
__ Documentation of the reason for the use of any alternative medication, most commonly, medication shortage

Medical Control Contact Criteria
__ Contact Medical Control whenever a question exists as to the best treatment course for the patient

PRECAUTIONS AND COMMENTS
- An EMS Agency must receive approval from their Resource Hospital to implement any medication substitution due to a shortage.
- At no time can an EMS agency borrow, supply, or sell any medication to another entity unless they possess a distributor’s license. The movement of medication is strictly regulated by the Food and Drug Administration and the Drug Enforcement Agency.
- Purchasing, possessing, delivering, administering, and safeguarding of controlled substances authorizes an EMS agency to possess the following controlled substances as approved by IDPH and the Region I EMS Advisory Council:
  - Ketamine
  - Midazolam
  - Diazepam
  - Morphine
  - Fentanyl
- If a medication has been approved to be used past the manufacturers’ expiration date due to a shortage it will be posted on the FDA website. The Resource Hospital, and in some cases, the Region I EMS Advisory Executive Council may also need to approve the extension of medication expirations dates due to a shortage.
- If a medication is no longer available and there is no Region I approved alternative the EMS agency must continue to provide care to the best of its ability. EMS Agencies must follow their regionally approved SMO’s to the best of their ability with the medications available to them.
### Region I EMS Alternative Medication Formulary

**Effective Date:** December 6, 2017

<table>
<thead>
<tr>
<th>Current Medication</th>
<th>Alternative A</th>
<th>Alternative B</th>
<th>Alternative C</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ondansetron (Zofran)</td>
<td>Diphenhydramine 25-50 mg IV/IM</td>
<td>Metoclopramide (Reglan) 10 mg IV/IM</td>
<td>Prochlorperazine (Compazine) 12.5 mg IV</td>
<td>ADULT ONLY Anti-emetic Ondansetron 4 mg ODT also an option</td>
</tr>
<tr>
<td>Etomidate</td>
<td>Midazolam C&lt;sub&gt;IV&lt;/sub&gt; (Versed) 5 mg IV</td>
<td>Ketamine C&lt;sub&gt;III&lt;/sub&gt; 1 mg/kg IV</td>
<td>Lorazepam C&lt;sub&gt;IV&lt;/sub&gt; (Ativan) 2 mg IV</td>
<td>Induction Ativan (Lorazepam) must be refrigerated following manufacturers guidelines</td>
</tr>
<tr>
<td>Morphone C&lt;sub&gt;II&lt;/sub&gt;</td>
<td>Fentanyl C&lt;sub&gt;II&lt;/sub&gt; 50 mcg IV</td>
<td>Ketorolac (Toradol) 30 mg IV/IM</td>
<td></td>
<td>Pain Management</td>
</tr>
<tr>
<td>Fentanyl C&lt;sub&gt;II&lt;/sub&gt;</td>
<td>Morphone C&lt;sub&gt;II&lt;/sub&gt; 4-6 mg IV</td>
<td>Ketorolac (Toradol) 30 mg IV/IM</td>
<td></td>
<td>Pain Management</td>
</tr>
<tr>
<td>Midazolam C&lt;sub&gt;IV&lt;/sub&gt; (Versed)</td>
<td>Diazepam C&lt;sub&gt;IV&lt;/sub&gt; (Valium) 5 mg IV</td>
<td>Lorazepam C&lt;sub&gt;IV&lt;/sub&gt; (Ativan) 2 mg or 0.05 mg/kg IV</td>
<td></td>
<td>Seizure Management</td>
</tr>
<tr>
<td>Diazepam C&lt;sub&gt;IV&lt;/sub&gt; (Valium)</td>
<td>Midazolam C&lt;sub&gt;IV&lt;/sub&gt; (Versed) 5 mg IV</td>
<td>Lorazepam C&lt;sub&gt;IV&lt;/sub&gt; (Ativan) 2 mg IV</td>
<td></td>
<td>Seizure Management</td>
</tr>
<tr>
<td>Ketorolac</td>
<td>Fentanyl 50 mcg IV</td>
<td>Morphine C&lt;sub&gt;II&lt;/sub&gt;</td>
<td></td>
<td>NSAID pain management (not mandatory substitution because of cost)</td>
</tr>
<tr>
<td>Ketamine C&lt;sub&gt;III&lt;/sub&gt;</td>
<td>Etomidate 0.1 mg/kg IV</td>
<td>Midazolam C&lt;sub&gt;IV&lt;/sub&gt; (Versed) 5 mg IV</td>
<td>Fentanyl 50 mcg IV</td>
<td></td>
</tr>
<tr>
<td>Midazolam C&lt;sub&gt;IV&lt;/sub&gt; (Versed)</td>
<td>Ketamine 1-3 mg/kg IM</td>
<td></td>
<td></td>
<td>Sedation</td>
</tr>
</tbody>
</table>

Return to Table of Contents
<table>
<thead>
<tr>
<th>Medication</th>
<th>Preparation</th>
<th>Preparation</th>
<th>Preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epinephrine 1:10 ml</td>
<td>Expel 1mL of Normal Saline from a 10 mL prefilled syringe</td>
<td>Instill 1 mg (mL) of Epinephrine 1:1 ml from 20 mL vial into prefilled syringe</td>
<td>30 mL vials are to be single patient use only</td>
</tr>
<tr>
<td>Glucose Gel</td>
<td>Expel 1mL of Normal Saline from a 10 mL prefilled syringe.</td>
<td>Instill 1 mg (mL) of Epinephrine 1:1 ml from ampule into a prefilled syringe.</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX: Primary Patient Assessment

Overview: A Primary assessment needs to be completed on all patients to identify and immediately correct any life-threatening problems.

SCENE SIZE-UP/GLOBAL ASSESSMENT
__ Recognize hazards, ensure safety of scene, and secure a safe area for treatment
__ Apply appropriate universal body/substance isolation precautions
__ Recognize hazards to patient and protect from further injury
__ Identify number of patients and resources needed
__ Call for EMS and/or law enforcement back-up if appropriate
__ Initiate Incident Command Structure System (ICS), if appropriate
__ Initiate Triage System, if appropriate
__ Observe position of patient
__ Determine mechanism of injury
__ Plan strategy to protect evidence at potential crime scene

GENERAL IMPRESSION
__ Check for life-threatening conditions
__ AVPU (A=alert, V=responds to verbal stimuli, P=responds to painful stimuli, U=unresponsive)
__ Determine chief complaint or mechanism of injury

AIRWAY (A)
__ Ensure open airway
__ Protect spine from unnecessary movement in patients at risk for spinal injury
__ Ensuring airway patency supersedes spinal immobilization
__ Look and listen for evidence of upper airway problems and potential obstructions
  ▪ Vomitus
  ▪ Bleeding
  ▪ Loose or missing teeth
  ▪ Dentures
  ▪ Facial trauma
__ Utilize any appropriate adjuncts as indicated to maintain airway
BREATHING (B)
- Look, listen, and feel assessing ventilation and oxygenation
- Expose chest and observe chest wall movement if necessary
- Determine approximate rate, depth, and work of breathing
- Reassess mental status
- Obtain pulse oximetry reading if available
- Intervention for inadequate ventilation and/or oxygenation:
  - Pocket mask BVM
  - Supplementary oxygen
  - Appropriate airway adjunct (oropharyngeal/nasal)
  - Advance airway management if indicated after bag-valve-mask ventilation

CIRCULATION (C)
- Check for pulse and begin CPR if necessary
  Note: defibrillation should not be delayed for CPR; if defibrillator is present and operator is qualified, use it to check patient for a shockable rhythm
- Palpate radial pulse if appropriate: absence or presence; quality (strong/weak); rate (slow, normal, or fast); regularity
- Control life-threatening hemorrhage with direct pressure
- Assess skin for signs of hypoperfusion or hypoxia
- Reassess mental status for signs of hypoperfusion
- Treat hypoperfusion if appropriate

LEVEL OF CONSCIOUSNESS & DISABILITIES (D)
- Determine need for C-Spine stabilization
- Determine GLASGOW COMA SCALE (GCS) SCORE

EXPOSE, EXAMINE & EVALUATE (E)
- In situations with suspected life-threatening trauma mechanism, a rapid head-to-toe assessment should be performed
- Expose head, trunk, and extremities
- Head-to-toe for DCAP-BTLS (see Note section of Secondary Patient Assessment SMO)
- Treat any newly discovered life-threatening wounds as appropriate
- Assist patient with medications if appropriate

Documentation of adherence to SMO
- Findings of primary assessment, for example: alert, oriented, and verbalizing; unresponsive to painful stimuli, airway maintained with Oropharyngeal airway, qualities of pulses, GCS, mechanism of injury, pulse oximetry, etc
- Any deviation from assessment and explanation of why
- Interventions for critical situations
APPENDIX: Request for New Standing Medical Order, Procedure, or Medication

Overview: Requests for new Standing Medical Orders, Procedures, or Medications (or revisions to current information) can be made by any Region I EMS Provider in order to remain current with interventions known to be effective in prehospital care.

INFORMATION NEEDED
__Completion of Region I SMO Request form
__Signature of sponsoring Region I EMS Medical Director
__Clearly defined indication(s) for the proposal
__An explanation of advantages (disadvantages) the change will have on patients
__Evidence supporting the implementation of the proposal
__Any fiscal impact for the EMS Systems/Provider Agencies

PROCESS
1. Submit the signed Request form to an EMS System Coordinator
2. The EMS Coordinator will be responsible for bringing the proposal to the Region I EMS Executive Committee for review
3. If the request is approved for development, the EMS Coordinator who received the request will be responsible for putting the request into the correct format and presenting it at the Region I EMS Advisory Council for input.
4. If the proposal is approved by the Region I EMS Advisory Council it will be presented at the Region I EMS Executive Committee for approval.
5. If the proposal is not approved, it will be returned to the provider/agency. The reasons for the proposal’s denial will be included and the provider/agency may have an opportunity to make revisions and submit the proposal again, following all the steps above.

Please provide as much detail as possible when following this outline:
1. Explanation for request
2. Indication for request
3. Supporting evidence (journals, articles, etc.)
4. Target population (adult, pediatric, neonate, geriatric)
5. Treatment for appropriate level (EMR, BLS, ILS, ALS)
6. When applicable, contraindications/potential adverse effects/precautions
7. When applicable, dosing for appropriate patient population/pharmacokinetics
8. When indicated, appropriate use of Medical Control
9. Fiscal impact for EMS Systems/EMS Agencies

Attach information contained in this outline and submit it with the Region I SMO Request Form.
Region I EMS Request Form

Date submitted to EMS System Coordinator: ________________

Printed name of EMS System Coordinator receiving application: ______________________

Submitted by Name (print): ____________________________________________

Signature: ________________________________

Agency: __________________________________________________________

Contact Phone: ______________________________________________________

Email: ____________________________________________________________

Sponsoring System Medical Director (print): ____________________________

Signature: __________________________________________________________

Official Use Only

Date received by Region I EMS System Coordinator: ________________

Review Date: __________________________ Approved / Denied

If approved, Region I EMS Advisory review date: ________________ Approved / Denied
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

APPENDIX: Secondary Assessment

Overview: The Secondary assessment is the systematic assessment and complaint focused relevant physical examination of the patient. The secondary assessment may be done concurrently with the patient history and should be performed after:

- The Primary Assessment and initial treatment and stabilization of life-threatening airway, breathing and circulation difficulties
- Spinal restriction as needed
- Beginning transport in the potentially unstable or critical patient
- A rapid head-to-toe assessment in the case of significant trauma
- Investigation of the chief complaint and associated complaints, signs or symptoms
- An initial set of vital signs—pulse, respirations, blood pressure
- Lung sounds
- Cardiac rhythm (if indicated)
- Consider orthostatic vital signs when needed to assess volume status
- Pulse oximetry and EtCO₂ (if indicated and available)

Give initial treatment including oxygen, ventilation if indicated, hemorrhage control if needed, basic wound/fracture care, and IV access if indicated/capable. IV access refers to an intravenous line, with isotonic crystalloid solution (Normal Saline) to maintain adequate perfusion.

The above set of assessments/treatments is referred to in these SMOs as Routine Medical Care, Routine Pediatric Care or Routine Trauma Care. This care should be provided to all patients regardless of presenting complaint. The purpose of the focused assessment is to identify problems, which, though not immediately life- or limb-threatening, could increase patient morbidity and mortality. Exposure of the patient for examination may be reduced or modified as indicated due to environmental factors.

HISTORY
- Optimally should be obtained directly from the patient; if language, culture, age-related, disability barriers or patient condition interferes, consult family members, significant others, scene bystanders or first responders.
- Check for advance directives, patient alert bracelets and prescription bottles as appropriate.
- Be aware of patient’s environment and issues such as domestic violence, child or elder abuse or neglect
- Allergies, Medications
- Past medical history relevant to chief complaint. Examples are previous myocardial infarcts, hypertension, diabetes, substance abuse, seizure disorder and hospital of choice.
**HISTORY (continued)**

- Have patient prioritize his/her chief complaint if complaining of multiple problems
- Ascertain recent medical history - admissions to hospitals, reasons given, etc.
- Pain questions if appropriate: OPQRST (O=onset, P=provoked, Q=quality, R=radiation, S=severity, T=time) plus location and factors that increase or decrease the pain severity
- Mechanism of injury if appropriate
- See “Information Needed” section of each SMO for history relevant to specific patient complaints.

**HEAD AND FACE**

- Observe and palpate skull (anterior and posterior) and face for DCAP-BTLS
- Check eyes for: equality and responsiveness of pupils, movement and size of pupils, foreign bodies, discoloration, contact lenses, prosthetic eyes
- Check nose and ears for: foreign bodies, fluid, and blood
- Recheck mouth for potential airway obstructions (swelling, dentures, bleeding, loose or avulsed teeth, vomitus, malocclusion, absent gag reflex) and odors, altered voice or speech patterns, and evidence of dehydration

**NECK**

- Observe and palpate for DCAP-BTLS, jugular vein distention, use of neck muscles for respiration, tracheal tugging, shift or deviation, stoma, and medical information medallions

**CHEST**

- Observe and palpate for DCAP-BTLS, scars, implanted devices (AICD or pacemakers), medication patches, chest wall movement, asymmetry and accessory muscle use
- Have patient take a deep breath if possible and observe and palpate for signs of discomfort, asymmetry and air leak from any wound

**ABDOMEN**

- Observe and palpate for DCAP-BTLS, scars, diaphragmatic breathing and distention
- Palpation should occur in all four quadrants taking special note of tenderness, masses and rigidity

**PELVIS/GENITO-URINARY**

- Observe and palpate for DCAP-BTLS, asymmetry, sacral edema, and as indicated for incontinence, priapism, blood at urinary meatus, or presence of any other abnormalities
- Palpate and gently compress lateral pelvic rims and symphysis pubis for tenderness, crepitus or instability
- Palpate bilateral femoral pulses

**SHOULDERS AND UPPER EXTREMITIES**

- Observe and palpate for DCAP-BTLS, asymmetry, skin color, capillary refill, edema, medical information bracelets, and equality of distal pulses
- Assess sensory and motor function as indicated
LOWER EXTREMITIES
__ Observe and palpate for DCAP-BTLS, asymmetry, skin color, capillary refill, edema, and equality of distal pulses
__ Assess sensory and motor function as indicated

BACK
__ Observe and palpate for DCAP-BTLS, asymmetry, and sacral edema

Documentation of adherence to SMO
__ Changes and trends observed in the field
__ Pertinent negative findings, e.g. denies SOB with chest pain; no other findings of significant injury
__ Findings from history/source of information is not from the patient
__ Findings of assessment on your initial exam

Medical Control Contact Criteria
__ Contact Medical Control whenever a question exists as to the best treatment course for the patient

PRECAUTIONS AND COMMENTS
• Observation and palpation can be done while gathering patient’s history.
• A systematic approach will enable the rescuer to be rapid and thorough and not miss subtle findings that may become life-threatening.
• Minimize scene time on trauma patients—for critical trauma patients conduct Focused assessment enroute to the hospital when time allows.
• The Focused Assessment should ONLY be interrupted if the patient experiences airway, breathing or circulatory deterioration requiring immediate intervention. Complete the examination before treating the other identified problems.
• Reassess vital signs, particularly in critical or rapidly-changing patients. Changes and trends observed in the field are essential data to be documented and communicated to the receiving facility staff.
• DCAP-BTLS: A mnemonic that stands for:
  Deformity
  Contusion/Crepitus
  Abrasion
  Puncture
  Bruising/Bleeding
  Tenderness
  Laceration
  Swelling
APPENDIX: In-Field Trauma Triage Criteria

Overview: The following patients are those who in the opinion of the American College of Surgeons Committee on Trauma are to have an increased mortality/morbidity if not treated at a trauma center, and should therefore be classified as trauma patients. These patients require transport to the nearest trauma center. The decision to triage to the nearest trauma center or directly to the Level I trauma center remains with Medical Control, as does aeromedical evacuation.

GUIDELINES

I. Physiologic Factors
   A. Adult Trauma Score of 10 or less or Pediatric Score of 8 or less
   B. Airway difficulties requiring intubation or other interventions at the scene
   C. Trauma with altered respiratory rate > 35/minute or < 12/minute
   D. Any multiple trauma patient with signs of hypoperfusion

II. Anatomic Factors
   A. Head, face and eye
      1. HEAD INJURY WITH PERSISTENT UNCONSCIOUSNESS OR FOCAL SIGNS (i.e. SEIZURES, POSTURING, UNABLE TO RESPOND TO SIMPLE COMMANDS)
      2. Head injury with LOC or an altered Glasgow Coma Score
      3. Traumatic and chemical eye injuries
      4. Maxillofacial trauma
      5. Penetrating injury to the neck
   
   B. Chest
      1. TRANSMEDIASTINAL GUNSHOT WOUNDS
      2. Penetrating injury to the chest
      3. Blunt chest trauma (significant pain and/or obvious external signs)
   
   C. Abdomen
      1. Penetrating injury to the abdomen or groin
      2. Blunt abdominal trauma (significant pain and/or obvious external signs)
   
   D. Spinal Cord
      1. SPINAL CORD INJURY WITH PARALYSIS
      2. Any suspected spinal cord injury in the absence of neurological deficit

Original SMO Date: 07/04
Reviewed: Appendix: In Field Trauma Triage Guideline
Last Revision: 06/17
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GUIDELINES (continued)

E. Extremity
   1. Multiple orthopedic injuries (>1 long bone fracture)
   2. Major extremity injury with vascular compromise (blunt and penetrating)
   3. Traumatic amputation proximal to the wrist or ankle

III. Deceleration Injury
   A. High energy dissipation—rapid acceleration with blunt chest or abdominal injury
   B. Falls of 20 feet or greater with the adult patient
   C. Falls of 3 times the height of the pediatric patient

IV. Motor Vehicle Incidents
   A. Extrication time of 20 minutes or more
   B. Passenger space invaded by 12 or more inches
   C. Ejection
   D. Fatality at the scene within the same motor vehicle
   E. Rollover
   F. Child under 12 years struck by car
   G. Child 5 years old or younger involved in any MVA without age appropriate restraint (under age 4 or less than 40 pounds require a car seat)
   H. Motorcycle crash greater than 20 mph and separation of rider from bike

V. Major Burns
   A. 20% total body surface of 2nd and 3rd degree burns
   B. Any burn patient with obvious head, neck or airway involvement

VI. Pediatric Trauma with one or more of the following:
   A. HEAD TRAUMA WITH PERSISTENT ALTERED LEVEL OF CONSCIOUSNESS OBVIOUS CHEST OR ABDOMINAL TRAUMA, EITHER PENETRATING OR BLUNT
   B. Pediatric Trauma Score of 8 or less
   C. Child under 12 struck by car
   D. Child 5 years old or younger involved in any MVA without age appropriate restraint (under age 4 or less than 40 pounds require a car seat)

VII. Maternal Trauma Patients with significant mechanism and/or obvious signs of Trauma
   A. THE PREGNANT PATIENT 20 – 32 WEEKS
   B. The pregnant patient 32 – 40 weeks
   C. Maternal patient who meets any other trauma criteria

VIII. Blunt and Penetrating Traumatic Arrests are at the discretion of Medical Control
Refer to Inbound Radio Report and Alert Notifications SMO and/or Transport Template SMO / Transport Resources Closest Hospital SMO for further details.

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APPENDIX: Use of Standing Medical Orders (SMOs)

I. PURPOSE

A. To develop a standard approach of pre-hospital patient care in EMS Region 1. The following patient care SMOs are established and approved by the EMS Region 1 Medical Directors for use by EMS Providers, Physicians and ECRN’s operating within Region 1.

B. Region 1 assumes certain common steps in a practical approach and response to emergency situations. These Standing Medical Orders outline current methods that have been well rewarded in terms of survival statistics.

C. The SMO dosages and treatments are written in compliance with the EMS Education Standards set forth by the US Department of Transportation (DOT), the American Heart Association and Illinois Emergency Medical Services Act. Dosing for all medications is listed in the Medication Flip Chart or Broselow tape.

D. The Standing Medical Orders will be utilized:
   1. As a written standard of care to be followed by all members of EMS Region 1 in the pre-hospital care of the acutely ill or injured patient.
   2. In disaster situations where immediate action to preserve and save lives supersedes the need to communicate with hospital-based personnel, or where such communication is not required by the Disaster Procedure.

II. MEDICAL CONTROL

A. Throughout these SMOs are boxes set aside with Medical Control Contact Criteria. These boxes are placed to draw particular attention to treatments/questions in which Medical Control needs to be contacted; however, always contact Medical Control if any question arises regarding the best treatment options for the patient.
III. GENERAL GUIDELINES

1. Color coding.
   - BLS providers will follow SMOs in Black with no highlight color.
   - ILS providers will follow SMOs in Black with Yellow highlighting.
   - ALS Providers will follow SMOs in Black, with both Yellow and Pink highlighting.

2. Pre-hospital personnel will initiate BLS measures, and then proceed to ALS measures as dictated by the patient assessment and scope of practice.

3. Medication dosing is generally not present in the SMO’s. Please refer to the medication chart for all dosing information. Broselow tape may be used for pediatric patients. Medications will be in bold blue print in all SMO’s.

4. Pre-hospital personnel will utilize good clinical judgment and consider additional resources as needed.

5. BLS personnel will request an ALS response unit to the scene or rapidly transport the patient to the nearest hospital according to EMS Region 1 “Transport to Other Than the Closest Hospital SMO.”

6. Routine Medical Care, Routine Trauma Care, and/or Routine Trauma Care should be provided to every patient as guided by assessment of the scene and the patient’s condition.

7. The Resource Hospital or Associate Hospital Physician or ECRN provides on-line Medical Control.

8. Optional Scope practices will be identified in each EMS Systems specific SMOs.

IV. DEFINITIONS

**Advanced Life Support (ALS) Services** – an advanced level of pre-hospital and inter-hospital emergency care and non-emergency medical care that includes basic life support care, cardiac monitoring, cardiac defibrillation, electrocardiography, intravenous therapy, administration of medications, drugs and solutions, use of adjunctive medical devices, trauma care, and other authorized techniques and procedures as outlined in the Advanced Life Support National Curriculum of the United States Department of Transportation and any modifications to that curriculum specified in this Part. (Section 3.10 of the Act)

**Alternate EMS Medical Director or Alternate EMSMD** – the physician who is designated by the Resource Hospital to direct the ALS/ILS/BLS operations in the absence of the EMS Medical Director.

**Ambulance** – any publicly or privately owned vehicle that is specifically designed, constructed or modified and equipped for, and is intended to be used for, and is maintained or operated for, the emergency transportation of persons who are sick, injured, wounded or otherwise incapacitated or helpless, or the non-emergency medical transportation of persons who require the presence of medical personnel to monitor the individual's condition or medical apparatus being used on such an individual. (Section 3.85 of the Act)

**Ambulance Service Provider or Ambulance Provider** – any individual, group of individuals, corporation, partnership, association, trust, joint venture, unit of local government or other public or private ownership entity that owns and operates a business or service using one or more ambulances or EMS vehicles for the transportation of emergency patients.
**Associate Hospital** – a hospital participating in an approved EMS System in accordance with the EMS System Program Plan, fulfilling the same clinical and communications requirements as the Resource Hospital. This hospital has neither the primary responsibility for conducting training programs nor the responsibility for the overall operation of the EMS System program. The Associate Hospital must have a basic or comprehensive Emergency Department with 24-hour physician coverage. It must have a functioning Intensive Care Unit and/or a Cardiac Care Unit.

**Basic Life Support (BLS) Services** – a basic level of pre-hospital and inter-hospital emergency care and non-emergency medical care that includes airway management, cardiopulmonary resuscitation (CPR), control of shock and bleeding and splinting of fractures, as outlined in a Basic Life Support National Curriculum of the United States Department of Transportation and any modifications to that curriculum specified in this Part. (Section 3.10 of the Act)

**Dysrhythmia** – a variation from the normal electrical rate and sequences of cardiac activity, also including abnormalities of impulse formation and conduction.

**Emergency** – a medical condition of recent onset and severity that would lead a prudent layperson, possessing an average knowledge of medicine and health, to believe that urgent or unscheduled medical care is required. (Section 3.5 of the Act)

**Emergency Medical Services (EMS) System or System** – an organization of hospitals, vehicle service providers and personnel approved by the Department in a specific geographic area, which coordinates and provides pre-hospital and inter-hospital emergency care and non-emergency medical transports at a BLS, ILS and/or ALS level pursuant to a System Program Plan submitted to and approved by the Department and pursuant to the EMS Regional Plan adopted for the EMS Region in which the System is located. (Section 3.20 of the Act)

**Emergency Medical Technician** – a person who has successfully completed a course of instruction in basic life support as prescribed by the Department, is currently licensed by the Department in accordance with standards prescribed by the Act and this Part and practices within an EMS System. (Section 3.50 of the Act)

**Emergency Medical Technician-Intermediate or EMT-I** – a person who has successfully completed a course of instruction in intermediate life support as prescribed by the Department, is currently licensed by the Department in accordance with standards prescribed by the Act and this Part and practices within an EMS System. (Section 3.50 of the Act)

**EMS Medical Director or EMSMD** – the physician, appointed by the Resource Hospital, who has the responsibility and authority for total management of the EMS System.
Emergency Medical Responder – a person who has successfully completed a course of instruction in emergency first response as prescribed by the Department, who provides first response services prior to the arrival of an ambulance or specialized emergency medical services vehicle, in accordance with the level of care established in the emergency first response course. (Section 3.60 of the Act)

Intermediate Life Support (ILS) Services – an intermediate level of pre-hospital and inter-hospital emergency care and non-emergency medical care that includes basic life support care, plus intravenous cannulation and fluid therapy, invasive airway management, trauma care, and other authorized techniques and procedures as outlined in the Intermediate Life Support National Curriculum of the United States Department of Transportation and any modifications to that curriculum specified in this Part. (Section 3.10 of the Act)

Paramedic – a person who has successfully completed a course of instruction in advanced life support care as prescribed by the Department, is licensed by the Department in accordance with standards prescribed by the Act and this Part and practices within an Advanced Life Support EMS System. (Section 3.50 of the Act)

Pediatric Trauma Patient – trauma patient from birth to 17 years of age.

Pre-Hospital Care – those emergency medical services rendered to emergency patients for analytic, resuscitative, stabilizing, or preventive purposes, precedent to and during transportation of such patients to hospitals. (Section 3.10 of the Act)

Pre-Hospital Care Provider – a System Participant or any EMT-B, I, P, Ambulance, Ambulance Provider, EMS Vehicle, Associate Hospital, Participating Hospital, EMS System Coordinator, Associate Hospital EMS Coordinator, Associate Hospital EMS Medical Director, ECRN or Physician serving on an ambulance or giving voice orders over an EMS System and subject to suspension by the EMS Medical Director of that System in accordance with the policies of the EMS System Program Plan approved by the Department.

Sustained Hypotension – two systolic blood pressures of 90 mmHg five minutes apart or, in the case of a pediatric patient, two systolic blood pressures of 80 mmHg five minutes apart.

Trauma – any significant injury which involves single or multiple organ systems. (Section 3.5 of the Act)

Vehicle Service Provider – an entity licensed by the Department to provide emergency or non-emergency medical services in compliance with the Act and this Part and an operational plan approved by its EMS System(s), utilizing at least ambulances or specialized emergency medical service vehicles (SEMSV). (Section 3.85 of the Act)

(Source: Amended at 27 Ill. Reg. 13507, effective July 25, 2003)

V. AUTHORITY


Original SMO Date: 07/ 04
Reviewed:
Last Revision: 06/17

Appendix: Use of Standing Medical Orders
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REGION I
EMERGENCY MEDICAL SERVICES

MEDICATION ADMINISTRATION CHART

As prepared by:
Kirk Schubert, PharmD, SwedishAmerican Hospital EMS System

Reviewed by:
Dr. Greg Conrad, EMSMD, Northwestern Medicine Kishwaukee Hospital EMS System
Dr. Jane Pearson, EMSMD, OSF Northern Region EMS System
Dr. John Underwood, EMSMD, SwedishAmerican Hospital EMS System
Mark Loewecke, OSF Northern Region EMS System
Richard Robinson, SwedishAmerican Hospital EMS System
Anthony Woodson, Northwestern Medicine Kishwaukee Hospital EMS System

IDPH Approval
Date: December 6, 2017
IV Doses, volumes, and concentrations used in

**PEDIATRIC RESUSCITATION**

and

**ADULT WEIGHT-BASED DOSING**

Last updated August 2018
Doses adapted from
BROSELOW Pediatric Emergency Tape Version 2017 Edition A
The Harriet Lane Handbook Twenty-first Edition
*For ET doses refer to Broselow Tape*

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**MEDICATION ADMINISTRATION CHART**

<table>
<thead>
<tr>
<th>Peds</th>
<th>3 kg</th>
<th>4 kg</th>
<th>5 kg</th>
<th>6-7 kg</th>
<th>8-9 kg</th>
<th>10-11 kg</th>
<th>12-14 kg</th>
<th>15-18 kg</th>
<th>19-23 kg</th>
<th>24-29 kg</th>
<th>30-36 kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult</td>
<td>50 kg</td>
<td>60 kg</td>
<td>70 kg</td>
<td>80 kg</td>
<td>90 kg</td>
<td>100 kg</td>
<td>110 kg</td>
<td>120 kg</td>
<td>130 kg</td>
<td>140 kg</td>
<td>150+ kg</td>
</tr>
<tr>
<td>Standard Dosing</td>
<td>ILS/ALS</td>
<td>BLS</td>
<td>EMR</td>
<td>Dextrose</td>
<td>Dopamine</td>
<td>Mag Sulfate</td>
<td>Fentanyl IN</td>
<td>Midazolam IN</td>
<td>Formulary</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For all pain and sedation medications marked with an asterisk (*) – start dose low – slowly increase – titrate to effect up to listed dose

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Return to Table of Contents
### PEDIATRIC RESUSCITATION – 3 KG

#### 3 kg

**Resuscitation/Cardiac**

<table>
<thead>
<tr>
<th></th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EPINEPHRINE</strong></td>
<td>0.01 mg/kg</td>
<td>0.03 mg</td>
<td>0.3 ml</td>
</tr>
<tr>
<td>(1 mg/10 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ATROPINE</strong></td>
<td>0.02 mg/kg</td>
<td>0.06 mg</td>
<td>0.6 ml</td>
</tr>
<tr>
<td>(1 mg/10 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SODIUM BICARBONATE</strong></td>
<td>0.01 mg/kg</td>
<td>0.03 mg</td>
<td>0.3 ml</td>
</tr>
<tr>
<td>(5 meq/10 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CALCIUM GLUCONATE</strong></td>
<td>1 mg/kg</td>
<td>3 mg</td>
<td>0.15 ml</td>
</tr>
<tr>
<td>(1 gm/10 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LIDOCAINE</strong></td>
<td>0.01 mg/kg</td>
<td>0.03 mg</td>
<td>0.3 ml</td>
</tr>
<tr>
<td>(100 mg/5 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>AMIODARONE</strong></td>
<td>0.01 mg/kg</td>
<td>0.03 mg</td>
<td>0.3 ml</td>
</tr>
<tr>
<td>(50 mg/ml) vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ADENOSINE</strong></td>
<td>0.01 mg/kg</td>
<td>0.03 mg</td>
<td>0.3 ml</td>
</tr>
<tr>
<td>(6 mg/2 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*For pain and sedation doses:
  Start dose low – slowly increase –
  Titrate to effect up to listed dose*

#### 3 kg

**Delayed Sequence Intubation (DSI)**

*FOR DSI APPROVED SERVICES ONLY*

<table>
<thead>
<tr>
<th></th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ATROPINE</strong></td>
<td>0.02 mg/kg</td>
<td>0.06 mg</td>
<td>0.6 ml</td>
</tr>
<tr>
<td>(1 mg/10 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Consider if age &lt;1 or increased secretions</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LIDOCAINE</strong></td>
<td>1 mg/kg</td>
<td>3 mg</td>
<td>0.15 ml</td>
</tr>
<tr>
<td>(100 mg/5 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ETOMIDATE</strong></td>
<td>0.3 mg/kg</td>
<td>0.9 mg</td>
<td>0.45 ml</td>
</tr>
<tr>
<td>2 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FENTANYL</strong></td>
<td>1 mcg/kg</td>
<td>3 mcg</td>
<td>0.06 ml</td>
</tr>
<tr>
<td>* (50 mcg/ml) vial/amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>KETAMINE IV</strong></td>
<td>2 mg/kg</td>
<td>6 mg</td>
<td>0.6 ml</td>
</tr>
<tr>
<td>10 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong></td>
<td>0.3 mg/kg</td>
<td>0.9 mg</td>
<td>0.18 ml</td>
</tr>
<tr>
<td>* (5 mg/ml Vial)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SUCCINYLCHOLINE</strong></td>
<td>2 mg/kg</td>
<td>6 mg</td>
<td>0.3 ml</td>
</tr>
<tr>
<td>20 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ROCURONIUM</strong></td>
<td>1 mg/kg</td>
<td>3 mg</td>
<td>0.3 ml</td>
</tr>
<tr>
<td>10 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>VECURONIUM</strong></td>
<td>0.2 mg/kg</td>
<td>0.6 mg</td>
<td>0.6 ml</td>
</tr>
<tr>
<td>(10 mg vial for recon. Add 10 ml NS for final conc. 1 mg/ml)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*For pain and sedation doses:
  Start dose low – slowly increase –
  Titrate to effect up to listed dose*
### Pediatrisic Resuscitation – 3 kg

**Anaphylaxis/Antidote**

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EPINEPHRINE</strong>&lt;br&gt;(1mg/1ml) vial/amp&lt;br&gt;Must use filter needle for amp</td>
<td>0.01 mg/kg</td>
<td>0.03 mg</td>
<td>0.03 ml</td>
</tr>
<tr>
<td><strong>DIPHENHYDRAMINE</strong>&lt;br&gt;(50 mg/1ml) Vial</td>
<td>1 mg/kg</td>
<td>3 mg</td>
<td>0.06 ml</td>
</tr>
<tr>
<td><strong>METHYLPREDNISONE</strong>&lt;br&gt;(125 mg/2ml) Vial</td>
<td>2 mg/kg</td>
<td>6 mg</td>
<td>0.096 ml</td>
</tr>
<tr>
<td><strong>ALBUTEROL</strong>&lt;br&gt;(2.5 mg/ml) Ampule</td>
<td>0.15 mg/kg</td>
<td>0.45 mg</td>
<td>0.18 ml</td>
</tr>
<tr>
<td><strong>NALOXONE</strong>&lt;br&gt;(1 mg/ml) Pre-filled syringe</td>
<td>0.1 mg/kg</td>
<td>0.3 mg</td>
<td>0.3 ml</td>
</tr>
<tr>
<td><strong>GLUCAGON</strong>&lt;br&gt;(1 mg/ml) Vial</td>
<td>Standard Dose&lt;br&gt;Not Weight-Based</td>
<td>0.5 mg</td>
<td>0.5 ml</td>
</tr>
</tbody>
</table>

*For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose*

### Asthma

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ALBUTEROL</strong>&lt;br&gt;(2.5 mg/ml) Ampule</td>
<td>0.15 mg/kg</td>
<td>0.45 mg</td>
<td>0.18 ml</td>
</tr>
<tr>
<td><strong>CONTINUOUS ALBUTEROL</strong></td>
<td>0.5 mg/kg</td>
<td>1.5 mg</td>
<td>0.6 ml</td>
</tr>
<tr>
<td><strong>METHYLPREDNISONE</strong>&lt;br&gt;(125 mg/2ml) Vial</td>
<td>2 mg/kg</td>
<td>6 mg</td>
<td>0.096 ml</td>
</tr>
<tr>
<td><strong>EPINEPHRINE</strong>&lt;br&gt;(1mg/1ml) vial/amp&lt;br&gt;Must use filter needle for amp</td>
<td>0.01 mg/kg</td>
<td>SUB Q&lt;br&gt;0.03 mg</td>
<td>0.03 ml</td>
</tr>
<tr>
<td><strong>MAGNESIUM SULFATE</strong>&lt;br&gt;(2 grams/50 ml) Solution for Inj</td>
<td>50 mg/kg</td>
<td>150 mg</td>
<td>3.75 ml</td>
</tr>
</tbody>
</table>
### Seizures

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DIAZEPAM</strong></td>
<td>0.2 mg/kg</td>
<td>0.6 mg</td>
<td>0.12 ml</td>
</tr>
<tr>
<td><em>(5 mg/ml) Pre-filled syringe</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LORAZEPAM</strong></td>
<td>0.1 mg/kg</td>
<td>0.3 mg</td>
<td>0.15 ml</td>
</tr>
<tr>
<td><em>(2 mg/ml) Pre-filled syringe</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong></td>
<td>0.1 mg/kg</td>
<td>0.3 mg</td>
<td>0.06 ml</td>
</tr>
<tr>
<td><em>(5 mg/ml) Vial</em></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose

### Antiemetic/Pain/Agitation

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ONDANSETRON</strong></td>
<td>0.15 mg/kg</td>
<td>0.45 mg</td>
<td>0.225 ml</td>
</tr>
<tr>
<td><em>(2 mg/ml) Vial</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FENTANYL</strong></td>
<td>1 mcg/kg</td>
<td>3 mcg</td>
<td>0.06 ml</td>
</tr>
<tr>
<td><em>(50mcg/ml) vial/amp</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MORPHINE</strong></td>
<td>0.1 mg/kg</td>
<td>0.3 mg</td>
<td>0.03 ml</td>
</tr>
<tr>
<td><em>(10 mg/1 ml) Pre-filled syringe</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>KETOROLAC</strong></td>
<td>0.5 mg/kg</td>
<td>1.5 mg</td>
<td>0.1 ml</td>
</tr>
<tr>
<td><em>(15 mg/ml) Pre-filled syringe</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ETOMIDATE</strong></td>
<td>0.2 mg/kg</td>
<td>0.6 mg</td>
<td>0.3 ml</td>
</tr>
<tr>
<td><em>(2 mg/ml) Vial</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong></td>
<td>0.1 mg/kg</td>
<td>0.3 mg</td>
<td>0.06 ml</td>
</tr>
<tr>
<td><em>(5 mg/ml) Vial</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>KETAMINE IM ONLY</strong></td>
<td>4 mg/kg</td>
<td>12 mg</td>
<td>0.12 ml</td>
</tr>
<tr>
<td><em>(100 mg/ml) Vial</em></td>
<td></td>
<td></td>
<td></td>
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</table>

*Must use filter needle for amp*
### 4 kg

#### Resuscitation/Cardiac

<table>
<thead>
<tr>
<th>Medication</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EPINEPHRINE</strong>&lt;br&gt;1 mg/10 ml (1:10 ml) Pre-filled syringe</td>
<td>0.01 mg/kg</td>
<td>0.04 mg</td>
<td>0.4 ml</td>
</tr>
<tr>
<td><strong>ATROPINE</strong>&lt;br&gt;(1mg/10ml) Pre-filled syringe</td>
<td>0.02 mg/kg</td>
<td>0.08 mg</td>
<td>0.8 ml</td>
</tr>
<tr>
<td><strong>SODIUM BICARBONATE</strong>&lt;br&gt;(5 meq/10 ml) Pre-filled syringe</td>
<td>1 meq/kg</td>
<td>4 meq</td>
<td>8 ml</td>
</tr>
<tr>
<td><strong>CALCIUM GLUCONATE</strong>&lt;br&gt;(1gm/10 ml) Pre-filled syringe</td>
<td>60 mg/kg</td>
<td>240 mg</td>
<td>2.4 ml</td>
</tr>
<tr>
<td><strong>LIDOCAINE</strong>&lt;br&gt;(100 mg/5 ml) Pre-filled syringe</td>
<td>1 mg/kg</td>
<td>4 mg</td>
<td>0.2 ml</td>
</tr>
<tr>
<td><strong>AMIODARONE</strong>&lt;br&gt;(50mg/ml) vial</td>
<td>5 mg/kg</td>
<td>20 mg</td>
<td>0.4 ml</td>
</tr>
<tr>
<td><strong>ADENOSINE</strong>&lt;br&gt;(6mg/2 ml) Pre-filled syringe</td>
<td>0.01 mg/kg</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; - 0.4 mg</td>
<td>0.13 ml</td>
</tr>
<tr>
<td></td>
<td>0.02 mg/kg</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; - 0.8 mg</td>
<td>0.26 ml</td>
</tr>
</tbody>
</table>

### 4 kg

#### Delayed Sequence Intubation (DSI)

*FOR DSI APPROVED SERVICES ONLY*

<table>
<thead>
<tr>
<th>Medication</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ATROPINE</strong>&lt;br&gt;(1mg/10ml) Pre-filled syringe&lt;br&gt;Consider if age &lt;1 or increased secretions</td>
<td>0.02mg/kg</td>
<td>0.08 mg</td>
<td>0.8 ml</td>
</tr>
<tr>
<td><strong>LIDOCAINE</strong>&lt;br&gt;(100 mg/5 ml) Pre-filled syringe</td>
<td>1 mg/kg</td>
<td>4 mg</td>
<td>0.2 ml</td>
</tr>
<tr>
<td><strong>ETOMIDATE</strong>&lt;br&gt;2 mg/ml Vial</td>
<td>0.3mg/kg</td>
<td>1.2 mg</td>
<td>0.6 ml</td>
</tr>
<tr>
<td><strong>FENTANYL</strong>&lt;br&gt;Must use filter needle for amp</td>
<td>1 mcg/kg</td>
<td>4 mcg</td>
<td>0.08 ml</td>
</tr>
<tr>
<td><strong>KETAMINE IV</strong>&lt;br&gt;10 mg/ml Vial</td>
<td>2 mg/kg</td>
<td>8 mg</td>
<td>0.8 ml</td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong>&lt;br&gt;1 mg/ml Vial</td>
<td>0.3 mg/kg</td>
<td>1.2 mg</td>
<td>1.2 ml</td>
</tr>
<tr>
<td><strong>SUCCINYLCHOLINE</strong>&lt;br&gt;20 mg/ml Vial</td>
<td>2 mg/kg</td>
<td>8 mg</td>
<td>0.4 ml</td>
</tr>
<tr>
<td><strong>ROCURONIUM</strong>&lt;br&gt;10 mg/ml Vial</td>
<td>1 mg/kg</td>
<td>4 mg</td>
<td>0.4 ml</td>
</tr>
<tr>
<td><strong>VECURONIUM</strong>&lt;br&gt;(10 mg vial for recon. Add 10 ml NS for final conc. 1mg/ml)</td>
<td>0.2 mg/kg</td>
<td>0.8 mg</td>
<td>0.8 ml</td>
</tr>
</tbody>
</table>
### 4 kg

#### Anaphylaxis/Antidote

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EPINEPHRINE</strong></td>
<td>0.01 mg/kg</td>
<td>IM 0.04 mg</td>
<td>0.04 ml</td>
</tr>
<tr>
<td><em>(1 mg/1ml) vial/amp</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DIPHENHYDRAMINE</strong></td>
<td>1 mg/kg</td>
<td>4 mg</td>
<td>0.08 ml</td>
</tr>
<tr>
<td><em>(50 mg/1 ml) Vial</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>METHYLPRÉDNISONE</strong></td>
<td>2 mg/kg</td>
<td>8 mg</td>
<td>0.128 ml</td>
</tr>
<tr>
<td><em>(125 mg/2 ml) Vial</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ALBUTEROL</strong></td>
<td>0.15 mg/kg</td>
<td>0.6 mg</td>
<td>0.24 ml</td>
</tr>
<tr>
<td><em>(2.5 mg/ml) Ampule</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NALOXONE</strong></td>
<td>0.1 mg/kg</td>
<td>0.4 mg</td>
<td>0.4 ml</td>
</tr>
<tr>
<td><em>(1 mg/ml) Pre-filled syringe</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>GLUCAGON</strong></td>
<td>Standard Dose Not Weight-Based</td>
<td>0.5 mg</td>
<td>0.5 ml</td>
</tr>
<tr>
<td><em>(1 mg/ml) Vial</em></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Asthma

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ALBUTEROL</strong></td>
<td>0.15 mg/kg</td>
<td>0.6 mg</td>
<td>0.24 ml</td>
</tr>
<tr>
<td><em>(2.5 mg/ml) Ampule</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CONTINUOUS ALBUTEROL</strong></td>
<td>0.5 mg/kg</td>
<td>2 mg</td>
<td>0.8 ml</td>
</tr>
<tr>
<td><strong>METHYLPRÉDNISONE</strong></td>
<td>2 mg/kg</td>
<td>8 mg</td>
<td>0.128 ml</td>
</tr>
<tr>
<td><em>(125 mg/2 ml) Vial</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>EPINEPHRINE</strong></td>
<td>0.01 mg/kg</td>
<td>SUB Q 0.04 mg</td>
<td>0.04 ml</td>
</tr>
<tr>
<td><em>(1 mg/1ml) vial/amp</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MAGNESIUM SULFATE</strong></td>
<td>50 mg/kg</td>
<td>200 mg</td>
<td>5 ml</td>
</tr>
<tr>
<td><em>(2 grams/50 ml) Solution for Injection</em></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Pediatric Resuscitation – 4 KG

#### Seizures

<table>
<thead>
<tr>
<th>Medication</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DIAZEPAM</strong> *</td>
<td>0.2 mg/kg</td>
<td>0.8 mg *</td>
<td>0.16 ml</td>
</tr>
<tr>
<td>(5 mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LORAZEPAM</strong> *</td>
<td>0.1 mg/kg</td>
<td>0.4 mg *</td>
<td>0.2 ml</td>
</tr>
<tr>
<td>(2 mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong> *</td>
<td>0.1 mg/kg</td>
<td>0.4 mg *</td>
<td>0.08 ml</td>
</tr>
<tr>
<td>(5 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose

#### Antiemetic/Pain/Agitation

<table>
<thead>
<tr>
<th>Medication</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ONDANSETRON</strong></td>
<td>0.15 mg/kg</td>
<td>0.6 mg</td>
<td>0.3 ml</td>
</tr>
<tr>
<td>(2 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FENTANYL</strong> *</td>
<td>1 mcg/kg</td>
<td>4 mcg *</td>
<td>0.08 ml</td>
</tr>
<tr>
<td>(50mcg/ml) vial/amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MORPHINE</strong> *</td>
<td>0.1 mg/kg</td>
<td>0.4 mg *</td>
<td>0.04 ml</td>
</tr>
<tr>
<td>(10 mg/1 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>KETOROLAC</strong></td>
<td>0.5 mg/kg</td>
<td>2 mg</td>
<td>0.14 ml</td>
</tr>
<tr>
<td>(15 mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ETOMIDATE</strong></td>
<td>0.2 mg/kg</td>
<td>0.8 mg</td>
<td>0.4 ml</td>
</tr>
<tr>
<td>(2 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong> *</td>
<td>0.1 mg/kg</td>
<td>0.4 mg *</td>
<td>0.8 ml</td>
</tr>
<tr>
<td>(5 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>KETAMINE IM ONLY</strong></td>
<td>4 mg/kg</td>
<td>16 mg</td>
<td>0.16 ml</td>
</tr>
<tr>
<td>(100 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Pediatric Resuscitation – 5 kg

## 5 kg

### Resuscitation/Cardiac

<table>
<thead>
<tr>
<th>Medication</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EPINEPHRINE</strong></td>
<td>0.01 mg/kg</td>
<td>0.05 mg</td>
<td>0.5 ml</td>
</tr>
<tr>
<td>(1 mg/10 ml (1:10 ml) Pre-filled syringe)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ATROPINE</strong></td>
<td>0.02 mg/kg</td>
<td>0.1 mg</td>
<td>1 ml</td>
</tr>
<tr>
<td>(1mg/10ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SODIUM BICARBONATE</strong></td>
<td>1 meq/kg</td>
<td>5 meq</td>
<td>10 ml</td>
</tr>
<tr>
<td>(5 meq/10 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CALCICUM GLUCONATE</strong></td>
<td>60 mg/kg</td>
<td>300 mg</td>
<td>3 ml</td>
</tr>
<tr>
<td>(1gm/10 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LIDOCAINE</strong></td>
<td>1 mg/kg</td>
<td>5 mg</td>
<td>0.25 ml</td>
</tr>
<tr>
<td>(100 mg/5 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>AMIODARONE</strong></td>
<td>5 mg/kg</td>
<td>25 mg</td>
<td>0.5 ml</td>
</tr>
<tr>
<td>(50mg/ml) vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ADENOSINE</strong></td>
<td>0.1 mg/kg</td>
<td>0.2 mg/kg</td>
<td>0.16 ml</td>
</tr>
<tr>
<td>(6mg/2 ml) Pre-filled syringe</td>
<td>0.2 mg/kg</td>
<td>0.5 mg</td>
<td>0.33 ml</td>
</tr>
</tbody>
</table>

### Delayed Sequence Intubation (DSI)

<table>
<thead>
<tr>
<th>Medication</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ATROPINE</strong></td>
<td>0.02 mg/kg</td>
<td>0.1 mg</td>
<td>1 ml</td>
</tr>
<tr>
<td>(1mg/10ml) Pre-filled syringe</td>
<td>Consider if age &lt;8 or increased secretions</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LIDOCAINE</strong></td>
<td>1 mg/kg</td>
<td>5 mg</td>
<td>0.25 ml</td>
</tr>
<tr>
<td>(100 mg/5 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ETOMIDATE</strong></td>
<td>0.3 mg/kg</td>
<td>1.5 mg</td>
<td>0.75 ml</td>
</tr>
<tr>
<td>2 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FENTANYL</strong></td>
<td>1 mcg/kg</td>
<td>5 mcg *</td>
<td>0.1 ml</td>
</tr>
<tr>
<td>(50mcg/ml) vial/amp</td>
<td>Must use filter needle for amp</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>KETAMINE IV</strong></td>
<td>2 mg/kg</td>
<td>10 mg</td>
<td>1 ml</td>
</tr>
<tr>
<td>10 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong></td>
<td>0.3 mg/kg</td>
<td>1.5 mg *</td>
<td>1.5 ml</td>
</tr>
<tr>
<td>1 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SUCCINYLCHOLINE</strong></td>
<td>2 mg/kg</td>
<td>10 mg</td>
<td>0.5 ml</td>
</tr>
<tr>
<td>20 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ROCURONIUM</strong></td>
<td>1 mg/kg</td>
<td>5 mg</td>
<td>0.5 ml</td>
</tr>
<tr>
<td>10 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>VECURONIUM</strong></td>
<td>0.2 mg/kg</td>
<td>1 mg</td>
<td>1 ml</td>
</tr>
</tbody>
</table>

* For pain and sedation doses:
  - Start dose low – slowly increase
  - Titrate to effect up to listed dose

---

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### Pediatric Resuscitation – 5 KG

#### 5 kg

**Anaphylaxis/Antidote**

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EPINEPHRINE</strong></td>
<td>0.01 mg/kg</td>
<td>0.05 mg</td>
<td>0.05 ml</td>
</tr>
<tr>
<td>(1 mg/1 ml) vial/amp</td>
<td>Must use filter needle for amp</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DIPHENHYDRAMINE</strong></td>
<td>1 mg/kg</td>
<td>5 mg</td>
<td>0.1 ml</td>
</tr>
<tr>
<td>(50 mg/1 ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>METHYPREDNISONE</strong></td>
<td>2 mg/kg</td>
<td>10 mg</td>
<td>0.16 ml</td>
</tr>
<tr>
<td>(125 mg/2 ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ALBUTEROL</strong></td>
<td>0.15 mg/kg</td>
<td>0.75 mg</td>
<td>0.3 ml</td>
</tr>
<tr>
<td>(2.5 mg/ml) Ampule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NALOXONE</strong></td>
<td>0.1 mg/kg</td>
<td>0.5 mg</td>
<td>0.5 ml</td>
</tr>
<tr>
<td>(1 mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>GLUCAGON</strong></td>
<td>Standard Dose</td>
<td>Not Weight-Based</td>
<td>0.5 mg</td>
</tr>
<tr>
<td>(1 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose

#### 5 kg

**Asthma**

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ALBUTEROL</strong></td>
<td>0.15 mg/kg</td>
<td>0.75 mg</td>
<td>0.3 ml</td>
</tr>
<tr>
<td>(2.5 mg/ml) Ampule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CONTINUOUS ALBUTEROL</strong></td>
<td>0.5 mg/kg</td>
<td>2.5 mg</td>
<td>1 ml</td>
</tr>
<tr>
<td><strong>METHYPREDNISONE</strong></td>
<td>2 mg/kg</td>
<td>10 mg</td>
<td>0.16 ml</td>
</tr>
<tr>
<td>(125 mg/2 ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>EPINEPHRINE</strong></td>
<td>0.01 mg/kg</td>
<td>SUB Q</td>
<td>0.05 mg</td>
</tr>
<tr>
<td>(1mg/1ml) vial/amp</td>
<td>Must use filter needle for amp</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MAGNESIUM SULFATE</strong></td>
<td>50 mg/kg</td>
<td>250 mg</td>
<td>6.25 ml</td>
</tr>
<tr>
<td>(2 grams/50 ml) Solution for Inj</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Pediatric Resuscitation – 5 kg

## Seizures

<table>
<thead>
<tr>
<th>Medication</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIAZEPAM *</td>
<td>0.2 mg/kg</td>
<td>1 mg *</td>
<td>0.2 ml</td>
</tr>
<tr>
<td>LORAZEPAM *</td>
<td>0.1 mg/kg</td>
<td>0.5 mg *</td>
<td>0.25 ml</td>
</tr>
<tr>
<td>MIDAZOLAM *</td>
<td>0.1 mg/kg</td>
<td>0.5 mg *</td>
<td>0.1 ml</td>
</tr>
</tbody>
</table>

* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose

## Antiemetic/Pain/Agitation

<table>
<thead>
<tr>
<th>Medication</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>ONDANSETRON</td>
<td>0.15 mg/kg</td>
<td>0.75 mg</td>
<td>0.375 ml</td>
</tr>
<tr>
<td>FENTANYL *</td>
<td>1 mcg/kg</td>
<td>5 mcg *</td>
<td>0.1 ml</td>
</tr>
<tr>
<td>MORPHINE *</td>
<td>0.1 mg/kg</td>
<td>0.5 mg *</td>
<td>0.05 ml</td>
</tr>
<tr>
<td>KETOROLAC</td>
<td>0.5 mg/kg</td>
<td>2.5 mg</td>
<td>0.16 ml</td>
</tr>
<tr>
<td>ETOMIDATE</td>
<td>0.2 mg/kg</td>
<td>1 mg</td>
<td>0.5 ml</td>
</tr>
<tr>
<td>MIDAZOLAM *</td>
<td>0.1 mg/kg</td>
<td>0.5 mg *</td>
<td>0.1 ml</td>
</tr>
<tr>
<td>KETAMINE IM ONLY</td>
<td>4 mg/kg</td>
<td>20 mg</td>
<td>0.2 ml</td>
</tr>
</tbody>
</table>

* Must use filter needle for amp

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Return to Formulary Table of Contents
# PEDIATRIC RESUSCITATION – 6-7 KG

## 6 - 7 kg

### Resuscitation

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EPINEPHRINE</strong></td>
<td>1 mg/10 ml (1:10 ml) Pre-filled syringe</td>
<td>0.01 mg/kg</td>
<td>0.065 mg</td>
</tr>
<tr>
<td><strong>ATROPINE</strong></td>
<td>(1mg/10ml) Pre-filled syringe</td>
<td>0.02 mg/kg</td>
<td>0.13 mg</td>
</tr>
<tr>
<td><strong>SODIUM BICARBONATE</strong></td>
<td>(5 meq/10 ml )Pre-filled syringe</td>
<td>1 meq/kg</td>
<td>6.5 meq</td>
</tr>
<tr>
<td><strong>CALCIUM GLUCONATE</strong></td>
<td>(1gm/10 ml) Pre-filled syringe</td>
<td>60 mg/kg</td>
<td>390 mg</td>
</tr>
<tr>
<td><strong>LIDOCAINE</strong></td>
<td>(100 mg/5 ml) Pre-filled syringe</td>
<td>1 mg/kg</td>
<td>6.5mg</td>
</tr>
<tr>
<td><strong>AMIODARONE</strong></td>
<td>(50mg/ml) vial</td>
<td>5 mg/kg</td>
<td>32 mg</td>
</tr>
<tr>
<td><strong>ADENOSINE</strong></td>
<td>(6mg/2 ml) Pre-filled syringe</td>
<td>0.1 mg/kg</td>
<td>0.65mg *</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.2 mg/kg</td>
<td>1st - 0.65mg</td>
</tr>
</tbody>
</table>

### 6 - 7 kg

#### Delayed Sequence Intubation (DSI)

*FOR DSI APPROVED SERVICES ONLY*

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ATROPINE</strong></td>
<td>(1mg/10ml) Pre-filled syringe</td>
<td>0.02 mg/kg</td>
<td>0.13 mg</td>
</tr>
<tr>
<td><strong>LIDOCAINE</strong></td>
<td>(100 mg/5 ml) Pre-filled syringe</td>
<td>1 mg/kg</td>
<td>6.5 mg</td>
</tr>
<tr>
<td><strong>ETOMIDATE</strong></td>
<td>2 mg/ml Vial</td>
<td>0.3mg/kg</td>
<td>2 mg</td>
</tr>
<tr>
<td><strong>FENTANYL</strong></td>
<td>(50mcg/ml) vial/amp Must use filter needle for amp</td>
<td>1 mcg/kg</td>
<td>6 mcg *</td>
</tr>
<tr>
<td><strong>KETAMINE IV</strong></td>
<td>10 mg/ml Vial</td>
<td>2 mg/kg</td>
<td>13 mg</td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong></td>
<td>1 mg/ml Vial</td>
<td>0.3 mg/kg</td>
<td>2 mg *</td>
</tr>
<tr>
<td><strong>SUCCINYLCHOLINE</strong></td>
<td>20 mg/ml Vial</td>
<td>2 mg/kg</td>
<td>13 mg</td>
</tr>
<tr>
<td><strong>ROCUROMIUM</strong></td>
<td>10 mg/ml Vial</td>
<td>1 mg/kg</td>
<td>7 mg</td>
</tr>
<tr>
<td><strong>VECURONIUM</strong></td>
<td>(10 mg vial for recon. Add 10 ml NS for final conc. 1mg/ml)</td>
<td>0.2 mg/kg</td>
<td>1.3 mg</td>
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</tbody>
</table>

* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose
### 6 - 7 kg

**Anaphylaxis/Antidote**

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPINEPHRINE</td>
<td>0.01 mg/kg</td>
<td>0.07 mg</td>
<td>0.07 ml</td>
</tr>
<tr>
<td>(1mg/1ml) vial/amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIPHENHYDRAMINE</td>
<td>1 mg/kg</td>
<td>7 mg</td>
<td>0.14 ml</td>
</tr>
<tr>
<td>(50 mg/1 ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>METHYLPREDNISONE</td>
<td>2 mg/kg</td>
<td>136 mg</td>
<td>0.096 ml</td>
</tr>
<tr>
<td>(125 mg/2 ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALBUTEROL</td>
<td>0.15 mg/kg</td>
<td>1 mg</td>
<td>0.4 ml</td>
</tr>
<tr>
<td>(2.5 mg/ml) Ampule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NALOXONE</td>
<td>0.1 mg/kg</td>
<td>0.7 mg</td>
<td>0.7 ml</td>
</tr>
<tr>
<td>(1mg/ml) Pre-filled syringe</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>GLUCAGON</td>
<td>Standard Dosing Not Weight-Based</td>
<td>0.5 mg</td>
<td>0.5 ml</td>
</tr>
<tr>
<td>(1 mg/ml) Vial</td>
<td></td>
<td></td>
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</table>

*For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose*

### 6 - 7 kg

**Asthma**

<table>
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<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
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</thead>
<tbody>
<tr>
<td>ALBUTEROL</td>
<td>0.15 mg/kg</td>
<td>1 mg</td>
<td>0.4 ml</td>
</tr>
<tr>
<td>(2.5 mg/ml) Ampule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONTINUOUS ALBUTEROL</td>
<td>0.5 mg/kg</td>
<td>3.4 mg</td>
<td>1.4 ml</td>
</tr>
<tr>
<td>METHYLPREDNISONE</td>
<td>2 mg/kg</td>
<td>13 mg</td>
<td>0.208 ml</td>
</tr>
<tr>
<td>(125 mg/2 ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EPINEPHRINE</td>
<td>0.01 mg/kg</td>
<td>SUB Q 0.07 mg</td>
<td>0.07 ml</td>
</tr>
<tr>
<td>(1mg/1ml) vial/amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAGNESIUM SULFATE</td>
<td>50 mg/kg</td>
<td>335 mg</td>
<td>8.37 ml</td>
</tr>
<tr>
<td>(2 grams/50 ml) Solution for Inj</td>
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</table>
### 6 - 7 kg

