REGION I
EMERGENCY MEDICAL SERVICES

Standing Medical Orders

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

#### MEDICATION ADMINISTRATION CHART

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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 (BLS) services will be allowed to acquire and transmit 12-Lead ECGs. EMT 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

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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 (BLS) services will be expected to report the 12-Lead computerized interpretation. Advanced EMT/Intermediate and 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

Localizing ECG Changes

Right Side 12 Lead
12 Lead Limb Placement

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

RA - White
LA - Black
RL - Green
LL - Red

LEFT POSTERIOR LEADS
V7: posterior axillary line at the same level as V4.6
V8: halfway between V7 and V9
V9: left paraspinal line at the same level as V4.6

Posterior 12 Lead

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

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
- **Ondansetron** for nausea and vomiting
- 12 lead ECG, Cardiac monitor
- IV access
- If hypotensive (SBP<90 and signs of poor perfusion): **fluid bolus**, reassess and repeat if indicated
- 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: 06/17; 09/19; 06/20
Last Revision: 09/19

Return to Table of Contents
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

Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 09/19

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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

- Adult Protective Services, 1-866-800-1409.
- 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, seven 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 or the Ombudsman Program at 815-316-0040.

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

SMO: Adult Airway Management

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
   • Sedation for Airway Management
   • 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 EtCO\textsubscript{2} 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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Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 09/19

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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.
__ O2 and airway management as indicated
__ 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
    Pediatric V-Fib/Pulseless V-Tach
    V-Fib/V-Tach – Adult
    Pediatric Respiratory Distress/Arrest
    Pediatric Arrest: Asystole/PEA
    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
**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

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**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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Original SMO Date: 07/04
Reviewed: 10/13; 06/17; 09/19; 06/20
Last Revision: 10/13; 06/17

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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

- Verification of hospital diversion status
- Orders received from Medical Control regarding patient destination

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

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* OTC, IM, or IV – OTC Diphenhydramine may be utilized by BLS services. Services must supply their own OTC products and utilize per manufacturers recommendations. OTC is not recommended for ALS units.
- Immediate transport
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** OTC, IV (or IM if can’t establish IV access)
- 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 five 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** OTC, 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
**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

**Medical Control Contact Criteria**

- Contact Medical Control for permission to administer **Epinephrine** in patients who are not in anaphylactic shock
- Contact Medical Control whenever a question exists as to the best treatment course for the patient

**PRECAUTIONS AND COMMENTS**

- Diphenhydramine OTC is only for BLS units
- For pediatric patients see **Pediatric Anaphylaxis and Allergic Reaction SMO**

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Reviewed: 06/17; 08/18; 09/19; 06/20
Last Revision: 09/19
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

Consider causes:

- Administer fluid bolus if suspected hypovolemia
- Dextrose 50% for blood glucose < 80mg/dL Dextrose Dosing Chart
- Naloxone IN, IM, IVP 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 used until a determination is made that an ICD is 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 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

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 devices 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, lightheadedness, 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
  Nitrites 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).
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Behavioral Emergencies

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 ranges 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

Return to Table of Contents
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

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:

<table>
<thead>
<tr>
<th>Hypoxia</th>
<th>Stroke/CVA</th>
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<tr>
<td>Hypotension</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.

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<th>MEDICATION ADMINISTRATION CHART</th>
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Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 09/19

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

SMO: 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.

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
Documentation of adherence to SMO

- Description of injury site and/or rash
- Removal of stinger if present
- Treatment given

Medical Control Contact Criteria

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

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.

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

SMO: Body Substance Exposure

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.
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 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 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.
### SMO: Bradycardia - Adult Symptomatic

**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 Midazolam IVP for sedation prior to TCP if patient conscious and Systolic BP >100
TREATMENT (continued)

- 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

MEDICATION ADMINISTRATION CHART

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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

<table>
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<tr>
<th>Medical Control Contact Criteria</th>
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<td>Permission for use of <strong>Epinephrine</strong> for patients with known history of coronary artery disease or hypertension</td>
</tr>
<tr>
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**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.

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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](#)

*Original SMO Date: 07/04*  
*Reviewed: 06/17; 09/19; 06/20*  
*Last Revision: 09/19*
**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
- Per Advanced Burn Life Support initial fluid rates for patients with visibly large burns are based on patient age:
  - 5 years old and younger – 125 ml per hour
  - 6-13 years old – 250 ml per hour
  - 14 years and older – 500 ml per hour
- 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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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.

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**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

---

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Normal waveform

Hyperventilation

Hyperventilation
**Hypoventilation**

![Graph showing hypoventilation]

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

![Graph showing apnea]

**Bronchoconstriction**

![Graph showing bronchoconstriction]
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
    Pediatric Bradycardia
    Adult Narrow Complex Tachycardia
    Pediatric Tachycardia
    Adult Wide Complex Tachycardia
    Pediatric Tachycardia
  • Pulmonary Edema
    Pulmonary Edema SMO

Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
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>
</tr>
</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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**SMO: Carbon Monoxide Exposure**

*Current Version: 2020.1*

*Issued: 07/20*

*EMS/ Region 1 SMO*
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: 06/17; 09/19; 06/20
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

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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
__If patient is conscious and time permits, sedate patient with Midazolam IVP
__Turn on defibrillator
__Apply limb leads
__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 for clinical situation (use the following or manufacturers’ recommendation):
  __ A-Fib – 120-200 joules; increase in step-wise fashion
  __ Stable monomorphic VT – 100 joules; increase in step-wise fashion
  __ Other SVT/Atrial flutter – 50-100 joules; increase in step-wise fashion
  __ For irregular wide-complex Tachycardia consistent with unstable polymorphic V-Tach treat with unsynchronized defibrillation dose
__Press synchronizer switch/button
__Assure machine sensing of R wave
__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, increase to next energy level, 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: 06/17; 09/19; 06/20
Last Revision: 09/19

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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

**Medical Control Contact Criteria**

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

**PRECAUTIONS AND COMMENTS**

  __If central line or central port does not flush easily do not force fluid through port
USE OF PORT-A-CATH NEEDLE SET

1. 
2. 
3. 
4. 

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

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.

**MEDICATION ADMINISTRATION CHART**

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Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
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

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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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Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 06/17

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**REGION I EMERGENCY MEDICAL SERVICES**  
**STANDING MEDICAL ORDERS**  
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**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
  - 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 Gynecological 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
  ___ For significant bleeding, tachycardia, and/or hypotension consider Tranexamic Acid (TXA)

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:

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<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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<tr>
<td>Grimace (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
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Last Revision: 09/19

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

PROCEDURE: CPAP

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
- For patients experiencing anxiety may administer Midazolam
- If wheezing, perform in-line Albuterol/Ipratropium Nebulizer Duo Neb treatment
- If patient deteriorates, remove CPAP, ventilate with BVM and consider airway insertion

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**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

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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**

- 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: 06/17; 09/19; 06/20
Last Revision: 07/11; 06/17; 09/19

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Current Version: 2020.1
Issued: 07/20
EMS/ Region 1 SMO
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**
- If acidosis is suspected consider **Sodium Bicarbonate**
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

MEDICATION ADMINISTRATION CHART

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<tr>
<th>Peds</th>
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<td>DSI</td>
<td>Meds</td>
<td>Formulary</td>
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</tbody>
</table>

Return to Table of Contents
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. EMSMD may also give approval to agencies for the sedation or sedation and paralytics***

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:
    __Combatative / 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
**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 combative 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: **Etotomate** 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 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:** [DSI Weight Based Dosing Chart](#)
- Consider pre-medications for DSI:
  - Lidocaine in the patient with suspected hyperkalemia or increased intracranial pressure
  - Atropine for persistent bradycardia

**STEP 4: SEDATION/INDUCTION:** [DSI Weight Based Dosing Chart](#)
- Sedation: Etomidate or Midazolam or Ketamine (use Ketamine IV according to DSI Dosing)
- Continue pre-oxygenation
- If provider/EMS agency is not approved for paralytics, skip to STEP 6

---

**Return to Table of Contents**
STEP 5: *If needed, and approved for paralytics:*
PARALYSIS, then INTUBATE: Succinylcholine (alternate Rocuronium or Vecuronium when Succinylcholine is not available) - *DSI Weight Based Dosing Chart*

- 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.
- Patient with protected airway may receive additional dosing.
- 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**
- Documentation 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: 06/17; 09/19; 06/20 Last Revision: 02/06; 06/17; 09/19
**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 Needles 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**

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Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 02/06; 06/17; 09/19

Procedure: Sedation for Airway Management/Delayed Sequence Intubation (DSI)

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

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
- Combativeness
- 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

Return to Table of Contents
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

MEDICATION ADMINISTRATION CHART

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MEDICATION ADMINISTRATION CHART

Pages 287 - 346

Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 09/14; 06/17

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

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 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. Three 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
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**

- I also have the following advance directives (OPTIONAL):
  - [ ] Health Care Power of Attorney
  - [ ] Living Will Declaration
  - [ ] Mental Health Treatment Preference Declaration

**Contact Person Information**

- Contact Person Name: [ ]
- Contact Phone Number: [ ]

**Health Care Professional Information**

- Preparer Name: [ ]
- Preparer Title: [ ]
- Preparer 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/phone 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 revising a POLST form requires completion of a new POLST form.
- Drawline 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 ILC 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://idph.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

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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**

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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

Original SMO Date: 08/07
Reviewed: 06/17; 09/19; 06/20
Last Revision: 09/14; 06/17

Return to Table of Contents
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

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

Original SMO Date: 08/07
Reviewed: 06/17; 09/19; 06/20
Last Revision: 09/14; 06/17

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## EMERGENCY INCIDENT REHABILITATION REPORT

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<th>B/P</th>
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**Medical Monitoring Reference**

- **Body Temperature**: < 100.6°F
- **Heart Rate**: < 110 bpm
- **Respirations**: 10 to 20
- **SpO₂**: > 95% and SpCO < 10%
- **Blood Pressure**: **INITIAL** Syst: >90 & <190 | Dias: >100 & <90
- **Re-Assessment** Syst: >95 & <160 | Dias: <90

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**Original SMO Date**: 08/07

**Reviewed**: 06/17; 09/19; 06/20

**Last Revision**: 09/14; 06/17

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**Procedure**: Emergency Incident Rehabilitation

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**Return to Table of Contents**
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 load 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
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 for additional dosing of sedation medication
__ 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:
  o Hypoxia
  o Hypotension
  o Hypoglycemia
  o Trauma (head injury)
  o Alcohol/Drug Intoxication or Reaction
  o Electrolyte Imbalances
  o 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.

 Call Medical Control for additional dosing for sedation medications.

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Original SMO Date: 06/13
Reviewed: 06/17; 09/19; 06/20
Last Revision: 06/17; 09/19
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
__For significant bleeding, tachycardia, and/or hypotension consider Tranexamic Acid (TXA)
__Transport as soon as possible
**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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**Standard Dosing**

- ILS/ALS
- BLS
- EMR
- Dextrose
- Dopamine
- Mag Sulfate
- Fentanyl IN
- Midazolam
- DSI
- Formulary

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**Original SMO Date:** 11/07  
**Reviewed:** 06/17; 09/19; 06/20  
**Last Revision:** 05/12; 12/02; 06/17; 09/19
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: 06/17; 09/19; 06/20
Last Revision: 06/17

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PRECAUTIONS AND COMMENTS

- It is not uncommon for blood pressure readings to range from 220/120 to 240/140 mm 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.
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

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

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

**Medical Control Contact Criteria**

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

**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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Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 06/17

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

**SMO: 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]).

**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__

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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 < 89°F. For temperatures > 89°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 rewarmed 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.

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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/GFAST 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

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**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
  - Respiration - 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 to include radio and phone report
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

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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)

Documention 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
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.
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
  ▪ Patient condition warrants advanced prehospital medical care
__ Call for ILS/ALS intercept EARLY. NEVER discontinue ILS/ALS care once initiated.
**PROCEDURE**

Upon request of BLS ambulance 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

**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.)
# 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 personal 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 personal 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
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
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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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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Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 06/17

Procedure: Intraosseous Access

Current Version: 2020.1
Issued: 07/20
EMS/ Region 1 SMO
**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**

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

**Humeral Head**

- The shoulder should be adducted
- The palm placed on the umbilicus

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

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

- Once site is located
- Confirm the exact position by verifying the greater Tubercle’s outer margins

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Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 06/17

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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
- Sedation for Airway Management
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.

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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.
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
- **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 120-200 J
  - Wide Regular 100 J, biphasic
  - Wide Polymorphic, unsynchronized defibrillation dose
- **Fentanyl** or **Morphine Sulfate IVP** for pain control if needed if patient SBP > 100 mmHg. (see **Pain Management SMO**)

- If cardioversion unsuccessful increase joules in a stepwise fashion
- 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: 09/19; 06/20
Last Revision: 09/19

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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
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 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 or 5th intercostal space in the mid-axillary 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
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

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

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

SMO: Ophthalmic Trauma

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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.

**Pain Management SMO**

**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.

**Pain Management SMO**

**Documentation of 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

**MEDICATION ADMINISTRATION CHART**

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**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*
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.

IV with Normal Saline at TKO

Consider Ondansetron prior to narcotic administration (EMT’s – adults only)

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 should be transported to the hospital. Patients who have received narcotics may not be considered competent to sign refusal. Contact Medical Control for direction. In those patients who receive Naloxone the coma/depressed respirations may reoccur when the Naloxone wears off.

Paramedics may consider the following as an alternative to the medications listed above:

- 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).
Medical Control Contact Criteria

- Contact Medical Control when narcotics and/or Naloxone have been administered and the patient wants to refuse transport
- Contact Medical Control whenever a question exists as to the best treatment course for the patient

PRECAUTIONS AND COMMENTS

- Morphine, Fentanyl, and Ketamine are potent 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$_2$ 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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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
  • BVM
  • OPA
  • NPA
  • Supraglottic Airway per EMS System approval following manufacturer’s guidelines
  • Pediatric intubation for patients < 30 kg has been devalued based on evidence based studies showing aggressive airway management without intubation results in improved outcomes:
    o In extreme or rare circumstances (tracheostomy patient, excessive bleeding in airway) when other measures have failed, intubation may be considered
__ 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: 09/19; 06/20
Last Revision: 09/19; 06/20

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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 devalued 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.
- For pediatric patients less than 30 kg cuffed tubes should be used.

**Kings Airway Chart**

<table>
<thead>
<tr>
<th>Size</th>
<th>Patient Criteria</th>
<th>Color</th>
<th>Inflation Volume</th>
<th>NG Max Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>&lt; 5 kg (12.5 lbs)</td>
<td>Clear</td>
<td>10 ml</td>
<td>10 F</td>
</tr>
<tr>
<td>1</td>
<td>5-12 kg (12.5-26.4 lbs)</td>
<td>White</td>
<td>20 ml</td>
<td>10 F</td>
</tr>
<tr>
<td>2</td>
<td>12-25 kg (26.4-55 lbs)</td>
<td>Green</td>
<td>35 ml</td>
<td>16 F</td>
</tr>
<tr>
<td>2.5</td>
<td>25-35 kg (55-77 lbs)</td>
<td>Orange</td>
<td>40-45 ml</td>
<td>16 F</td>
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<tr>
<td>3</td>
<td>4-5 ft</td>
<td>Yellow</td>
<td>45-60 ml</td>
<td>18 F</td>
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<td>4</td>
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<td>5</td>
<td>&gt; 6 ft</td>
<td>Purple</td>
<td>70-90 ml</td>
<td>18 F</td>
</tr>
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</table>

**MEDICATION ADMINISTRATION CHART**

<table>
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<tr>
<th>Peds</th>
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<td>Meds</td>
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</tr>
</tbody>
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Original SMO Date: 06/17
Reviewed: 09/19; 06/20
Last Revision: 09/19; 06/20

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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 OTC, IM, or IV – OTC Diphenhydramine may be utilized by BLS services. Services must supply their own OTC products and utilize per manufacturers recommendations. OTC is not recommended for ALS units.
- Immediate transport
OBJECTIVE FINDINGS

Mild
__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** OTC, IV (or IM if can’t establish IV access)
__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
__Bradyardia
__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** OTC, IV (or IM if can’t establish IV access)
- **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.
**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
TREATMENT

__Routine Pediatric Care

__Check blood glucose

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

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
<table>
<thead>
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</table>

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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)

**Calcium Gluconate IVP or IO** for suspected hyperkalemia (history of renal failure, dialysis, or potassium ingestion)
- 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: 03/14; 06/17; 09/19; 06/20
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

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)

MEDICATION ADMINISTRATION CHART

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<thead>
<tr>
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Original SMO Date: 12/12
Reviewed: 03/14; 06/17; 09/19; 06/20
Last Revision: 03/14; 06/17

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

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

Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 06/17

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

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
__ 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

Original SMO Date: 12/12
Reviewed: 03/14; 06/17; 09/19; 06/20
Last Revision: 03/14; 09/19

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### 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.
- Per Advanced Burn Life Support initial fluid rates for patients with visibly large burns are based on patient age:
  - 5 years old and younger – 125 ml per hour
  - 6-13 years old – 250 ml per hour
  - 14 years and older – 500 ml per hour
- 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
**MEDICATION ADMINISTRATION CHART**

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**RULE OF NINES CHART**

Original SMO Date: 12/12  
Reviewed: 03/14; 06/17; 09/19; 06/20  
Last Revision: 03/14; 09/19  

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

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 (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)
- 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 pre 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

Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 06/17

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**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

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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>SVT</th>
<th>Ventricular Tachycardia</th>
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<td>• Progression</td>
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<td>• Fluid loss</td>
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<td>• Trauma</td>
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<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

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

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### 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 with **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 with **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 valsala 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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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)
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 EtCO$_2$ 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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**Original SMO Date:** 07/04  
**Reviewed:** 06/17; 09/19; 06/20  
**Last Revision:** 06/17

**Return to Table of Contents**
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
  - If heart rate greater than 100 bpm, check skin color. If peripheral cyanosis give oxygen by mask.

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

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**PRECAUTIONS AND COMMENTS**

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

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Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 06/17

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**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
TREATMENT (continued)

Lower Airway (Wheezing)

___ **Albuterol:**
- Age 2 and older: **Albuterol** prn until relief of symptoms
- Under 2: Contact Medical Control

___ 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:
- **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.
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Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 06/17

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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
**TREATMENT**

**Routine Pediatric Care**

Seizure precautions

- GENTLE HANDLING. Minimal CNS stimulation. Do NOT check pupillary reflexes.
- Minimize external stimulation - avoid sirens, bright lights and loud music if possible.

__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

For generalized convulsive (tonic-clonic) seizure treat with **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

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Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 09/19

**SMO: Pediatric Seizures / Status Epilepticus**

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**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: 06/17; 09/19; 06/20
Last Revision: 09/19

Return to Table of Contents
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

Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 06/17

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**

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Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 06/17
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

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** OTC, IVP, or IM (repeat as needed)

**NARCOTICS**

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

**TRICYCLIC ANTIDEPRESSANTS (TCA)**

- **Routine Pediatric Care**
- Collect information
- **Calcium Gluconate IVP or IO** for suspected hyperkalemia (history of renal failure, dialysis, or potassium ingestion)
- 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
- **Calcium Gluconate IVP or IO** symptomatic for calcium channel blocker overdose
- 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

Medical Control Contact Criteria

Consult Medical Control for administration of Sodium Bicarb or Lidocaine
__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.
- 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)

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Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 09/19

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

SMO: Pediatric Cardiac Arrest: Ventricular Fibrillation & Pulseless V-Tach

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 (ex. history of cardiovascular disease, congenital heart defect, respiratory disease, trauma, diabetes)
- History of present event (ex. 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 or pulseless V-Tach
- Defibrillate at 2 J/kg repeat at 4 J/kg if ineffective, subsequent doses greater than or equal to 4 J/kg to a max of 10 J/kg or adult dose
- 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

**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)

**MEDICATION ADMINISTRATION CHART**

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**MEDICATION ADMINISTRATION CHART**

- Pages 287 - 346

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Original SMO Date: 07/04
Reviewed: 02/07; 06/17; 09/19; 06/20
Last Revision: 02/07; 06/17

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Current Version: 2020.1
Issued: 07/20
EMS/Region 1 SMO
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

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**

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<td>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.</td>
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<td>An RN or non-agency EMS provider on scene must provide proof of State of Illinois licensure and a picture ID.</td>
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<td>He/she must agree to follow the directions of the EMSMD or his/her designee.</td>
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**Documentation of adherence to SMO**

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<td>Notification of Medical Control as outlined above.</td>
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<td>Any deviation from SMO as discussed with Medical Control.</td>
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<td>Documentation of name, State of Illinois license number, and picture ID produced as outlined above.</td>
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**Medical Control Contact Criteria**

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**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.

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: 06/17; 09/19; 06/20
Last Revision: 06/17

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

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, administer Midazolam
- Magnesium Sulfate (see Magnesium Sulfate Administration Chart) after initial dose of
- Midazolam for seizure

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

Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 09/19

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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/GYN 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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Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 09/19

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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

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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Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 06/17

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

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**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 or dehydration is suspected.
  - If systolic BP under 90, see Cardiogenic Shock SMO

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Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 06/17

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**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

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**SMO: Pulmonary Edema**

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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
- For significant bleeding, tachycardia, and/or hypotension consider Tranexamic Acid (TXA)

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
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
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: __________________________  __________________________
Is the patient oriented to: □ Person □ Place □ Time □ Situation □
Suspicion of intoxication? □ NY □ Y
Medical Control Contended? □ NY □ Y  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 of 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:

□ 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.
□ I am refusing transport to __________________________ Hospital. I have been informed that this facility is the nearest facility within the radius of ___ miles.

RISKS

All refusals 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,

"Signed name of patient/patient authorized to consent for patient" __________________________
"Signature of patient/patient authorized to consent for patient" __________________________

Printed name of witness __________________________  Signature of witness __________________________

Comments: __________________________ __________________________ __________________________ __________________________

X __________________________ __________________________
Signature of Administrator #1/License #  Signature of Administrator #2/License #
White: Agency Copy Yellow: EMS Copy Pink: Patient Copy

Original SMO Date: 07/04  Reviewed: 02/06; 06/17; 09/19; 06/20
Last Revision: 02/06; 06/17; 06/20

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Refusal / Discharge Instructions (Front Page)

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 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.

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:
- Your pain gets worse or is now only in 1 area.
- You vomit blood or the first bloody urine.
- You become dizzy or faint.
- You begin to feel weaker or more disoriented or swollen.
- You have a temperature over 100°F.
- You have trouble passing urine.
- 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 picking 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:
- You have shooting pains into your buttocks, groin, legs, or arms of the pain increases.
- You have trouble urinating or loss of control of your stools or urines.
- 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 coldwater, 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:
- Temperature is greater than 101°F for 24 hours.
- A child becomes less active or alert.
- Temperature does not come down with Acetaminophen (Tylenol) or Ibuprofen with the appropriate dose.