#### Seizures

<table>
<thead>
<tr>
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<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DIAZEPAM</strong> *</td>
<td>0.2 mg/kg</td>
<td>1.3 mg *</td>
<td>0.26 ml</td>
</tr>
<tr>
<td>(5 mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LORAZEPAM</strong> *</td>
<td>0.1 mg/kg</td>
<td>0.7 mg *</td>
<td>0.35 ml</td>
</tr>
<tr>
<td>(2 mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong> *</td>
<td>0.1 mg/kg</td>
<td>0.7 mg *</td>
<td>0.14 ml</td>
</tr>
<tr>
<td>(5 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose

#### Antiemetic/Pain/Agitation

<table>
<thead>
<tr>
<th></th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ONDANSETRON</strong></td>
<td>0.15 mg/kg</td>
<td>1 mg</td>
<td>0.5 ml</td>
</tr>
<tr>
<td>(2 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FENTANYL</strong> *</td>
<td>1 mcg/kg</td>
<td>6 mcg *</td>
<td>0.12 ml</td>
</tr>
<tr>
<td>(50mcg/ml) vial/amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MORPHINE</strong> *</td>
<td>0.1 mg/kg</td>
<td>0.7 mg *</td>
<td>0.07 ml</td>
</tr>
<tr>
<td>(10 mg/1 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>KETOROLAC</strong></td>
<td>0.5 mg/kg</td>
<td>3.35 mg</td>
<td>0.23 ml</td>
</tr>
<tr>
<td>(15 mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>ETOMIDATE</strong></td>
<td>0.2 mg/kg</td>
<td>1.3 mg</td>
<td>0.65 ml</td>
</tr>
<tr>
<td>(2 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong> *</td>
<td>0.1 mg/kg</td>
<td>0.7 mg *</td>
<td>0.14 ml</td>
</tr>
<tr>
<td>(5 mg/ml) Vial</td>
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</tr>
<tr>
<td><strong>KETAMINE IM ONLY</strong></td>
<td>4 mg/kg</td>
<td>26 mg</td>
<td>2.6 ml</td>
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<tr>
<td>(100 mg/ml) Vial</td>
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</table>
# Pediatric Resuscitation

## 8 - 9 kg

### Resuscitation

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<tr>
<th>Medication</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EPINEPHRINE</strong></td>
<td>0.01 mg/kg</td>
<td>0.085 mg</td>
<td>0.85 ml</td>
</tr>
<tr>
<td>1 mg/10 ml (1:10 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ATROPINE</strong></td>
<td>0.02 mg/kg</td>
<td>0.17 mg</td>
<td>1.7 ml</td>
</tr>
<tr>
<td>1mg/10ml Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SODIUM BICARBONATE</strong></td>
<td>1 meq/kg</td>
<td>8.5 meq</td>
<td>17 ml</td>
</tr>
<tr>
<td>(5 meq/10 ml)Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CALCIUM GLUCONATE</strong></td>
<td>60 mg/kg</td>
<td>510 mg</td>
<td>5.1 ml</td>
</tr>
<tr>
<td>(1gm/10 ml)Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LIDOCAINE</strong></td>
<td>1 mg/kg</td>
<td>8.5 mg</td>
<td>0.42 ml</td>
</tr>
<tr>
<td>(100 mg/5 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>AMIODARONE</strong></td>
<td>5 mg/kg</td>
<td>42 mg</td>
<td>0.85 ml</td>
</tr>
<tr>
<td>(50mg/ml) vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ADENOSINE</strong></td>
<td>0.1 mg/kg</td>
<td>1st - 0.85mg</td>
<td>0.28 ml</td>
</tr>
<tr>
<td>(6mg/2 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.2 mg/kg</td>
<td>2nd - 1.7 mg</td>
<td>0.56 ml</td>
</tr>
</tbody>
</table>

### Delayed Sequence Intubation (DSI)

*FOR DSI APPROVED SERVICES ONLY*

<table>
<thead>
<tr>
<th>Medication</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ATROPINE</strong></td>
<td>0.02 mg/kg</td>
<td>0.17 mg</td>
<td>1.7 ml</td>
</tr>
<tr>
<td>(1mg/10ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consider if age &lt;8 or increased secretions</td>
<td></td>
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</tr>
<tr>
<td><strong>LIDOCAINE</strong></td>
<td>1 mg/kg</td>
<td>8.5 mg</td>
<td>0.42 ml</td>
</tr>
<tr>
<td>(100 mg/5 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ETOMIDATE</strong></td>
<td>0.3mg/kg</td>
<td>2.5 mg</td>
<td>1.25 ml</td>
</tr>
<tr>
<td>2 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FENTANYL</strong></td>
<td>1 mcg/kg</td>
<td>8 mg *</td>
<td>0.16 ml</td>
</tr>
<tr>
<td>(50mcg/ml) vial/amp</td>
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<td></td>
</tr>
<tr>
<td>Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>KETAMINE IV</strong></td>
<td>2 mg/kg</td>
<td>17 mg</td>
<td>1.7 ml</td>
</tr>
<tr>
<td>10 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong></td>
<td>0.3 mg/kg</td>
<td>2.5 mg *</td>
<td>2.5 ml</td>
</tr>
<tr>
<td>1 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SUCCINYLCHOLINE</strong></td>
<td>2 mg/kg</td>
<td>17 mg</td>
<td>0.85 ml</td>
</tr>
<tr>
<td>20 mg/ml Vial</td>
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</tr>
<tr>
<td><strong>ROCURONIUM</strong></td>
<td>1 mg/kg</td>
<td>9 mg</td>
<td>0.9 ml</td>
</tr>
<tr>
<td>10 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>VECURONIUM</strong></td>
<td>0.2 mg/kg</td>
<td>1.7 mg</td>
<td>1.7 ml</td>
</tr>
<tr>
<td>(10 mg vial for recon. Add 10 ml NS for final conc. 1mg/ml)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose

Return to Table of Contents
Return to Formulary Table of Contents
## PEDIATRIC RESUSCITATION – 8-9 KG

### 8 - 9 kg
#### Anaphylaxis/Antidote

<table>
<thead>
<tr>
<th></th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPINEPHRINE</td>
<td>0.01 mg/kg</td>
<td>0.085 mg</td>
<td>0.085 ml</td>
</tr>
<tr>
<td>(1mg/1ml) vial/amp Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIPHENHYDRAMINE</td>
<td>1 mg/kg</td>
<td>8.5 mg</td>
<td>0.17 ml</td>
</tr>
<tr>
<td>(50 mg/1 ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>METHYLPREDNISONE</td>
<td>2 mg/kg</td>
<td>17 mg</td>
<td>0.27 ml</td>
</tr>
<tr>
<td>(125 mg/2 ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALBUTEROL</td>
<td>0.15 mg/kg</td>
<td>1.28 mg</td>
<td>0.5 ml</td>
</tr>
<tr>
<td>(2.5 mg/ml) Ampule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NALOXONE</td>
<td>0.1 mg/kg</td>
<td>0.9 mg</td>
<td>0.9 ml</td>
</tr>
<tr>
<td>(1mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GLUCAGON</td>
<td>Standard Dose Not Weight-Based</td>
<td>0.5 mg</td>
<td>0.5 ml</td>
</tr>
<tr>
<td>(1mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose

### 8 - 9 kg
#### Asthma

<table>
<thead>
<tr>
<th></th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
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<tbody>
<tr>
<td>ALBUTEROL</td>
<td>0.15 mg/kg</td>
<td>1.28 mg</td>
<td>0.5 ml</td>
</tr>
<tr>
<td>(2.5 mg/ml) Ampule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONTINUOUS ALBUTEROL</td>
<td>0.5 mg/kg</td>
<td>4.25 mg</td>
<td>1.7 ml</td>
</tr>
<tr>
<td>METHYLPREDNISONE</td>
<td>2 mg/kg</td>
<td>17 mg</td>
<td>0.27 ml</td>
</tr>
<tr>
<td>(125 mg/2 ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EPINEPHRINE</td>
<td>0.01 mg/kg</td>
<td>SUB Q 0.085 mg</td>
<td>0.085 ml</td>
</tr>
<tr>
<td>(1mg/1ml) vial/amp Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAGNESIUM SULFATE</td>
<td>50 mg/kg</td>
<td>425 mg</td>
<td>10.63 ml</td>
</tr>
<tr>
<td>(2 grams/50 ml) Solution for Inj</td>
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</table>
### 8 - 9 kg

#### Seizures

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIAZEPAM</td>
<td>0.2 mg/kg</td>
<td>1.7 mg</td>
<td>0.34 ml</td>
</tr>
<tr>
<td>(5 mg/ml) Pre-filled syringe</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>LORAZEPAM</td>
<td>0.1 mg/kg</td>
<td>0.9 mg</td>
<td>0.45 ml</td>
</tr>
<tr>
<td>(2 mg/ml) Pre-filled syringe</td>
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<td></td>
</tr>
<tr>
<td>MIDAZOLAM</td>
<td>0.1 mg/kg</td>
<td>0.9 mg</td>
<td>0.18 ml</td>
</tr>
<tr>
<td>(5 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose

---

#### Antiemetic/Pain/Agitation

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>ONDANSETRON</td>
<td>0.15 mg/kg</td>
<td>1.28 mg</td>
<td>0.64 ml</td>
</tr>
<tr>
<td>ODT &amp; (2 mg/ml) Vial</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>FENTANYL</td>
<td>1 mcg/kg</td>
<td>8 mcg</td>
<td>0.16 ml</td>
</tr>
<tr>
<td>(50mcg/ml) vial/amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morphine</td>
<td>0.1 mg/kg</td>
<td>0.9 mg</td>
<td>0.09 ml</td>
</tr>
<tr>
<td>(10 mg/1 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KETOROLAC</td>
<td>0.5 mg/kg</td>
<td>4.25 mg</td>
<td>0.28 ml</td>
</tr>
<tr>
<td>(15 mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ETOMIDATE</td>
<td>0.2 mg/kg</td>
<td>1.7 mg</td>
<td>0.85 ml</td>
</tr>
<tr>
<td>(2 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MIDAZOLAM</td>
<td>0.1 mg/kg</td>
<td>0.9 mg</td>
<td>0.18 ml</td>
</tr>
<tr>
<td>(5 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KETAMINE IM ONLY</td>
<td>4 mg/kg</td>
<td>34 mg</td>
<td>0.34 ml</td>
</tr>
<tr>
<td>(100 mg/ml) Vial</td>
<td></td>
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**PEDIATRIC RESUSCITATION – 10-11 KG**

### 10 - 11 kg

#### Resuscitation

<table>
<thead>
<tr>
<th>Medication</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EPINEPHRINE</strong></td>
<td>0.01 mg/kg</td>
<td>0.1 mg</td>
<td>1 ml</td>
</tr>
<tr>
<td>1 mg/10 ml (1:10 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ATROPINE</strong></td>
<td>0.02 mg/kg</td>
<td>0.21 mg</td>
<td>2.1 ml</td>
</tr>
<tr>
<td>(1 mg/10 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SODIUM BICARBONATE</strong></td>
<td>1 meq/kg</td>
<td>10 meq</td>
<td>20 ml</td>
</tr>
<tr>
<td>(5 meq/10 ml Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CALCIUM GLUCONATE</strong></td>
<td>60 mg/kg</td>
<td>630 mg</td>
<td>6.3 ml</td>
</tr>
<tr>
<td>(1 gm/10 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LIDOCAINE</strong></td>
<td>1 mg/kg</td>
<td>10 mg</td>
<td>0.5 ml</td>
</tr>
<tr>
<td>(100 mg/5 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>AMIODARONE</strong></td>
<td>5 mg/kg</td>
<td>50 mg</td>
<td>1 ml</td>
</tr>
<tr>
<td>(50 mg/1 ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ADENOSINE</strong></td>
<td>0.1 mg/kg</td>
<td>0.2 mg/kg</td>
<td>1st - 1 mg</td>
</tr>
<tr>
<td>(6 mg/2 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td>2nd - 2.1 mg</td>
</tr>
</tbody>
</table>

#### 10 - 11 kg

#### Delayed Sequence Intubation (DSI)

*FOR DSI APPROVED SERVICES ONLY*

<table>
<thead>
<tr>
<th>Medication</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ATROPINE</strong></td>
<td>0.02 mg/kg</td>
<td>0.21 mg</td>
<td>2.1 ml</td>
</tr>
<tr>
<td>(1 mg/10 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LIDOCAINE</strong></td>
<td>1 mg/kg</td>
<td>10 mg</td>
<td>0.5 ml</td>
</tr>
<tr>
<td>(100 mg/5 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ETomidate</strong></td>
<td>0.3 mg/kg</td>
<td>3.2 mg</td>
<td>1.6 ml</td>
</tr>
<tr>
<td>2 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FENTANYL</strong></td>
<td>1 mcg/kg</td>
<td>10 mcg</td>
<td>0.2 ml</td>
</tr>
<tr>
<td>*(50 mcg/ml) vial/amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>KETAMINE IV</strong></td>
<td>2 mg/kg</td>
<td>20 mg</td>
<td>2 ml</td>
</tr>
<tr>
<td>10 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong></td>
<td>0.3 mg/kg</td>
<td>3.2 mg</td>
<td>3.2 ml</td>
</tr>
<tr>
<td>*(1 mg/ml Vial)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SUCCINYLCHOLINE</strong></td>
<td>2 mg/kg</td>
<td>20 mg</td>
<td>1 ml</td>
</tr>
<tr>
<td>20 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ROCURONIUM</strong></td>
<td>1 mg/kg</td>
<td>10 mg</td>
<td>1 ml</td>
</tr>
<tr>
<td>10 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>VECURONIUM</strong></td>
<td>0.2 mg/kg</td>
<td>2.1 mg</td>
<td>2.1 ml</td>
</tr>
<tr>
<td>*(10 mg vial for recon. Add 10 ml NS for final conc. 1 mg/ml)</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
### Pediatric Resuscitation – 10-11 kg

#### Anaphylaxis/Antidote

<table>
<thead>
<tr>
<th>Medicine</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EPINEPHRINE</strong> (1mg/1ml) vial/amp</td>
<td>0.01 mg/kg</td>
<td>0.1 mg IM</td>
<td>0.1 ml</td>
</tr>
<tr>
<td>Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DIPHENHYDRAMINE</strong> (50 mg/1 ml) Vial</td>
<td>1 mg/kg</td>
<td>10 mg</td>
<td>0.2 ml</td>
</tr>
<tr>
<td><strong>METHYLprednisONE</strong> (125 mg/2 ml) Vial</td>
<td>2 mg/kg</td>
<td>20 mg</td>
<td>0.32 ml</td>
</tr>
<tr>
<td><strong>ALBUTEROL</strong> (2.5 mg/ml) Ampule</td>
<td>0.15 mg/kg</td>
<td>1.5 mg</td>
<td>0.6 ml</td>
</tr>
<tr>
<td><strong>NALOXONE</strong> (1mg/ml) Pre-filled syringe</td>
<td>0.1 mg/kg</td>
<td>1 mg</td>
<td>1 ml</td>
</tr>
<tr>
<td><strong>GLUCAGON</strong> (1mg/ml) Vial</td>
<td>Standard Dose Not Weight-Based</td>
<td>0.5 mg</td>
<td>0.5 ml</td>
</tr>
</tbody>
</table>

#### Asthma

<table>
<thead>
<tr>
<th>Medicine</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ALBUTEROL</strong> (2.5 mg/ml) Ampule</td>
<td>0.15 mg/kg</td>
<td>1.5 mg</td>
<td>0.6 ml</td>
</tr>
<tr>
<td><strong>CONTINUOUS ALBUTEROL</strong></td>
<td>0.5 mg/kg</td>
<td>5 mg</td>
<td>2 ml</td>
</tr>
<tr>
<td><strong>METHYLprednisONE</strong> (125 mg/2 ml) Vial</td>
<td>2 mg/kg</td>
<td>20 mg</td>
<td>0.32 ml</td>
</tr>
<tr>
<td><strong>EPINEPHRINE</strong> (1mg/1ml) vial/amp Must use filter needle for amp</td>
<td>0.01 mg/kg</td>
<td>SUB Q 0.1 mg</td>
<td>0.1 ml</td>
</tr>
<tr>
<td><strong>MAGNESIUM SULFATE</strong> (2 grams/50 ml) Solution for Injection</td>
<td>50 mg/kg</td>
<td>500 mg</td>
<td>12.5 ml</td>
</tr>
</tbody>
</table>

*For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose*
**PEDIATRIC RESUSCITATION – 10-11 KG**

### 10 - 11 kg

**Seizures**

<table>
<thead>
<tr>
<th>Medication</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DIAZEPAM</strong> *</td>
<td>0.2 mg/kg</td>
<td>2 mg *</td>
<td>0.4 ml</td>
</tr>
<tr>
<td>(5 mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LORAZEPAM</strong> *</td>
<td>0.1 mg/kg</td>
<td>1 mg *</td>
<td>0.5 ml</td>
</tr>
<tr>
<td>(2 mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong> *</td>
<td>0.1 mg/kg</td>
<td>1 mg *</td>
<td>0.2 ml</td>
</tr>
<tr>
<td>(5 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose.

### 10 - 11 kg

**Antiemetic/Pain/Agitation**

<table>
<thead>
<tr>
<th>Medication</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ONDANSETRON</strong></td>
<td>0.15 mg/kg</td>
<td>1.5 mg</td>
<td>0.75 ml</td>
</tr>
<tr>
<td>(2 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FENTANYL</strong> *</td>
<td>1 mcg/kg</td>
<td>10 mcg *</td>
<td>0.2 ml</td>
</tr>
<tr>
<td>(50 mcg/ml) vial/amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MORPHINE</strong> *</td>
<td>0.1 mg/kg</td>
<td>1 mg *</td>
<td>0.1 ml</td>
</tr>
<tr>
<td>(10 mg/1 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>KETOROLAC</strong></td>
<td>0.5 mg/kg</td>
<td>5 mg</td>
<td>0.33 ml</td>
</tr>
<tr>
<td>(15 mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ETOMIDATE</strong></td>
<td>0.2 mg/kg</td>
<td>2 mg</td>
<td>1 ml</td>
</tr>
<tr>
<td>(2 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong> *</td>
<td>0.1 mg/kg</td>
<td>1 mg *</td>
<td>0.2 ml</td>
</tr>
<tr>
<td>(5 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>KETAMINE IM ONLY</strong></td>
<td>4 mg/kg</td>
<td>40 mg</td>
<td>ml</td>
</tr>
<tr>
<td>(100 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Return to Table of Contents**

**Return to Formulary Table of Contents**
# Pediatric Resuscitation – 12-14 kg

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Epinephrine</strong></td>
<td>0.01 mg/kg</td>
<td>0.13 mg</td>
<td>1.3 ml</td>
</tr>
<tr>
<td>1 mg/10 ml (1:10 ml)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Atropine</strong></td>
<td>0.02 mg/kg</td>
<td>0.26 mg</td>
<td>2.6 ml</td>
</tr>
<tr>
<td>(1mg/10ml) Pre-filled</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sodium Bicarbonate</strong></td>
<td>1 meq/kg</td>
<td>13 meq</td>
<td>26 ml</td>
</tr>
<tr>
<td>(5 meq/10 ml)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-filled syringe</td>
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</tr>
<tr>
<td><strong>Calcium Gluconate</strong></td>
<td>60 mg/kg</td>
<td>780 mg</td>
<td>7.8 ml</td>
</tr>
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<td>(1gm/10 ml)</td>
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<tr>
<td>Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lidocaine</strong></td>
<td>1 mg/kg</td>
<td>13 mg</td>
<td>0.65 ml</td>
</tr>
<tr>
<td>(100 mg/5 ml)</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Amiodarone</strong></td>
<td>5 mg/kg</td>
<td>65 mg</td>
<td>1.3 ml</td>
</tr>
<tr>
<td>(50 mg/1 ml) Vial</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Adenosine</strong></td>
<td>0.1 mg/kg</td>
<td>1st – 1.3 mg</td>
<td>0.43 ml</td>
</tr>
<tr>
<td>(6mg/2 ml) Pre-filled</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Delay Sequence Intubation (DSI)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Atropine</strong></td>
<td>0.02 mg/kg</td>
<td>0.26 mg</td>
<td>2.6 ml</td>
</tr>
<tr>
<td>(1mg/10ml) Pre-filled</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not recommended in patients &gt;1 year of age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lidocaine</strong></td>
<td>1 mg/kg</td>
<td>13 mg</td>
<td>0.65 ml</td>
</tr>
<tr>
<td>(100 mg/5 ml)</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Etomidate</strong></td>
<td>0.3 mg/kg</td>
<td>4 mg</td>
<td>2 ml</td>
</tr>
<tr>
<td>2 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fentanyl</strong> *</td>
<td>1 mcg/kg</td>
<td>13 mcg</td>
<td>0.26 ml</td>
</tr>
<tr>
<td>(50mcg/ml) vial/amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ketamine IV</strong></td>
<td>2 mg/kg</td>
<td>26 mg</td>
<td>2.6 ml</td>
</tr>
<tr>
<td>10 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Midazolam</strong> *</td>
<td>0.3 mg/kg</td>
<td>4 mg *</td>
<td>4 ml</td>
</tr>
<tr>
<td>1 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Succinylcholine</strong></td>
<td>2 mg/kg</td>
<td>26 mg</td>
<td>1.3 ml</td>
</tr>
<tr>
<td>20 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Rocuronium</strong></td>
<td>1 mg/kg</td>
<td>13 mg</td>
<td>1.3 ml</td>
</tr>
<tr>
<td>10 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vecuronium</strong></td>
<td>0.2 mg/kg</td>
<td>2.6 mg</td>
<td>2.6 ml</td>
</tr>
<tr>
<td>(10 mg vial for recon. Add 10 ml NS for final conc. 1mg/ml)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*For pain and sedation doses:
Start dose low – slowly increase –
Titrate to effect up to listed dose
### Anaphylaxis/Antidote

<table>
<thead>
<tr>
<th>Medication</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EPINEPHRINE</strong></td>
<td>0.01 mg/kg</td>
<td>IM 0.13 mg</td>
<td>0.13 ml</td>
</tr>
<tr>
<td>(1mg/1ml) vial/amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Must use filter needle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DIPHENHYDRAMINE</strong></td>
<td>1 mg/kg</td>
<td>13 mg</td>
<td>0.26 ml</td>
</tr>
<tr>
<td>(50 mg/1 ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>METHYLPREDNISONE</strong></td>
<td>2 mg/kg</td>
<td>26 mg</td>
<td>0.2 ml</td>
</tr>
<tr>
<td>(125 mg/2 ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ALBUTEROL</strong></td>
<td>0.15 mg/kg</td>
<td>1.95 mg</td>
<td>0.78 ml</td>
</tr>
<tr>
<td>(2.5 mg/ml) Ampule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NALOXONE</strong></td>
<td>0.1 mg/kg</td>
<td>1.3 mg</td>
<td>1.3 ml</td>
</tr>
<tr>
<td>(1mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>GLUCAGON</strong></td>
<td></td>
<td>Standard Dose Not Weight-Based</td>
<td>0.5 mg 0.5 ml</td>
</tr>
<tr>
<td>(1mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Asthma

<table>
<thead>
<tr>
<th>Medication</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ALBUTEROL</strong></td>
<td>0.15 mg/kg</td>
<td>1.95 mg</td>
<td>0.78 ml</td>
</tr>
<tr>
<td>(2.5 mg/ml) Ampule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CONTINUOUS ALBUTEROL</strong></td>
<td>0.5 mg/kg</td>
<td>6.5 mg</td>
<td>2.6 ml</td>
</tr>
<tr>
<td><strong>METHYLPREDNISONE</strong></td>
<td>2 mg/kg</td>
<td>26 mg</td>
<td>0.2 ml</td>
</tr>
<tr>
<td>(125 mg/2 ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>EPINEPHRINE</strong></td>
<td>0.01 mg/kg</td>
<td>SUB Q 0.13 mg</td>
<td>0.13 ml</td>
</tr>
<tr>
<td>(1mg/1ml) vial/amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Must use filter needle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MAGNESIUM SULFATE</strong></td>
<td>50 mg/kg</td>
<td>650 mg</td>
<td>16.25 ml</td>
</tr>
<tr>
<td>(2 grams/50 ml) Solution for Injection</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
### 12 - 14 kg

#### Seizures

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DIAZEPAM</strong> *</td>
<td>0.2 mg/kg</td>
<td>2.6 mg *</td>
<td>0.52 ml</td>
</tr>
<tr>
<td>(5 mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LORAZEPAM</strong> *</td>
<td>0.2 mg/kg</td>
<td>1.3 mg *</td>
<td>0.65 ml</td>
</tr>
<tr>
<td>(2 mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong> *</td>
<td>0.1 mg/kg</td>
<td>1.3 mg *</td>
<td>0.26 ml</td>
</tr>
<tr>
<td>(5 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose

#### Antiemetic/Pain/Agitation

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ONDANSETRON</strong></td>
<td>0.15 mg/kg</td>
<td>1.95 mg</td>
<td>0.97 ml</td>
</tr>
<tr>
<td>(2 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FENTANYL</strong> *</td>
<td>1 mcg/kg</td>
<td>13 mcg *</td>
<td>0.26 ml</td>
</tr>
<tr>
<td>(50mcg/ml vial/amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MORPHINE</strong> *</td>
<td>0.1 mg/kg</td>
<td>2.6 mg *</td>
<td>0.26 ml</td>
</tr>
<tr>
<td>(10 mg/1 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>KETOROLAC</strong></td>
<td>0.5 mg/kg</td>
<td>6.5 mg</td>
<td>0.43 ml</td>
</tr>
<tr>
<td>(15 mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ETOMIDATE</strong></td>
<td>0.2 mg/kg</td>
<td>2.6 mg</td>
<td>1.3 ml</td>
</tr>
<tr>
<td>(2 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong> *</td>
<td>0.1 mg/kg</td>
<td>1.3 mg *</td>
<td>0.26 ml</td>
</tr>
<tr>
<td>(5 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>KETAMINE IM ONLY</strong></td>
<td>4 mg/kg</td>
<td>52 mg</td>
<td>0.52 ml</td>
</tr>
<tr>
<td>(100 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Pediatric Resuscitation – 15-18 kg

## 15 - 18 kg Resuscitation

<table>
<thead>
<tr>
<th>Medication</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EPINEPHRINE</strong></td>
<td>0.01 mg/kg</td>
<td>0.17 mg</td>
<td>1.7 ml</td>
</tr>
<tr>
<td>1 mg/10 ml (1:10 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ATROPINE</strong></td>
<td>0.02 mg/kg</td>
<td>0.33 mg</td>
<td>3.3 ml</td>
</tr>
<tr>
<td>(1mg/10ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SODIUM BICARBONATE</strong></td>
<td>1 meq/kg</td>
<td>16.5 meq</td>
<td>33 ml</td>
</tr>
<tr>
<td>(5 meq/10 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CALCIUM GLUCONATE</strong></td>
<td>60 mg/kg</td>
<td>990 mg</td>
<td>9.9 ml</td>
</tr>
<tr>
<td>(1gm/10 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LIDOCAINE</strong></td>
<td>1 mg/kg</td>
<td>17 mg</td>
<td>0.85 ml</td>
</tr>
<tr>
<td>(100 mg/5 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>AMIODARONE</strong></td>
<td>5 mg/kg</td>
<td>80 mg</td>
<td>1.6 ml</td>
</tr>
<tr>
<td>(50 mg/1 ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ADENOSINE</strong></td>
<td>0.1 mg/kg</td>
<td>1st - 1.7 mg</td>
<td>0.56 ml</td>
</tr>
<tr>
<td>(6mg/2 ml) Pre-filled syringe</td>
<td></td>
<td>2nd - 3.3 mg</td>
<td>1.1 ml</td>
</tr>
<tr>
<td><strong>FENTANYL</strong></td>
<td>1 mcg/kg</td>
<td>16 mcg</td>
<td>0.32 ml</td>
</tr>
<tr>
<td>* (50mcg/ml) vial/amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## 15 - 18 kg Delayed Sequence Intubation (DSI)

*FOR DSI APPROVED SERVICES ONLY*

<table>
<thead>
<tr>
<th>Medication</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ATROPINE</strong></td>
<td>0.02 mg/kg</td>
<td>0.33 mg</td>
<td>3.3 ml</td>
</tr>
<tr>
<td>(1mg/10ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not recommended in patients &gt;1 year of age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LIDOCAINE</strong></td>
<td>1 mg/kg</td>
<td>17 mg</td>
<td>0.85 ml</td>
</tr>
<tr>
<td>(100 mg/5 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ETOMIDATE</strong></td>
<td>0.3 mg/kg</td>
<td>5 mg</td>
<td>2.5 ml</td>
</tr>
<tr>
<td>2 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FENTANYL</strong></td>
<td>1 mcg/kg</td>
<td>16 mcg *</td>
<td>0.32 ml</td>
</tr>
<tr>
<td>* (50mcg/ml) vial/amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>KETAMINE IV</strong></td>
<td>2 mg/kg</td>
<td>33 mg</td>
<td>3.3 ml</td>
</tr>
<tr>
<td>10 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong></td>
<td>0.3 mg/kg</td>
<td>5 mg *</td>
<td>5 ml</td>
</tr>
<tr>
<td>* 1 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SUCCINYLCHOLINE</strong></td>
<td>2 mg/kg</td>
<td>34 mg</td>
<td>1.7 ml</td>
</tr>
<tr>
<td>20 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ROCURONIUM</strong></td>
<td>1 mg/kg</td>
<td>17 mg</td>
<td>1.7 ml</td>
</tr>
<tr>
<td>10 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>VECURONIUM</strong></td>
<td>0.2 mg/kg</td>
<td>3.4 mg</td>
<td>3.4 ml</td>
</tr>
<tr>
<td>(10 mg vial for recon. Add 10 ml NS for final conc. 1mg/ml)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose*
### 15 - 18 kg

#### Anaphylaxis/Antidote

<table>
<thead>
<tr>
<th>Medicine</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EPINEPHRINE</strong></td>
<td>0.01 mg/kg</td>
<td>0.17 mg</td>
<td>0.17 ml</td>
</tr>
<tr>
<td>(1mg/1ml) vial/amp</td>
<td></td>
<td>IM</td>
<td></td>
</tr>
<tr>
<td>Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DIPHENHYDRAMINE</strong></td>
<td>1 mg/kg</td>
<td>17 mg</td>
<td>0.34 ml</td>
</tr>
<tr>
<td>(50 mg/1 ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>METHYLPREDNISONE</strong></td>
<td>2 mg/kg</td>
<td>34 mg</td>
<td>0.272 ml</td>
</tr>
<tr>
<td>(125 mg/2 ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ALBUTEROL</strong></td>
<td>0.15 mg/kg</td>
<td>2.55 mg</td>
<td>1 ml</td>
</tr>
<tr>
<td>(2.5 mg/ml) Ampule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NALOXONE</strong></td>
<td>0.1 mg/kg</td>
<td>1.6 mg</td>
<td>1.6 ml</td>
</tr>
<tr>
<td>(1mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>GLUCAGON</strong></td>
<td>Standard Dose Not Weight-Based</td>
<td>0.5 mg</td>
<td>0.5 ml</td>
</tr>
<tr>
<td>(1mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose*

### 15 - 18 kg

#### Asthma

<table>
<thead>
<tr>
<th>Medicine</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ALBUTEROL</strong></td>
<td>0.15 mg/kg</td>
<td>2.55 mg</td>
<td>1 ml</td>
</tr>
<tr>
<td>(2.5 mg/ml) Ampule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CONTINUOUS ALBUTEROL</strong></td>
<td>0.5 mg/kg</td>
<td>8.5 mg</td>
<td>3.4 ml</td>
</tr>
<tr>
<td><strong>METHYLPREDNISONE</strong></td>
<td>2 mg/kg</td>
<td>34 mg</td>
<td>0.272 ml</td>
</tr>
<tr>
<td>(125 mg/2 ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>EPINEPHRINE</strong></td>
<td>0.01 mg/kg</td>
<td>SUB Q 0.17 mg</td>
<td>0.17 ml</td>
</tr>
<tr>
<td>(1mg/1ml) vial/amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MAGNESIUM SULFATE</strong></td>
<td>50 mg/kg</td>
<td>850 mg</td>
<td>21.25 ml</td>
</tr>
<tr>
<td>(2 grams/50 ml) Solution for Injection</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose*
# Pediatric Resuscitation – 15-18 KG

## 15 - 18 kg

### Seizures

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIAZEPAM *</td>
<td>0.2 mg/kg</td>
<td>3.4 mg *</td>
<td>0.68 ml</td>
</tr>
<tr>
<td>(5 mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LORAZEPAM *</td>
<td>0.1 mg/kg</td>
<td>1.7 mg *</td>
<td>0.85 ml</td>
</tr>
<tr>
<td>(2 mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MIDAZOLAM *</td>
<td>0.1 mg/kg</td>
<td>1.7 mg *</td>
<td>0.34 ml</td>
</tr>
<tr>
<td>(5 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose

### Antiemetic/Pain/Agitation

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>ONDANSETRON</td>
<td>0.15 mg/kg</td>
<td>2.55 mg</td>
<td>1.27 ml</td>
</tr>
<tr>
<td>(2 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FENTANYL *</td>
<td>1 mcg/kg</td>
<td>16 mcg *</td>
<td>0.32 ml</td>
</tr>
<tr>
<td>(50mcg/ml) vial/amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MORPHINE *</td>
<td>0.1 mg/kg</td>
<td>1.7 mg *</td>
<td>0.17 ml</td>
</tr>
<tr>
<td>(10 mg/1 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KETOROLAC</td>
<td>0.5 mg/kg</td>
<td>8.5 mg</td>
<td>0.56 ml</td>
</tr>
<tr>
<td>(15 mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ETOMIDATE</td>
<td>0.2 mg/kg</td>
<td>3.4 mg</td>
<td>1.7 ml</td>
</tr>
<tr>
<td>(2 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MIDAZOLAM *</td>
<td>0.1 mg/kg</td>
<td>1.7 mg *</td>
<td>0.34 ml</td>
</tr>
<tr>
<td>(5 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KETAMINE IM ONLY</td>
<td>4 mg/kg</td>
<td>68 mg</td>
<td>0.68 ml</td>
</tr>
<tr>
<td>(100 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Pediatric Resuscitation – 19-23 kg

### 19 - 23 kg Resuscitation

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EPINEPHRINE</strong></td>
<td>0.01 mg/kg</td>
<td>0.21 mg</td>
<td>2.1 ml</td>
</tr>
<tr>
<td>1 mg/10 ml (1:10 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ATROPHINE</strong></td>
<td>0.02 mg/kg</td>
<td>0.42 mg</td>
<td>4.2 ml</td>
</tr>
<tr>
<td>(1mg/10ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SODIUM BICARBONATE</strong></td>
<td>1 meq/kg</td>
<td>21 meq</td>
<td>42 ml</td>
</tr>
<tr>
<td>(5 meq/10 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CALCIUM GLUCONATE</strong></td>
<td>60 mg/kg</td>
<td>1260 mg</td>
<td>12.6 ml</td>
</tr>
<tr>
<td>(1gm/10 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LIDOCAINE</strong></td>
<td>1 mg/kg</td>
<td>20 mg</td>
<td>1 ml</td>
</tr>
<tr>
<td>(100 mg/5 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>AMIODARONE</strong></td>
<td>5 mg/kg</td>
<td>105 mg</td>
<td>2.1 ml</td>
</tr>
<tr>
<td>(50 mg/1 ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ADENOSINE</strong></td>
<td>0.1 mg/kg</td>
<td>2.1 mg</td>
<td></td>
</tr>
<tr>
<td>0.2 mg/kg 1st – 2.1 mg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(6mg/2 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 19 - 23 kg Delayed Sequence Intubation (DSI)

*FOR DSI APPROVED SERVICES ONLY*

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ATROPHINE</strong></td>
<td>0.02 mg/kg</td>
<td>0.42 mg</td>
<td>4.2 ml</td>
</tr>
<tr>
<td>(1mg/10ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not recommended in patients &gt;1 year of age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LIDOCAINE</strong></td>
<td>1 mg/kg</td>
<td>20 mg</td>
<td>1 ml</td>
</tr>
<tr>
<td>(100 mg/5 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ETOMIDATE</strong></td>
<td>0.3 mg/kg</td>
<td>6.3 mg</td>
<td>3.15 ml</td>
</tr>
<tr>
<td>2 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FENTANYL</strong></td>
<td>1 mcg/kg</td>
<td>21 mcg *</td>
<td>0.42 ml</td>
</tr>
<tr>
<td>(50 mcg/ml) vial/amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>KETAMINE IV</strong></td>
<td>2 mg/kg</td>
<td>42 mg</td>
<td>4.2 ml</td>
</tr>
<tr>
<td>10 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong></td>
<td>0.3 mg/kg</td>
<td>6.3 mg</td>
<td>6.3 ml</td>
</tr>
<tr>
<td>1 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SUCCINYLCHOLINE</strong></td>
<td>2 mg/kg</td>
<td>40 mg</td>
<td>2 ml</td>
</tr>
<tr>
<td>20 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ROCURONIUM</strong></td>
<td>1 mg/kg</td>
<td>21 mg</td>
<td>2.1 ml</td>
</tr>
<tr>
<td>10 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>VECURONIUM</strong></td>
<td>0.2 mg/kg</td>
<td>4.2 mg</td>
<td>4.2 ml</td>
</tr>
<tr>
<td>(10 mg vial for recon. Add 10 ml NS for final conc. 1mg/ml)</td>
<td></td>
<td></td>
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</tbody>
</table>

*For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose*
### Anaphylaxis/Antidote

<table>
<thead>
<tr>
<th>Medicine</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPINEPHRINE (1mg/1ml) vial/amp</td>
<td>0.01 mg/kg</td>
<td>IM</td>
<td>0.21 mg</td>
</tr>
<tr>
<td>DIPhenHyDRAMINE (50 mg/1 ml) Vial</td>
<td>1 mg/kg</td>
<td>21 mg</td>
<td>0.42 ml</td>
</tr>
<tr>
<td>METHYLprednisone (125 mg/2 ml) Vial</td>
<td>2 mg/kg</td>
<td>42 mg</td>
<td>0.336 ml</td>
</tr>
<tr>
<td>ALBUTEROL (2.5 mg/ml) Ampule</td>
<td>0.15 mg/kg</td>
<td>2.5 mg</td>
<td>1 ml</td>
</tr>
<tr>
<td>NALoxONE (1mg/ml) Pre-filled syringe</td>
<td>0.1 mg/kg</td>
<td>2 mg</td>
<td>2 ml</td>
</tr>
<tr>
<td>GLUCAGON (1mg/ml) Vial</td>
<td>Standard Dose Not Weight-Based</td>
<td>1 mg</td>
<td>1 ml</td>
</tr>
</tbody>
</table>

For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose.

### Asthma

<table>
<thead>
<tr>
<th>Medicine</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALBUTEROL (2.5 mg/ml) Ampule</td>
<td>0.15 mg/kg</td>
<td>2.5 mg</td>
<td>1 ml</td>
</tr>
<tr>
<td>CONTINUOUS ALBUTEROL</td>
<td>0.5 mg/kg</td>
<td>10 mg</td>
<td>4 ml</td>
</tr>
<tr>
<td>METHYLprednisone (125 mg/2 ml) Vial</td>
<td>2 mg/kg</td>
<td>42 mg</td>
<td>0.34 ml</td>
</tr>
<tr>
<td>EPINEPHRINE (1mg/1ml) vial/amp Must use filter needle for amp</td>
<td>0.01 mg/kg</td>
<td>SUB Q</td>
<td>0.21 mg</td>
</tr>
<tr>
<td>MAGNESIUM SULFATE (2 grams/50 ml) Solution for Injection</td>
<td>50 mg/kg</td>
<td>1050 mg</td>
<td>26.25 ml</td>
</tr>
</tbody>
</table>
PEDIATRIC RESUSCITATION – 19-23 KG

19 - 23 kg
Seizures

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIAZEPAM*</td>
<td>0.2 mg/kg</td>
<td>4.2 mg*</td>
<td>0.84 ml</td>
</tr>
<tr>
<td>(5 mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LORAZEPAM*</td>
<td>0.1 mg/kg</td>
<td>2.1 mg*</td>
<td>2 ml</td>
</tr>
<tr>
<td>(2 mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MIDAZOLAM*</td>
<td>0.1 mg/kg</td>
<td>2.1 mg*</td>
<td>0.42 ml</td>
</tr>
<tr>
<td>(5 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose

19 - 23 kg
Antiemetic/Pain/Agitation

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>ONDANSETRON</td>
<td>0.15 mg/kg</td>
<td>3.15 mg</td>
<td>1.6 ml</td>
</tr>
<tr>
<td>(2 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FENTANYL*</td>
<td>1 mcg/kg</td>
<td>21 mcg*</td>
<td>0.42 ml</td>
</tr>
<tr>
<td>(50mcg/ml) vial/amp Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MORPHINE*</td>
<td>0.1 mg/kg</td>
<td>2.1 mg*</td>
<td>0.21 ml</td>
</tr>
<tr>
<td>(10 mg/1 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KETOROLAC</td>
<td>0.5 mg/kg</td>
<td>10.5 mg</td>
<td>0.7 ml</td>
</tr>
<tr>
<td>(15 mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ETOMIDATE</td>
<td>0.2 mg/kg</td>
<td>4.2 mg</td>
<td>2.1 ml</td>
</tr>
<tr>
<td>(2 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MIDAZOLAM*</td>
<td>0.1 mg/kg</td>
<td>2.1 mg*</td>
<td>0.42 ml</td>
</tr>
<tr>
<td>(5 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KETAMINE IM ONLY</td>
<td>4 mg/kg</td>
<td>84 mg</td>
<td>0.84 ml</td>
</tr>
<tr>
<td>(100 mg/ml) Vial</td>
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</tbody>
</table>
# PEDIATRIC RESUSCITATION – 24-29 KG

## 24 - 29 kg Resuscitation

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EPINEPHRINE</strong></td>
<td>0.01 mg/kg</td>
<td>0.27 mg</td>
<td>2.7 ml</td>
</tr>
<tr>
<td>(1 mg/10 ml (1:10 ml) Pre-filled syringe)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ATROPINE</strong></td>
<td>0.02 mg/kg</td>
<td>0.5 mg</td>
<td>5 ml</td>
</tr>
<tr>
<td>(1mg/10ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SODIUM BICARBONATE</strong></td>
<td>1 meq/kg</td>
<td>27 meq</td>
<td>54 ml</td>
</tr>
<tr>
<td>(5 meq/10 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CALCIUM GLUCONATE</strong></td>
<td>0.1 mg/kg</td>
<td>27 mg</td>
<td>1.35 ml</td>
</tr>
<tr>
<td>(1 gm/10 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LIDOCAINE</strong></td>
<td>0.2 mg/kg</td>
<td>5.4 mg</td>
<td>5.4 ml</td>
</tr>
<tr>
<td>(100 mg/5 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>AMIODARONE</strong></td>
<td>60 mg/kg</td>
<td>1590 mg</td>
<td>15.9 ml</td>
</tr>
<tr>
<td>(50 mg/1 ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ADENOSINE</strong></td>
<td>0.1 mg/kg</td>
<td>1st - 2.7 mg</td>
<td>0.9 ml</td>
</tr>
<tr>
<td>(6mg/2 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## 24 - 29 kg Delayed Sequence Intubation (DSI)

*FOR DSI APPROVED SERVICES ONLY*

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ATROPINE</strong></td>
<td>0.02 mg/kg</td>
<td>0.5 mg</td>
<td>5 ml</td>
</tr>
<tr>
<td>(1mg/10ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LIDOCAINE</strong></td>
<td>1 mg/kg</td>
<td>27 mg</td>
<td>1.35 ml</td>
</tr>
<tr>
<td>(100 mg/5 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ETOMIDATE</strong></td>
<td>0.3 mg/kg</td>
<td>8 mg</td>
<td>4 ml</td>
</tr>
<tr>
<td>2 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FENTANYL</strong></td>
<td>1 mcg/kg</td>
<td>26 mcg *</td>
<td>0.52 ml</td>
</tr>
<tr>
<td>(50mcg/ml) vial/amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>KETAMINE IV</strong></td>
<td>2 mg/kg</td>
<td>50 mg</td>
<td>5 ml</td>
</tr>
<tr>
<td>10 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong></td>
<td>0.3 mg/kg</td>
<td>8 mg *</td>
<td>8 ml</td>
</tr>
<tr>
<td>1 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SUCCINYLCHOLINE</strong></td>
<td>2 mg/kg</td>
<td>54 mg</td>
<td>2.7 ml</td>
</tr>
<tr>
<td>20 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ROCURONIUM</strong></td>
<td>1 mg/kg</td>
<td>27 mg</td>
<td>2.7 ml</td>
</tr>
<tr>
<td>10 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>VECURONIUM</strong></td>
<td>0.2 mg/kg</td>
<td>5.4 mg</td>
<td>5.4 ml</td>
</tr>
<tr>
<td>(10 vial for recon. Add 10 ml NS for final conc. 1mg/ml)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose*
# PEDIATRIC RESUSCITATION – 24-29 KG

## 24 - 29 kg

### Anaphylaxis/Antidote

<table>
<thead>
<tr>
<th>Medicine</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPINEPHRINE</td>
<td>0.01 mg/kg</td>
<td>0.27 mg</td>
<td>0.27 ml</td>
</tr>
<tr>
<td>(1mg/1ml) vial/amp</td>
<td></td>
<td>IM</td>
<td></td>
</tr>
<tr>
<td>Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIPHENHYDRAMINE</td>
<td>1 mg/kg</td>
<td>27 mg</td>
<td>0.54 ml</td>
</tr>
<tr>
<td>(50 mg/1 ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>METHYLPRÉDNISONE</td>
<td>2 mg/kg</td>
<td>54 mg</td>
<td>0.43 ml</td>
</tr>
<tr>
<td>(125 mg/2 ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALBUTEROL</td>
<td>0.15 mg/kg</td>
<td>2.5 mg</td>
<td>1 ml</td>
</tr>
<tr>
<td>(2.5 mg/ml) Ampule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NALOXONE</td>
<td>0.1 mg/kg</td>
<td>2 mg</td>
<td>2 ml</td>
</tr>
<tr>
<td>(1mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GLUCAGON</td>
<td>Standard Dose</td>
<td>1 mg</td>
<td>1 ml</td>
</tr>
<tr>
<td>(1mg/ml) Vial</td>
<td>Not Weight-Based</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### For pain and sedation doses:
- Start dose low – slowly increase –
- Titrate to effect up to listed dose

## 24 - 29 kg

### Asthma

<table>
<thead>
<tr>
<th>Medicine</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALBUTEROL</td>
<td>0.15 mg/kg</td>
<td>2.5 mg</td>
<td>1 ml</td>
</tr>
<tr>
<td>(2.5 mg/ml) Ampule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONTINUOUS ALBUTEROL</td>
<td>0.5 mg/kg</td>
<td>10 mg</td>
<td>4 ml</td>
</tr>
<tr>
<td>METHYLPRÉDNISONE</td>
<td>2 mg/kg</td>
<td>54 mg</td>
<td>0.43 ml</td>
</tr>
<tr>
<td>(125 mg/2 ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EPINEPHRINE</td>
<td>0.01 mg/kg</td>
<td>SUB Q</td>
<td>0.27 ml</td>
</tr>
<tr>
<td>(1mg/1ml) vial/amp</td>
<td></td>
<td>0.27 mg</td>
<td></td>
</tr>
<tr>
<td>MAGNESIUM SULFATE</td>
<td>50 mg/kg</td>
<td>1350 mg</td>
<td>33.75 ml</td>
</tr>
<tr>
<td>(2 grams/50 ml) Solution for Injection</td>
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<td></td>
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</tbody>
</table>
### Seizures

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DIAZEPAM</strong> *</td>
<td>0.2 mg/kg</td>
<td>5.4 mg *</td>
<td>1.08 ml</td>
</tr>
<tr>
<td>(5 mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LORAZEPAM</strong> *</td>
<td>0.1 mg/kg</td>
<td>2.7 mg *</td>
<td>1.35 ml</td>
</tr>
<tr>
<td>(2 mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong> *</td>
<td>0.1 mg/kg</td>
<td>2.7 mg *</td>
<td>0.54 ml</td>
</tr>
<tr>
<td>(5 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose

### Antiemetic/Pain/Agitation

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ONDANSETRON</strong></td>
<td>0.15 mg/kg</td>
<td>4 mg</td>
<td>2 ml</td>
</tr>
<tr>
<td>(2 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FENTANYL</strong> *</td>
<td>1 mcg/kg</td>
<td>26 mcg *</td>
<td>0.52 ml</td>
</tr>
<tr>
<td>(50mcg/ml) vial/amp Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MORPHINE</strong> *</td>
<td>0.1 mg/kg</td>
<td>2.7 mg *</td>
<td>0.27 ml</td>
</tr>
<tr>
<td>(10 mg/1 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>KETOROLAC</strong></td>
<td>0.5 mg/kg</td>
<td>13.5 mg</td>
<td>0.9 ml</td>
</tr>
<tr>
<td>(15 mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ETOMIDATE</strong></td>
<td>0.2 mg/kg</td>
<td>5.4 mg</td>
<td>2.7 ml</td>
</tr>
<tr>
<td>(2 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong> *</td>
<td>0.1 mg/kg</td>
<td>2.7 mg *</td>
<td>0.54 ml</td>
</tr>
<tr>
<td>(5 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>KETAMINE IM ONLY</strong></td>
<td>4 mg/kg</td>
<td>108 mg</td>
<td>1.08 ml</td>
</tr>
<tr>
<td>(100 mg/ml) Vial</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
## PEDIATRIC RESUSCITATION – 30-36 KG

### 30 - 36 kg Resuscitation

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EPINEPHRINE</strong>&lt;br&gt;1 mg/10 ml (1:10 ml) Pre-filled syringe</td>
<td>0.01 mg/kg</td>
<td>0.33 mg</td>
<td>3.3 ml</td>
</tr>
<tr>
<td><strong>ATROPINE</strong>&lt;br&gt;(1mg/10ml) Pre-filled syringe</td>
<td>0.02 mg/kg</td>
<td>0.5 mg</td>
<td>5 ml</td>
</tr>
<tr>
<td><strong>SODIUM BICARBONATE</strong>&lt;br&gt;(5 meq/10 ml) Pre-filled syringe</td>
<td>1 meq/kg</td>
<td>33 meq</td>
<td>66 ml</td>
</tr>
<tr>
<td><strong>CALCIUM GLUCONATE</strong>&lt;br&gt;(1gm/10 ml) Pre-filled syringe</td>
<td>60 mg/kg</td>
<td>1980 mg</td>
<td>19.8 ml</td>
</tr>
<tr>
<td><strong>LIDOCAINE</strong>&lt;br&gt;(100 mg/5 ml) Pre-filled syringe</td>
<td>1 mg/kg</td>
<td>33 mg</td>
<td>1.7 ml</td>
</tr>
<tr>
<td><strong>AMIODARONE</strong>&lt;br&gt;(50 mg/1 ml) 50% Vial</td>
<td>50 mg/kg</td>
<td>165 mg</td>
<td>3.3 ml</td>
</tr>
<tr>
<td><strong>ADENOSINE</strong>&lt;br&gt;(6mg/2 ml) Pre-filled syringe</td>
<td>0.1 mg/kg&lt;br&gt;0.2 mg/kg</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; – 3.3 mg&lt;br&gt;2&lt;sup&gt;nd&lt;/sup&gt; – 6 mg</td>
<td>1.1 ml&lt;br&gt;2 ml</td>
</tr>
</tbody>
</table>

### 30 - 36 kg Delayed Sequence Intubation (DSI)<br>*FOR DSI APPROVED SERVICES ONLY*

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ATROPINE</strong>&lt;br&gt;(1mg/10ml) Pre-filled syringe&lt;br&gt;Not recommended in patients &gt;1 year of age</td>
<td>0.02 mg/kg</td>
<td>0.5 mg</td>
<td>5 ml</td>
</tr>
<tr>
<td><strong>LIDOCAINE</strong>&lt;br&gt;(100 mg/5 ml) Pre-filled syringe</td>
<td>1 mg/kg</td>
<td>33 mg</td>
<td>1.7 ml</td>
</tr>
<tr>
<td><strong>ETOMIDATE</strong>&lt;br&gt;2 mg/ml Vial</td>
<td>0.3 mg/kg</td>
<td>10 mg</td>
<td>5 ml</td>
</tr>
<tr>
<td><strong>FENTANYL</strong>&lt;br&gt;*&lt;/br&gt;(50mcg/ml) vial/amp&lt;br&gt;Must use filter needle for amp</td>
<td>1 mcg/kg</td>
<td>33 mcg&lt;br&gt;*</td>
<td>0.66 ml</td>
</tr>
<tr>
<td><strong>KETAMINE IV</strong>&lt;br&gt;10 mg/ml Vial</td>
<td>2 mg/kg</td>
<td>66 mg</td>
<td>6.6 ml</td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong>&lt;br&gt;*&lt;/br&gt;1 mg/ml Vial</td>
<td>0.3 mg/kg</td>
<td>10 mg&lt;br&gt;*</td>
<td>10 ml</td>
</tr>
<tr>
<td><strong>SUCCINYLCHOLINE</strong>&lt;br&gt;20 mg/ml Vial</td>
<td>2 mg/kg</td>
<td>66 mg</td>
<td>3.3 ml</td>
</tr>
<tr>
<td><strong>ROCURONIUM</strong>&lt;br&gt;10 mg/ml Vial</td>
<td>1 mg/kg</td>
<td>33 mg</td>
<td>3.3 ml</td>
</tr>
<tr>
<td><strong>VECURONIUM</strong>&lt;br&gt;(10 mg vial for recon. Add 10 ml NS for final conc. 1mg/ml)</td>
<td>0.2 mg/kg</td>
<td>6.6 mg</td>
<td>6.6 ml</td>
</tr>
</tbody>
</table>

* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose.
**PEDIATRIC RESUSCITATION – 30-36 KG**

### 30 – 36 kg

#### Anaphylaxis/Antidote

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EPINEPHRINE</strong></td>
<td>0.01 mg/kg</td>
<td>IM 0.33 mg</td>
<td>0.33 ml</td>
</tr>
<tr>
<td>(1mg/1ml) vial/amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DIPHENHYDRAMINE</strong></td>
<td>1 mg/kg</td>
<td>33 mg</td>
<td>0.66 ml</td>
</tr>
<tr>
<td>(50 mg/1 ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>METHYLPREDNISONE</strong></td>
<td>2 mg/kg</td>
<td>66 mg</td>
<td>0.53 ml</td>
</tr>
<tr>
<td>(125 mg/2 ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ALBUTEROL</strong></td>
<td>0.15 mg/kg</td>
<td>2.5 mg</td>
<td>1 ml</td>
</tr>
<tr>
<td>(2.5 mg/ml) Ampule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NALOXONE</strong></td>
<td>0.1 mg/kg</td>
<td>2 mg</td>
<td>2 ml</td>
</tr>
<tr>
<td>(1mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>GLUCAGON</strong></td>
<td>Standard Dose Not Weight-Based</td>
<td>1 mg</td>
<td>1 ml</td>
</tr>
<tr>
<td>(1mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### For pain and sedation doses:
Start dose low – slowly increase – Titrate to effect up to listed dose

---

### 30 - 36 kg

#### Asthma

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ALBUTEROL</strong></td>
<td>0.15 mg/kg</td>
<td>0.6 mg</td>
<td>0.24 ml</td>
</tr>
<tr>
<td>(2.5 mg/ml) Ampule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CONTINUOUS ALBUTEROL</strong></td>
<td>0.5 mg/kg</td>
<td>10 mg</td>
<td>4 ml</td>
</tr>
<tr>
<td><strong>METHYLPREDNISONE</strong></td>
<td>2 mg/kg</td>
<td>66 mg</td>
<td>0.53 ml</td>
</tr>
<tr>
<td>(125 mg/2 ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>EPINEPHRINE</strong></td>
<td>0.01 mg/kg</td>
<td>SUB Q 0.33 mg</td>
<td>0.33 ml</td>
</tr>
<tr>
<td>(1mg/1ml) vial/amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MAGNESIUM SULFATE</strong></td>
<td>50 mg/kg</td>
<td>1650 mg</td>
<td>41.25 ml</td>
</tr>
<tr>
<td>(2 grams/50 ml) Solution for Injection</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

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*Return to Table of Contents*  
*Return to Formulary Table of Contents*
## 30 - 36 kg

### Seizures

<table>
<thead>
<tr>
<th></th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DIAZEPAM</strong></td>
<td>0.2 mg/kg</td>
<td>6.6 mg*</td>
<td>1.32 ml</td>
</tr>
<tr>
<td><em>(5 mg/ml) Pre-filled syringe</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LORAZEPAM</strong></td>
<td>0.1 mg/kg</td>
<td>3.3 mg*</td>
<td>1.65 ml</td>
</tr>
<tr>
<td><em>(2 mg/ml) Pre-filled syringe</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong></td>
<td>0.1 mg/kg</td>
<td>3.3 mg*</td>
<td>0.66 ml</td>
</tr>
<tr>
<td><em>(5 mg/ml) Vial</em></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose*

### Antiemetic/Pain/Agitation

<table>
<thead>
<tr>
<th></th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ONDANSETRON</strong></td>
<td>0.15 mg/kg</td>
<td>4 mg</td>
<td>2 ml</td>
</tr>
<tr>
<td><em>(2 mg/ml) Vial</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FENTANYL</strong></td>
<td>1 mcg/kg</td>
<td>33 mcg*</td>
<td>0.66 ml</td>
</tr>
<tr>
<td><em>(50 mcg/ml) vial/amp</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MORPHINE</strong></td>
<td>0.1 mg/kg</td>
<td>3.3 mg*</td>
<td>0.33 ml</td>
</tr>
<tr>
<td><em>(10 mg/1 ml) Pre-filled syringe</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>KETOROLAC</strong></td>
<td>0.5 mg/kg</td>
<td>15 mg</td>
<td>1 ml</td>
</tr>
<tr>
<td><em>(15 mg/ml) Pre-filled syringe</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ETOMIDATE</strong></td>
<td>0.2 mg/kg</td>
<td>6.6 mg</td>
<td>3.3 ml</td>
</tr>
<tr>
<td><em>(2 mg/ml) Vial</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong></td>
<td>0.1 mg/kg</td>
<td>3.3 mg*</td>
<td>0.66 ml</td>
</tr>
<tr>
<td><em>(5 mg/ml) Vial</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>KETAMINE IM ONLY</strong></td>
<td>4 mg/kg</td>
<td>132 mg</td>
<td>1.32 ml</td>
</tr>
<tr>
<td><em>(100 mg/ml) Vial</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DRUG</td>
<td>DOSE/KG</td>
<td>DOSE</td>
<td>VOLUME</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td>Diazepam *</td>
<td>0.2 mg/kg</td>
<td>10 mg</td>
<td>2 mL</td>
</tr>
<tr>
<td>(5 mg/ml) pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Etomidate</td>
<td>0.2 mg/kg</td>
<td>10 mg</td>
<td>5 mL</td>
</tr>
<tr>
<td>(2 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fentanyl *</td>
<td>0.5 mcg/kg</td>
<td>25 mcg</td>
<td>0.5 mL</td>
</tr>
<tr>
<td>(50 mcg/ml) vial/amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Must use filter for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ketamine IM ONLY</td>
<td>4 mg/kg</td>
<td>200 mg</td>
<td>2 mL</td>
</tr>
<tr>
<td>(100 mg/mL) vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ketamine IV</td>
<td>1.5 mg/kg</td>
<td>75 mg</td>
<td>7.5 mL</td>
</tr>
<tr>
<td>For DSI ONLY</td>
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<td></td>
</tr>
<tr>
<td>(10 mg/mL) vial</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Lidocaine 2%</td>
<td>20 mg/ml</td>
<td>50 mg</td>
<td>2.5 mL</td>
</tr>
<tr>
<td>(10 mg/ml) syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lorazepam *</td>
<td>0.1 mg/kg</td>
<td>5 mg</td>
<td>2.5 mL</td>
</tr>
<tr>
<td>(2 mg/ml) pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midazolam *</td>
<td>0.1 mg/kg</td>
<td>5 mg</td>
<td>1 mL</td>
</tr>
<tr>
<td>(5 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morphine *</td>
<td>0.05 mg/kg</td>
<td>2.5 mg</td>
<td>0.25 mL</td>
</tr>
<tr>
<td>(10 mg/1 mL) pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rocuronium</td>
<td>1 mg/kg</td>
<td>50 mg</td>
<td>5 mL</td>
</tr>
<tr>
<td>(10 mg/ml) vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium Bicarbonate</td>
<td>1 mEq/kg</td>
<td>50 mEq</td>
<td>50 mL</td>
</tr>
<tr>
<td>(1 mEq/ml) Syringe</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Succinylcholine</td>
<td>1.5 mg/kg</td>
<td>75 mg</td>
<td>3.75 mL</td>
</tr>
<tr>
<td>(20 mg/ml) vial</td>
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<tr>
<td>Vecuronium</td>
<td>0.1 mg/kg</td>
<td>5 mg</td>
<td>5 mL</td>
</tr>
<tr>
<td>(1 mg/ml)</td>
<td>* (10 mg vial for recon. Add 10 ml NS for final conc.)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* For pain and sedation doses:
  Start dose low – slowly increase –
  Titrate to effect up to listed dose
<table>
<thead>
<tr>
<th>DRUG</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diazepam</strong> *</td>
<td>0.2 mg/kg</td>
<td>12 mg *</td>
<td>2.4 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>(5 mg/ml) pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Etomidate</strong></td>
<td>0.2 mg/kg</td>
<td>12 mg</td>
<td>6 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>(2 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fentanyl</strong> *</td>
<td>0.5 mcg/kg</td>
<td>30 mcg *</td>
<td>0.6 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>(50 mcg/ml) vial/amp Must use filter for amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ketamine IM ONLY</strong></td>
<td>4 mg/kg</td>
<td>240 mg</td>
<td>2.4 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>(100 mg/ml) vial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ketamine IV</strong></td>
<td>1.5 mg/kg</td>
<td>90 mg</td>
<td>9 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>For DSI ONLY (10 mg/ml) vial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lidocaine 2%</strong></td>
<td>20 mg/ml</td>
<td>60 mg</td>
<td>3 mL</td>
<td>May repeat using half dose to a total of 3 mg/kg</td>
</tr>
<tr>
<td>(10 mg/ml) syringe</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lorazepam</strong> *</td>
<td>0.1 mg/kg</td>
<td>6 mg *</td>
<td>3 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>(2 mg/ml) pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Midazolam</strong> *</td>
<td>0.1 mg/kg</td>
<td>6 mg *</td>
<td>1.2 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>(5 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Morphine</strong> *</td>
<td>0.05 mg/kg</td>
<td>3 mg *</td>
<td>0.3 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>(10 mg/1 mL) pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Rocuronium</strong></td>
<td>1 mg/kg</td>
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<td>6 mL</td>
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<tr>
<td><strong>Sodium Bicarbonate</strong></td>
<td>1 mEq/kg</td>
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<td><strong>Succinylcholine</strong></td>
<td>1.5 mg/kg</td>
<td>90 mg</td>
<td>4.5 mL</td>
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<td><strong>Vecuronium</strong></td>
<td>0.1 mg/kg</td>
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<td>6 mL</td>
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<td>(1 mg/ml)</td>
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*For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose.*
### 70 KG

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<th>DOSE</th>
<th>VOLUME</th>
<th>Notes</th>
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<tr>
<td><strong>Diazepam</strong> *</td>
<td>0.2 mg/kg</td>
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<tr>
<td><strong>Etomidate</strong></td>
<td>0.2 mg/kg</td>
<td>14 mg</td>
<td>7 mL</td>
<td>May repeat x 1 after 5 minutes</td>
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<tr>
<td>(2 mg/ml) Vial</td>
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<td>35 mcg</td>
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<tr>
<td>Must use filter for amp</td>
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</tr>
<tr>
<td><strong>Ketamine IM ONLY</strong></td>
<td>4 mg/kg</td>
<td>280 mg</td>
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<td>(100 mg/mL) vial</td>
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<td><strong>Ketamine IV</strong> *</td>
<td>1.5 mg/kg</td>
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<tr>
<td>For DSI ONLY</td>
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<tr>
<td>(10 mg/mL) vial</td>
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<tr>
<td><strong>Lidocaine 2%</strong></td>
<td>20 mg/ml</td>
<td>70 mg</td>
<td>3.5 mL</td>
<td>May repeat using half dose to a total of 3 mg/kg</td>
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<tr>
<td>(10 mg/ml) syringe</td>
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<tr>
<td><strong>Lorazepam</strong> *</td>
<td>0.1 mg/kg</td>
<td>7 mg</td>
<td>3.5 mL</td>
<td>May repeat x 1 after 5 minutes</td>
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<tr>
<td>(2 mg/ml) pre-filled syringe</td>
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<tr>
<td><strong>Midazolam</strong> *</td>
<td>0.1 mg/kg</td>
<td>7 mg</td>
<td>1.4 mL</td>
<td>May repeat x 1 after 5 minutes</td>
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<td>(5 mg/ml) Vial</td>
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<td><strong>Morphine</strong> *</td>
<td>0.05 mg/kg</td>
<td>3.5 mg</td>
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<td>(10 mg/1 mL) pre-filled syringe</td>
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<td><strong>Rocuronium</strong></td>
<td>1 mg/kg</td>
<td>70 mg</td>
<td>7 mL</td>
<td>Additional dose online only</td>
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<tr>
<td>(10mg/ml) vial</td>
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<tr>
<td><strong>Sodium Bicarbonate</strong></td>
<td>1 mEq/kg</td>
<td>70 mEq</td>
<td>70 mL</td>
<td>May follow with half dose every 10 minutes</td>
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<tr>
<td>(1 mEq/ml) Syringe</td>
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</tr>
<tr>
<td><strong>Succinylcholine</strong></td>
<td>1.5 mg/kg</td>
<td>105 mg</td>
<td>5.25 mL</td>
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<td>(20 mg/ml) vial</td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vecuronium</strong></td>
<td>0.1 mg/kg</td>
<td>7 mg</td>
<td>7 mL</td>
<td>Additional dose online only</td>
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<tr>
<td>(1 mg/ml)</td>
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<tr>
<td><em>(10 mg vial for recon. Add 10 ml NS for final conc.)</em></td>
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</tbody>
</table>

* For pain and sedation doses:
  Start dose low – slowly increase –
  Titrate to effect up to listed dose

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### 80 KG

<table>
<thead>
<tr>
<th>DRUG</th>
<th>DOSE/KG</th>
<th>DOSAGE</th>
<th>VOLUME</th>
<th>Notes</th>
</tr>
</thead>
</table>
| Diazepam *  
(5 mg/ml) pre-filled syringe | 0.2 mg/kg | 16 mg * | 3.2 mL | Additional dose online only |
| Etomidate  
(2 mg/ml) Vial | 0.2 mg/kg | 16 mg | 8 mL | May repeat x 1 after 5 minutes |
| Fentanyl  
(50 mcg/ml) vial/amp  
Must use filter for amp | 0.5 mcg/kg | 40 mcg * | 0.8 mL | May repeat x 1 after 5 minutes |
| Ketamine IM ONLY  
(100 mg/mL) vial | 4 mg/kg | 320 mg | 3.2 mL | Additional dose online only |
| Ketamine IV  
For DSI ONLY  
(10 mg/mL) vial | 1.5 mg/kg | 120 mg | 12 mL | Additional dose online only |
| Lidocaine 2%  
(10 mg/ml) syringe | 20 mg/ml | 80 mg | 4 mL | May repeat using half dose to a total of 3 mg/kg |
| Lorazepam *  
(2 mg/ml) pre-filled syringe | 0.1 mg/kg | 8 mg * | 4 mL | May repeat x 1 after 5 minutes |
| Midazolam  
(5 mg/ml) Vial | 0.1 mg/kg | 8 mg * | 1.6 mL | May repeat x 1 after 5 minutes |
| Morphine *  
(10 mg/1 mL) pre-filled syringe | 0.05 mg/kg | 4 mg * | 0.4 mL | May repeat x 1 after 5 minutes |
| Rocuronium  
(10 mg/ml) vial | 1 mg/kg | 80 mg | 8 mL | Additional dose online only |
| Sodium Bicarbonate  
(1 mEq/ml) Syringe | 1 mEq/kg | 80 mEq | 80 mL | May follow with half dose every 10 minutes |
| Succinylcholine  
(20 mg/ml) vial | 1.5 mg/kg | 120 mg | 6 mL | Additional dose online only |
| Vecuronium  
(1 mg/ml)  
*(10 mg vial for recon. Add 10 ml NS for final conc.) | 0.1 mg/kg | 8 mg | 8 mL | Additional dose online only |

* For pain and sedation doses:  
Start dose low – slowly increase –  
Tritrate to effect up to listed dose
<table>
<thead>
<tr>
<th>DRUG</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diazepam</strong> * (5 mg/ml)</td>
<td>0.2 mg/kg</td>
<td>18 mg *</td>
<td>3.6 mL</td>
<td>Additional dose online only</td>
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<td>pre-filled syringe</td>
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<tr>
<td><strong>Etomidate</strong> (2 mg/ml) Vial</td>
<td>0.2 mg/kg</td>
<td>18 mg</td>
<td>9 mL</td>
<td>May repeat x 1 after 5 minutes</td>
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<td><strong>Fentanyl</strong> * (50 mcg/ml)</td>
<td>0.5 mcg/kg</td>
<td>45 mcg *</td>
<td>0.9 mL</td>
<td>May repeat x 1 after 5 minutes</td>
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<tr>
<td>vial/amp</td>
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<td></td>
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<tr>
<td>Must use filter for amp</td>
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<tr>
<td><strong>Ketamine IM ONLY</strong></td>
<td>4 mg/kg</td>
<td>360 mg</td>
<td>3.6 mL</td>
<td>Additional dose online only</td>
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<td>(100 mg/mL) vial</td>
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<tr>
<td><strong>Ketamine IV</strong> For DSI ONLY</td>
<td>1.5 mg/kg</td>
<td>135 mg</td>
<td>13.5 mL</td>
<td>Additional dose online only</td>
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<tr>
<td>(10 mg/mL) vial</td>
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<tr>
<td><strong>Lidocaine 2%</strong> (10 mg/ml)</td>
<td>20 mg/ml</td>
<td>90 mg</td>
<td>4.5 mL</td>
<td>Using half dose to a total of 3 mg/kg</td>
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<td><strong>Lorazepam</strong> * (2 mg/ml)</td>
<td>0.1 mg/kg</td>
<td>9 mg *</td>
<td>4.5 mL</td>
<td>May repeat x 1 after 5 minutes</td>
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<tr>
<td>pre-filled syringe</td>
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</tr>
<tr>
<td><strong>Midazolam</strong> * (5 mg/ml) Vial</td>
<td>0.1 mg/kg</td>
<td>9 mg *</td>
<td>1.8 mL</td>
<td>May repeat x 1 after 5 minutes</td>
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<tr>
<td><strong>Morphine</strong> * (10 mg/1 mL)</td>
<td>0.05 mg/kg</td>
<td>4.5 mg *</td>
<td>0.45 mL</td>
<td>May repeat x 1 after 5 minutes</td>
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<tr>
<td>pre-filled syringe</td>
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<tr>
<td><strong>Rocuronium</strong> (10mg/ml)</td>
<td>1 mg/kg</td>
<td>90 mg</td>
<td>9 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>vial</td>
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<tr>
<td><strong>Sodium Bicarbonate</strong></td>
<td>1 mEq/kg</td>
<td>90 mEq</td>
<td>90 mL</td>
<td>May follow with half dose every 10 minutes</td>
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<td>(1 mEq/ml) Syringe</td>
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<td><strong>Succinylcholine</strong> (20 mg/ml)</td>
<td>1.5 mg/kg</td>
<td>135 mg</td>
<td>6.75 mL</td>
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<td>vial</td>
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<tr>
<td><strong>Vecuronium</strong> (1 mg/ml)</td>
<td>0.1 mg/kg</td>
<td>9 mg</td>
<td>9 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>*(10 mg vial for recon. Add 10 ml NS for final conc.)</td>
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* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose
<table>
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<tr>
<th>DRUG</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
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<td>20 mg*</td>
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<td>(5 mg/ml) pre-filled syringe</td>
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<td>10 mL</td>
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<td>(2 mg/ml) Vial</td>
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<td>Fentanyl *</td>
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<td>50 mcg*</td>
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<td>400 mg</td>
<td>4 mL</td>
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<td>15 mL</td>
<td>Additional dose online only</td>
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<td>For DSI ONLY (10 mg/mL)</td>
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<td>Lorazepam * (2 mg/ml) pre-filled syringe</td>
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<td>10 mg*</td>
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<td>May repeat x 1 after 5 minutes</td>
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<tr>
<td>Midazolam * (5 mg/ml) Vial</td>
<td>0.1 mg/kg</td>
<td>10 mg*</td>
<td>2 mL</td>
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<td>Morphine * (10 mg/1 mL) pre-filled syringe</td>
<td>0.05 mg/kg</td>
<td>5 mg*</td>
<td>0.5 mL</td>
<td>May repeat x 1 after 5 minutes</td>
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<tr>
<td>Rocuronium (10mg/ml) vial</td>
<td>1 mg/kg</td>
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<td>10 mL</td>
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<tr>
<td>Sodium Bicarbonate (1 mEq/ml) Syringe</td>
<td>1 mEq/kg</td>
<td>100 mEq</td>
<td>100 mL</td>
<td>May follow with half dose every 10 minutes</td>
</tr>
<tr>
<td>Succinylcholine (20 mg/ml) vial</td>
<td>1.5 mg/kg</td>
<td>150 mg</td>
<td>7 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>Vecuronium (1 mg/ml)</td>
<td>0.1 mg/kg</td>
<td>10 mg</td>
<td>10 mL</td>
<td>Additional dose online only</td>
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<td>*(10 mg vial for recon. Add 10 ml NS for final conc.)</td>
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### 110 KG

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<th>DOSE</th>
<th>VOLUME</th>
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</tr>
</thead>
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<tr>
<td><strong>Diazepam</strong> <em>(5 mg/ml)</em></td>
<td>0.2 mg/kg</td>
<td>22 mg *</td>
<td>4.4 mL</td>
<td>Additional dose online only</td>
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<tr>
<td><strong>Etomidate</strong> <em>(2 mg/ml)</em></td>
<td>0.2 mg/kg</td>
<td>22 mg</td>
<td>11 mL</td>
<td>May repeat x 1 after 5 minutes</td>
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<tr>
<td><strong>Fentanyl</strong> <em>(50 mcg/ml)</em></td>
<td>0.5 mcg/kg</td>
<td>55 mcg *</td>
<td>1.1 mL</td>
<td>May repeat x 1 after 5 minutes</td>
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<tr>
<td><strong>Ketamine IM ONLY</strong> <em>(100 mg/mL)</em></td>
<td>4 mg/kg</td>
<td>440 mg</td>
<td>4.4 mL</td>
<td>Additional dose online only</td>
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<tr>
<td><strong>Ketamine IV For DSI ONLY</strong> <em>(10 mg/mL)</em></td>
<td>1.5 mg/kg</td>
<td>165 mg</td>
<td>16.5 mL</td>
<td>Additional dose online only</td>
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<tr>
<td><strong>Lidocaine 2%</strong> <em>(10 mg/ml)</em></td>
<td>20 mg/ml</td>
<td>110 mg</td>
<td>5.5 mL</td>
<td>May repeat using half dose to a total of 3 mg/kg</td>
</tr>
<tr>
<td><strong>Lorazepam</strong> <em>(2 mg/ml)</em></td>
<td>0.1 mg/kg</td>
<td>11 mg *</td>
<td>5.5 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td><strong>Midazolam</strong> <em>(5 mg/ml)</em></td>
<td>0.1 mg/kg</td>
<td>11 mg *</td>
<td>2.2 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td><strong>Morphine</strong> <em>(10 mg/1 mL)</em></td>
<td>0.05 mg/kg</td>
<td>5.5 mg *</td>
<td>0.55 mL</td>
<td>May repeat x 1 after 5 minutes</td>
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<tr>
<td><strong>Rocuronium</strong> <em>(10mg/mL)</em></td>
<td>1 mg/kg</td>
<td>110 mg</td>
<td>11 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td><strong>Sodium Bicarbonate</strong> <em>(1 mEq/ml)</em></td>
<td>1 mEq/kg</td>
<td>110 mEq</td>
<td>110 mL</td>
<td>May follow with half dose every 10 minutes</td>
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<tr>
<td><strong>Succinylcholine</strong> <em>(20 mg/ml)</em></td>
<td>1.5 mg/kg</td>
<td>165 mg</td>
<td>8.25 mL</td>
<td>Additional dose online only</td>
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<tr>
<td><strong>Vecuronium</strong> <em>(1 mg/ml)</em></td>
<td>0.1 mg/kg</td>
<td>11 mg</td>
<td>11 mL</td>
<td>Additional dose online only</td>
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* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose.
## 120 KG

<table>
<thead>
<tr>
<th>DRUG</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diazepam *</td>
<td>0.2 mg/kg</td>
<td>24 mg *</td>
<td>4.8 mL</td>
<td>Additional dose online only</td>
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<tr>
<td>(5 mg/ml) pre-filled syringe</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Etomidate</td>
<td>0.2 mg/kg</td>
<td>24 mg</td>
<td>12 mL</td>
<td>May repeat x 1 after 5 minutes</td>
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<tr>
<td>(2 mg/ml) Vial</td>
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<tr>
<td>Fentanyl *</td>
<td>0.5 mcg/kg</td>
<td>60 mcg *</td>
<td>1.2 mL</td>
<td>May repeat x 1 after 5 minutes</td>
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<td>(50 mcg/ml) vial/amp</td>
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<td>Must use filter for amp</td>
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</tr>
<tr>
<td>Ketamine IM ONLY</td>
<td>4 mg/kg</td>
<td>480 mg</td>
<td>4.8 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>(100 mg/mL) vial</td>
<td></td>
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</tr>
<tr>
<td>Ketamine IV</td>
<td>1.5 mg/kg</td>
<td>180 mg</td>
<td>18 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>For DSI ONLY</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(10 mg/mL) vial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lidocaine 2%</td>
<td>20 mg/ml</td>
<td>120 mg</td>
<td>6 mL</td>
<td>May repeat using half dose to a total of 3 mg/kg</td>
</tr>
<tr>
<td>(10 mg/ml) syringe</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lorazepam *</td>
<td>0.1 mg/kg</td>
<td>12 mg *</td>
<td>6 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>(2 mg/ml) pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midazolam *</td>
<td>0.1 mg/kg</td>
<td>12 mg *</td>
<td>2.4 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>(5 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morphine *</td>
<td>0.05 mg/kg</td>
<td>6 mg *</td>
<td>0.6 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>(10 mg/1 mL) pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rocuronium</td>
<td>1 mg/kg</td>
<td>120 mg</td>
<td>12 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>(10mg/ml) vial</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium Bicarbonate</td>
<td>1 mEq/kg</td>
<td>120 mEq</td>
<td>120 mL</td>
<td>May follow with half dose every 10 minutes</td>
</tr>
<tr>
<td>(1 mEq/ml) Syringe</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Succinylcholine</td>
<td>1.5 mg/kg</td>
<td>180 mg</td>
<td>9 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>(20 mg/ml) vial</td>
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</tr>
<tr>
<td>Vecuronium</td>
<td>0.1 mg/kg</td>
<td>12 mg</td>
<td>12 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>(1 mg/ml)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*(10 mg vial for recon. Add 10 ml NS for final conc.)</td>
<td></td>
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</tr>
</tbody>
</table>

* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose
<table>
<thead>
<tr>
<th>DRUG</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diazepam</strong> *</td>
<td>0.2 mg/kg</td>
<td>26 mg</td>
<td>5.2 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>(5 mg/ml) pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Etomidate</strong></td>
<td>0.2 mg/kg</td>
<td>26 mg</td>
<td>13 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>(2 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fentanyl</strong> *</td>
<td>0.5 mcg/kg</td>
<td>65 mcg</td>
<td>1.3 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>(50 mcg/ml) vial/amp</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ketamine IM ONLY</strong></td>
<td>4 mg/kg</td>
<td>500 mg</td>
<td>5 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>(100 mg/mL) vial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ketamine IV</strong></td>
<td>1.5 mg/kg</td>
<td>195 mg</td>
<td>19.5 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td><strong>For DSI ONLY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(10 mg/mL) vial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lidocaine 2%</strong></td>
<td>20 mg/ml</td>
<td>130 mg</td>
<td>6.5 mL</td>
<td>May repeat using half dose to a total of 3 mg/kg</td>
</tr>
<tr>
<td>(10 mg/ml) syringe</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lorazepam</strong> *</td>
<td>0.1 mg/kg</td>
<td>13 mg</td>
<td>6.5 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>(2 mg/ml) pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Midazolam</strong> *</td>
<td>0.1 mg/kg</td>
<td>13 mg</td>
<td>2.6 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>(5 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Morphine</strong> *</td>
<td>0.05 mg/kg</td>
<td>6.5 mg</td>
<td>0.65 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>(10 mg/1 mL) pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Rocuronium</strong></td>
<td>1 mg/kg</td>
<td>130 mg</td>
<td>13 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>(10mg/ml) vial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sodium Bicarbonate</strong></td>
<td>1 mEq/kg</td>
<td>130 mEq</td>
<td>130 mL</td>
<td>May follow with half dose every 10 minutes</td>
</tr>
<tr>
<td>(1 mEq/ml) Syringe</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Succinylcholine</strong></td>
<td>1.5 mg/kg</td>
<td>195 mg</td>
<td>9.75 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>(20 mg/ml) vial</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vecuronium</strong> *</td>
<td>0.1 mg/kg</td>
<td>13 mg</td>
<td>13 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>(1 mg/ml)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(10 mg vial for recon. Add 10 ml NS for final conc.)</em></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

* For pain and sedation doses:  
Start dose low – slowly increase –  
Titrate to effect up to listed dose
# 140 KG

<table>
<thead>
<tr>
<th>DRUG</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diazepam</strong> *</td>
<td>0.2 mg/kg</td>
<td>28 mg *</td>
<td>5.6 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>(5 mg/ml) pre-filled syringe</td>
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<td></td>
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</tr>
<tr>
<td><strong>Etomidate</strong></td>
<td>0.2 mg/kg</td>
<td>28 mg</td>
<td>14 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>(2 mg/ml) Vial</td>
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<td></td>
</tr>
<tr>
<td><strong>Fentanyl</strong> *</td>
<td>0.5 mcg/kg</td>
<td>70 mcg *</td>
<td>1.4 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>(50 mcg/ml) vial/amp</td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ketamine IM ONLY</strong></td>
<td>4 mg/kg</td>
<td>500 mg</td>
<td>5 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>(100 mg/mL) vial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ketamine IV</strong></td>
<td>1.5 mg/kg</td>
<td>200 mg</td>
<td>20 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td><strong>For DSI ONLY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(10 mg/mL) vial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lidocaine 2%</strong></td>
<td>20 mg/ml</td>
<td>140 mg</td>
<td>7 mL</td>
<td>May repeat using half dose to a total of 3 mg/kg</td>
</tr>
<tr>
<td>(10 mg/ml) syringe</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lorazepam</strong> *</td>
<td>0.1 mg/kg</td>
<td>14 mg *</td>
<td>7 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>(2 mg/ml) pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Midazolam</strong> *</td>
<td>0.1 mg/kg</td>
<td>14 mg *</td>
<td>2.8 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>(5 mg/ml) Vial</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td><strong>Morphine</strong> *</td>
<td>0.05 mg/kg</td>
<td>7 mg *</td>
<td>0.7 mL</td>
<td>May repeat x 1 after 5 minutes</td>
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<tr>
<td>(10 mg/1 mL) pre-filled syringe</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Rocuronium</strong></td>
<td>1 mg/kg</td>
<td>140 mg</td>
<td>14 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>(10mg/ml) vial</td>
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</tr>
<tr>
<td><strong>Sodium Bicarbonate</strong></td>
<td>1 mEq/kg</td>
<td>140 mEq</td>
<td>140 mL</td>
<td>May follow with half dose every 10 minutes</td>
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<tr>
<td>(1 mEq/ml) Syringe</td>
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<tr>
<td><strong>Succinylcholine</strong></td>
<td>1.5 mg/kg</td>
<td>210 mg</td>
<td>10.5 mL</td>
<td>Additional dose online only</td>
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<td>(20 mg/ml) vial</td>
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</tr>
<tr>
<td><strong>Vecuronium</strong> *</td>
<td>0.1 mg/kg</td>
<td>14 mg</td>
<td>14 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>(1 mg/ml)</td>
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</tr>
<tr>
<td><em>(10 mg vial for recon. Add 10 ml NS for final conc.)</em></td>
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<tr>
<td>DRUG</td>
<td>DOSE/KG</td>
<td>DOSE</td>
<td>VOLUME</td>
<td>Notes</td>
</tr>
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<td>--------------------------------------------</td>
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<td><strong>150 KG or greater</strong></td>
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<tr>
<td>Diazepam *</td>
<td>0.2 mg/kg</td>
<td>30 mg *</td>
<td>6 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>(5 mg/ml) pre-filled syringe</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Etomidate</td>
<td>0.2 mg/kg</td>
<td>30 mg</td>
<td>15 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>(2 mg/ml) Vial</td>
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</tr>
<tr>
<td>Fentanyl *</td>
<td>0.5 mcg/kg</td>
<td>75 mcg *</td>
<td>1.5 mL</td>
<td>May repeat x 1 after 5 minutes</td>
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<td>(50 mcg/ml) vial/amp</td>
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</tr>
<tr>
<td>Must use filter for amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ketamine IM ONLY</td>
<td>4 mg/kg</td>
<td>500 mg</td>
<td>5 mL</td>
<td>Additional dose online only</td>
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<tr>
<td>(100 mg/mL) vial</td>
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<td></td>
</tr>
<tr>
<td>Ketamine IV For DSI ONLY</td>
<td>1.5 mg/kg</td>
<td>200 mg</td>
<td>20 mL</td>
<td>Additional dose online only</td>
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<td>(10 mg/mL) vial</td>
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</tr>
<tr>
<td>Lidocaine 2%</td>
<td>20 mg/ml</td>
<td>150 mg</td>
<td>7.5 mL</td>
<td>May repeat using half dose to a total of 3 mg/kg</td>
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<tr>
<td>(10 mg/ml) syringe</td>
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</tr>
<tr>
<td>Lorazepam *</td>
<td>0.1 mg/kg</td>
<td>15 mg *</td>
<td>7.5 mL</td>
<td>May repeat x 1 after 5 minutes</td>
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<tr>
<td>(2 mg/ml) pre-filled syringe</td>
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<tr>
<td>Midazolam *</td>
<td>0.1 mg/kg</td>
<td>15 mg *</td>
<td>3 mL</td>
<td>May repeat x 1 after 5 minutes</td>
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<tr>
<td>(5 mg/ml) Vial</td>
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<tr>
<td>Morphine *</td>
<td>0.05 mg/kg</td>
<td>7.5 mg *</td>
<td>0.75 mL</td>
<td>May repeat x 1 after 5 minutes</td>
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<tr>
<td>(10 mg/1 mL) pre-filled syringe</td>
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<td></td>
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<tr>
<td>Rocuronium</td>
<td>1 mg/kg</td>
<td>150 mg</td>
<td>15 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>(10 mg/ml) vial</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Sodium Bicarbonate</td>
<td>1 mEq/kg</td>
<td>150 mEq</td>
<td>150 mL</td>
<td>May follow with half dose every 10 minutes</td>
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<tr>
<td>(1 mEq/ml) Syringe</td>
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<tr>
<td>Succinylcholine</td>
<td>1.5 mg/kg</td>
<td>225 mg</td>
<td>11.25 mL</td>
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<td>Vecuronium</td>
<td>0.1 mg/kg</td>
<td>15 mg</td>
<td>15 mL</td>
<td>Additional dose online only</td>
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<tr>
<td>(1 mg/ml) *</td>
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<tr>
<td>*(10 mg vial for recon. Add 10 ml NS for final conc.)</td>
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<tr>
<td>GENERIC NAME</td>
<td>INDICATIONS</td>
<td>CONTRAINDICATIONS</td>
<td>Route</td>
<td>Dose</td>
</tr>
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<td>---------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
<td>------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Adenosine (Adenocard)</td>
<td>SVT, Stable Monomorphic Wide Complex Tachycardia of UKN Origin, generally over the rate of 150</td>
<td>Bronchoconstriction or Bronchospasm (Asthma), 2nd or 3rd degree heart blocks, Sick sinus syndrome</td>
<td>Fast IV followed with 20 ml flush</td>
<td>6 mg followed by 12 mg max of 18 mg</td>
</tr>
<tr>
<td>Amiodarone (Cordarone)</td>
<td>V-Fib, Pulseless V-T</td>
<td>Bradycardia/heart blocks, Cardiogenic shock, Iodine allergies</td>
<td>IV / IO push</td>
<td>300 mg Repeat at 150 mg Max of 450 mg</td>
</tr>
<tr>
<td>Amiodarone (Cordarone) * Loading Dose</td>
<td>Stable VT (wide-complex tachycardia)</td>
<td>Bradycardia/heart blocks, Cardiogenic shock, Iodine allergies</td>
<td>IV / IO (Drip over 10 minutes; 10 drop/mL tubing=103 drops/minute)</td>
<td>150 mg over 10 min May repeat one time for reoccurrence</td>
</tr>
<tr>
<td>Albuterol Sulfate</td>
<td>Shortness of Breath with bronchoconstriction / wheezing, Allergic Reaction, Hyperkalemia</td>
<td>Caution in tachycardia patients with severe cardiac disease</td>
<td>Nebulizer with B IpO2, inline CPAP</td>
<td>2.5 mg May repeat as needed</td>
</tr>
<tr>
<td>Aspirin chewable tablets</td>
<td>Chest Pain suggestive of ACS</td>
<td>Recent GI bleed, Allergy, Bleeding Disorders</td>
<td>PO Chewed</td>
<td>324 mg</td>
</tr>
<tr>
<td>Atropine Sulfate</td>
<td>Symptomatic Bradycardia</td>
<td>Caution with acute MI</td>
<td>IVP / IO / ETT (Fast)</td>
<td>0.5 mg max of 3 mg</td>
</tr>
<tr>
<td>Atropine Sulfate for Organophosphate Poisoning</td>
<td>Organophosphate Poisoning, Nerve agent exposure</td>
<td>None</td>
<td>IVP/IO</td>
<td>1 gram repeated every 5 minutes until symptom resolution. No max dose.</td>
</tr>
<tr>
<td>Calcium Gluconate</td>
<td>Hyperkalemia, hypocalcemia, hypermagnesemia</td>
<td>Digitalis toxicity, hypercalcemia</td>
<td>IV / IO</td>
<td>See chart for dose</td>
</tr>
<tr>
<td>Dextrose 10%, 25%, 50%</td>
<td>Hypoglycemia</td>
<td></td>
<td>IV / IO</td>
<td>May repeat dose x 1</td>
</tr>
<tr>
<td>Diazepam (Valium) *</td>
<td>Seizures, Moderate Sedation</td>
<td>Shock</td>
<td>IV / IO / IM (slowly)</td>
<td>Wt based</td>
</tr>
<tr>
<td>Diphenhydramine (Benadryl)</td>
<td>Allergic Reaction</td>
<td>Acute Asthma, COPD, Glaucoma</td>
<td>IV / IM</td>
<td>25-50 mg</td>
</tr>
<tr>
<td>Dopamine (Intropin)</td>
<td>Cardiogenic Shock, Symptomatic Bradycardia, Post-Cardiac Arrest, Distributive shock</td>
<td>Hypovolemia</td>
<td>IV / IO (Drip)</td>
<td>See drip chart</td>
</tr>
</tbody>
</table>

* For pain and sedation doses: 
Start dose low – slowly increase – 
Titrate to effect up to listed dose
<table>
<thead>
<tr>
<th>GENERIC NAME</th>
<th>INDICATIONS</th>
<th>CONTRAINDICATIONS</th>
<th>ROUTE</th>
<th>DOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Epi Auto-Injector (Adrenalin)</strong></td>
<td>Anaphylaxis / allergic reaction bronchoconstriction / wheezing refractory to neb</td>
<td>Caution in patients with severe cardiac disease</td>
<td>IM</td>
<td>0.3 mg</td>
</tr>
<tr>
<td><strong>Epinephrine 1:1 ml</strong></td>
<td>Anaphylaxis / allergic reaction bronchoconstriction / wheezing refractory to neb</td>
<td>Caution in patients with severe cardiac disease</td>
<td>IM</td>
<td>0.3 mg. Repeat dose of 0.5 mg. Max 2 doses.</td>
</tr>
<tr>
<td><strong>Epinephrine 1:10 ml</strong></td>
<td><strong>Severe Allergic reaction / anaphylaxis (Impending cardiac arrest)</strong></td>
<td>Caution in patients with severe cardiac disease</td>
<td>IV (slow) over 3 minutes</td>
<td>1 mg over 3 minutes. Contact online if symptoms persist.</td>
</tr>
<tr>
<td><strong>Epinephrine 1:10 ml</strong></td>
<td>Cardiac arrest - Pulseless V-Tach, V-Fib, Asystole, PEA</td>
<td>Undiluted 1:1 ml IV (Must dilute prior to administration)</td>
<td>IV / IO / ETT</td>
<td>1 mg (ACLS algorithm)</td>
</tr>
<tr>
<td><strong>Etomidate (Amidate)</strong></td>
<td>Sedation, Induction of general anesthesia</td>
<td></td>
<td>IV / IO</td>
<td>Wt based</td>
</tr>
<tr>
<td>**Fentanyl (Fentanyl Citrate) * **</td>
<td>Pain Control</td>
<td>Caution in patients with hypertension, hypotension or increase ICP</td>
<td>IV / IO / MAD *</td>
<td>Wt based</td>
</tr>
<tr>
<td><strong>Furosemide (Lasix)</strong></td>
<td>Pulmonary Edema with signs of fluid overload</td>
<td>Hypovolemia, dehydration, BP &lt; 90</td>
<td>IV / IO / IM</td>
<td>40 mg May repeat one dose</td>
</tr>
<tr>
<td><strong>Ipratropium Bromide 0.02%</strong></td>
<td>Shortness of Breath with bronchoconstriction / wheezing, Allergic Reaction</td>
<td>Caution in tachycardia patients with severe cardiac disease</td>
<td>Nebulizer with 8 lpm O2, inline CPAP</td>
<td>0.5 mg</td>
</tr>
<tr>
<td><strong>Glucagon</strong></td>
<td>Hypoglycemia, Beta block OD</td>
<td></td>
<td>IM / IV</td>
<td>1 mg</td>
</tr>
<tr>
<td><strong>Ketamine (Ketalar)</strong></td>
<td>Pain unresponsive to narcotics, Anxiety, Excited Delirium</td>
<td>Increased intracranial pressure, severe hypertension</td>
<td>IM</td>
<td>Wt based</td>
</tr>
<tr>
<td><strong>Ketamine (Ketalar)</strong></td>
<td>Induction for DSI only</td>
<td>Increased intracranial pressure, severe hypertension</td>
<td>IV / IO (must be diluted prior to administration)</td>
<td>Wt based</td>
</tr>
<tr>
<td><strong>Ketorolac (Toradol)</strong></td>
<td>Moderately severe pain</td>
<td>Patients with bleeding disorders, active peptic ulcers or patients with allergies to aspirin or NSAIDS</td>
<td>IV / IO / IM</td>
<td>15 mg May repeat x 1 if needed</td>
</tr>
<tr>
<td><strong>Lidocaine (Xylocaine)</strong></td>
<td>V-Fib, Pulseless V-T, Stable VT (wide-complex tachycardia), Pain management post IO</td>
<td>Bradycardia with Ventricular Escape Rhythm</td>
<td>IV / IO / ETT</td>
<td>Wt based</td>
</tr>
<tr>
<td><strong>Lorazepam * (back-up if Midazolam and Diazepam are not available)</strong></td>
<td>Seizures, Moderate Sedation, Pre-treatment for DSI</td>
<td></td>
<td>IM / IV / IO *</td>
<td>Wt based</td>
</tr>
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* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose
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<th>CONTRAINDICATIONS</th>
<th>ROUTE</th>
<th>DOSE</th>
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<tbody>
<tr>
<td>Magnesium Sulfate</td>
<td>Shortness of breath with bronchoconstriction / wheezing</td>
<td>AV Blocks</td>
<td>IV / IO</td>
<td>2 Grams over 20 minutes Online for further doses</td>
</tr>
<tr>
<td>Magnesium Sulfate</td>
<td>Polymorphic V-T, Torsade's de Pointes with pulse</td>
<td>AV Blocks</td>
<td>IV/IO</td>
<td>2 Grams over 5-10 minutes Online for further doses</td>
</tr>
<tr>
<td>Magnesium Sulfate</td>
<td>Torsade's de Pointes pulseless</td>
<td>AV Blocks</td>
<td>IV/IO</td>
<td>2 Grams over 1-2 minutes Online for further doses</td>
</tr>
<tr>
<td>Magnesium Sulfate</td>
<td>Eclampsia</td>
<td>AV Blocks</td>
<td>IV/IO</td>
<td>2 Grams over 5 minutes Online for further doses</td>
</tr>
<tr>
<td>Methylprednisolone (Solu-Medrol)</td>
<td>Shortness of Breath with bronchoconstriction / wheezing, Allergic Reaction, Anaphylaxis</td>
<td></td>
<td>IV / IO</td>
<td>125 mg</td>
</tr>
<tr>
<td>Metoprolol Tartrate (Lopressor)</td>
<td>Chest Pain suggestive of ACS, Hypertensive Crisis</td>
<td>BP &lt; 100, HR &lt; 60, 2nd or 3rd degree heart block (unless functional pacemaker present), cardiogenic shock, uncompensated heart failure, any suspected substance abuse</td>
<td>IV / IO</td>
<td>5 mg</td>
</tr>
<tr>
<td>Midazolam (Versed) *</td>
<td>Seizures, Moderate Sedation, Pre-treatment for DSI</td>
<td>Shock</td>
<td>IV / IO / MAD / IM *</td>
<td>Wt based</td>
</tr>
<tr>
<td>Morphine Sulfate *</td>
<td>Pain Control</td>
<td>BP &lt; 100, Hypovolemia</td>
<td>IV / IO / MAD / IM *</td>
<td>Wt based</td>
</tr>
<tr>
<td>Naloxone (Narcan) Naloxone</td>
<td>Opioid overdose with respiratory depression (typically 4 mg should reverse most opioids, however some synthetics may require up to 10 mg)</td>
<td>Caution with narcotic-dependent patients who may experience withdrawal syndrome (using higher doses may cause pulmonary edema)</td>
<td>IV / IO / MAD / IM</td>
<td>0.4 - 2 mg (titrate to effect up to 2 mg) May repeat as needed</td>
</tr>
<tr>
<td>Nitroglycerin tablets</td>
<td>Chest Pain suggestive of ACS, Pulmonary Edema</td>
<td>BP &lt; 100, Inferior MI with possible RV infarction, severe bradycardia, severe tachycardia, Erectile dysfunction meds within 24 hrs. Use caution for patients on CPAP</td>
<td>SL</td>
<td>0.4 mg Repeat every 5 min 3 doses</td>
</tr>
<tr>
<td>Ondansetron (Zofran)</td>
<td>Nausea/Vomiting</td>
<td></td>
<td>IV / IO (slow) ODT-oral</td>
<td>4 mg</td>
</tr>
<tr>
<td>Oral Glucose</td>
<td>Hypoglycemia</td>
<td>Patient who is not able to follow commands</td>
<td>PO</td>
<td>15 grams</td>
</tr>
</tbody>
</table>

* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose
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<th>DOSE</th>
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</thead>
<tbody>
<tr>
<td>Sodium Bicarbonate</td>
<td>Cardiac Arrest, Metabolic Acidosis, Hyperkalemia, Tricyclic Antidepressant</td>
<td>Alkalosis, hypocalcemia, hypochloremia</td>
<td>IV / IO</td>
<td>Wt based</td>
</tr>
<tr>
<td>Succinylcholine (Anectine)</td>
<td>Paralytic for DSI</td>
<td>Hyperkalemia</td>
<td>IV / IO</td>
<td>Wt based</td>
</tr>
<tr>
<td>Tetracaine</td>
<td>Eye anesthetic to irrigate eyes</td>
<td>Open injury to the eye</td>
<td>1-2 drops</td>
<td></td>
</tr>
<tr>
<td>Tranexamic Acid (Cyklokapron)</td>
<td>Traumatic hemorrhagic shock w/ suspected need for massive blood transfusion</td>
<td>Injury greater than 3 hours old</td>
<td>IV / IO Drip</td>
<td>1 gram in 100 ml over 10 min</td>
</tr>
<tr>
<td>Rocuronium Bromide (back-up if Succinylcholine not available)</td>
<td>Paralytic for DSI</td>
<td>-</td>
<td>IV / IO</td>
<td>Wt based</td>
</tr>
<tr>
<td>Vecuronium (back-up if Succinylcholine not available)</td>
<td>Paralytic for DSI</td>
<td>-</td>
<td>IV / IO</td>
<td>Wt based</td>
</tr>
</tbody>
</table>

* For pain and sedation doses:  
  Start dose low – slowly increase –  
  Titrate to effect up to listed dose
### Pharmacology BLS Only

**Adult Patients**

<table>
<thead>
<tr>
<th>GENERIC NAME</th>
<th>INDICATIONS</th>
<th>CONTRAINDICATIONS</th>
<th>Route</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albuterol Sulfate</td>
<td>Shortness of Breath with bronchoconstriction / wheezing, Allergic Reaction, Hyperkalemia</td>
<td>Caution in tachycardia patients with severe cardiac disease</td>
<td>Nebulizer with 8 lpm O2, inline CPAP</td>
<td>2.5 mg (in 3 ml) may repeat if needed off-line</td>
</tr>
<tr>
<td>Aspirin chewable tablets</td>
<td>Chest Pain suggestive of ACS</td>
<td>Recent GI bleed, Allergy, Bleeding Disorders Use caution for patients on CPAP</td>
<td>PO Chewed</td>
<td>324 mg (4 - 81 mg) off-line</td>
</tr>
<tr>
<td>Epi Auto-Injector (Adrenalin)</td>
<td>Anaphylaxis / allergic reaction bronchoconstriction / wheezing refractory to neb</td>
<td>Caution in patients with severe cardiac disease</td>
<td>IM</td>
<td>0.3 mg off-line Anaphylaxis on-line allergic reaction</td>
</tr>
<tr>
<td>DuoNeb (Albuterol / Ipratropium)</td>
<td>Shortness of Breath with bronchoconstriction / wheezing, Allergic Reaction</td>
<td>Caution in tachycardia patients with severe cardiac disease</td>
<td>Nebulizer with 8 lpm O2, inline CPAP</td>
<td>Use DuoNeb for first dose* repeat with Albuterol if needed</td>
</tr>
<tr>
<td>Glucagon</td>
<td>Hypoglycemia, Beta blocker OD</td>
<td></td>
<td>IM</td>
<td>1 mg off-line</td>
</tr>
<tr>
<td>Naloxone (Narcan)</td>
<td>Opioid overdose with respiratory depression</td>
<td>Caution with narcotic-dependent patients who may experience withdrawal syndrome</td>
<td>MAD / IM</td>
<td>2 mg (in 2 ml) MAD is preferred route 1/2 in each nare may repeat X 1 dose off-line</td>
</tr>
<tr>
<td>Nitroglycerin tablets</td>
<td>Chest Pain suggestive of ACS, Pulmonary Edema</td>
<td>BP &lt; 100, Inferior MI with possible RV infarction, severe bradycardia, severe tachycardia, Erectile dysfunction meds within 24 hrs. <strong>Use caution for patients on CPAP</strong></td>
<td>SL</td>
<td>0.4 mg If patient prescribed nitro, repeat every 5 min x 3 doses total Off-line (use EMS supply) On-line for pt not prescribed nitro</td>
</tr>
<tr>
<td>Oral Glucose</td>
<td>Hypoglycemia</td>
<td>Patient who is not able to follow commands</td>
<td>PO</td>
<td>15 grams off-line</td>
</tr>
</tbody>
</table>

* DuoNeb: use one premade Albuterol & Ipratropium (2.5 mg/0.5 mg in 5 ml) or add one Albuterol (2.5 mg in 3 ml) and one Ipratropium (0.5 / 2.5 ml) to nebulizer

**See next page for Pediatric Patients**

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### Pediatric Patients

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<tr>
<th>GENERIC NAME</th>
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<tbody>
<tr>
<td><strong>Albuterol Sulfate</strong></td>
<td>Shortness of Breath with bronchoconstriction / wheezing, Allergic Reaction, Hyperkalemia</td>
<td>Caution in tachycardia patients with severe cardiac disease</td>
<td>Nebulizer with 8 lpm O2, inline CPAP</td>
<td>2.5 mg (in 3 ml) may repeat if needed off-line Full dose make not be appropriate / needed in smaller patients, monitor patient and discontinue if extreme tachycardia or patient improved and additional medication not required</td>
</tr>
<tr>
<td><strong>Aspirin chewable tablets</strong></td>
<td>Chest Pain suggestive of ACS</td>
<td>Recent GI bleed, Allergy, Bleeding Disorders</td>
<td>PO Chewed</td>
<td><strong>NA</strong> not used in pediatric patients</td>
</tr>
<tr>
<td><strong>Epi Auto-Injector (Adrenalin)</strong></td>
<td>Anaphylaxis / allergic reaction bronchoconstriction / wheezing refractory to neb</td>
<td>Caution in patients with severe cardiac disease</td>
<td>IM</td>
<td>Epi Jr. 0.15 for patient 15 to 30 kg Epi 0.3 for patient greater than 30 kg (66 pounds) - under 15 kg (33 pounds) call Medical Control off-line Anaphylaxis on-line allergic reaction</td>
</tr>
<tr>
<td><strong>DuoNeb (Albuterol / Ipratropium)</strong></td>
<td>Shortness of Breath with bronchoconstriction / wheezing, Allergic Reaction</td>
<td>Caution in tachycardia patients with severe cardiac disease</td>
<td>Nebulizer with 8 lpm O2, inline CPAP</td>
<td><strong>NA</strong> not used in pediatric patients</td>
</tr>
<tr>
<td><em>DuoNeb: use one premade Albuterol &amp; Ipratropium (2.5 mg/0.5 mg in 5 ml) or add one Albuterol (2.5 mg in 3 ml) and one Ipratropium (0.5 / 2.5 ml) to nebulizer</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Glucagon</strong></td>
<td>Hypoglycemia, Beta blocker OD</td>
<td></td>
<td>IM</td>
<td>0.5 mg for patient less than 22 kg (48 pounds) 1.0 mg for patients over 22 kg (48 pounds) 1 mg off-line</td>
</tr>
<tr>
<td><strong>Naloxone (Narcan)</strong></td>
<td>Opioid overdose with respiratory depression</td>
<td>Caution with narcotic-dependent patients who may experience withdrawal syndrome</td>
<td>MAD / IM</td>
<td>1 mg for patients 10-20 kg (22-44 pounds) 2 mg for patients over 20 kg (44 pounds) MAD is preferred route 1/2 in each nare May repeat X 1 dose off-line</td>
</tr>
<tr>
<td><strong>Nitroglycerin tablets</strong></td>
<td>Chest Pain suggestive of ACS, Pulmonary Edema</td>
<td>BP &lt; 100, Inferior MI with possible RV infarction, severe bradycardia, severe tachycardia, Erectile dysfunction meds within 24 hrs.</td>
<td>SL</td>
<td><strong>NA</strong> not used in pediatric patients</td>
</tr>
<tr>
<td><strong>Oral Glucose</strong></td>
<td>Hypoglycemia</td>
<td>Patient who is not able to follow commands</td>
<td>PO</td>
<td>15 grams off-line</td>
</tr>
</tbody>
</table>

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### Adult Patients

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<tr>
<th>GENERIC NAME</th>
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<th>CONTRAINDICATIONS</th>
<th>Route</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspirin chewable tablets</td>
<td>Chest Pain suggestive of ACS</td>
<td>Recent GI bleed, Allergy, Bleeding Disorders</td>
<td>PO Chewed</td>
<td>324 mg (4 - 81 mg) off-line</td>
</tr>
<tr>
<td>Epi Auto-Injector (Adrenalin)</td>
<td>Anaphylaxis / allergic reaction bronchoconstriction / wheezing refractory to neb</td>
<td>Caution in patients with severe cardiac disease</td>
<td>IM</td>
<td>0.3 mg off-line Anaphylaxis on-line allergic reaction</td>
</tr>
<tr>
<td>Naloxone (Narcan)</td>
<td>Opioid overdose with respiratory depression</td>
<td>Caution with narcotic-dependent patients who may experience withdrawal syndrome</td>
<td>MAD</td>
<td>2 mg (in 2 ml) Epi Jr. for patient 15 to 30 Kg (33-66 pounds) Epi 0.3 for patient greater than 30 kg (66 pounds) under 15 kg (33 pounds) call Medical Control off-line Anaphylaxis on-line allergic reaction</td>
</tr>
<tr>
<td>Oral Glucose</td>
<td>Hypoglycemia</td>
<td>Patient who is not able to follow commands</td>
<td>PO</td>
<td>15 grams off-line</td>
</tr>
</tbody>
</table>

### Pediatric Patients

<table>
<thead>
<tr>
<th>GENERIC NAME</th>
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<th>CONTRAINDICATIONS</th>
<th>Route</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspirin chewable tablets</td>
<td>Chest Pain suggestive of ACS</td>
<td>Recent GI bleed, Allergy, Bleeding Disorders</td>
<td>PO Chewed</td>
<td>NA not used in pediatric patients</td>
</tr>
<tr>
<td>Epi Auto-Injector (Adrenalin)</td>
<td>Anaphylaxis / allergic reaction bronchoconstriction / wheezing refractory to neb</td>
<td>Caution in patients with severe cardiac disease</td>
<td>IM</td>
<td>Epi Jr. 0.15 for patient 15 to 30 Kg (33-66 pounds) Epi 0.3 for patient greater than 30 kg (66 pounds) under 15 kg (33 pounds) call Medical Control off-line Anaphylaxis on-line allergic reaction</td>
</tr>
<tr>
<td>Naloxone (Narcan)</td>
<td>Opioid overdose with respiratory depression</td>
<td>Caution with narcotic-dependent patients who may experience withdrawal syndrome</td>
<td>MAD</td>
<td>1 mg for patients 10-20 kg (22-44 pounds)2 mg for patients over 20 kg (44 pounds) 1/2 in each nare May repeat X 1 dose off-line</td>
</tr>
<tr>
<td>Oral Glucose</td>
<td>Hypoglycemia</td>
<td>Patient who is not able to follow commands</td>
<td>PO</td>
<td>15 grams off-line</td>
</tr>
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REGION I
EMERGENCY
MEDICAL SERVICES

PREHOSPITAL FORMULARY

As prepared by:

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Reference: Jones and Bartlett Learning LLC, 2013 pp 1574-1628

IDPH Approval
Date: December 6, 2017
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

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<td><strong>Midazolam (Versed)</strong></td>
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<td><strong>Morphine Sulfate</strong></td>
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<td><strong>Naloxone Hydrochloride (Narcan)</strong></td>
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<td><strong>Nitroglycerine</strong></td>
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<td><strong>Ondansetron (Zofran)</strong></td>
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<td><strong>Oral Glucose/Glucose Tablets</strong></td>
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<td><strong>Oxygen</strong></td>
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<td><strong>Prochlorperazine (Compazine) – Alternative to Ondansetron shortage</strong></td>
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<td><strong>Rocuronium Bromide – Alternative to Succinylcholine shortage</strong></td>
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<td><strong>Sodium Bicarbonate</strong></td>
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<td><strong>Sodium Chloride</strong></td>
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<td><strong>Succinylcholine Chloride (Anectine)</strong></td>
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<td><strong>Tetracaine Hydrochloride</strong></td>
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<td><strong>Tranexamic Acid (Cyklokapron)</strong></td>
</tr>
<tr>
<td><strong>Vecuronium – Alternative to Succinylcholine shortage</strong></td>
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<th>Formulary Resources</th>
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<td><strong>Intranasal Dosing – Fentanyl</strong></td>
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<td><strong>Intranasal Dosing – Midazolam</strong></td>
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<td><strong>Region I Medication Restocking Sheet</strong></td>
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<td><strong>Chem Pak Information</strong></td>
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<td><strong>Chem Pak – Atropine Sulfate</strong></td>
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<td><strong>Chem Pak – Pralidoxime Chloride (2-Pam)</strong></td>
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<td><strong>Chem Pak – Diazepam (Valium)</strong></td>
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<tr>
<th>EMT-Basic Medications Table of Contents</th>
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<tr>
<td><strong>Albuterol</strong></td>
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<tr>
<td><strong>DuoNeb</strong></td>
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<tr>
<td><strong>Aspirin</strong></td>
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<td><strong>Epi Auto Injector</strong></td>
</tr>
<tr>
<td><strong>Glucagon</strong></td>
</tr>
<tr>
<td><strong>Naloxone</strong></td>
</tr>
<tr>
<td><strong>Nitroglycerine</strong></td>
</tr>
<tr>
<td><strong>Oral Glucose</strong></td>
</tr>
<tr>
<td><strong>EMT Basic Pharmacology (Standard Dosing) Adult and Peds</strong></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th><strong>Adenosine</strong></th>
<th>(Adenocard)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification:</strong></td>
<td>Antidysrhythmic Agent</td>
</tr>
<tr>
<td><strong>Actions:</strong></td>
<td>Slows conduction through the A-V node, can interrupt the re-entry pathways through the A-V node, and can restore normal sinus rhythm in patients with PSVT and Wolff-Parkinson-White (WPW).</td>
</tr>
<tr>
<td><strong>Indications:</strong></td>
<td>Supraventricular tachycardia (stable)</td>
</tr>
<tr>
<td></td>
<td>Monomorphic wide-complex tachycardia (stable)</td>
</tr>
<tr>
<td><strong>Contraindications include but not limited to:</strong></td>
<td>o 2\textsuperscript{nd} or 3\textsuperscript{rd} degree heart block</td>
</tr>
<tr>
<td></td>
<td>o Sick sinus syndrome</td>
</tr>
<tr>
<td></td>
<td>o Hypersensitivity to Adenosine</td>
</tr>
<tr>
<td><strong>Adverse effects include but not limited to:</strong></td>
<td>➢ Transient asystole</td>
</tr>
<tr>
<td></td>
<td>➢ Facial flushing</td>
</tr>
<tr>
<td></td>
<td>➢ Headache</td>
</tr>
<tr>
<td></td>
<td>➢ Dizziness</td>
</tr>
<tr>
<td></td>
<td>➢ Dyspnea</td>
</tr>
<tr>
<td></td>
<td>➢ Nausea/vomiting</td>
</tr>
<tr>
<td></td>
<td>➢ Chest pressure</td>
</tr>
<tr>
<td></td>
<td>➢ Bronchoconstriction in some asthma patients</td>
</tr>
<tr>
<td><strong>Adult Administration:</strong></td>
<td>Initial 6 mg IVP bolus followed by 20 ml NS flush. If dysrhythmia persists, follow with 12 mg followed by 20 ml NS flush. Call Medical Control for additional dosing.</td>
</tr>
<tr>
<td><strong>Packaging Information:</strong></td>
<td>(6 mg/2 ml) Pre-filled syringe</td>
</tr>
<tr>
<td><strong>Pediatric Administration:</strong></td>
<td>See Medication Administration Chart for weight based dosing; follow with 5-10 mL NS flush.</td>
</tr>
<tr>
<td><strong>Onset:</strong></td>
<td>Within 30 seconds</td>
</tr>
<tr>
<td><strong>Duration:</strong></td>
<td>10 seconds</td>
</tr>
<tr>
<td><strong>Pregnancy Safety:</strong></td>
<td>Category C</td>
</tr>
<tr>
<td><strong>Precautions and Comments:</strong></td>
<td>Half-life is 10 seconds.</td>
</tr>
<tr>
<td></td>
<td>A brief period of asystole (up to 15 seconds) following conversion, followed by resumption of NSR is common after rapid administration.</td>
</tr>
<tr>
<td></td>
<td>Draw up adenosine and saline flush in separate syringes to allow for a more rapid bolus.</td>
</tr>
<tr>
<td></td>
<td>Not indicated for patients with a known history of atrial fibrillation/atrial flutter, but may be used to determine rhythm in irregular tachycardias. Once atrial fibrillation or atrial flutter is confirmed you should discontinue any further administration.</td>
</tr>
</tbody>
</table>

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### Albuterol Sulfate

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Bronchodilator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</td>
<td>Relaxes bronchial smooth muscle by stimulating beta&lt;sub&gt;2&lt;/sub&gt; receptors resulting in bronchodilation.</td>
</tr>
</tbody>
</table>
| Indications:    | - Acute asthma/emphysema  
                 - Allergic reactions  
                 - COPD/bronchitis  
                 - Bronchospasm  
                 - Known or suspected patients with hyperkalemia |
| Contraindications include but not limited to: | - Symptomatic tachycardia (>150 BPM)  
   - Chest pressure  
   - Prior hypersensitivity reaction to Albuterol |
| Adverse effects include but not limited to: | - Tachycardia  
   - Hypertension  
   - Palpitations  
   - Dizziness  
   - Dysrhythmias  
   - Restlessness  
   - Nausea |
| Adult Administration: | Via nebulizer – 2.5 mg - repeat PRN until relief of symptoms |
| Packaging Information: | (2.5 mg/3 ml) Ampule/Nebulizer |
| Pediatric Administration: | Via nebulizer – up to 2.5 mg  
Call Medical Control for repeat dosing |
| Onset: | Within 5 minutes |
| Duration: | 3-4 hours |
| Pregnancy Safety: | Category C |
| Precautions and Comments: | Monitor blood pressure and heart rate closely. |

#### Used in SMO:
- Adult Anaphylaxis and Allergic Reaction
- Bronchospasm
- Crush Syndrome and Suspension
- Trauma
- Pediatric Anaphylaxis and Allergic Reaction
- Pediatric Respiratory Distress

---

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### Albuterol Sulfate/Ipratropium Bromide (DuoNeb)

| Classification: | Albuterol is a bronchodilator  
Ipratropium is an anticholinergic bronchodilator |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</td>
<td>Relaxes bronchial smooth muscle by stimulating beta&lt;sub&gt;2&lt;/sub&gt; receptors resulting in bronchodilation.</td>
</tr>
</tbody>
</table>
| Indications: | • Acute asthma attack  
• Bronchospasm associate with emphysema/bronchitis  
• COPD  
• Wheezing in croup or bronchiolitis |
| Contraindications include but not limited to: | o Signs of an MI  
o Cardiac arrhythmias associated with tachycardia  
o Patients taking Spiriva/other bronchodilator  
o Known hypersensitivity to Albuterol/Ipratropium |
| Adverse effects include but not limited to: | ➢ Tachycardia  
➢ Hypertension  
➢ Palpitations  
➢ Dizziness  
➢ Dysrhythmias  
➢ Restlessness/Nervousness  
➢ Nausea/Vomiting |
| Adult Administration: |  
**Packaging Information:** One ampule containing Albuterol/Ipratropium in 3 ml NS  
Can repeat twice following initial treatment (3 total doses) |
| Pediatric Administration: | Not recommended for pediatric patients |
| Onset: | Within 5 minutes |
| Duration: | 3-4 hours |
| Pregnancy Safety: | Category C |
| Precautions and Comments: | Monitor blood pressure and heart rate closely.  
Stop treatment if:  
• Pulse rate increases by 20 beats/minute  
• Frequent PVC's develop  
• Any tachydysrhythmias other than sinus tachycardia develop  
Use with caution in patients with:  
• Heart disease  
• Hypertension  
• Palpitations |
| Used in SMO: | Adult Anaphylaxis and Allergic Reaction  
Bronchospasm  
Crush Syndrome and Suspension  
Trauma |

**Pharmacology Chart**

**Used in SMO:**
- Adult Anaphylaxis and Allergic Reaction
- Bronchospasm
- Crush Syndrome and Suspension
- Trauma

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## Amiodarone (Cordarone, Pacerone)

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Antiarrhythmic agent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</td>
<td>• Delays repolarization</td>
</tr>
<tr>
<td></td>
<td>• Prolongs action potential</td>
</tr>
<tr>
<td></td>
<td>• Slows conduction</td>
</tr>
<tr>
<td></td>
<td>• Delays impulses from SA and AV nodes</td>
</tr>
<tr>
<td></td>
<td>• Slows conduction through accessory pathways</td>
</tr>
<tr>
<td></td>
<td>• Vasodilation</td>
</tr>
</tbody>
</table>

| Indications:    | • Ventricular fibrillation |
|                | • Wide-complex tachycardia |

<table>
<thead>
<tr>
<th>Contraindications include but not limited to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>o Cardiogenic shock</td>
</tr>
<tr>
<td>o Bradycardia/heart blocks</td>
</tr>
<tr>
<td>o Iodine allergies</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Adverse effects include but not limited to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>➢ Hypotension</td>
</tr>
<tr>
<td>➢ Bradycardia</td>
</tr>
<tr>
<td>➢ AV block</td>
</tr>
<tr>
<td>➢ Asystole</td>
</tr>
<tr>
<td>➢ PEA</td>
</tr>
<tr>
<td>➢ Hepatotoxicity</td>
</tr>
</tbody>
</table>

### Adult Administration:
- **VF/VT (pulseless)** – 300 mg slow IV/IO push (over 1-2 minutes) followed in 5 minutes by 150 mg IV/IO push
- **VT (with pulse)** – IV/IO – slowly infuse 150 mg over 10 minutes. Mix with 100 ml Normal Saline and infuse at a rate of 618 ml/hr. May repeat one time.