HEAD INJURY:
- Immediately after a blow to the head, nausea, and vomiting may occur.
- Individuals who have sustained a head injury must be checked, and if necessary examined every 2 hours for the first 24 hours.
- Ice may be placed on the injured area to decrease pain and swelling.
- Only clear liquids such as juice, soft drinks or water the first 12 hours after injury.

Call or see a physician, go to the emergency department, or call 911 immediately:
- The injured person has persistent vomiting, is not able to be awakened, has trouble walking or using an arm or leg, has a seizure, develops unusual 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. Severe stings may cause a headache and an upset stomach (vomiting).

Call or see a physician, go to the emergency department, or call 911 immediately:
- 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 every hour) will decrease pain and swelling.
- Diphenhydramine (Benadryl) may be used as directed to control itching and hives.

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. It is possible that any cause which produces respiratory distress.

Call or see a physician, go to the emergency department, or call 911 immediately:
- If you have seen a physician for this problem, take all medications as directed.
- The cough, wheezing, or breathing difficulty becomes worse or does not improve even when taking medications.
- You have Chest Pain.
- Sputum (spit) changes from clear to yellow, green, grey, or becomes bloody.
- You are not able to perform normal activities.

EXTREMITIES INJURY:
- Extremity injuries may consist of cuts, scrapes, bruises, sprains, or broken bones (fractures).
- Apply ice on the injury for 12 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:
- The bruising, swelling or pain gets worse despite the treatment listed above.
- Any injuries listed in the Wound Care Instructions are noted.
- You are unable to move the extremity or 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 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:
- You develop a temperature above 101°F.
- Vomiting or Diarrhea lasts longer than 24 hours, gets worse, or bloody noted.
- You cannot keep fluids down or no urination is noted in 8 hours.

WOUND CARE:
- Wounds include cuts, scrapes, bruises, 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 twice daily with soap and 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:
- See the Extremity Injury Instructions.
- Temperature is greater than 101°F.
- Bruising, swelling, or pain gets worse or bleeding is not controlled as directed.
- Any signs of infection, such as redness, drainage of yellow fluid or pus, red streaks extending from the wound, or a bad smell, noted.
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 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, or heart attacks 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, light-headedness.
- 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, drop in 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, light-headedness 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 you 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, irritability, 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, drowsy, 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 877-363-6358
- National hotline 1-800-799-7223 / TTY 1-800-787-3224
- http://www.illacdv.org/

Narcan:
- You have received Narcan for an apparent Narco tic 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 Narco tic is out of your system. If that happens you could die.
- We cannot take you against your will.
- We recommend that you do not do any more drugs or alcohol.

Local Phone Numbers

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.
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’ Personnel 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.

<table>
<thead>
<tr>
<th>Print Name</th>
<th>Signature</th>
<th>DOB</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
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</tr>
</tbody>
</table>

| 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
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>
<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>40 kg</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>
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<td>120 kg</td>
<td>130 kg</td>
<td>140 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>DSI Meds</td>
<td>Formulary</td>
<td></td>
</tr>
</tbody>
</table>
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%
    o If history of COPD sats 90% to 92% are preferred to avoid respiratory depression.
    o 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/OI 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 should 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 or 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></th>
<th>Peds</th>
<th>Adult</th>
<th>Standard Dosing</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 kg</td>
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<td>ILS/ALS</td>
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<tr>
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<td>8-9 kg</td>
<td>10-11 kg</td>
<td>BLS</td>
</tr>
<tr>
<td>12-14 kg</td>
<td>12-14 kg</td>
<td>60 kg</td>
<td>DEXTROSE</td>
</tr>
<tr>
<td>15-18 kg</td>
<td>15-18 kg</td>
<td>70 kg</td>
<td>Dopamine</td>
</tr>
<tr>
<td>19-23 kg</td>
<td>19-23 kg</td>
<td>80 kg</td>
<td>Mag Sulfate</td>
</tr>
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<tr>
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</tr>
<tr>
<td></td>
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<td>Formulary</td>
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</tbody>
</table>

Original SMO Date: 07/04
Reviewed: 02/06; 06/17; 09/19; 06/20
Last Revision: 02/06; 06/17

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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.
**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>
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<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>
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<tbody>
<tr>
<td>Newborn-3 months</td>
<td>85-205</td>
<td>140</td>
<td>80-160</td>
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<tr>
<td>3 months-2 years</td>
<td>100-190</td>
<td>130</td>
<td>75-160</td>
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<tr>
<td>2-10 years</td>
<td>60-140</td>
<td>80</td>
<td>60-90</td>
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<tr>
<td>&gt; 10 years</td>
<td>60-100</td>
<td>75</td>
<td>50-90</td>
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**Blood pressure**

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<th>Male</th>
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<td>81-103</td>
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<tr>
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<td>82-102</td>
<td>87-105</td>
</tr>
<tr>
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<td>67-103</td>
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<tr>
<td>2 years</td>
<td>71-105</td>
<td>70-106</td>
</tr>
<tr>
<td>7 years</td>
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<td>79-115</td>
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<tr>
<td>Adolescent (15 years)</td>
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</table>

<table>
<thead>
<tr>
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<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 day</td>
<td>31-45</td>
<td>30-44</td>
</tr>
<tr>
<td>4 days</td>
<td>37-53</td>
<td>35-53</td>
</tr>
<tr>
<td>1 month</td>
<td>36-56</td>
<td>37-55</td>
</tr>
<tr>
<td>3 months</td>
<td>44-64</td>
<td>45-65</td>
</tr>
<tr>
<td>6 months</td>
<td>46-66</td>
<td>48-68</td>
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<tr>
<td>1 year</td>
<td>22-60</td>
<td>20-58</td>
</tr>
<tr>
<td>2 years</td>
<td>27-65</td>
<td>25-63</td>
</tr>
<tr>
<td>7 years</td>
<td>39-77</td>
<td>38-78</td>
</tr>
<tr>
<td>Adolescent (15 years)</td>
<td>47-85</td>
<td>45-85</td>
</tr>
</tbody>
</table>
## 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>Body weight loss</td>
<td>Infants: 5% (50 ml/kg)</td>
<td>Moderate: 10% (100 ml/kg)</td>
<td>Severe: 15% (150 ml/kg)</td>
</tr>
<tr>
<td></td>
<td>Children: 3% (30 ml/kg)</td>
<td>Moderate: 6% (60 ml/kg)</td>
<td>Severe: 9% (90 ml/kg)</td>
</tr>
<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>
<td>Mild tachycardia</td>
<td>Moderate tachycardia</td>
<td>Extreme tachycardia</td>
</tr>
<tr>
<td>Peripheral Pulse</td>
<td>Normal</td>
<td>Diminished</td>
<td>Absent</td>
</tr>
<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>
REGION 1 EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Routine Trauma Care and Overview

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:
     - 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
     - Prepare to suction or maintain Spinal Restriction while log rolling patient for vomiting
     - Airway management as indicated
   - EtCO\textsubscript{2} as indicated (if available).
   - Chest Trauma:
     - For open chest wounds utilize occlusive dressings
     - 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

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>Peds</th>
<th>3 kg</th>
<th>4 kg</th>
<th>5 kg</th>
<th>6-7 kg</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Adult</td>
<td>40 kg</td>
<td>50 kg</td>
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<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>
</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>DSI</td>
<td>Meds</td>
<td>Formulary</td>
</tr>
</tbody>
</table>

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

SMO: Adult Seizures / Status Epilepticus

**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

---

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**TREATMENT**

__Routine Medical Care__

__Seizure precautions__

- GENTLE HANDLING. Minimal CNS stimulation. Do NOT check pupillary reflexes.
- Minimize external stimulation - avoid sirens, bright lights and loud music if possible.

__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 administer Midazolam __

If unable to secure IV or IO, give 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**

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<td>100 kg</td>
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<td>130 kg</td>
<td>140 kg</td>
<td>150 + kg</td>
</tr>
<tr>
<td>Standard Dosing</td>
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<td>BLS</td>
<td>EMR</td>
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<td>Midazolam IN</td>
<td>DSI Meds</td>
<td>Formulary</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 09/19
REGION I EMERGENCY MEDICAL SERVICES  
STANDING MEDICAL ORDERS  
BLS, ILS, ALS  

SMO: Sepsis

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**
- If patient meets sepsis criteria 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 for adult patients with 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**

<table>
<thead>
<tr>
<th>Peds</th>
<th>3 kg</th>
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<tbody>
<tr>
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<td>80 kg</td>
<td>90 kg</td>
<td>100 kg</td>
<td>110 kg</td>
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<td>140 kg</td>
</tr>
<tr>
<td></td>
<td>ILS/</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>DSI Meds</td>
<td>Formulary</td>
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Original SMO Date: 06/17
Reviewed: 09/19; 06/20
Last Revision: 09/19

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## ADULT SEPSIS SCREENING TOOL

<table>
<thead>
<tr>
<th>Is the patient’s presentation suggestive of any of the following infections?</th>
<th></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>

<table>
<thead>
<tr>
<th>Are any two of the following:</th>
<th></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>
</tr>
<tr>
<td>Tachypnea &gt; 20/m, PaCO2 &lt; 32 mmHg; SpO2 ≤ 92%</td>
<td></td>
</tr>
<tr>
<td>Adult Tachycardia &gt; 90 bpm</td>
<td></td>
</tr>
<tr>
<td>Pediatric Tachycardia (add chart)</td>
<td></td>
</tr>
<tr>
<td>0d – 3m &gt;180</td>
<td></td>
</tr>
<tr>
<td>Systolic BP &lt; 90 mm/Hg</td>
<td></td>
</tr>
<tr>
<td>Pediatric Systolic BP</td>
<td></td>
</tr>
<tr>
<td>0d-3m - &lt;50</td>
<td></td>
</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
Pediatric Sepsis Screening Tool

<table>
<thead>
<tr>
<th>Heart Rate or Blood Pressure Abnormal?</th>
<th>Sepsis Screen is Negative, Stop Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Fever &gt;= 38 (100.4) or hypothermia &lt;= 36 (96.8) or signs/symptoms of infection?</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

Risk Factors
- High Risk Condition
- Poor Capillary Refill
- Altered mental status

Positive Screen
Peds Sepsis Alert is called
Start RN Peds Sepsis Protocol (except <30 days)

Did the patient screen positive for Sepsis? (circle one): YES NO

Was a Pediatric Sepsis Alert called? (circle one): YES NO

Vital Sign Limits

<table>
<thead>
<tr>
<th>Age</th>
<th>Heart Rate</th>
<th>Systolic BP</th>
</tr>
</thead>
<tbody>
<tr>
<td>0d-3m</td>
<td>&gt;180</td>
<td>&lt;50</td>
</tr>
<tr>
<td>3m-1Y</td>
<td>&gt;170</td>
<td>&lt;70</td>
</tr>
<tr>
<td>1Y-4Y</td>
<td>&gt;150</td>
<td>&lt;75</td>
</tr>
<tr>
<td>4Y-12Y</td>
<td>&gt;130</td>
<td>&lt;80</td>
</tr>
<tr>
<td>&gt;=12Y</td>
<td>&gt;120</td>
<td>&lt;85</td>
</tr>
</tbody>
</table>

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**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>Skin temperature/quality</td>
<td>White, cool, moist</td>
</tr>
<tr>
<td>Skin color</td>
<td>Normal to Pale</td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>Normal</td>
</tr>
<tr>
<td>Pulse</td>
<td>Tachycardia</td>
</tr>
<tr>
<td>Level of consciousness</td>
<td>Unaltered or slightly anxious</td>
</tr>
<tr>
<td>Capillary Refill Time</td>
<td>Normal</td>
</tr>
<tr>
<td>Pulse Pressure</td>
<td>Normal or narrowed</td>
</tr>
</tbody>
</table>

**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
  - Direct pressure is the primary method of controlling most external bleeding and should be used as soon as possible.
  - Tourniquets
    - Consider tourniquets when direct pressure does not control bleeding
    - Tourniquets may not be practical on proximal extremity locations
    - Cut away clothing
    - Tighten per manufacturers’ instructions until hemorrhage stops
TREATMENT (continued)

- Secure tourniquets per manufacturers’ recommendations
- Note time of tourniquets application and provide this information to receiving care provider. Do not remove any tourniquet without authorization from Medical Control.
- If one tourniquet is not sufficient to control bleeding consider a second tourniquet proximal to the first

Wound Packing

- Consider wound packing for life threatening bleed from a penetrating injury to the buttock, pelvis (pelvic girdle), axilla (armpit), or neck. Also, consider for penetrating injuries to extremity with significant bleeding that cannot be controlled with direct pressure or tourniquets.
- Wound packing is contraindicated for the chest, back, head, abdomen, and dialysis graft bleeding.
- Wound packing procedure:
  - Attempt to control bleeding with direct pressure.
  - Cut away clothing at wound site.
  - Have wound packing supplies on hand – use a roll of plain gauze.
  - Carefully remove any obvious foreign object from the wound (splintered wood, etc.)
  - Apply direct pressure just proximal to the wound to reduce bleeding. With one finger of the other hand push the end of the gauze as deeply into the wound as possible. Continue to feed the gauze deep into the wound in small increments. Do not attempt to feed a large amount of gauze all at once.
  - Continue to pack gauze deeply and tightly in order to apply direct pressure over the source of the bleed. When the packing reaches the level of the skin apply any remaining gauze over the wound to help apply pressure.
  - Hold direct pressure over the wound for at least ten minutes. Do not release this pressure to “check” for bleeding.
  - If possible, wrap with gauze to maintain pressure.
  - Note: this is a very painful procedure, provide Pain Management per SMO.

- 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)
Controlled Hemorrhage | Uncontrolled Hemorrhage | Neurogenic
--- | --- | ---
Fluid | 20ml/kg Normal Saline | Titrate to maintain goal SBP 80-90 mmHg or MAP of >65 mmHg | Titrate to maintain goal SBP 90 mmHg or MAP between 65 to 90 mmHg
Blood Pressure Goal | SBP 80-90 mmHg | SBP 80-90 mmHg | SBP ≥90 mmHg
Medication Management | | | Consider TXA on patients with signs of hemorrhagic shock, tachycardia > 110 and hypotension SBP <100 and time less than 3 hour from injury. | Dopamine 5-10 mcg/kg/min if bleeding controlled and volume replaced

- 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
- If tourniquet is used document time applied
- 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:

\[ \text{MAP} = \frac{2 \times \text{Diastolic Blood Pressure} + \text{Systolic Blood Pressure}}{3} \]

If BP = 90/40
\[ \text{MAP} = \frac{(2 \times 40) + 90}{3} = 57 \]

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Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 12/19

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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
    - Expressive and/or receptive aphasia
    - Nonverbal
    - Fluency in a different language than the EMS provider
  - Sensory Barriers
    - Visual Impairment
    - Auditory Impairment

- Assistance Adjuncts:
  - Device examples include, but are not limited to:
    - Extremity prostheses
    - Hearing aids
    - Tracheostomy
    - Central Intravenous Catheters
    - CSF Shunt
    - Gastrostomy Tube (G-Tube or J-Tube)
    - Colostomy or Ileostomy
    - 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
Reviewed: 09/19; 06/20
Last Revision: 09/19
**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 purposed 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

Return to Table of Contents
Medical Control Contact Criteria

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

**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 Downs 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](#).

Original SMO Date: 06/17
Reviewed: 09/19; 06/20
Last Revision: 09/19

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

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

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Reviewed: 06/17; 09/19; 06/20
Last Revision: 06/17

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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-fowlers 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

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°

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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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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, administer 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 Midazolam for seizure activity.

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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<th>Standard Dosing</th>
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<th>BLS</th>
<th>EMR</th>
<th>Dextrose</th>
<th>Dopamine</th>
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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 will complete Region Approved LVO Screening Tool
      - **LVO Screen Positive**
        - **Yes**
          - Last known well less than 24 hours
            - **Yes**
              - Direct Transport by Ambulance to a CSC adds less than 15 minutes to travel time
                - **Yes**
                  - Direct Transport by Ambulance to a CSC does not preclude use of IV Alteplase (tPA)
                    - **Yes**
                      - Notify Medical Control for Bypass Instructions
                        - **OK to Bypass**
                          - Transport patient to a CSC and notify receiving facility of patient with a positive LVO screen
          - **No**
            - Direct Transport by Ambulance to a CSC does not preclude use of IV Alteplase (tPA)
              - **No**
                - Transport patient to closest hospital: ASRH, PSC, or CSC
      - **No**
    - **No**
      - EMS completes Stroke Screening Checklist/FAST Screening tool
        - Stroke Screening Checklist/FAST Exam Negative
          - Transport to closest hospital: ASRH, PSC, or CSC

**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.**
ASRH: Acute Stroke Ready Hospital—A hospital that has been designated by IDPH or certified through a certifying body as meeting the criteria for providing emergency stroke care.

PSC: Primary Stroke Center—a hospital that has been certified as a Primary Stroke Center by a Department-approved nationally recognized certifying body and designated by IDPH.

CSC: Comprehensive Stroke Center—a hospital that has been certified as a Comprehensive Stroke Center by a Department-approved nationally recognized certifying body and designated by IDPH.

LVO—Large Vessel Occlusion.

tPA—Tissue Plasminogen Activator, also known as Activase, is a possible treatment for acute ischemic (clot) strokes.

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 ≤ 20 minutes
4. Door to CT results ≤ 40 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 or PSC not capable of treating post tPA patient, patient need for neuro intervention, etc.).
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:**

___ Signs of sudden numbness or weakness of face, arm, leg, especially one side
___ Signs of sudden confusion, trouble speaking or understanding
___ Signs of sudden trouble walking, dizziness, loss of balance or coordination
___ Signs of sudden severe headache with no known cause
___ Signs of 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:** ______________________________

**G-FAST Screen:**

**GAZE DEVIATION:** Does the person stare to one side and cannot move their eyes back to center

___ Normal: Patient able to move eyes from side to side and back to midline

___ Abnormal: Patient stares to one side and cannot move eyes back to midline or to look elsewhere

**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 24 hours, then a stroke alert is NOT paged because the patient is outside of acute treatment window.

***If any of the FAST questions is scored abnormal, the chances are high that a stroke may be occurring. If the G for gaze is abnormal, chances are high the patient has a severe stroke with a Large Vessel Occlusion in the brain. Follow the EMS Region 1 Suspected Stroke Patient Transport Algorithm for ED Destination

EMS Personnel Signature: ______________________ Date: ______ Time: ______

Ambulance: ______________________

Original SMO Date: 06/15
Reviewed: 06/17; 08/18; 09/19; 06/20
Last Revision: 09/19

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
ALS

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, epigastrium 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__
## 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

**Cardiac monitoring**
- Obtain and record blood sugar level.
- Consider possible causes of syncope and/or altered sensorium:

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<td>Psychiatric</td>
<td>Stroke, Subarachnoid, Shock</td>
<td>Alcohol and other Toxins</td>
<td>Endocrine</td>
<td>Insulin</td>
<td>Oxygen/Opiates</td>
<td>Uremia</td>
</tr>
</tbody>
</table>
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 respiration < 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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<thead>
<tr>
<th>Peds</th>
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</table>
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: 06/17; 09/19; 06/20
Last Revision: 09/19

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**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** OTC, IVP, or IM (repeat as needed)

### NARCOTICS

- Ensure ABC’s, oxygenation, ventilation including oropharyngeal or nasal pharyngeal airways, supraglottic airway or intubation as indicated, and suction prn (consider Naloxone before advanced airway)
  - **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%

### TRICYCLIC ANTIDEPRESSANTS (TCA)

- Collect information
- Airway management including oropharyngeal or nasal pharyngeal airways, supraglottic airway or intubation as indicated
  - **Calcium Gluconate IVP or IO** for suspected hyperkalemia (history of renal failure, dialysis, or potassium ingestion)
  - **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 or supraglottic 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**.
  - **Calcium Gluconate IVP or IO** for symptomatic calcium channel blocker overdose

### 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
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 Carfentanyl 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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<thead>
<tr>
<th>MEDICATION ADMINISTRATION CHART</th>
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Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 09/19

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
ILS, ALS

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 patients 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 is 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

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**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).
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.
**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>Name of Hospital</th>
<th>*Average Transport Time</th>
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* 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.

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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:
- _______________________________________  
- _______________________________________  

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:

- Provider agency signature ___________________________ Date ______________
- EMS System Coordinator ______________________________ Date ______________
- EMSMD ______________________________ Date ______________
<table>
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<tr>
<th>Region</th>
<th>Hospital Name</th>
<th>Specialty Capabilities</th>
<th>Level</th>
<th>Training Center</th>
<th>Other</th>
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</tbody>
</table>

Definitions/Abbreviations:
- Level I: Hospital is characterized by capability of providing leadership and coordination for every aspect of traumatic injury prevention and rehabilitation.
- Level II: Hospital provides comprehensive assessment, intervention, and management for patients with severe injuries and may have a regional role in trauma care.
- Level III: Hospital provides definitive trauma care and coordinates the needs of patients, but differs from Level II in teaching, research, and organized trauma care.

Note: The table above represents the transport template hospital resources for Region 1, as per the specified document version and date.
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 1 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>
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<th>Medical Control Contact Criteria</th>
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<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.
**NOTE:** Notification and permission from Medical Control will be done from the scene.
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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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 points) 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

Search for and treat possible contributing factors (H’s & T’s):
- Hypoxia (ventilate/O2)
- Hypothermia (core rewarmin)
- 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

- **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.**
- **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 Administration Chart**
  - **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).
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Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 09/19

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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
TREATMENT
__Routine Medical Care
__Synchronized cardioversion (defibrillate for polymorphic): 100 J biphasic, if unsuccessful increase in a step-wise fashion. Consider Midazolam IV/IO/IM 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>
<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>40 kg</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>
</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>DSI Meds</td>
<td>Formulary</td>
<td></td>
</tr>
</tbody>
</table>

Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 09/19

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REGION I
EMERGENCY MEDICAL SERVICES

Appendices

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IDPH Approval
Date: December 6, 2017
Re-Issued: August, 2018
Annual Review: December, 2019
Reviewed: June, 2020
Reissued: July, 2020
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
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<tbody>
<tr>
<td>A &amp; O x 4</td>
<td>Alert, oriented person to date, time, place</td>
</tr>
<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>
</tr>
<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>
</tr>
<tr>
<td>Bilat</td>
<td>Bilateral</td>
</tr>
<tr>
<td>BLS</td>
<td>Basic life support</td>
</tr>
<tr>
<td>BM</td>
<td>Bowel Movement</td>
</tr>
<tr>
<td>BOW</td>
<td>Bag of 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>
</tr>
<tr>
<td>COPD</td>
<td>Chronic Obstructive Pulmonary Disease</td>
</tr>
<tr>
<td>C-section or C-sect</td>
<td>Cesarean Section</td>
</tr>
<tr>
<td>CSF</td>
<td>Cerebral spinal fluid</td>
</tr>
<tr>
<td>C-spine</td>
<td>Cervical spine</td>
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<tr>
<td>CVA</td>
<td>Cerebrovascular accident</td>
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<tr>
<td>DC or dc</td>
<td>Discontinue</td>
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<tr>
<td>Dept</td>
<td>Department</td>
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<tr>
<td>Dx</td>
<td>Diagnosis</td>
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<tr>
<td>DTs</td>
<td>Delirium Tremens</td>
</tr>
<tr>
<td>D5W</td>
<td>5% Dextrose in water</td>
</tr>
<tr>
<td>ECG or EKG</td>
<td>Electrocardiogram</td>
</tr>
<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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<tr>
<td>ED</td>
<td>Emergency Department</td>
</tr>
<tr>
<td>ET</td>
<td>Endotracheal</td>
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<td>ETOH</td>
<td>Alcohol</td>
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<td>Exam</td>
<td>Examination</td>
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<td>Extr or EXT</td>
<td>Extremities</td>
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<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
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<td>FB</td>
<td>Foreign Body</td>
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<td>FHT</td>
<td>Fetal Heart Tones</td>
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<td>Fib</td>
<td>Fibrillation</td>
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<tr>
<td>Fx</td>
<td>Fracture</td>
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<tr>
<td>GCS</td>
<td>Glasgow Coma Score</td>
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<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>
</tr>
<tr>
<td>H20</td>
<td>Water</td>
</tr>
<tr>
<td>HEENT</td>
<td>Head, Eyes, Ears, Nose and Throat</td>
</tr>
<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>
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<tr>
<td>HTN</td>
<td>Hypertension</td>
</tr>
<tr>
<td>Hx</td>
<td>History</td>
</tr>
<tr>
<td>ILS</td>
<td>Intermediate Life Support</td>
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<td>IM</td>
<td>Intramuscular</td>
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<tr>
<td>IN</td>
<td>Intranasal</td>
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<tr>
<td>irreg</td>
<td>Irregular</td>
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<tr>
<td>IV</td>
<td>Intravenous</td>
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<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>
</tr>
<tr>
<td>N/A or NA</td>
<td>Not applicable</td>
</tr>
<tr>
<td>NAD</td>
<td>No acute distress</td>
</tr>
<tr>
<td>NaHCO3</td>
<td>Sodium Bicarbonate</td>
</tr>
<tr>
<td>Neg</td>
<td>Negative</td>
</tr>
<tr>
<td>Neuro</td>
<td>Neurology / Nervous system</td>
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<tr>
<td>NKA</td>
<td>No known allergies</td>
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*Return to Table of Contents*
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
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<tbody>
<tr>
<td>NPO</td>
<td>Nothing by mouth</td>
</tr>
<tr>
<td>NRB mask</td>
<td>Non-rebreather mask</td>
</tr>
<tr>
<td>NS</td>
<td>Normal saline</td>
</tr>
<tr>
<td>NSR</td>
<td>Normal sinus rhythm</td>
</tr>
<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>
</tr>
<tr>
<td>PRN</td>
<td>As occasion requires / as needed</td>
</tr>
<tr>
<td>Pt</td>
<td>Patient</td>
</tr>
<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>
</tr>
<tr>
<td>Rt</td>
<td>Right</td>
</tr>
<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>
</tr>
<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>
</tr>
<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>
</tr>
<tr>
<td>SVT</td>
<td>Supraventricular tachycardia</td>
</tr>
<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>
</tr>
<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>
</tr>
<tr>
<td>WNL</td>
<td>Within normal limits</td>
</tr>
</tbody>
</table>

**Return to Table of Contents**
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
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<tbody>
<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>AEIOU&amp;TIPS</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>
</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 The Joint Commission 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 Region 1 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.

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# ADULT GLASGOW COMA SCORE

## AREAS OF RESPONSE

<table>
<thead>
<tr>
<th>AREA</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>Obey 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>decerbrate</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

<table>
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<tr>
<th>Injury Severity</th>
<th>Score Limit</th>
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<tr>
<td>Severe Head Injury</td>
<td>&lt; 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>

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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.

| RESPIRATORY RATE (spontaneous patient-initiated inspirations/ minute) | 10 - 29 / minute | 4 |
| - | greater than 29 | 3 |
| 6 - 9 minutes | 2 |
| 1 - 5 / minute | 1 |
| None | 0 |

| SYSTOLIC BLOOD PRESSURE | Greater than 89 | 4 |
| - | 76 - 89 mm Hg | 3 |
| 50 - 75 mm Hg | 2 |
| 1 - 49 mm Hg | 1 |
| No pulse | 0 |

| GLASGOW COMA SCALE (see above) | 13 – 15 | 4 |
| - | 9 – 12 | 3 |
| 6 – 8 | 2 |
| 4 – 5 | 1 |
| 3 | 0 |

| TOTAL POSSIBLE SCORE | 0 – 12 |
# PEDIATRIC GLASGOW COMA SCORE

<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></td>
<td></td>
</tr>
<tr>
<td>To <em>Verbal Command</em></td>
<td></td>
<td>To <em>Shout</em></td>
<td></td>
</tr>
<tr>
<td>To <em>Pain</em></td>
<td></td>
<td>To <em>Pain</em></td>
<td></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>Obeys Commands</em> to move</td>
<td></td>
<td><em>Obeys Commands</em> to move</td>
<td></td>
</tr>
<tr>
<td><em>Localized Painful</em> stimuli</td>
<td></td>
<td><em>Localized Painful</em> stimuli</td>
<td></td>
</tr>
<tr>
<td><em>Withdraws</em> from painful stimulus</td>
<td></td>
<td><em>Flexion—normal</em></td>
<td></td>
</tr>
<tr>
<td><em>Flexion</em>, abnormal <em>decorticate</em> posturing</td>
<td></td>
<td><em>Flexion</em>, abnormal <em>decorticate</em> posturing</td>
<td></td>
</tr>
<tr>
<td><em>Extension</em>, abnormal <em>decerebrate</em> posturing</td>
<td></td>
<td><em>Extension</em>, abnormal <em>decerebrate</em> posturing</td>
<td></td>
</tr>
<tr>
<td>No movement or posturing</td>
<td></td>
<td>No movement or posturing</td>
<td>1</td>
</tr>
<tr>
<td><strong>VERBAL RESPONSE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 5 years</td>
<td></td>
<td>&lt; 2 – 5 years</td>
<td>0 - 23 months</td>
</tr>
<tr>
<td><em>Oriented</em> and converses</td>
<td></td>
<td>Appropriate words &amp; phrases for age</td>
<td>Smiles, coos, cries appropriately</td>
</tr>
<tr>
<td><em>Disoriented</em> but converses</td>
<td></td>
<td>Inappropriate words</td>
<td>Cries</td>
</tr>
<tr>
<td><em>Inappropriate</em> words</td>
<td></td>
<td>Cries and/or screams</td>
<td>Inappropriate crying and/or screaming</td>
</tr>
<tr>
<td>Incomprehensible</td>
<td></td>
<td>Grunts</td>
<td>Grunts</td>
</tr>
<tr>
<td>No response</td>
<td></td>
<td>No response</td>
<td>No response</td>
</tr>
<tr>
<td><strong>TOTAL POSSIBLE SCORE</strong></td>
<td></td>
<td></td>
<td>3 - 15</td>
</tr>
</tbody>
</table>

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

APPENDIX: Medication Shortages

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 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.

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**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 and EMS agency to possess the following controlled substances as approved by IDPH and the Region I EMS Advisory Council:
  - Ketamine
  - Midazolam
  - 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.

<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></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100 kg</td>
<td>110 kg</td>
<td>120 kg</td>
<td>130 kg</td>
<td>140 kg</td>
<td>Adult</td>
</tr>
<tr>
<td></td>
<td>40 kg</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>
</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>DSI Meds</td>
<td>Formulary</td>
<td></td>
</tr>
</tbody>
</table>
### Region I EMS Alternative Medication Formulary

Effective Date: December 31, 2019

<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></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ADULT ONLY Anti-emetic Ondansetron 4 mg ODT also an option</td>
</tr>
<tr>
<td>Etomidate</td>
<td>Midazolam C IV (Versed) 5 mg IV</td>
<td>Ketamine C III 1 mg/kg IV</td>
<td>Lorazepam C IV (Ativan) 2 mg/ml</td>
<td>Induction Ativan (Lorazepam) must be refrigerated following manufacturers guidelines</td>
</tr>
<tr>
<td>Morphine C II</td>
<td>Fentanyl C II 50 mcg IV</td>
<td>Ketorolac (Toradol) 30 mg IV/IM</td>
<td></td>
<td>Pain Management SMO ONLY</td>
</tr>
<tr>
<td>Fentanyl C II</td>
<td>Morphine C II 4-6 mg IV</td>
<td>Ketorolac (Toradol) 30 mg IV/IM</td>
<td></td>
<td>Pain Management SMO ONLY</td>
</tr>
<tr>
<td>Midazolam C IV (Versed)</td>
<td>Diazepam C IV (Valium) 5 mg/ml</td>
<td>Lorazepam C IV (Ativan) 2 mg/ml</td>
<td></td>
<td>Seizure Management</td>
</tr>
<tr>
<td>Ketorolac</td>
<td>Fentanyl 50 mcg IV</td>
<td>Morphine C II</td>
<td></td>
<td>NSAID pain management (not mandatory substitution because of cost)</td>
</tr>
<tr>
<td>Ketamine C III</td>
<td>Etomidate 0.1 mg/kg IV</td>
<td>Midazolam C IV (Versed) 5 mg IV</td>
<td>Fentanyl 50 mcg IV</td>
<td></td>
</tr>
<tr>
<td>Midazolam C IV (Versed)</td>
<td>Diazepam C IV (Valium) 5 mg/ml</td>
<td>Ketamine 1-3 mg/kg IM</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>
</tr>
</thead>
<tbody>
<tr>
<td>Epinephrine 1:10 ml</td>
<td>Expel 1mL of Normal Saline from a 10 mL prefilled syringe. Instill 1 mg (mL) of Epinephrine 1:1 ml from 20 mL vial into prefilled syringe. 30 mL vials are to be single patient use only.</td>
<td>Epinephrine 1:1 ml Ampule Expel 1mL of Normal Saline from a 10 mL prefilled syringe. Instill 1 mg (mL) of Epinephrine 1:1 ml from ampule into a prefilled syringe.</td>
</tr>
<tr>
<td>Glucose Gel</td>
<td>Glucose Tabs</td>
<td></td>
</tr>
</tbody>
</table>

SUGGESTION:
Make medication substitutions that will allow minimal formulary changes when possible, even when this means moving into secondary alternatives to allow for maximum safety.
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
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 EtCO$_2$ (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

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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
Appendix: Trauma Triage Criteria  Page 2 of 3

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
### CATEGORY I
- **Hemodynamic Compromise** as evidenced by:
  - BP $\leq 90$ systolic / Peds BP $\leq 80$ systolic
- **Respiratory Compromise** as evidenced by:
  - Respiratory rate $< 10$ or $> 29$ / Respirations $< 20$ for infants ($<1$ year)
- **Altered Mentation** as evidenced by:
  - Glasgow Coma Scale $< 10$ / Pediatric $< 13$ with trauma mechanism

**Anatomical Injury:**
- Penetrating injury of head, neck, torso, groin, or extremities proximal to elbow or knee
- Open or depressed skull fracture
- Two or more body regions with threat to life or limb
- Combination trauma with $\geq 20\%$ TBSA burn
- Amputation, crushed, degloved, mangled, pulseless extremity proximal to wrist or ankle
- Limb paralysis and or sensory deficit above the wrist and ankle
- Chest wall instability/Flail chest
- Two or more proximal long bone fractures
- Unstable pelvic fractures
- Inability to intubate or surgical airway needed

### CATEGORY II
**Mechanism of Injury**
- GCS 11-13 with traumatic mechanism
- Falls from $>20$ feet
- Falls 2 times body height/length of child
- Death in same passenger compartment of MVC
- Ejection (partial or complete) from any motorized vehicle
- Intrusion into compartment $>12$ inches occupant side/$>18$ inches any side of vehicle
- Auto vs Pedestrian or Bicyclist: thrown, run over, or $>20$ mph impact
- Motorcycle/ATV crash $>20$ mph and/or separation
- Burns $>10\%$ TBSA ($2^{nd}/3^{rd}$ degree) and/or inhalation injury
- Trauma in pregnant patient $>20$ weeks gestation
- Adults $>80$ of age with trauma mechanism
- Anticoagulated – any age with evidence of head trauma
  - Unknown injuries upon arrival, excludes ASA/NSAIDS

Initiate appropriate trauma treatment SMO and transport to closest hospital

Refer to Inbound Radio Report and Alert Notifications SMO and/or Transport Template SMO / Transport Resources / Closest Hospital SMO for further details.
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 Pediatric 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


Return to Table of Contents
REGION I
EMERGENCY
MEDICAL SERVICES

MEDICATION ADMINISTRATION CHART

As prepared by:

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Reviewed by:

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James Graham, OSF Northern Region EMS System
Richard Robinson, SwedishAmerican Hospital EMS System
Anthony Woodson, Northwestern Medicine Kishwaukee Hospital EMS System
Don Crawford, Mercyhealth System

IDPH Approval
Date: December 6, 2017
Re-Issued: August, 2018
Annual Review: December, 2019
Reviewed: June, 2020
Reissued: July, 2020
IV Doses, volumes, and concentrations used in

**PEDIATRIC RESUSCITATION**

and

**ADULT WEIGHT-BASED DOSING**

Last updated December, 2019

Doses adapted from

BROSELOW Pediatric Emergency Tape Version 2019 Edition A

The Harriet Lane Handbook Twenty-Second Edition

*For ET doses refer to Broselow Tape*

*For all pain and sedation medications marked with an asterisk (*) – start dose low – slowly increase – titrate to effect up to listed dose*
Resuscitation/Cardiac

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<thead>
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<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
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<td><strong>EPINEPHRINE</strong></td>
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<td></td>
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<td></td>
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<tr>
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<td>1 meq/kg</td>
<td>3 meq</td>
<td>6 ml **Dilute with equal volume of NS prior to administration</td>
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<tr>
<td></td>
<td>0.2 mg/kg</td>
<td>2nd - 0.6 mg</td>
<td>0.2 ml</td>
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**Synchronized Cardioversion**

**First Shock – 3 joules**

**Defibrillation**

**First Shock**

6 joules

**Second Shock**

12 joules

**Subsequent**

12-30 joules

**Supraglottic Airway**

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<tr>
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<th>i-gel</th>
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<td>0 – clear</td>
<td>1 - pink</td>
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**Cuffed ETT Size**

| 3.0 | 1 - straight |

**Normal Saline Bolus**

60 ml
### Delayed Sequence Intubation (DSI)

**FOR DSI APPROVED SERVICES ONLY**

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<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
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<td></td>
<td>0.002mg/kg</td>
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<td>0.01 ml</td>
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<td>0.001mg/kg</td>
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<td>0.01 ml</td>
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<td>0.0002mg/kg</td>
<td>0.001 mg</td>
<td>0.001 ml</td>
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<td>0.0001 mg</td>
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<td>3 mcg *</td>
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</tr>
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<td></td>
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<td></td>
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<td>0.0003 ml</td>
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<td>5 mg/ml Vial</td>
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<td>20 mg/ml Vial</td>
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### Anaphylaxis/Antidote

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<th>DOSE</th>
<th>VOLUME</th>
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<td>EPINEPHRINE</td>
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<td>(125 mg/2 ml) Vial</td>
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<td>(2.5 mg/ml) Ampule</td>
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<td>GLUCAGON</td>
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<td>(1 mg/ml) Vial</td>
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### 3 kg

#### Asthma

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<th>VOLUME</th>
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<td>ALBUTEROL (2.5 mg/ml) Ampule</td>
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<td>0.18 ml</td>
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<tr>
<td>CONTINUOUS ALBUTEROL</td>
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<tr>
<td>MESTHYPREDNILOSONE (125 mg/2 ml) Vial</td>
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</tr>
<tr>
<td>EPINEPHRINE (1mg/1ml vial/amp)</td>
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<td>SUB Q</td>
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#### Seizures

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<th>VOLUME</th>
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<tr>
<td>MIDAZOLAM * (5 mg/ml) Vial</td>
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<td>0.3 mg</td>
<td>0.06 ml</td>
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<td>0.15 ml</td>
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#### Antiemetic/Pain/Agitation

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<th>Drug</th>
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<td>FENTANYL * (50mcg/ml vial/amp) Must use filter needle for amp</td>
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<td>0.06 ml</td>
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<td>MORPHINE * (10 mg/1 ml) Pre-filled syringe</td>
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<td>KETAMINE IM ONLY (100 mg/ml) Vial</td>
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<td>12 mg</td>
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* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose.
**PEDIATRIC RESUSCITATION – 4 KG**

### 4 kg

**Resuscitation/Cardiac**

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<thead>
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<th>Medication</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
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<td><strong>EPINEPHRINE</strong></td>
<td>0.01 mg/kg</td>
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<td>1 mg/10 ml (1:10 ml) Pre-filled syringe</td>
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<tr>
<td><strong>ATROPINE</strong></td>
<td>0.02 mg/kg</td>
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<td>(1mg/10ml) Pre-filled syringe</td>
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<tr>
<td><strong>SODIUM BICARBONATE</strong></td>
<td>1 meq/kg</td>
<td>4 meq</td>
<td>8 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>240 mg</td>
<td>2.4 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>4 mg</td>
<td>0.2 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>20 mg</td>
<td>0.4 ml</td>
</tr>
<tr>
<td>(50mg/ml) vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ADENOSINE</strong></td>
<td>0.01 mg/kg</td>
<td>1st - 0.4 mg</td>
<td>0.13 ml</td>
</tr>
<tr>
<td>(6mg/2 ml) Pre-filled syringe</td>
<td></td>
<td>2nd - 0.8 mg</td>
<td>0.26 ml</td>
</tr>
<tr>
<td></td>
<td>0.02 mg/kg</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*

**Synchronized Cardioversion**

<table>
<thead>
<tr>
<th>Shock Type</th>
<th>Energy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First shock</strong></td>
<td>4 joules</td>
</tr>
<tr>
<td><strong>Subsequent shock</strong></td>
<td>8 joules</td>
</tr>
</tbody>
</table>

**Defibrillation**

<table>
<thead>
<tr>
<th>Shock Type</th>
<th>Energy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First shock</strong></td>
<td>8 joules</td>
</tr>
<tr>
<td><strong>Second shock</strong></td>
<td>16 joules</td>
</tr>
<tr>
<td><strong>Subsequent</strong></td>
<td>16-40 joules</td>
</tr>
</tbody>
</table>

**Supraglottic Airway**

<table>
<thead>
<tr>
<th>Airway Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Kings Airway</strong></td>
<td>0 – clear</td>
</tr>
<tr>
<td>i-gel</td>
<td>1 – pink</td>
</tr>
</tbody>
</table>

**Cuffed ETT Size**

<table>
<thead>
<tr>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0</td>
</tr>
</tbody>
</table>

**Blade Size**

<table>
<thead>
<tr>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - Straight</td>
</tr>
</tbody>
</table>

**Normal Saline Bolus**

<table>
<thead>
<tr>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 ml</td>
</tr>
</tbody>
</table>

*Return to Table of Contents*

*Return to Formulary Table of Contents*
### 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>&lt;sup&gt;*&lt;/sup&gt;</td>
<td>0.02mg/kg</td>
<td>0.08 mg</td>
<td>0.8 ml</td>
</tr>
<tr>
<td>(1mg/10ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not recommended for patients &lt;11 KG or &lt; 1 year of age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ETomidate</strong></td>
<td>0.3mg/kg</td>
<td>1.2 mg</td>
<td>0.6 ml</td>
</tr>
<tr>
<td>2 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fentanyl</strong>&lt;sup&gt;*&lt;/sup&gt;</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>Ketamine IV</strong></td>
<td>2 mg/kg</td>
<td>8 mg</td>
<td>0.8 ml</td>
</tr>
<tr>
<td>10 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Midazolam</strong>&lt;sup&gt;*&lt;/sup&gt;</td>
<td>0.3 mg/kg</td>
<td>1.2 mg</td>
<td>1.2 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>8 mg</td>
<td>0.4 ml</td>
</tr>
<tr>
<td>20 mg/ml Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 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>(1mg/1ml) vial/amp</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>(50 mg/1 ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Methylprednisolone</strong></td>
<td>2 mg/kg</td>
<td>8 mg</td>
<td>0.13 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>0.6 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>Naloxone</strong>&lt;sup&gt;*&lt;/sup&gt;</td>
<td>0.1 mg/kg</td>
<td>0.4 mg</td>
<td>0.4 ml</td>
</tr>
<tr>
<td>(1 mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Glucagon</strong>&lt;sup&gt;*&lt;/sup&gt;</td>
<td>Standard Dose 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>
<td></td>
</tr>
</tbody>
</table>

* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose
### 4 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>&lt;br&gt;(2.5 mg/ml) Ampule</td>
<td>0.15 mg/kg</td>
<td>0.6 mg</td>
<td>0.24 ml</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>METHYLPREDNISOLONE</strong>&lt;br&gt;(125 mg/2 ml) Vial</td>
<td>2 mg/kg</td>
<td>8 mg</td>
<td>0.128 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><strong>SUB Q 0.04 mg</strong></td>
<td>0.04 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>MIDAZOLAM</strong>&lt;br&gt;*&lt;br&gt;(5 mg/ml) Vial</td>
<td>0.1 mg/kg</td>
<td>0.4 mg *</td>
<td>0.08 ml</td>
</tr>
<tr>
<td><strong>DIAZEPAM</strong>&lt;br&gt;*&lt;br&gt;(5 mg/ml) Pre-filled syringe</td>
<td>0.2 mg/kg</td>
<td>0.8 mg *</td>
<td>0.16 ml</td>
</tr>
<tr>
<td><strong>LORAZEPAM</strong>&lt;br&gt;*&lt;br&gt;(2 mg/ml) Pre-filled syringe</td>
<td>0.1 mg/kg</td>
<td>0.4 mg *</td>
<td>0.2 ml</td>
</tr>
</tbody>
</table>