### Packaging Information:
(150 mg/3 ml) Vial

### Pediatric Administration:
- **VF/VT (pulseless)** – see Medication Administration Chart for weight based dosing and administration rates
- **VT (with pulse)** – see Medication Administration Chart for weight based dosing and administration rates

### Onset:
2-3 minutes

### Duration:
Days to weeks

### Pregnancy Safety:
Category D

### Precautions and Comments:
In patients with a pulse Amiodarone must be administered very slowly (Adults: over 10 minutes / Pediatrics: over 30 minutes).

Use with beta blockers and calcium channel blockers may increase risk of hypotension and bradycardia.

Use with Fentanyl may cause hypotension, bradycardia, and decreased cardiac output.

Use with antihypertensives may increase hypotensive effect.

---

**Pharmacology Chart**

**Used in SMO:**
- Pediatric Tachycardia
- Pediatric Arrest/Asystole/PEA
- Poisoning and Overdose
- Ventricular Fibrillation/Pulseless
- Ventricular Tachycardia
- Wide Complex Tachycardia

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# Aspirin (ASA)

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Antiplatelet, Analgesic, Antipyretic, Anti-inflammatory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</td>
<td>Inhibition of platelet aggregation and platelet synthesis. Reduction of risk of death in patients with a history of myocardial infarction or unstable angina.</td>
</tr>
<tr>
<td>Indications:</td>
<td>Chest pain with suspected myocardial ischemia</td>
</tr>
<tr>
<td>Contraindications include but not limited to:</td>
<td>Allergy to ASA/NSAID, Peptic ulcer disease, Hypersensitivity to salicylates</td>
</tr>
<tr>
<td>Adverse effects include but not limited to:</td>
<td>Nausea, GI upset, Hepatotoxicity, Occult blood loss, Anaphylaxis</td>
</tr>
<tr>
<td>Adult Administration:</td>
<td>324 mg / 4 tablets</td>
</tr>
<tr>
<td>Packaging Information:</td>
<td>(81 mg) Chewable Tablet</td>
</tr>
<tr>
<td>Pediatric Administration:</td>
<td>Not recommended</td>
</tr>
<tr>
<td>Onset:</td>
<td>30-60 minutes</td>
</tr>
<tr>
<td>Duration:</td>
<td>4-6 hours</td>
</tr>
<tr>
<td>Pregnancy Safety:</td>
<td>Category D in the third trimester: use ONLY if benefit to mother justifies the risk to the fetus.</td>
</tr>
<tr>
<td>Precautions and Comments:</td>
<td>Patients who have already taken Aspirin today (such as 81 mg daily dose) can still be administered Aspirin. Consider Aspirin early in the appropriate intervention as it has been shown to improve mortality.</td>
</tr>
<tr>
<td>Used in SMO:</td>
<td>Chest Pain of Suspected Cardiac Origin</td>
</tr>
</tbody>
</table>
# Atropine Sulfate

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Parasympathetic blocker (Anticholinergic), Antidysrhythmic agent</th>
</tr>
</thead>
</table>
| **Actions:**             | • Inhibits parasympathetic stimulation by blocking 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. |
| **Indications:**         | • Symptomatic bradycardia  
                         | • Organophosphate poisoning (OPP)  
                         | • Pre-intubation for patients <20 kg or < 5 years old  
                         | • Nerve agent exposure (see Mark 1 Nerve Agent) |
| **Contraindications include but not limited to:** | Neonates (bradycardia and asystole/PEA in neonates is usually caused by hypoventilation. Also, the vagus nerve in neonates is underdeveloped and atropine will usually have no effect). |
| **Adverse effects include but not limited to:** | Dilated pupils  
                         | Tachycardia  
                         | Increased myocardial oxygen demand  
                         | Headache  
                         | Dizziness  
                         | Palpitations  
                         | Nausea/vomiting  
                         | Flushed skin  
                         | Increased intraocular pressure |

**Adult Administration:**

**Packaging Information:** (1 mg/10 ml) Pre-filled syringe

Bradycardia: IV/IO every 5 minutes to max of 3 mg
Poisoning and Overdose: IV/IO every 5 minutes until symptoms clear

**Pediatric Administration:**

See Medication Administration Chart for weight based dosing and administration rates

**Onset:** 2-5 minutes

**Duration:** 20 minutes

**Pregnancy Safety:** Category C

**Precautions and Comments:**

Bradycardia in pediatrics is usually due to hypoxia.

Atropine is not recommended in neonates.

Atropine is not recommended in asymptomatic bradycardia. The increase in myocardial oxygen demand may cause/ extend an AMI.

Atropine will not be effective for Type II AV Block and new 3rd degree block with wide QRS complex (the patients may cause paradoxical slowing – be prepared to pace).
Calcium Gluconate

Classification: Calcium salts

Actions: Soluble calcium ions bind with soluble fluoride ions to produce the insoluble and therefore inactive calcium fluoride salt.

Indications:
- Hyperkalemia
- Hypocalcemia
- Hypermagnesemia

Contraindications include but not limited to:
- Digitalis toxicity
- Hypercalcemia

Adverse effects include but not limited to:
- May induce cardiac dysrhythmias
- IM administration may cause severe tissue necrosis
- If calcium overdosing adverse effects may be:
  - Dry mouth
  - Headache
  - Anxiety
  - Thirst
  - Metal taste
  - Vomiting/diarrhea

Adult Administration:

Packaging Information:
(1 GM/10 ml) Vial

IV/IO – 1 Gram – may repeat every 5 minutes two times for a total of 3 Grams (12-lead EKG recommended prior to each administration for non-code).

In a cardiac arrest situation give 3 Grams rapidly.

Pediatric Administration:
See Medication Administration Chart for weight based dosing and administration rates

Onset: Immediate

Duration: 30 minutes to 2 hours

Pregnancy Safety: Category C

Precautions and Comments:

Pharmacology Chart

Used in SMO:
- Adult Asystole/PEA
- Crush Syndrome and Suspension
- Trauma
- Excited Delirium
- Adult V-Fib/V-Tach

The faster Calcium Gluconate is given the faster the body eliminates it. For prolonged transports repeat doses may be needed.
### Dextrose

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Hyperglycemic agent, hypertonic solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</td>
<td>Provides immediate source of glucose, which is rapidly utilized for cellular metabolism</td>
</tr>
<tr>
<td>Indications:</td>
<td>Altered level of consciousness due to suspected hypoglycemia</td>
</tr>
<tr>
<td>Contraindications:</td>
<td>None</td>
</tr>
<tr>
<td>Adverse effects include but not limited to:</td>
<td>CVA, Intracranial hemorrhage, Thrombophlebitis, Rhabdomyolysis</td>
</tr>
</tbody>
</table>

#### Adult Administration:
See [Dextrose Administration Chart](#).

#### Packaging Information:
- **D50**: (25 G/50 ml) Pre-filled syringe
- **D10**: (10 G/ 100 ml) Bag

#### Pediatric Administration:
See [Dextrose Administration Chart](#) for weight based dosing and administration rates

#### Onset:
30-60 seconds

#### Duration:
Dependent on level of hypoglycemia

#### Pregnancy Safety:
Category A

#### Precautions and Comments:
- Causes tissue necrosis if injected into interstitial space.
- Use caution with patients with suspected intracranial hemorrhage.
- Effects may be delayed in elderly patients with poor circulation.
- May increase cerebral ischemia in CVA.
- Hypoglycemia* is defined as:
  - Neonate (<1 month) – blood sugar <50 mg/dL
  - Infant/child (>1 month) – blood sugar <60 mg/dL
  - Adult – blood sugar = or <80 mg/dL
  - * or any blood sugar with signs and symptoms of hypoglycemia

---

**Used in SMO:**
- Alcohol Related Emergencies
- Altered Mental Status (Adult)
- Asystole/PEA (Adult)
- Diabetic Emergencies
- Pediatric Altered Mental Status
- Pediatric Seizures
- Stroke
- Syncope

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Dextrose Chart

Pediatric Dose = 0.5 Gm/kg/dose
Dextrose 10% and 25% recommended for children < 2 years old
Dextrose 10% *ONLY* for children 28 days and younger (if D10 is not available D50 must be diluted twice to a concentration of 12.5%
D50% may be diluted 1:1 with NS (0.9%) prior to administration to give
Final concentration of D25%

May repeat dose x 1

<table>
<thead>
<tr>
<th>Patient weight</th>
<th>Dose (Grams)</th>
<th>Dextrose 10% (0.1 Gm/mL)</th>
<th>Dextrose 25% (0.25 Gm/mL)</th>
<th>Dextrose 50% (0.5 Gm/mL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 kg</td>
<td>1.5 G</td>
<td>15 mL</td>
<td>6 mL</td>
<td>-</td>
</tr>
<tr>
<td>4 kg</td>
<td>2 G</td>
<td>20 mL</td>
<td>8 mL</td>
<td>-</td>
</tr>
<tr>
<td>5 kg</td>
<td>2.5 G</td>
<td>25 mL</td>
<td>10 mL</td>
<td>-</td>
</tr>
<tr>
<td>Pink (6 - 7 kg)</td>
<td>3.25 G</td>
<td>32 mL</td>
<td>13 mL</td>
<td>6.5 mL Dilute 1:1</td>
</tr>
<tr>
<td>Red (8 - 9 kg)</td>
<td>4.25 G</td>
<td>42.5 mL</td>
<td>17 mL</td>
<td>8.5 mL Dilute 1:1</td>
</tr>
<tr>
<td>Purple (10 - 11kg)</td>
<td>5.25 G</td>
<td>52.5 mL</td>
<td>21 mL</td>
<td>10.5 mL</td>
</tr>
<tr>
<td>Yellow (12 - 13 kg)</td>
<td>6.5 G</td>
<td>65 mL</td>
<td>26 mL</td>
<td>13 mL</td>
</tr>
<tr>
<td>White (15 - 18 kg)</td>
<td>8.25 G</td>
<td>82.5 mL</td>
<td>33 mL</td>
<td>16.5 mL</td>
</tr>
<tr>
<td>Blue (19 - 21 kg)</td>
<td>10.5 G</td>
<td>105 mL</td>
<td>42 mL</td>
<td>21 mL</td>
</tr>
<tr>
<td>Orange (24 - 29 kg)</td>
<td>13.3 G</td>
<td>133 mL</td>
<td>53.2 mL</td>
<td>26.6 mL</td>
</tr>
<tr>
<td>Green (33 - 36 kg)</td>
<td>16.5 G</td>
<td>165 mL</td>
<td>68 mL</td>
<td>33 mL</td>
</tr>
<tr>
<td>Adult</td>
<td>25 G</td>
<td>250 ml</td>
<td>100 ml</td>
<td>50 ml</td>
</tr>
</tbody>
</table>
**Formulary – Diazepam (Valium)**

<table>
<thead>
<tr>
<th>Diazepam</th>
<th>Valium</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification:</strong></td>
<td>Benzodiazepine derivative</td>
</tr>
<tr>
<td><strong>Actions:</strong></td>
<td>Tranquilizer, anticonvulsant, skeletal muscle relaxant through effects on the central nervous system</td>
</tr>
</tbody>
</table>
| **Indications:** | • Status seizures (any seizure lasting longer than five (5) minutes or two consecutive seizures without regaining responsiveness).
• Drug-induced hyperadrenergic states manifested by tachycardia and hypertension (i.e., cocaine, amphetamine overdose).
• Patients who are combative.
• Severe musculoskeletal spasms.
• Acute alcohol withdrawal.
• Post nerve agent exposure. |
| **Contraindications include but not limited to:** | In known hypersensitivity, drug abuse, coma, shock, or head injury induced CNS depression. |
| **Adverse effects include but not limited to:** | • Hypotension
• Tachycardia
• Respiratory depression
• Confusion
• Nausea |
| **Adult Administration:** | See Adult Medication Administration Chart |
| **Packaging Information:** | IV/IO over 2 minutes every 10-15 minutes up to 30 mg |
| **Pediatric Administration:** | See Medication Administration Chart for dosing
• 30 days to 5 years old – IV slowly (over 2 minutes) every 2-5 minutes up to 5 mg
• >5 years old – IV slowly (over 2 minutes) every 2-5 minutes up to 10 mg |
| **Onset:** | 1-5 minutes if IV
15-20 minutes if IM |
| **Duration:** | 15 – 60 minutes |
| **Pregnancy Safety:** | Category D |
| **Precautions and Comments:** | • May result in significant CNS depression when administered with other CNS depressants.
• Do not administer with other IV medications as it may form a precipitate.
• Place patients receiving Diazepam on oxygen.
• Monitor the patient closely as Diazepam can cause respiratory depression and/or hypotension (vital signs, cardiac monitor, pulse ox, EtCO₂) |
| **Used in SMO:** | Pain Management
Pediatric Seizure
Pre-Eclampsia/Eclampsia
Sedation for Pacing/Cardioversion
Seizures (Adult) |

*For pain and sedation doses: Start dose low – slowly increase – Titrates to effect up to listed dose*
Diphenhydramine

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Antihistamine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</td>
<td>Competes with histamines at receptor sites. Reverses muscle spasms associated with dystonic reactions (phenothiazine).</td>
</tr>
</tbody>
</table>
| Indications:    | - Allergic reactions  
- Muscle spasms associated with dystonic reactions |
| Contraindications include but not limited to: | o Glaucoma  
- Acute asthma  
- COPD |
| Adverse effects include but not limited to: | - Hypotension  
- Drowsiness  
- Tachycardia  
- Bradycardia  
- Dry mouth  
- Urinary retention |
| Adult Administration: | IM or IV |
| Packaging Information: | 25-50 mg |
| Pediatric Administration: | See Medication Administration Chart for weight based dosing and administration rates IM or IV |
| Onset: | 1-5 minutes if given IV/IO push  
15 minutes if given IM/PO |
| Duration: | 3-4 hours |
| Pregnancy Safety: | Category B |
| Precautions and Comments: | - May caused depressed level of consciousness in elderly patients.  
- May have additive effect with alcohol or depressants. |
| Pharmacology Chart | Used in SMQ:  
- Anaphylaxis and Allergic Reaction (Adult)  
- Pediatric Anaphylaxis and Allergic Reaction  
- Pediatric Toxic Exposure Poisoning and Overdose (Adult) |
<table>
<thead>
<tr>
<th><strong>Dopamine</strong></th>
<th><strong>Intropin</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification:</strong></td>
<td>Sympathomimetic agent (Catecholamine)</td>
</tr>
</tbody>
</table>
| **Actions:** | **Moderate dose** (2-10 μg/kg/min)  
Increases inotropy (force) without increasing chronotropy (heart rate).  
Increases blood pressure by stimulating beta\(_1\) receptors.  
**High dose** (over 10 μg/kg/min)  
Causes vasoconstriction. Increases inotropy and chronotropy.  
Increases blood pressure by stimulating alpha and beta\(_1\) receptors. |
| **Indications:** | • Cardiogenic shock  
• Distributive shock |
| **Contraindications include but not limited to:** | o Hypovolemia |
| **Adverse effects include but not limited to:** | ➢ Hypotension  
➢ Tachycardia  
➢ Dyspnea |
| **Adult Administration:** | IV – usual infusion rate 2-20 mcg/kg/min; titrate response; taper slowly |
| **Packaging Information:** | See [Dopamine Drip Chart](#) for weight based dosing and administration rates |
| (400 mg/250 ml) Bag | |
| **Pediatric Administration:** | Not recommended |
| **Onset:** | 5 minutes |
| **Duration:** | 5-10 minutes |
| **Pregnancy Safety:** | Category C – avoid use in pregnant patients |
| **Precautions and Comments:** | • Not for use in hypovolemia  
• Causes tissue necrosis if injected into interstitial space  
• MAO inhibitors may increase its effects |
| **Used in SMO:** | Bites and Stings  
Bradycardia (Adult)  
Cardiogenic Shock  
Chest Pain of Suspected Cardiac Origin  
Sepsis  
Trauma Shock/Hemorrhage Control |
## Dopamine

400 mg in 250 ml or 1.6 mg/ml
Drops per minute based on microdrip Tubing (60 drops/ml)

<table>
<thead>
<tr>
<th>Weight KG</th>
<th>mL/hr</th>
<th>2</th>
<th>2.5</th>
<th>5</th>
<th>7.5</th>
<th>10</th>
<th>15</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td></td>
<td>3.75</td>
<td>4.7</td>
<td>9.4</td>
<td>14</td>
<td>18.8</td>
<td>28</td>
<td>37.6</td>
</tr>
<tr>
<td></td>
<td>drops/min</td>
<td>4</td>
<td>5</td>
<td>9</td>
<td>14</td>
<td>19</td>
<td>28</td>
<td>38</td>
</tr>
</tbody>
</table>
# REGION I EMERGENCY MEDICAL SERVICES
## STANDING MEDICAL ORDERS
### BLS, ILS, ALS
---

**FORMULARY - Epinephrine (Adrenalin)**

<table>
<thead>
<tr>
<th>Epinephrine 1:1 ml and 1:10 ml</th>
<th>Adrenalin</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification:</strong></td>
<td>Sympathomimetic agent (Catecholamine)</td>
</tr>
<tr>
<td><strong>Actions:</strong></td>
<td>Acts directly on Alpha and Beta receptors of the SNS. Beta effect is more profound than Alpha effects. Effects include:</td>
</tr>
<tr>
<td></td>
<td>• Increased heart rate (chronotropy)</td>
</tr>
<tr>
<td></td>
<td>• Increased cardiac contractile force (inotropy)</td>
</tr>
<tr>
<td></td>
<td>• Increased electrical activity within myocardium (dromotropy)</td>
</tr>
<tr>
<td></td>
<td>• Increased systemic vascular resistance</td>
</tr>
<tr>
<td></td>
<td>• Increased blood pressure</td>
</tr>
<tr>
<td></td>
<td>• Increased automaticity</td>
</tr>
<tr>
<td></td>
<td>• Increased bronchial smooth muscle dilation</td>
</tr>
<tr>
<td></td>
<td>• Increases coronary perfusion during CPR by increasing aortic diastolic pressure</td>
</tr>
<tr>
<td><strong>Indications:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Cardiopulmonary arrest:</td>
</tr>
<tr>
<td></td>
<td>- Ventricular Fibrillation/Pulseless Ventricular Tachycardia</td>
</tr>
<tr>
<td></td>
<td>- Asystole/PEA</td>
</tr>
<tr>
<td></td>
<td>• Allergic reaction/anaphylaxis</td>
</tr>
<tr>
<td></td>
<td>• Asthma</td>
</tr>
<tr>
<td></td>
<td>• Refractory pediatric bradycardia, unresponsive to O₂ and ventilation</td>
</tr>
<tr>
<td></td>
<td>• Stridor (croup, airway burns, laryngeal edema)</td>
</tr>
<tr>
<td><strong>Contraindications include but not limited to:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Hypertension</td>
</tr>
<tr>
<td></td>
<td>o Undiluted 1:1 ml IVP</td>
</tr>
<tr>
<td><strong>Adverse effects include but not limited to:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>➢ Hypertension-tachycardia</td>
</tr>
<tr>
<td></td>
<td>➢ Increases myocardial oxygen demand and potentially increases myocardial ischemia</td>
</tr>
</tbody>
</table>

**Adult Administration:**

**Cardiopulmonary Arrest:**
IV/IO: 1 mg of 1:10 ml. If rhythm persists repeat every 3-5 minutes
ET: 2 mg of 1:1 ml diluted to 5-10 mL. Followed with 5 normal ventilations. If rhythm persists repeat every 3 to 5 minutes.

**Bronchospasm:**
IM: 0.3 mg of 1:1 ml, may repeat at 20 minute intervals

**Anaphylaxis and Allergic Reaction:**
Bronchospasm:
IM: 0.3 mg of 1:1 ml, may repeat at 20 minute intervals for a total of 2 doses

**Hypotension/Airway Compromise:**
IM: 0.3-0.5 mg of 1:1 ml every 15 minutes if there is no improvement

**Impending Arrest:**
IV/IO: (0.1 mg/1 ml) of 1:10 ml slow over 5 minutes

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Formulary: Epinephrine Page 1 of 2
Adult Administration (continued)

Packaging Information:
1 mg/10 ml (1:10 ml) Pre-filled syringe
1 mg/1 ml (1:1 ml) vial 30 ml

Stridor:
Patient in cardiac arrest from anaphylaxis:
IV or IO of 1:10 ml
First dose: 1 mg
Repeat doses 3-5 mg every 3 minutes if arrest persists
If no IV/IO then ET 1:1 ml – 2.5 mg diluted in
5-10 mL NS followed by 5 ventilations every 3 minutes if arrest persists

Pediatric Administration:

Please see Medication Administration Chart for weight-based dosing.

Cardiac Arrest:
IV/IO: Initial dose: 0.01 mg/kg (1:10 ml, 0.1 mL/kg)
IV/IO: Repeat doses: 0.01 mg/kg (1:10 ml, 0.1mL/kg).
If rhythm persists repeat every 3-5 minutes.

Bronchospasm:
IM: 0.01 mg/kg (max 0.3 mg) of 1:1 ml. May repeat in
10-20 minutes for a total of 2 doses.

Refractive Bradycardia:
IV/IO: 0.01 mg/kg (1:10 ml, 0.1 mL/kg
Repeat dose is same as the initial dose, every 3-5 minutes

Anaphylaxis/Allergic Reaction:

Bronchospasm:
IM: 0.01 mg/kg of 1:1 ml every 15 minutes if there is
no clinical improvement.

Hypotension/Airway Compromise:
IM: 0.01 mg (max 0.3 mg) every 15 minutes if there is
no clinical improvement

Impending Arrest:
IV/IO: 0.01 mg/kg, diluted with Normal Saline to 10 mL
slow push over 5 minutes and then every 1-2 minutes if
there is inadequate response to treatment.

Onset:
Immediate if given IVP.
5-10 minutes if given SQ/IM.

Duration:
3-5 minutes if given IVP/.
20 minutes if given SQ/IM.

Pregnancy Safety:
Category C

Precautions and Comments:

Used in SMO:
Anaphylaxis and Allergic Reaction
(Adult)
Asystole/PEA
Bronchospasm
Pediatric Anaphylaxis and Allergic Reaction
Pediatric Arrest
Pediatric Bradycardia
Pediatric Respiratory Arrest
Pediatric Ventricular Fibrillation/PVT
Ventricular Fibrillation/Pulseless
Ventricular Tachycardia

Pharmacology Chart

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### Epinephrine Auto-injector

<table>
<thead>
<tr>
<th>Classification</th>
<th>Adrenaline, Epinephrine Hydrochloride</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions</td>
<td>Acts directly on Alpha and Beta receptors of the SNS. Beta effect is more profound than Alpha effects. Effects include:</td>
</tr>
<tr>
<td></td>
<td>• Increased heart rate (chronotropy)</td>
</tr>
<tr>
<td></td>
<td>• Increased cardiac contractile force (inotropy)</td>
</tr>
<tr>
<td></td>
<td>• Increased electrical activity within myocardium (dromotropy)</td>
</tr>
<tr>
<td></td>
<td>• Increased systemic vascular resistance</td>
</tr>
<tr>
<td></td>
<td>• Increased blood pressure</td>
</tr>
<tr>
<td></td>
<td>• Increased bronchial smooth muscle dilation</td>
</tr>
<tr>
<td>Indications</td>
<td>• Allergic Reaction</td>
</tr>
<tr>
<td></td>
<td>o Shortness of breath (wheezing, hoarseness, other abnormal breath sounds)</td>
</tr>
<tr>
<td></td>
<td>o Itching/hives that are severe and rapidly progressing</td>
</tr>
<tr>
<td></td>
<td>o Oral swelling/laryngospasm/difficulty swallowing</td>
</tr>
<tr>
<td></td>
<td>o Hypotension/unresponsiveness</td>
</tr>
<tr>
<td></td>
<td>o Patients with an exposure to known allergen with progressively worsening symptoms (i.e., hives)</td>
</tr>
<tr>
<td></td>
<td>• Severe Asthma</td>
</tr>
<tr>
<td>Contraindications</td>
<td>None when indicated</td>
</tr>
<tr>
<td>Adverse effects include but not limited to:</td>
<td>Hypertension-tachycardia</td>
</tr>
<tr>
<td></td>
<td>Tremor, weakness</td>
</tr>
<tr>
<td></td>
<td>Pallor, sweating, nausea, vomiting</td>
</tr>
<tr>
<td></td>
<td>Nervousness, anxiety</td>
</tr>
<tr>
<td></td>
<td>Increases myocardial oxygen demand and potentially increases myocardial ischemia</td>
</tr>
</tbody>
</table>

### Adult Administration

**Packaging Information:**
- Epinephrine (0.3 mg/0.3 ml) auto-injector
- Epinephrine (0.15 mg/0.3 ml) auto-injector

Patients over 30 kg (66 pounds): Epinephrine Auto-Injector (Adult size) 0.3 mg (0.3 mL, 1:1,000) IM – lateral high thigh is preferred. May repeat if available in 10 minutes if patient condition warrants.

### Pediatric Administration:

Patient 15-30 kg (33-66 pounds): Epinephrine Auto-Injector (Pediatric size) 0.15 mg (0.3 mL, 1:2,000) – lateral high thigh is preferred. May repeat if available in 10 minutes if patient condition warrants.

### Onset:

5-10 minutes
<table>
<thead>
<tr>
<th>Duration:</th>
<th>20 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnancy Safety:</td>
<td>Category C</td>
</tr>
<tr>
<td>Precautions and Comments:</td>
<td>Use with caution in elderly or pregnant patients, but don't withhold if patient has serious signs or symptoms (i.e., airway compromise, severe SOB, profound hypotension)</td>
</tr>
</tbody>
</table>

**Pharmacology Chart**

**Used in SMO:**
- Bronchospasm
- Pediatric Anaphylaxis and Allergic Reaction

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## Etomidate

<table>
<thead>
<tr>
<th><strong>Etomidate</strong></th>
<th><strong>Amidate</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification:</strong></td>
<td>General anesthetic and hypnotic without analgesic properties</td>
</tr>
<tr>
<td><strong>Actions:</strong></td>
<td>Depresses the activity of the brain stem reticular activating system</td>
</tr>
<tr>
<td><strong>Indications:</strong></td>
<td>Induction of general anesthesia and sedation of critically ill or injured patients and prior to cardioversion or intubation</td>
</tr>
<tr>
<td><strong>Contraindications include but not limited to:</strong></td>
<td>Known hypersensitivity</td>
</tr>
<tr>
<td><strong>Adverse effects include but not limited to:</strong></td>
<td></td>
</tr>
</tbody>
</table>
  - Myoclonic skeletal muscle movements  
  - Nausea and vomiting post procedure  
  - Apnea  
  - Hypoventilation or hyperventilation  
  - Laryngospasm  
  - Hypertension or hypotension  
  - Tachycardia or bradycardia |
| **Adult Administration:** | See [Adult Medication Administration Chart](#) for dosing |
| **Packaging Information:** |  
  - (2 mg/ml) Vial  
  - IV/IO: over 30-60 seconds  
  - Limit to 1 dose |
| **Pediatric Administration:** | See [Medication Administration Chart](#) for weight-based dosing  
  - (>10 years old): IV/IO: 0.2-0.4 mg/kg for sedation infused over 30-60 seconds. Maximum dose: 20 mg |
| **Onset:** | Within 1 minute |
| **Duration:** | 3 to 10 minutes |
| **Pregnancy Safety:** | Category C |
| **Precautions and Comments:** | The most common interaction of etomidate is with prescription medications such as alpha blockers, beta blockers, and antipsychotics causing an increased risk of hypotension. Administration to patients taking Verapamil may also result in increased hypotension as well as AV delay. Be ready to support ventilations if the patient develops apnea. |
| **Used in SMO:** | Delayed Sequence Intubation |

---

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**Formulary – Fentanyl (Fentanyl Citrate)**

<table>
<thead>
<tr>
<th><strong>Classification:</strong></th>
<th>Narcotic analgesic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Actions:</strong></td>
<td>Produces analgesia by inhibiting the ascending pain pathways. Depresses the central nervous system by interacting with receptors in the brain.</td>
</tr>
<tr>
<td><strong>Indications:</strong></td>
<td>Moderate to severe pain.</td>
</tr>
<tr>
<td><strong>Contraindications include but not limited to:</strong></td>
<td></td>
</tr>
<tr>
<td>o Use with caution in patients with hypertension or hypotension</td>
<td></td>
</tr>
<tr>
<td>o Use with caution in patients with increased ICP</td>
<td></td>
</tr>
<tr>
<td>o Use with caution in elderly patients</td>
<td></td>
</tr>
<tr>
<td>o Hypersensitivity to drug</td>
<td></td>
</tr>
<tr>
<td><strong>Adverse effects include but not limited to:</strong></td>
<td></td>
</tr>
<tr>
<td>➢ Severe respiratory difficulty as a result of thoracic rigidity (if given too fast IV or IO)</td>
<td></td>
</tr>
<tr>
<td>➢ Respiratory depression</td>
<td></td>
</tr>
<tr>
<td>➢ Hypotension/Bradycardia</td>
<td></td>
</tr>
<tr>
<td>➢ Altered mental status</td>
<td></td>
</tr>
<tr>
<td>➢ Nausea/vomiting</td>
<td></td>
</tr>
</tbody>
</table>

**Adult Administration:**
See [Adult Medication Administration Chart](#) for dosing. IV/IO, IN*, IM. Titrate to relief of pain. May repeat every 5 minutes to maximum dose of 200 mcg (if blood pressure drops below 90 mmHg discontinue administration)

**Packaging Information:**
(50 mcg/ml) Vial/ampule
Must use filter needle for ampule
Restocking requires a 222 form
* Intranasal dose – see Fentanyl IN Dosing Chart
Consider lower dose (25 mcg) for smaller or elderly patients

**Pediatric Administration:**
See [Medication Administration Chart](#) for weight-based dosing

* Intranasal dose = see Fentanyl IN Dosing Chart

**Onset:**
Immediate if given SLOW IV/IO – 7-8 minutes if given IM

**Duration:**
1-2 hours

**Pregnancy Safety:**
Category C

**Precautions and Comments:**
Monitor vital signs closely before and after administration.

May be used in multi-system trauma and abdominal pain when appropriate.

Have Naloxone/Atropine and respiratory assistance readily available.

Check for Fentanyl patch before administration.

Fentanyl is 100 times more potent than Morphine (100 mcg of Fentanyl = 1 mg of Morphine).
### Furosemide

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Loop diuretic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</td>
<td>Inhibits reabsorption of sodium in the proximal tubule and descending loop of Henle.</td>
</tr>
<tr>
<td>Indications:</td>
<td>Acute pulmonary edema and congestive heart failure.</td>
</tr>
</tbody>
</table>
| Contraindications include but not limited to: | o Hypovolemia  
  o Dehydration  
  o Electrolyte depletion  
  o Known hypersensitivity  
  o Anuria |
| Adverse effects include but not limited to: | ➢ Hypotension  
  ➢ ECG changes  
  ➢ Chest pain  
  ➢ Hypokalemia  
  ➢ Hyponatremia  
  ➢ Hyperglycemia |
| Adult Administration:    | IV/IO: 40 mg over 1-2 minutes. If no response, dose may be repeated. |
| Packaging Information:   | Elderly patients may experience increase in adverse drug reactions. |
| (100 mg/10 ml) Vial      |                                |
| Pediatric Administration:| Not recommended                 |
| Onset:                   | 15-20 minutes                   |
| Duration:                | 4-6 hours                       |
| Pregnancy Safety:        | Category C                      |
| Precautions and Comments:| Furosemide may result in sodium and potassium depletion and may potentiate digitalis and lithium toxicity. |

**Pharmacology Chart**

**Used in SMO:** Pulmonary Edema

---

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<table>
<thead>
<tr>
<th>Glucagon</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification:</strong></td>
<td>Hyperglycemic agent (pancreatic hormone)</td>
</tr>
<tr>
<td><strong>Actions:</strong></td>
<td>Elevates blood glucose by converting liver glycogen into glucose.</td>
</tr>
<tr>
<td></td>
<td>Increases cardiac output by increasing inotropy and chronotropy.</td>
</tr>
<tr>
<td></td>
<td>Stimulate the release of catecholamine.</td>
</tr>
<tr>
<td></td>
<td>Relaxes smooth muscle of the gastrointestinal tract, bronchioles, and blood vessels.</td>
</tr>
<tr>
<td><strong>Indications:</strong></td>
<td>• Hypoglycemia</td>
</tr>
<tr>
<td></td>
<td>• Beta blocker OD</td>
</tr>
<tr>
<td></td>
<td>• Allergic reaction</td>
</tr>
<tr>
<td><strong>Contraindications:</strong></td>
<td>Not significant in the above indications.</td>
</tr>
<tr>
<td><strong>Adverse effects include but not limited to:</strong></td>
<td>➢ Nausea/vomiting</td>
</tr>
<tr>
<td></td>
<td>➢ Headache</td>
</tr>
<tr>
<td><strong>Adult Administration:</strong></td>
<td>Hypoglycemia: 1 mg IM – may repeat in 7-10 minutes</td>
</tr>
<tr>
<td></td>
<td>Beta Blocker OD: 2-4 mg IV/IO</td>
</tr>
<tr>
<td><strong>Packaging Information:</strong></td>
<td>(1 mg/ml) Vial</td>
</tr>
<tr>
<td><strong>Pediatric Administration:</strong></td>
<td>See Medication Administration Chart for weight-based dosing</td>
</tr>
<tr>
<td></td>
<td>Hypoglycemia: 0.1 mg/kg IM</td>
</tr>
<tr>
<td></td>
<td>Beta Blocker OD: 0.1 mg/kg IV/IO</td>
</tr>
<tr>
<td><strong>Onset:</strong></td>
<td>1-3 minutes if given IVP</td>
</tr>
<tr>
<td></td>
<td>5-20 minutes if given IM</td>
</tr>
<tr>
<td><strong>Duration:</strong></td>
<td>15-20 minutes if given IVP</td>
</tr>
<tr>
<td></td>
<td>15-30 minutes if given IM</td>
</tr>
<tr>
<td><strong>Pregnancy Safety:</strong></td>
<td>Category B</td>
</tr>
<tr>
<td><strong>Precautions and Comments:</strong></td>
<td>Use with caution in patients with cardiovascular and renal disease.</td>
</tr>
<tr>
<td></td>
<td>Glucagon is an antagonist to insulin.</td>
</tr>
<tr>
<td><strong>Used in SMO:</strong></td>
<td>Alcohol Related Emergencies</td>
</tr>
<tr>
<td></td>
<td>Adult Altered Mental Status</td>
</tr>
<tr>
<td></td>
<td>Diabetic Emergencies</td>
</tr>
<tr>
<td></td>
<td>Pediatric Altered Mental Status</td>
</tr>
<tr>
<td></td>
<td>Pediatric Seizures</td>
</tr>
<tr>
<td></td>
<td>Pediatric Toxic Exposure</td>
</tr>
</tbody>
</table>
**Ipratropium Bromide**

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Anticholinergic (parasympatholytic) which causes bronchodilation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</td>
<td>Chemically related to Atropine, Ipratropium Bromide inhibits vagally-mediated reflexes and increases in-cyclic GMP by antagonizing acetylcholine, which relaxes bronchial smooth muscle and drying respiratory tract secretions</td>
</tr>
</tbody>
</table>
| Indications:    | • Asthma and bronchospasm associated with COPD  
• Bronchospasm related to chronic bronchitis or emphysema |
| Contraindications include but not limited to: | o Not the primary treatment for bronchospasm  
o Known hypersensitivity |
| Adverse effects include but not limited to: |  Palpitations  
 Dizziness  
 Anxiety  
 Headache  
 Eye pain  
 Urinary retention  
 Nervousness |
| Adult Administration: | Nebulize a total 3 ml (when used as part of DuoNeb).  
After DuoNeb administer Albuterol if additional doses needed. |
| Packaging Information: | (0.5 mg/2.5 ml) Ampule |
| Pediatric Administration: | Not recommended |
| Onset: | 15-30 minutes with peak effect in 1-2 hours |
| Duration: | 4-8 hours |
| Pregnancy Safety: | Category B |
| Precautions and Comments: | Can cause paradoxical bronchospasm.  
Use with caution in patients with coronary artery disease.  
Use with caution in patients the hepatic and renal insufficiency.  
Use with caution in patients with glaucoma, prostatic hypertrophy, and bladder obstruction |

---

*Formulary Ipratropium Page 1 of 1*  
Current Version: 2018.1  
Issued: 08/18  
EMS/Region1 SMO
## Ketamine

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Non-barbiturate anesthetic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</td>
<td>Acts on the limbic system and cortex to block afferent transmission of impulses associated with pain perception. It produces short-acting amnesia without muscular relaxation.</td>
</tr>
<tr>
<td>Indications:</td>
<td>Pain control</td>
</tr>
</tbody>
</table>
| Contraindications include but not limited to: | o Stroke  
o Increased intracranial pressure  
o Severe hypertension  
o Cardiac decompensation  
o Hypersensitivity |
| Adverse effects include but not limited to: | ➢ Hypertension  
➢ Increased heart rate  
➢ Hypersalivation  
➢ Hallucinations, delusions, explicit dreams  
➢ Less common side effects include hypotension, bradycardia, and respiratory depression |

### Adult Administration:

**Packaging Information:**
- (100 mg/ml) 5 ml Vial – Excited Delirium
- (10 mg/ml) 20 ml Vial – DSI

See [Adult Medication Administration Chart](#) for dosing

---

**Excited Delirium:** IM: 4 mg/kg

---

**Delayed Sequence Intubation:** 1-2 mg/kg IV/IO (must be diluted prior to administration)

### Pediatric Administration:

**IM ADMINISTRATION ONLY**

See [Medication Administration Chart](#) for weight-based dosing

> 2 years old: 2-4 mg/kg IM

### Onset:

Within 30 seconds

### Duration:

5-10 minutes

### Pregnancy Safety:

Category C

### Precautions and Comments:

- When administering IM multiple injections may be required due to maximum volumes that can be administered. Maximum volume in deltoid muscle 1-2 ml. Maximum volume in larger muscles is 5 ml. Decrease volume with small muscle mass.

- May increase blood pressure, muscle tone, and heart rate.

- As with any anesthetic, the dosage needs to be assessed carefully and individualized.
<table>
<thead>
<tr>
<th><strong>Ketorolac Tromethamine</strong></th>
<th><strong>Toradol</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification:</strong></td>
<td>Nonsteroidal anti-inflammatory</td>
</tr>
<tr>
<td><strong>Actions:</strong></td>
<td>An anti-inflammatory that also exhibits peripherally acting nonnarcotic analgesic activity by inhibiting prostaglandin synthesis.</td>
</tr>
<tr>
<td><strong>Indications:</strong></td>
<td>Short term management of moderate to severe pain</td>
</tr>
</tbody>
</table>
| **Contraindications include but not limited to:** | o Bleeding disorders  
  o Renal failure  
  o Active peptic ulcer disease  
  o Patients with allergies to aspirin or other nonsteroidal anti-inflammatory drugs  
  o Hypersensitivity to the drug |
| **Adverse effects include but not limited to:** | ➢ Anaphylaxis from hypersensitivity  
  ➢ Edema  
  ➢ Sedation  
  ➢ Bleeding disorders  
  ➢ Rash  
  ➢ Nausea  
  ➢ Headache |
| **Adult Administration:** | IM: 1 dose of 15 mg; may repeat one time |
| **Packaging Information:** | IV/IO: 15 mg over 1 minute (for patients <65 years old or weighing more than 50 kg); may repeat one time |
| **(15 mg/ml) Pre-filled syringe** | |
| **Pediatric Administration:** | Not recommended |
| **Onset:**                | Within 10 minutes |
| **Duration:**             | 6-8 hours |
| **Pregnancy Safety:**     | Not recommended for pregnant patients |
| **Precautions and Comments:** | Not recommended for potential surgical patient.  
  May increase bleeding time when administered to patients taking anticoagulants.  
  Effects of lithium and methotrexate may be increased.  
  Use with caution and reduce dose when administering to elderly patients. |
| **Pharmacology Chart**   | |
| **Used in SMO:**          | Pain Management |
# Formulary - Lidocaine 2% (Xylocaine)

<table>
<thead>
<tr>
<th>Lidocaine 2%</th>
<th>Lidocaine</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification:</strong></td>
<td>Antidysrhythmic, anesthetic</td>
</tr>
<tr>
<td><strong>Actions:</strong></td>
<td>Suppressed ventricular dysrhythmias by decreasing ventricular irritability.</td>
</tr>
</tbody>
</table>
| **Indications:** | - Cardiac arrest from ventricular tachycardia or ventricular fibrillation  
  - Stable monomorphic VT with preserved ventricular function  
  - Wide-complex tachycardia of unknown origin  
  - Head injured patient  
  - Pain management post intraosseous insertion  
  - Post cardioversion or defibrillation of ventricular rhythms* |
| **Contraindications include but not limited to:** | o Second-degree heart block (Mobitz II) or third degree (complete) heart block in the absence of an artificial pacemaker  
  o Junctional bradycardia  
  o Ventricular ectopy associated with bradycardia  
  o Idioventricular or escape rhythms  
  o Hypersensitivity |
| **Adverse effects include but not limited to:** | ➢ Lightheadedness  
  ➢ Bradycardia  
  ➢ Confusion  
  ➢ Hypotension  
  ➢ Seizures |
| **Adult Administration:** | See [Adult Medication Administration Chart](#) for weight based dosing |
| **Packaging Information:** | (10 mg/ml) Pre-filled syringe  
  May repeat using half dose to a total of 3 mg/kg |
| **Pediatric Administration:** | See [Medication Administration Chart](#) for weight based dosing |
| **Onset:** | 45-90 seconds |
| **Duration:** | 10-20 minutes |
| **Pregnancy Safety:** | Category B |
| **Precautions and Comments:** | ➢ If bradycardia occurs along with premature ventricular contractions, always treat the bradycardia first.  
  ➢ Discontinue if signs of toxicity occur. |

*May be used if patient is allergic to amiodarone

---

**Formulary Lidocaine 2% Page 1 of 1**
**Formulary: Lorazepam Page 1 of 1**

### Lorazepam

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Benzodiazepine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</td>
<td>A sedative, anticonvulsant, and amnestic (induces amnesia)</td>
</tr>
</tbody>
</table>
| Indications:    | - Status epilepticus  
                    - Sedation prior to transcutaneous pacing, synchronized cardioversion, and painful procedures in the conscious patient  
                    - Cocaine induced acute coronary syndromes  
                    - Agitated or combative patients |
| Contraindications include but not limited to: |  
  o Coma (unless seizing)  
  o Altered mental status of unknown age  
  o Severe hypotension  
  o Shock  
  o Respiratory insufficiency |
| Adverse effects include but not limited to: |  
  ➢ Respiratory depression  
  ➢ Tachycardia/bradycardia  
  ➢ Hypotension  
  ➢ Sedation  
  ➢ Ataxia  
  ➢ Confusion  
  ➢ Blurred vision |
| Adult Administration: |  
**Used as a back-up if Diazepam/Midazolam are not available – 30 day stability if unrefrigerated**  
See Adult Weight Based Medication Administration Chart  
May repeat x 1 after 5 minutes |
| Pediatric Administration: | See Medication Administration Chart for dosing |
| Onset: | 5 minutes (IV) |
| Duration: | 6-8 hours |
| Pregnancy Safety: | Category D |
| Precautions and Comments: |  
  ➢ May cause respiratory depression, respiratory effort must be continuously monitored with Capnography  
  ➢ Should be used with caution with hypotensive patients and patients with altered mental status  
  ➢ Lorazepam potentiates alcohol or other CNS depressants |

---

*For pain and sedation doses:
Start dose low – slowly increase –
Titrate to effect up to listed dose*
**Magnesium Sulfate**

<table>
<thead>
<tr>
<th><strong>Classification:</strong></th>
<th>Antidysrhythmic, Electrolyte</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Actions:</strong></td>
<td>Controls ventricular response rate. Increases the movement of potassium into cells. Blocks the release of acetylcholine.</td>
</tr>
</tbody>
</table>
| **Indications:** | - Ventricular fibrillation, pulseless ventricular tachycardia (VF/VT)  
- Ventricular tachycardia with a pulse  
- Post conversion of VF/VT  
- Torsade’s de Pointes  
- Seizures related to eclampsia |
| **Contraindications include but not limited to:** | o Hypersensitivity  
o Sinus bradycardia  
 o Hypermagnesemia |
| **Adverse effects include but not limited to:** | ➢ Hypotension  
➢ Hypertension  
➢ Dysrhythmias  
➢ Facial flushing  
➢ Diaphoresis  
➢ Depressed reflexes  
➢ Bradycardia |

**Adult Administration:**

- **Torsades De Pointe pulseless:** 2 GM over 1-2 minutes; online for further dosing
- **Torsades De Pointe with pulse:** 2 GM over 5-10 minutes; online for further dosing
- **Eclampsia:** 2 GM over 5 minutes; online for further dosing
- **Bronchoconstriction:** 2 GM over 20 minutes; online for further dosing

**Packaging Information:**

(2 Grams/50 ml) Solution for injection

**Pediatric Administration:**

- See Medication Administration Chart for weight-based dosing

**Onset:** Immediate

**Duration:** 3-4 hours

**Pregnancy Safety:** Category A

**Precautions and Comments:**

- Magnesium must be used with caution in patients with renal failure because it is cleared by the kidneys and can reach toxic levels easily in those patients.

- There may be a rapid drop in blood pressure with rapid administration. Respiratory depression may occur with rapid IV administration.

- If administering to pediatric patient do not hang entire bag. Draw out and discard all but desired dose before hanging.
Magnesium Sulfate Administration Rate
Chart for 2 grams in 50 ml

<table>
<thead>
<tr>
<th>Drops/ml setup</th>
<th>50 ml administered over ___ minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5 minutes</td>
</tr>
<tr>
<td>10</td>
<td>100 drops/min</td>
</tr>
<tr>
<td>15</td>
<td>150 drops/min</td>
</tr>
<tr>
<td>20</td>
<td>200 drops/min</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indication</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shortness of breath with bronchoconstriction / wheezing</td>
<td>2 grams over 20 minutes</td>
</tr>
<tr>
<td>Polymorphic V-T, Torsade's de Pointes with a pulse</td>
<td>2 grams over 5-10 minutes</td>
</tr>
<tr>
<td>Torsade's de Pointes pulseless</td>
<td>2 grams over 1 - 2 minutes (may use 60 ml syringe and push over 1-2 minutes)</td>
</tr>
<tr>
<td>Eclampsia</td>
<td>2 grams over 5 minutes</td>
</tr>
</tbody>
</table>
### Formulary – Mark I Nerve Agent Kit (ChemPak)

<table>
<thead>
<tr>
<th>Mark I Nerve Agent Kit</th>
<th>Chem Pak</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification:</strong></td>
<td>Nerve agent antidote</td>
</tr>
<tr>
<td><strong>Indications:</strong></td>
<td><strong>Mild Exposures:</strong></td>
</tr>
<tr>
<td></td>
<td>Rhinorrhea</td>
</tr>
<tr>
<td></td>
<td>Chest tightness</td>
</tr>
<tr>
<td></td>
<td>Dyspnea</td>
</tr>
<tr>
<td></td>
<td>Bronchospasm</td>
</tr>
<tr>
<td></td>
<td><strong>Moderate Exposures:</strong></td>
</tr>
<tr>
<td></td>
<td>Salivation</td>
</tr>
<tr>
<td></td>
<td>Lacrimation</td>
</tr>
<tr>
<td></td>
<td>Urination</td>
</tr>
<tr>
<td></td>
<td>GI Symptoms</td>
</tr>
<tr>
<td></td>
<td>Emesis</td>
</tr>
<tr>
<td></td>
<td>Miosis</td>
</tr>
<tr>
<td></td>
<td><strong>Severe Exposures:</strong></td>
</tr>
<tr>
<td></td>
<td>Jerking</td>
</tr>
<tr>
<td></td>
<td>Twitching</td>
</tr>
<tr>
<td></td>
<td>Staggering</td>
</tr>
<tr>
<td></td>
<td>Headache</td>
</tr>
<tr>
<td></td>
<td>Drowsiness</td>
</tr>
<tr>
<td></td>
<td>Seizures</td>
</tr>
<tr>
<td></td>
<td>Apnea</td>
</tr>
<tr>
<td><strong>Contraindications:</strong></td>
<td>Do not use auto-injectors in patients under 30 kg</td>
</tr>
<tr>
<td><strong>Adverse effects:</strong></td>
<td><strong>Atropine:</strong></td>
</tr>
<tr>
<td></td>
<td>Tachycardia</td>
</tr>
<tr>
<td></td>
<td>Increased myocardial O₂ demand</td>
</tr>
<tr>
<td></td>
<td>Headache</td>
</tr>
<tr>
<td></td>
<td>Dizziness</td>
</tr>
<tr>
<td></td>
<td>Palpitations</td>
</tr>
<tr>
<td></td>
<td>Dries mucous membranes</td>
</tr>
<tr>
<td></td>
<td>Nausea/vomiting</td>
</tr>
<tr>
<td></td>
<td>Flushed skin</td>
</tr>
<tr>
<td></td>
<td>Dilated pupils</td>
</tr>
<tr>
<td></td>
<td>Increased intraocular pressure</td>
</tr>
<tr>
<td></td>
<td><strong>Pralidoxime:</strong></td>
</tr>
<tr>
<td></td>
<td>Hypertension</td>
</tr>
<tr>
<td></td>
<td>Blurry vision</td>
</tr>
<tr>
<td></td>
<td>Diplopia</td>
</tr>
<tr>
<td></td>
<td>Tachycardia</td>
</tr>
<tr>
<td></td>
<td>Nausea</td>
</tr>
<tr>
<td></td>
<td>Increases atropine effects</td>
</tr>
<tr>
<td>Mark I Nerve Agent Kit (continued)</td>
<td>Chem Pak</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td><strong>Onset:</strong></td>
<td>Immediate – 15 minutes</td>
</tr>
<tr>
<td><strong>Duration:</strong></td>
<td>Half-life – 2-Pam 74-77 minutes; Atropine 10 minutes</td>
</tr>
<tr>
<td><strong>Pregnancy Safety:</strong></td>
<td>Category C</td>
</tr>
</tbody>
</table>
| **Precautions and Comments:**     | • Kit contains:  
|                                   |   - Atropine – 2 mg/0.7 mL auto-injector  
|                                   |   - Pralidoxime – 600 mg/2 mL auto-injector  
|                                   | • Nerve agents are the most toxic of the known chemical agents. They are hazards in their liquid and vapor states and can cause death within minutes after exposure. Nerve agents inhibit acetylcholinesterase in tissue, and their effects are caused by the resulting excess of acetylcholine. Nerve agents are considered to be major military and terrorist threats. Common names for nerve agents include: Tabun, Sarin, and Soman. Nerve agents are liquids under normal temperature conditions. When dispersed, the most volatile ones constitute both a vapor and liquid hazard.  
|                                   | • No more than three sets of antidote (total of six injections) should be used.  
|                                   | • Attempt to decontaminate skin and clothing between injections.  
|                                   | • Follow the Region I Disaster Preparedness/IDPH information for distribution of the ChemPak from the most appropriate Resource Hospital. |

See Resources for additional information on the Chem Pak
**Methylprednisolone**

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Glucocorticoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</td>
<td>Suppresses acute and chronic inflammation, potentiates vascular smooth muscle relaxation, and may alter airway hyperactivity.</td>
</tr>
</tbody>
</table>
| Indications:    | - Anaphylaxis  
                  - Persistent asthma  
                  - Unresponsive bronchospasm |
| Contraindications include but not limited to: | o Known hypersensitivity |
| Adverse effects include but not limited to: | - Headache  
                  - Hypertension  
                  - Sodium and water retention  
                  - Hypokalemia  
                  - Alkalosis |
| Adult Administration: | 125 mg IV/IO over 3-5 minutes |
| Packaging Information: | (125 mg/2 ml) Accu-o-vial  
                           When mixing shake gently until solution clears. Shaking faster will not speed up the process. |
| Pediatric Administration: | See [Medication Administration Chart](#) for weight-based dosing  
                           2 mg/kg IV/IO up to maximum 125 mg |
| Onset: | 1-2 hours |
| Duration: | 8-24 hours |
| Pregnancy Safety: | Category C |
| Precautions and Comments: | Rapid IV administration of high doses may cause a drop in blood pressure.  
                           Use with caution in pregnant patients and patients with GI bleeding.  
                           Use with caution in patients with diabetes mellitus as hypoglycemic responses to insulin and oral hypoglycemic agents may be blunted. |

**Used in SMO:**
- Anaphylaxis and Allergic Reaction
- Bronchospasm
- Pediatric Respiratory Distress/Arrest

**Return to SMO Table of Contents**

**Return to Formulary Table of Contents**
# Metoclopramide (Reglan)

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Antiemetic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</td>
<td>Treatment for nausea and vomiting</td>
</tr>
<tr>
<td>Indications:</td>
<td>Nausea and vomiting</td>
</tr>
<tr>
<td>Contraindications include but not limited to:</td>
<td>GI obstruction, bleeding or perforation</td>
</tr>
<tr>
<td>Adverse effects include but not limited to:</td>
<td>Confusion, Depression, Drowsiness, Cardiac conduction disturbances, Fatigue, Hypotension, Hypertension</td>
</tr>
</tbody>
</table>

**Adult Administration:**

**Packaging Information:**
(10 mg/2 ml) Vial

**Pediatric Administration:**
Not recommended

**Onset:**
1-3 minutes (IV)

**Duration:**
1-2 hours

**Pregnancy Safety:**
Category B

**Precautions and Comments:**

Use caution in patients with renal disease; attributable to possible accumulation and toxicity.

Not recommended for patients with Parkinson’s disease.

Concurrent use of ethanol can increase the CNS depressant effects of metoclopramide.

**Used in SMO:**
- Abdominal Pain
- Routine Medical Care

**Formulary:**
Metoclopramide
<table>
<thead>
<tr>
<th>Metoprolol Tartrate</th>
<th>Lopressor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification:</strong></td>
<td>Beta-blocking agent</td>
</tr>
<tr>
<td><strong>Actions:</strong></td>
<td>Used to control ventricular response in supraventricular tachydysrhythmias (paroxysmal supraventricular tachycardia, atrial fibrillation, or atrial flutter).</td>
</tr>
<tr>
<td><strong>Indications:</strong></td>
<td>• Patients with suspected MI and unstable angina in the absence of contraindications</td>
</tr>
</tbody>
</table>
| **Contraindications include but not limited to:** | o Suspected cocaine use  
 o Hemodynamically unstable patients  
 o Bradycardia |
| **Adverse effects include but not limited to:** | ➢ Bradycardia  
 ➢ Hypotension  
 ➢ Palpitations  
 ➢ Nausea and vomiting |
| **Adult Administration:** | 5 mg slow, steady IV/IO push. Push each ml over one minute. Avoid pulse dosing. |
| **Packaging Information:** | (5 mg/5 ml) Vial |
| **Pediatric Administration:** | Not recommended |
| **Onset:** | 1-2 minutes |
| **Duration:** | 3-4 hours |
| **Pregnancy Safety:** | Category C |
| **Precautions and Comments:** | • Give slowing IV over 5 minutes  
 • Use caution in patients with liver or renal dysfunction |
| **Used in SMO:** | Chest Pain of Suspected Cardiac Origin  
 Hypertensive Crisis |
## Midazolam

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Short acting benzodiazepine, CNS depressant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</td>
<td>Reduces anxiety, depresses CNS function, and induces amnesia</td>
</tr>
</tbody>
</table>
| Indications:    | • Seizures  
|                 |   • Agitation in intubated patient  
|                 |   • Induction for Delayed Sequence Intubation |
| Contraindications include but not limited to: | o Hypotension  
|                 | o Shock  
|                 | o Coma  
|                 | o Alcohol intoxication  
|                 | o Depressed vital signs  
|                 | o Hypersensitivity |
| Adverse effects include but not limited to: | ➢ Hypotension  
|                 | ➢ Respiratory depression or arrest  
|                 | ➢ Fluctuations in vital signs  
|                 | ➢ Hiccups/cough  
|                 | ➢ Headache  
|                 | ➢ Nausea/vomiting |
| Adult Administration: | IV/IO/IM: See [Adult Medication Administration Chart](#) for dosing |
| Packaging Information: | IN – See [Midazolam IN Dosing Chart](#) |
| Pediatric Administration: | See [Medication Administration Chart](#) for weight-based dosing |
| Onset: | IV/IO: 3-5 minutes, dose dependent |
| Duration: | 2-6 hours, dose dependent |
| Pregnancy Safety: | Category D |
| Precautions and Comments: | Patients receiving Midazolam require continuous monitoring of respiratory and cardiac function. Emergency airway adjuncts should be readily available.  
|                 | May cause apnea, especially in children and the elderly.  
|                 | Effects are intensified by ETOH or other CNS depressant medications. Be prepared to support respiration.  
|                 | Carefully monitor the patient's vital signs, pulse oximetry and EtCO₂, if available. |
| Used in SMO: | [Bradycardia](#)  
|             | [Excited Delirium](#)  
|             | [Intranasal Medications (MAD Device)](#)  
|             | [Narrow Complex Tachycardia](#)  
|             | [Pain Management](#)  
|             | [Pediatric Tachycardia](#)  
|             | [Pediatric Seizure](#)  
|             | [Pre-Eclampsia/Eclampsia](#)  
|             | [Seizures](#)  
|             | [Stroke](#)  
|             | [Wide Complex Tachycardia](#)  

*For pain and sedation doses:  
Start dose low – slowly increase –  
Titrate to effect up to listed dose*
### Morphine Sulfate

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Narcotic analgesic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</td>
<td>Produces analgesia by inhibiting the ascending pain pathways.</td>
</tr>
<tr>
<td></td>
<td>Depresses the central nervous system by interacting with receptors in the brain.</td>
</tr>
<tr>
<td></td>
<td>Causes venous pooling due to peripheral vasodilation resulting in decreased systemic vascular resistance and decreased venous return.</td>
</tr>
<tr>
<td>Indications:</td>
<td>• Moderate to severe pain</td>
</tr>
<tr>
<td></td>
<td>• Pain associated with transcutaneous pacing</td>
</tr>
<tr>
<td></td>
<td>• Chest pain</td>
</tr>
<tr>
<td>Contraindications include but not limited to:</td>
<td>o Patients with altered level of consciousness</td>
</tr>
<tr>
<td></td>
<td>o Pain of unknown etiology</td>
</tr>
<tr>
<td></td>
<td>o Patients at risk of respiratory depression</td>
</tr>
<tr>
<td></td>
<td>o Head injury</td>
</tr>
<tr>
<td></td>
<td>o Hypovolemia</td>
</tr>
<tr>
<td></td>
<td>o Blood pressure &lt;100</td>
</tr>
<tr>
<td></td>
<td>o Multi-system trauma</td>
</tr>
<tr>
<td>Adverse effects include but not limited to:</td>
<td>➢ Respiratory depression</td>
</tr>
<tr>
<td></td>
<td>➢ Hypotension</td>
</tr>
<tr>
<td></td>
<td>➢ Seizures</td>
</tr>
<tr>
<td></td>
<td>➢ Bradycardia</td>
</tr>
<tr>
<td></td>
<td>➢ Altered mental status</td>
</tr>
</tbody>
</table>

**Adult Administration:**

See [Adult Medication Administration Chart](#) for dosing

**Packaging Information:**

(10 mg/1 ml) Pre-filled syringe

Restocking requires 222 form

**Pediatric Administration:**

See [Medication Administration Chart](#) for weight-based dosing

**Onset:**

Immediate if given IV; 5-30 minutes if given IM

**Duration:**

3-5 hours

**Pregnancy Safety:**

Category C

**Precautions and Comments:**

[Pharmacology Chart](#)

**Used in SMO:**

[Intranasal Medications/MAD Device](#)

[Narrow Complex Tachycardia](#)

[Pain Management](#)

*For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose*
<table>
<thead>
<tr>
<th><strong>Naloxone Hydrochloride</strong></th>
<th><strong>Narcan</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification:</strong></td>
<td>Opioid antagonist</td>
</tr>
<tr>
<td><strong>Actions:</strong></td>
<td>Reverses the effects of narcotics by competing for opiate receptor sites in the central nervous system.</td>
</tr>
</tbody>
</table>
| **Indications:**          | • Narcotic agonist  
|                           |   - Morphine  
|                           |   - Heroin  
|                           |   - Hydromorphone  
|                           |   - Methadone  
|                           |   - Meperidine  
|                           |   - Paregoric  
|                           |   - Fentanyl  
|                           |   - Oxycodone  
|                           |   - Codeine  
|                           | • Narcotic agonist/antagonist  
|                           |   - Butrophanol  
|                           |   - Pentazocine  
|                           |   - Nalbuphine  
|                           | • Decreased level of consciousness  
|                           | • Coma of unknown origin  
| **Contraindications include but not limited to:** | o Use caution with narcotic-dependent patients who may experience withdrawal syndrome  
|                           | o Avoid use in meperidine-induced seizures  
| **Adverse effects include but not limited to:** | ➢ Hypertension  
|                           | ➢ Tremors  
|                           | ➢ Nausea/vomiting  
|                           | ➢ Dysrhythmias  
|                           | ➢ Diaphoresis  
|                           | ➢ Withdrawal (opiates)  
|                           | ➢ Flash pulmonary edema  
| **Adult Administration:** | IV: 0.4 mg in 1 minute increments slow IV push titrated to effect to maximum of 2 mg per dose. May repeat as needed to maximum dose.  
|                           | IN: 2 mg to maximum of 1 mL per nostril. May repeat as needed to maximum dose.  
|                           | IM: 1-2 mg if unable to establish IV. May repeat as needed to maximum dose.  
| **Packaging Information:** | ET: 1 mg diluted to 5-10 mL. May repeat in 5 minutes if no response (IN/IM routes are preferred if no IV). |
| (2 mg/2 ml) Pre-filled syringe | 
| **Pediatric Administration:** | See [Medication Administration Chart](#) for weight-based dosing  

---

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<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Onset</td>
<td>Within 2 minutes</td>
</tr>
<tr>
<td>Duration</td>
<td>20-30 minutes</td>
</tr>
<tr>
<td>Pregnancy Safety</td>
<td>Category B</td>
</tr>
</tbody>
</table>

**Precautions and Comments:**

- Check and remove any transdermal systemic opioid patch.