#### 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>&lt;br&gt;(2 mg/ml) Vial</td>
<td>0.15 mg/kg</td>
<td>0.6 mg</td>
<td>0.3 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>4 mcg *</td>
<td>0.08 ml</td>
</tr>
<tr>
<td><strong>MORPHINE</strong>&lt;br&gt;*&lt;br&gt;(10 mg/1 ml) Pre-filled syringe</td>
<td>0.1 mg/kg</td>
<td>0.4 mg *</td>
<td>0.04 ml</td>
</tr>
<tr>
<td><strong>KETOROLAC</strong>&lt;br&gt;(15 mg/ml) Pre-filled syringe</td>
<td>0.5 mg/kg</td>
<td>2 mg</td>
<td>0.14 ml</td>
</tr>
<tr>
<td><strong>ETOMIDATE</strong>&lt;br&gt;(2 mg/ml) Vial</td>
<td>0.2 mg/kg</td>
<td>0.8 mg</td>
<td>0.4 ml</td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong>&lt;br&gt;*&lt;br&gt;(5 mg/ml) Vial</td>
<td>0.05 mg/kg</td>
<td>0.2 mg *</td>
<td>0.4 ml</td>
</tr>
<tr>
<td><strong>KETAMINE IM ONLY</strong>&lt;br&gt;(100 mg/ml) Vial</td>
<td>4 mg/kg</td>
<td>16 mg</td>
<td>0.16 ml</td>
</tr>
</tbody>
</table>

* For pain and sedation doses: Start dose low – slowly increase – Titrator to effect up to listed dose.
### Resuscitation/Cardiac

<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>0.5 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>CALCIUM 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>1st - 0.5 mg</td>
<td>2nd - 1 mg</td>
<td>0.33 ml</td>
</tr>
</tbody>
</table>

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

**Dilute with equal volume of NS prior to administration**

---

**Synchronized Cardioversion**

| First shock – 5 joules | Subsequent shock – 10 joules |

**Defibrillation**

<table>
<thead>
<tr>
<th>First shock</th>
<th>Second Shock</th>
<th>Subsequent</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 joules</td>
<td>20 joules</td>
<td>20-15 joules</td>
</tr>
</tbody>
</table>

**Supraglottic Airway**

<table>
<thead>
<tr>
<th>Kings Airway</th>
<th>i-gel</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - white</td>
<td>1 - pink</td>
</tr>
</tbody>
</table>

**Cuffed ETT Size**

| 3.0 | 1 - Straight |

**Normal Saline Bolus**

| 100 ml |
# PEDIATRIC RESUSCITATION – 5 KG

## 5 kg

### Delayed Sequence Intubation (DSI)

*FOR DSI APPROVED SERVICES ONLY*

<table>
<thead>
<tr>
<th>ATROPINE</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1mg/10ml) Pre-filled syringe</td>
<td>0.02 mg/kg</td>
<td>0.1 mg</td>
<td>1 ml</td>
</tr>
<tr>
<td>Not recommended for patients &lt; 11 KG or &lt; 1 year of age</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ETomidate</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 mg/ml Vial</td>
<td>0.3mg/kg</td>
<td>1.5 mg</td>
<td>0.75 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FentanyL*</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>(50mcg/ml) vial/amp</td>
<td>1 mcg/kg</td>
<td>5 mcg *</td>
<td>0.1 ml</td>
</tr>
<tr>
<td>Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>KetamINe IV</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 mg/ml Vial</td>
<td>2 mg/kg</td>
<td>10 mg</td>
<td>1 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Midazolam*</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mg/ml Vial</td>
<td>0.3 mg/kg</td>
<td>1.5 mg *</td>
<td>1.5 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Succinylcholine</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 mg/ml Vial</td>
<td>2 mg/kg</td>
<td>10 mg</td>
<td>0.5 ml</td>
</tr>
</tbody>
</table>

### 5 kg

#### Anaphylaxis/Antidote

<table>
<thead>
<tr>
<th>Epinephrine</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1mg/1ml) vial/amp</td>
<td>0.01 mg/kg</td>
<td>0.05 mg</td>
<td>0.05 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DiphenhydramINE</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>(50 mg/1 ml) Vial</td>
<td>1 mg/kg</td>
<td>5 mg</td>
<td>0.1 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MethylpredniLOSONe</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>(125 mg/2 ml) Vial</td>
<td>2 mg/kg</td>
<td>10 mg</td>
<td>0.16 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Albuterol</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2.5 mg/ml) Ampule</td>
<td>0.15 mg/kg</td>
<td>0.75 mg</td>
<td>0.3 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Naloxone</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1 mg/ml) Pre-filled syringe</td>
<td>0.1 mg/kg</td>
<td>0.5 mg</td>
<td>0.5 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Glucagon</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1 mg/ml) Vial</td>
<td>Standard Dose 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*
### 5 kg

**Asthma**

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALBUTEROL (2.5 mg/ml)</td>
<td>0.15 mg/kg</td>
<td>0.75 mg</td>
<td>0.3 ml</td>
</tr>
<tr>
<td>CONTINUOUS ALBUTEROL</td>
<td>0.5 mg/kg</td>
<td>2.5 mg</td>
<td>1 ml</td>
</tr>
<tr>
<td>METHYLPREDNILOSONE (125 mg/2 ml)</td>
<td>2 mg/kg</td>
<td>10 mg</td>
<td>0.16 ml</td>
</tr>
<tr>
<td>EPINEPHRINE (1mg/1ml)</td>
<td>0.01 mg/kg</td>
<td>SUB Q 0.05 mg</td>
<td>0.05 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>MIDAZOLAM * (5 mg/ml)</td>
<td>0.1 mg/kg</td>
<td>0.5 mg *</td>
<td>0.1 ml</td>
</tr>
<tr>
<td>DIAZEPAM * (2 mg/ml)</td>
<td>0.2 mg/kg</td>
<td>1 mg *</td>
<td>0.2 ml</td>
</tr>
<tr>
<td>LORAZEPAM * (2 mg/ml)</td>
<td>0.1 mg/kg</td>
<td>0.5 mg *</td>
<td>0.25 ml</td>
</tr>
</tbody>
</table>

**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 (2 mg/ml)</td>
<td>0.15 mg/kg</td>
<td>0.75 mg</td>
<td>0.375 ml</td>
</tr>
<tr>
<td>FENTANYL * (50mcg/ml)</td>
<td>1 mcg/kg</td>
<td>5 mcg *</td>
<td>0.1 ml</td>
</tr>
<tr>
<td>MORPHINE * (10 mg/1 ml)</td>
<td>0.1 mg/kg</td>
<td>0.5 mg *</td>
<td>0.05 ml</td>
</tr>
<tr>
<td>KETOROLAC (15 mg/ml)</td>
<td>0.5 mg/kg</td>
<td>2.5 mg</td>
<td>0.16 ml</td>
</tr>
<tr>
<td>ETOMIDATE (2 mg/ml)</td>
<td>0.2 mg/kg</td>
<td>1 mg</td>
<td>0.5 ml</td>
</tr>
<tr>
<td>MIDAZOLAM * (5 mg/ml)</td>
<td>0.05 mg/kg</td>
<td>0.25 mg *</td>
<td>0.05 ml</td>
</tr>
<tr>
<td>KETAMINE IM ONLY (100 mg/ml)</td>
<td>4 mg/kg</td>
<td>20 mg</td>
<td>0.2 ml</td>
</tr>
</tbody>
</table>

*For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose.*
# Pediatric Resuscitation – 6-7 kg

## Drug Doses

<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>0.065 mg</td>
<td>0.65 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>0.13 mg</td>
<td>1.3 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>6.5 meq</td>
<td>13 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>390 mg</td>
<td>3.9 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>6.5 mg</td>
<td>0.33 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>32 mg</td>
<td>0.65 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 - 0.65mg</td>
<td>0.21 ml</td>
</tr>
<tr>
<td>(6mg/2 ml) Pre-filled syringe</td>
<td>0.2 mg/kg</td>
<td>2nd - 1.3 mg</td>
<td>0.43 ml</td>
</tr>
</tbody>
</table>

### Cardiac Resuscitation

#### Synchronized Cardioversion

<table>
<thead>
<tr>
<th>Shock Type</th>
<th>Energy (Joules)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Shock</td>
<td>7 joules</td>
</tr>
<tr>
<td>Subsequent Shock</td>
<td>13 joules</td>
</tr>
</tbody>
</table>

#### Defibrillation

<table>
<thead>
<tr>
<th>Shock Type</th>
<th>Energy (Joules)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Shock</td>
<td>13 joules</td>
</tr>
<tr>
<td>Second Shock</td>
<td>26 joules</td>
</tr>
<tr>
<td>Subsequent</td>
<td>26-60 joules</td>
</tr>
</tbody>
</table>

#### Supraglottic Airway

<table>
<thead>
<tr>
<th>Device Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kings Airway</td>
<td>3.0</td>
</tr>
<tr>
<td>i-gel</td>
<td>1.5 - blue</td>
</tr>
</tbody>
</table>

#### Cuffed ETT Size

<table>
<thead>
<tr>
<th>Size</th>
<th>Blade Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0</td>
<td>1 - Straight</td>
</tr>
</tbody>
</table>

#### Normal Saline Bolus

<table>
<thead>
<tr>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>130 ml</td>
</tr>
</tbody>
</table>

*For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose*
## 6 - 7 kg
### Delayed Sequence Intubation (DSI)
*FOR DSI APPROVED SERVICES ONLY*

<table>
<thead>
<tr>
<th>ATROPINE</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1mg/10ml) Pre-filled syringe</td>
<td>0.02 mg/kg</td>
<td>0.13 mg</td>
<td>1.3 ml</td>
</tr>
<tr>
<td>Not recommended for patients &lt; 11 KG or &lt; 1 year of age</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ETOMIDATE</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 mg/ml Vial</td>
<td>0.3 mg/kg</td>
<td>2 mg</td>
<td>1 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FENTANYL *</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>(50mcg/ml) vial/amp</td>
<td>1 mcg/kg</td>
<td>6 mcg *</td>
<td>0.12 ml</td>
</tr>
<tr>
<td>Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>KETAMINE IV</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 mg/ml Vial</td>
<td>2 mg/kg</td>
<td>13 mg</td>
<td>1.3 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MIDAZOLAM *</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mg/ml Vial</td>
<td>0.3 mg/kg</td>
<td>2 mg *</td>
<td>2 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SUCCINYLCHOLINE</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 mg/ml Vial</td>
<td>2 mg/kg</td>
<td>13 mg</td>
<td>0.7 ml</td>
</tr>
</tbody>
</table>

## 6 - 7 kg
### Anaphylaxis/Antidote

<table>
<thead>
<tr>
<th>EPINEPHRINE</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1mg/1ml) vial/amp</td>
<td>0.01 mg/kg</td>
<td>0.07 mg</td>
<td>0.07 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIPHENHYDRAMINE</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>(50 mg/1 ml) Vial</td>
<td>1 mg/kg</td>
<td>7 mg</td>
<td>0.14 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>METHYLPREDNILOSONE</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>(125 mg/2 ml) Vial</td>
<td>2 mg/kg</td>
<td>136 mg</td>
<td>0.21 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ALBUTEROL</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2.5 mg/ml) Ampule</td>
<td>0.15 mg/kg</td>
<td>1 mg</td>
<td>0.4 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NALOXONE</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1mg ml) Pre-filled syringe</td>
<td>0.1 mg/kg</td>
<td>0.7 mg</td>
<td>0.7 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GLUCAGON</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1 mg/ml) Vial</td>
<td>Standard Dosing 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
### 6 - 7 kg

#### Asthma

<table>
<thead>
<tr>
<th>Medication</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>1 mg</td>
<td>0.4 ml</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>METHYLPREDNILOSONE</td>
<td>2 mg/kg</td>
<td>13 mg</td>
<td>0.21 ml</td>
</tr>
<tr>
<td>EPINEPHRINE (1mg/1ml) vial/amp</td>
<td>0.01 mg/kg</td>
<td>SUB Q 0.07 mg</td>
<td>0.07 ml</td>
</tr>
</tbody>
</table>

#### Seizures

<table>
<thead>
<tr>
<th>Medication</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIDAZOLAM * (5 mg/ml) Vial</td>
<td>0.1 mg/kg</td>
<td>0.7 mg *</td>
<td>0.14 ml</td>
</tr>
<tr>
<td>DIAZEPAM * (5 mg/ml) Pre-filled syringe</td>
<td>0.2 mg/kg</td>
<td>1.3 mg</td>
<td>0.26 ml</td>
</tr>
<tr>
<td>LORAZEPAM * (2 mg/ml) Pre-filled syringe</td>
<td>0.1 mg/kg</td>
<td>0.7 mg *</td>
<td>0.35 ml</td>
</tr>
</tbody>
</table>

#### 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         (2 mg/ml) Vial</td>
<td>0.15 mg/kg</td>
<td>1 mg</td>
<td>0.5 ml</td>
</tr>
<tr>
<td>FENTANYL * (50mcg/ml) vial/amp</td>
<td>1 mcg/kg</td>
<td>6 mcg *</td>
<td>0.12 ml</td>
</tr>
<tr>
<td>MORPHINE * (10 mg/1 ml) Pre-filled syringe</td>
<td>0.1 mg/kg</td>
<td>0.7 mg *</td>
<td>0.07 ml</td>
</tr>
<tr>
<td>KETOROLAC                  (15 mg/ml) Pre-filled syringe</td>
<td>0.5 mg/kg</td>
<td>3.35 mg</td>
<td>0.23 ml</td>
</tr>
<tr>
<td>ETOMIDATE                  (2 mg/ml) Vial</td>
<td>0.2 mg/kg</td>
<td>1.3 mg</td>
<td>0.65 ml</td>
</tr>
<tr>
<td>MIDAZOLAM * (5 mg/ml) Vial</td>
<td>0.05 mg/kg</td>
<td>0.3 mg *</td>
<td>0.07 ml</td>
</tr>
<tr>
<td>KETAMINE IM ONLY          (100 mg/ml) Vial</td>
<td>4 mg/kg</td>
<td>26 mg</td>
<td>2.6 ml</td>
</tr>
</tbody>
</table>

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

---

*Footnotes and references if necessary.*
### 8 - 9 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>0.085 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>1&lt;sup&gt;st&lt;/sup&gt; - 0.85mg</td>
<td>0.28 ml</td>
</tr>
<tr>
<td>(6mg/2 ml) Pre-filled syringe</td>
<td></td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; - 1.7 mg</td>
<td>0.56 ml</td>
</tr>
<tr>
<td></td>
<td>0.2 mg/kg</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

#### Synchronized Cardioversion
- **First Shock** – 8 joules
- **Subsequent Shock** – 17 joules

#### Defibrillation
- **First Shock** 17 joules
- **Second Shock** 33 joules
- **Subsequent** 33-80 joules

#### Supraglottic Airway
- **Kings Airway** 1 – white
- **i-gel** 1.5 - blue

#### Cuffed ETT Size
- **3.0**
- **Blade Size** 1 – Straight

#### Normal Saline Bolus
- **170 ml**

---

*Return to Table of Contents*
# Pediatric Resuscitation 8-9 kg

## 8 - 9 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>ATROPHINE <em>(1mg/10ml)</em> pre-filled syringe</td>
<td>0.02 mg/kg</td>
<td>0.17 mg</td>
<td>1.7 ml</td>
</tr>
<tr>
<td>ETOMIDATE <em>(2mg/ml)</em> vial</td>
<td>0.3 mg/kg</td>
<td>2.5 mg</td>
<td>1.25 ml</td>
</tr>
<tr>
<td>FENTANYL <em>(50mcg/ml)</em> vial/amp</td>
<td>1 mcg/kg</td>
<td>8 mg *</td>
<td>0.16 ml</td>
</tr>
<tr>
<td>KETAMINE IV <em>(2mg/ml)</em> vial</td>
<td>2 mg/kg</td>
<td>17 mg</td>
<td>1.7 ml</td>
</tr>
<tr>
<td>MIDAZOLAM * <em>(1mg/ml)</em> Vial</td>
<td>0.3 mg/kg</td>
<td>2.5 mg *</td>
<td>2.5 ml</td>
</tr>
<tr>
<td>SUCCINYLCHOLINE <em>(20mg/ml)</em> Vial</td>
<td>2 mg/kg</td>
<td>17 mg</td>
<td>0.85 ml</td>
</tr>
</tbody>
</table>

## 8 - 9 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 <em>(1mg/ml)</em> vial/amp</td>
<td>0.01 mg/kg</td>
<td>0.085 mg</td>
<td>0.085 ml</td>
</tr>
<tr>
<td>DIPHENHYDRAMINE <em>(50mg/1ml)</em> vial</td>
<td>1 mg/kg</td>
<td>8.5 mg</td>
<td>0.17 ml</td>
</tr>
<tr>
<td>METHYLPREDNISOLONE <em>(125mg/2ml)</em> vial</td>
<td>2 mg/kg</td>
<td>17 mg</td>
<td>0.27 ml</td>
</tr>
<tr>
<td>ALBUTEROL <em>(2.5mg/ml)</em> Ampule</td>
<td>0.15 mg/kg</td>
<td>1.28 mg</td>
<td>0.5 ml</td>
</tr>
<tr>
<td>NALOXONE <em>(1mg/ml)</em> pre-filled syringe</td>
<td>0.1 mg/kg</td>
<td>0.9 mg</td>
<td>0.9 ml</td>
</tr>
<tr>
<td>GLUCAGON <em>(1mg/ml)</em> Vial</td>
<td>Standard Dose 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*
### PEDIATRIC RESUSCITATION – 8-9 KG

#### 8 - 9 kg

**Asthma**

<table>
<thead>
<tr>
<th></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>1.28 mg</td>
<td>0.5 ml</td>
</tr>
<tr>
<td><em>(2.5 mg/ml)</em> Ampule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CONTINUOUS ALBUTEROL</strong>*</td>
<td>0.5 mg/kg</td>
<td>4.25 mg</td>
<td>1.7 ml</td>
</tr>
<tr>
<td><em>(125 mg/2 ml)</em> Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>METHYLPREDNISLONE</strong></td>
<td>2 mg/kg</td>
<td>17 mg</td>
<td>0.27 ml</td>
</tr>
<tr>
<td><em>(125 mg/2 ml)</em> 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>0.085 ml</td>
</tr>
<tr>
<td><em>(1mg/1ml)</em> vial/amp</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 8 - 9 kg

**Seizures**

<table>
<thead>
<tr>
<th></th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MIDAZOLAM</strong> *</td>
<td>0.1 mg/kg</td>
<td>0.9 mg *</td>
<td>0.18 ml</td>
</tr>
<tr>
<td><em>(5 mg/ml)</em> Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DIAZEPAM</strong> *</td>
<td>0.2 mg</td>
<td>1.7 mg *</td>
<td>0.34 ml</td>
</tr>
<tr>
<td><em>(5 mg/ml)</em> Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LORAZEPAM</strong> *</td>
<td>0.1 mg/kg</td>
<td>0.9 mg *</td>
<td>0.45 ml</td>
</tr>
<tr>
<td><em>(2 mg/ml)</em> Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 8 - 9 kg

**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>1.28 mg</td>
<td>0.64 ml</td>
</tr>
<tr>
<td>ODT &amp; <em>(2 mg/ml)</em> Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FENTANYL</strong> *</td>
<td>1 mcg/kg</td>
<td>8 mcg *</td>
<td>0.16 ml</td>
</tr>
<tr>
<td><em>(50mcg/ml)</em> vial/amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MORPHINE</strong> *</td>
<td>0.1 mg/kg</td>
<td>0.9 mg *</td>
<td>0.09 ml</td>
</tr>
<tr>
<td><em>(10 mg/1 ml)</em> Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>KETOROLAC</strong></td>
<td>0.5 mg/kg</td>
<td>4.25 mg</td>
<td>0.28 ml</td>
</tr>
<tr>
<td><em>(15 mg/ml)</em> Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ETOMIDATE</strong></td>
<td>0.2 mg/kg</td>
<td>1.7 mg</td>
<td>0.85 ml</td>
</tr>
<tr>
<td><em>(2 mg/ml)</em> Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong> *</td>
<td>0.05 mg/kg</td>
<td>0.4 mg *</td>
<td>0.09 ml</td>
</tr>
<tr>
<td><em>(5 mg/ml)</em> Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>KETAMINE IM ONLY</strong></td>
<td>4 mg/kg</td>
<td>34 mg</td>
<td>0.34 ml</td>
</tr>
<tr>
<td><em>(100 mg/ml)</em> 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
# Pediatric Resuscitation – 10-11 kg

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dose per kg</th>
<th>Total 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) 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>1st - 1 mg</td>
<td>0.35 ml</td>
</tr>
<tr>
<td>(6 mg/2 ml) Pre-filled syringe</td>
<td></td>
<td>2nd - 2.1 mg</td>
<td>0.7 ml</td>
</tr>
<tr>
<td></td>
<td>0.2 mg/kg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Synchronized Cardioversion

- **First Shock** – 10 joules
- **Subsequent shock** – 20 joules

### Defibrillation

- **First Shock** – 20 joules
- **Second Shock** – 40 joules
- **Subsequent** – 40-100 joules

### Supraglottic Airway

- **Kings Airway** – 1 – white
- **i-gel** – 1.5 - blue

### Cuffed ETT Size

- **3.5** – **1-1.5 - Straight**

**Normal Saline Bolus**

- 210 ml

*For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose*
10 - 11 kg
Delayed Sequence Intubation (DSI)
*FOR DSI APPROVED SERVICES ONLY*

<table>
<thead>
<tr>
<th>ATROPINE</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1mg/10ml) Pre-filled syringe</td>
<td>0.02 mg/kg</td>
<td>0.21 mg</td>
<td>2.1 ml</td>
</tr>
<tr>
<td>Not recommended for patients &lt; 11 KG or &lt; 1 year of age</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ETOMIDATE</th>
<th>2 mg/ml Vial</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.3 mg/kg</td>
<td>3.2 mg</td>
<td>1.6 ml</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FENTANYL *</th>
<th>0.3 mg/kg</th>
<th>3.2 mg</th>
<th>1.6 ml</th>
</tr>
</thead>
<tbody>
<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>

<table>
<thead>
<tr>
<th>KETAMINE IV</th>
<th>10 mg/ml Vial</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 mg/kg</td>
<td>20 mg</td>
<td>2 ml</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MIDAZOLAM *</th>
<th>1 mg/ml Vial</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.3 mg/kg</td>
<td>3.2 mg</td>
<td>3.2 ml</td>
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</table>

<table>
<thead>
<tr>
<th>SUCCINYLCHOLINE</th>
<th>20 mg/ml Vial</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 mg/kg</td>
<td>20 mg</td>
<td>1 ml</td>
<td></td>
<td></td>
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</tbody>
</table>