- The goal of Naloxone administration is to improve respiratory drive, not to return the patient to their full mental capacity.

- High dose/rapid reversal of narcotic effects may lead to combative behavior, possible severe withdrawal, and other adverse drug reactions. Consider other causes/potency of opiate agonist when evaluating need for repeat dosing.

- Observe for: seizures, hypertension, chest pain, and/or severe headache.

**Used in SMO:**

- Alcohol Related Emergencies
- Adult Altered Mental Status
- Asystole/PEA
- Behavioral Emergencies
- Intranasal Medication/MAD Device
- Pain Management
- Pediatric Altered Mental Status
- Pediatric Seizure
- Pediatric Toxic Exposure
- Poisoning and Overdose
- Syncope

---

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## Nitroglycerine

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Vasodilator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</td>
<td>Decreases the workload of the heart and lowers myocardial oxygen demand.</td>
</tr>
</tbody>
</table>
| Indications:    | • Ischemic chest pain  
                  • Pulmonary edema  
                  • Congestive heart failure  
                  • AMI |
| Contraindications include but not limited to: | o Volume depletion  
              o Hypotension  
              o Head injury  
              o Symptomatic bradycardia  
              o Symptomatic tachycardia  
              o Right ventricular infarction  
              o Cerebral hemorrhage  
              o Recent use of Cialis, Levitra, or Viagra  
              o Aortic stenosis |
| Adverse effects include but not limited to: | ➢ Transient headache  
              ➢ Tachycardia  
              ➢ Hypotension  
              ➢ Nausea/vomiting  
              ➢ Postural syncope  
              ➢ Diaphoresis  
              ➢ Flushing |

### Adult Administration:

**Packaging Information:**

| (0.4 mg SL Tablet) Bottle | SL: 0.4 mg (1 tab) – may repeat every 5 minutes to up to 3 doses. Contact Medical Control for any additional doses. |

**Onset:** 1-3 minutes  
**Duration:** 30-60 minutes  
**Pregnancy Safety:** Category C  

**Precautions and Comments:**

- Tablet must be fully dissolved before resuming CPAP.  
- Associated with increased susceptibility to hypotension in the elderly  
- Must be kept in airtight containers and decomposes when exposed to light or heat  
- If administered sublingually, the active ingredient may produce a stinging sensation
### Ondansetron

<table>
<thead>
<tr>
<th><strong>Classification:</strong></th>
<th>Antiemetic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Actions:</strong></td>
<td>Prevents nausea/vomiting</td>
</tr>
<tr>
<td><strong>Indications:</strong></td>
<td>Treatment of nausea/vomiting</td>
</tr>
</tbody>
</table>
| **Contraindications include but not limited to:** | Known sensitivity to Ondansetron or other 5-HT3 antagonists:  
  - Granisetron (Kytril)  
  - Dolasetron (Anzemet)  
  - Palonosetron (Aloxi) |
| **Adverse effects include but not limited to:** |  
  - Tachycardia  
  - Hypotension  
  - Syncope (if administered too quickly) |

#### Adult Administration:

**Packaging Information:**  
- (4 mg/ml) Vial  
- (4 mg) ODT  

- 4 mg IV/IO/IM/ODT – IV over 30 seconds or more. IV is the preferred route of administration.

**Pediatric Administration:**

- See Medication Administration Chart for weight-based dosing

  **Tablet dosing:** 1 mg/10 kg up to 4 mg

  **Patients 4 years old to adult (>34 kg):** 4 mg IV/IO/IM – IV over 30 seconds or more. May repeat once 10 minutes after initial dose.

  **Patients 1 year old to 4 years old:** 2 mg IV/IO/IM – IV over 30 seconds or more. May repeat once 10 minutes after initial dose. (For this age group use IV/IO/IM only)

- Contact Medical Control for patients <1 year old.

**Onset:** Up to 30 minutes with usual response in 5-10 minutes

**Duration:** Half-life is four hours

**Pregnancy Safety:** Category B

**Precautions and Comments:**

  **Pharmacology Chart**

  **Used in SMO:** Abdominal Pain, Routine Medical Care

  Administer slowly (over at least 30 seconds) in order to avoid hypotension.

  Use with caution in patients with hepatic impairment.

  Tablets are not able to be divided.
Oral Glucose

**Classification:**
Monosaccharide carbohydrate

**Actions:**
After absorption from GI tract, glucose is distributed in the tissues and provides a rapid increase in circulating blood sugar.

**Indications:**
Suspected or known hypoglycemia

**Contraindications:**
Patient who is not able to follow commands

**Adverse effects include but not limited to:**
- Nausea/vomiting
- Aspiration
- Hyperglycemia

**Adult Administration:**
15 GM/37.5 GM tube

**Alternative:** Glucose tablets – 15-20 GM PO. Recheck blood sugar in 15 minutes. If BS still below 80 mg/dL and/or exhibiting signs/symptoms of hypoglycemia another 15-20 GM may be administered.

**Pediatric Administration:**
Up to 15 GM as tolerated

**Alternative:** Glucose tablets – tablets are not recommended for patients who cannot protect their airway or of an appropriate age to swallow a tablet.

**Onset:**
5-10 minutes

**Duration:**
Variable

**Pregnancy Safety:**
Category A

**Precautions and Comments:**
Not a substitute for IV dextrose in extreme cases of hypoglycemia (blood sugar <40) unless IV access is unobtainable.

**Used in SMO:**
- Adult Altered Mental Status
- Diabetic Emergencies
- Pediatric Altered Mental Status
- Pediatric Seizure
- Pediatric Toxic Exposure
- Poisoning and Overdose
- Seizure and Status Epilepticus
- Syncope

---

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# Oxygen

<table>
<thead>
<tr>
<th><strong>Oxygen</strong></th>
<th>(O_2)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification:</strong></td>
<td>Naturally occurring atmospheric gas</td>
</tr>
<tr>
<td><strong>Actions:</strong></td>
<td>Oxygen is present in room air at a concentration of approximately 21%. Supplemental oxygen elevates oxygen tension and increases oxygen content in the blood, which improves tissue oxygenation and promotes aerobic metabolism, and reverses hypoxemia.</td>
</tr>
</tbody>
</table>
| **Indications:** | • Any suspected cardiovascular emergency  
• Confirmed or suspected hypoxia  
• Ischemic chest pain  
• Respiratory insufficiency  
• Suspected stroke or ACS with hypoxemia (when oxygen saturation is unknown or <94%)  
• Confirmed or suspected carbon monoxide poisoning and other causes of decreased tissue oxygenation (cardiac arrest) |
| **Contraindications:** | Oxygen should never be withheld from any critically ill patient |
| **Adverse effects:** | High-concentration oxygen may cause decreased level of consciousness and respiratory depression in patients with chronic carbon dioxide retention. |
| **Onset:** | Immediate |
| **Duration:** | Less than 2 minutes |
| **Pregnancy Safety:** | Category A |
| **Precautions and Comments:** | • Restlessness may be an important sign of hypoxia  
• Some patients may become agitated when nasal cannula is applied.  
• Do not use a nasal cannula with any patient suspected of having a basilar skull fracture.  
• Oxygen vigorously supports combustion. |
# Prochlorperazine (Compazine)

<table>
<thead>
<tr>
<th>Prochlorperazine</th>
<th>Compazine</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification:</strong></td>
<td>Phenothiazine antiemetic</td>
</tr>
<tr>
<td><strong>Actions:</strong></td>
<td>Antiemetic</td>
</tr>
<tr>
<td><strong>Indications:</strong></td>
<td>• Nausea and vomiting</td>
</tr>
</tbody>
</table>
| **Contraindications include but not limited to:** | o CNS depression  
  o Severe liver or cardiac disease  
  o Patients who have received a large amount of depressants (including alcohol) |
| **Adverse effects include but not limited to:** | • May impair mental and physical ability  
  • Drowsiness  
  • Blurred vision  
  • Hypotension  
  • Tachycardia |
| **Adult Administration:** | IV: 5 mg slow (5 mg per minute); may repeat one time  
  IM: 5 mg |
| **Packaging Information:** | (5 mg/ml) Pre-filled syringe |
| **Pediatric Administration:** | Online Medical Control for dosing |
| **Onset:** | IV/IO – rapid  
  IM – 10-20 minutes |
| **Duration:** | 3-4 hours |
| **Pregnancy Safety:** | Category C |
| **Precautions and Comments:** | **Use as alternative to Ondansetron shortages only**  
  • Use caution in patients with respiratory disease, diabetes mellitus, and epilepsy |
| **Pharmacology Chart** |  |
| **Used in SMO:** | Abdominal Pain  
  Routine Medical Care |
Rocuronium Bromide

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Non-depolarizing neuromuscular blocking agent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</td>
<td>Acts by competing for cholinergic receptors at the motor end-plate</td>
</tr>
<tr>
<td>Indications:</td>
<td>Used as paralytic agent for Delayed Sequence Intubation</td>
</tr>
</tbody>
</table>
| Contraindications include but not limited to: | - Hypersensitivity to neuromuscular blocking agents  
  - Known neuromuscular disease |
| Adverse effects: | - Transient hypotension or hypertension |
| Adult Administration: | See [Adult Medication Administration Chart](#) for dosing |

**Packaging Information:**

- Packaging Information: (10 mg/ml) Vial

**Pediatric Administration:**

- Packaging Information: See [Medication Administration Chart](#) for weight-based dosing

**Onset:**

- 30 seconds to 2 minutes

**Duration:**

- 30 minutes

**Pregnancy Safety:**

- Category C

**Precautions and Comments:**

- Patient must be on monitoring devices when a paralytic is administered, including:
  - Continuous ECG
  - EtCO₂
  - Blood pressure
  - SaO₂

- Rocuronium should be stored at 36–46 degrees Fahrenheit. If stored unopened outside a refrigerator at a temperature up to 86 degrees the vial should be discarded at 12 weeks. Never put the vial back into the refrigerator once it has been kept outside.

**Used in SMO:**

- Delayed Sequence Intubation

**Pharmacology Chart**

Rocuronium is used as a backup paralytic agent. Preferred paralytic is Succinylcholine.
**Sodium Bicarbonate**

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Alkalinizing agent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</td>
<td>Combines with hydrogen ions to form carbonic acid and increase blood pH</td>
</tr>
</tbody>
</table>
| Indications:        | Cardiopulmonary arrest states when drug therapy and/or defibrillation have not been successful  
|                     | Overdose of tricyclic antidepressants (cardiac toxicity) |
| Contraindications include but not limited to: | Not significant in the above indications, however:  
|                      | Not effective in hypercarbic acidosis (e.g., cardiac arrest and CPR without intubation)  
|                      | Severe pulmonary edema |
| Adverse effects include but not limited to: | Metabolic alkalosis  
|                      | Pulmonary Edema  
|                      | Hypoxia  
|                      | Electrolyte imbalance  
|                      | Seizure |
| Adult Administration: | See Adult Medication Administration Chart for dosing |
| Packaging Information: | (5 mEq/10 ml) Pre-filled syringe |
| Pediatric Administration: | See Medication Administration Chart for weight-based dosing |
| Onset:               | Immediate |
| Duration:            | 30-60 minutes |
| Pregnancy Safety:    | Category C |
| Precautions and Comments: | Flush IV tubing before and after administration.  
|                      | Maintain adequate ventilation. |

**Used in SMO:**
- Asystole/PEA
- Crush Syndrome
- Excited Delirium
- Pediatric Toxic Exposure
- Poisoning and Overdose
- Ventricular Fibrillation/Pulseless
- Ventricular Tachycardia

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### Sodium Chloride 0.9%  
**Normal Saline**

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Isotonic solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</td>
<td>Replaces fluid and electrolytes lost from the intravascular and intracellular spaces</td>
</tr>
</tbody>
</table>
| Indications:    | - Initial fluid replacement in hypovolemia and dehydration  
                  - Intravenous access for drug administration |
| Contraindications: | Not significant in above indications |
| Adverse effects: | Circulatory fluid volume overload |

**Adult Administration:**
- Flow rate dependent on patient condition  
- Titrate to response of vital signs  
- Fluid bolus = 250-500 mL

**Pediatric Administration:**
- Flow rate dependent on patient condition  
- Titrate to response of vital signs  
- Fluid bolus = 20 mL/kg  
- Less than 28 days fluid bolus = 10 mL/kg

<table>
<thead>
<tr>
<th>Onset:</th>
<th>Immediate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration:</td>
<td>Remains in intravascular space less than one hour</td>
</tr>
<tr>
<td>Pregnancy Safety:</td>
<td>Category A</td>
</tr>
</tbody>
</table>

**Precautions and Comments:** Monitor infusion rate closely and auscultate breath sounds prior to administration.

**Used in SMO:**
- Abdominal Pain  
- Asystole/PEA  
- Bradycardia  
- Burns  
- Cardiogenic Shock  
- Central Line/Port-A-Cath Access  
- Crush Syndrome  
- Delayed Sequence Intubation  
- Excited Delirium  
- Gynecological Hemorrhage  
- Hyperthermia  
- Hypothermia  
- Adult Intubation  
- Narrow Complex Tachycardia  
- Pediatric Anaphylaxis and Allergic Reaction  
- Pediatric Altered Mental Status  
- Pediatric Burns  
- Pediatric Head Trauma  
- Pediatric Seizure  
- Pediatric Shock  
- Pediatric Trauma  
- Trauma in Pregnancy  
- Routine Medical Care  
- Routine Pediatric Care

**Used in SMO (continued):**
- Sepsis  
- Shock/Hemorrhagic Fluid Resuscitation  
- Special Needs Patients  
- Stroke  
- Syncope  
- Transcutaneous Pacing  
- Traumatic Arrest

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**Succinylcholine Chloride**  
**Anectine**

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Neuromuscular blocker (depolarizing)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</td>
<td>The quickest onset and briefest duration of all neuromuscular blocking agents.</td>
</tr>
<tr>
<td>Indications:</td>
<td>To facilitate intubation</td>
</tr>
</tbody>
</table>
| Contraindications include but not limited to: | o Hyperkalemia  
o Hypersensitivity  
o Inability to control airway and/or support ventilations with oxygen and positive pressure  
o Intraocular (globe rupture) injuries |
| Adverse effects include but not limited to: |  
  ➢ Hypotension  
  ➢ Respiratory depression  
  ➢ Bradycardia  
  ➢ Initial muscle fasciculation  
  ➢ Excessive salivation  
  ➢ May exacerbate hyperkalemia in trauma patients |
| Adult Administration: | See [Adult Medication Administration Chart](#) for dosing |
| Packaging Information: | (20 mg/ml) Vial |
| Pediatric Administration: | See [Medication Administration Chart](#) for weight-based dosing |
| Onset: | Less than 1 minutes |
| Duration: | 3-10 minutes after single IV dose |
| Pregnancy Safety: | Category C |
| Precautions and Comments: | Neuromuscular blocking agents will produce respiratory paralysis. Intubation and ventilatory support must be readily available.  
  If the patient is conscious, explain the effects of the medication before administration. An induction agent should be used in any conscious patient before undergoing neuromuscular blockade. Pre-medicating with Lidocaine may blunt any increase in intracranial pressure associated with intubation. |
| Used in SMO: | Delayed Sequence Intubation |
# Tetracaine Hydrochloride

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Topical ophthalmic anesthetic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</td>
<td>Rapid, brief anesthesia that inhibits conduction of nerve impulses from sensory nerves.</td>
</tr>
</tbody>
</table>
| Indications:    | - Short-term relieve from eye pain or irritation  
|                 | - Patient comfort before eye irrigation |
| Contraindications include but not limited to: | o Hypersensitivity to the drug  
|                 | o Open injury to the eye |
| Adverse effects include but not limited to: | ➢ Burning or stinging sensation  
|                 | ➢ Irritation |
| Adult Administration: | 1-2 drops |
| Packaging Information: | (20 mg/4 ml) Eye Drops |
| Pediatric Administration: | 1-2 drops |
| Onset: | Within 30 seconds |
| Duration: | 10-15 minutes |
| Pregnancy Safety: | Category C |
| Precautions and Comments: | Tetracaine can cause epithelial damage and systemic toxicity.  
| Pharmacology Chart | Incompatible with mercury or silver salts often found in ophthalmic products. |
| Used in SMO: | Ophthalmic Trauma |
# Tranexamic Acid (Cyklokapron)

<table>
<thead>
<tr>
<th><strong>Tranexamic Acid</strong></th>
<th><strong>Cyklokapron</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification:</strong></td>
<td>Synthetic amino acid (lysine)</td>
</tr>
<tr>
<td><strong>Actions:</strong></td>
<td>Blocks plasminogen from being converted to the enzyme plasmin. Plasmin works to break down already-formed blood clots by attacking and breaking down fibrin, which destroys clots, in a process known as fibrinolysis.</td>
</tr>
</tbody>
</table>
| **Indications:** | Any trauma patient >14 years old at high risk for ongoing internal hemorrhage and meeting one or more of the following criteria:  
- Systolic blood pressure <100 mmHg  
- Tachycardia >110 beats per minute with signs of hypoperfusion (confusion, altered mental status, cool extremities, etc.) |
| **Contraindications include but not limited to:** | o Injuries > 3 hours old  
- Evidence of Disseminated Intravascular Coagulation (DIC)  
- Patients < 14 years old  
- Hypersensitivity to the drug |
| **Adverse effects include but not limited to:** | For patients with DIC there may a variety of signs/symptoms:  
- Signs of stroke, such as speech and movement problems  
- Swelling of legs and/or redness and warmth  
- Shortness of breath  
- Chest pain or MI  
- Petechiae |
| **Adult Administration:** | Mix 1,000 mg in 100 mL Normal Saline. Infuse over 10 minutes.  
- 10 gtts/mL tubing at drip rate of 1.6 gtts/second (100 gtt/minute)  
- If infusion pump available – 1,500 mL/hr |
| **Pediatric Administration:** | Same as adult for children > 14 years old |
| **Onset:** | 5-15 minutes |
| **Duration:** | 3 hours |
| **Pregnancy Safety:** | Category B |
| **Precautions and Comments:** |  
- Hypotension has been observed when TXA is administered too fast  
- TXA should NEVER be administered “wide open”  
- Female patients taking birth control are at increased risk for blood clots and TXA significantly increases that risk |
**Vecuronium**

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Vecuronium Class: Non-depolarizing neuromuscular blocker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</td>
<td>An intermediate-acting, non-depolarizing, neuromuscular blocking agent that produces skeletal muscle paralysis by blockade at the myoneural junction. Neuromuscular blockade progresses in a predictable order, beginning with muscles associated with fine movements (eyes, face, and neck); followed by muscles of the limbs, chest, and abdomen; and, finally, the diaphragm.</td>
</tr>
</tbody>
</table>

**Indications:**
- Facilitate intubation

**Contraindications include but not limited to:**
- Inability to control airway and/or support ventilations
- Bradycardia
- Dysrhythmias
- Hypotension
- Muscular disease

**Adverse effects include but not limited to:**
- Rare hypersensitivity reactions (bronchospasm, flushing, erythema, urticaria, hypotension, sinus tachycardia).

**Adult Administration:**
See Adult Medication Administration Chart for dosing

<table>
<thead>
<tr>
<th>Packaging Information:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(10 mg Powder) Vial</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pediatric Administration:</th>
</tr>
</thead>
<tbody>
<tr>
<td>See Medication Administration Chart for dosing</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Onset:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within one minute</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Duration:</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-40 minutes (depending on dose)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pregnancy Safety:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category C</td>
</tr>
</tbody>
</table>

**Precautions and Comments:**
- Pharmacology Chart

**Used in SMO:**
- Delayed Sequence Intubation

Vecuronium is used as a backup paralytic agent. Preferred paralytic is Succinylcholine.
### Fentanyl 50 μg/ml IN Dosing Chart

<table>
<thead>
<tr>
<th>Patient Weight KG</th>
<th>Fentanyl dose μg</th>
<th>Fentanyl Dose ml</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-5 kg</td>
<td>10</td>
<td>0.3</td>
</tr>
<tr>
<td>6-10 kg</td>
<td>20</td>
<td>0.5</td>
</tr>
<tr>
<td>11-15 kg</td>
<td>30</td>
<td>0.7</td>
</tr>
<tr>
<td>16-20 kg</td>
<td>40</td>
<td>0.9</td>
</tr>
<tr>
<td>21-25 kg</td>
<td>50</td>
<td>1.1</td>
</tr>
<tr>
<td>26-30 kg</td>
<td>60</td>
<td>1.3</td>
</tr>
<tr>
<td>31-35 kg</td>
<td>70</td>
<td>1.5</td>
</tr>
<tr>
<td>36-40 kg</td>
<td>80</td>
<td>1.7</td>
</tr>
<tr>
<td>41-45 kg</td>
<td>90</td>
<td>1.8</td>
</tr>
<tr>
<td>46-50 kg</td>
<td>100</td>
<td>2.0</td>
</tr>
<tr>
<td>51-55 kg</td>
<td>110</td>
<td>2.3</td>
</tr>
<tr>
<td>56-60 kg</td>
<td>120</td>
<td>2.5</td>
</tr>
<tr>
<td>61-70 kg</td>
<td>140</td>
<td>2.9</td>
</tr>
<tr>
<td>71-80 kg</td>
<td>160</td>
<td>3.3</td>
</tr>
<tr>
<td>81-90 kg</td>
<td>180</td>
<td>3.7</td>
</tr>
<tr>
<td>91 kg or greater</td>
<td>200</td>
<td>4.0</td>
</tr>
</tbody>
</table>

* For pain and sedation doses: Start dose low – slowly increase – Titrated to effect up to listed dose

**Notes:**
- 2-3 μg/kg
- Administer 1/2 dose per nare
- 1/4 to 1/2 ml is ideal
- Volumes >2 ml may be titrated with 2nd dose
- 5-10 minutes later
- Monitor for respiratory depression
- May repeat 1/2 dose every 5-10 minutes until desired effect achieved

* Fentanyl is the preferred analgesic agent for intranasal delivery due to absorption and bioavailability concerns with Morphine
<table>
<thead>
<tr>
<th>Age</th>
<th>Weight KG</th>
<th>Volume ml</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neonate</td>
<td>3</td>
<td>0.3</td>
</tr>
<tr>
<td>&lt;1</td>
<td>6</td>
<td>0.4</td>
</tr>
<tr>
<td>1</td>
<td>10</td>
<td>0.5</td>
</tr>
<tr>
<td>2</td>
<td>14</td>
<td>0.7</td>
</tr>
<tr>
<td>3</td>
<td>16</td>
<td>0.8</td>
</tr>
<tr>
<td>4</td>
<td>18</td>
<td>0.9</td>
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<tr>
<td>5</td>
<td>20</td>
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<td>1.2</td>
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<td>28</td>
<td>1.3</td>
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<td>10</td>
<td>30</td>
<td>1.4</td>
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<td>11</td>
<td>32</td>
<td>1.4</td>
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<td>12</td>
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<td>1.5</td>
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<tr>
<td>Small Teen</td>
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<tr>
<td>Adult</td>
<td>&gt;50</td>
<td>2</td>
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</tbody>
</table>

* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose

Return to SMO Table of Contents

Return to Formulary Table of Contents
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**STANDING MEDICAL ORDERS**
**BLS, ILS, ALS**

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**REGION I EMERGENCY MEDICAL SERVICES**
**STANDING MEDICAL ORDERS**
**BLS, ILS, ALS**

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**FORMULARY – References – Region I Medication Restocking Form**

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**MEDICATIONS: EMS RESTOCKING**

| Patient Name: | ____________________________ |
| Account Number: | ____________________________ |
| Agency: | ____________________________ |
| Ambulance Number: | ____________________________ |
| Signature: | ____________________________ |

---

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Name: Generic</th>
<th>Name: Trade</th>
<th>Strength &amp; unit of use</th>
<th>Recommended Par Level/Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adenosine</td>
<td>Adenocard</td>
<td>6 mg/2 ml Syringe</td>
<td>18 mg</td>
<td></td>
</tr>
<tr>
<td>Albuterol 0.083%</td>
<td>Proventil or Ventolin</td>
<td>2.5 mg/3 ml Neb</td>
<td>5 mg</td>
<td></td>
</tr>
<tr>
<td>Albuterol/Ipratropium</td>
<td>DuoNeb</td>
<td>2.5 mg/0.5 mg/3 ml Neb</td>
<td>5/1 mg</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE: Carry 2 additional Ipratropium/Albuterol if no Duo-Neb**

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Name: Generic</th>
<th>Name: Trade</th>
<th>Strength &amp; unit of use</th>
<th>Recommended Par Level/Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amiodarone</td>
<td>Cordarone</td>
<td>150 mg/3 ml Vial</td>
<td>450 mg</td>
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<tr>
<td>Aspirin Chewable</td>
<td>81 mg Tablet</td>
<td>648 mg</td>
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<td></td>
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<tr>
<td>Atropine Sulfate</td>
<td>1 mg/10 ml Syringe</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Calcium Gluconate</td>
<td>1 gram/10 mL Vial</td>
<td>3 grams</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D10</td>
<td>50 grams/500ml Bag</td>
<td>500 ml</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D50</td>
<td>Dextrose 50%</td>
<td>25 g/50 ml Syringe</td>
<td>50 grams</td>
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<tr>
<td>Diazepam</td>
<td>Valium</td>
<td>10 mg/2 ml Syringe</td>
<td>30 mg (30 mg max)</td>
<td></td>
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<tr>
<td>Diphenhydramine</td>
<td>Benadryl</td>
<td>50 mg/ml Vial</td>
<td>100 mg</td>
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<tr>
<td>Dopamine</td>
<td>Intropin</td>
<td>400 mg/250 ml Bag</td>
<td>400 mg</td>
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</tr>
<tr>
<td>Epinephrine 1 mg/ml</td>
<td>Epi Pen</td>
<td>0.3 mg/0.3 ml Auto Injector</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Epinephrine 1 mg/ml</td>
<td>Adrenalin</td>
<td>1 mg/ml Vial</td>
<td>2 mg</td>
<td></td>
</tr>
<tr>
<td>Epinephrine 1 mg/ml</td>
<td>Adrenalin</td>
<td>30 mg/30 ml Vial</td>
<td>30 mg</td>
<td></td>
</tr>
<tr>
<td>Epinephrine 1mg/2ml</td>
<td>Epi Pen Jr</td>
<td>0.15 mg/0.3 ml Auto Injector</td>
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<td></td>
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<tr>
<td>Epinephrine 0.10 mg/ml</td>
<td>Adrenalin</td>
<td>1 mg/10 ml Syringe</td>
<td>4 mg</td>
<td></td>
</tr>
<tr>
<td>Etomidate</td>
<td>Amidate</td>
<td>40 mg/20 ml Vial</td>
<td>40 mg (max 80 mg)</td>
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<tr>
<td>Fentanyl</td>
<td>Sublimaze</td>
<td>50 mcg/ml Vial</td>
<td>400 mcg (400 mcg max)</td>
<td></td>
</tr>
<tr>
<td>Furosemide</td>
<td>Lasix</td>
<td>100 mg/10 ml Vial</td>
<td>100 mg</td>
<td></td>
</tr>
<tr>
<td>Glucagon</td>
<td>GlucaGen</td>
<td>1 mg/ml Vial</td>
<td>1 mg</td>
<td></td>
</tr>
</tbody>
</table>

---

*Return to SMO Table of Contents*
*Return to Formulary TOC*
<table>
<thead>
<tr>
<th>Name: Generic</th>
<th>Name: Trade</th>
<th>Strength &amp; unit of use</th>
<th>Recommended Par Level/Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ipratropium 0.02%</td>
<td>Atrovent</td>
<td>0.5 mg/2.5 ml Neb</td>
<td>2 mg</td>
</tr>
<tr>
<td>Ketamine IM</td>
<td>Ketalar</td>
<td>500 mg/5 ml Vial</td>
<td>500 mg (max 500 mg)</td>
</tr>
<tr>
<td><strong>Ketamine IV</strong></td>
<td><strong>Ketalar</strong></td>
<td><strong>200 mg/20 ml Vial</strong></td>
<td><strong>200 mg (200 mg max)</strong></td>
</tr>
<tr>
<td>Ketorolac</td>
<td>Toradol</td>
<td>15 mg/ml Vial</td>
<td>45 mg</td>
</tr>
<tr>
<td>Lidocaine 2%</td>
<td>Xylocaine</td>
<td>100 mg/5 ml Syringe</td>
<td>300 mg</td>
</tr>
<tr>
<td><strong>Lorazepam</strong></td>
<td><strong>Ativan</strong></td>
<td><strong>2 mg/ml Vial/Syringe</strong></td>
<td><strong>8 mg (30 mg max)</strong></td>
</tr>
<tr>
<td>Magnesium Sulfate</td>
<td>MgSO₄</td>
<td>2 GM/50 ml</td>
<td>2 GM</td>
</tr>
<tr>
<td>Methylprednisolone</td>
<td>Solu-Medrol</td>
<td>125 mg/2 ml Act-O-Vial</td>
<td>125 mg</td>
</tr>
<tr>
<td>Metoprolol Tartrate</td>
<td>Labetalol</td>
<td>5 mg/5ml Vial</td>
<td>15 ml</td>
</tr>
<tr>
<td>Midazolam</td>
<td>Versed</td>
<td>5 mg/ml Vial</td>
<td>30 mg (30 mg max)</td>
</tr>
<tr>
<td>Morphine Sulfate</td>
<td></td>
<td>10 mg/ml Syringe</td>
<td>20 mg (20 mg max)</td>
</tr>
<tr>
<td>Naloxone</td>
<td>Narcan</td>
<td>2 mg/2 ml Syringe</td>
<td>16 mg</td>
</tr>
<tr>
<td>Nitroglycerin</td>
<td>Nitrostat</td>
<td>0.4 mg SL Tablet</td>
<td>2 bottles</td>
</tr>
<tr>
<td>Ondansetron</td>
<td>Zofran</td>
<td>4 mg/2 ml Vial</td>
<td>8 mg</td>
</tr>
<tr>
<td>Ondansetron</td>
<td>Zofran ODT</td>
<td>4 mg ODT</td>
<td>8 mg</td>
</tr>
<tr>
<td>Rocuronium</td>
<td>Zemuron</td>
<td>10 mg/ml Vial</td>
<td>150 mg (150 mg max)</td>
</tr>
<tr>
<td>Sodium Bicarbonate</td>
<td>NaCHO₂ 8.4%</td>
<td>50 meq/50 ml Syringe</td>
<td>150 meq</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>NaCl 0.9%</td>
<td>10 ml Syringe</td>
<td>100 ml</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>NaCl 0.9%</td>
<td>100 ml Sealed bag</td>
<td>200 ml</td>
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<tr>
<td>Sodium Chloride</td>
<td>NaCl 0.9%</td>
<td>500 ml Bag</td>
<td>1000 ml</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>NaCl 0.9%</td>
<td>1000 ml Bag</td>
<td>2000 ml</td>
</tr>
<tr>
<td>Succinylcholine</td>
<td>Anectine</td>
<td>200 mg/10 ml Vial</td>
<td>200 mg (400 mg max)</td>
</tr>
<tr>
<td>Tetracaine 0.5% eye drops</td>
<td>Pontacaine OP 0.5%</td>
<td>20 mg/4 ml Eye Drops</td>
<td>4 ml</td>
</tr>
<tr>
<td>Tranexamic Acid (TXA)</td>
<td>Cytokapron</td>
<td>1000 mg/10 ml Vial</td>
<td>1000 mg</td>
</tr>
<tr>
<td>Vecuronium</td>
<td>Norcuron</td>
<td>10 mg Powder Vial</td>
<td>30 mg (30 mg max)</td>
</tr>
</tbody>
</table>

**Mercyhealth Additional Medications**

| Calcium Chloride 10% Solution | | 1 GM/10 ml preload syringe |
| Diltiazem | Cardizem | 5 mg/ml – 5 ml vial |
| Hydromorphone | Dilaudid | 1 mg/ml |
| Magnesium Sulfate 50% | | 5 GM/10 ml preload syringe or 2 GM bags |
## Key to Controlled Substances Categories

Products listed with the numerals shown below are subject to the Controlled Substance Act of 1970. These drugs are categorized according to their potential for abuse. The greater the potential, the more severe the limitations on their prescription.

<table>
<thead>
<tr>
<th>Category</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>II</td>
<td>High potential for abuse. Use may lead to severe physical or psychological dependence. Prescriptions must be written in ink, or typewritten, and signed by the practitioner. Verbal prescriptions must be confirmed in writing within 72 hours and may only be given for a genuine emergency. No renewals are permitted.</td>
</tr>
<tr>
<td>III</td>
<td>Some potential for abuse. Use may lead to low-to-moderate physical dependence or high psychological dependence. Prescriptions may be oral or written. Up to five (5) renewals are permitted within six (6) months.</td>
</tr>
<tr>
<td>IV</td>
<td>Low potential for abuse. Use may lead to limited physical or psychological dependence. Prescriptions may be oral or written. Up to five (5) renewals are permitted within six (6) months.</td>
</tr>
<tr>
<td>V</td>
<td>Subject to state and local regulation. Abuse potential is low. A prescription may not be required.</td>
</tr>
</tbody>
</table>
The Food and Drug Administration’s Categories are based on the degree to which available information has ruled out risk to the fetus, balanced against the drug’s potential to the patient. Ratings range from “A”, for drugs that have been tested for teratogenicity under controlled conditions without showing evidence of damage to the fetus, to “D” and “X” for drugs that are teratogenic. The “D” rating is generally reserved for drugs with no safer alternatives. The “X” rating means there is absolutely no reason to risk using the drug in pregnancy.

<table>
<thead>
<tr>
<th>Category</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Controlled studies show no risk. Adequate, well-controlled studies in pregnant women have failed to demonstrate risk to the fetus.</td>
</tr>
<tr>
<td>B</td>
<td>No evidence of risk in humans. Either animal findings show risk, but human findings do not, or if no human studies have been done, animal findings are negative.</td>
</tr>
<tr>
<td>C</td>
<td>Risk cannot be ruled out. Human studies are lacking, and animal studies are either positive for fetal risk or lacking. However, potential benefits may justify the potential risk.</td>
</tr>
<tr>
<td>D</td>
<td>Positive evidence of risk. Investigational or post-marketing data show risk to the fetus. Nevertheless, potential benefits may outweigh the potential risk.</td>
</tr>
<tr>
<td>X</td>
<td>Contraindicated in pregnancy. Studies in animals or human, or investigational or post-marketing reports have shown fetal risk, which clearly outweighs any possible benefit to the patient.</td>
</tr>
<tr>
<td><strong>FORMULARYABBREVIATIONS</strong>*</td>
<td><strong>Definition</strong></td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------------</td>
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<tr>
<td>ADR</td>
<td>Adverse Drug Reaction</td>
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<tr>
<td>ASA</td>
<td>Aspirin</td>
</tr>
<tr>
<td>BP</td>
<td>Blood pressure</td>
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<tr>
<td>BPM</td>
<td>Beats per minute</td>
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<tr>
<td>BS</td>
<td>Blood sugar</td>
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<tr>
<td>CNS</td>
<td>Central nervous system</td>
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<tr>
<td>dL</td>
<td>Deciliter</td>
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<tr>
<td>ECG</td>
<td>Electrocardiogram</td>
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<tr>
<td>ET</td>
<td>Endotracheal</td>
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<tr>
<td>GCS</td>
<td>Glasgow Coma Scale</td>
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<td>GI</td>
<td>Gastrointestinal</td>
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<tr>
<td>gm or GM or G</td>
<td>Gram</td>
</tr>
<tr>
<td>gtt(s) or Gtt(s)</td>
<td>Drop(s)</td>
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<tr>
<td>HR</td>
<td>Heart rate</td>
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<tr>
<td>IM</td>
<td>Intramuscularly</td>
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<tr>
<td>IN</td>
<td>Intranasal</td>
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<tr>
<td>IO</td>
<td>Intraosseous</td>
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<tr>
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<td>Intravenous</td>
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<td>Intravenous push</td>
</tr>
<tr>
<td>kg</td>
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<td>Pound</td>
</tr>
<tr>
<td>L</td>
<td>Liter</td>
</tr>
<tr>
<td>LOC</td>
<td>Level of consciousness</td>
</tr>
<tr>
<td>MAO</td>
<td>Monoamine oxidase</td>
</tr>
<tr>
<td>mcgtt</td>
<td>Microdrip</td>
</tr>
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<td>mEq or meq</td>
<td>Milliequivalent</td>
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<td>mg</td>
<td>Milligram</td>
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<td>NS</td>
<td>Normal Saline</td>
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<td>OD</td>
<td>Overdose</td>
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<tr>
<td>OPP</td>
<td>Organophosphate poisoning</td>
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<td>PEA</td>
<td>Pulseless electrical activity</td>
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<td>PO</td>
<td>By mouth</td>
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<tr>
<td>PVC</td>
<td>Premature ventricular contraction</td>
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<tr>
<td>Sub-Q or subq</td>
<td>Subcutaneous</td>
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<td>U</td>
<td>Unit</td>
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<tr>
<td>μg</td>
<td>Microgram</td>
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* This list of abbreviations only covers this Prehospital Formulary.
### Treatment Capacity:

<table>
<thead>
<tr>
<th>Medication</th>
<th>Unit Pack</th>
<th>Number of Cases</th>
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<tbody>
<tr>
<td>Mark I auto-injector</td>
<td>240</td>
<td>5</td>
</tr>
<tr>
<td>Atropine Sulfate 0.4 mg/ml 20 mL</td>
<td>100</td>
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<tr>
<td>Pralidoxime 1 GM injection 20 mL</td>
<td>276</td>
<td>1</td>
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<tr>
<td>Atropen 0.5 mg</td>
<td>144</td>
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<tr>
<td>Atropen 1.0 mg</td>
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<tr>
<td>Diazepam 5 mg/mL auto-injector</td>
<td>150</td>
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</tr>
<tr>
<td>Diazepam 5 mg/mL Vial 10 mL</td>
<td>25</td>
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</tr>
<tr>
<td>Sterile Water for injection 20 mL</td>
<td>100</td>
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</tbody>
</table>
REGION I EMERGENCY MEDICAL SERVICES
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FORMULARY – References – Mark I Auto Injector – Atropine/Pralidoxime

<table>
<thead>
<tr>
<th>Mark I Auto Injector</th>
<th>Atropine/Pralidoxime</th>
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</thead>
<tbody>
<tr>
<td><strong>Classification:</strong></td>
<td>Nerve agent antidote</td>
</tr>
<tr>
<td><strong>Indications:</strong></td>
<td>Mild Exposures:</td>
</tr>
<tr>
<td></td>
<td>Rhinorrhea</td>
</tr>
<tr>
<td></td>
<td>Chest tightness</td>
</tr>
<tr>
<td></td>
<td>Dyspnea</td>
</tr>
<tr>
<td></td>
<td>Bronchospasm</td>
</tr>
<tr>
<td></td>
<td><strong>Moderate Exposures:</strong></td>
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<tr>
<td></td>
<td>Salivation</td>
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<tr>
<td></td>
<td>Lacrimation</td>
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<tr>
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<td>Urination</td>
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<tr>
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<td>GI Symptoms</td>
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<td>Emesis</td>
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<td>Miosis</td>
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<td><strong>Severe Exposures:</strong></td>
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<td>Jerking</td>
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<tr>
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<td>Twitching</td>
</tr>
<tr>
<td></td>
<td>Staggering</td>
</tr>
<tr>
<td></td>
<td>Headache</td>
</tr>
<tr>
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<td>Drowsiness</td>
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<td>Coma</td>
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<tr>
<td></td>
<td>Seizures</td>
</tr>
<tr>
<td></td>
<td>Apnea</td>
</tr>
<tr>
<td><strong>Contraindications:</strong></td>
<td>Do not use auto-injectors in patients under 30 kg</td>
</tr>
<tr>
<td><strong>Adverse effects:</strong></td>
<td><strong>Atropine:</strong></td>
</tr>
<tr>
<td></td>
<td>Tachycardia</td>
</tr>
<tr>
<td></td>
<td>Increased myocardial O₂ demand</td>
</tr>
<tr>
<td></td>
<td>Headache</td>
</tr>
<tr>
<td></td>
<td>Dizziness</td>
</tr>
<tr>
<td></td>
<td>Palpitations</td>
</tr>
<tr>
<td></td>
<td>Dries mucous membranes</td>
</tr>
<tr>
<td></td>
<td>Nausea/vomiting</td>
</tr>
<tr>
<td></td>
<td>Flushed skin</td>
</tr>
<tr>
<td></td>
<td>Dilated pupils</td>
</tr>
<tr>
<td></td>
<td>Increased intraocular pressure</td>
</tr>
<tr>
<td></td>
<td><strong>Pralidoxime:</strong></td>
</tr>
<tr>
<td></td>
<td>Hypertension</td>
</tr>
<tr>
<td></td>
<td>Blurry vision</td>
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<td></td>
<td>Diplopia</td>
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<td></td>
<td>Tachycardia</td>
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<tr>
<td></td>
<td>Nausea</td>
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<tr>
<td></td>
<td>Increases atropine effects</td>
</tr>
</tbody>
</table>

**Adult Administration:** See respective medications for dosing

**Pediatric Administration:** Not indicated for pediatrics <10 years old or <30 kg

**Onset:** Immediate – 15 minutes

**Duration:** Half-life: 2-Pam 74-77 minutes
Atropine: 10 minutes

**Pregnancy Safety:** Category C
Precautions and Comments:

- Kit contains:
  - Atropine 2 mg/0.7 mL auto-injector
  - Pralidoxime 600 mg/2 mL auto-injector
- Nerve agents are the most toxic of the known chemical agents. They are hazards in their liquid and vapor states and can cause death within minutes after exposure. Nerve agents inhibit acetylcholinesterase in tissue, and their effects are caused by the resulting excess of acetylcholine. Nerve agents are considered to be major military and terrorist threats. Common names for nerve agents include: Tabun, Sarin, and Soman. Nerve agents are liquids under normal temperature conditions. When dispersed, the most volatile ones constitute both a vapor and liquid hazard.
**Chem Pack – Atropine Sulfate**

| Classification: | Parasympathetic blocker (anticholinergic)  
|                 | Antidysrhythmic agent |
| Actions:        | Inhibits parasympathetic stimulation by blocking 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 |
| Indications:    | Organophosphate poisoning (OPP)  
|                 | Nerve agent exposure |
| Contraindications: | Neonates (bradycardia and asystole/PEA in neonates is usually caused by hypoventilation; also the vagus nerve in neonates is underdeveloped and atropine will usually have no effect upon it) |
| Adverse Effects: | Tachycardia  
|                 | Increased myocardial O₂ demand  
|                 | Headache  
|                 | Dizziness  
|                 | Palpitations  
|                 | Dries mucous membranes  
|                 | Nausea/vomiting  
|                 | Flushed skin  
|                 | Dilated pupils  
|                 | Increased intraocular pressure |
| Precautions:    | Do not under-dose pediatric patients (minimum dose is 0.1 mg) |

### Adult Administration:

- **Mild Exposure:**  
  1 auto-injector IM or 2 mg IV/IO/IM  
  May repeat 2 mg every 3-5 minutes until symptoms improve

- **Moderate Exposure:**  
  2 auto-injectors IM or 4 mg IV/IO/IM  
  May repeat 1 auto-injector - 2 mg every 3-5 minutes until symptoms improve

- **Severe Exposure:**  
  3 auto-injectors IM or 6 mg IV/IO/IM  
  May repeat 1 auto-injector 2 mg every 3-5 minutes until symptoms improve

### Pediatric Administration:

- **For All Exposures:**  
  0.02 mg/kg IV/IO/IM (minimum dose of 0.1 mg)  
  May repeat every 3-5 minutes until symptoms improve

---

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### Pediatric Administration (continued):

<table>
<thead>
<tr>
<th>Auto-injector/Atropen information:</th>
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</thead>
<tbody>
<tr>
<td>• For children 0-2 years old (&lt;18 kg) use 0.5 mg Atropen</td>
</tr>
<tr>
<td>• For children 2-10 years old (18-30 kg) use 1.0 mg Atropen</td>
</tr>
<tr>
<td>• For patients ≥ 10 years old (&gt;30 kg) use 2 mg atropine auto-injector</td>
</tr>
</tbody>
</table>

Atropens and auto-injectors may be repeated every 3-5 minutes until symptoms improve.

<table>
<thead>
<tr>
<th>Onset:</th>
<th>2-5 minutes</th>
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<tr>
<td>Duration:</td>
<td>20 minutes</td>
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<tr>
<td>Pregnancy Safety:</td>
<td>Category C</td>
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<tr>
<td>Precautions and Comments:</td>
<td>Atropine should be given prior to 2-Pam.</td>
</tr>
</tbody>
</table>
**Chem Pack – Pralidoxime**

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Cholinesterase reactivator</th>
</tr>
</thead>
</table>
| **Actions:**    | • Removes organophosphate agent from cholinesterase and reactivates the cholinesterase  
                  • Re-establishes normal skeletal muscle contractions |
| **Indications:** | • Antidote for organophosphate poisoning (not carbamates)  
                  • Antidote for nerve agent poisoning |
| **Contraindications:** | Hypertension is relative contraindication |
| **Adverse Effects:** |  
  ➢ Hypertension  
  ➢ Blurry vision  
  ➢ Diplopia  
  ➢ Tachycardia  
  ➢ Nausea  
  ➢ Increases Atropine’s effects  
  ➢ Pain at injection site |

**Adult Administration:**

- **Auto-injector:**
  - Mild: Administer 1 auto-injector; 600 mg IM
  - Moderate: Administer 1 auto-injector; 600 mg IM  
    May repeat in 5-10 minutes
  - Severe: Administer 3 auto-injectors; 1,800 mg IM
  - Elderly (>65 years old): Limit to 1 auto-injector. Contact Medical Control if additional doses are needed.

- **IV/IO Infusion:**
  - 1-2 GM over 30 minutes. May repeat in 1 hour
  - Elderly patients (>65 years old): 7.5 mg/kg to maximum of 1 GM over 30 minutes. Contact Medical Control if additional doses are needed.

- **Pediatric Administration:**
  - 20 mg/kg IM or IV/IO to maximum of 1 GM (if give IV/IO – give over 30 minutes). May repeat in 1 hour.
  - No auto-injectors on children <10 years old (<30 kg).

- **Onset:** 5-15 minutes
- **Duration:** Half-life: 75 minutes
- **Pregnancy Safety:** Category C
- **Precautions and Comments:** Atropine should be given first.
## Chem Pack – Diazepam

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<th><strong>Classification:</strong></th>
<th>Benzodiazepine</th>
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<tr>
<td><strong>Actions:</strong></td>
<td>Decreases neurologic activity</td>
</tr>
<tr>
<td></td>
<td>Skeletal muscle relaxant</td>
</tr>
<tr>
<td></td>
<td>Amnesic</td>
</tr>
<tr>
<td><strong>Indications:</strong></td>
<td>Seizures as a result of nerve agent exposure</td>
</tr>
<tr>
<td><strong>Contraindications:</strong></td>
<td>o Hypersensitivity to benzodiazepines</td>
</tr>
<tr>
<td></td>
<td>o Myasthenia gravis</td>
</tr>
<tr>
<td><strong>Adverse Effects:</strong></td>
<td>Drowsiness</td>
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<tr>
<td></td>
<td>Fatigue</td>
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<td></td>
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<td></td>
<td>Confusion</td>
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<td>Constipation</td>
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<td>Dysarthria</td>
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<td></td>
<td>Anxiety</td>
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<td>Injection site reaction</td>
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</table>

| **Onset:** | 1-5 minutes |
| **Duration:** | 15 minutes to 1 hour |
| **Pregnancy Safety:** | Category D |
| **Precautions and Comments:** | Use caution with elderly patients or patients that are under the influence of CNS depressants. |
|                     | Diazepam does not prevent seizures; do not give prophylactically. |
REGION I
EMERGENCY MEDICAL SERVICES

Emergency Medical Responder
Standing Medical Orders

As prepared by:

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Mark Loewecke, OSF Northern Region EMS System
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Anthony Woodson, Northwestern Medicine Kishwaukee Hospital EMS System

IDPH Approval
Date: December 6, 2017
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# Emergency Medical Responder
## Standing Medical Orders
### General Guidelines

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**Overview:** Body substance exposure is a significant risk for pre-hospital care providers. This SMO serves as a guideline for exposure reporting in EMS Region 1. For specific information, review the receiving hospital specific procedure for reporting, treatment and follow-up care.

**INFORMATION NEEDED**
- Date and time of exposure
- Host patient
- Type of exposure
- BSI used by pre-hospital provider

**OBJECTIVE FINDINGS**
- A significant exposure is blood or body fluids on or in non-intact skin
- A non-significant exposure would be identified as blood or body fluids on in-tact skin or clothes, or BSI equipment

**RECOMMENDATIONS**
- Each hospital has specific procedures for the pre-hospital exposure. Consult with the ED nurse Manager for specific response to reporting, treatment and follow-up care.
- If a pre-hospital provider, (EMT, Fireman, Police Officer, etc), has a significant exposure, (e.g. blood or body fluid on non-intact skin, contact with mucous membranes or a needle stick), they should respond to the emergency department who is receiving the patient. The person who has the exposure should notify the charge nurse of the receiving hospital emergency department and advise that a potential significant exposure has occurred.
- The appropriate hospital, system and department incident reports must be completed. Some departments require additional notification paperwork be completed. Once the appropriate forms are completed, they will be turned into the receiving hospitals Emergency Department Charge Nurse and appropriate agency / department officer.
- An EMS system form must be completed and returned to the resource hospital of the agency involved (e.g., an exposure happens to an EMT on XYZ department in Anywhere. A form must be filled out for Anywhere Hospital, XYZ department and the EMS Resource Hospital of XYZ department)
- The appropriate person in the receiving hospitals emergency department will evaluate the exposure to determine if a significant exposure has occurred.
**RECOMMENDATIONS (continued)**

__If a significant exposure has occurred or is suspected the receiving hospitals Emergency Department Charge Nurse or appropriate designee will implement the hospital specific response procedure. This procedure will include but not be limited to baseline blood test on the EMS provider and host patient, interview and counseling of risks to EMS provider, follow-up information and / or referral which may or may not include prophylaxis.__

__The response action will be documented on the incident report forms and forwarded to the EMS provider, receiving facility infection control provider, providers department officer (if applicable), and the providers EMS System Resource Hospital. __

__Follow-up notification of test results is the responsibility of the receiving hospital infectious disease provider. The EMS Systems Coordinator will follow up within 48 hours of receipt of incident report to clarify procedure has been accomplished and notification and follow-up has occurred. __

__If the exposure is identified as non-significant the EMS provider will be advised of same and no further testing will be accomplished. The EMS provider will be counseled on proper use of BSI in the pre-hospital environment. __

__The non-significant exposure will be documented on the incident report and forwarded to the chain of command of the provider and the EMS Resource Hospital System Coordinator. __

**Documentation of adherence to SMO**

Complete and accurate information regarding:

- Exposure type
- Host patient
- EMS provider
- Receiving hospital
- Description of event
- Results and follow-up care and notification
- It is imperative that the EMS provider who has a potential exposure report to the receiving hospital’s emergency department at the time of exposure. Delay in reporting could result in hospital and staffs inability to attain host blood for testing and effectively provide counseling, intervention or follow-up. The provider should initiate this as soon as possible. Follow any additional agency specific policies and/or procedures.
- The best response to an exposure is not to have one. Use proper BSI precautions in every patient encounter.
- If there are questions regarding BSI precautions, vaccinations, or proper reporting contact the local hospital, host agency / Department Chief or EMS Officer or the EMS Systems Coordinator at the EMS Resource Hospital.
PROCEDURE: Body Substance Isolation (Universal Precautions)

Overview: Body substance isolation should be used for all patient contacts if the pre-hospital provider may be exposed to blood or other body fluids.

INFORMATION NEEDED
___ Assume all patients are carriers of infectious / contagious disease
___ If specific contagion is identified respond with appropriate BSI protection (e.g. TB appropriate fitted mask with filtration system, gown, and gloves)
___ If disease etiology dictates, mask and cover patient appropriate to minimize exposure
___ Review patient chart for specifics to contagion
___ Make sure annual testing and prophylaxis is accomplished
___ Make sure proper testing and BSI equipment is available for use prior to patient response

Use BSI:
___ Potential respiratory contagion in a closed ambulance environment
___ Potential contagion from blood and body fluids during a trauma patient response
___ Potential contagion during an invasive skill (e.g. needle stick)

RECOMMENDATIONS
___ Gloves should be worn when handling blood, body fluids, mucous membranes, non-intact skin, and body tissues. Double glove if necessary.
___ New gloves should be worn for each patient contact. Hands must be washed (wet or dry wash) after glove removals and between patient contacts.
___ If splash of blood or body fluid is anticipated, a full face shield or goggles and facemask should be worn
___ If emergency ventilatory support is necessary. A resuscitation mask with one-way valve and filter or bag valve mask should be used.
___ Do not recap needles. Promptly place sharps in a designated puncture resistance, protected lid container.
___ Place all soiled linen in a properly marked laundry bag before sending in to laundry or leaving at hospital.
___ Do not launder contaminated clothes with regular laundry. Wash separately then rinse washer with at least a 1:10 bleach solution.
___ Use a solution of 1 part bleach to 10 parts water (or equivalent solution) to clean equipment, clean spills, and decontaminate walls, floors, and other objects soiled with blood or body fluids.
RECOMMENDATIONS (continued)
__If pre-hospital provider has a skin break (cut, abrasion, dermatitis, etc) use gloves and clothing to protect from exposure with blood or body fluids
__Keep vaccinations current and have proper annual testing
__Significant exposure to and possible contamination from blood or body fluids should be reported immediately (ask receiving hospital for Exposure Report Form)
__Patients should be asked if they are allergic to latex. Non-latex equipment should be used on all patients that have latex allergies.

Documentation of adherence to SMO
__ BSI used
__ Documentation of situation in which potential exposure or exposure occurred
__ Nature of contagion
__ Person or agency exposure reported to and additional information regarding origination of transfer, number of people potential exposed, duration of exposure and receiving facility.

PRECAUTIONS AND COMMENTS
▪ Make sure that proper BSI equipment is available prior to patient encounter
▪ Since there is no reliable, immediate means to identify infected patients, pre-hospital care providers should be equally cautious when caring for all patients.
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
EMR

SMO: Firearm Concealed Carry Act

Overview: Illinois has implemented the Firearm Concealed Carry Act allowing registered individuals to possess a concealed firearm on a daily or routine basis. This SMO will be a common sense guide for the EMS provider in dealing with the firearm during patient care procedures. While it is not an exhaustive list of possible situations, it will give guidance during most situations.

Information Needed:
Consider that the safest place for the firearm in any of these situations is in the accompanying holster. EMS providers will now need to ask if the patient is armed before making the decision to start an evaluation. It may be necessary to remind the patient that State law prohibits firearms on a hospital campus. When approaching a scene where the patient may be carrying a concealed handgun, several scenarios are possible and should be handled in one of the following manners:

1. The patient is at their private residence. Ask or assist the patient in removing the firearm and holster as one unit and leave it at the residence in their previously designated location (ideal situation).
2. If law enforcement is at the scene during situations such as a traffic accident or public encounter, have the officer secure and take custody of the firearm.
   a. If the patient is unable to remove the holstered firearm due to significant mechanism of injury and a full body assessment is needed, cut the holster straps and remove the holstered firearm from the patient as a unit and give to law enforcement.
   b. If the holster is contaminated with blood or bodily fluid, have the officer don gloves before touching the holstered firearm. Provide a plastic or biohazard bag if necessary.
   c. If the patient has an altered level of consciousness and is unable to comply with the request to remove the holstered firearm, safely remove the holstered firearm by whatever means necessary (cut holster straps, unbuckle straps, etc.) and give to law enforcement when available, or have the officer assist with safe removal of the firearm. Belligerent, combative, or uncooperative patients that are known to have a firearm should not be approached until law enforcement arrives or the scene is otherwise made safe.
3. If law enforcement are not on scenes to take custody of the firearm, place the holstered firearm in the lockable firearm transport (see IDPH recommendation).
4. If the hospital has a secure location, such as a gun safe currently used by law enforcement, place the firearm, holstered if possible, in the gun safe and notify law enforcement or a qualified hospital security agent.
5. Make arrangements for law enforcement to meet the ambulance at the hospital and take custody upon arrival in the ambulance bay or parking area.
6. Women may carry the firearm in a purse rather than a holster. The safest approach is to leave the firearm in the purse, turning it and the contents over to law enforcement to secure the firearm. The purse can be returned to the patient once the firearm is removed and secure.
7. If the patient has the firearm in a pocket without a holster, use extreme caution in retrieving it from the clothing, handling it only by the handle. Never attempt to unload the firearm or handle the trigger area. Avoid trying to manipulate or change the safety on a firearm. Have one crewmember place the gun in a safe or secure location in the home or lockable firearm transport box in the ambulance until law enforcement arrives.

8. If the patient is to be transported by helicopter from the scene or a rendezvous point, leave the firearm with first arriving law enforcement or notify local law enforcement of the situation. Do not send the firearm in the helicopter.

9. It may be considered a refusal of care if a patient will not remove or relinquish their firearm. Contact Medical Control for any situation of this type.

**PRECAUTIONS AND COMMENTS**

- If the EMS provider feels threatened or that the scene is unsafe, then follow standard policies and procedures for scene safety.
- EMS providers should never attempt to unload a firearm, regardless of their experience with it.
- Providers should make arrangements with state, county, and local law enforcement to assist with these situations.
- Relinquish firearm only to law enforcement, security personnel, or other qualified person.
- At no time should patient care be compromised in a safe situation due to there being a firearm. This includes transporting to the hospital where law enforcement can rendezvous with EMS to take custody of the firearm.
- Receiving hospitals should allow an ambulance on the premises with a secured firearm to facilitate optimal patient outcomes, as long as arrangements are pending for law enforcement to take custody of the firearm.
- A chain of custody form may be necessary to reduce the potential of losing the firearm or ammunition while patient care is being administered. Consult local authorities or your hospital for such a form.

---

**Medical Control Contact Criteria**

Contact Medical Control whenever a question exists as to the best treatment course for the patient.
SMO: Do Not Resuscitate (DNR), POLST, Advanced Directive

Overview: IDPH EMS Region 1 Medical Directors have adopted the Illinois Department of Public Health (IDPH) “Uniform Do-Not-Resuscitate (DNR) Advanced Directive” as mandated by (210 ILCS 50/) Emergency Medical Services Act.

This SMO is intended to honor a physician’s order that reflects an individual’s wishes about receiving cardiopulmonary resuscitation (CPR). It allows an individual, in consultation with their health-care professional, to make advanced decisions about CPR, in the event the individual’s breathing and/or heartbeat stops. When the patient has a valid DNR form, EMS personnel will not institute “Cardiopulmonary Resuscitation”. This has been defined by IDPH as various medical procedures, such as chest compressions, electrical shocks, and insertion of a breathing tube, used in an attempt to restart the patient’s heart and/or breathing.

The implementation of this SMO references subsection (d) of Section 65 of the Health Care Surrogate Act, 755 ILCS 40/65, provides:

“A health care professional or health care provider may presume, in the absence of knowledge to the contrary, that a completed Department of Public Health Uniform DNR Order or a copy of that form is a valid DNR Order. A health care professional or health care provider, or an employee of a health care professional or health care provider, who in good faith complies with a do-not-resuscitate order made in accordance with this Act is not, as a result of that compliance, subject to any criminal or civil liability, except for willful and wanton misconduct, and may not be found to have committed an act of unprofessional conduct.”

“DNR” or Do Not Resuscitate does not allow for the withholding routine treatment from a patient who has a pulse and respiration.

The sections below explain what is on the form, however, situations where hospice patients call 911 generally need to be transported.