10 - 11 kg
Anaphylaxis/Antidote

<table>
<thead>
<tr>
<th>EPINEPHRINE</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1mg/1ml) vial/amp</td>
<td>0.01 mg/kg</td>
<td>IM 0.1 mg</td>
<td>0.1 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIPHENHYDRAMINE</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>(50 mg/1 ml) Vial</td>
<td>1 mg/kg</td>
<td>10 mg</td>
<td>0.2 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>METHYLPREDNISLONE</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>(125 mg/2 ml) Vial</td>
<td>2 mg/kg</td>
<td>20 mg</td>
<td>0.32 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ALBUTEROL</th>
<th>0.15 mg/kg</th>
<th>1.5 mg</th>
<th>0.6 ml</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2.5 mg/ml) Ampule</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NALOXONE</th>
<th>0.1 mg/kg</th>
<th>1 mg</th>
<th>1 ml</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GLUCAGON</th>
<th>Standard Dose Not Weight-Based</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1mg/ml) Vial</td>
<td>0.5 mg</td>
<td>0.5 ml</td>
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</table>
### PEDIATRIC RESUSCITATION – 10-11 KG

#### 10 - 11 kg

<table>
<thead>
<tr>
<th></th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Asthma</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ALBUTEROL</strong></td>
<td>0.15 mg/kg</td>
<td>1.5 mg</td>
<td>0.6 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>5 mg</td>
<td>2 ml</td>
</tr>
<tr>
<td><strong>METHYLPREDNISOLONE</strong></td>
<td>2 mg/kg</td>
<td>20 mg</td>
<td>0.32 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>0.1 ml</td>
</tr>
<tr>
<td>(1mg/1ml) vial/amp</td>
<td></td>
<td>0.1 mg</td>
<td></td>
</tr>
</tbody>
</table>

#### 10 - 11 kg

<table>
<thead>
<tr>
<th></th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Seizures</strong></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>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>
</tbody>
</table>

#### 10 - 11 kg

<table>
<thead>
<tr>
<th></th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Antiemetic/Pain/Agitation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<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>* (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>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>0.05 mg/kg</td>
<td>0.5 mg</td>
<td>0.1 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>

* 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
12 - 14 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>0.13 mg</td>
<td>1.3 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>0.26 mg</td>
<td>2.6 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>13 meq</td>
<td>26 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>780 mg</td>
<td>7.8 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>13 mg</td>
<td>0.65 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>65 mg</td>
<td>1.3 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 – 1.3 mg</td>
<td>0.43 ml</td>
</tr>
<tr>
<td>(6mg/2 ml) Pre-filled syringe</td>
<td></td>
<td>2nd – 2.6 mg</td>
<td>0.86 ml</td>
</tr>
<tr>
<td></td>
<td>0.2 mg/kg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Synchronized Cardioversion

**First Shock** – 13 joules  
**Subsequent shock** – 26 joules

**Defibrillation**

<table>
<thead>
<tr>
<th>Shock Type</th>
<th>Joules</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Shock</td>
<td>26</td>
</tr>
<tr>
<td>Second Shock</td>
<td>52</td>
</tr>
<tr>
<td>Subsequent</td>
<td>52-130</td>
</tr>
</tbody>
</table>

**Supraglottic Airway**

<table>
<thead>
<tr>
<th>Airway Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kings Airway</td>
<td>2 – green</td>
</tr>
<tr>
<td>i-gel</td>
<td>2 - gray</td>
</tr>
</tbody>
</table>

**Cuffed ETT Size**

<table>
<thead>
<tr>
<th>Size</th>
<th>Blade Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0</td>
<td>2 - Straight</td>
</tr>
</tbody>
</table>

**Normal Saline Bolus**

<table>
<thead>
<tr>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>260 ml</td>
</tr>
</tbody>
</table>

* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose.
### 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>0.26 mg</td>
<td>2.6 ml</td>
</tr>
<tr>
<td>(1mg/10ml) 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>**FENTANYL *</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>**MIDAZOLAM *</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>
</tbody>
</table>

### Anaphylaxis/Antidote

*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>
</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><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>METHYLprednisolone</strong></td>
<td>2 mg/kg</td>
<td>26 mg</td>
<td>0.42 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>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>
### 12 - 14 kg
#### Asthma

<table>
<thead>
<tr>
<th>Drug</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>1.95 mg</td>
<td>0.78 ml</td>
</tr>
<tr>
<td>CONTINUOUS ALBUTEROL</td>
<td>0.5 mg/kg</td>
<td>6.5 mg</td>
<td>2.6 ml</td>
</tr>
<tr>
<td>METHYL PREDNISOLONE (125 mg/2 ml Vial)</td>
<td>2 mg/kg</td>
<td>26 mg</td>
<td>0.42 ml</td>
</tr>
<tr>
<td>EPINEPHRINE (1 mg/1 ml vial/amp)</td>
<td>0.01 mg/kg</td>
<td>SUB Q 0.13 mg</td>
<td>0.13 ml</td>
</tr>
</tbody>
</table>

*For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose*
## 15 - 18 kg Resuscitation

<table>
<thead>
<tr>
<th><strong>EPINEPHRINE</strong> 1 mg/10 ml (1:10 ml) Pre-filled syringe</th>
<th><strong>DOSE/KG</strong></th>
<th><strong>DOSE</strong></th>
<th><strong>VOLUME</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.01 mg/kg</td>
<td>0.17 mg</td>
<td>1.7 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>ATROPINE</strong> (1mg/10ml) Pre-filled syringe</th>
<th><strong>DOSE/KG</strong></th>
<th><strong>DOSE</strong></th>
<th><strong>VOLUME</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.02 mg/kg</td>
<td>0.33 mg</td>
<td>3.3 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>SODIUM BICARBONATE</strong> (5 meq/10 ml) Pre-filled syringe</th>
<th><strong>DOSE/KG</strong></th>
<th><strong>MEQ</strong></th>
<th><strong>VOLUME</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 meq/kg</td>
<td>16.5 meq</td>
<td>33 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>CALCIUM GLUCONATE</strong> (1gm/10 ml) Pre-filled syringe</th>
<th><strong>DOSE/KG</strong></th>
<th><strong>MG</strong></th>
<th><strong>VOLUME</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60 mg/kg</td>
<td>990 mg</td>
<td>9.9 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>LIDOCAINE</strong> (100 mg/5 ml) Pre-filled syringe</th>
<th><strong>DOSE/KG</strong></th>
<th><strong>MG</strong></th>
<th><strong>VOLUME</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 mg/kg</td>
<td>17 mg</td>
<td>0.85 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>AMIODARONE</strong> (50 mg/1 ml) Vial</th>
<th><strong>DOSE/KG</strong></th>
<th><strong>MG</strong></th>
<th><strong>VOLUME</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5 mg/kg</td>
<td>80 mg</td>
<td>1.6 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>ADENOSINE</strong> (6mg/2 ml) Pre-filled syringe</th>
<th><strong>DOSE/KG</strong></th>
<th><strong>1st – 1.7 mg</strong></th>
<th><strong>VOLUME</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.1 mg/kg</td>
<td>1.7 mg</td>
<td>0.56 ml</td>
</tr>
<tr>
<td></td>
<td>0.2 mg/kg</td>
<td>2nd - 3.3 mg</td>
<td>1.1 ml</td>
</tr>
</tbody>
</table>

### Synchronized Cardioversion

<table>
<thead>
<tr>
<th>First shock – 17 joules</th>
<th>Subsequent shock – 33 joules</th>
</tr>
</thead>
</table>

### Defibrillation

<table>
<thead>
<tr>
<th>First shock</th>
<th>33 joules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second shock</td>
<td>66 joules</td>
</tr>
<tr>
<td>Subsequent</td>
<td>66-160 joules</td>
</tr>
</tbody>
</table>

### Supraglottic Airway

<table>
<thead>
<tr>
<th><strong>Kings Airway</strong></th>
<th>2 – green</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>i-gel</strong></td>
<td>2 - gray</td>
</tr>
</tbody>
</table>

### Cuffed ETT Size

<table>
<thead>
<tr>
<th><strong>Blade Size</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>4.5</td>
</tr>
<tr>
<td>2 - Straight</td>
</tr>
</tbody>
</table>

### Normal Saline Bolus

| **325 ml** |

* For pain and sedation doses: Start dose low – slowly increase – Titrated to effect up to listed dose
### 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>0.33 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>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>
</tbody>
</table>

### 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 0.17 mg</td>
<td>0.17 ml</td>
</tr>
<tr>
<td>(1mg/1ml) vial/amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(or Epi Jr)</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>METHYLprednisolone</strong></td>
<td>2 mg/kg</td>
<td>34 mg</td>
<td>0.5 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</td>
<td>0.5 mg</td>
<td>0.5 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.
# 15 - 18 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>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>METHYL PREDNISOLONE</strong></td>
<td>2 mg/kg</td>
<td>34 mg</td>
<td>0.5 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>0.17 ml</td>
</tr>
<tr>
<td>(1 mg/1 ml) vial/amp</td>
<td></td>
<td>0.17 mg</td>
<td></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>MIDAZOLAM</strong></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><strong>DIAZEPAM</strong></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><strong>LORAZEPAM</strong></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>
</tbody>
</table>

## 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>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><strong>FENTANYL</strong></td>
<td>1 mcg/kg</td>
<td>16 mcg</td>
<td>0.32 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>1.7 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><strong>KETOROLAC</strong></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><strong>ETOMIDATE</strong></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><strong>MIDAZOLAM</strong></td>
<td>0.05 mg/kg</td>
<td>0.8 mg</td>
<td>0.16 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>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>

* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose.
### 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) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ATROPINE</strong></td>
<td>0.02 mg/kg</td>
<td>0.42 mg</td>
<td>4.2 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>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>(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>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>1st – 2.1 mg</td>
<td>0.7 ml</td>
</tr>
<tr>
<td>(6 mg/2 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.2 mg/kg</td>
<td>2nd – 4.2 mg</td>
<td>1.4 ml</td>
</tr>
</tbody>
</table>

#### Synchronized Cardioversion
- **First Shock** – 20 joules
- **Subsequent Shock** – 40 joules

#### Defibrillation
- **First Shock** – 40 joules
- **Second Shock** – 80 joules
- **Subsequent** – 80-200 joules

#### Supraglottic Airway
- **Kings Airway** 2 – green
- **i-gel** 2 – grey

#### Cuffed ETT Size
- **Cuffed ETT Size** 5.0
- **Blade Size** 2 – Straight or Curved

#### Normal Saline Bolus
- **420 ml**

*For pain and sedation doses:
Start dose low – slowly increase – Titrate to effect up to listed dose*
### 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>0.42 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>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>* (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>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)</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>
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</table>

### 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 0.21 mg</td>
<td>0.21 ml</td>
</tr>
<tr>
<td>(1mg/1ml) vial/amp (or Epi Jr)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DIPHENHYDRAMINE</strong></td>
<td>1 mg/kg</td>
<td>21 mg</td>
<td>0.42 ml</td>
</tr>
<tr>
<td>(50 mg/1 ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>METHYLPREDNISLOSONE</strong></td>
<td>2 mg/kg</td>
<td>42 mg</td>
<td>0.7 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>1 mg/kg</td>
<td>Standard Dose Not Weight-Based</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*
## PEDIATRIC RESUSCITATION – 19-23 KG

### 19 - 23 kg

#### Asthma

<table>
<thead>
<tr>
<th></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>2.5 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>CONTINUOUS ALBUTEROL</strong></td>
<td>0.5 mg/kg</td>
<td>10 mg</td>
<td>4 ml</td>
</tr>
<tr>
<td><strong>METHYPREDNISOLONE</strong></td>
<td>2 mg/kg</td>
<td>42 mg</td>
<td>0.7 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>0.21 ml</td>
</tr>
<tr>
<td>(1 mg/1 ml) vial/amp</td>
<td></td>
<td>0.21 mg</td>
<td></td>
</tr>
</tbody>
</table>

#### Seizures

<table>
<thead>
<tr>
<th></th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MIDAZOLAM</strong> *</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><strong>DIAZEPAM</strong> *</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><strong>LORAZEPAM</strong> *</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>
</tbody>
</table>

#### 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>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><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>MORPHINE</strong> *</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><strong>KETOROLAC</strong></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><strong>ETOMIDATE</strong></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><strong>MIDAZOLAM</strong> *</td>
<td>0.05 mg/kg</td>
<td>2.1 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>84 mg</td>
<td>0.84 ml</td>
</tr>
<tr>
<td>(100 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.
# Pediatric Resuscitation

## 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>(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>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>60 mg/kg</td>
<td>1590 mg</td>
<td>15.9 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>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>AMIODARONE</strong></td>
<td>5 mg/kg</td>
<td>130 mg</td>
<td>2.6 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>1&lt;sup&gt;st&lt;/sup&gt; - 2.7 mg</td>
<td>0.9 ml</td>
</tr>
<tr>
<td>(6 mg/2 ml) Pre-filled syringe</td>
<td></td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; - 5.4 mg</td>
<td>1.8 ml</td>
</tr>
<tr>
<td></td>
<td>0.2 mg/kg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Synchronized Cardioversion

- **First Shock** – 27 joules
- **Subsequent Shock** – 53 joules

### Defibrillation

- **First Shock** – 53 joules
- **Second Shock** – 106 joules
- **Subsequent** – 106-260 joules

### Supraglottic Airway

- **Kings Airway** – 2 – green to 2.5 orange
- **i-gel** – 2.5 - white

### Cuffed ETT Size

- **6.0**

### Blade Size

- 2 – Straight or Curved

### Normal Saline Bolus

- 530 ml
### 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>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>*</td>
<td></td>
<td></td>
<td></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>
</tbody>
</table>

### 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 0.27 mg</td>
<td>0.27 ml</td>
</tr>
<tr>
<td>(1mg/1 ml) vial/amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(or Epi Jr)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DIPHENHYDRAMINE</strong></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><strong>METHYLPRERNDNILOSONE</strong></td>
<td>2 mg/kg</td>
<td>54 mg</td>
<td>0.86 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</td>
<td>Not Weight-Based</td>
<td>1 mg</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.
## PEDIATRIC RESUSCITATION – 24-29 KG

### 24 - 29 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> (2.5 mg/ml Ampule)</td>
<td>0.15 mg/kg</td>
<td>2.5 mg</td>
<td>1 ml</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>METHYLprednisolONE</strong> (125 mg/2 ml Vial)</td>
<td>2 mg/kg</td>
<td>54 mg</td>
<td>0.86 ml</td>
</tr>
<tr>
<td><strong>EPINEPHRINE</strong> (1mg/1ml vial/amp)</td>
<td>0.01 mg/kg</td>
<td>SUB Q 0.27 mg</td>
<td>0.27 ml</td>
</tr>
</tbody>
</table>

### 24 - 29 kg

#### Seizures

<table>
<thead>
<tr>
<th>Drug</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MIDAZOLAM</strong> * (5 mg/ml Vial)</td>
<td>0.1 mg/kg</td>
<td>2.7 mg</td>
<td>0.54 ml</td>
</tr>
<tr>
<td><strong>DIAZEPAM</strong> * (5 mg/ml Pre-filled syringe)</td>
<td>0.2 mg/kg</td>
<td>5.4 mg</td>
<td>1.08 ml</td>
</tr>
<tr>
<td><strong>LORAZEPAM</strong> * (2 mg/ml Pre-filled syringe)</td>
<td>0.1 mg/kg</td>
<td>2.7 mg</td>
<td>1.35 ml</td>
</tr>
</tbody>
</table>

### 24 - 29 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><strong>ONDANSETRON</strong> (2 mg/ml Vial)</td>
<td>0.15 mg/kg</td>
<td>4 mg</td>
<td>2 ml</td>
</tr>
<tr>
<td><strong>FENTANYL</strong> * (50mcg/ml vial/amp)</td>
<td>1 mcg/kg</td>
<td>26 mcg</td>
<td>0.52 ml</td>
</tr>
<tr>
<td>Must use filter needle for amp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MORPHINE</strong> * (10 mg/1 ml Pre-filled syringe)</td>
<td>0.1 mg/kg</td>
<td>2.7 mg</td>
<td>0.27 ml</td>
</tr>
<tr>
<td><strong>KETOROLAC</strong> (15 mg/ml Pre-filled syringe)</td>
<td>0.5 mg/kg</td>
<td>13.5 mg</td>
<td>0.9 ml</td>
</tr>
<tr>
<td><strong>ETOMIDATE</strong> (2 mg/ml Vial)</td>
<td>0.2 mg/kg</td>
<td>5.4 mg</td>
<td>2.7 ml</td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong> * (5 mg/ml Vial)</td>
<td>0.05 mg/kg</td>
<td>1.3 mg</td>
<td>0.26 ml</td>
</tr>
<tr>
<td><strong>KETAMINE IM ONLY</strong> (100 mg/ml Vial)</td>
<td>4 mg/kg</td>
<td>108 mg</td>
<td>1.08 ml</td>
</tr>
</tbody>
</table>

* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose
# 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>Epinephrine</td>
<td>0.01 mg/kg</td>
<td>0.33 mg</td>
<td>3.3 ml</td>
</tr>
<tr>
<td>(1 mg/10 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atropine</td>
<td>0.02 mg/kg</td>
<td>0.5 mg</td>
<td>5 ml</td>
</tr>
<tr>
<td>(1 mg/10 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium Bicarbonate</td>
<td>1 meq/kg</td>
<td>33 meq</td>
<td>66 ml</td>
</tr>
<tr>
<td>(5 meq/10 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calcium Gluconate</td>
<td>60 mg/kg</td>
<td>1980 mg</td>
<td>19.8 ml</td>
</tr>
<tr>
<td>(1 gm/10 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lidocaine</td>
<td>1 mg/kg</td>
<td>33 mg</td>
<td>1.7 ml</td>
</tr>
<tr>
<td>(100 mg/5 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amiodarone</td>
<td>50 mg/kg</td>
<td>165 mg</td>
<td>3.3 ml</td>
</tr>
<tr>
<td>(50 mg/1 ml) 50% Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adenosine</td>
<td>0.1 mg/kg</td>
<td>0.2 mg/kg</td>
<td>1.1 ml</td>
</tr>
<tr>
<td>(6 mg/2 ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

## Synchronized Cardioversion
- **First Shock – 30 joules**
- **Subsequent Shock – 66 joules**

## Defibrillation
- **First Shock** 66 joules
- **Second Shock** 130 joules
- **Subsequent** 130-330 joules

## Supraglottic Airway
- **Kings Airway** 2.5 – orange
- **i-gel** 3 - yellow

## Cuffed ETT Size
- **6.5** 3 – Straight or Curved

## Normal Saline Bolus
- **660 ml**

*Return to Table of Contents*
**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>ATROPINE (1mg/10ml)</td>
<td>0.02 mg/kg</td>
<td>0.5 mg</td>
<td>5 ml</td>
</tr>
<tr>
<td>ETOMIDATE 2 mg/ml</td>
<td>0.3 mg/kg</td>
<td>10 mg</td>
<td>5 ml</td>
</tr>
<tr>
<td>FENTANYL * (50mcg/ml)</td>
<td>1 mcg/kg</td>
<td>33 mcg</td>
<td>0.66 ml</td>
</tr>
<tr>
<td>KETAMINE IV 10 mg/ml</td>
<td>2 mg/kg</td>
<td>66 mg</td>
<td>6.6 ml</td>
</tr>
<tr>
<td>MIDAZOLAM * 1 mg/ml</td>
<td>0.3 mg/kg</td>
<td>10 mg</td>
<td>10 ml</td>
</tr>
<tr>
<td>SUCCINYLCHOLINE 20 mg/ml</td>
<td>2 mg/kg</td>
<td>66 mg</td>
<td>3.3 ml</td>
</tr>
</tbody>
</table>

**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>EPINEPHRINE (1mg/1ml)</td>
<td>0.01 mg/kg</td>
<td>IM 0.33 mg</td>
<td>0.33 ml</td>
</tr>
<tr>
<td>DIPHENHYDRAMINE (50 mg/1 ml)</td>
<td>1 mg/kg</td>
<td>33 mg</td>
<td>0.66 ml</td>
</tr>
<tr>
<td>METHYLprednisolone (125 mg/2 ml)</td>
<td>2 mg/kg</td>
<td>66 mg</td>
<td>1.1 ml</td>
</tr>
<tr>
<td>ALBUTEROL (2.5 mg/ml)</td>
<td>0.15 mg/kg</td>
<td>2.5 mg</td>
<td>1 ml</td>
</tr>
<tr>
<td>NALOXONE (1mg/ml)</td>
<td>0.1 mg/kg</td>
<td>2 mg</td>
<td>2 ml</td>
</tr>
<tr>
<td>GLUCAGON (1mg/ml)</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*
### 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>METHYLPREDNISOLONE</strong></td>
<td>2 mg/kg</td>
<td>66 mg</td>
<td>1.1 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>0.33 mg</td>
<td>0.33 ml</td>
</tr>
<tr>
<td>(1mg/1ml) vial/amp</td>
<td></td>
<td></td>
<td></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>MIDAZOLAM</strong> *</td>
<td>0.1 mg/kg</td>
<td>3.3 mg*</td>
<td>0.66 ml</td>
</tr>
<tr>
<td>(5 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<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>(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>3.3 mg*</td>
<td>1.65 ml</td>
</tr>
<tr>
<td>(2 mg/ml) Pre-filled syringe</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 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>33 mcg*</td>
<td>0.66 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>3.3 mg*</td>
<td>0.33 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>15 mg</td>
<td>1 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>6.6 mg</td>
<td>3.3 ml</td>
</tr>
<tr>
<td>(2 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MIDAZOLAM</strong> *</td>
<td>0.05 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><strong>KETAMINE IM ONLY</strong></td>
<td>4 mg/kg</td>
<td>132 mg</td>
<td>1.32 ml</td>
</tr>
<tr>
<td>(100 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
<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>Etomidate</strong>&lt;br&gt;(2 mg/ml) Vial</td>
<td>0.2 mg/kg</td>
<td>8 mg</td>
<td>4 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td><strong>Fentanyl</strong>&lt;br&gt;*(50 mcg/ml) vial/amp</td>
<td>1 mcg/kg</td>
<td>40 mcg</td>
<td>0.8 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td><strong>Ketamine IM ONLY</strong>&lt;br&gt;Excited Delirium&lt;br&gt;(100 mg/mL) vial</td>
<td>4 mg/kg</td>
<td>160 mg</td>
<td>0.4 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td><strong>Ketamine IM ONLY</strong>&lt;br&gt;Pain Management&lt;br&gt;(100 mg/mL) vial</td>
<td>0.4 mg/kg</td>
<td>16 mg</td>
<td>0.16 ml</td>
<td>May repeat x 1</td>
</tr>
<tr>
<td><strong>Lidocaine 2%</strong>&lt;br&gt;(20 mg/ml) syringe</td>
<td>1 mg/kg</td>
<td>40 mg</td>
<td>2 mL</td>
<td>May repeat using half dose to a total of 3 mg/kg</td>
</tr>
<tr>
<td><strong>Midazolam</strong>&lt;br&gt;Excited Delirium&lt;br&gt;(5 mg/ml) Vial</td>
<td>0.07 mg/kg</td>
<td>2.8 mg</td>
<td>0.56 mL</td>
<td>May repeat x 1</td>
</tr>
<tr>
<td><strong>Midazolam</strong>&lt;br&gt;Sedation&lt;br&gt;(5 mg/ml) Vial</td>
<td>0.025 mg/kg</td>
<td>1 mg</td>
<td>0.2 mL</td>
<td>May repeat x 1 (If pt is intubated additional doses may be considered)</td>
</tr>
<tr>
<td><strong>Midazolam</strong>&lt;br&gt;Seizure&lt;br&gt;(5 mg/ml) Vial</td>
<td>0.1 mg/kg</td>
<td>4 mg</td>
<td>0.8 mL</td>
<td>May repeat x1</td>
</tr>
<tr>
<td><strong>Morphine</strong>&lt;br&gt;*(10 mg/1 mL) pre-filled syringe</td>
<td>0.05 mg/kg</td>
<td>2 mg</td>
<td>0.2 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td><strong>Sodium Bicarbonate</strong>&lt;br&gt;(1 mEq/ml) Syringe</td>
<td>1 mEq/kg</td>
<td>40 mEq</td>
<td>40 mL</td>
<td>May follow with half dose every 10 minutes</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>Etomidate (2 mg/ml) Vial</td>
<td>0.2 mg/kg</td>
<td>10 mg</td>
<td>5 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>Fentanyl * (50 mcg/ml) vial/amp</td>
<td>1 mcg/kg</td>
<td>50 mcg</td>
<td>1 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>Ketamine IM ONLY Excited Delirium</td>
<td>4 mg/kg</td>
<td>200 mg</td>
<td>2 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>Ketamine IM ONLY Pain Management</td>
<td>0.4 mg/kg</td>
<td>20 mg</td>
<td>0.2 ml</td>
<td>May repeat x 1</td>
</tr>
<tr>
<td>Lidocaine 2% (20 mg/ml) syringe</td>
<td>1 mg/kg</td>
<td>50 mg</td>
<td>2.5 mL</td>
<td>May repeat using half dose to a total of 3 mg/kg</td>
</tr>
<tr>
<td>Midazolam * Excited Delirium</td>
<td>0.07 mg/kg</td>
<td>3.5 mg</td>
<td>0.7 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>Midazolam * Sedation (5 mg/ml) Vial</td>
<td>0.025 mg/kg</td>
<td>1.25 mg</td>
<td>0.25 ml</td>
<td>May repeat x 1 (If pt is intubated additional doses may be considered)</td>
</tr>
<tr>
<td>Midazolam * Seizure (5 mg/ml) Vial</td>
<td>0.1 mg/kg</td>
<td>5 mg</td>
<td>1 mL</td>
<td>May repeat x 1</td>
</tr>
<tr>
<td>Morphine * (10 mg/1 mL) pre-filled syringe</td>
<td>0.05 mg/kg</td>
<td>2.5 mg</td>
<td>0.25 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>Sodium Bicarbonate (1 mEq/ml) Syringe</td>
<td>1 mEq/kg</td>
<td>50 mEq</td>
<td>50 mL</td>
<td>May follow with half dose every 10 minutes</td>
</tr>
</tbody>
</table>

* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose.
### 60 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>Etomidate *(2 mg/ml) Vial *</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>Fentanyl *(50 mcg/ml) vial/amp Must use filter for amp</td>
<td>1 mcg/kg</td>
<td>60 mcg</td>
<td>1.2 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td><strong>Ketamine IM ONLY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Excited Delirium (100 mg/mL) vial</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><strong>Pain Management (100 mg/mL) vial</strong></td>
<td>0.4 mg/kg</td>
<td>24 mg</td>
<td>0.24 ml</td>
<td>May repeat x 1</td>
</tr>
<tr>
<td><strong>Lidocaine 2% (20 mg/ml) syringe</strong></td>
<td>1 mg/kg</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><strong>Midazolam * Excited Delirium (5 mg/ml) Vial</strong></td>
<td>0.07 mg/kg</td>
<td>4.2 mg</td>
<td>0.84 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td><strong>Midazolam * Sedation (5 mg/ml) Vial</strong></td>
<td>0.025 mg/kg</td>
<td>1.5 mg</td>
<td>0.3 mL</td>
<td>May repeat x 1 (If pt is intubated additional doses may be considered)</td>
</tr>
<tr>
<td><strong>Midazolam * Seizure (5 mg/ml) Vial</strong></td>
<td>0.1 mg/kg</td>
<td>6 mg</td>
<td>1.2 mL</td>
<td>May repeat x1</td>
</tr>
<tr>
<td><strong>Morphine * (10 mg/1 mL) pre-filled syringe</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><strong>Sodium Bicarbonate (1 mEq/ml) Syringe</strong></td>
<td>1 mEq/kg</td>
<td>60 mEq</td>
<td>60 mL</td>
<td>May follow with half dose every 10 minutes</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
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<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Etomidate</strong> <em>(2 mg/ml) Vial</em></td>
<td>0.2 mg/kg</td>
<td>14 mg</td>
<td>7 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td><strong>Fentanyl</strong> <em>(50 mcg/ml) vial/amp</em></td>
<td>1 mcg/kg</td>
<td>70 mcg *</td>
<td>1.4 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td><strong>Ketamine IM ONLY</strong> <em>Excited Delirium</em> <em>(100 mg/mL) vial</em></td>
<td>4 mg/kg</td>
<td>280 mg</td>
<td>2.8 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td><strong>Ketamine IM ONLY</strong> <em>Pain Management</em> <em>(100 mg/mL) vial</em></td>
<td>0.4 mg/kg</td>
<td>28 mg</td>
<td>0.28 ml</td>
<td>May repeat x 1</td>
</tr>
<tr>
<td><strong>Lidocaine 2%</strong> <em>(20 mg/ml) syringe</em></td>
<td>1 mg/kg</td>
<td>70 mg</td>
<td>3.5 mL</td>
<td>May repeat using half dose to a total of 3 mg/kg</td>
</tr>
<tr>
<td><strong>Midazolam</strong> <em>Excited Delirium</em> <em>(5 mg/ml) Vial</em></td>
<td>0.07 mg/kg</td>
<td>4.9 mg *</td>
<td>0.98 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td><strong>Midazolam</strong> <em>Sedation</em> <em>(5 mg/ml) Vial</em></td>
<td>0.025 mg/kg</td>
<td>1.75 mg *</td>
<td>0.35 ml</td>
<td>May repeat x 1 (If pt is intubated additional doses may be considered)</td>
</tr>
<tr>
<td><strong>Midazolam</strong> <em>Seizure</em> <em>(5 mg/ml) Vial</em></td>
<td>0.1 mg/kg</td>
<td>7 mg *</td>
<td>1.4 ml</td>
<td>May repeat x 1</td>
</tr>
<tr>
<td><strong>Morphine</strong> <em>(10 mg/1 mL) pre-filled syringe</em></td>
<td>0.05 mg/kg</td>
<td>3.5 mg *</td>
<td>0.35 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td><strong>Sodium Bicarbonate</strong> <em>(1 mEq/ml) Syringe</em></td>
<td>1 mEq/kg</td>
<td>70 mEq</td>
<td>70 mL</td>
<td>May follow with half dose every 10 minutes</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>Etomidate</strong> <em>(2 mg/ml) Vial</em></td>
<td>0.2 mg/kg</td>
<td>16 mg</td>
<td>8 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td><strong>Fentanyl</strong> <em>(50 mcg/ml) vial/amp</em></td>
<td>1 mcg/kg</td>
<td>80 mcg</td>
<td>1.6 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td><strong>Ketamine IM ONLY Excited Delirium</strong> <em>(100 mg/mL) vial</em></td>
<td>4 mg/kg</td>
<td>320 mg</td>
<td>3.2 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td><strong>Ketamine IM ONLY</strong> <em>Pain Management</em>* <em>(100 mg/mL) vial</em></td>
<td>0.4 mg/kg</td>
<td>32 mg</td>
<td>0.32 mL</td>
<td>May repeat x 1</td>
</tr>
<tr>
<td><strong>Lidocaine 2%</strong> <em>(20 mg/ml) syringe</em></td>
<td>1 mg/kg</td>
<td>80 mg</td>
<td>4 mL</td>
<td>May repeat using half dose to a total of 3 mg/kg</td>
</tr>
<tr>
<td><strong>Midazolam</strong> <em>Excited Delirium</em>* <em>(5 mg/ml) Vial</em></td>
<td>0.07 mg/kg</td>
<td>5.6 mg *</td>
<td>1.12 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td><strong>Midazolam</strong> <em>Sedation</em>* <em>(5 mg/ml) Vial</em></td>
<td>0.025 mg/kg</td>
<td>2 mg *</td>
<td>0.4 mL</td>
<td>May repeat x 1 (If pt is intubated additional doses may be considered)</td>
</tr>
<tr>
<td><strong>Midazolam</strong> <em>Seizure</em>* <em>(5 mg/ml) Vial</em></td>
<td>0.1 mg/kg</td>
<td>8 mg *</td>
<td>1.6 mL</td>
<td>May repeat x 1</td>
</tr>
<tr>
<td><strong>Morphine</strong> <em>(10 mg/1 mL) pre-filled syringe</em></td>
<td>0.05 mg/kg</td>
<td>4 mg *</td>
<td>0.4 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td><strong>Sodium Bicarbonate</strong> <em>(1 mEq/ml) Syringe</em></td>
<td>1 mEq/kg</td>
<td>80 mEq</td>
<td>80 mL</td>
<td>May follow with half dose every 10 minutes</td>
</tr>
<tr>
<td>DRUG</td>
<td>DOSE/KG</td>
<td>DOSE</td>
<td>VOLUME</td>
<td>NOTES</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-----------</td>
<td>-------</td>
<td>--------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>Etomidate (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>
</tr>
<tr>
<td>Fentanyl * (50 mcg/ml) vial/amp Must use filter for amp</td>
<td>1 mcg/kg</td>
<td>90 mcg</td>
<td>1.8 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>Ketamine IM ONLY Excited Delirium (100 mg/ml) vial</td>
<td>4 mg/kg</td>
<td>360 mg</td>
<td>3.6 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>Ketamine IM ONLY Pain Management (100 mg/ml) vial</td>
<td>0.4 mg/kg</td>
<td>36 mg</td>
<td>0.36 ml</td>
<td>May repeat x 1</td>
</tr>
<tr>
<td>Lidocaine 2% (20 mg/ml) syringe</td>
<td>1 mg/kg</td>
<td>90 mg</td>
<td>4.5 mL</td>
<td>May repeat using half dose to a total of 3 mg/kg</td>
</tr>
<tr>
<td>Midazolam * Excited Delirium (5 mg/ml) Vial</td>
<td>0.07 mg/kg</td>
<td>6.3 mg</td>
<td>1.26 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>Midazolam * Sedation (5 mg/ml) Vial</td>
<td>0.025 mg/kg</td>
<td>2.25 mg</td>
<td>0.45 ml</td>
<td>May repeat x 1 (If pt is intubated additional doses may be considered)</td>
</tr>
<tr>
<td>Midazolam * Seizure (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</td>
</tr>
<tr>
<td>Morphine * (10 mg/1 mL) pre-filled syringe</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>
</tr>
<tr>
<td>Sodium Bicarbonate (1 mEq/ml) Syringe</td>
<td>1 mEq/kg</td>
<td>90 mEq</td>
<td>90 mL</td>
<td>May follow with half dose every 10 minutes</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>Etomidate <em>(2 mg/ml) Vial</em></td>
<td>0.2 mg/kg</td>
<td>20 mg</td>
<td>10 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>Fentanyl <em>(50 mcg/ml) vial/amp</em></td>
<td>1 mcg/kg</td>
<td>100 mcg</td>
<td>2 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>Ketamine IM ONLY *Excited Delirium (100 mg/mL) vial</td>
<td>4 mg/kg</td>
<td>400 mg</td>
<td>4 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>Ketamine IM ONLY Pain Management (100 mg/mL) vial</td>
<td>0.4 mg/kg</td>
<td>40 mg</td>
<td>0.4 ml</td>
<td>May repeat x 1</td>
</tr>
<tr>
<td>Lidocaine 2% <em>(20 mg/ml) syringe</em></td>
<td>1 mg/kg</td>
<td>100 mg</td>
<td>5 mL</td>
<td>May repeat using half dose to a total of 3 mg/kg</td>
</tr>
<tr>
<td>Midazolam *Excited Delirium (5 mg/ml) Vial</td>
<td>0.07 mg/kg</td>
<td>7 mg *</td>
<td>1.4 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>Midazolam *Sedation (5 mg/ml) Vial</td>
<td>0.025 mg/kg</td>
<td>2.5 mg *</td>
<td>0.5 ml</td>
<td>May repeat x 1 (If pt is intubated additional doses may be considered)</td>
</tr>
<tr>
<td>Midazolam *Seizure (5 mg/ml) Vial</td>
<td>0.1 mg/kg</td>
<td>10 mg</td>
<td>2 mL</td>
<td>May repeat x 1</td>
</tr>
<tr>
<td>Morphine <em>(10 mg/1 mL) pre-filled syringe</em></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>
</tr>
<tr>
<td>Sodium Bicarbonate <em>(1 mEq/ml) Syringe</em></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>
</tbody>
</table>

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

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<table>
<thead>
<tr>
<th>DRUG</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Etomidate (2 mg/ml) Vial</td>
<td>0.2 mg/kg</td>
<td>22 mg</td>
<td>11 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>Fentanyl * (50 mcg/ml) vial/amp</td>
<td>1 mcg/kg</td>
<td>100 mcg</td>
<td>2 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>Ketamine IM ONLY</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Excited Delirium</strong> (100 mg/mL) vial</td>
<td>4 mg/kg</td>
<td>440 mg</td>
<td>4.4 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>Ketamine IM ONLY Pain Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pain Management</strong> (100 mg/mL) vial</td>
<td>0.4 mg/kg</td>
<td>44 mg</td>
<td>0.44 ml</td>
<td>May repeat x 1</td>
</tr>
<tr>
<td>Lidocaine 2% (20 mg/ml) syringe</td>
<td>1 mg/kg</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>Midazolam * (5 mg/ml) Vial</td>
<td>0.07 mg/kg</td>
<td>7.7 mg</td>
<td>1.54 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>Midazolam * (5 mg/ml) Vial</td>
<td>0.025 mg/kg</td>
<td>2.75 mg</td>
<td>0.55 ml</td>
<td>May repeat x 1 (if pt is intubated additional doses may be considered)</td>
</tr>
<tr>
<td>Midazolam * (5 mg/ml) Vial</td>
<td>0.1 mg/kg</td>
<td>10 mg</td>
<td>2 ml</td>
<td>May repeat x 1</td>
</tr>
<tr>
<td>Morphine * (10 mg/1 mL) pre-filled syringe</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>
</tr>
<tr>
<td>Sodium Bicarbonate (1 mEq/ml Syringe)</td>
<td>1 mEq/kg</td>
<td>110 mEq</td>
<td>110 mL</td>
<td>May follow with half dose every 10 minutes</td>
</tr>
<tr>
<td>DRUG</td>
<td>DOSE/KG</td>
<td>DOSE</td>
<td>VOLUME</td>
<td>NOTES</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-----------</td>
<td>---------</td>
<td>---------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>Etomidate (2 mg/ml) Vial</td>
<td>0.2 mg/kg</td>
<td>24 mg</td>
<td>12 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>Fentanyl * (50 mcg/ml) vial/amp</td>
<td>1 mcg/kg</td>
<td>100 mcg</td>
<td>2 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>Ketamine IM ONLY</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excited Delirium (100 mg/mL) vial</td>
<td>4 mg/kg</td>
<td>480 mg</td>
<td>4.8 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>Ketamine IM ONLY</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pain Management (100 mg/mL) vial</td>
<td>0.4 mg/kg</td>
<td>48 mg</td>
<td>0.48 ml</td>
<td>May repeat x 1</td>
</tr>
<tr>
<td>Lidocaine 2% (20 mg/ml) syringe</td>
<td>1 mg/kg</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>Midazolam * Excited Delirium (5 mg/ml) Vial</td>
<td>0.07 mg/kg</td>
<td>8.4 mg *</td>
<td>1.68 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>Midazolam * Sedation (5 mg/ml) Vial</td>
<td>0.025 mg/kg</td>
<td>3 mg *</td>
<td>0.6 ml</td>
<td>May repeat x 1 (If pt is intubated additional doses may be considered)</td>
</tr>
<tr>
<td>Midazolam * Seizure (5 mg/ml) Vial</td>
<td>0.1 mg/kg</td>
<td>10 mg *</td>
<td>2 ml</td>
<td>May repeat x1</td>
</tr>
<tr>
<td>Morphine * (10 mg/1 mL) pre-filled syringe</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>Sodium Bicarbonate (1 mEq/ml Syringe)</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>
</tbody>
</table>

* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose
### 130 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>Etomidate</strong> <em>(2 mg/ml)</em> Vial</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><strong>Fentanyl</strong> * <em>(50 mcg/ml)</em> vial/amp</td>
<td>1 mcg/kg</td>
<td>100 mcg</td>
<td>2 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td><strong>Ketamine IM ONLY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Excited Delirium</em> <em>(100 mg/mL)</em> vial</td>
<td>4 mg/kg</td>
<td>500 mg</td>
<td>5 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td><strong>Ketamine IM ONLY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Pain Management</em> <em>(100 mg/mL)</em> vial</td>
<td>0.4 mg/kg</td>
<td>52 mg</td>
<td>0.52 ml</td>
<td>May repeat x 1</td>
</tr>
<tr>
<td><strong>Lidocaine 2%</strong> <em>(20 mg/ml)</em> syringe</td>
<td>1 mg/kg</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><strong>Midazolam</strong> * <em>(5 mg/ml)</em> Vial</td>
<td>0.07 mg/kg</td>
<td>9.1 mg</td>
<td>1.82 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td><strong>Midazolam</strong> * <em>(5 mg/ml)</em> Vial</td>
<td>0.025 mg/kg</td>
<td>3.25 mg</td>
<td>0.65 ml</td>
<td>May repeat x 1 (If pt is intubated additional doses may be considered)</td>
</tr>
<tr>
<td><strong>Midazolam</strong> * <em>(5 mg/ml)</em> Vial</td>
<td>0.1 mg/kg</td>
<td>10 mg</td>
<td>2 ml</td>
<td>May repeat x 1</td>
</tr>
<tr>
<td><strong>Morphine</strong> * <em>(10 mg/1 mL)</em> pre-filled syringe</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><strong>Sodium Bicarbonate</strong> <em>(1 mEq/ml)</em> Syringe</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>
</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>Etomidate (2 mg/ml) Vial</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>Fentanyl * (50 mcg/ml) vial/amp</td>
<td>1 mcg/kg</td>
<td>100 mcg</td>
<td>2 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>Ketamine IM ONLY Excited Delirium (100 mg/mL) vial</td>
<td>4 mg/kg</td>
<td>500 mg</td>
<td>5 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>Ketamine IM ONLY Pain Management (100 mg/mL) vial</td>
<td>0.4 mg/kg</td>
<td>56 mg</td>
<td>0.56 mL</td>
<td>May repeat x 1</td>
</tr>
<tr>
<td>Lidocaine 2% (20 mg/ml) syringe</td>
<td>1 mg/kg</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>Midazolam * Excited Delirium (5 mg/ml) Vial</td>
<td>0.07 mg/kg</td>
<td>9.8 mg</td>
<td>1.96 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>Midazolam * Sedation (5 mg/ml) Vial</td>
<td>0.025 mg/kg</td>
<td>3.5 mg</td>
<td>0.7 mL</td>
<td>May repeat x 1 (If pt is intubated additional doses may be considered)</td>
</tr>
<tr>
<td>Midazolam * Seizure (5 mg/ml) Vial</td>
<td>0.1 mg/kg</td>
<td>10 mg</td>
<td>2 mL</td>
<td>May repeat x 1</td>
</tr>
<tr>
<td>Morphine * (10 mg/1 mL) pre-filled syringe</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>
</tr>
<tr>
<td>Sodium Bicarbonate (1 mEq/ml) Syringe</td>
<td>1 mEq/kg</td>
<td>140 mEq</td>
<td>140 mL</td>
<td>May follow with half dose every 10 minutes</td>
</tr>
</tbody>
</table>

* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose
### 150 KG or greater

<table>
<thead>
<tr>
<th>DRUG</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Etomidate (2 mg/ml) Vial</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>Fentanyl * (50 mcg/ml) vial/amp</td>
<td>1 mcg/kg</td>
<td>100 mcg*</td>
<td>2 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>Ketamine IM ONLY Excited Delirium (100 mg/mL) vial</td>
<td>4 mg/kg</td>
<td>500 mg</td>
<td>5 mL</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>Ketamine IM ONLY Pain Management (100 mg/mL) vial</td>
<td>0.4 mg/kg</td>
<td>60 mg</td>
<td>0.6 ml</td>
<td>May repeat x 1</td>
</tr>
<tr>
<td>Lidocaine 2% (20 mg/ml) syringe</td>
<td>1 mg/kg</td>
<td>150 mg</td>
<td>7.5 mL</td>
<td>May repeat using half dose to a total of 3 mg/kg</td>
</tr>
<tr>
<td>Midazolam * Excited Delirium (5 mg/ml) Vial</td>
<td>0.07 mg/kg</td>
<td>10 mg*</td>
<td>2 mL</td>
<td>May repeat x 1 after 5 minutes</td>
</tr>
<tr>
<td>Midazolam * Sedation (5 mg/ml) Vial</td>
<td>0.025 mg/kg</td>
<td>3.75 mg*</td>
<td>0.75 ml</td>
<td>May repeat x 1 (If pt is intubated additional doses may be considered)</td>
</tr>
<tr>
<td>Midazolam * Seizure (5 mg/ml) Vial</td>
<td>0.1 mg/kg</td>
<td>10 mg*</td>
<td>2 ml</td>
<td>May repeat x 1</td>
</tr>
<tr>
<td>Morphine * (10 mg/1 mL) pre-filled syringe</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>
</tr>
<tr>
<td>Sodium Bicarbonate (1 mEq/ml) Syringe</td>
<td>1 mEq/kg</td>
<td>150 mEq</td>
<td>150 mL</td>
<td>May follow with half dose every 10 minutes</td>
</tr>
</tbody>
</table>