Information Needed
__ Completed patient assessment.
__ Completed IDPH or Medical Control approved POLST/ Advanced Directive form
Objective Findings

__ Patient assessment to determine if the patient is presenting with:

Full Cardiopulmonary Arrest
  * Cessation of heartbeat and respirations
Pre-arrest Emergency
  * breathing is labored or stopped
  * heartbeat is still present
__ Completed IDPH approved POLST/ Advanced Directive form

Advance Directives

<table>
<thead>
<tr>
<th>IDPH POLST form</th>
<th>Practitioner Orders for Life Sustaining Treatment; provides guidance during life-threatening emergencies. Must be followed by all healthcare providers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power of Attorney for Healthcare</td>
<td>Names agent: rarely contains directions for authorized practitioner</td>
</tr>
<tr>
<td>Mental Health Treatment Declaration</td>
<td>Directions + Agent (for authorized practitioner)</td>
</tr>
<tr>
<td>Living Will</td>
<td>Directions for authorized practitioner (NOT EMS)</td>
</tr>
</tbody>
</table>

1. A valid, completed POLST form or previous DNR order does not expire. A new form voids past ones; follow instructions on most recent form. EMS is not responsible for seeking out other forms- work with form that is presented as truthful.
2. Original form NOT necessary- all copies of a valid form are also valid; form color does not matter.
3. SECTION A Cardiopulmonary Resuscitation: (no pulse and not breathing)
   a. If “Attempt Resuscitation” box is checked, start full resuscitation per SMO. Full treatment (section B) should be selected.
   b. If “Do Not Attempt Resuscitation/ DNR” box is checked; do not begin CPR.
4. SECTION B explains extent/intensity of treatment for persons found with a pulse and/or breathing.
   a. Full Treatment: Primary goal of sustaining life by medically indicated means. In addition to treatment described in selected treatment and comfort-focused treatment, use of intubation, mechanical ventilation, and cardioversion as indicated. Transfer to hospital if indicated.
   b. Selective Treatment: Primary goal of treating medical conditions with selected medical measures. In addition to treatment described in Comfort-focused Treatment, use medical treatment, IV fluids and IV medications as medically appropriate, and consistent with patient preference. Do not intubate. May consider less invasive airway support (CPAP/BiPAP). Transfer to hospital if indicated.
c. Comfort-Focused Treatment: Primary goal of maximizing comfort. Relieve pain and suffering through use of medications by EMS approved routes as needed; use oxygen, suction, manual treatment of airway obstruction. Do not use treatments listed in Full and Selected Treatment unless consistent with comfort goal. Contact transporting agency only if comfort needs cannot be met in current location.

5. COMPONENTS OF A VALID POLST form/ DNR order: Region I recognizes an appropriately executed IDPH POLST form and/or any other written document that has not been revoked; containing at least the following elements:
   a. Patient Name
   b. Resuscitation order (Section A)
   c. Date
   d. 3 Signatures
      i. Patient or Legal Representative Signature
      ii. Witness Signature
      iii. Authorized Practitioner Name & Signature (Physician, licensed resident (2\textsuperscript{nd} year or higher), APN, PA)

6. If POLST or DNR form is valid: follow orders on form. If form is missing or inappropriately executed, contact Medical Control for guidance.

7. A patient, POA, or Surrogate that consented to the form may revoke it at any time. A POA or Surrogate should not overturn decisions made, documented, and signed by the patient.

8. If resuscitation begun prior to from presentation, follow form instructions after order validity is confirmed.

9. If orders disputed or questionable contact Medical Control and explain the situation, follow orders received.

Power of Attorney for Healthcare (POA)/ Living Wills:

If someone presents themselves as having POA to direct medical care for a patient and/or a Living Will is presented follow these procedures:
   1. Contact Medical Control; explain situation and follow orders received.
   2. Living Wills alone may not be honored by EMS personnel
   3. If a Power of Attorney for healthcare document is presented by the agent, confirm that the document is in effect and covers the current situation
      a. If yes, the agent may consent to or refuse general medical treatment for the patient.
      b. A POA cannot rescind a DNR order consented to by the patient.
      c. A POA may rescind a DNR order for which they or another surrogate provided consent.
      d. If there is any doubt, continue treatment, contact medical control, explain the situation, and follow orders received.
   4. Bring any documents received to the hospital.
**Hospice Patients not in cardiac/respiratory arrest:**

1. If patient is registered in a hospice program and has a POLST form completed, follow patient wishes as specified in Box B.
2. Consult with hospice representatives if on scene re: other care options.
3. Contact Medical Control; communicate patient’s status; POLST selection; hospice recommendations; presence of written treatment plans and/or valid DNR orders. Follow Medical Control orders.
4. If hospice enrollment is confirmed but a POLST form is not on scene, contact Medical Control. A DNR order should be assumed in these situations; seek Medical Control approval to withhold resuscitation if cardiorespiratory arrest occurs.

**Documentation of adherence to SMO**

- Documentation of the patient assessment and condition
- Documentation of valid POLST/DNR form
- Document any issues or concerns with the call
- Document all contact with Medical Control
- Document whom the patient/deceased has been transferred to
HIPAA PERMITS DISCLOSURE OF POLST TO HEALTH CARE PROFESSIONALS AS NECESSARY FOR TREATMENT

**THIS SIDE FOR INFORMATIONAL PURPOSES ONLY**

<table>
<thead>
<tr>
<th>Patient Last Name</th>
<th>Patient First Name</th>
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Use of the Illinois Department of Public Health (IDPH) Practitioner Orders for Life-Sustaining Treatment (POLST) Form is always voluntary. This order records your wishes for medical treatment in your current state of health. Once initial medical treatment is begun and the risks and benefits of further therapy are clear, your treatment wishes may change. Your medical care and this form can be changed to reflect your new wishes at any time. However, no form can address all the medical treatment decisions that may need to be made. The Power of Attorney for Health Care Advance Directive (POAHC) is recommended for all capable adults, regardless of their health status. A POAHC allows you to document, in detail, your future health care instructions and name a Legal Representative to speak for you if you are unable to speak for yourself.

**Advance Directive Information**

- [ ] Health Care Power of Attorney
- [ ] Living Will Declaration
- [ ] Mental Health Treatment Preference Declaration

<table>
<thead>
<tr>
<th>Contact Person Name</th>
<th>Contact Phone Number</th>
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</table>

<table>
<thead>
<tr>
<th>Preparer Name</th>
<th>Phone Number</th>
</tr>
</thead>
</table>

Preparer Title

Date Prepared

Completing the IDPH POLST Form

- The completion of a POLST form is always voluntary, cannot be mandated and may be changed at any time.
- A POLST should reflect current preferences of persons completing the POLST Form; encourage completion of a POAHC.
- Verbal orders are acceptable with follow-up signature by authorized practitioner in accordance with facility/community policy.
- Use of original form is encouraged. Photocopies and faxes on any color of paper also are legal and valid forms.

Reviewing a POLST Form

- This POLST form should be reviewed periodically and if:
  - The patient is transferred from one care setting or care level to another, or
  - There is a substantial change in the patient’s health status, or
  - The patient’s treatment preferences change, or
  - The patient’s primary care professional changes.

Voiding or revoking a POLST Form

- A patient with capacity can void or revoke the form, and/or request alternative treatment.
- Changing, modifying or revoking a POLST form requires completion of a new POLST form.
- Draw line through sections A through E and write “VOID” across page if any POLST form is replaced or becomes invalid.

Illinois Health Care Surrogate Act (755 ILCS 40/25) Priority Order

1. Patient’s guardian of person
2. Patient’s spouse or partner of a registered civil union
3. Adult child
4. Adult grandchild
5. Adult sibling
6. A close friend of the patient
7. The patient’s guardian of the estate
8. The patient’s guardian of the estate

For more information, visit the IDPH Statement of Illinois law at
http://dhcc.illinois.gov/topics-services/health-care-regulation/nursing-homes/advance-directives

HIPAA (HEALTH INSURANCE PORTABILITY AND ACCOUNTABILITY ACT of 1996) PERMITS DISCLOSURE TO HEALTH CARE PROFESSIONALS AS NECESSARY FOR TREATMENT

Original SMO Date: 02/07
Reviewed: 05/09
Last Revision: 03/10; 06/17

Return to EMR Table of Contents

Current Version: 2018.1
Issued: 08/18
EMS/Region1 SMO
Overview: Certain patient death situations require notification of a Coroner for investigation into that death. Deaths that occur in EMS Region 1 will be reported to the coroner of the county affected. There should be no transport of a deceased patient across county boundaries.

Coroner Notification:

- Out of hospital deaths that are not transported to the hospital

Resuscitation is not indicated in the following situations:

- The patient has been declared dead by a coroner or patient’s physician
- Patient has a valid DNR/POLST order
- Obvious signs of death

Obvious signs of death include:

ALL of the following:

- Unresponsive
- Apnea
- Pulseless
- Fixed dilated pupils

AND at least one of the following:

- Rigor mortis without profound hypothermia
- Decomposition
- Decapitation
- Incineration
- Profound dependent lividity
- Skin deterioration or decomposition
- Trauma to the head, neck or chest inconsistent with life
- Blunt trauma with no signs of life
- Penetrating trauma with no signs of life on arrival
**PROCEDURE:**
- Confirm signs of death, note time
- Notify Coroner
- EMS should remain on scene until relieved by coroner or law enforcement

**Documentation of adherence to SMO**
- Document time of pronouncement/decision to not initiate treatment
- Document all hand-offs and/or transfer of custody of the body

**Medical Control Contact Criteria**

- Contact Medical Control for any questions regarding this SMO

**PRECAUTIONS AND COMMENTS**
- Do not transport patient who is dead at scene unless otherwise directed by the coroner
Overview: Pain is the most frequent reason people seek healthcare. Pain is an individual and unique experience, changing not only from person to person, but from minute to minute. Fear and anxiety associated with injury and illness are intensified by the presence of pain. Pain management is a desired goal of treatment. Pain relief can decrease patient anxiety and provide for comfort. Care must be taken to ensure that the treatment of pain does not result in masking of important symptoms or result in deterioration of the patient.

Conditions:
2. Multisystem trauma – refer to Routine Trauma Care or EMR Trauma Emergencies Guidelines
3. Severe burns – refer to Adult Burns or Pediatric Burns SMO
4. Significant orthopedic trauma – EMR Trauma Emergencies Guidelines
5. Abdominal Pain

INFORMATION NEEDED
__ Patient Age
__ Pertinent Medical History
__ Pain Assessment: One of the best pain assessment techniques for gathering and recording information is by the use of the pneumonic O-P-Q-R-S-T:

- Onset – when did the pain start?
- Provokes - what brings on the pain?
- Quality - what does it feel like?
- Region / Radiation where is it? Where does it go?
- Severity - how bad is it? (Rated on a consistently used scale) (1-10 grading scale)
- Timing - when did it start/end? How long does it last? How long have you had it?

OBJECTIVE FINDINGS
__General appearance
__Mental status (AVPU), skin condition, perfusion status
__Respiratory rate, rhythm and pattern and work of breathing (patient positioning such as tripoding)
__Hemodynamic state Blood Pressure, perfusion status
**TREATMENT**

- Perform patient assessment and record vital signs, level of consciousness and oxygen saturation.
- Reassure and comfort patient.
- Provide care based on other SMOs related to the patient’s presenting complaint.
- Place the patient in position of comfort. If risk of spine injury, institute spinal restrictions.
- Coach the patients breathing – calm, deep inhalations and slow relaxed exhalations.
- Distract patient or encourage them to focus on something other than their injury or pain.

**Documentation of adherence to SMO**

- Patient’s presenting signs and symptoms, including vital signs, level of consciousness and oxygen saturation. Oxygen administration
- Indication for SMO use
- Documentation of measures utilized to make patient more comfortable i.e. reassurance, position of comfort etc.
- Repeat assessment and vital signs as indicated.
- Changes from baseline, if any, that occur during treatment or transport

**Medical Control Contact Criteria**

- Contact Medical Control whenever a question exists as to the best treatment course for the patient
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
EMR

SMO: Physician/ RN on Scene

Overview: When EMT’s have established patient contact, "a caregiver/patient" relationship has been established between the patient and EMSMD or designee. If a physician in on-scene they MAY assume responsibility for this patient if the following criteria are satisfied and documented:

- Physician can show a State of Illinois Medical license
- Physician also produces a picture ID
- Physician agrees to accompany patient to the hospital in the transporting vehicle

If any of these criteria are not met and the physician on scene insists on taking control of the situation, contact Medical Control for physician-to-physician communication. The EMT should employ the following as guidelines in interacting with a physician on the scene:

**PHYSICIAN ON SCENE**

- Contact the resource hospital as soon as possible. All treatment should be reported over the radio for purposes of documentation.
- When, after consultation with the EMSMD or designee, it is determined that the physician's orders may be harmful to the patient, the EMT will:
  - Explain to the physician on-scene the recognized deviation from SOPs and/or policies and procedures.
  - Immediately put the physician at the scene in contact with Medical Control.
  - The EMSMD or designee will explain system SOPs and policies and procedures and attempt to reach consensus on patient care. Patient management by the licensed physician to provide supervision and direction throughout the pre-hospital care and transport process will continue until responsibility for care of the patient can be turned over directly to a physician on duty at hospital emergency department.
  - In cases where disagreements cannot be resolved, the EMSMD or designee will assume responsibility for patient care.
- In cases where the patient's personal physician is physically present, Medical Control should respect the previously established doctor/patient relationship as long as acceptable medical care is being provided.
### RN or NON-AGENCY EMS PROVIDER ON SCENE
- An RN or non-agency EMS provider on scene may assist to the level of First Aid. If additional skill are needed (e.g. IV initiation) Medical Control MUST be contacted for permission to utilize this person in an expanded role.
- An RN or non-agency EMS provider on scene must provide proof of State of Illinois licensure and a picture ID.
- He/she must agree to follow the directions of the EMSMD or his/her designee.

### Documentation of adherence to SMO
- Notification of Medical Control as outlined above.
- Any deviation from SMO as discussed with Medical Control.
- Documentation of name, State of Illinois license number, and picture ID produced as outlined above.

### Medical Control Contact Criteria
- Immediately upon scene physician’s request to assume responsibility at the scene.
- If any question exists as to best treatment option for the patient.

### PRECAUTIONS AND COMMENTS
- The “caregiver/patient” relationship has been established between the patient and EMSMD when the EMT establishes patient contact.
- EMT’s act under medical direction of Medical Control for the management of the patient.
- On-scene physician, RN, or non-agency EMS Provider involvement should be established with caution and with close Region 1 Medical Control guidance.
ON-SITE PHYSICIAN RESPONSIBILITY ACKNOWLEDGMENT

Thank you for your offer of assistance. Be advised the attending EMS Region 1 personnel are operating under the authority of Illinois law. No physician or other person may intercede in patient care without the EMS Region 1 Medical Director, or his or her appropriate designee, relinquishing responsibility of the scene or otherwise giving approval in accordance with EMS Region 1 SMOs.

IF YOU ARE A PHYSICIAN AND DESIRE TO ACCEPT RESPONSIBILITY FOR AND DIRECTION OF THE CARE OF THE PATIENT(S) AT THE SCENE:

1. You **MUST** show your medical license wallet card to the EMT and state your specialty.

2. You **MUST** accompany any patient whose care you direct to the medical facility in the ambulance or other attending medical vehicle.

4. Your direction of a case **MUST** be approved by the EMS Region 1 Medical Director or his or her appropriate designee.

*Please print except for your signature:*

I, _________________________________________________ M.D. / D.O., assume full responsibility for the pre-hospital direction of medical care of the patient(s) identified below during this ambulance call, and I will accompany the patient(s) to the medical facility. I understand that the Region 1 EMS Medical Director, or his or her appropriate designee, retains the right to resume responsibility for the medical care of such patient(s) at his or her discretion in accordance with Region 1 EMS SMOs at any time, and that the care of the patient(s) will be relinquished to the appropriate Region 1 personnel upon arrival at the medical facility.

Patient Identification (*please initial and provide information as appropriate)*:

________ All patients at the scene, OR

________ The following patients:

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
EMR

SMO: Refusal of Medical Care or Transport

Overview: Generally an Emergency Medical Responder will not execute patient refusals. This SMO is provided to be informational regarding the refusal process. In the event that there is not a higher level of care present and the patient insists on refusing transport the EMR should follow this SMO as closely as possible and contact Medical Control for any high-risk refusals.

This SMO relates to those cases in which EMS has been called and the patient/patients refuse to give their consent for assessment and/or treatment and/or transport and highlights the following:

- An adult patient with decision-making capacity has the right to refuse medical treatment. An adult patient with decision-making capacity, for the purpose of this SMO, is defined as:
  - Oriented to person, place, time, and event
  - No suspicion of being under the influence of drugs or alcohol
- An adult patient cannot refuse emergency treatment if that patient has decreased level of consciousness or, in EMS personnel’s judgment, cannot make competent decisions related to their emergency care.
- A patient is considered high risk for signing a refusal under the following circumstances:
  - Concern with decision-making capacity
  - A minor with no legal guardian available
  - Suspected high risk medical conditions, such as:
    - Chest pain
    - Syncope
    - Altered Mental Status
    - Stroke/TIA
    - Abnormal vital signs
    - EMS provider impression
- All patients who refuse care must be encouraged to sign a Region One Prehospital Refusal form (or a form mandated by the agency’s EMS MD).

OBJECTIVE FINDINGS

- Adult patient is conscious and competent
- Patient injuries
- Vital signs
- SAMPLE history
Refusal of Treatment by Competent Adult Patients
__Patients have the right to refuse treatment and/or transport
__The patient will be informed of the risk of refusal and possibility of deterioration of medical
   condition, up to and including death
__Attempt to assess vital signs and SAMPLE history if possible
__For high risk refusals, as defined above:
   • Consider contacting Medical Control
   • Attempt to leave patient in care of a responsible party
   • Provide post refusal instructions as indicated
   • Inform patient to call back if conditions changes or decision to refuse treatment is
     reconsidered
__Once the allowed assessment is performed, and the patient persists in refusing care and/or
   transport, the patient will be asked to sign the Region One Prehospital Refusal
   form (or a form mandated by the agency’s EMS MD). The refusal form must also be signed by the EMT
   and by one other witness (preferably law enforcement or family) if available.

Multiple Victims Refusal of Consent for Treatment
__To ensure the efficient use of resources, if an incident is declared an MVI or Disaster by the on
   scene commander, a reasonable/ common sense approach should be used and provider safety must
   be considered. If mechanism of the incident indicates the potential for victims or the Incident
   Commander has declared an MVI or Disaster, and the patients are refusing treatment, the Region
   One Multiple Victim Release Form may be completed in lieu of individual Patient Refusal Form.
__One EMS Run Report must be completed and a copy of the Multiple Victim Release form must be
   attached to the Run Report.

Minor in Need of Emergency Care who Refuses Treatment
__All reasonable attempts should be made to release a minor to a legal guardian. If a legal guardian
   cannot be located document attempts made to contact.
   • Minor may be turned over to local police or juvenile authority, or
   • Minor may be released if legal guardian is contacted by phone and consent for release is
     given. Document phone call, name of guardian, and witness.
__If the need for emergency care exists or if the behavior of the patient suggests a lack of capacity to make
   a refusal in a valid manner continue to render care, up to and including transport.

Post-Treatment Refusals
This section applies to when treatment has been given by EMS and the patient considers their
condition improved to the point that they refuse transport, such as:
- Hypoglycemic patient
- Overdose patient
- Asthma/respiratory
- Chest pain
- Syncope
- Pain control
Important points to discuss with patient before obtaining refusal:

- EMS evaluation and/or treatment is not a substitute for medical evaluation and treatment by a doctor. EMS will advise the patient to see a doctor or go to a hospital. The patient will be given the Discharge Instruction Form. EMS will circle the appropriate potential diagnosis with the patient and document this discussion on the refusal form.

- If patient’s condition was discussed with Medical Control on scene, inform them that this also does not substitute for medical evaluation.

- Patient’s condition may be worse than originally evaluated. Without treatment, patient’s condition or problem could become worse.

- If patient changes their mind or condition becomes worse, patient should be made aware that they may call 911 and EMS will respond as always.

Medical Control Contact Criteria

- Contact Medical Control whenever a question exists as to the best treatment course for the patient
- Issues regarding decision-making capacity of patients should be managed directly with Medical Control
- Contact Medical Control if there is a question regarding need for evaluation/treatment (based on mechanism of injury, etc.)

PRECAUTIONS AND COMMENTS

- Important points to discuss with patient before obtaining refusal:
  - EMS evaluation and/or treatment is not a substitute for medical evaluation and treatment by a doctor. EMS will advise the patient to see a doctor or go to a hospital. If patient’s condition was discussed with Medical Control on scene, inform them that this also does not substitute for medical evaluation.
  - Patient’s condition may be worse than originally evaluated. Without treatment, patient’s condition or problem could become worse.
  - If patient changes their mind or condition becomes worse, patient should be made aware that they may call 911 and EMS will respond as always.

- FOR MINORS: Instruct the patient’s legal guardian that in this situation, they are acting on behalf of the patient and they understand the above information regarding refusal of treatment or transport, and accept responsibility for the patient.

- Certain injuries, illnesses, ingestions, or injected substances can alter behavior and create a situation whereby the capacity to make a valid judgment by the patient no longer exists. It is better to treat and prevent any further harm to the patient who may not be able to judge his/her own condition.

- The State of Illinois permits Emancipated Minors to be treated as adults and therefore allows them to make the decision regarding consent for treatment or refusal of services.
Overview: Patients will only be restrained if clinically necessary. The use of restraints is only utilized if the patient is violent and may cause harm to themselves or others. Physical restraints are a last resort in caring for the emotionally disturbed patient. Never apply physical restraints for punitive reasons, or in a manner that restricts breathing and circulation, or in places that restrict access for monitoring the patient.

PROCEDURE

Scene size-up:
- Assess the patient and surrounds for potential weapons.
- When dealing with an agitated and combative patient consider law enforcement to help gain control of the situation.
- If scene is unsafe, back out and call law enforcement.

Utilize verbal de-escalation methods whenever possible. Consider physical restraints a last resort when verbal control is ineffective.

To safely restrain a patient use a minimum of 4 people, if possible.

Once restrained, place patient in semi-fowlers or recovery position to maximize breathing

Assess and address any medical conditions after the patient is safely restrained.

If law enforcement restrains a patient with handcuffs, an officer with a key must accompany the patient during transport (law enforcement may follow in their vehicle).

Documentation of adherence to SMO

Behavior noted as evidence that the patient is at risk of self-harm or harm to others

Type of restraint used and if partial or full restraints were used

Constant observation of patient while restraints in place

Neurovascular status check noted every 10 minutes while restraints in place

If handcuffs are used by a law enforcement officer, officer that has the key to the handcuffs must accompany the patient (may be in his/her own vehicle)

Time medical control was contacted

Original SMO Date: 07/04
Reviewed: 
Last Revision: 02/06; 06/17

Procedure: Restraints

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PRECAUTIONS AND COMMENTS
- At no point should EMS personnel place themselves in danger. Additional manpower should be requested as needed.
- In emergency situations, an EMR may initiate application of restraints in the absence of an order from Medical Control.
- Explain the procedure to the patient (and the family) if possible. The team leader should be the one communicating with the patient.
- If attempts at verbally calming the patient have failed and the decision is made to use restraints, do not waste time bargaining with the patient.
- Remember to remove any equipment from your person which can be used as a weapon against you (i.e. trauma shears).
- Approach the patient, keeping the team leader near the head to continue communications and at least one person on each side.
- Always keep the patient informed of why the restraints are being used.
- Soft, disposable restraints are preferred for EMS use.
- No hog-tying or hobble restraints allowed. No “sandwiching” with long boards or scoop stretchers.
SMO: Spinal Restriction

**Overview:** Spinal restriction should be considered on patients that have experienced a mechanism of injury. The purpose of this SMO is to give guidance on which patients should receive spinal restriction and how to accomplish this spinal restriction.

**Indication**

Any patient that experiences a mechanism of injury that creates the potential for a spine injury

**OBJECTIVE FINDINGS**

- Mental Status
- Neuro Assessment – LOC, pupils, and the ability to move and feel extremities

**Selective Spinal Restriction**

If any of the following is present or a spine injury is suspected then perform spinal restriction:

- Any focal deficits noted in the neuro exam.
- Patient age 65 or greater or less than 5 with a mechanism of injury.
- Alteration in mental status.
- Evidence of intoxication.
- Evidence of intoxication may include: GCS less than 15, slurred speech, dilated pupils, flushed skin, unsteady gate, irregular behavior or presence of paraphernalia.
- Inability of patient to communicate.
- Distraction injury: any painful injury that may distract the patient from the pain of a spinal injury.
- Examples of distracting injuries: long bone fractures, rib fractures, pelvic fractures, abdominal pain, large contusion, avulsion to the face or scalp, partial thickness burns greater than 10% TBSA or full thickness burns or any significantly painful injury.
- Tenderness, swelling or deformity noted when the spine is palpated.
- Pain to Range of Motion (ROM)
- ROM should not be assessed if any one of the above is present.
- To assess ROM have patient touch chin to chest, look up, and turn head from side to side.
  - If any pain is noted stop this assessment.

If none of the above is present, spinal restriction is not required.
Spinal Restriction Techniques

__Assessment__
- Assess motor and sensory function before and after spinal restriction and regularly during transport.
- Consider the use of S\textsubscript{p}O\textsubscript{2} to monitor respiratory function

__Ambulatory patients__
- Alert cooperative patients may be allowed to self-limit movement but a cervical collar is and should be recommended
- Apply appropriate sized cervical collar. If the cervical collar does not fit then, use alternate mode of stabilization.
- Instruct patient to sit on the cot. Secure the patient in position of comfort. Limit the movement of the neck during this process.

__Non-ambulatory patients__
- Extricate patient as needed by the safest method available while limiting flexion, extension, rotation and distraction of the spine.
- Tools such as pull sheets, scoop stretchers, KED, vacuum splints and backboards may be used.
- Place the patient in the best position suited to protect the airway while applying appropriate spinal restriction.
- If patient is transported on a hard device apply adequate padding

__Penetration trauma__ patients without spinal pain or neuro deficits do not need spinal restriction.

__Pediatric patients__
- Pediatric patients may not understand why they are being separated from their parent / guardian and are being placed in spinal restriction. Fighting with the pediatric patient may cause more harm to their spine. Consider leaving the child in their uncompromised car seat with added padding. If parent / guardian are available have them be involved in the child’s care. This may alleviate the need to force the patient into spinal restriction.
- If child has been removed from the vehicle / car seat consider the use of pediatric restriction devices (or adult restriction with additional padding). If this causes increased agitation, movement and potential harm to the child consider placing the child in a car seat and pad to restrict movement.
- During transport every effort should be made to safely restrain the pediatric patient.
Following is a list of acceptable methods / tools to achieve spinal restriction. This list is arranged from the least invasive to the most invasive.

- Fowler’s, semi-fowlers or supine positioning on cot with correctly sized cervical collar.
- Supine position with vacuum splint from head to toe.
- For pediatric patients, uncompromised child car seat with appropriate padding.
- Supine position on scoop stretcher, secured with straps and appropriate padding including head blocks.
- KED (vest type extrication device)
- Supine position on long backboard, secured with straps and appropriate padding including head blocks

**Documentation of adherence to SMO**
- Mechanism of injury
- Neuro Assessment
- Spinal precaution completed
- Assessment findings before and after patient packaging

**Medical Control Contact Criteria**
- Contact Medical Control whenever a question exists as to the best treatment course for the patient

**PRECAUTIONS AND COMMENTS**
- Spinal precaution for at-risk patients is paramount. This is true whether or not a backboard is utilized. Minimal patient movement and the patient’s security to stretcher and/or backboard are necessary.
- Backboards should be used judiciously where the possible benefits outweigh the risks. Long backboards can cause discomfort and agitation in a patient, but the concerns and benefits of spinal restriction should take prevalence.
- In the event a patient is placed on a restriction device for extrication or before the arrival of the transporting unit a decision may be made by transporting unit whether the patient should be left on a restriction device for transport using guideline noted in this SMO.
Overview: Patients entrust the medical community to care for them to the highest level possible. To that end, this policy is to delineate proper transfer of responsibility of patient care.

INFORMATION NEEDED
__ Level of care patient is currently receiving
__ Level of care to which patient is being transferred

TRANSFER OF RESPONSIBILITY FOR PATIENT CARE

Transfer of patient care to another prehospital care provider (in a situation other than a disaster or triage situation):
__ When the care of a patient is going to be transferred to another prehospital care provider, the EMR crew shall remain with the patient until the second care provider arrives and accepts responsibility for the care of the patient.
__ Written or verbal acceptance of responsibility for the patient should be obtained.
__ The second provider shall not accept responsibility for the patient until the report is given. When care of patient is transferred to another prehospital provider, that provider must be of at least an equal, if not higher, degree of training (e.g., BLS crew must transfer to at least another BLS ambulance; care of the ALS patient may not be transferred to a BLS crew).

Documentation of adherence to SMO
__ Document to whom the patient is being transferred to include level of licensure.

Medical Control Contact Criteria
__ Contact Medical Control whenever a question exists as to the best treatment course to the patient.

PRECAUTIONS AND COMMENTS
• Abandonment is defined as terminating medical care without legal excuse or turning care over to personnel who do not have training and expertise appropriate for the medical needs of the patient.
# REGION I EMERGENCY MEDICAL SERVICES

Medical and Trauma Emergencies
For
Emergency Medical Responders

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Current Version: 2018.1
Issued: 08/18
EMS/Region1 SMO
Overview: Managing a patient’s airway may be necessitated due to upper or lower airway obstruction, inadequate ventilation, impairment of the respiratory muscles, ventilation-perfusion mismatching, diffusion abnormalities, or impairment of the nervous system. Dyspnea often is associated with hypoxia.

INFORMATION NEEDED
__ Scene survey
__ Chief complaint
__ History of foreign body airway obstruction, respiratory distress, etc. (see Primary Survey)
__ Medical History (see Secondary Survey)

OBJECTIVE FINDINGS
__ Mental status (AVPU)
__ Airway patency (head-tilt chin lift OR modified jaw thrust for unconscious patient or if C-spine trauma is a possibility)
__ Oxygenation and Circulatory status (pulse oximetry, vital signs)

TREATMENT
__ Assess airway patency utilizing adjuncts as indicated
__ Oxygen as indicated for patient condition. Maintain SpO2 levels in the 94% to 99% if possible.
  • Nasal cannula (2-6 L/min) for awake, oriented, stable patients without evidence of hypoperfusion
  • High flow via nonrebreather mask (10-15 L/min)
  • Assist ventilations with BVM and 100% oxygen if indicated.
__ Manage Foreign Body Airway Obstruction per American Heart Association standards
__ Assess airway patency utilizing adjuncts as indicated
  • OPA
  • NPA
  • System approved Supraglottic Airway (per manufacturers guidelines)
**TREATMENT (continued)**

__ Confirm advanced airways and document with the following:
- Auscultation
- Absence of gastric sounds
- Bi-lateral chest rise

**Documentation of adherence to SMO**
- Indications for airway management
- Methods utilized
- Confirmation details
- Patient condition reassessed

**Medical Control Contact Criteria**

- Contact Medical Control whenever a question exists as to the best treatment course for the patient

**PRECAUTIONS AND COMMENTS**
- Utilize BLS methods for maintaining airway patency and good ventilations and reassess patient’s oxygenation and ventilatory status BEFORE utilizing supraglottic airway methods, particularly in pediatric patients. Benefits of intubation not demonstrated well in pediatrics.
Overview: A routine medical assessment needs to be completed on all medical patients to identify and immediately correct life-threatening problems. This protocol is intended to provide the E.M.S. Provider with guidelines to treat a medical patient as effectively and soon as possible.

INFORMATION NEEDED
__Perform scene size-up and triage
__Identify and control hazards
__Move patient emergently if necessary
__Contact Medical Control with any questions or concerns

Perform the following measures as applicable:
1. **Body Substance Isolation (Universal Precautions)**
2. Stabilize spine if indicated and maintain manual control until relieved.
4. Evaluate airway, breathing and circulation.
5. If the patient is unconscious, pulseless and not breathing implement **Cardiopulmonary Arrest**
6. As necessary: open airway manually, suction, and use airway adjuncts as indicated. Airway adjuncts include oropharyngeal, nasopharyngeal and any system approved supraglottic airways.
7. If patient is having difficulty, position patient in a semi-sitting position (if no spinal precautions needed).
   ➢ Position the patient in the recovery position, or other comfortable position as indicated.
8. Administer O2 as indicated: If pulse oximeter is available assess O2 saturation
   ➢ N.R.B. mask at 100% O2 (12-15 L/ min)
   ➢ Nasal cannula (2-6 L/ min)
   ➢ if indicated, assist breathing with appropriate device and 100% O2
9. Patients with altered mental status: If blood glucose monitoring equipment is available check patient blood sugar levels.
10. Loosen tight clothing.
11. Protect the patient’s privacy as much as possible.
12. Look for Medic Alert Tags.
13. Reassure the patient and explain what you are doing.
14. Obtain patient’s medical history and the history of the emergency event as soon as possible.
15. Use the **S.A.M.P.L.E** process to organize history.
16. Give a complete and accurate report to the arriving EMS transporting unit.
Overview: Emergency Medical Responder shall utilize the following guidelines for medical emergency care situations.

Allergic Reactions: Mild or Moderate Reaction

Overview: Allergic reactions can vary in severity from a mild reaction consisting of hives and rash to a severe generalized allergic reaction termed anaphylaxis resulting in cardiovascular and respiratory collapse. Common causes of allergic reactions include: bee/wasp stings, penicillin or other drug allergies and seafood or nuts. Exposures can occur from ingestion, inhalation, injection or absorption through skin or mucous membranes. This SMO is intended to help the EMS responder assess and treat the spectrum of allergic reactions. Common assessment findings include exposure to common allergens (bee stings, drugs, nuts, seafood, medications), prior allergic reactions, wheezing, stridor, respiratory distress, itching, hives, rash, nausea, weakness, anxiety

1. Routine Medical Care
2. Remove etiologic agent if possible or relocate patient
3. Oxygen as indicated

Allergic Reactions: Severe Reaction / Anaphylaxis

1. Routine Medical Care
2. To be categorized as a severe allergic reaction / anaphylaxis patient will have one or more if the follow:
   __Altered mental status
   __Hypotension (SBP < 90 and evidence of hypoperfusion)
   __Bronchospasm (difficulty breathing / wheezing)
   __Swelling of the face and/or airway
3. Administer Epinephrine Autoinjector
   - **Epi JR. 0.15mg** for children weighing 33 pounds (15 kg) to 66 pounds (30kg)
   - **Epi 0.3mg** for patients greater than 66 pounds (30kg)
   - Consult Medical Control for children less than 33 pounds
**Altered Mental Status**

**Overview:** The term *altered mental status* describes a change from the “normal” mental state. The term *level of consciousness* indicates a patient’s state of awareness. Check surroundings for syringes, blood glucose monitoring supplies, insulin, etc. Be alert to changes in mental status and symptoms such as headache, seizures, confusion, trauma, etc. Obtain medical history: psychiatric and medical problems, medications, and allergies.

1. **Routine Medical Care**
2. Protect the patient’s airway. Watch for vomiting and have suction available.
3. Protect patient’s c-spine.
4. If equipment available, determine blood glucose level – normal range 60-120mg/dL
   - Blood glucose < 80 with signs and symptom of hypoglycemia:
   - **Oral Glucose 15G** if patient is alert with intact gag reflex
5. **Naloxone (Narcan) 2mg** intranasal, for suspected opiate overdose with respiratory depression consisting of respirations < 12 and or very shallow respirations and/or signs of shock

**Behavioral**

**Overview:** “Normal” behavior is generally considered to be adaptive behavior that is accepted by society. This idea is also defined by society when the behavior:
- Deviates from society’s norms and expectations
- Interferes with well-being and ability to function
- Is harmful to the individual or group

A behavior emergency can be defined as a change in mood or behavior that cannot be tolerated by the involved person or others and requires intervention.

1. Scene size-up. If scene unsafe, elicit police assistance before patient contact.
2. **Routine Medical Care** or **Routine Trauma Care**
3. Identify yourself clearly
4. Approach patient in a calm and professional manner. Talk to patient alone—request bystanders to wait in another area. Show concern for family members as well. Allow patient to verbalize his problem in his own words. Reassure patient that help is available.
5. Get patient’s permission to do your assessment before touching patient
6. NEVER leave patient alone.

**Bites, Stings and Envenomation**

**Overview:** An insect, animal or human bite or sting frequently is a combination of puncture, laceration, avulsion and crush injuries. Complications are common—all patients who have been bitten/ stung should seek physician evaluation. Try to find out the type of animal or insect, time of exposure and history of previous exposures, allergic reactions, and any known specific allergen

- **Routine Medical Care**
- **See Allergic Reaction Mild/Moderate** or **Allergic Reaction Severe** as needed
- If patient is hypotensive, treat for **Shock**
- Scrape off any remaining stinger or tentacles
- Clean the affected area with saline, cover with sterile dressing
- Do not perform any of the following:
  - Tourniquets or constricting bands above or below the site
  - Incision and / or suction
  - Application of cold for snake or spider bites
Cardiac Arrest Algorithm
Per AHA Guidelines 2015

**BLS Healthcare Provider**
**Adult Cardiac Arrest Algorithm—2015 Update**

1. Verify scene safety.

2. Victim is unresponsive. Shout for nearby help. Activate emergency response system via mobile device (if appropriate). Get AED and emergency equipment (or send someone to do so).

3a. Monitor until emergency responders arrive.

3b. Look for no breathing or only gasping and check pulse (simultaneously). Is pulse definitely (lit) within 10 seconds?

   - **Normal breathing, has pulse**
   - **No normal breathing, has pulse**

3b1. Provide rescue breathing: 1 breath every 5-6 seconds, or about 10-12 breaths/min.
   - Activate emergency response system if not already done after 2 minutes.
   - Continue rescue breathing; check pulse every 2 minutes. If no pulse, begin CPR (go to “CPR” box).
   - If possible opioid overdose, administer naloxone if available per protocol.

By this time in all scenarios, emergency response system or backup is activated, and AED and emergency equipment are retrieved or someone is retrieving them.

4. CPR
   - Begin cycles of 30 compressions and 2 breaths. Use AED as soon as it is available.

5. AED arrives.

6. Check rhythm
   - **Yes, shockable**
   - **No, nonshockable**

7. Give 1 shock. Resume CPR immediately for about 2 minutes (until promoted by AED to allow rhythm check). Continue until ALS providers take over or victim starts to move.

8. Resume CPR immediately for about 2 minutes until prompted by AED to allow rhythm check. Continue until ALS providers take over or victim starts to move.

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**Figure 4.** BLS Healthcare Provider Adult Cardiac Arrest Algorithm.
Chest Pain of Suspected Cardiac Origin

Overview: Patients with acute non-traumatic chest pain are among the most challenging patients cared for in EMS. They may appear seriously ill or completely well and yet remain at significant risk of sudden death or acute myocardial infarction. Sorting out which patient is experiencing chest pain of cardiac origin represents a tremendous challenge. This SMO should be utilized whenever cardiac chest pain is suspected. Whenever there is question as to whether or not you should utilize this SMO, contact medical control for further guidance.

1. Routine Medical Care
2. Administer O₂ as indicated
3. Low Dose- ASA 81 mg X FOUR tablets chew and swallow
4. If at any time patient becomes unconscious and pulseless, begin Cardiac Arrest SMO

Environmental Emergencies

(Hyperthermia)

Overview: Heat illness results from one of two basic causes:
- Normal mechanisms that regulate the body’s thermostat are overwhelmed by environmental conditions such as heat stress or increased exercise in moderate to extreme environmental conditions.
- Failure of the body's regulatory mechanisms especially in older adults, young children, babies and ill or debilitated patients.

1. Routine Medical Care
2. Remove the patient from the hot environment.
3. Begin cooling measures with cool water and fanning.

(Hypothermia)

Overview: Core body temperature less than 95 °F [35° C] can result from a decrease in heat production, an increase in heat loss, or a combination of the two factors. Most common cause is exposure to extreme environmental conditions. Classified as Mild (CBT of 96.8° F to a CBT of 93.2° F [36-34° C]), Moderate (CBT of 86° F [30°C]), and Severe (CBT of < 86.0° F [<30°C]).

1. Routine Medical Care
2. Handle the patient very gently
3. Remove the patient from the cold environment
4. Cut away any wet clothing
5. Conserve body heat with blankets
6. Do NOT add external warming measures
7. Assess pulse for 30-45 seconds
8. If the use of the AED is warranted do not shock the patient more than 3 times

Obstructed Airway

1. Routine Medical Care
2. Remove the airway obstruction if able to visualize.
3. Suction the airway as needed.
4. If the airway is still obstructed use American Heart or Red Cross obstructed airway procedures.
Poisoning and Overdose

Overview: Poisoning and Overdose can take several forms and patients may range from mildly ill to very critical. This SMO is intended to guide EMS Responders in providing care for these patients. Variances in condition occur due to amount of substance involved, time of incident, type of substance involved, and whether it is an overdose or actual poison.

1. **Routine Medical Care**
2. Attempt to identify the substances and method of ingestion.
3. Collect bottles, pills, syringes, M.S.D.S. papers or other items that may help identify the substance.
4. For patient suspected of overdosing on narcotics or unknown substances
   - Ensure ABC’s, oxygenation, ventilation
   - **Naloxone (Narcan) 2mg** intranasal for altered mental status with severe respiratory depression or arrest; signs and symptoms of shock; or hypoventilation

Respiratory Distress with Acute Bronchospasm (Wheezeing)

Overview: Respiratory distress with acute bronchospasm can be seen in patients as a result of many causes including asthma, COPD, bronchitis, and allergic reaction. Treatment must be concentrated on airway patency and ventilation.

1. **Routine Medical Care**
2. Administer O₂ as indicated
3. Assist with patients prescribed medication / inhalers

Seizure

Overview: A seizure is a temporary, abnormal electrical activity of the brain that results in a loss of consciousness, loss of organized muscle tone, and presence of convulsions. The patient will usually regain consciousness within 1 to 3 minutes followed by a period of confusion and fatigue (post-ictal state).

Multiple seizures in a brief time span or seizures lasting more than 5 minutes may constitute status epilepticus and require EMS intervention to stop the seizure. Causes of seizures include: epilepsy, stroke, head trauma, hypoglycemia, hypoxia, infection, a rapid change in core body temperature (e.g. febrile seizures), eclampsia, alcohol withdrawal, and overdose.

1. **Routine Medical Care**
2. Protect the patient from injury during the seizure. Take special care to protect the patient’s head and airway (watch for vomiting and have suction available).
3. Administer O₂.
Overview: Stroke, also known as cerebrovascular accident (CVA), is a sudden interruption in blood flow to the brain that results in neurological deficit. This interruption can be caused by ischemia (blockage) or hemorrhage (bleeding). It is the third leading cause of death in the United States and frequently leaves its survivors severely debilitated.

1. **Routine Medical Care**
2. **Perform FAST Exam**
3. Protect airway, suction as necessary. Seizure and vomiting
4. Administer O₂ as indicated
5. Maintain head and neck in neutral alignment. Do NOT flex the neck.
6. If BP > 90 mmHg, elevate head of bed to 30°
7. If altered sensorium, seizure, or focal neurological deficit, obtain and record blood sugar level.
   - If blood sugar < 80 administer **Oral Glucose 15G** if patient is alert with intact gag reflex
8. Monitor and record neurological status and any changes.
9. Protect paralyzed limbs from injury.
10. Whenever possible, the EMR should establish the last known well time.

**FAST EXAM:**

**FACIAL DROOP:** Ask the person to smile and/or show their teeth

___ **Normal:** Both sides of the face are equal, there is no droop noted to one side

___ **ABNORMAL:** One side the mouth or face is drooping, drooling or does not look the same

**ARM DRIFT:** Ask the person to hold both arms out in front of them for the count of 10

___ **Normal:** Both arms move equally

___ **ABNORMAL:** One arm drifts down or does not move at all, the other is normal

**SPEECH:** Have the person say a sentence (example: You can’t teach an old dog new tricks.)

___ **Normal:** Sentence sounds normal, no slurring words and person uses correct words

___ **ABNORMAL:** Patient unable to speak (mute), words are slurred, incorrect words used

**TIME:** If the time of Last Known Well is **GREATER** than 8 **hours**, then a stroke alert is **NOT** paged because the patient is outside of acute window.

If any of the above questions is scored abnormal, the chances are high that a stroke may be occurring.

Original SMO Date: 07/04
Reviewed:
Last Revision: 02/06; 06/17

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REGION I EMERGENCY MEDICAL SERVICES  
STANDING MEDICAL ORDERS  
EMR  

SMO: Routine Trauma Care

Overview: A trauma assessment needs to be completed on all trauma patients to identify and immediately correct life-threatening problems in accordance with PHTLS and ITLS guidelines. Scene times should be kept to a minimum and the patient should be promptly transported to the trauma center. Emergency Medical Responders shall utilize the following guidelines for trauma emergency care situations. Contact Medical Control whenever a question exists as to the best treatment course for the patient.

Perform the following measures as necessary:

1. Scene Assessment (Scene Size-up)
   - Assess scene safety and situation
   - Apply Personal Protection Equipment
   - Identify mechanism of injury and any special extrication needs
   - Call for additional resources
   - Minimal disturbance of crime scene should be considered

2. Assessment
   - Assess airway patency utilizing adjuncts as indicated (OPA, NPA and any System approved supraglottic airway). Secure the airway with Spinal Restrictions.
   - Spinal restriction as indicated
   - Assess breathing, apply oxygen as indicated:
     - Oxygen via nasal cannula (2-6 L/min) for awake, oriented, stable patients without evidence of hypoperfusion or mental status changes.
     - High-flow via non-rebreather mask (10-15 L/min) if indicated. Assist ventilations with BVM and 100% oxygen if indicated
     - Clear and maintain airway with Spinal Restriction as indicated
     - Airway management as indicated
   - Chest Trauma:
     - For open chest wounds utilize occlusive dressings
   - Immediately control external bleeding. Refer to Bleeding Guidelines
   - Follow Shock / Internal Bleeding guidelines if SBP < 90 mm Hg for patient management
   - Assess disability: AVPU, pupils and Glasgow Coma Scale, and PMS.
   - If altered mental status, check blood sugar.
Assessment (continued):

- Remove clothing to expose injuries. Cover patient with a blanket to avoid hypothermia.
- Obtain SAMPLE history.
- Reassess airway patency and maintain good ventilation.
- Reassess ABC’s including patient’s color.
- Perform Secondary Assessment
- For head trauma elevate head approximately 15-30 degrees.
- Splint fractures and bandage wounds, control bleeding. Re-check PMS.
- Reassess critical patients frequently
Overview: The EMR shall utilize the following guidelines for trauma emergency care situations.

Abuse: Geriatric/Spouse
1. Scene safety, notify law enforcement if necessary
2. Routine Trauma Care or Routine Medical Care as appropriate
3. Treat injuries as appropriate
4. Should patient refuse care, resource assistance information should be provided
   - Domestic Violence Hotline (1-800-799-7233)
   - Elder Abuse (persons 60 years of age or older) 1-800-252-8966
   - Nursing Home Abuse – 1-800-252-4343
   - Adult Protective Services – 1-866-800-1409
5. Attempt to preserve evidence if needed

Amputations
1. Routine Trauma Care
2. Control bleeding
3. Place body part in plastic bag. Place plastic bag containing body part in a larger bag or container and place in container with ice/water.
4. Use caution to not freeze body part.

Bleeding
1. Routine Trauma Care
2. For external bleeding use direct pressure, if direct pressure is not effective a tourniquet should be considered.
3. Treat for shock.

Bones and Muscles
1. Routine Trauma Care
2. Control external bleeding with direct pressure. If direct pressure is unsuccessful, consider a tourniquet to control bleeding
3. Manual stabilization - support the joint above and below the injury.
4. Cover open wounds with sterile dressing.
5. Pad to prevent pressure and discomfort.
6. Use caution to not replace protruding bones.
7. Reassess pulses as needed
8. Assess treat for shock
Burns
1. Routine Trauma Care
2. The first priority is to stop the burning process by removing the patient from the source of the burn or eliminate the source
   a. Thermal burns
      1) Continuously monitor the airway. Examine the mouth and nose for signs of respiratory burns.
      2) Remove clothing and jewelry from the affected site.
      3) Cover the burn with dry sterile dressing.
      4) Protect patient from hypothermia
      5) Treat for shock
   b. Chemical burns
      1) Body Substance Isolation
      2) Remove clothing and jewelry
      3) For dry chemicals brush off all visible chemical prior to beginning the water flush.
      4) The site should be flushed with copious amounts of water for 20 minutes.
   c. Electrical burns
      1) Scene safety
      2) Treat entrance and exit wounds as thermal burns.
      3) Spinal restriction is indicated with serious electrical burns.
      4) If the patient is pulseless refer to Cardiac Arrest SMO.

Chest Injuries
1. Routine Trauma Care
2. If an open wound is present (sucking chest wound), cover the wound with a 3-sided, occlusive dressing. If the patient develops increased difficulty breathing or cyanosis, temporarily release the dressing.

Child Abuse and Neglect
1. Routine Trauma Care
2. If you suspect abuse or neglect do not confront the parents. EMS’s role is one of patient treatment and transporting the child.
3. Manage the scene in order to preserve evidence.
4. Insure that an EMS team member has notified medical control or other appropriate agency. EMS responders are mandatory reporters.
   a. Remain objective during reporting procedures.
   b. For DCFS call 1-800-25ABUSE (1-800-252-2873)
Drowning and Near Drowning
1. **Routine Trauma Care**
2. Keep the victim warm. If hypothermia is suspected, handle patient very gently. Remove wet clothing and apply warm blanket.
   
   **NOTE**: Because of possible serious delayed reactions, all near drowning patients should be evaluated in the Emergency Department even if they appear to be uninjured at the scene.

Eviscerations
1. **Routine Trauma Care**
2. Do not attempt to replace protruding organs.
3. Cover with thick, sterile, moist dressings.

Impaled Object
1. **Routine Trauma Care**
2. Do not remove object unless interferes with airway control.
4. Control bleeding.

Injuries to the Brain and Skull
1. **Routine Trauma Care**
2. Maintain ABC’s.
3. Spinal Restriction
4. Monitor mental status
5. Control bleeding.

Shock/ Internal Bleeding
1. **Routine Trauma Care**
2. Maintain the patient’s body position as flat.
3. Keep patient warm.

SIDS (Sudden Infant Death Syndrome)
1. SIDS cannot be predicted or prevented.
2. Start infant CPR
3. Remain compassionate to all involved. Do not make any statements that they could construe as untruthful or appear to be assigning blame.
Overview: This protocol is to be used when EMS providers are faced with a situation where needs exceed resources. This can occur when number or intensity of care needed by victims exceed the care that can be provided with the present resources. Needs may exceed resources with just a few patients or you may encounter situations with ample resources where multiple patient’s needs can be met easily. This policy should be instituted any time needs exceed resources on scene. In order to maintain proficiency in triaging patients, the region I EMS Medical Directors will require patient triage to occur any time the number of victims on scene exceed 5 patients. (Mandatory for > 5 victims but may be instituted for less)

Several steps should occur when encountering a situation where needs exceed resources. First, early recruitment of additional help must be attempted. Second, care must be prioritized to provide the greatest good to the most patients. As additional resources become available, i.e. additional caregivers or equipment on site, the treatment priorities should be adjusted to expand care to those who were initially triaged to a delayed or expectant category.

Early and concise communication from the field to medical control is vitally important. Once you have an initial assessment of approximate numbers of victims, severity and types of injuries/illnesses i.e. triage category (number of reds, yellows, greens and blacks), contact medical control with this information. Be sure to specify which information is “known” versus “estimates or guesstimates.” As more precise information is available frequent updates of medical control need to occur.

Region I has adopted the START Triage method as described below. In a disaster situation, one may be working with other providers that utilize different triage systems. It may be helpful to be familiar with some of the more common systems. The United States Military uses a standardized triage category system that is taught in the Basic Disaster Life Support Course. The BDLS Triage System assists in the triage of large numbers of casualties. It is designed to sort large numbers of casualties that are in close proximity to each other. It is presented at the end of this protocol.
START TRIAGE
_Triage is used to sort patients and resources when the demand for emergency medical services exceeds the immediate capability to deliver that service. The goal of triage is to deliver the most care to the greatest number of patients, and to deliver care to those patients who will benefit most. _Triage officers are designated according to the district or county Mass Casualty plan. Illinois EMS Region 1 Trauma Plan utilizes the S.T.A.R.T. triage plan. Casualties are sorted according to the START triage method and tagged:

- **RED:** Immediate, life threatening
- **YELLOW:** Delayed treatment. These patients are the next priority after patients in the RED category have been treated and/or transported.
- **GREEN:** Designates the “walking wounded” or patients with minor injuries.
- **BLACK:** Dead, no resuscitation indicated. In mass casualty situations, resuscitation of fatally injured patients may take care away from those who would have a much greater chance of survival. In these situations, no resuscitations should be initiated. Of course, if there is sufficient personnel and equipment, normal protocols for caring for these patients should apply.

OBJECTIVE FINDINGS
_S.T.A.R.T. TRIAGE: (Simple Triage and Rapid Transport)_
_In START triage the patient is assessed quickly for the following signs. Once a patient has a value, which would place him in the RED category, tag him and move on. For the initial triage all patients who can walk are considered GREEN._

GUIDELINES (SEE FLOWCHART)
__Step 1 - Clear the scene of any walking wounded
__Step 2 - Assess ventilation in the remaining patients
   - No respiratory effort after opening patient’s airway- BLACK
   - Respirations above 30 - RED
   - Respirations below 30 - continued assessment
__Step 3 - Assess perfusion
   - No radial pulse - RED
   - Radial pulse present - continued assessment
__Step 4 - Assess neurological status
   - Unconscious or altered level of consciousness - RED
__Once the BLACKs, GREENs, and REDs have been designated by the above physical findings - all remaining patients are designated as YELLOW (delayed).
__Once the patients have been moved into the various treatment areas immediate re-triage should be accomplished. All BLACK category patients should be confirmed as resources are available._
**Documentation of adherence to SMO**

- Assessment, reassessment and vital signs documented (identified color system
- Treatment
- Patient destination
- Type of situation (chemical, trauma, etc)
- Decontamination needed.

**PRECAUTIONS AND COMMENTS**

- Keep ALL patient communication concise to keep radio time to a minimum
- Reassess and re-triage patients as indicated
- Trauma patients pose a significant risk for exposing pre-hospital personnel at the scene to blood and body fluids. Barrier precautions should be in place before arrival at the scene and BSI should be observed at all times
- Scene Safety is paramount.
- Minimal disturbance of crime scene should be considered.
REGION I
EMERGENCY MEDICAL SERVICES

Obstetrical Emergencies
For
Emergency Medical Responders

Return to EMR Table of Contents
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
EMR

SMO: Obstetric Emergency: Childbirth/Normal/Abnormal Deliveries/Pre-Partum Hemorrhage/Post-Partum Hemorrhage

Overview: Delivering an infant usually progresses independently of prehospital providers. The critical question is whether delivery is imminent, indicated by crowning of the head or bulging of the perineum or rectum. The focus of care is to control delivery and prevent injury from expulsive forces that cause tearing of maternal perineal and pelvic tissues, injury of the infant’s head, or inadvertently dropping the infant. However, make no attempt to stop an imminent delivery.

INFORMATION NEEDED
__ History of prenatal care
__ Estimated due date
__ Known high risk pregnancy
__ Anticipated problems (multiple fetuses, premature delivery, placenta previa, abruption placenta, lack of prenatal care, use of narcotics or stimulants, etc.)
__ Gravida/para
__ Onset of regular contractions
__ Rupture of membranes, fluid color, time of rupture
__ Frequency and duration of contractions
__ Urge to bear down or have a bowel movement

OBJECTIVE FINDINGS
__ Inspect the perineal area for:
  Fluid or bleeding
  Crowning (check during contractions)
  Abnormal presentation (breech, extremity, cord)

TREATMENT
___ Routine Medical Care
___ If birth is not imminent, place patient in left lateral position

Original SMO Date: 11/07
Reviewed: 07/13
Last Revision: 05/12; 12/12; 06/17
**Normal Delivery**
- Assist with delivery
- Sterile technique
- Control and guide delivery of baby’s head. After the head delivers, use bulb syringe to suction the infant’s mouth first, then nares. This is critical if meconium is present, because aspiration causes significant lung injury.
- Check for nuchal cord – slide over head if possible. If tight, clamp and cut, unwind, and deliver baby quickly
- Proceed to control and guide delivery of the body
- Suction mouth first, then nares
- Clamp and cut cord – clamps should be placed at approximately 6 inches and 9 inches from baby, then cut between clamps
- Dry and wrap infant for warmth (especially the head); if possible, place with mother for shared body heat
- Note time of delivery
- Assess infant’s status using APGAR score at 1 and 5 minutes post-delivery (see Precautions and Comments)
- Evaluate mother post-delivery for evidence of shock due to excessive

**Pre-partum Hemorrhage – near term**
- Assume placenta previa (painless bleeding) or abruption placenta (sharp pain)
- Check for crowning but DO NOT attempt vaginal exam
- Treat for shock
- Do not pack the vagina with any material to stop bleeding. An externally placed dressing or pad should be used to absorb flow

**Post-partum Hemorrhage**
- Fundal massage
- Immediate transport to nearest hospital
- Do not pack the vagina with any material to stop bleeding. An externally placed dressing or pad should be used to absorb flow

**Breech Delivery**
- Assist with delivery, if able
- Provide airway with gloved hand for baby if needed
- If unable to deliver, left lateral Trendelenburg position and rapid transport

**Prolapsed Cord**
- Left lateral Trendelenburg position, elevate hips, if possible or knee-chest position
- If cord is present, manually displace presenting part off cord and maintain displacement
- Rapid transport
PRECAUTIONS AND COMMENTS

- Spontaneous abortion of fetus (>20 weeks) gestational age should be considered a neonatal resuscitation. See Neonatal Resuscitation SMO.
- Consider ruptured ectopic pregnancy in a woman of childbearing age with signs of shock.

BLOOD LOSS ESTIMATION GUIDE

250 ml = 1 cup or clot mass size of an orange
355 ml = 12 oz soda can
500 ml = 2 cups or clot mass size of a softball

Floor spill
500 ml = 20 inches diameter
1000 ml = 30 inches diameter
1500 ml = 40 inches diameter

APGAR SCORE:

<table>
<thead>
<tr>
<th>Appearance (skin color)</th>
<th>0=Body and extremities blue, pale</th>
<th>1=Body pink, extremities blue</th>
<th>2=Completely pink</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulse</td>
<td>0=Absent</td>
<td>1=Less than 100/min</td>
<td>2=100/min and above</td>
</tr>
<tr>
<td>Grimace (Irritability)</td>
<td>0=No response</td>
<td>1=Grimace</td>
<td>2=Cough, sneeze, cry</td>
</tr>
<tr>
<td>Activity (Muscle tone)</td>
<td>0=Limp</td>
<td>1=Some flexion of the extremities</td>
<td>2=Active motion</td>
</tr>
<tr>
<td>Respirations</td>
<td>0=Absent</td>
<td>1=Slow and irregular</td>
<td>2=Strong cry</td>
</tr>
</tbody>
</table>
# Pediatric Emergencies
For
Emergency Medical Responders

<table>
<thead>
<tr>
<th>SMO</th>
<th>Category</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pediatric Airway Management</td>
<td>Pediatric</td>
<td>New</td>
</tr>
<tr>
<td>Pediatric Medical Emergencies</td>
<td>Pediatric</td>
<td>New</td>
</tr>
<tr>
<td>Pediatric Neonatal Resuscitation</td>
<td>Pediatric</td>
<td></td>
</tr>
<tr>
<td>Pediatric Trauma Emergencies</td>
<td>Pediatric</td>
<td>New</td>
</tr>
<tr>
<td>Routine Pediatric Care</td>
<td>Pediatric</td>
<td>New</td>
</tr>
</tbody>
</table>
Overview: Pediatric patients account for about 10% or less of EMS emergency responses. Caring for these patients presents unique challenges related to size, physical and intellectual maturation, and diseases specific to neonates, infants, and children. It is important to maintain and improve knowledge and clinical skills for these patients through continuing education programs and clinical applications specific to this age group.

The importance of assessing and maintaining AIRWAY, BREATHING, & CIRCULATION (A-B-C) in the pediatric patient cannot be overemphasized.

INFORMATION NEEDED
- Patient age and weight
- Scene assessment
- Primary assessment
- Nature of illness/mechanism of injury
- Focused history/physical Assessment
- Ongoing assessment

General Approach to the Pediatric Patient
Assessments and interventions must be tailored to each child in terms of age, size, and development. Providers must be familiar with assessment algorithms for medical emergencies, assessment mnemonics such as DCAP-BTLS for trauma emergencies.

Consider the following when performing a pediatric patient assessment:
- Smile if appropriate to the situation
- Keep voice at an even quiet tone
- Speak slowly using simple, age appropriate terms
- Use toys or penlight as distracters
- Keep small children with their caregiver(s), allowing the caregiver to hold the child and assist with the assessment if necessary. Child must be properly restrained during transport.
- Kneel down to the level of the child if possible
General Approach to Pediatric Patient (continued)

- Make as many of the following observations as possible prior to touching the child as physical contact may unset the child
  - Level of consciousness
  - General appearance, age appropriate behavior, malnourished or well-nourished appearance, purposeful eye movement, general mood, playing, using a pacifier or bottle
  - Obvious respiratory distress or extreme pain
  - Position of the child: upright, tripod, recumbent, semi-fowlers
  - Muscle tone: good vs. flaccid
  - Movement: spontaneous, purposeful, symmetrical
  - Skin color
  - Life-threatening injuries

- It may be necessary to interview an adolescent without a caregiver present to obtain accurate information about drug use, alcohol use, LMP, sexual activity, or abuse

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**AIRWAY**

- Self-maintained
- Maintainable with positioning or assistance: held tilt/chin lift, jaw thrust, tripod, high fowlers
- Maintainable with adjuncts
- Maintainable with suction
- Most pediatric patients can be successfully ventilated using BVM
- BVM, supraglottic are preferred airways for pediatric patients

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**BREATHING**

- Rate - compare to normal for age. Rate greater than 60/min is critical in all ages
- Rhythm: regular; irregular; patterned, Cheyne-stokes, agonal, biots, Kussmaul
- Quality: work of breath; use of accessory muscles, head bobbing, see-saw breathing, retractions, nasal flaring
- Auscultate respiratory sounds for absence, presence, snoring, stridor, crackles, gurgling, wheezing, grunting
- Pulse oximetry
- Administer oxygen of 02 sat <94 and/or other signs of respiratory compromise
  - **Blow by**
  - Nasal cannula
  - Non-rebreather
  - BVM
### CIRCULATION
- Heart rate – compare to normal for age.
- Central/truncal pulses (apical, femoral, carotid) – strong, weak, absent
- Peripheral pulses – present/absent, strong, weak, thready
- Skin/mucous membrane color
- Skin temperature – hot, warm, cool
- Blood pressure – use appropriate sized cuff
- Use the Pediatric Trauma Score for B/P determination if appropriate cuff is unavailable or capillary refill time (children under age 3)
- Hydration status – infant anterior fontanel status, mucous membranes, skin turgor, tears, urine output history

### DISABILITY
- Use AVPU to assess responsiveness.
- Assess pupil response
- Assess distal neurologic status – numbness or tingling

### EXPOSURE
- Assess for hypo/hyperthermia
- Check for significant bleeding
- Check for petechiae or purpura (purple discolorations that do not blanch with skin pressure)
- Be aware of signs of child abuse and, if present, report to authorities

**Documentation of adherence to SMO**
- **Primary Assessment**
  - Patient weight
PRECAUTIONS AND COMMENTS
Considerations for Children with Special Healthcare Needs (CSHN)

- Refer to child’s emergency care plan formulated by their medical providers, if available.
- Understanding the child’s baseline will assist in determining the significance of altered physical findings. Parents/caregivers are the best source of information on: medications, baseline vitals, functional/normal mentation, likely medical complications, equipment operation and troubleshooting, emergency procedures.
- It may be helpful to use the DOPE mnemonic to assess problems with ventilation equipment or long-term catheters for feeding tubes. DOPE stands for:
  - D – Dislodged tube
  - O – Obstructed tube
  - P – Pneumothorax
  - E – Equipment failure
- Assess in a systematic and thorough manner, regardless of underlying conditions. Use parents/caregivers as medical resources.
- Be prepared for differences in airway anatomy, physical development, cognitive development, surgical alterations, or mechanical adjuncts. Common home therapies include: respiratory support, nutritional therapy, intravenous therapy, urinary catheterization, dialysis, biotelemetry, ostomy care, orthotic devices, communication or mobility devices, or hospice care.
- Communicate with the child in an age appropriate manner. Maintain communication with and remain sensitive to the parents/caregivers and child.
- The most common emergency encountered with the pediatric patient is respiratory related and so familiarity with respiratory emergency interventions/adjuncts/treatment is appropriate.
**Pediatric Glasgow Coma Scale**

**Eye Opening:**
4-Spontaneous
3-To Verbal Stimuli
2-To Painful Stimuli
1-None

**Verbal Response:**
5-Oriented/Infant coos or babbles
4-Confused/Infant has irritable cry
3-Inappropriate words/Infant cries in pain
2-Incomprehensible sounds/Infant moans in pain
1-No Response

**Motor Response:**
6-Obeys/Infant moves spontaneously or purposefully
5-Localizes pain/Infant withdraws to touch
4-Withdraws to pain
3-Flexion (decorticate posturing)
2-Extension (decerebrate posturing)
1-No response

**NORMAL VITAL SIGNS**

**Respiratory Rates**

<table>
<thead>
<tr>
<th>Age</th>
<th>Breaths/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant (&lt; 1 year)</td>
<td>30 – 60</td>
</tr>
<tr>
<td>Toddler (1-3 years)</td>
<td>24 – 40</td>
</tr>
<tr>
<td>Preschool (4-5 years)</td>
<td>22 – 34</td>
</tr>
<tr>
<td>School age (6-12 years)</td>
<td>18 – 30</td>
</tr>
<tr>
<td>Adolescent (13-18 years)</td>
<td>12 – 16</td>
</tr>
</tbody>
</table>

**Heart rates**

<table>
<thead>
<tr>
<th>Age</th>
<th>Awake Pulse/min</th>
<th>Mean</th>
<th>Sleeping Pulse/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newborn-3 months</td>
<td>85-205</td>
<td>140</td>
<td>80-160</td>
</tr>
<tr>
<td>3 months-2 years</td>
<td>100-190</td>
<td>130</td>
<td>75-160</td>
</tr>
<tr>
<td>2-10 years</td>
<td>60-140</td>
<td>80</td>
<td>60-90</td>
</tr>
<tr>
<td>&gt; 10 years</td>
<td>60-100</td>
<td>75</td>
<td>50-90</td>
</tr>
</tbody>
</table>

**Blood pressure**

<table>
<thead>
<tr>
<th>Age</th>
<th>Systolic</th>
<th>Diastolic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>1 day</td>
<td>60-76</td>
<td>60-74</td>
</tr>
<tr>
<td>4 days</td>
<td>67-83</td>
<td>68-84</td>
</tr>
<tr>
<td>1 month</td>
<td>73-91</td>
<td>74-94</td>
</tr>
<tr>
<td>3 months</td>
<td>78-100</td>
<td>81-103</td>
</tr>
<tr>
<td>6 months</td>
<td>82-102</td>
<td>87-105</td>
</tr>
<tr>
<td>1 year</td>
<td>68-104</td>
<td>67-103</td>
</tr>
<tr>
<td>2 years</td>
<td>71-105</td>
<td>70-106</td>
</tr>
<tr>
<td>7 years</td>
<td>79-113</td>
<td>79-115</td>
</tr>
<tr>
<td>Adolescent (15 years)</td>
<td>93-127</td>
<td>95-131</td>
</tr>
</tbody>
</table>

Original SMO Date: 07/04
Reviewed:
Last Revision: 02/06; 06/17
### DEGREE OF DEHYDRATION ASSESSMENT

<table>
<thead>
<tr>
<th>Clinical Parameters</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Body weight loss</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infant</td>
<td>5% (50 ml/kg)</td>
<td>10% (100 ml/kg)</td>
<td>15% (150 ml/kg)</td>
</tr>
<tr>
<td>Child</td>
<td>3% (30 ml/kg)</td>
<td>6% (60 ml/kg)</td>
<td>9% (90 ml/kg)</td>
</tr>
<tr>
<td><strong>Fontanelle</strong></td>
<td>Flat or depressed</td>
<td>Depressed</td>
<td>Significant depression</td>
</tr>
<tr>
<td><strong>Mucous Membranes</strong></td>
<td>Dry</td>
<td>Very dry</td>
<td>Parched</td>
</tr>
<tr>
<td><strong>Skin Perfusion</strong></td>
<td>Warm / normal color</td>
<td>Cool extremities / pale</td>
<td>Cold extremities</td>
</tr>
<tr>
<td><strong>Heart Rate</strong></td>
<td>Mild tachycardia</td>
<td>Moderate tachycardia</td>
<td>Extreme tachycardia</td>
</tr>
<tr>
<td><strong>Peripheral Pulse</strong></td>
<td>Normal</td>
<td>Diminished</td>
<td>Absent</td>
</tr>
<tr>
<td><strong>Blood Pressure</strong></td>
<td>Normal</td>
<td>Normal</td>
<td>&lt; 70 + 2x age in years</td>
</tr>
<tr>
<td><strong>Sensorium</strong></td>
<td>Normal-irritable</td>
<td>Irritable-lethargic</td>
<td>Unresponsive</td>
</tr>
</tbody>
</table>
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
EMR

SMO: Pediatric Airway Management

Overview: Respiratory arrest is the common reason for codes. Bradycardia is often the result of hypoxia. This makes optimizing a pediatric patient’s oxygenation and ventilation of primary importance. Fortunately, most pediatric patients are able to be successfully BVM ventilated. Utilization of pediatric supraglottic airways are preferred airway adjuncts.

INFORMATION NEEDED
__ Scene survey
__ Chief complaint
__ History of foreign body airway obstruction, respiratory distress, etc. (see Primary Patient Assessment SMO)
__ Medical History (see Secondary Patient Assessment SMO)

OBJECTIVE FINDINGS
__ Mental status (AVPU)
__ Airway patency (head-tilt chin lift OR modified jaw thrust for unconscious patient or if C-spine trauma is a possibility)
__ Oxygenation and Circulatory status (pulse oximetry, vital signs)

TREATMENT
__ Routine Pediatric Care
__ Manage Foreign Body Airway Obstruction per American Heart Association standards
__ Assess airway patency utilizing adjuncts as indicated
  • OPA
  • NPA
  • Per EMS System approval supraglottic airway per manufacturer’s instructions
__ Confirm advanced airways and document:
  • Auscultation
  • Absence of gastric sounds
  • Chest rise
Documentation of adherence to SMO

- Indications for airway management
- Methods utilized
- Confirmation for advanced airway
- Patient condition reassessed

Medical Control Contact Criteria

- Contact Medical Control whenever a question exists as to the best treatment course for the patient

PRECAUTIONS AND COMMENTS

- Utilize basic methods for maintaining airway patency and good ventilations and reassess patient’s oxygenation and ventilatory status BEFORE utilizing advanced airway methods.
Overview: Emergency Medical Responder shall utilize the following guidelines for medical emergency care situations.

**Allergic Reactions: Mild or Moderate Reaction**

**Overview:** Allergic reactions can vary in severity from a mild reaction consisting of hives and rash to a severe generalized allergic reaction termed anaphylaxis resulting in cardiovascular and respiratory collapse. Common causes of allergic reactions include: bee/wasp stings, penicillin or other drug allergies and seafood or nuts. Exposures can occur from ingestion, inhalation, injection or absorption through skin or mucous membranes. This SMO is intended to help the EMS responder assess and treat the spectrum of allergic reactions. Common assessment findings include exposure to common allergens (bee stings, drugs, nuts, seafood, medications), prior allergic reactions, wheezing, stridor, respiratory distress, itching, hives, rash, nausea, weakness, anxiety

1. **Routine Pediatric Care**
2. Remove etiologic agent if possible or relocate patient
3. Oxygen as needed

**Allergic Reactions: Severe Reaction / Anaphylaxis**

1. **Routine Pediatric Care**
2. To be categorized as a severe allergic reaction / anaphylaxis patient will have one or more if the following:
   - Altered mental status
   - Hypotension (SBP < 90 and evidence of hypoperfusion)
   - Bronchospasm (difficulty breathing / wheezing)
   - Swelling of the face and/or airway
3. Administer **Epinephrine Autoinjector**
   - **Epi JR. 0.15mg** for children weighing 33 pounds (15 kg) to 66 pounds (30kg)
   - **Epi 0.3mg** for patients greater than 66 pounds (30kg)
   - Consult Medical Control for children less than 33 pounds or if there is a question regarding medication administration
Altered Mental Status

Overview: The term *altered mental status* describes a change from the “normal” mental state. The term *level of consciousness* indicates a patient’s state of awareness. Check surroundings for syringes, blood glucose monitoring supplies, insulin, etc. Be alert to changes in mental status and symptoms such as headache, seizures, confusion, trauma, etc. Obtain medical history: psychiatric and medical problems, medications, and allergies.

Performing a neurologic examination on an infant or child is more difficult than examining an adult. Pediatric patients often cannot or will not cooperate with the examiner. Parents and guardians can confirm whether the infant or child’s reaction to verbal or tactile stimuli is baseline or changed.

1. **Routine Pediatric Care**
2. Protect the patient’s airway. Watch for vomiting and have suction available.
3. Spinal Restrictions as indicated
4. Check blood glucose
5. Blood glucose level less than 80 mg/dl child or less than 40 mg/dl newborn
   - Administer *Oral glucose* if patient is able to swallow, maintain their airway, and follow commands
6. Airway management as indicated
7. Consider *Naloxone* if suspected or possible overdose with respiratory depression. Administer *Naloxone* as indicated

Behavioral

Overview: “Normal” behavior is generally considered to be adaptive behavior that is accepted by society. This idea is also defined by society when the behavior:

- Deviates from society’s norms and expectations
- Interferes with well-being and ability to function
- Is harmful to the individual or group

A behavior emergency can be defined as a change in mood or behavior that cannot be tolerated by the involved person or others and requires intervention.

1. Scene size-up. If scene unsafe, elicit police assistance before patient contact.
2. **Routine Medical Care** or **Routine Trauma Care**
3. Identify yourself clearly
4. Approach patient in a calm and professional manner. Talk to patient alone—request bystanders to wait in another area. Show concern for family members as well. Allow patient to verbalize his problem in his own words. Reassure patient that help is available.
5. Get patient’s permission to do your assessment before touching patient
Bites, Stings and Envenomation

Overview: An insect, animal or human bite or sting frequently is a combination of puncture, laceration, avulsion and crush injuries. Complications are common—all patients who have been bitten/stung should seek physician evaluation. Try to find out the type of animal or insect, time of exposure and history of previous exposures, allergic reactions, and any known specific allergen.

1. Routine Pediatric Care
2. See Allergic Reaction Mild/Moderate or Allergic Reaction Severe as needed
3. If patient is hypotensive, treat for shock
4. Scrape off any remaining stinger or tentacles
5. Clean the affected area with saline, cover with sterile dressing
6. Do not perform any of the following:
   - Tourniquets or constricting bands above or below the site
   - Incision and / or suction
   - Application of cold for snake or spider bites
Cardiac Arrest
Per American Heart Association 2015 guidelines

BLS Healthcare Provider Pediatric Cardiac Arrest Algorithm
for the Single Rescuer — 2015 Update

1. Verify scene safety.

2. Victim is unresponsive. Shout for nearby help. Activate emergency response system via mobile device (if appropriate).

3a. Activate emergency response system (if not already done). Return to victim and monitor until emergency responders arrive.

3b. Look for no breathing or only gasping and check pulse (simultaneously). Is pulse definitely felt within 10 seconds?

3b. Provide rescue breathing: 1 breath every 3.5 seconds, or about 12 - 20 breaths/min. Add compressions if pulse remains ≤50/min with signs of poor perfusion.*

3b. Activate emergency response system (if not already done) after 2 minutes.

3b. Continue rescue breathing: check pulse about every 2 minutes. If no pulse, begin CPR (go to "CPR" box).

4. Witnessed sudden collapse?

4a. Yes

5. CPR

1 rescuer: Begin cycles of 30 compressions and 2 breaths.
(Use 15:2 ratio if second rescuer arrives.) Use AED as soon as it is available.

6. After about 2 minutes, if still alone, activate emergency response system and retrieve AED (if not already done).

7. AED analyzes rhythm. Shockable rhythm?

8. Yes, shockable

Give 1 shock. Resume CPR immediately for about 2 minutes (until prompted by AED to allow rhythm check). Continue until ALS providers take over or victim starts to move.

9. No, non-shockable

Resume CPR immediately for about 2 minutes (until prompted by AED to allow rhythm check). Continue until ALS providers take over or victim starts to move.

*Signs of poor perfusion may include cool extremities, decrease in responsiveness, weak pulses, paleness, mottling (patchy skin appearance), and cyanosis (turning blue).

Figure 28. BLS Healthcare Provider Pediatric Cardiac Arrest Algorithm for the Single Rescuer.
Environmental Emergencies
(Hyperthermia)

Overview: Heat illness results from one of two basic causes:

- Normal mechanisms that regulate the body’s thermostat are overwhelmed by environmental conditions such as heat stress or increased exercise in moderate to extreme environmental conditions.
- Failure of the body’s regulatory mechanisms especially in older adults, young children, babies and ill or debilitated patients.

1. Routine Pediatric Care
2. Remove the patient from the hot environment.
3. Begin cooling measures with cool water and fanning.

Hypothermia

Overview: Core body temperature less than 95 ° F [35° C] can result from a decrease in heat production, an increase in heat loss, or a combination of the two factors. Most common cause is exposure to extreme environmental conditions. Classified as Mild (CBT of 96.8° F to a CBT of 93.2° F [36-34° C]), Moderate (CBT of 86° F [30°C]), and Severe (CBT of < 86.0° F [<30°C]).

1. Routine Pediatric Care
2. Handle the patient very gently
3. Remove the patient from the cold environment
4. Cut away any wet clothing
5. Conserve body heat with blankets
6. Do NOT add external warming measures
7. Assess pulse for 30-45 seconds
8. If the use of the AED is warranted do not shock the patient more than 3 times

Obstructed Airway

1. Routine Pediatric Care
2. Remove the airway obstruction if able to visualize.
3. Suction the airway as needed.
4. If the airway is still obstructed use American Heart or Red Cross obstructed airway procedures.
**Poisoning and Overdose**
**Overview:** Poisoning and Overdose can take several forms and patients may range from mildly ill to very critical. This SMO is intended to guide EMS Responders in providing care for these patients. Variances in condition occur due to amount of substance involved, time of incident, type of substance involved, and whether it is an overdose or actual poison. Caution must be used with all substances, including medications. When appropriate, utilize gloves and or masks to avoid exposing yourself.

1. **Routine Medical Care**
2. Attempt to identify the substances and method of ingestion.
3. Collect bottles, pills, syringes, M.S.D.S. papers or other items that may help identify the substance.
   - Use care to avoid direct contact with all substances (Universal Precautions).
4. For patient suspected of overdosing on narcotics or unknown substances
   - Ensure ABC’s, oxygenation, ventilation
   - **Naloxone (Narcan) 2mg** intranasal for altered mental status with severe respiratory depression or arrest; signs and symptoms of shock; or hypoventilation

**Respiratory Distress with Acute Bronchospasm (Wheezing)**
**Overview:** Respiratory distress with acute bronchospasm can be seen in patients as a result of many causes including asthma, COPD, bronchitis, and allergic reaction. Treatment must be concentrated on airway patency and ventilation.

1. **Routine Medical Care**
2. Administer O₂ as indicated
3. Assist with patients with prescribed medication / inhalers

**Seizure**
**Overview:** A seizure is a temporary, abnormal electrical activity of the brain that results in a loss of consciousness, loss of organized muscle tone, and presence of convulsions. The patient will usually regain consciousness within 1 to 3 minutes followed by a period of confusion and fatigue (postictal state). Multiple seizures in a brief time span or seizures lasting more than 5 minutes may constitute status epilepticus and require EMS intervention to stop the seizure. Causes of seizures include: epilepsy, stroke, head trauma, hypoglycemia, hypoxia, infection, a rapid change in core body temperature (e.g. febrile seizures), eclampsia, alcohol withdrawal, and overdose.

1. **Routine Medical Care**
2. Protect the patient from injury during the seizure. Take special care to protect the patient’s head and airway (be prepared for vomiting and have suction available).
3. Administer O₂ and ventilate as indicated.

**SIDS (Sudden Infant Death Syndrome)**
1. SIDS cannot be predicted or prevented.
2. Start infant C.P.R.
3. Remain compassionate to all involved. Do not make any statements that they could construe as untruthful or appear to be assigning blame.
Overview: Assessment, airway and infant body temperature cannot be over emphasized. The anatomical and physiological differences that are present in a newborn can cause severe problems if not recognized. All neonatal emergency patients should be transported to the hospital. Neonate is defined as less than 30 days old.

INFORMATION NEEDED
- Gestational age
- Infant is part of a multiple birth or NICU graduate
- Meconium stained during birth (See Meconium Staining section below)
- Mother use of drugs or alcohol
- Known infant history
- Presence of special need (e.g. apnea monitor, etc)
- If just born, time since birth

OBJECTIVE FINDINGS
- If just born 30 second cardiopulmonary assessment
  - Airway, breathing (respiratory rate, quality, work of breathing, presence of cry)
  - Circulation (skin color, temperature, pulses, capillary refill, mental status)
- If infant less than 30 days same arrest intervention as just born
- Airway interventions and keep baby warm

TREATMENT—MECONIUM STAINING NOTED
- As soon as head is delivered attempt to suction before baby starts to breath
- If thick meconium or secretion present and signs of respiratory distress thoroughly suction mouth, then nose
TREATMENT (NO MECONIUM STAINING NOTED)

- Assess patient, dry immediately if wet and stimulate
- Assess airway patency. Secure the airway.
- Suction mouth then nasopharynx.
- Cover head with stocking cap or equivalent
- Clamp and cut the cord if necessary
- Evaluate respirations. Assist with BVM ventilation with 40-60 breaths / min with 100% oxygen for severe respiratory depression; use mask with 100% oxygen for mild distress
- Check heart rate at base of umbilical cord or auscultate precordium as indicated. Further treatment depends on heart rate.
- If heart rate less than 60 bpm, continue assisted ventilations and begin chest compressions at 120 min
- If heart rate is 60-80 bpm then continue ventilations. If poor perfusion and no improvement after 30 seconds of ventilations with 100% oxygen, consider compressions at 120 min.
- If heart rate 80-100 bpm. Give 100% oxygen by BVM. Reassess heart rate after 15-30 seconds.
- If heart rate greater than 100 bpm, check skin color. If peripheral cyanosis give oxygen by mask.
- If unable to ventilate effectively with BVM consider supraglottic device.
- Confirm proper airway device placement and ventilate 30 times a minute with continued chest compressions.
- Continue to reassess respiratory rate and heart rate while enroute

Documentation of adherence to SMO

- 30-second cardiopulmonary assessment
- Administration of oxygen
- Document all cardiac interventions and response
- Medication administration
- Airway management

Medical Control Contact Criteria

- Contact Medical Control whenever a question exists as to the best treatment course for the patient
- Contact receiving hospital as soon as possible for a Neonatal Resuscitation patient

PRECAUTIONS AND COMMENTS

- Perform chest compressions on the neonate per American Heart Association guidelines
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
EMR

SMO: Pediatric Trauma Emergencies

Overview: The EMR shall utilize the following guidelines for trauma emergency care situations. Children have good compensatory mechanisms up to a point. When that point is reached they deteriorate very quickly. This SMO is intended to provide the EMS Provider with guidelines to treat a pediatric trauma patient as soon as possible.

Amputations
1. Routine Trauma Care
2. Control bleeding.
3. Place body part in plastic bag. Place plastic bag containing body part in a larger bag or container and place in container with ice/water.
4. Use caution to not freeze body part.

Bleeding
1. Routine Trauma Care
2. For external bleeding use direct pressure, if direct pressure is not effective a tourniquet should be considered.
3. Treat for shock.

Bones and Muscles
1. Routine Trauma Care
2. Control external bleeding with direct pressure. If direct pressure is unsuccessful, consider a tourniquet to control bleeding
3. Manual stabilization - support the joint above and below the injury.
4. Cover open wounds with sterile dressing.
5. Pad to prevent pressure and discomfort.
6. Use caution to not replace protruding bones.
7. Reassess pulses as needed
8. Assess treat for shock
Burns
1. **Routine Trauma Care**
2. The first priority is to stop the burning process by removing the patient from the source of the burn or eliminate the source
   a. **Thermal burns**
      1. Monitor the airway. Examine the mouth and nose for signs of respiratory burns/ soot/singed nares.
      2. Remove clothing and jewelry from the affected site.
      3. Cover the burn with dry sterile dressing.
      4. Protect patient from hypothermia.
      5. Treat for shock.
   b. **Chemical burns**
      1. **Body Substance Isolation**
      2. Remove clothing and jewelry.
      3. For dry chemicals brush off all visible chemical prior to beginning the water flush.
      4. The site should be flushed with copious amounts of water for 20 minutes.
   c. **Electrical burns**
      1. Scene safety.
      2. Treat entrance and exit wounds as thermal burns.
      3. Spinal restriction is indicated with serious electrical burns.
      4. If the patient is pulseless refer to [Cardiac Arrest SMO](#).

Chest Injuries
1. **Routine Trauma Care**
2. If an open wound is present (sucking chest wound), cover the wound with a 3-sided, occlusive dressing. If the patient develops increased difficulty breathing or cyanosis, temporarily release the dressing.

Child Abuse and Neglect
1. **Routine Trauma Care**
2. If you suspect abuse or neglect do not confront the parents. EMS’s role is one of patient treatment and transporting the child.
3. Manage the scene in order to preserve evidence.
4. Insure that an EMS team member has notified medical control or other appropriate agency. EMS responders are mandatory reporters.
   a. Be objective during reporting procedures.
   b. For DCFS contact 1-800-25ABUSE (1-800-252-2873).
Drowning and Near Drowning
1. Routine Trauma Care
2. Keep the victim warm. If hypothermia is suspected, handle patient gently. Remove wet clothing and apply warm blanket.
   NOTE: Because of possible serious delayed reactions, all near drowning patients should be evaluated in the Emergency Department even if they appear to be uninjured at the scene.
3. If pulseless start high quality CPR pre AHA guidelines
4. AED - treat per AHA guidelines
5. If other trauma is suspected refer to appropriate trauma SMO
6. BLS maneuvers to remove Foreign Body Airway Obstruction if indicated
7. Reassess basic methods to maintain airway patency and good ventilation

Eviscerations
1. Routine Trauma Care
2. Do not attempt to replace protruding organs.
3. Cover with thick, sterile, moist dressings.

Impaled Object
1. Routine Trauma Care
2. Do not remove object unless interferes with airway patency.
4. Control bleeding.

Injuries to the Brain and Skull
1. Routine Trauma Care
2. Maintain ABC’s.
3. Spinal Restriction
4. Monitor mental status
5. Control bleeding.

Shock/Internal Bleeding
1. Routine Pediatric Care or Routine Trauma Care
2. Maintain the patient’s body position as supine.
3. Keep patient warm.
4. Spinal Restriction as indicated
5. Control external bleeding
6. O₂ as indicated
REGION I
EMERGENCY
MEDICAL SERVICES

Appendices
For
Emergency Medical Responders

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Overview: In the absence of an established IV, intranasal is a rapid route offering high level of bioavailability of the medication being administered. The intranasal route can reduce the risk of needle sticks while delivering effective medication levels.

The rich vasculature of the nasal cavity provides a direct route into the bloodstream for medications that easily cross the mucous membranes. Due to this direct absorption into the bloodstream, rate and extent of absorption are relatively comparable to IV administration.

CONTRAINDICATIONS
___ Epistaxis (nosebleed)
___ Nasal Trauma
___ Nasal septal abnormalities
___ Nasal congestion / discharge

Medication that may be used Intranasal
___ Naloxone

PROCEDURE
___ Attach MAD tip to syringe
   • Intranasal doses are listed in the Medication Administration Chart
   • Do not exceed 0.5 – 1.0 ml per nostril
___ Remove air from syringe
___ Place MAD tip into nostril
___ Timing with respirations, depress the plunger rapidly when patient fully exhales and before inhalation
___ Evaluate the effectiveness of the medication, if desired effect has not been achieved, consider repeating and/or changing route of administration

Documentation of adherence to SMO
___ Dose and time of medication administered
___ Vitals before and after administration of medication
Medical Control Contact Criteria

Contact Medical Control whenever a question exists as to the best treatment course to the patient.

PRECAUTIONS AND COMMENTS

- Indication, contraindications, actions and side effects are the same when given intranasal as they would be if the medication were given IV / IM.
- The *ideal* volume for intranasal administration is 0.2-0.3ml and the maximum recommended volume per nostril is 1ml. If dose is greater than 0.5ml, apply it in two separate doses allowing 5-10 minutes apart for each dose. The spacing allows the former dose to absorb.
- The MAD® atomizer has a dead space of 0.1ml, so particularly for doses less than 0.9ml be sure to take the dead space into account by adding 0.1ml to the final volume (i.e. volume of dose + 0.1ml)
# SMO: Region 1 Acceptable Abbreviations

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<td>A &amp; O x 4</td>
<td>Alert, oriented person to date, time, place</td>
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<td>Abdomen</td>
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<td>cm</td>
<td>Centimeter</td>
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<td>5% Dextrose in water</td>
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<td>LLQ</td>
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<td>LMP</td>
<td>Last menstrual period</td>
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<td>LOC</td>
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<td>N &amp; V or N/V</td>
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<tr>
<td>NKA</td>
<td>No known allergies</td>
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<td>NRB mask</td>
<td>Non-rebreather mask</td>
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<td>NS</td>
<td>Normal saline</td>
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<td>Normal sinus rhythm</td>
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<td>PAC</td>
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<td>PASG</td>
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<td>PERRL</td>
<td>Pupils equal, round and reactive to light</td>
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<td>PMH</td>
<td>Past medical history</td>
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<td>Pulses Motor Sensation</td>
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<td>Standing Medical Orders</td>
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<td>Sub-Q or subq</td>
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<td>Temperature</td>
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<td>Tuberculosis</td>
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<td>TKO</td>
<td>To keep open</td>
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<td>WNL</td>
<td>Within normal limits</td>
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<td>At</td>
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<td>Advanced/ Basic Disaster Life Support</td>
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<td>Acidosis, alcohol; epilepsy; infection; overdose; uremia; tumor, trauma, toxin; insulin; psychosis, poison; stroke, seizure</td>
</tr>
<tr>
<td>AVPU</td>
<td>Alert, Verbal, Pain, Unresponsive</td>
</tr>
<tr>
<td>BTLS</td>
<td>Basic Trauma Life Support</td>
</tr>
<tr>
<td>DCAP-BTLS-IC</td>
<td>Deformities, Contusions, Abrasions, Penetrations or Punctures, Burns, Tenderness, Lacerations, Swelling, Instability, Crepitus</td>
</tr>
<tr>
<td>GEMS</td>
<td>Geriatrics Emergency Medical Services</td>
</tr>
<tr>
<td>Id-me</td>
<td>Immediate, Delayed, Minimal, Expectant</td>
</tr>
<tr>
<td>MASS</td>
<td>Move, Assess, Sort, Send</td>
</tr>
<tr>
<td>OPQRST</td>
<td>Onset, Provokes, Quality, Radiation, Severity, Time</td>
</tr>
<tr>
<td>PALS</td>
<td>Pediatric Advanced Life Support</td>
</tr>
<tr>
<td>PEPP</td>
<td>Pediatric Education Pre-hospital Provider</td>
</tr>
<tr>
<td>PHTLS</td>
<td>Pre-Hospital Trauma Life Support</td>
</tr>
<tr>
<td>SAMPLE</td>
<td>Signs &amp; Symptoms, Allergies, Medications, Past medical history, Last oral intake, Events leading to incident</td>
</tr>
<tr>
<td>START</td>
<td>Simple Triage and Rapid Transport</td>
</tr>
</tbody>
</table>

**NOTE:** Based on JCAHO National Patient Safety Goals, these acceptable abbreviations are to minimize confusion when using abbreviations. Commonly used abbreviations such as *MS, OU, OD, OS, cc* are not allowed to be utilized under Region1 EMS Acceptable Medical Abbreviations.
RULE OF NINES:

RULE OF PALMS: To measure the extent of irregular burns, the percentage of burned surface can be estimated by considering the palm of the patient’s hand as equal to 1% of the total body surface and then estimating the TBSA burned in reference to the palm.
## ADULT GLASGOW COMA SCORE

<table>
<thead>
<tr>
<th>AREAS OF RESPONSE</th>
<th>DESCRIPTION</th>
<th>SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EYE OPENING</strong></td>
<td>Eyes open <em>Spontaneously</em></td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Eyes open in response to <em>Voice</em></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Eyes open in response to <em>Pain</em></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>No eye opening response</td>
<td>1</td>
</tr>
<tr>
<td><strong>VERBAL RESPONSE</strong></td>
<td><em>Oriented</em> (e.g., to person, place, time)</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td><em>Confused</em>, speaks but is disoriented</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td><em>Inappropriate</em> but comprehensible words</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><em>Incomprehensible</em> sounds but no words are spoken</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>None</td>
<td>1</td>
</tr>
<tr>
<td><strong>MOTOR RESPONSE</strong></td>
<td><em>Obeys Commands</em> to move</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td><em>Localized Painful</em> stimuli</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td><em>Withdraws</em> from painful stimulus</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td><em>Flexion</em>, abnormal <em>decorticate</em> posturing</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><em>Extension</em>, abnormal <em>decerebrate</em> posturing</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>No movement or posturing</td>
<td>1</td>
</tr>
</tbody>
</table>

**TOTAL POSSIBLE SCORE**: 3 - 15

- **Severe Head Injury**: ≤ 8
- **Moderate Head Injury**: 9 – 12
- **Minor Head Injury**: 13 - 15

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### ADULT TRAUMA SCORE

The Trauma Score is a numerical grading system for estimating the severity of injury. The score is composed of the Glasgow Coma Scale (reduced to approximately one-third value) and measurements of cardiopulmonary function. Each parameter is given a number (high for normal and low for impaired function). Severity of injury is estimated by summing the numbers. The lowest score is 0, and the highest score is 12.

<table>
<thead>
<tr>
<th>RESPIRATORY RATE (spontaneous patient-initiated inspirations/ minute)</th>
<th>10 - 29 / minute</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>greater than 29</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>6 - 9 minutes</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>1 - 5 / minute</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SYSTOLIC BLOOD PRESSURE</th>
<th>Greater than 89</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>76 - 89 mm Hg</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>50 - 75 mm Hg</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>1 - 49 mm Hg</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>No pulse</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GLASGOW COMA SCALE (see above)</th>
<th>13 – 15</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 – 12</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>6 – 8</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>4 – 5</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

| TOTAL POSSIBLE SCORE | 0 – 12 |

[Return to EMR Table of Contents]
<table>
<thead>
<tr>
<th>AREAS OF RESPONSE</th>
<th>&gt;1 year</th>
<th>&lt; 1 year</th>
<th>GCS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EYE OPENING</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spontaneously</td>
<td></td>
<td>Spontaneously</td>
<td>4</td>
</tr>
<tr>
<td>To <em>Verbal Command</em></td>
<td></td>
<td>To <em>Shout</em></td>
<td>3</td>
</tr>
<tr>
<td>To <em>Pain</em></td>
<td></td>
<td>To <em>Pain</em></td>
<td>2</td>
</tr>
<tr>
<td>No eye opening response</td>
<td></td>
<td>No eye opening response</td>
<td>1</td>
</tr>
<tr>
<td><strong>MOTOR RESPONSE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Obey Commands</em> to move</td>
<td><em>Obey Commands</em> to move</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td><em>Localized Painful</em> stimuli</td>
<td><em>Localized Painful</em> stimuli</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td><em>Withdraws</em> from painful stimulus</td>
<td><em>Flexion—normal</em></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td><em>Flexion</em>, abnormal <em>decorticate</em> posturing</td>
<td><em>Flexion</em>, abnormal <em>decorticate</em> posturing</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><em>Extension</em>, abnormal <em>decerebrate</em> posturing</td>
<td><em>Extension</em>, abnormal <em>decerebrate</em> posturing</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>No movement or posturing</td>
<td>No movement or posturing</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>VERBAL RESPONSE</strong></td>
<td>&gt; 5 years</td>
<td>&lt; 2 – 5 years</td>
<td>0 - 23 months</td>
</tr>
<tr>
<td><em>Oriented</em> and converses</td>
<td>Appropriate words &amp; phrases for age</td>
<td>Smiles, coos, cries appropriately</td>
<td>5</td>
</tr>
<tr>
<td><em>Disoriented</em> but converses</td>
<td>Inappropriate words</td>
<td>Cries</td>
<td>4</td>
</tr>
<tr>
<td><em>Inappropriate</em> words</td>
<td>Cries and/or screams</td>
<td>Inappropriate crying and/or screaming</td>
<td>3</td>
</tr>
<tr>
<td><em>Incomprehensible</em></td>
<td>Grunts</td>
<td>Grunts</td>
<td>2</td>
</tr>
<tr>
<td>No response</td>
<td>No response</td>
<td>No response</td>
<td>1</td>
</tr>
<tr>
<td><strong>TOTAL POSSIBLE SCORE</strong></td>
<td></td>
<td></td>
<td>3 - 15</td>
</tr>
</tbody>
</table>

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Pediatric Trauma Score

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>+2</th>
<th>+1</th>
<th>-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>≥ 20 kg</td>
<td>10 – 20 kg</td>
<td>≤ 10 kg</td>
</tr>
<tr>
<td>Airway</td>
<td>Normal</td>
<td>Maintainable</td>
<td>Unable to maintain</td>
</tr>
<tr>
<td>CNS</td>
<td>Awake</td>
<td>Obtunded</td>
<td>Coma</td>
</tr>
<tr>
<td>Systolic BP</td>
<td>≥ 90 mm Hg</td>
<td>50 – 90 mm Hg</td>
<td>≤ 50 mm Hg</td>
</tr>
<tr>
<td>Open wound</td>
<td>None</td>
<td>Minor</td>
<td>Major</td>
</tr>
<tr>
<td>Skeletal Injuries</td>
<td>None</td>
<td>Closed fracture</td>
<td>Open or multiple fractures</td>
</tr>
</tbody>
</table>

Revised Trauma Score

<table>
<thead>
<tr>
<th>Glasgow Coma Scale (GCS)</th>
<th>Systolic Blood Pressure (SBP)</th>
<th>Respiratory Rate (RR)</th>
<th>Coded Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>13-15</td>
<td>&gt;89</td>
<td>10-29</td>
<td>4</td>
</tr>
<tr>
<td>9-12</td>
<td>76-89</td>
<td>&gt;29</td>
<td>3</td>
</tr>
<tr>
<td>6-8</td>
<td>50-75</td>
<td>6-9</td>
<td>2</td>
</tr>
<tr>
<td>4-5</td>
<td>1-49</td>
<td>1-5</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

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**AVPU**
The mnemonic AVPU refers to the basic scale of consciousness and identifies the following levels of consciousness:

A – The patient is awake and alert. This does not necessarily mean that they are orientated to time and place or neurologically responding normally.

V – The patient is not fully awake, and will only respond to verbal commands or become roused after verbal stimuli.

P – The patient is difficult to rouse and will only respond to painful stimuli, such as nail bed pressure or trapezius pain.

U – The patient is completely unconscious and unable to be roused.

**Sample History**
S - Signs and symptoms
A - Allergies
M - Medications
P - Past medical history or pertinent history
L - Last oral intake
E - Events leading to incident
APPENDIX: Primary Patient Assessment

Overview: A Primary assessment needs to be completed on all patients to identify and immediately correct any life-threatening problems.

SCENE SIZE-UP/GLOBAL ASSESSMENT
- Recognize hazards, ensure safety of scene, and secure a safe area for treatment
- Apply appropriate universal body/substance isolation precautions
- Recognize hazards to patient and protect from further injury
- Identify number of patients and resources needed
- Call for EMS and/or law enforcement back-up if appropriate
- Initiate Incident Command Structure System (ICS), if appropriate
- Initiate Triage System, if appropriate
- Observe position of patient
- Determine mechanism of injury
- Plan strategy to protect evidence at potential crime scene

GENERAL IMPRESSION
- Check for life-threatening conditions
- AVPU (A=alert, V=responds to verbal stimuli, P=responds to painful stimuli, U=unresponsive)
- Determine chief complaint or mechanism of injury

AIRWAY (A)
- Ensure open airway
- Protect spine from unnecessary movement in patients at risk for spinal injury
- Ensuring airway patency supersedes spinal immobilization
- Look and listen for evidence of upper airway problems and potential obstructions
  - Vomitus
  - Bleeding
  - Loose or missing teeth
  - Dentures
  - Facial trauma
- Utilize any approved adjuncts as indicated to maintain airway
BREATHING (B)
__ Look, listen, and feel assessing ventilation and oxygenation
__ Expose chest and observe chest wall movement if necessary
__ Determine approximate rate, depth, and work of breathing
__ Reassess mental status
__ Obtain pulse oximetry reading if available
__ Intervention for inadequate ventilation and/or oxygenation:
   - Pocket mask BVM
   - Supplementary oxygen
   - Appropriate airway adjunct (oropharyngeal/nasal)
   - Advance airway management if indicated after bag-valve-mask ventilation

CIRCULATION (C)
__ Check for pulse and begin CPR if necessary
   Note: defibrillation should not be delayed for CPR; if defibrillator is present and operator is qualified, use it to check patient for a shockable rhythm
__ Palpate radial pulse if appropriate: absence or presence; quality (strong/weak); rate (slow, normal, or fast); regularity
__ Control life-threatening hemorrhage with direct pressure
__ Assess skin for signs of hypoperfusion or hypoxia
__ Reassess mental status for signs of hypoperfusion
__ Treat hypoperfusion if appropriate

LEVEL OF CONSCIOUSNESS & DISABILITIES (D)
__ Determine need for C-Spine stabilization
__ Determine GLASGOW COMA SCALE (GCS) SCORE in Appendix

EXPOSE, EXAMINE & EVALUATE (E)
__ In situations with suspected life-threatening trauma mechanism, a rapid head-to-toe assessment should be performed
__ Expose head, trunk, and extremities
__ Head to toe for DCAP-BTLS (see Note section of Secondary Assessment SMO)
__ Treat any newly discovered life-threatening wounds as appropriate
__ Assist patient with medications if appropriate

Documentation of adherence to SMO
__ Findings of primary assessment, for example: alert, oriented, and verbalizing; unresponsive to painful stimuli, airway maintained with oropharyngeal airway, qualities of pulses, GCS, mechanism of injury, pulse oximetry, etc
__ Any deviation from assessment and explanation of why
__ Interventions for critical situations
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
EMR

APPENDIX: Secondary Patient Assessment

Overview: The Secondary assessment is the systematic assessment and complaint focused relevant physical examination of the patient. The secondary assessment may be done concurrently with the patient history and should be performed after:

- The Primary Assessment and initial treatment and stabilization of life-threatening airway, breathing and circulation difficulties
- Spinal restriction as needed
- A Rapid Trauma Assessment in the case of significant trauma
- Investigation of the chief complaint and associated complaints, signs or symptoms
- An initial set of vital signs—pulse, respirations, blood pressure
- Lung sounds
- Consider orthostatic vital signs when needed to assess volume status
- Pulse oximetry (if indicated)

Give initial treatment including oxygen, ventilation if indicated, hemorrhage control if needed, basic wound/fracture care

The above set of assessments/treatments is referred to in these SMOs as “Routine Medical Care” or “Routine Trauma Care”. This care should be provided to all patients regardless of presenting complaint. The purpose of the focused assessment is to identify problems, which, though not immediately life- or limb-threatening, could increase patient morbidity and mortality. Exposure of the patient for examination may be reduced or modified as indicated due to environmental factors.

HISTORY

- Optimally should be obtained directly from the patient; if language, culture, age-related, disability barriers or patient condition interferes, consult family members, significant others, scene bystanders or first responders.
- Check for advance directives, patient alert bracelets and prescription bottles as appropriate.
- Be aware of patient’s environment and issues such as domestic violence, child or elder abuse or neglect
- Allergies, Medications
- Past medical history relevant to chief complaint. Examples are previous myocardial infarcts, hypertension, diabetes, substance abuse, seizure disorder and hospital of choice.
- Have patient prioritize his/her chief complaint if complaining of multiple problems
- Ascertain recent medical history -admissions to hospitals, reasons given, etc.
- Pain questions if appropriate: OPQRST (O=onset, P=provoked, Q=quality, R=radiation, S=severity, T=time) plus location and factors that increase or decrease the pain severity
- Mechanism of injury if appropriate

See “Information Needed” section of each SMO for history relevant to specific patient complaints.
**HEAD AND FACE**

- Observe and palpate skull (anterior and posterior) and face for DCAP-BTLS
- Check eyes for: equality and, responsiveness of pupils, movement and size of pupils, foreign bodies, discoloration, contact lenses, prosthetic eyes
- Check nose and ears for: foreign bodies, fluid, and blood
- Recheck mouth for potential airway obstructions (swelling, dentures, bleeding, loose or avulsed teeth, vomitus, malocclusion, absent gag reflex) and odors, altered voice or speech patterns, and evidence of dehydration

**NECK**

- Observe and palpate for DCAP-BTLS, jugular vein distention, use of neck muscles for respiration, tracheal tugging, shift or deviation, stoma, and medical information medallions

**CHEST**

- Observe and palpate for DCAP-BTLS, scars, implanted devices (AICD or pacemakers), medication patches, chest wall movement, asymmetry and accessory muscle use
- Have patient take a deep breath if possible and observe and palpate for signs of discomfort, asymmetry and air leak from any wound

**ABDOMEN**

- Observe and palpate for DCAP-BTLS, scars, diaphragmatic breathing and distention
- Palpation should occur in all four quadrants taking special note of tenderness, masses and rigidity

**PELVIS/GENITO-URINARY**

- Observe and palpate for DCAP-BTLS, asymmetry, sacral edema, and as indicated for incontinence, priapism, blood at urinary meatus, or presence of any other abnormalities
- Palpate and gently compress lateral pelvic rims and symphysis pubis for tenderness, crepitus or instability
- Palpate bilateral femoral pulses

**SHOULDER AND UPPER EXTREMITIES**

- Observe and palpate for DCAP-BTLS, asymmetry, skin color, capillary refill, edema, medical information bracelets, and equality of distal pulses
- Assess sensory and motor function as indicated

**LOWER EXTREMITIES**

- Observe and palpate for DCAP-BTLS, asymmetry, skin color, capillary refill, edema, and equality of distal pulses
- Assess sensory and motor function as indicated

**BACK**

- Observe and palpate for DCAP-BTLS, asymmetry, and sacral edema
Documentation of adherence to SMO

__ Changes and trends observed in the field
__ Pertinent negative findings, e.g. denies SOB with chest pain; no other findings of significant injury
__ Findings from history/source of information is not from the patient
__ Findings of assessment on your initial exam

Medical Control Contact Criteria

__ Contact Medical Control whenever a question exists as to the best treatment course for the patient

PRECAUTIONS AND COMMENTS

- Observation and palpation can be done while gathering patient’s history.
- A systematic approach will enable the rescuer to be rapid and thorough and not miss subtle findings that may become life-threatening.
- Minimize scene time on trauma patients.
- The Focused Assessment should ONLY be interrupted if the patient experiences airway, breathing or circulatory deterioration requiring immediate intervention. Complete the examination before treating the other identified problems.
- Reassess vital signs, particularly in critical or rapidly-changing patients. Changes and trends observed in the field are essential data to be documented and communicated to the receiving facility staff.
- **DCAP-BTLS**: A mnemonic that stands for:
  - Deformity
  - Contusion/Crepitus
  - Abrasion
  - Puncture
  - Bruising/Bleeding
  - Tenderness
  - Laceration
  - Swelling
I. PURPOSE

A. To develop a standard approach of pre-hospital patient care in EMS Region 1. The following patient care SMOs are established and approved by the EMS Region 1 Medical Directors for use by EMS Providers, Physicians and ECRN’s operating within Region 1.

B. Region 1 assumes certain common steps in a practical approach and response to emergency situations. These Standing Medical Orders outline current methods that have been well rewarded in terms of survival statistics.

C. The SMO dosages and treatments are written in compliance with the EMS Education Standards set forth by the US Department of Transportation (DOT), the American Heart Association and Illinois Emergency Medical Services Act. Dosing for all medications is listed in the Medication Administration Chart.

D. The Standing Medical Orders will be utilized:
   i. As a written standard of care to be followed by all members of EMS Region 1 in the pre-hospital care of the acutely ill or injured patient.
   ii. In disaster situations where immediate action to preserve and save lives supersedes the need to communicate with hospital-based personnel, or where such communication is not required by the Disaster Procedure.

II. MEDICAL CONTROL

A. Throughout these SMOs are boxes set aside with Medical Control Contact Criteria. These boxes are placed to draw particular attention to treatments/questions in which Medical Control needs to be contacted; however, always contact Medical Control if any question arises regarding the best treatment options for the patient.
III. GENERAL GUIDELINES

- Pre-hospital personnel will initiate Basic measures, as dictated by the patient assessment and scope of practice.
- Medication dosing is generally not present in the SMO’s. Please refer to the medication chart for all dosing information. Medications will be in **bold blue** print in all SMO’s for BLS, ILS, and ALS. Medications will be in **bold red** print for EMR.
- Pre-hospital personnel will utilize good clinical judgment and consider additional resources as needed.
- **Routine Medical Care**, **Routine Trauma Care**, and/or **Routine Trauma Care** should be provided to every patient as guided by assessment of the scene and the patient’s condition.
- The Resource Hospital or Associate Hospital Physician or ECRN provides on-line Medical Control.
- Optional Scope practices will be identified in each EMS Systems specific SMOs.

IV. DEFINITIONS

**Advanced Life Support (ALS) Services** – an advanced level of pre-hospital and inter-hospital emergency care and non-emergency medical care that includes basic life support care, cardiac monitoring, cardiac defibrillation, electrocardiography, intravenous therapy, administration of medications, drugs and solutions, use of adjunctive medical devices, trauma care, and other authorized techniques and procedures as outlined in the Advanced Life Support National Curriculum of the United States Department of Transportation and any modifications to that curriculum specified in this Part. (Section 3.10 of the Act)

**Alternate EMS Medical Director or Alternate EMSMD** – the physician who is designated by the Resource Hospital to direct the ALS/ILS/BLS operations in the absence of the EMS Medical Director.

**Ambulance** – any publicly or privately owned vehicle that is specifically designed, constructed or modified and equipped for, and is intended to be used for, and is maintained or operated for, the emergency transportation of persons who are sick, injured, wounded or otherwise incapacitated or helpless, or the non-emergency medical transportation of persons who require the presence of medical personnel to monitor the individual's condition or medical apparatus being used on such an individual. (Section 3.85 of the Act)

**Ambulance Service Provider or Ambulance Provider** – any individual, group of individuals, corporation, partnership, association, trust, joint venture, unit of local government or other public or private ownership entity that owns and operates a business or service using one or more ambulances or EMS vehicles for the transportation of emergency patients.
**Associate Hospital** – a hospital participating in an approved EMS System in accordance with the EMS System Program Plan, fulfilling the same clinical and communications requirements as the Resource Hospital. This hospital has neither the primary responsibility for conducting training programs nor the responsibility for the overall operation of the EMS System program. The Associate Hospital must have a basic or comprehensive Emergency Department with 24-hour physician coverage. It must have a functioning Intensive Care Unit and/or a Cardiac Care Unit.

**Basic Life Support (BLS) Services** – a basic level of pre-hospital and inter-hospital emergency care and non-emergency medical care that includes airway management, cardiopulmonary resuscitation (CPR), control of shock and bleeding and splinting of fractures, as outlined in a Basic Life Support National Curriculum of the United States Department of Transportation and any modifications to that curriculum specified in this Part. (Section 3.10 of the Act)

**Dysrhythmia** – a variation from the normal electrical rate and sequences of cardiac activity, also including abnormalities of impulse formation and conduction.

**Emergency** – a medical condition of recent onset and severity that would lead a prudent lay person, possessing an average knowledge of medicine and health, to believe that urgent or unscheduled medical care is required. (Section 3.5 of the Act)

**Emergency Medical Services (EMS) System or System** – an organization of hospitals, vehicle service providers and personnel approved by the Department in a specific geographic area, which coordinates and provides pre-hospital and inter-hospital emergency care and non-emergency medical transports at a BLS, ILS and/or ALS level pursuant to a System Program Plan submitted to and approved by the Department and pursuant to the EMS Regional Plan adopted for the EMS Region in which the System is located. (Section 3.20 of the Act)

**Emergency Medical Technician** – a person, who has successfully completed a course of instruction in basic life support as prescribed by the Department, is currently licensed by the Department in accordance with standards prescribed by the Act and this Part and practices within an EMS System. (Section 3.50 of the Act)

**Emergency Medical Technician-Intermediate or EMT-I** – a person, who has successfully completed a course of instruction in intermediate life support as prescribed by the Department, is currently licensed by the Department in accordance with standards prescribed by the Act and this Part and practices within an EMS System. (Section 3.50 of the Act)

**EMS Medical Director or EMSMD** – the physician, appointed by the Resource Hospital, who has the responsibility and authority for total management of the EMS System.

**Emergency Medical Responder** – a person who has successfully completed a course of instruction in emergency first response as prescribed by the Department, who provides first response services prior to the arrival of an ambulance or specialized emergency medical services vehicle, in accordance with the level of care established in the emergency first response course. (Section 3.60 of the Act)
**Intermediate Life Support (ILS) Services** – an intermediate level of pre-hospital and inter-hospital emergency care and non-emergency medical care that includes basic life support care, plus intravenous cannulation and fluid therapy, invasive airway management, trauma care, and other authorized techniques and procedures as outlined in the Intermediate Life Support National Curriculum of the United States Department of Transportation and any modifications to that curriculum specified in this Part. (Section 3.10 of the Act)

**Paramedic** – a person who has successfully completed a course of instruction in advanced life support care as prescribed by the Department, is licensed by the Department in accordance with standards prescribed by the Act and this Part and practices within an Advanced Life Support EMS System. (Section 3.50 of the Act)

**Pediatric Trauma Patient** – trauma patient from birth to 17 years of age.

**Pre-Hospital Care** – those emergency medical services rendered to emergency patients for analytic, resuscitative, stabilizing, or preventive purposes, precedent to and during transportation of such patients to hospitals. (Section 3.10 of the Act)

**Pre-Hospital Care Provider** – a System Participant or any EMT-B, I, P, Ambulance, Ambulance Provider, EMS Vehicle, Associate Hospital, Participating Hospital, EMS System Coordinator, Associate Hospital EMS Coordinator, Associate Hospital EMS Medical Director, ECRN or Physician serving on an ambulance or giving voice orders over an EMS System and subject to suspension by the EMS Medical Director of that System in accordance with the policies of the EMS System Program Plan approved by the Department.

**Sustained Hypotension** – two systolic blood pressures of 90 mmHg five minutes apart or, in the case of a pediatric patient, two systolic blood pressures of 80 mmHg five minutes apart.

**Trauma** – any significant injury which involves single or multiple organ systems. (Section 3.5 of the Act)

**Vehicle Service Provider** – an entity licensed by the Department to provide emergency or non-emergency medical services in compliance with the Act and this Part and an operational plan approved by its EMS System(s), utilizing at least ambulances or specialized emergency medical service vehicles (SEMSV). (Section 3.85 of the Act)

(Source: Amended at 27 Ill. Reg. 13507, effective July 25, 2003)

V. **AUTHORITY**

REGION I
EMERGENCY
MEDICAL SERVICES

PREHOSPITAL FORMULARY
For
Emergency Medical Responders

As prepared by:

Dr. Greg Conrad, EMSMD, Northwestern Medicine Kishwaukee Hospital EMS System
Dr. Jane Pearson, EMSMD, OSF Northern Region EMS System
Dr. John Underwood, EMSMD, SwedishAmerican Hospital EMS System
Kirk Schubert, PharmD, SwedishAmerican Hospital EMS System

Mark Loewecke, OSF Northern Region EMS System
Richard Robinson, SwedishAmerican Hospital EMS System
Anthony Woodson, Northwestern Medicine Kishwaukee Hospital EMS System

Reference: Jones and Bartlett Learning LLC, 2013 pp 1574-1628

IDPH Approval
Date: December 6, 2017
<table>
<thead>
<tr>
<th>EMR Medications Table of Contents</th>
<th></th>
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</thead>
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<tr>
<td>Aspirin</td>
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<tr>
<td>Epi Auto Injector</td>
<td>500</td>
</tr>
<tr>
<td>Naloxone</td>
<td>502</td>
</tr>
<tr>
<td>Oral Glucose</td>
<td>504</td>
</tr>
</tbody>
</table>
# Aspirin

<table>
<thead>
<tr>
<th><strong>Classification:</strong></th>
<th>Antiplatelet, Analgesic, Antipyretic, Anti-inflammatory</th>
</tr>
</thead>
</table>

**Actions:**
- Inhibition of platelet aggregation and platelet synthesis.
- Reduction of risk of death in patients with a history of myocardial infarction or unstable angina.

**Indications:**
- Chest pain with suspected myocardial ischemia

**Contraindications include but not limited to:**
- Allergy to ASA/NSAID
- Peptic ulcer disease
- Hypersensitivity to salicylates

**Adverse effects include but not limited to:**
- Nausea, GI upset
- Hepatotoxicity
- Occult blood loss
- Anaphylaxis

**Adult Administration:**
- 324 mg / 4 tablets

**Packaging Information:**
- (81 mg) Chewable Tablet

**Pediatric Administration:**
- Not recommended

**Onset:**
- 30-60 minutes

**Duration:**
- 4-6 hours

**Pregnancy Safety:**
- Category D in the third trimester: use ONLY if benefit to mother justifies the risk to the fetus.

**Precautions and Comments:**
- Patients who have already taken Aspirin today (such as 81 mg daily dose) can still be administered Aspirin.
- Consider Aspirin early in the appropriate intervention as it has been shown to improve mortality.

**Used in SMO:**
- Chest Pain of Suspected Cardiac Origin

**Pharmacology Chart**

---

*Return to EMR SMO Table of Contents*

*Return to EMR Formulary Table of Contents*
**Epinephrine Auto-injector**  Adrenalin, Epinephrine Hydrochloride

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Sympathomimetic agent (Catecholamine)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</td>
<td>Acts directly on Alpha and Beta receptors of the SNS. Beta effect is more profound than Alpha effects. Effects include:</td>
</tr>
<tr>
<td></td>
<td>• Increased heart rate (chronotropy)</td>
</tr>
<tr>
<td></td>
<td>• Increased cardiac contractile force (inotropy)</td>
</tr>
<tr>
<td></td>
<td>• Increased electrical activity within myocardium (dromotropy)</td>
</tr>
<tr>
<td></td>
<td>• Increased systemic vascular resistance</td>
</tr>
<tr>
<td></td>
<td>• Increased blood pressure</td>
</tr>
<tr>
<td></td>
<td>• Increased bronchial smooth muscle dilation</td>
</tr>
<tr>
<td>Indications:</td>
<td>• Allergic Reaction</td>
</tr>
<tr>
<td></td>
<td>o Shortness of breath (wheezing, hoarseness, other abnormal breath sounds)</td>
</tr>
<tr>
<td></td>
<td>o Itching/hives that are severe and rapidly progressing</td>
</tr>
<tr>
<td></td>
<td>o Oral swelling/laryngospasm/difficulty swallowing</td>
</tr>
<tr>
<td></td>
<td>o Hypotension/unresponsiveness</td>
</tr>
<tr>
<td></td>
<td>o Patients with an exposure to known allergen with progressively worsening symptoms (i.e., hives)</td>
</tr>
<tr>
<td></td>
<td>• Severe Asthma</td>
</tr>
<tr>
<td>Contraindications:</td>
<td>o None when indicated</td>
</tr>
</tbody>
</table>

Adverse effects include but not limited to:
- Hypertension-tachycardia
- Tremor, weakness
- Pallor, sweating, nausea, vomiting
- Nervousness, anxiety
- Increases myocardial oxygen demand and potentially increases myocardial ischemia

**Adult Administration:**

**Packaging Information:**
- Epinephrine (0.3 mg/0.3 ml) auto-injector
- Epinephrine (0.15 mg/0.3 ml) auto-injector

<table>
<thead>
<tr>
<th>Patients over 30 kg (66 pounds):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epinephrine Auto-Injector (Adult size) 0.3 mg (0.3 mL, 1:1 ml) IM – lateral high thigh is preferred. May repeat in 10 minutes if patient condition warrants.</td>
</tr>
</tbody>
</table>

**Pediatric Administration:**

<table>
<thead>
<tr>
<th>Patient 15-30 kg (33-66 pounds):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epinephrine Auto-Injector (Pediatric size) 0.15 mg (0.3 mL, 1:2 ml) – lateral high thigh is preferred. May repeat in 10 minutes if patient condition warrants.</td>
</tr>
</tbody>
</table>

**Onset:**

5-10 minutes

---

*Formulary: Epinephrine Auto-Injector Page 1 of 2*
| **Duration:** | 20 minutes |
| **Pregnancy Safety:** | Category C |
| **Precautions and Comments:** | Use with caution in elderly or pregnant patients, but don’t withhold if patient has serious signs or symptoms (i.e., airway compromise, severe SOB, profound hypotension) |

**Used in SMO:**
- Adult Anaphylaxis and Allergic Reaction
- Pediatric Anaphylaxis and Allergic Reaction

**Pharmacology Chart**

[Return to EMR SMO Table of Contents](#)

[Return to EMR Formulary Table of Contents](#)
# Formulary - Naloxone Hydrochloride (Narcan)

<table>
<thead>
<tr>
<th>Naloxone Hydrochloride</th>
<th>Narcan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification:</strong></td>
<td>Opioid antagonist</td>
</tr>
<tr>
<td><strong>Actions:</strong></td>
<td>Reverses the effects of narcotics by competing for opiate receptor sites in the central nervous system.</td>
</tr>
</tbody>
</table>
| **Indications:**       | • Narcotic agonist  
|                        |   - Morphine  
|                        |   - Heroin  
|                        |   - Hydromorphone  
|                        |   - Methadone  
|                        |   - Meperidine  
|                        |   - Paregoric  
|                        |   - Fentanyl  
|                        |   - Oxycodone  
|                        |   - Codeine  
|                        | • Narcotic agonist/antagonist  
|                        |   - Butorphanol  
|                        |   - Pentazocine  
|                        |   - Nalbuphine  
|                        | • Decreased level of consciousness  
|                        | • Coma of unknown origin  |
| **Contraindications include but not limited to:** | 0 Use caution with narcotic-dependent patients who may experience withdrawal syndrome  
|                                                    | 0 Avoid use in meperidine-induced seizures  |
| **Adverse effects include but not limited to:**  | 0 Hypertension  
|                                                    | 0 Tremors  
|                                                    | 0 Nausea/vomiting  
|                                                    | 0 Dysrhythmias  
|                                                    | 0 Diaphoresis  
|                                                    | 0 Withdrawal (opiates)  
<p>|                                                    | 0 Flash pulmonary edema  |
| <strong>Adult Administration:</strong> | See Pharmacology Chart |
| <strong>Pediatric Administration:</strong> | See Pharmacology Chart |</p>
<table>
<thead>
<tr>
<th>Onset</th>
<th>Within 2 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration</td>
<td>20-30 minutes</td>
</tr>
<tr>
<td>Pregnancy Safety:</td>
<td>Category B</td>
</tr>
<tr>
<td>Precautions and Comments:</td>
<td>Check and remove any transdermal systemic opioid patch.</td>
</tr>
<tr>
<td></td>
<td>The goal of Naloxone administration is to improve respiratory drive, not to return the patient to their full mental capacity.</td>
</tr>
<tr>
<td></td>
<td>High dose/rapid reversal of narcotic effects may lead to combative behavior, possible severe withdrawal, and other adverse drug reactions. Consider other causes/potency of opiate agonist when evaluating need for repeat dosing.</td>
</tr>
<tr>
<td></td>
<td>Observe for: seizures, hypertension, chest pain, and/or severe headache.</td>
</tr>
</tbody>
</table>

**Used in SMO:**
- Adult Altered Mental Status
- Intranasal Medication/MAD Device
- Pediatric Altered Mental Status
- Pediatric Poisoning and Overdose
- Poisoning and Overdose Adult

**Pharmacology Chart**
### Oral Glucose

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Monosaccharide carbohydrate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</td>
<td>After absorption from GI tract, glucose is distributed in the tissues and provides a rapid increase in circulating blood sugar.</td>
</tr>
<tr>
<td>Indications:</td>
<td>Suspected or known hypoglycemia</td>
</tr>
<tr>
<td>Contraindications:</td>
<td>Patient who is not able to follow commands</td>
</tr>
</tbody>
</table>
| Adverse effects include but not limited to: | • Nausea/vomiting  
• Aspiration  
• Hyperglycemia |
| Adult Administration: | 15 GM/37.5 GM tube |
| Pediatric Administration: | Up to 15 GM as tolerated |
| Onset: | 5-10 minutes |
| Duration: | Variable |
| Pregnancy Safety: | Category A |
| Precautions and Comments: | Not a substitute for IV dextrose in extreme cases of hypoglycemia (blood sugar <40) unless IV access is unobtainable. |

**Used in SMO:**
- Adult Altered Mental Status
- Pediatric Altered Mental Status
- Stroke

---

**Pharmacology Chart**

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**Return to EMR SMO Table of Contents**

**Return to EMR Formulary Table of Contents**
The Food and Drug Administration’s Categories are based on the degree to which available information has ruled out risk to the fetus, balanced against the drug’s potential to the patient. Ratings range from "A", for drugs that have been tested for teratogenicity under controlled conditions without showing evidence of damage to the fetus, to "D" and "X" for drugs that are teratogenic. The "D" rating is generally reserved for drugs with no safer alternatives. The "X" rating means there is absolutely no reason to risk using the drug in pregnancy.