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

For agencies approved for paralytics

## 40 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>Lidocaine</strong></td>
<td>1.5 mg/kg</td>
<td>60 mg</td>
<td>3 ml</td>
<td>May repeat using half dose to a total of 3 mg/ml</td>
</tr>
<tr>
<td>(20 mg/ml)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Atropine</strong></td>
<td>Not weight based</td>
<td></td>
<td></td>
<td>IV/IO 0.5 mg every 5 min to max of 3 mg</td>
</tr>
<tr>
<td><strong>Etomidate</strong></td>
<td>0.2 mg/kg</td>
<td>8 mg</td>
<td>4 ml</td>
<td>May repeat x1 after 5 minutes</td>
</tr>
<tr>
<td>(2 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>60 mg</td>
<td>6 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>Midazolam</strong></td>
<td>0.025 mg/kg</td>
<td>1 mg</td>
<td>0.2 ml</td>
<td>May repeat x1 after 5 minutes</td>
</tr>
<tr>
<td>(5 mg/ml) Vial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Succinylcholine</strong></td>
<td>1.5 mg/kg</td>
<td>60 mg</td>
<td>3 ml</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>(20 mg/ml) vial</td>
<td></td>
<td></td>
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### Alternatives:

<table>
<thead>
<tr>
<th>DRUG</th>
<th>DOSE/KG</th>
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<th>VOLUME</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rocuronium</strong></td>
<td>1 mg/kg</td>
<td>40 mg</td>
<td>4 ml</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>(10 mg/ml) vial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vecuronium</strong></td>
<td>0.1 mg/kg</td>
<td>4 mg</td>
<td>4 ml</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>(1 mg/ml) 10 mg vial for recon. Ad 10 ml NS for final concentration</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## 50 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>Lidocaine</strong></td>
<td>1.5 mg/kg</td>
<td>50 mg</td>
<td>2.5 ml</td>
<td>May repeat using half dose to a total of 3 mg/ml</td>
</tr>
<tr>
<td>(20 mg/ml)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Atropine</strong></td>
<td>Not weight based</td>
<td></td>
<td></td>
<td>IV/IO 0.5 mg every 5 min to max of 3 mg</td>
</tr>
<tr>
<td><strong>Etomidate</strong></td>
<td>0.2 mg/kg</td>
<td>10 mg</td>
<td>5 ml</td>
<td>May repeat x1 after 5 minutes</td>
</tr>
<tr>
<td>(2 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>75 mg</td>
<td>7.5 ml</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>(100 mg/ml) Vial</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Midazolam</strong></td>
<td>0.025 mg/kg</td>
<td>1.25 mg</td>
<td>0.25 ml</td>
<td>May repeat x1 after 5 minutes</td>
</tr>
<tr>
<td>(5 mg/ml) Vial</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Succinylcholine</strong></td>
<td>1.5 mg/kg</td>
<td>75 mg</td>
<td>3.75 ml</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>(20 mg/ml) vial</td>
<td></td>
<td></td>
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### Alternatives:

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Rocuronium</strong></td>
<td>1 mg/kg</td>
<td>50 mg</td>
<td>5 ml</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>(10 mg/ml) vial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vecuronium</strong></td>
<td>0.1 mg/kg</td>
<td>5 mg</td>
<td>5 ml</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>(1 mg/ml) 10 mg vial for recon. Ad 10 ml NS for final concentration</td>
<td></td>
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</table>

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[Return to Table of Contents](#)
# Delayed Sequence Intubation

*For agencies approved for paralytics*

## 60 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>Lidocaine (20 mg/ml)</td>
<td>1.5 mg/kg</td>
<td>60 mg</td>
<td>3 ml</td>
<td>May repeat using half dose to a total of 3 mg/ml</td>
</tr>
<tr>
<td>Atropine</td>
<td>Not weight based</td>
<td>IV/IO 0.5 mg every 5 min to max of 3 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Etomidate (2 mg/ml Vial)</td>
<td>0.2 mg/kg</td>
<td>12 mg</td>
<td>6 ml</td>
<td>May repeat x1 after 5 minutes</td>
</tr>
<tr>
<td>Ketamine IV (100 mg/ml Vial)</td>
<td>1.5 mg/kg</td>
<td>90 mg</td>
<td>9 ml</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>Midazolam (5 mg/ml Vial)</td>
<td>0.025 mg/kg</td>
<td>1.5 mg</td>
<td>0.3 ml</td>
<td>May repeat x1 after 5 minutes</td>
</tr>
<tr>
<td>Succinylcholine (20 mg/ml Vial)</td>
<td>1.5 mg/kg</td>
<td>90 mg</td>
<td>4.5 ml</td>
<td>Additional dose online only</td>
</tr>
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</table>

### Alternatives:

<table>
<thead>
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<th>DOSE/KG</th>
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<th>VOLUME</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rocuronium (10 mg/ml vial)</td>
<td>1 mg/kg</td>
<td>60 mg</td>
<td>6 ml</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>Vecuronium</td>
<td>0.1 mg/kg</td>
<td>6 mg</td>
<td>6 ml</td>
<td>Additional dose online only</td>
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## 70 KG

<table>
<thead>
<tr>
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<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lidocaine (20 mg/ml)</td>
<td>1.5 mg/kg</td>
<td>70 mg</td>
<td>3.5 ml</td>
<td>May repeat using half dose to a total of 3 mg/ml</td>
</tr>
<tr>
<td>Atropine</td>
<td>Not weight based</td>
<td>IV/IO 0.5 mg every 5 min to max of 3 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Etomidate (2 mg/ml Vial)</td>
<td>0.2 mg/kg</td>
<td>14 mg</td>
<td>7 ml</td>
<td>May repeat x1 after 5 minutes</td>
</tr>
<tr>
<td>Ketamine IV (100 mg/ml Vial)</td>
<td>1.5 mg/kg</td>
<td>105 mg</td>
<td>10.5 ml</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>Midazolam (5 mg/ml Vial)</td>
<td>0.025 mg/kg</td>
<td>1.75 mg</td>
<td>0.35 ml</td>
<td>May repeat x1 after 5 minutes</td>
</tr>
<tr>
<td>Succinylcholine (20 mg/ml Vial)</td>
<td>1.5 mg/kg</td>
<td>105 mg</td>
<td>5.25 ml</td>
<td>Additional dose online only</td>
</tr>
</tbody>
</table>

### Alternatives:

<table>
<thead>
<tr>
<th>DRUG</th>
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<th>DOSE</th>
<th>VOLUME</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rocuronium (10 mg/ml vial)</td>
<td>1 mg/kg</td>
<td>70 mg</td>
<td>7 ml</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>Vecuronium</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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</tbody>
</table>
## Delayed Sequence Intubation

For agencies approved for paralytics

### 80 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>Lidocaine (20 mg/ml)</td>
<td>1.5 mg/kg</td>
<td>80 mg</td>
<td>4 ml</td>
<td>May repeat using half dose to a total of 3 mg/ml</td>
</tr>
<tr>
<td>Atropine</td>
<td>Not weight based</td>
<td></td>
<td></td>
<td>IV/IO 0.5 mg every 5 min to max of 3 mg</td>
</tr>
<tr>
<td>Etomidate (2 mg/ml)</td>
<td>0.2 mg/kg</td>
<td>16 mg</td>
<td>8 ml</td>
<td>May repeat x1 after 5 minutes</td>
</tr>
<tr>
<td>Ketamine IV (100 mg/ml) Vial</td>
<td>1.5 mg/kg</td>
<td>120 mg</td>
<td>12 ml</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>Midazolam (5 mg/ml)</td>
<td>0.025 mg/kg</td>
<td>2 mg</td>
<td>0.4 ml</td>
<td>May repeat x1 after 5 minutes</td>
</tr>
<tr>
<td>Succinylcholine (20 mg/ml) vial</td>
<td>1.5 mg/kg</td>
<td>120 mg</td>
<td>6 ml</td>
<td>Additional dose online only</td>
</tr>
</tbody>
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### Alternatives:

<table>
<thead>
<tr>
<th>DRUG</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rocuronium (10 mg/ml) vial</td>
<td>1 mg/kg</td>
<td>80 mg</td>
<td>8 ml</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>Vecuronium (1 mg/ml)</td>
<td>0.1 mg/kg</td>
<td>8 mg</td>
<td>8 ml</td>
<td>Additional dose online only</td>
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### 90 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>Lidocaine (20 mg/ml)</td>
<td>1.5 mg/kg</td>
<td>90 mg</td>
<td>4.5 ml</td>
<td>May repeat using half dose to a total of 3 mg/ml</td>
</tr>
<tr>
<td>Atropine</td>
<td>Not weight based</td>
<td></td>
<td></td>
<td>IV/IO 0.5 mg every 5 min to max of 3 mg</td>
</tr>
<tr>
<td>Etomidate (2 mg/ml)</td>
<td>0.2 mg/kg</td>
<td>18 mg</td>
<td>9 ml</td>
<td>May repeat x1 after 5 minutes</td>
</tr>
<tr>
<td>Ketamine IV (100 mg/ml) Vial</td>
<td>1.5 mg/kg</td>
<td>135 mg</td>
<td>13.5 ml</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>Midazolam (5 mg/ml)</td>
<td>0.025 mg/kg</td>
<td>2.25 mg</td>
<td>0.45 ml</td>
<td>May repeat x1 after 5 minutes</td>
</tr>
<tr>
<td>Succinylcholine (20 mg/ml) vial</td>
<td>1.5 mg/kg</td>
<td>135 mg</td>
<td>6.75 ml</td>
<td>Additional dose online only</td>
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### Alternatives:

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<th>VOLUME</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rocuronium (10 mg/ml) vial</td>
<td>1 mg/kg</td>
<td>90 mg</td>
<td>9 ml</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>Vecuronium (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>
</tbody>
</table>
# Delayed Sequence Intubation

For agencies approved for paralytics

## 100 KG

<table>
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<tr>
<th>DRUG</th>
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</thead>
<tbody>
<tr>
<td>Lidocaine (20 mg/ml)</td>
<td>1.5 mg/kg</td>
<td>100 mg</td>
<td>5 ml</td>
<td>May repeat using half dose to a total of 3 mg/ml</td>
</tr>
<tr>
<td>Atropine</td>
<td>Not weight based</td>
<td></td>
<td></td>
<td>IV/IO 0.5 mg every 5 min to max of 3 mg</td>
</tr>
<tr>
<td>Etomidate (2 mg/ml)</td>
<td>0.2 mg/kg</td>
<td>20 mg</td>
<td>10 ml</td>
<td>May repeat x1 after 5 minutes</td>
</tr>
<tr>
<td>Ketamine IV (100 mg/ml)</td>
<td>1.5 mg/kg</td>
<td>150 mg</td>
<td>15 ml</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>Midazolam (5 mg/ml)</td>
<td>0.025 mg/kg</td>
<td>2.5 mg</td>
<td>0.5 ml</td>
<td>May repeat x1 after 5 minutes</td>
</tr>
<tr>
<td>Succinylcholine</td>
<td>1.5 mg/kg</td>
<td>150 mg</td>
<td>7.5 ml</td>
<td>Additional dose online only</td>
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Alternatives:

<table>
<thead>
<tr>
<th>DRUG</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rocuronium (10 mg/ml)</td>
<td>1 mg/kg</td>
<td>100 mg</td>
<td>10 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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## 110 KG

<table>
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<th>DOSE</th>
<th>VOLUME</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lidocaine (20 mg/ml)</td>
<td>1.5 mg/kg</td>
<td>110 mg</td>
<td>5.5 ml</td>
<td>May repeat using half dose to a total of 3 mg/ml</td>
</tr>
<tr>
<td>Atropine</td>
<td>Not weight based</td>
<td></td>
<td></td>
<td>IV/IO 0.5 mg every 5 min to max of 3 mg</td>
</tr>
<tr>
<td>Etomidate (2 mg/ml)</td>
<td>0.2 mg/kg</td>
<td>22 mg</td>
<td>11 ml</td>
<td>May repeat x1 after 5 minutes</td>
</tr>
<tr>
<td>Ketamine IV (100 mg/ml)</td>
<td>1.5 mg/kg</td>
<td>165 mg</td>
<td>16.5 ml</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td>Midazolam (5 mg/ml)</td>
<td>0.025 mg/kg</td>
<td>2.75 mg</td>
<td>0.55 ml</td>
<td>May repeat x1 after 5 minutes</td>
</tr>
<tr>
<td>Succinylcholine</td>
<td>1.5 mg/kg</td>
<td>165 mg</td>
<td>8.25 ml</td>
<td>Additional dose online only</td>
</tr>
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Alternatives:

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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Rocuronium (10 mg/ml)</td>
<td>1 mg/kg</td>
<td>110 mg</td>
<td>10 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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### 120 KG

<table>
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<tbody>
<tr>
<td><strong>Lidocaine</strong></td>
<td>1.5 mg/kg</td>
<td>120 mg</td>
<td>6 ml</td>
<td>May repeat using half dose to a total of 3 mg/ml</td>
</tr>
<tr>
<td><strong>Atropine</strong></td>
<td>Not weight based</td>
<td></td>
<td></td>
<td>IV/IO 0.5 mg every 5 min to max of 3 mg</td>
</tr>
<tr>
<td><strong>Etomidate</strong></td>
<td>0.2 mg/kg</td>
<td>24 mg</td>
<td>12 ml</td>
<td>May repeat x1 after 5 minutes</td>
</tr>
<tr>
<td><strong>Ketamine IV</strong></td>
<td>1.5 mg/kg</td>
<td>180 mg</td>
<td>18 ml</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td><strong>Midazolam</strong></td>
<td>0.025 mg/kg</td>
<td>3 mg</td>
<td>0.6 ml</td>
<td>May repeat x1 after 5 minutes</td>
</tr>
<tr>
<td><strong>Succinylcholine</strong></td>
<td>1.5 mg/kg</td>
<td>180 mg</td>
<td>9 ml</td>
<td>Additional dose online only</td>
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**Alternatives:**

<table>
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<tr>
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<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rocuronium</strong></td>
<td>1 mg/kg</td>
<td>120 mg</td>
<td>12 ml</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td><strong>Vecuronium</strong></td>
<td>0.1 mg/kg</td>
<td>12 mg</td>
<td>12 ml</td>
<td>Additional dose online only</td>
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### 130 KG

<table>
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<th>VOLUME</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lidocaine</strong></td>
<td>1.5 mg/kg</td>
<td>130 mg</td>
<td>6.5 ml</td>
<td>May repeat using half dose to a total of 3 mg/ml</td>
</tr>
<tr>
<td><strong>Atropine</strong></td>
<td>Not weight based</td>
<td></td>
<td></td>
<td>IV/IO 0.5 mg every 5 min to max of 3 mg</td>
</tr>
<tr>
<td><strong>Etomidate</strong></td>
<td>0.2 mg/kg</td>
<td>26 mg</td>
<td>13 ml</td>
<td>May repeat x1 after 5 minutes</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>Midazolam</strong></td>
<td>0.025 mg/kg</td>
<td>3.25 mg</td>
<td>0.65 ml</td>
<td>May repeat x1 after 5 minutes</td>
</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>
</tbody>
</table>

**Alternatives:**

<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>Rocuronium</strong></td>
<td>1 mg/kg</td>
<td>130 mg</td>
<td>30 ml</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td><strong>Vecuronium</strong></td>
<td>0.1 mg/kg</td>
<td>30 mg</td>
<td>30 ml</td>
<td>Additional dose online only</td>
</tr>
</tbody>
</table>
## Delayed Sequence Intubation

*For agencies approved for paralytics*

### 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>Lidocaine</strong></td>
<td>1.5 mg/kg</td>
<td>140 mg</td>
<td>7 ml</td>
<td>May repeat using half dose to a total of 3 mg/ml</td>
</tr>
<tr>
<td><em>(20 mg/ml)</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Atropine</strong></td>
<td>Not Weight Based</td>
<td></td>
<td>IV/IO 0.5 mg every 5 min to max of 3 mg</td>
<td></td>
</tr>
<tr>
<td><strong>Etomidate</strong></td>
<td>0.2 mg/kg</td>
<td>28 mg</td>
<td>14 ml</td>
<td>May repeat x1 after 5 minutes</td>
</tr>
<tr>
<td><em>(2 mg/ml) Vial</em></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><em>(100 mg/ml) Vial</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Midazolam</strong></td>
<td>0.025 mg/kg</td>
<td>3.5 mg</td>
<td>0.7 ml</td>
<td>May repeat x1 after 5 minutes</td>
</tr>
<tr>
<td><em>(5 mg/ml) Vial</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<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>
</tr>
<tr>
<td><em>(20 mg/ml) vial</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Alternatives:

<table>
<thead>
<tr>
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<th>DOSE</th>
<th>VOLUME</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rocuronium</strong></td>
<td>1 mg/kg</td>
<td>140 mg</td>
<td>40 ml</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td><em>(10 mg/ml) vial</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vecuronium</strong></td>
<td>0.1 mg/kg</td>
<td>40 mg</td>
<td>40 ml</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td><em>(1 mg/ml) 10 mg vial for recon. Ad 10 ml NS for final concentration</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 150 KG or greater

<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>Lidocaine</strong></td>
<td>1.5 mg/kg</td>
<td>150 mg</td>
<td>7.5 ml</td>
<td>May repeat using half dose to a total of 3 mg/ml</td>
</tr>
<tr>
<td><em>(20 mg/ml)</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Atropine</strong></td>
<td>Not weight based</td>
<td></td>
<td>IV/IO 0.5 mg every 5 min to max of 3 mg</td>
<td></td>
</tr>
<tr>
<td><strong>Etomidate</strong></td>
<td>0.2 mg/kg</td>
<td>30 mg</td>
<td>15 ml</td>
<td>May repeat x1 after 5 minutes</td>
</tr>
<tr>
<td><em>(2 mg/ml) Vial</em></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><em>(100 mg/ml) Vial</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Midazolam</strong></td>
<td>0.025 mg/kg</td>
<td>3.75 mg</td>
<td>0.75 ml</td>
<td>May repeat x1 after 5 minutes</td>
</tr>
<tr>
<td><em>(5 mg/ml) Vial</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Succinylcholine</strong></td>
<td>1.5 mg/kg</td>
<td>225 mg</td>
<td>11.25 ml</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td><em>(20 mg/ml) vial</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Alternatives:

<table>
<thead>
<tr>
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<th>VOLUME</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rocuronium</strong></td>
<td>1 mg/kg</td>
<td>150 mg</td>
<td>15 ml</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td><em>(10 mg/ml) vial</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vecuronium</strong></td>
<td>0.1 mg/kg</td>
<td>15 mg</td>
<td>15 ml</td>
<td>Additional dose online only</td>
</tr>
<tr>
<td><em>(1 mg/ml) 10 mg vial for recon. Ad 10 ml NS for final concentration</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>GENERIC NAME</th>
<th>INDICATIONS</th>
<th>CONTRAINDICATIONS</th>
<th>Route</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<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>VT with a pulse (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 8 lpm O2, inline CPAP May dilute with NS for pediatric dosing</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 Use caution during CPAP</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>2 mg 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>1 gram May repeat every 5 minutes x 2 for total of 3 grams (12 lead EKG recommended prior to each administration for non-code)</td>
</tr>
<tr>
<td>Dextrose 10%, 25%, 50%</td>
<td>Hypoglycemia</td>
<td>IV / IO</td>
<td>See chart for dose May repeat dose x 1</td>
<td></td>
</tr>
<tr>
<td>Diazepam (Valium)</td>
<td>Seizures, Moderate Sedation</td>
<td>IV / IO/IM (slowly)</td>
<td>Wt Based</td>
<td></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 mg/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 1mg/10 ml</strong></td>
<td>Severe Allergic reaction / anaphylaxis (impending cardiac arrest)</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 1mg/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>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>Use DuoNeb for first dose* repeat with Albuterol if needed</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

**Glucagon**
- Hypoglycemia, Beta blocker OD
  - IM / IV
  - 1 mg

**Ketamine (Ketalar)**
- Pain unresponsive to narcotics, Anxiety, Excited Delirium
  - Increased intracranial pressure, severe hypertension
  - IM
  - Wt based

**Ketamine (Ketalar)**
- Induction for DSI only
  - Increased intracranial pressure, severe hypertension
  - IV / IO (must be diluted prior to administration)
  - Wt based

**Ketorolac (Toradol)**
- Moderately severe pain
  - Patients with bleeding disorders, active peptic ulcers or patients with allergies to aspirin or NSAIDS
  - IV / IO / IM
  - 15 mg
  - May repeat x 1 if needed

**Lidocaine (Xylocaine)**
- V-Fib, Pulseless V-T, Stable VT (wide-complex tachycardia), Pain management post IO
  - Bradycardia with Ventricular Escape Rhythm
  - IV / IO / ETT
  - Wt based

**Lorazepam * (back-up if Midazolam is not available)**
- Seizures, Moderate Sedation, Pre-treatment for DSI
  - IM / IV / IO *
  - Wt based

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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>
</tr>
</thead>
<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 5-10 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></td>
<td>IV / IO</td>
<td>5 mg</td>
</tr>
<tr>
<td>Midazolam (Versed) *</td>
<td>Seizures</td>
<td>Shock</td>
<td>IV / IO / MAD / IM *</td>
<td>Wt based</td>
</tr>
<tr>
<td>Midazolam (Versed) *</td>
<td>Sedation, Pre-Sedation for DSI</td>
<td>Shock</td>
<td>IV / IO / MAD / IM *</td>
<td>Wt based</td>
</tr>
<tr>
<td>Midazolam (Versed) *</td>
<td>Excited Delirium</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)</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>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Bicarbonate</td>
<td>Cardiac Arrest, Metabolic Acidosis, Hyperkalemia, Tricyclic Antidepressant Overdose, Crush injuries/suspension trauma</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