<table>
<thead>
<tr>
<th>Category</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Controlled studies show no risk. Adequate, well-controlled studies in pregnant women have failed to demonstrate risk to the fetus.</td>
</tr>
<tr>
<td>B</td>
<td>No evidence of risk in humans. Either animal findings how risk, but human findings do not, or if no human studies have been done, animal findings are negative.</td>
</tr>
<tr>
<td>C</td>
<td>Risk cannot be ruled out. Human studies are lacking, and animal studies are either positive for fetal risk or lacking. However, potential benefits may justify the potential risk.</td>
</tr>
<tr>
<td>D</td>
<td>Positive evidence of risk. Investigational or post-marketing data show risk to the fetus. Nevertheless, potential benefits may outweigh the potential risk.</td>
</tr>
<tr>
<td>X</td>
<td>Contraindicated in pregnancy. Studies in animals or human, or investigational or post-marketing reports have shown fetal risk, which clearly outweighs any possible benefit to the patient.</td>
</tr>
</tbody>
</table>
REGION I
EMERGENCY
MEDICAL SERVICES

Disaster Preparedness
Standing Medical Orders

As prepared by:

Dr. Greg Conrad, EMSMD, Northwestern Medicine Kishwaukee Hospital EMS System
Dr. Jane Pearson, EMSMD, OSF Northern Region EMS System
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Mark Loewecke, OSF Northern Region EMS System
Richard Robinson, SwedishAmerican Hospital EMS System
Anthony Woodson, Northwestern Medicine Kishwaukee Hospital EMS System
Steven Kirschbaum, SwedishAmerican Hospital EMS System

IDPH Approval
Date: December 6, 2017
<table>
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<th>Page</th>
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<td>Blister Agents</td>
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<tr>
<td>Biological Agents</td>
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<td></td>
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<td>Category A</td>
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<td>Category B</td>
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<td>523</td>
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<td>START Triage</td>
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<td>531</td>
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<tr>
<td>Jump START Triage</td>
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<td>School Bus Accident</td>
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<td>Mass Casualty Incident</td>
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<td>ChemPak Information</td>
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GENERAL PRINCIPLES
An event involving Weapons of Mass Destruction (WMD) is by definition a Mass Casualty Incident (MCI). These guidelines are to be used in conjunction with disaster protocols on a regional level. These guidelines will be operated under the Incident Command system, with the fire service acting as line authority and having command of the scene. These guidelines are not inclusive of all WMD agents that exist, and are not intended to replace the resources and information available from the Emergency Management Agency, Department of Health, Department of Homeland Security, and HazMat agencies. These guidelines focus on those agents that are listed as Category A agents by the Center for Disease Control (CDC) and agents that are most likely to cause higher morbidity and mortality, widespread public exposure, or create a scene where public health resources may be overwhelmed.

The first priority will be rescuer safety. No rescuer, fire, EMS, law enforcement or otherwise will proceed into the “hot zone” (a zone where decontamination has not taken place) without proper equipment and protection, and without the expressed consent of the Incident Commander. This is for the safety of the rescuer, and to prevent the rescuer from becoming a victim, compounding the problem. EMS will operate in the “cold zone” (an area designated for patient care that takes place after sufficient decontamination) and will not approach the hot zone due to possible respiratory or chemical contamination. It must also be remembered that the most commonly used weapons are explosives and secondary explosives have been used to injury or kill EMS professionals in the past. Therefore, staging EMS in the “cold zone” will help prevent secondary provider injury.

Weapons of Mass Destruction
It must be realized that chemical agents have immediate effects, whereas biological agents and radiation agents are delayed and will allow for consultation with higher authorities. Chemical agents and explosive agents however, require immediate action, and thus the protocol is aimed at these agents.

Chemical Agents

Blister Agents
Blister agents, such as mustard gas, have signs and symptoms that include red skin, blisters, dry cough, and hoarse voice.
**Blood Agents**
Cyanide is the most common blood agent. Signs and symptoms range from death, coma, and seizures, to headache, chest pain, palpitations, and shortness of breath in mild exposures.

**Choking Agents**
Choking agents, such as chlorine, ammonia, methylisocyanate, have signs and symptoms that include cough, choking, gagging, tearing and secretions, pulmonary edema.

**Nerve Agents**
Nerve agents, such organophosphates, Sarin, and VX have a range of toxicity from headache, nausea and vomiting and bronchial constriction to death, paralysis, seizures, and coma. A mnemonic such as SLUDGE-M or DUMBELS may be used to remember the most common signs and symptoms. SLUDGE-M stands for Salivation, Lacrimation, Urination, Defecation, Gastrointestinal upset, Emesis, and Muscle twitching/Miosis. DUMBELS stands for Diaphoresis, Urination, Miosis, Bradycardia, Emesis /Expiratory wheezing, Lacrimation, and Salivation.

**Biologic Agents**
These may range from smallpox virus to anthrax or viral hemorrhagic fevers. In general, it may take several hours for a team to determine what the agent is. Therefore, prophylactic treatment is only advised with consultation of the Regional Hospital Coordination Center, county and state departments of public health, and federal authorities.

**Radiological Agents**
“Dirty bombs” use radioactive material to contaminate a wide-spread area. Typically their effects are not immediate, although burns may occur to individuals in close proximity to the explosion. Tissues that have rapid cell growth, such as the gut and the skin, are usually the first effected.

**Nuclear Agents**
Nuclear agents use radiation from the detonation of nuclear warheads or direct exposure to a radioactive source can cause illnesses such as severe radiation poisoning and cancer. The severity of the illnesses are based on the length of exposure (TIME), distance from the radioactive source (DISTANCE), and objects used to limit the amount of radiation to which patients may be exposed (SHIELDING).
**Explosive Agents**
Explosions in enclosed spaces cause trauma by direct and indirect means. An explosion may cause multi-system trauma, the victim may fall and sustain injury, or debris and shrapnel may impact victims. In addition, air-filled structures like bowel, tympanic membranes, and lungs are particularly susceptible to a sudden change in air pressure.

**CLINICAL TREATMENT GUIDELINES FOR WMD AGENTS**

**UNIVERSAL PRECAUTIONS** should be practiced during the treatment of all patients within the scene of known or potential contamination. Personal protective equipment to be worn includes, at minimum gloves. However, gowns, respirator masks, shoe covers, and agent specific equipment should be worn in some instances. Additional measures to be taken are noted within the guidelines.

USE THE **START/JumpSTART TRIAGE PROTOCOL**s. Patients who are in arrest due to WMD agents will not be resuscitated. Aggressive airway management is necessary, and early antidote administration is imperative.

**PATIENT DECONTAMINATION** should include removal of the patient from the site and the removal and containment of any and all contaminated or potentially contaminated clothing and released body fluids. Additional measures to be taken beyond these minimum standards are noted within the guidelines. Decontamination of all equipment, including the transport vehicle, must be considered and, if necessary, performed following patient transport.

**EMS CHEMPACK DEPLOYMENT PROTOCOL** should be activated when there is a confirmed or potential release of a chemical or biologic agent, an explosion of unknown source, a potential for a large number of victims, incidents in which a large number of victims present with signs and symptoms for which the CHEMPACK assets may be therapeutic, or when the anticipated need for nerve agent antidotes exceed the resources of the EMS system. These include signs and symptoms for which the responder may feel that self-administration of the contents of nerve agent antidote auto-injectors may be potentially necessary.

**FOR ALL AREAS WHERE ALBUTEROL ADMINISTRATION IS INDICATED,** please note that wheezing is a less reliable indicator of bronchospasm in infants and children due to the anatomical configuration of their airways. Severe smaller airway constriction with resultant hypoxia may be present. All infants or children in apparent distress should be immediately assessed with pulse oximetry. If bronchospasm is present, treat as asthma with inhaled albuterol. Bronchospasm may be particularly severe, especially in previously sensitized individuals and must be treated aggressively.
REGION 1 EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Disaster – Chemical Weapons: Blister Agents

**Overview:** Blister or Vesicant Agents are chemical that are designed to incapacitate and disable those exposed by burning, blistering, and irritating the skin and mucosa; causing severe damage to the eyes, lungs, GI tract, and other internal organs. Vesicants have a latent period from immediate – 12 hours before symptoms first appear. These agents include Lewisite (L), Nitrogen Mustard (HN), Sulfur Mustard (HD), and Phosgene Oxime (CX). These agents have no odor in their pure form, however when weaponized they may have a mustard, garlic, rotten onion, or geranium like odor. Blister agents can be in the form of oily liquids and solids. The liquid form of the agent is usually aerosolized when disseminated. Proper decontamination of patients is necessary to prevent rescuer exposure to the agent. Bleach or hypochlorite is not recommended for decontamination of equipment as it produces a poisonous smoke.

**INFORMATION NEEDED**
- Name of Chemical Agent (if possible)
- History of current illness
- Rapid or slow onset of signs/symptoms
- Number of patients
- Decontamination/treatment procedures already provided
- Type of exposure, vapor/gas or liquid

**OBJECTIVE FINDINGS**

__Onset of signs/symptoms:
- Sulfur Mustard/Nitrogen Mustard delayed 1 – 12 hours
- Lewisite/Phosgene Oxime immediately

__Respiratory:
- Upper Airway Irritation, sore throat, non-productive cough, hoarseness, laryngitis, laryngospasm, and dyspnea. Both Lewisite and Phosgene Oxime exposure can cause pulmonary edema.

__Cardiovascular:
- Hypovolemic shock and circulatory collapse. Tachycardia

__GI/GU:
- Pain, nausea, and vomiting; Patients may also experience diarrhea or constipation.

__Skin:
- Erythema with burning and stinging pain occurring 2-48 hours post exposure. Small vesicles will develop into large blisters.

__HEENT:
- Irritation, reddening of the eyes, severe conjunctivitis, photophobia, miosis, blepharospasm, edema of the lids and conjunctivae, pain, and corneal damage.

__CNS:
- Seizures, anxiety, apathy, and lethargy.
TREATMENT

- Ensure patient has been adequately decontaminated prior to patient care
- Assess ABCs
- Maintain patient’s airway, suction if necessary
- Assist with ventilations as needed
- 100% oxygen via nasal cannula (2-6 L/min) for awake, oriented, stable patients without evidence of hypoperfusion or high-flow via nonrebreather mask (10-15 L/min) if indicated
- Monitor for pulmonary edema
- Treat for shock
- Consider advanced airway management if patient unconscious, exhibiting signs of pulmonary edema, or is in severe respiratory distress.
- Assist ventilations with BVM and 100% oxygen if indicated
- Consider CPAP
- Cardiac monitoring
- For treatment of pulmonary edema refer to the Pulmonary Edema SMO. The use of vasodilators in patients exposed to Lewisite is not recommended. Lewisite causes systemic capillary leakage, and hypovolemic shock may occur in severely exposed patients. Closely monitor blood pressure.
- For treatment of seizures or convulsions refer to the Seizure SMO or Pediatric Seizure SMO.

Documentation for adherence to SMO

- History of illness
- Oxygen provided
- Decontamination procedures used, if any
- Ventilatory support
- Medications provided, if any

Medical Control Contact Criteria

- Contact Medical Control as soon as possible
- Call for ILS or ALS support if there is any signs of respiratory difficulty
- Contact Medical Control prior to administering Albuterol nebulizer treatment

PRECAUTIONS AND COMMENTS

- Minimize scene time and notify the receiving hospital as soon as possible.
REGION 1 EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Disaster – Chemical Weapons: Cyanide Agents

Overview: Blood agents include Hydrogen Cyanide (AC) and Cyanogen Chloride (CK) are extremely toxic. These agents are absorbed into the blood stream and spread through the body. Once absorbed into the body the combine with ferric ions in the cells to prevent intracellular oxygen utilization to make adenosine triphosphate (ATP). This leads to body functions failing and death by suffocation. Cyanides are used in many manufacturing processes and metal plating. Cyanides may be found as a solid, liquid, or gas. In its solid form, it is white and has a faint odor of almonds. Exposure can happen by contact with eyes, inhalation, ingestion, and skin absorption.

INFORMATION NEEDED
- Name of Chemical Agent (if possible)
- History of current illness
- Number of patients
- Decontamination/treatment procedures already provided
- Type of exposure, vapor/gas or liquid
- Route of exposure

OBJECTIVE FINDINGS

__Onset of signs/symptoms:
Immediate upon exposure - may be rapidly fatal without early symptoms.

__Respiratory: May cause immediate respiratory arrest. Initially respiratory rate and depth are increased. As poisoning progresses, respirations become slow, gasping, and apneic. Respiratory tract irritation and pulmonary edema may occur.

__Cardiovascular: Initially pulse rate decreases and blood pressure increases. As poisoning progresses, bradycardia, heart blocks, ventricular arrhythmias hypotension and cardiovascular collapse may occur.

__GI/GU: Nausea, vomiting, excessive salivation, and hemorrhage.

__Skin: dermatitis, ulcers, pale or reddish skin color with diaphoresis. Cyanosis is not always present.

__HEENT: Chemical conjunctivitis and dilated pupils.

__CNS: Immediate coma. Initially anxiety, agitation, vertigo, weakness, paralysis, headache, confusion, lethargy, and seizures may be present.
TREATMENT
___Ensure patient has been adequately decontaminated prior to patient care.
___Assess ABCs
___Initiate CPR or artificial respirations as necessary
___Maintain patient’s airway, suction if necessary
___100% oxygen via nasal cannula (2-6 L/min) for awake, oriented, stable patients without evidence of hypoperfusion or high-flow via nonrebreather mask (10-15 L/min) if indicated.
___Monitor for pulmonary edema
___Treat for shock (see Adult Shock SMO or Pediatric Shock SMO)
___Consider Endotracheal Intubation if patient unconscious, exhibiting signs of pulmonary edema, or is in severe respiratory distress.
___Cardiac Monitoring
___Fluid resuscitation for hypotension as necessary
___For treatment of pulmonary edema refer to the Pulmonary Edema SMO

Documentation for adherence to SMO
___History of illness
___Oxygen provided
___Decontamination procedures used, if any
___Ventilatory support
___Medications provided, if any

Medical Control Contact Criteria
___Contact Medical Control
___Call for ILS or ALS support as needed

PRECAUTIONS AND COMMENTS
- Minimize scene time and notify the receiving hospital as soon as possible.
- Decontamination may not be needed unless clothing is wet.
Overview: Pulmonary or choking agents are chemicals that once inhaled can cause lung tissue damage. These agents include Phosgene (CG), Diphosgene (DP), Chlorine (Cl), Anhydrous Ammonia, and Chloropicrin (PS). All of these agents combine with water in the body to form compounds that irritate and destroy lung tissue and other moist areas of the body like skin and eyes. Primary routes of exposure are skin and eyes, and inhalation. These agents, once inhaled, damage alveoli and result in the development of pulmonary edema.

INFORMATION NEEDED

- Name of Chemical Agent (if possible)
- History of current illness
- Rapid or slow onset of signs/symptoms
- Number of patients
- Decontamination/treatment procedures already provided
- Type of exposure, vapor/gas or liquid

OBJECTIVE FINDINGS

Onset of signs/symptoms:
Immediate. Pulmonary Edema may be delayed for 2 – 24 hours after exposure.

Respiratory: Dry throat, cough, pharyngitis, pneumonia, pneumonitis, pulmonary edema, dyspnea, and tachypnea.

Cardiovascular: Cardiovascular collapse. Hypovolemia, shock, and arrhythmias.

GI/GU: Abdominal Pain, nausea, and vomiting.

Skin: Dermatitis and chemical burns.

HEENT: Chemical conjunctivitis, corneal damage, and burns. Lacrimation and blepharospasm.

CNS: Headache, CNS depression, seizures, and coma.

TREATMENT

Ensure patient has been adequately decontaminated prior to patient care.
Assess ABCs
Maintain patient’s airway, suction if necessary
Assist with ventilations as needed.
Cardiopulmonary Resuscitation if necessary
100% oxygen via nasal cannula (2-6 L/min) for awake, oriented, stable patients without evidence of hypoperfusion or high-flow via nonrebreather mask (10-15 L/min) if indicated.
**TREATMENT - continued**

- Monitor for pulmonary edema
- Treat for shock (see Adult Shock SMO or Pediatric Shock SMO)
- If eye irritation, flush eyes with water. Continuous irrigation each eye with 0.9% saline during transport.
- Cover burns with dry sterile dressings after decontamination.
- Consider **Endotracheal Intubation** if patient unconscious, exhibiting signs of pulmonary edema, or is in severe respiratory distress.
- Assist ventilations with BVM and 100% oxygen if indicated
- Consider **CPAP**
- Cardiac Monitoring
- For treatment of Pulmonary Edema refer to the **Pulmonary Edema SMO**
- For treatment of seizures or convulsions refer to the Adult Seizure SMO or Pediatric Seizure SMO
- **Sodium Bicarbonate** may be beneficial. Consult medical control prior to administration

**Documentation for adherence to SMO**

- History of illness
- Oxygen provided
- Decontamination procedures used, if any
- Ventilatory support
- Medications provided, if any

**Medical Control Contact Criteria**

- Contact Medical Control
- Products of exposure may cause acidosis. Sodium Bicarbonate may be beneficial. Consult medical control prior to administration.
- Call for ILS or ALS support as needed

**PRECAUTIONS AND COMMENTS**

- Minimize scene time and notify the receiving hospital as soon as possible.
- These agents may combine with water to form hydrochloric acid in most cases. Use caution when handling patients.
REGION 1 EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Disaster – Chemical Weapons: Riot Control Agents

Overview: Riot control agents are irritants of low toxicity and short duration of action. These agents are used to temporarily render the person incapable of fighting or resisting. Common agents used are Orthochlorobenzilidene malononitrile (CS; Tear Gas), Chloracetophenone (CN; Mace), Dibenzoxazepine (CR), and Oleoresin capsicum (OC; Pepper Spray). Riot control agents are solids with low vapor temperatures and are dispersed as fine particles or in solutions. Effects are transient, lasting approximately 30 minutes after exposure. Although these agents have a low toxicity and a high safety ratio, exacerbation of respiratory conditions in patients with pre-existing respiratory illnesses is possible at high concentrations.

INFORMATION NEEDED
- Name of chemical agent (if possible)
- History of current illness
- Onset of signs/symptoms
- Number of patients
- Decontamination/treatment procedures already provided

OBJECTIVE FINDINGS
- Onset of signs/symptoms:
  - Immediate
- Respiratory: Mild transient cough.
- Cardiovascular: Transient increase in heart rate and blood pressure.
- GI/GU: burning of mucous membranes, nausea, vomiting, and abdominal pain.
- Skin: irritation of the skin, especially the mucous membranes, pallor, and cyanosis.
- HEENT: Chemical conjunctivitis

TREATMENT
- Ensure patient has been adequately decontaminated prior to patient care.
- Immediately flush the patient’s eyes with plain water.
- Assess ABCs
- Maintain patient’s airway, suction if necessary
- Encourage patient to take deep breaths
- Administer high-flow oxygen via nonrebreather mask (10-15 L/min).
- Monitor for respiratory insufficiency and assist with ventilations as needed.

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TREATMENT – continued

__Treat for shock (see Adult Shock SMO or Pediatric Shock SMO)__
__Consider Advanced Airway Management if patient unconscious, exhibiting signs of pulmonary edema, or is in severe respiratory distress. __
__Assist ventilations with BVM and 100% oxygen if indicated. __
__Consider CPAP __
__Cardiac Monitoring __
__Establish IV access if signs of hypoperfusion are present __
__For treatment of seizures or convulsions refer to the Adult Seizure SMO or Pediatric Seizure SMO__

Documentation for adherence to SMO
__History of illness__
__Oxygen provided__
__Decontamination procedures used, if any__
__Ventilatory support__
__Medications provided, if any__

Medical Control Contact Criteria

__Contact Medical Control as soon as possible to seek ILS and/or ALS support__

PRECAUTIONS AND COMMENTS
- It is highly recommended that each EMS provider be very familiar with decontamination techniques for this type of patient.
- Decontamination of law enforcement should be done with clean water only. Do not use water on clothing still being worn. Decontamination should be focused on the officer’s face, eyes, and hair.
Overview: Nerve agents are the most toxic of the known chemical warfare agents. Nerve agents Tabun (GA), sarin (GB), Soman (GD), and VX are manufactured compounds. The G-type agents are clear, colorless, tasteless liquids miscible in water and most organic solvents. GB is odorless and is the most volatile nerve agent; however, it evaporates at about the same rate as water. GA has a slightly fruity odor, and GD has a slight mothball-like odor. VX is a clear, amber-colored odorless, oily liquid. It is miscible with water and dissolves in all solvents. VX is the least volatile nerve agent. They are chemically similar to organophosphate pesticides and exert their biological effects by inhibiting acetylcholinesterase enzymes causing overstimulation of the parasympathetic nervous system, striated muscle, and CNS. Respiratory failure is caused by chemically mediated pulmonary edema and respiratory muscle paralysis.

***Early access to the CHEMPAK is recommended in the event of a Mass Casualty Incident. Refer to CHEMPAK SMO for further guidance***

INFORMATION NEEDED
- Name of Chemical Agent (if possible)
- History of current illness
- Time onset of signs/symptoms
- Number of Mark 1Kits or DuoNeb autoinjectors administered.
- Number of patients
- Decontamination/treatment procedures already provided
- Type of exposure, vapor/gas or liquid

OBJECTIVE FINDINGS
__Onset of signs/symptoms:
   Initial symptoms depend on the dose and route of exposure. Nerve agents are readily absorbed from the respiratory tract with symptoms begin within seconds to minutes after exposure. Effects from skin exposure to liquid nerve agent may not develop for up to 18 hours following exposure.
__Respiratory: Excessive rhinorrhea, cough, wheezing, bronchorrhea, acute pulmonary edema, chest tightness, dyspnea, and Respiratory failure.
__Cardiovascular: Bradycarrhythmias, A-V Blocks, and hypotension.
__GI/GU: Nausea, vomiting, diarrhea, abdominal cramping, excessive salivation, urination, and defecation.
OBJECTIVE FINDINGS (continued)

__Skin:__ Pallor, cyanosis, and diaphoresis

__HEENT:__ Lacrimation, blurred vision, and pupil constriction.

__CNS:__ CNS depression, coma, anxiety, headache, dizziness, weakness, loss of muscle coordination, muscle fasciculations, seizures, disorientation, confusion, drowsiness, and slurred speech.

__PEDIATRIC:__ CNS depression, flaccid muscle tone, dyspnea, and coma.

TREATMENT

__Ensure patient has been adequately decontaminated prior to patient care. Patients not completely decontaminated can expose responders to the agent through off gassing.

__Administer [Mark 1 kit](#) or [DuoNeb autoinjector](#) if available

__Assess ABCs

__Administer oxygen by non-rebreather mask at 10-15 L/min

__Aggressive airway control may be needed and may require advanced airway insertion

__Maintain patient’s airway, suction if necessary

__Assist ventilations with BVM and 100% oxygen if indicated

__Perform CPR if necessary

__Monitor for pulmonary edema

__Treat for shock (see [Adult Shock SMO](#) or [Pediatric Shock SMO](#))

__Anticipate seizures

__Seek ALS upgrade

__Consider [Advanced Airway Management](#) if patient unconscious, has severe pulmonary edema, or is in severe respiratory distress

__Consider CPAP

__Cardiac Monitoring

__For treatment of pulmonary edema refer to the [Pulmonary Edema SMO](#)

__For treatment of seizures or convulsions refer to the [Adult Seizure SMO](#) or [Pediatric Seizure SMO](#)

Documentation for adherence to SMO

__History of illness

__Oxygen provided

__Decontamination procedures used, if any

__Ventilatory support

__Medications provided, if any

Medical Control Contact Criteria

__Notify Medical Control of the nerve agent exposure

__Call for access to CHEMPAK

PRECAUTIONS AND COMMENTS

- Minimize scene time and notify the receiving hospital as soon as possible.
- Patients not completely decontaminated can expose responders to the agent through off gassing.
REGION 1 EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Disaster – Biological Agents: Category A

Overview: Biological agents can be made by using bacteria, viruses, and toxins as fine airborne particles. Biological agents have been biologically and genetically engineered to increase dispersal and lethality thus making them inherently different from other bacteria, viruses, and toxins. Biological agents are infectious through one or more of the following mechanisms of exposure, depending upon the particular type of agent: inhalation, ingestion, or penetration of the skin through open wounds. The U.S. Centers for Disease Control and Prevention (CDC) rates biological agents with the greatest potential for harming public health as “Category A”. “Category A” agents include anthrax, botulism, plague, smallpox, tularemia, and viral hemorrhagic fevers. The onset of signs and symptoms of disease caused by these agents vary based on the incubation periods of each specific bacteria, virus, or toxin. Unless announced by the terrorist’s attacks using infectious agents will usually go unrecognized until the incubation period is complete and patients begin to flood the medical facilities. Public health and the CDC continually monitor disease reports for potential outbreaks in the United States.

INFORMATION NEEDED
__History related to the presenting condition of the patient
__Other members of the family or friends ill with similar signs and symptoms
__Any travel outside the United States, especially to regions with evidence of current disease outbreak
__Complaints of flu-like symptoms

OBJECTIVE FINDINGS
__Onset of signs/symptoms: Varies based on specific disease.
__Respiratory: Cough, hypoxemia, tachypnea, chest tightness, pleuritic pain, dyspnea, hemoptyisis, pharyngitis, acute respiratory distress syndrome
__Cardiovascular: Chest pain, tachycardia, sepsis, septic shock, cardiovascular collapse
__GI/GU: Nausea/Vomiting, diarrhea or bloody diarrhea, abdominal pain, hematuria
__Skin: Fever/Chills, diaphoresis, open sores, papules at the same stage of development, buboes (plague)
__HEENT: Fatigue/Malaise, sore throat, conjunctivitis, conjunctival hemorrhage
__CNS: Confusion, dizziness, descending paralysis, seizures, headache, delirium
__Musculoskeletal: Myalgia, joint pain

TREATMENT
__Ensure patient has been adequately decontaminated as needed prior to patient care.
__Use appropriate PPE; for Viral Hemorrhagic Fever patients follow CDC and public health PPE guidelines
TREATMENT - continued

__Provide supportive care
__Assess ABCs
__Maintain patient’s airway, suction if necessary
__Assist with ventilations as needed.
__Provide CPR if necessary
__100% oxygen via nasal cannula (2-6 L/min) for awake, oriented, stable patients without evidence of hypoperfusion or high flow oxygen via nonrebreather mask (10-15 L/min) if indicated.
__Monitor for pulmonary edema
__Treat for shock (see Adult Shock SMO, Pediatric Shock SMO, and/or Sepsis SMO)
__Consider Advanced Airway Management if patient unconscious, exhibiting signs of pulmonary edema, or is in severe respiratory distress.
__Assist ventilations with BVM and 100% oxygen if indicated
__Cardiac Monitoring
__For treatment of pulmonary edema refer to the Pulmonary Edema SMO
__For treatment of seizures or convulsions refer to the Adult Seizure SMO or Pediatric Seizure SMO

Documentation for adherence to SMO
__History of illness
__Oxygen provided
__Decontamination procedures used, if any
__Ventilatory support
__Medications provided, if any

Medical Control Contact Criteria
__Contact Medical Control as soon as possible.
__Call for ILS or ALS support if there is any signs of respiratory difficulty
__Contact Medical Control for infectious disease advice when needed.

PRECAUTIONS AND COMMENTS
- Notify the receiving hospital as soon as possible.
- Ensure use of proper PPE for rescuer protection.
REGION 1 EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Disaster – Biological Agents: Category B

Overview: Biological agents can be made by using bacteria, viruses, and toxins as fine airborne particles. Biological agents have been biologically and genetically engineered to increase dispersal and lethality thus making them inherently different from other bacteria, viruses, and toxins. Biological agents are infectious through one or more of the following mechanisms of exposure, depending upon the particular type of agent: inhalation, ingestion, or penetration of the skin through open wounds. The U.S. Centers for Disease Control and Prevention (CDC) rates biological agents that are difficult to disseminate and/or would result in moderate morbidity and low mortality rates as “Category B”. “Category B” agents include ricin, Q fever, staphylococcal enterotoxin B, Venezuelan equine encephalitis, cholera, and T2 mycotoxin. The onset of signs and symptoms of disease caused by these agents vary based on the incubation periods of each specific bacteria, virus, or toxin. Unless announced by the terrorist’s, attacks using infectious agents will usually go unrecognized until the incubation period is complete and patients begin to flood the medical facilities. Public health and the CDC continually monitor disease reports for potential outbreaks in the United States.

INFORMATION NEEDED
__Any known exposure
__History related to the presenting condition of the patient
__Other members of the family or friends ill with similar signs and symptoms
__Any travel outside the United States, especially to regions with evidence of current disease outbreak
__Complaints of flu-like symptoms

OBJECTIVE FINDINGS
__Onset of signs/symptoms: Varies based on specific disease.
__Respiratory: Cough, hypoxemia, tachypnea, pleuritic chest pain, wheezing, respiratory failure
__Cardiovascular: Chest pain, bradycardia, tachycardia, myocarditis, hypotension, cardiovascular collapse
__GI/GU: Nausea/Vomiting, diarrhea, abdominal pain, hematuria, GI hemorrhage, hematemesis
__Skin: Fever/Chills, diaphoresis
__HEENT: headache, sore throat, conjunctivitis, photophobia, erythema
__CNS: Fatigue/Malaise, confusion, seizures, delirium,
__Musculoskeletal: Myalgia

TREATMENT
__Ensure patient has been adequately decontaminated prior to patient care.
__Ensure use of proper PPE according to CDC and public health guidelines
TREATMENT - continued
____ Provide supportive care
____ Assess ABCs
____ Maintain patient’s airway, suction if necessary
____ Assist with ventilations as needed.
____ Administer CPR if needed
____ 100% oxygen via nasal cannula (2-6 L/min) for awake, oriented, stable patients without evidence of hypoperfusion or high-flow via nonrebreather mask (10-15 L/min) if indicated.
____ Treat for shock (see Adult Shock SMO or Pediatric Shock SMO)
____ Consider Advanced Airway Management if patient unconscious, exhibiting signs of pulmonary edema, or is in severe respiratory distress.
____ Assist ventilations with BVM and 100% oxygen if indicated
____ Cardiac Monitoring
____ For treatment of seizures or convulsions refer to the Adult Seizure SMO or Pediatric Seizure SMO

Documentation for adherence to SMO
____ History of illness
____ Oxygen provided
____ Decontamination procedures used, if any
____ Ventilatory support
____ Medications provided, if any

Medical Control Contact Criteria

____ Contact Medical Control as soon as possible.
____ Call for ILS or ALS support if there is any signs of respiratory difficulty

PRECAUTIONS AND COMMENTS

▪ Notify the receiving hospital as soon as possible.
▪ Ensure use of proper PPE for rescuer protection.

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REGION 1 EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Disaster – Biological Agents: Category C

Overview: Biological agents can be made by using bacteria, viruses, and toxins as fine airborne particles. Biological agents have been biologically and genetically engineered to increase dispersal and lethality thus making them inherently different from other bacteria, viruses, and toxins. Biological agents are infectious through one or more of the following mechanisms of exposure, depending upon the particular type of agent: inhalation, ingestion, or penetration of the skin through open wounds. The U.S. Centers for Disease Control and Prevention (CDC) rates biological agents that have the potential to be engineered for mass dissemination in the future as “Category C”. “Category C” agents include various viruses that cause encephalitis, Hantavirus, and influenza. The onset of signs and symptoms of disease caused by these agents vary based on the incubation periods of each specific bacteria, virus, or toxin. Unless announced by the terrorist’s, attacks using infectious agents will usually go unrecognized until the incubation period is complete and patients begin to flood the medical facilities. Public health and the CDC continually monitor disease reports for potential outbreaks in the United States.

INFORMATION NEEDED
__Any known exposure
__History related to the presenting condition of the patient
__Other members of the family or friends ill with similar signs and symptoms
__Any travel outside the United States, especially to regions with evidence of current disease outbreak
__Complaints of flu-like symptoms

OBJECTIVE FINDINGS
__Onset of signs/symptoms: Varies based on specific disease.
__Respiratory: Cough, hypoxemia, tachypnea, dyspnea
__Cardiovascular: Chest pain
__GI/GU: Nausea/Vomiting, diarrhea
__Skin: Fever/Chills, diaphoresis
__HEENT: Headache, sore throat
__CNS: Confusion, fatigue/malaise

TREATMENT
__Ensure patient has been adequately decontaminated prior to patient care.
__Ensure use of proper PPE
__Provide supportive care.

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TREATMENT - continued

- Assess ABCs
- Maintain patient’s airway, suction if necessary
- Assist with ventilations as needed
- Administer CPR if needed
- 100% oxygen via nasal cannula (2-6 L/min) for awake, oriented, stable patients without evidence of hypoperfusion or high-flow via nonrebreather mask (10-15 L/min) if indicated.
- Treat for shock (see Adult Shock SMO or Pediatric Shock SMO)
- Consider Advanced Airway Management if patient unconscious, exhibiting signs of pulmonary edema, or is in severe respiratory distress.
- Assist ventilations with BVM and 100% oxygen if indicated
- Consider CPAP
- Cardiac Monitoring
- For treatment of Pulmonary Edema refer to the Pulmonary Edema SMO

Documentation for Adherence to SMO

- History of illness
- Oxygen provided
- Decontamination procedures used, if any
- Ventilatory support
- Medications provided, if any

Medical Control Contact Criteria

- Contact Medical Control as soon as possible.
- Call for ILS or ALS support if there is any signs of respiratory difficulty

PRECAUTIONS AND COMMENTS

- Notify the receiving hospital as soon as possible.
- Ensure proper use of PPE for responders.
Overview: Radioactive contamination and radiation exposure could occur if radioactive materials are released into the environment as the result of an accident, an event in nature, or an act of terrorism. The amount of radiation exposure is based on three criteria. The three criteria are TIME – the length of exposure; DISTANCE – distance from the radioactive source; SHIELDING – any objects or clothing directly between the patient and the radioactive source. Internal exposure (inhalation of ingestion) to radioactive particles can lead to exposure to higher doses of radiation. A simple radiological device could be a hidden radioactive source emitting gamma waves. Exposure to such a device would cause patients to be irradiated but not contaminated and do not pose a secondary contamination risk. Conversely, exposure to particle radiation sources emitting alpha, beta, neutron, proton, and positron radiation in the form of dust, liquids, or gasses would contaminate patients and pose a secondary contamination risk if not properly handled. These devices differ from a radiation dispersal device (RDD) as there is an absence of an explosive used to disperse the radioactive materials. Exposure to radiation damages DNA and RNA. Cells in the GI tract and hematopoietic system are affected most. Irradiation of a patient by high doses of radiation over a short period of time can cause Acute Radiation Syndrome (ARS). ARS affects bone marrow, Gastrointestinal, Cardiovascular, and Central Nervous Systems. Decontamination of contaminated patients does not supersed emergency medical care.

INFORMATION NEEDED
__History of present illness/injury
__Length of time of exposure, if known
__Type of radiation, if known
__Initial distance of the patient from the source, if known
__Irradiated or contaminated
__Number of potential patients
__Any decontamination completed

OBJECTIVE FINDINGS
__Onset of signs/symptoms: in most cases symptoms are delayed for hours to days
__Respiratory: Dyspnea, cough with irritation and edema to the upper airway, pneumonitis
__Cardiovascular: Tachycardia, cardiovascular collapse, bone marrow suppression
__GI/GU: Nausea, vomiting, diarrhea
__Skin: Mild irritation, erythema, burns, hair loss
__HEENT: Lacrimation, conjunctivitis, corneal damage
__CNS: Decreased level of consciousness, coma, ataxia, headache, lethargy, weakness, tremors, convulsions
TREATMENT

Ensure patient has been adequately decontaminated prior to patient care. Do not delay treatment due to decontamination.

Provide supportive care

Assess ABCs

Maintain patient’s airway, suction if necessary

Assist with ventilations as needed

Administer CPR if needed

100% oxygen via nasal cannula (2-6 L/min) for awake, oriented, stable patients without evidence of hypoperfusion or high-flow via nonrebreather mask (10-15 L/min) if indicated.

Treat for shock (see Adult Shock SMO or Pediatric Shock SMO)

Documentation for Adherence to SMO

History of illness

Oxygen provided

Decontamination procedures used, if any

Ventilatory support

Medications provided, if any

Medical Control Contact Criteria

In all probability it will be known that patients have been exposed to radiation. Contact Medical Control as soon as possible so that all receiving hospitals will be able to receive and handle this type of patient or patients.

PRECAUTIONS AND COMMENTS

- It is imperative that the EMS personnel are familiar with local, area and state guidelines for handling of a radiation accident. Protocols are established for safe handling of the scene, rescuers and the patient by these guidelines

Do not delay treatment due to decontamination
Overview: Explosives may be categorized as manufactured or improvised. Manufactured explosives assure a standard by which they are produced. This type of explosive is usually mass produced and tested for both commercial and military applications. Improvised explosives are weapons produced in small quantities or a commercial device that is used outside its intended purpose. All responders operating at the scene of a bombing or explosion should be trained and equipped to identify and don the proper PPE for such an incident. Explosions cause multisystem trauma and burns. Injuries associated with detonation of these explosives are categorized as primary, secondary, tertiary, quaternary, and quinary blast injuries.

INFORMATION NEEDED

__ History of present illness/injury
__ High explosive or low explosive, if known
__ Distance of the patient from the explosion, if known
__ Potential contaminates, if known
__ Number of potential patients
__ Any decontamination completed

OBJECTIVE FINDINGS

__ Primary Blast Injuries: Direct tissue damage, dismemberment, tympanic membrane rupture, pulmonary edema, gastrointestinal hemorrhage.
__ Secondary Blast Injuries: Penetrating trauma
__ Tertiary Blast Injuries: Penetrating trauma, blunt force trauma, crush injuries, compartment syndrome, traumatic asphyxia, traumatic amputations
__ Quaternary Blast Injuries: Burns, Inhalation injuries, asphyxiation, exacerbation of pre-existing medical conditions.
__ Quinary Blast Injuries: Varied health effects depending on agent used. (Bacteria, radiation, chemicals, contaminated tissue from bystanders or assailant)

OTHER FINDINGS

__ Cardiovascular: Circulatory collapse, arrhythmias
__ Respiratory: Tachypnea, dyspnea, hemoptysis, cough, chest pain, hypoxia, wheezes, pneumothorax, hemothorax
__ CNS: Traumatic Brain Injuries, Headaches, dizziness, progressive stupor, seizure, coma
__ GI/GU: Abdominal pain, acute abdomen, nausea, vomiting, diarrhea, gastroenteritis, testicular pain
__ HEENT: dermatitis, skin eruptions, tinnitus, hearing loss, otalgia, otorrhea
__ Pediatric: Anatomic features unique to pediatric patients make them more susceptible to blast injuries.
TREATMENT
__Ensure proper decontamination, as needed, has been completed prior to patient care.
__Routine trauma care
__Refer to START Triage SMO if multiple patients
__Assess ABCs
__Administer oxygen by non-rebreather mask at 10-15 L/min
__Aggressive airway control may be needed and may require advanced airway insertion
__Maintain patient’s airway, suction if necessary
__Assist ventilations with BVM and 100% oxygen if indicated
__Perform CPR if necessary
__Monitor for pulmonary edema
__Treat for shock (see Adult Shock SMO or Pediatric Shock SMO)
__Seek ALS upgrade
__Consider Advanced Airway Management if patient unconscious, has severe pulmonary edema, or is in severe respiratory distress
__Consider CPAP
__Cardiac Monitoring
__For treatment of pulmonary edema refer to the Pulmonary Edema SMO
__For treatment of seizures or convulsions refer to the Adult Seizure SMO or Pediatric Seizure SMO
__For treatment of crush injuries refer to the Crush Syndrome and Suspension Trauma SMO

Documentation for adherence to SMO
__Mechanism of injury
__History of illness/injury
__Oxygen provided
__Decontamination procedures used, if any
__Ventilatory support
__Medications provided, if any
__Additional treatment and interventions

Medical Control Contact Criteria
__Contact Medical Control as soon as possible.
__Call for ILS or ALS support if there is any signs of respiratory difficulty

PRECAUTIONS AND COMMENTS
- Minimize scene time and notify the receiving hospital as soon as possible.
- Always be aware for the potential of secondary devices designed to injure or kill responders.
**Overview:** This SMO is to be used when EMS providers are faced with a situation where NEEDS EXCEED RESOURCES. This can occur when number or intensity of care needed by victims exceed the care that can be provided with the present resources. Needs may exceed resources with just a few patients or you may encounter situations with ample resources where multiple patient’s needs can be met easily. This policy should be instituted any time needs exceed resources on scene.

Several steps should occur when encountering a situation where needs exceed resources. First, early recruitment of additional help must be attempted. Second, care must be prioritized to provide the greatest good to the most patients. As additional resources become available, i.e. additional caregivers or equipment on site, the treatment priorities should be adjusted to expand care to those who were initially triaged to a delayed or expectant category.

Early and concise communication from the field to medical control is vitally important. Once you have an initial assessment of approximate numbers of victims, severity and types of injuries/illnesses i.e. triage category (number of reds, yellows, greens and blacks), contact Medical Control/receiving hospital with this information. Be sure to specify which information is “known” versus “estimates or guesstimates.” As more precise information is available frequent updates of medical control need to occur.

**START TRIAGE**

_Triage is used to sort patients and resources when the demand for emergency medical services exceeds the immediate capability to deliver that service. The goal of triage is to deliver the most care to the greatest number of patients, and to deliver care to those patients who will benefit most._

_Triage officers are designated according to the district or county Mass Casualty Plan. Illinois EMS Region 1 Trauma Plan utilizes the S.T.A.R.T. triage plan. Casualties are sorted according to the START triage method and tagged:_

- **RED:** Immediate, life threatening
- **YELLOW:** Delayed treatment. These patients are the next priority after patients in the RED category have been treated and/or transported.
- **GREEN:** Designates the “walking wounded” or patients with minor injuries.
- **BLACK:** Dead, no resuscitation indicated. In mass casualty situations, resuscitation of fatally injured patients may take care away from those who would have a much greater chance of survival. In these situations, no resuscitations should be initiated. Of course, if there is sufficient personnel and equipment, normal SMO’s for caring for these patients should apply.
OBJECTIVE FINDINGS

__S.T.A.R.T. TRIAGE: (Simple Triage and Rapid Transport) __

In START triage the patient is assessed quickly for the following signs. Once a patient has a value, which would place him in the RED category, tag him and move on. For the initial triage all patients who can walk are considered GREEN.

GUIDELINES (SEE FLOWCHART)

__Step 1 - Clear the scene of any walking wounded
__Step 2 - Assess ventilation in the remaining patients
   - No respiratory effort after opening patient’s airway- BLACK
   - Respirations above 30 - RED
   - Respirations below 30 - continued assessment
__Step 3 - Assess perfusion
   - No radial pulse - RED
   - Radial pulse present - continued assessment
__Step 4 - Assess neurological status
   - Unconscious or altered level of consciousness - RED
__Once the BLACKs, GREENs, and REDs have been designated by the above physical findings - all remaining patients are designated as YELLOW (delayed).
__Once the patients have been moved into the various treatment areas immediate re-triage should be accomplished. All BLACK category patients should be confirmed as resources are available.

Documentation of adherence to SMO
__Assessment, reassessment and vital signs documented (identified color system
__Treatment
__Patient destination
__Type of situation (chemical, trauma, etc)
__Decontamination needed.

PRECAUTIONS AND COMMENTS

- Keep ALL patient communication concise to keep radio time to a minimum
- Reassess and re-triage patients as indicated
- Trauma patients pose a significant risk for exposing pre-hospital personnel at the scene to blood and body fluids. Barrier precautions should be in place before arrival at the scene and BSI should be observed at all times
- Scene Safety is paramount.
- Minimal disturbance of crime scene should be considered.
START TRIAGE SYSTEM

STEP 1: Clear the Scene of Any “Walking Wounded”
These Patients are considered Delayed Category (GREEN)

STEP 2: Assess Ventilation in Remaining Patients

No Respiratory Effort
AFTER OPENING AIRWAY: DEAD/NON-SALVAGEABLE (BLACK)
Respirations above 30: CRITICAL / IMMEDIATE (RED)
Respirations below 30: CONTINUE ASSESSMENT TO NEXT STEP

STEP 3: Assess Perfusion in Remaining Patients

No Radial Pulse: CRITICAL / IMMEDIATE (RED)
Pulse Present: CONTINUE ASSESSMENT TO NEXT STEP

STEP 4: Assess Neurologic Status

Unconscious / Altered Mental Status: CRITICAL / IMMEDIATE (RED)
Normal Mentation Processes: DELAYED (YELLOW)
Overview: The JumpSTART Pediatric MCI Triage Tool is an objective tool developed specifically for the triage of children in the multi-casualty/disaster setting. JumpSTART is intended for the triage of children with acute injuries and may not be appropriate for the primary triage of children with medical illnesses in a disaster setting. The JumpSTART Triage Tool parallels the START Triage method used for adult patients, but addresses the developmental differences seen in pediatric patients. Differentiating between some children and adults can be challenging. Current recommendations are if the victim appears to be a child use the JumpSTART Tool and if the victim appears to be a young adult use the START Triage Tool. Refer to the START Triage SMO for further information.

INFORMATION NEEDED
__ Estimated number of patients
__ Type of incident

TREATMENT
__ Prioritize pediatric patients using the JumpSTART Triage algorithm
__ Establish treatment zones for RED, YELLOW, and GREEN category patients
__ Routine trauma care should be administered once patients have been moved to a treatment zone.
__ Patients should be re- triaged at least every 5 minutes for unstable patients and at least every 15 minutes for stable patients.

Documentation for adherence to SMO
__ Patient demographics and triage tag numbers
__ Initial triage category
__ Triage category at time of transport
__ Transport destination

PRECAUTIONS AND COMMENTS
- Notify the area hospitals as soon as possible.
- The first arriving unit with triage capability should initiate the triage process
- All on-scene communications should be through incident command to avoid confusion and duplication of resources.
- Radio communications with receiving hospitals should be limited to triage category only. Routine in-bound patient reports should be avoided.
JumpSTART Pediatric MCI Triage

Able to walk? YES → MINOR → Secondary Triage

NO

Breathing? NO → Position upper airway

APNEIC

Palpable pulse? NO → DECEASED

YES

5 rescue breaths

APNEIC → DECEASED

Respiratory Rate

<15 OR >45 → IMMEDIATE

15–45 → IMMEDIATE

Palpable Pulse?

NO → IMMEDIATE

YES

"P" (Inappropriate) Posturing or "U"

"A", "V" or "P" (Appropriate) → DELAYED

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*Evaluate infants first in secondary triage using the entire IS algorithm
Overview: This policy was developed to assist responders during school bus incidents involving the presence of minors. The goal of this policy is to maximize resources by reducing the number of confirmed uninjured children transported to the hospital. This policy only applies to EMS Systems that have a pre-arranged agreement with their school board. It is recommended that each EMS provider within Region 1 will implement and develop a procedure for releasing uninjured children to a parent, legal guardian, or local school official who is willing and approved to take custody of the children.

These procedures should be reviewed and accepted by Local EMS and School Officials. Once Medical Control confirms that minors are not injured, the custody and responsibility for these uninjured children will remain with the responding EMS provider until the children are transferred to parents, legal guardian, school officials or the hospital as outlined in their individual agency procedures. If no procedure exists, then the children would need to be transported to the hospital(s) designated by medical control.

INFORMATION NEEDED
__ Mechanism of injury
__ Number of patients
__ Damage to school transport vehicle
__ Potential for more help needed

OBJECTIVE FINDINGS
Once these objective findings have been determined, the patients may be assigned to one of the following levels:

Level 1 Bus Incident:
Significant injuries present in one or more children, or the existence of an obvious mechanism of injury that can be reasonably expected to cause significant injuries.

Level 2 Bus Incident:
Minor injuries present in one or more children with no obvious existence of a mechanism of injury that could reasonably be expected to cause significant injuries.

Level 3 Bus Incident:
No injuries present in any children and no mechanism that could be reasonably expected to cause injuries.

Level 4 Bus Incident:
If the patients have special healthcare needs and/or have communication difficulties, EMS must contact Medical Control for further directions.
TREATMENT

Once the Level has been determined; approval to implement this policy must be obtained from Medical Control. All children in a level 1 incident will be transported to hospital(s). All level 4 children will be transported per direction of Medical Control. Each provider should follow the Region 1 Mass Casualty Incident SMO as applicable.

- If Medical Control approves implementation of this policy for level 2 or 3 incidents, an appropriate release of service form will be utilized for the children who will not be transported.
- The provider agency will then transfer the custody of the minor consistent with the Treatment of a Minor policy, to the parents, legal guardians or school officials.
- The school officials will follow their established procedure for informing parents and/or legal guardians of the crash / accident / incident.

Once the decision to implement the uninjured children procedure is approved by Medical Control, it is the responsibility of the Local School Official with assistance from EMS to direct and confirm that the children are returned to their parents, legal guardians. EMS will complete all appropriate reports and release of services forms (see Refusal Form / Multiple Patient Refusal Form).

Documentation of adherence to SMO

- All contacts/ discussions with Medical Control
- Criteria that designates patient as a Level 1, 2, 3, 4
- To whom care of child released (school official, parent, etc)
- Care rendered to minor patient

Medical Control Contact Criteria

- Contact Medical Control if any question exists as to the best option for the patient.
- Approval to implement this policy must be obtained from Medical Control.

PRECAUTIONS AND COMMENTS

- If EMS Personnel on the scene feel that any child should be offered medical care, need evaluation by a physician or confirmation of custody or responsibility cannot be verified, then the child should be transported to the hospital(s) designated by Medical Control.
- This policy and procedure only governs the disposition of uninjured children. Per Medical Control, all uninjured children will be discharged to the custody of the appropriate person as outlined in the agency procedure. It is required for the EMS Provider to list the names of the uninjured children with the description of the incident on the System approved patient care run report as well as complete an appropriate release of service form. These reports / forms must then be forwarded to the EMS System Office.
- All such incidents will be reviewed by the EMS System Medical Director, EMS System Coordinator, the EMS CQI Council and the provider agency or agencies involved for each implementation of this procedure.

Original SMO Date: 03/12
Reviewed:
Last Revision: 11/11, 06/17
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Mass Casualty Incidents (MCI)

Overview: A Mass Casualty Incident (MCI) is defined as any event; planned or unplanned that results in the need to provide medical care to patients outside of traditional EMS Responses. Incidents are divided into planned events (special events—like a sporting event or political protest) and unplanned incidents (such as terrorism, earthquakes, natural disasters, or weather related triggering mechanisms).

The overall operations on scene shall be managed by the NIMS Incident Command System and shall be under the direction and control of the Incident Commander (IC) normally from the agency with primary jurisdiction over the incident. Ambulance services, first responder units and EMS personnel involved in mutual aid response to a MCI will be dispatched through the responding services’ communications center. These units will be dispatched only upon IC request. The on-scene medical operations shall be directed by a Medical Branch Director. In the absence of online or on-scene medical direction, EMS will provide patient care in accordance with Region 1 Treatment Protocols.

It is highly recommended that all EMS services participate in annual training and exercises. EMS services should encourage their personnel to participate in on-going emergency preparedness training in the Incident Command System, START and JumpSTART Triage Systems, hazard materials awareness programs and other related MCI training.

OBJECTIVE FINDINGS

Scene safety of the responders, bystanders on the scene
Objects or people that caused the injury
Estimated number of injured
Mechanisms of injury
Any hostile parties involved, their location, and weapons
Hazardous materials and decon efforts
Ensure such information is passed on to responding units and IC

OPERATIONAL RESPONSIBILITIES

Medical Branch Director: The Medical Branch Director is responsible for the implementation of the IAP within the Branch. The Branch Director reports to the Operations Section Chief and supervises the Triage, Treatment, and Transportation Group Supervisors. The Medical Branch establishes command and controls the activities within the Medical Area in order to assure the best possible emergency medical care to patients during a mass casualty incident.
Medical Branch Director Task List

1. Assure Triage, Treatment, and Transport has been established. If established by Command, Triage, Treatment, and Transport will now report to the Medical Branch.
2. Work with Command, and direct and/or supervise on-scene personnel from agencies such as the Medical Examiner's Office, Red Cross, private ambulance companies, and assigned volunteers.
3. Ensure notification of receiving facilities.
4. If the incident is due to a known or suspected WMD, designate a Medical Intelligence Officer to assist with decontamination, antidotes, and treatment of victims.
5. Ensure proper security of incident site, treatment area, and loading area; also provide for traffic control and access for emergency vehicles, including law enforcement.

Triage Group Supervisor: The Triage Group Supervisor reports to the Medical Branch Director and supervises Triage Personnel/Litter Bearers and the Morgue Unit Leader. The Triage Group Supervisor assumes responsibility for providing triage management and movement of patients from the triage area. When triage has been completed, the Group Supervisor may be reassigned as needed.

Triage Group Supervisor Task List

1. Organize the Triage Team to begin initial triaging of victims, utilizing the START/JumpSTART triage system.
2. Assemble the walking wounded and uninjured in a safe area. Use bullhorns or a public address (PA) system if necessary.
3. Advise Command (or the Medical Branch, if established) as soon as possible if there is a need for additional resources.
4. Coordinate with Treatment Group to ensure that priority victims are treated first.
5. Ensure that all areas around the MCI scene have been checked for potential victims, walking wounded, ejected victims, and so forth.
7. Maintain security and control of the triage area. Request the assistance of law enforcement.
8. Report to Command/Medical Branch upon completion of duties for further assignments.

Treatment Group Supervisor: The Treatment Group Supervisor reports to the Medical Branch Director and supervises the Treatment Unit Leaders and the Treatment Dispatch Unit Leader. The Treatment Group Supervisor assumes responsibility for treatment, preparation for transport, and coordination of patient treatment in the Treatment Areas and directs movement of patients to loading location(s).
Treatment Group Supervisor Task List

1. Consider assigning a Documentation Aide to assist with paperwork.
2. Direct personnel to either begin treatment on the victims where they lay or establish a centralized treatment area.
3. Considerations for a treatment area:
   a. Capable of accommodating the number of victims and equipment.
   b. Consider weather, safety, and the possibility of hazardous materials.
   c. Designate entrance and exit areas, which are readily accessible (funnel points).
   d. On large-scale incidents, divide the treatment area into three distinct areas based on priority. Designate a Treatment Manager for each area (Red, Yellow, Green). Use appropriate-color tarps if available.
4. Complete a Treatment Log as victims enter the area.
5. Ensure that all victims are re- triaged through a secondary exam and the assessment is documented on a triage tag.
6. Ensure that enough equipment is available to effectively treat all victims.
7. Establish communications with Transport to coordinate proper transport of the appropriate victims. Direct movement of victims to the ambulance loading areas.
8. Provide periodic status reports to Command/Medical Branch.

Transportation Group Supervisor: Transportation Group Supervisor reports to the Medical Branch Director and supervises the Medical Communications Unit Leader, Ground Transportation Unit Leader, and Helispot Manager. This supervisor is responsible for the coordination of patient transportation and maintenance of records relating to patient identification, injuries, mode of off-incident transportation, and destination.

Transport Group Supervisor Task List

1. Assign a Documentation Aide with a radio to assist with paperwork and communications.
2. Assign a Medical Communication Unit Leader to establish continuous contact with receiving facilities.
3. Establish a victim loading area. Advise Staging of the location and direction of travel. Consider requesting law enforcement assistance for ensuring the security of the loading area.
4. Arrange for the transport of victims from the treatment area.
5. Maintain a Transportation Log and keep a piece of the triage tag for future documentation.
6. Communicate with the Helispot Manager and relay the number of victims to be transported by air. Air-transferred victims should be assigned to distant hospitals, unless the victims' needs dictate otherwise (e.g., trauma center, burn unit).
Medical Communications Unit Leader Task List

1. Establish communication with receiving facilities. Advises receiving facility of the overall situation (e.g., smoke inhalation, trauma, burns, hazardous materials exposure, etc.) and the number and categories of victims. Ground-transported victims should be assigned to hospitals on a rotating basis.

2. When units are prepared to transport, advise Medical Control and supply of the following information:
   a. The unit transporting.
   b. The number of victims to be transported.
   c. Their priority: Red, Yellow, or Green.
   d. Any victims with special needs (e.g., cardiac, burn, trauma).

*Note: Transporting units will not contact the individual hospital on their own, unless there is a need for medical direction/care outside of protocols.*

**DEMOBILIZATION PROCEDURE**

1. The NIMS demobilization procedure will be followed as required.
2. A declared MCI shall be terminated upon coordinating with the appropriate command positions; the IC may terminate the incident.
3. The on-scene Medical Branch Director should confer with the appropriate Group Supervisors to determine if any additional patient care needs exist prior to contacting the Operations Section Chief/IC.
4. The Transport Group Supervisor will be responsible for notifying receiving facilities that all patients have been assigned to transport units and that all on-scene patient care activities have been completed/ended at the MCI site.
5. The EMS Branch Director will contact receiving facilities to confirm up that all Medical Branch components of the MCI are demobilized.
### RESOURCES for Disaster Preparedness SMO’s

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Review of Standing Medical Orders

Ongoing review of Region I EMS Standing Medical Orders is required to remain current with interventions known to be effective in prehospital care and should be the responsibility of each provider in Region I. It is expected that each provider maintain a functional knowledge of the Standing Medical Orders and apply them appropriately during all patient interactions.

Updates and new Standing Medical Orders are noted with either the “Original SMO Date” or “Last Revision” within each SMO. The most current version and implementation date of the entire document is noted in the footer on each page. Distribution and education regarding any updates remains the purview of each Region I EMS Resource Hospital.

The Standing Medical Orders have been developed and approved through a collaborative process involving the Medical Directors listed below:

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