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### Pharmacology BLS Only

#### Adult Patients

<table>
<thead>
<tr>
<th>GENERIC NAME</th>
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<th>Route</th>
<th>Dose</th>
</tr>
</thead>
<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</td>
</tr>
<tr>
<td><strong>Aspirin chewable tablets</strong></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><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 off-line Anaphylaxis on-line allergic reaction</td>
</tr>
<tr>
<td><strong>Diphenhydramine (Benadryl)</strong></td>
<td>Allergic Reaction</td>
<td>Acute Asthma, COPD, Glaucoma</td>
<td>OTC</td>
<td>Formulations dosed per manufacturers recommendations</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>Use DuoNeb for first dose* repeat with Albuterol if needed</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 |

| **Glucagon** | Hypoglycemia, Beta blocker OD | IM | 1 mg off-line |
| **Naloxone (Narcan)** | Opioid overdose with respiratory depression | Caution with narcotic-dependent patients who may experience withdrawal syndrome | MAD / IM | 2 mg (in 2 ml) MAD is preferred route 1/2 in each nare may repeat X 1 dose off-line |
| **Nitroglycerin tablets** | Chest Pain suggestive of ACS, Pulmonary Edema | BP < 100, Inferior MI with possible RV infarction, severe bradycardia, severe tachycardia, Erectile dysfunction meds within 24 hrs. **Use caution for patients on CPAP** | SL | If patient prescribed nitro, repeat every 5 min x 3 doses total Off-line (use EMS supply) On-line for pt not prescribed nitro |
| **Ondansetron** | Nausea/Vomiting | Tablets are not able to be divided. For adults only. | ODT-oral | 4 mg |
| **Oral Glucose** | Hypoglycemia | Patient who is not able to follow commands | PO | 15 grams off-line |

See next page for Pediatric Patients

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### Pharmacology BLS Only

#### Pediatric Patients

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<th>CONTRAINDICATIONS</th>
<th>Route</th>
<th>Dose</th>
</tr>
</thead>
<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>NA not used in pediatric patients</td>
<td></td>
<td></td>
<td>NA 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 mg for patient 15 to less than 30 kg Epi 0.3 mg 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>NA not used in pediatric patients</td>
</tr>
<tr>
<td><strong>Diphenhydramine (Benadryl)</strong></td>
<td>Allergic Reaction</td>
<td>Acute Asthma, COPD, Glaucoma</td>
<td>OTC</td>
<td>Formulations dosed per manufacturers recommendations</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>NA not used in pediatric patients</td>
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<td></td>
<td>NA not used in pediatric patients</td>
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<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>

* 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

# Adult Patients

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<th>Route</th>
<th>Dose</th>
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<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</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</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 bronchoconstrictic / 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) MAD is preferred route 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>
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<th>CONTRAINDICATIONS</th>
<th>Route</th>
<th>Dose</th>
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<tr>
<td><strong>Albuterol Sulfate</strong></td>
<td>Shortness of Breath with bronchoconstriction / wheezing,</td>
<td>Caution in tachycardia patients with severe cardiac disease</td>
<td>Nebulizer with 8 lpm O2</td>
<td>2.5 mg (in 3 ml) may repeat if needed off-line</td>
</tr>
<tr>
<td></td>
<td>Allergic Reaction, Hyperkalemia</td>
<td></td>
<td></td>
<td>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>NA not used in pediatric patients</td>
<td></td>
<td></td>
<td>NA 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 (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><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</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><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>
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Region 1 Alternative Medication Dosing

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<th>Wt</th>
<th>DRUG</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
<th>Notes</th>
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<tbody>
<tr>
<td>40 KG</td>
<td><strong>Diazepam</strong></td>
<td>0.2 mg/kg</td>
<td>8 mg</td>
<td>1.6 ml</td>
<td>Additional dose Online only</td>
</tr>
<tr>
<td>50 KG</td>
<td></td>
<td></td>
<td>10 mg</td>
<td>2 ml</td>
<td></td>
</tr>
<tr>
<td>60 KG</td>
<td></td>
<td></td>
<td>12 mg</td>
<td>2.4 ml</td>
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<tr>
<td>70 KG</td>
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<td>14 mg</td>
<td>2.8 ml</td>
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</tr>
<tr>
<td>80 KG</td>
<td></td>
<td></td>
<td>16 mg</td>
<td>3.2 ml</td>
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</tr>
<tr>
<td>90 KG</td>
<td></td>
<td></td>
<td>18 mg</td>
<td>3.6 ml</td>
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<tr>
<td>100 KG</td>
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<td>20 mg</td>
<td>4 ml</td>
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</tr>
<tr>
<td>110 KG</td>
<td></td>
<td></td>
<td>22 mg</td>
<td>4.4 ml</td>
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</tr>
<tr>
<td>120 KG</td>
<td></td>
<td></td>
<td>24 mg</td>
<td>4.8 ml</td>
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</tr>
<tr>
<td>130 KG</td>
<td></td>
<td></td>
<td>26 mg</td>
<td>5.2 ml</td>
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</tr>
<tr>
<td>140 KG</td>
<td></td>
<td></td>
<td>28 mg</td>
<td>5.6 ml</td>
<td></td>
</tr>
<tr>
<td>150 KG</td>
<td><strong>Diazepam</strong></td>
<td>0.2 mg/kg</td>
<td>30 mg</td>
<td>6 ml</td>
<td>Additional dose Online only</td>
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</table>

<table>
<thead>
<tr>
<th>Wt</th>
<th>DRUG</th>
<th>DOSE/KG</th>
<th>DOSE</th>
<th>VOLUME</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 KG</td>
<td><strong>Lorazepam</strong></td>
<td>0.1 mg/kg</td>
<td>4 mg</td>
<td>2 ml</td>
<td>May repeat x1 after 5 minutes</td>
</tr>
<tr>
<td>50 KG</td>
<td></td>
<td></td>
<td>5 mg</td>
<td>2.5 ml</td>
<td></td>
</tr>
<tr>
<td>60 KG</td>
<td></td>
<td></td>
<td>6 mg</td>
<td>3 ml</td>
<td></td>
</tr>
<tr>
<td>70 KG</td>
<td></td>
<td></td>
<td>7 mg</td>
<td>3.5 ml</td>
<td></td>
</tr>
<tr>
<td>80 KG</td>
<td></td>
<td></td>
<td>8 mg</td>
<td>4 ml</td>
<td></td>
</tr>
<tr>
<td>90 KG</td>
<td></td>
<td></td>
<td>9 mg</td>
<td>4.5 ml</td>
<td></td>
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<tr>
<td>100 KG</td>
<td></td>
<td></td>
<td>10 mg</td>
<td>5 ml</td>
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</tr>
<tr>
<td>110 KG</td>
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<td>11 mg</td>
<td>5.5 ml</td>
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<tr>
<td>120 KG</td>
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<td></td>
<td>12 mg</td>
<td>6 ml</td>
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<tr>
<td>130 KG</td>
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<td>13 mg</td>
<td>6.5 ml</td>
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<tr>
<td>140 KG</td>
<td></td>
<td></td>
<td>14 mg</td>
<td>7 ml</td>
<td></td>
</tr>
<tr>
<td>150 KG</td>
<td><strong>Lorazepam</strong></td>
<td></td>
<td>15 mg</td>
<td>7.5 ml</td>
<td>May repeat x1 after 5 minutes</td>
</tr>
</tbody>
</table>

* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose.
REGION I
EMERGENCY MEDICAL SERVICES

PREHOSPITAL FORMULARY

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Reference: Jones and Bartlett Learning LLC, 2013 pp 1574-1628

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

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<td><strong>Naloxone</strong></td>
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**Adenosine (Adenocard)**

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<th>Classification:</th>
<th>Antidysrhythmic Agent</th>
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<tr>
<td>Actions:</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>Indications:</td>
<td>Supraventricular tachycardia (stable) Monomorphic wide-complex tachycardia (stable)</td>
</tr>
<tr>
<td>Contraindications include but not limited to:</td>
<td></td>
</tr>
</tbody>
</table>
  o 2nd or 3rd degree heart block  
  o Sick sinus syndrome  
  o Hypersensitivity to Adenosine |
| Adverse effects include but not limited to: | 
  ➢ Transient asystole  
  ➢ Facial flushing  
  ➢ Headache  
  ➢ Dizziness  
  ➢ Dyspnea  
  ➢ Nausea/vomiting  
  ➢ Chest pressure  
  ➢ Bronchoconstriction in some asthma patients |
| Adult Administration:    | 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. |
| **Packaging Information:** | (6 mg/2 ml) Pre-filled syringe |
| Pediatric Administration:| See Medication Administration Chart for weight based dosing; follow with 5-10 mL NS flush. |
| Onset:                   | Within 30 seconds |
| Duration:                | 10 seconds |
| Pregnancy Safety:        | Category C |
| Precautions and Comments:| Half-life is 10 seconds. A brief period of asystole (up to 15 seconds) following conversion, followed by resumption of NSR is common after rapid administration. Draw up adenosine and saline flush in separate syringes to allow for a more rapid bolus. 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. |

**Pharmacology Chart**

**Used in SMO:**
- Narrow Complex Tachycardia
- Pediatric Dysrhythmias – Tachycardia
- Wide Complex Tachycardia

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### Albuterol Sulfate

<table>
<thead>
<tr>
<th><strong>Classification:</strong></th>
<th>Bronchodilator</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Actions:</strong></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:** | o Symptomatic tachycardia (>150 BPM)  
o Chest pressure  
o 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 |
| **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. Use with caution in patients with:  
• Heart disease  
• Hypertension  
• Tachy-dysrhythmias  
• Patients being treated with MAO inhibitors and tricyclics may experience tachycardia and hypertension  
• Patients who are hypersensitive to sympathomimetics |

**Packaging Information:**

(2.5 mg/3 ml) Ampule/Nebulizer

**Used in SMO:**

- Adult Anaphylaxis and Allergic Reaction
- Bronchospasm
- CPAP
- Crush Syndrome and Suspension
- Trauma
- Excited Delirium
- Pediatric Anaphylaxis and Allergic Reaction
- Pediatric Respiratory Distress
**REGION I EMERGENCY MEDICAL SERVICES**  
**STANDING MEDICAL ORDERS**  
**BLS, ILS, ALS**

**FORMULARY – Albuterol Sulfate/Ipratropium Bromide (DuoNeb)**

<table>
<thead>
<tr>
<th>Albuterol Sulfate</th>
<th>Ipratropium Bromide (DuoNeb)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification:</strong></td>
<td></td>
</tr>
<tr>
<td>Albuterol is a bronchodilator</td>
<td></td>
</tr>
<tr>
<td>Ipratropium is an anticholinergic bronchodilator</td>
<td></td>
</tr>
<tr>
<td><strong>Actions:</strong></td>
<td></td>
</tr>
<tr>
<td>Relaxes bronchial smooth muscle by stimulating beta\textsubscript{2} receptors resulting in bronchodilation.</td>
<td></td>
</tr>
<tr>
<td><strong>Indications:</strong></td>
<td></td>
</tr>
<tr>
<td>• Acute asthma attack</td>
<td></td>
</tr>
<tr>
<td>• Bronchospasm associated with emphysema/bronchitis</td>
<td></td>
</tr>
<tr>
<td>• COPD</td>
<td></td>
</tr>
<tr>
<td>• Wheezing in croup or bronchiolitis</td>
<td></td>
</tr>
<tr>
<td><strong>Contraindications include but not limited to:</strong></td>
<td></td>
</tr>
<tr>
<td>• Signs of an MI</td>
<td></td>
</tr>
<tr>
<td>• Cardiac arrhythmias associated with tachycardia</td>
<td></td>
</tr>
<tr>
<td>• Patients taking Spiriva/other bronchodilator</td>
<td></td>
</tr>
<tr>
<td>• Known hypersensitivity to Albuterol/Ipratropium</td>
<td></td>
</tr>
<tr>
<td><strong>Adverse effects include but not limited to:</strong></td>
<td></td>
</tr>
<tr>
<td>• Tachycardia</td>
<td></td>
</tr>
<tr>
<td>• Hypertension</td>
<td></td>
</tr>
<tr>
<td>• Palpitations</td>
<td></td>
</tr>
<tr>
<td>• Dizziness</td>
<td></td>
</tr>
<tr>
<td>• Dysrhythmias</td>
<td></td>
</tr>
<tr>
<td>• Restlessness/Nervousness</td>
<td></td>
</tr>
<tr>
<td>• Nausea/Vomiting</td>
<td></td>
</tr>
</tbody>
</table>

**Adult Administration:**

**Packaging Information:**
- Albuterol: (2.5 mg/3 ml) Ampule
- Ipratropium: (0.5 mg/2.5 ml) Ampule
- 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:**

**Pharmacology Chart**

**Used in SMO:**
- Adult Anaphylaxis and Allergic Reaction
- Bronchospasm
- CPAP
- Crush Syndrome and Suspension
- Trauma

**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

**Patients being treated with MAO inhibitors and tricyclics may experience tachycardia and hypertension**

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### Amiodarone (Cordarone, Pacerone)

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Antiarrhythmic agent</th>
</tr>
</thead>
</table>
| Actions:        | • Delays repolarization  
                  • Prolongs action potential  
                  • Slows conduction  
                  • Delays impulses from SA and AV nodes  
                  • Slows conduction through accessory pathways  
                  • Vasodilation |
| Indications:    | • Ventricular fibrillation  
                  • Wide-complex tachycardia |
| Contraindications include but not limited to: | o Cardiogenic shock  
                                              o Bradycardia/heart blocks  
                                              o Iodine allergies |
| Adverse effects include but not limited to: | ➢ Hypotension  
                                              ➢ Bradycardia  
                                              ➢ AV block  
                                              ➢ Asystole  
                                              ➢ PEA  
                                              ➢ Hepatotoxicity |

**Adult Administration:**

<table>
<thead>
<tr>
<th>VF/VT (pulseless) – 300 mg slow IV/IO push (over 1-2 minutes) followed in 5 minutes by 150 mg IV/IO push</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
</tr>
</tbody>
</table>

**Packaging Information:**

**(150 mg/ 3 ml) Vial**

**Pediatric Administration:**

<table>
<thead>
<tr>
<th>VF/VT (pulseless) – see Medication Administration Chart for weight based dosing and administration rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>VT (with pulse) – see Medication Administration Chart for weight based dosing and administration rates</td>
</tr>
</tbody>
</table>

**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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<table>
<thead>
<tr>
<th><strong>Aspirin</strong> (ASA)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification:</strong></td>
<td>Antiplatelet, Analgesic, Antipyretic, Anti-inflammatory</td>
</tr>
<tr>
<td><strong>Actions:</strong></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><strong>Indications:</strong></td>
<td>Chest pain with suspected myocardial ischemia</td>
</tr>
<tr>
<td><strong>Contraindications include but not limited to:</strong></td>
<td>o Allergy to ASA/NSAID o Peptic ulcer disease o Hypersensitivity to salicylates</td>
</tr>
<tr>
<td><strong>Adverse effects include but not limited to:</strong></td>
<td>➢ Nausea, GI upset ➢ Hepatotoxicity ➢ Occult blood loss ➢ Anaphylaxis</td>
</tr>
<tr>
<td><strong>Adult Administration:</strong></td>
<td>324 mg / 4 tablets</td>
</tr>
<tr>
<td><strong>Packaging Information:</strong></td>
<td>(81 mg) Chewable Tablet</td>
</tr>
<tr>
<td><strong>Pediatric Administration:</strong></td>
<td>Not recommended</td>
</tr>
<tr>
<td><strong>Onset:</strong></td>
<td>30-60 minutes</td>
</tr>
<tr>
<td><strong>Duration:</strong></td>
<td>4-6 hours</td>
</tr>
<tr>
<td><strong>Pregnancy Safety:</strong></td>
<td>Category D in the third trimester: use ONLY if benefit to mother justifies the risk to the fetus.</td>
</tr>
<tr>
<td><strong>Precautions and Comments:</strong></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><strong>Pharmacology Chart</strong></td>
<td>Chest Pain of Suspected Cardiac Origin</td>
</tr>
</tbody>
</table>
### 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:**
- 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

Bradydcardia: IV/IO 0.5 mg every 5 min to max of 3 mg
Poisoning and Overdose: IV/IO 2 mg 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

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Calcium salts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</td>
<td>Soluble calcium ions bind with soluble fluoride ions to produce the insoluble and therefore inactive calcium fluoride salt.</td>
</tr>
</tbody>
</table>
| Indications:    | • Hyperkalemia  
                 • Hypocalcemia  
                 • Hypermagnesemia |
| Contraindications include but not limited to: | o Digitalis toxicity  
                                            o 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: | 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. |
| Pedicatric 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: | The faster Calcium Gluconate is given the faster the body eliminates it. For prolonged transports repeat doses may be needed. Flush before and after each dose. |

**Packaging Information:**  
(1 GM/10 ml) Vial  

**Used in SMO:**  
- Adult Asystole/PEA  
- Crush Syndrome and Suspension  
- Trauma  
- Excited Delirium  
- Adult V-Fib/V-Tach  
- Adult Toxic Exposure  
- Pediatric Arrest/Asystole/PEA  
- Pediatric Toxic Exposure
## Dextrose

<table>
<thead>
<tr>
<th></th>
<th>D50, D10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classification:</td>
<td>Hyperglycemic agent, hypertonic solutions</td>
</tr>
<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></td>
</tr>
</tbody>
</table>
  - CVA  
  - Intracranial hemorrhage  
  - Thrombophlebitis  
  - Rhabdomyolysis |

**Adult Administration:**

### 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:**
- Adult Seizure
- Alcohol Related Emergencies
- Altered Mental Status (Adult)
- Asystole/PEA (Adult)
- Diabetic Emergencies
- Pediatric Altered Mental Status
- Pediatric Seizures
- Stroke
- Syncope

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*Formulary Dextrose Page 1 of 2*

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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 (Grams)</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 - 11 kg)</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>
<tr>
<td><strong>Diazepam</strong></td>
<td><strong>Valium (alternative to Midazolam)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Classification:</strong></td>
<td>Benzodiazepine derivative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Actions:</strong></td>
<td>Tranquilizer, anticonvulsant, skeletal muscle relaxant through effects on the central nervous system</td>
<td></td>
<td></td>
<td></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 Alternative 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:** | [Pharmacology Chart](#)  
  - 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) |

*For pain and sedation doses:  
Start dose low – slowly increase –  
Titrate 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  
                                          o Acute asthma  
                                          o COPD |
| Adverse effects include but not limited to: | ➢ Hypotension  
                                           ➢ Drowsiness  
                                           ➢ Tachycardia  
                                           ➢ Bradycardia  
                                           ➢ Dry mouth  
                                           ➢ Urinary retention |

**Adult Administration:**

**Packaging Information:**

(50 mg/1 ml) Vial  
Tablet - OTC

IM or IV  
25-50 mg  
EMT's – OTC

**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

**Precautions and Comments:**

- May caused depressed level of consciousness in elderly patients.  
  - May have additive effect with alcohol or depressants.

**Pharmacology Chart**

**Used in SMO:**

- Anaphylaxis and Allergic Reaction (Adult)  
- Pediatric Anaphylaxis and Allergic Reaction  
- Pediatric Toxic Exposure Poisoning and Overdose (Adult)
### Dopamine

**Classification:** Sympathomimetic agent (Catecholamine)

**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:**
- 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:**
- (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

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# 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>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></td>
<td>ml/hr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</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>
</tr>
<tr>
<td>60</td>
<td>4.5</td>
<td>5.6</td>
<td>11.3</td>
<td>16.9</td>
<td>22.5</td>
<td>33.8</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>drops/min</td>
<td>5</td>
<td>6</td>
<td>11</td>
<td>17</td>
<td>23</td>
<td>34</td>
</tr>
<tr>
<td>70</td>
<td>5.3</td>
<td>6.6</td>
<td>13.1</td>
<td>19.7</td>
<td>26.3</td>
<td>39.4</td>
<td>52.6</td>
</tr>
<tr>
<td></td>
<td>drops/min</td>
<td>5</td>
<td>7</td>
<td>13</td>
<td>20</td>
<td>26</td>
<td>39</td>
</tr>
<tr>
<td>80</td>
<td>6.3</td>
<td>7.5</td>
<td>15</td>
<td>22.5</td>
<td>30</td>
<td>45</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>drops/min</td>
<td>6</td>
<td>8</td>
<td>15</td>
<td>23</td>
<td>30</td>
<td>45</td>
</tr>
<tr>
<td>90</td>
<td>6.8</td>
<td>8.4</td>
<td>16.9</td>
<td>25.3</td>
<td>33.8</td>
<td>50.6</td>
<td>67.6</td>
</tr>
<tr>
<td></td>
<td>drops/min</td>
<td>7</td>
<td>8</td>
<td>17</td>
<td>25</td>
<td>34</td>
<td>51</td>
</tr>
<tr>
<td>100</td>
<td>7.5</td>
<td>9.4</td>
<td>18.8</td>
<td>28.1</td>
<td>37.5</td>
<td>56.3</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td>drops/min</td>
<td>8</td>
<td>9</td>
<td>19</td>
<td>28</td>
<td>38</td>
<td>56</td>
</tr>
<tr>
<td>110</td>
<td>8.3</td>
<td>10.3</td>
<td>20.6</td>
<td>30.9</td>
<td>41.3</td>
<td>61.8</td>
<td>82.6</td>
</tr>
<tr>
<td></td>
<td>drops/min</td>
<td>8</td>
<td>10</td>
<td>21</td>
<td>31</td>
<td>41</td>
<td>62</td>
</tr>
<tr>
<td>120</td>
<td>9</td>
<td>11.3</td>
<td>22.5</td>
<td>33.8</td>
<td>45</td>
<td>67.5</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>drops/min</td>
<td>9</td>
<td>11</td>
<td>23</td>
<td>34</td>
<td>45</td>
<td>68</td>
</tr>
<tr>
<td>130</td>
<td>9.8</td>
<td>12.2</td>
<td>24.4</td>
<td>36.6</td>
<td>48.8</td>
<td>73.1</td>
<td>97.6</td>
</tr>
<tr>
<td></td>
<td>drops/min</td>
<td>10</td>
<td>12</td>
<td>24</td>
<td>37</td>
<td>49</td>
<td>73</td>
</tr>
<tr>
<td>140</td>
<td>10.5</td>
<td>13.1</td>
<td>26.2</td>
<td>39.3</td>
<td>52.4</td>
<td>78.6</td>
<td>104.8</td>
</tr>
<tr>
<td></td>
<td>drops/min</td>
<td>11</td>
<td>13</td>
<td>26</td>
<td>39</td>
<td>52</td>
<td>79</td>
</tr>
<tr>
<td>150</td>
<td>11.3</td>
<td>14.1</td>
<td>28.1</td>
<td>42.2</td>
<td>56.3</td>
<td>84.4</td>
<td>112.5</td>
</tr>
<tr>
<td></td>
<td>drops/min</td>
<td>11</td>
<td>14</td>
<td>28</td>
<td>42</td>
<td>56</td>
<td>84</td>
</tr>
</tbody>
</table>
Epinephrine (Adrenalin)

<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 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>Indications:</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>Contraindications include but not limited to:</td>
<td></td>
</tr>
<tr>
<td>- Hypertension</td>
<td></td>
</tr>
<tr>
<td>- Undiluted 1:1 ml IVP</td>
<td></td>
</tr>
<tr>
<td>Adverse effects include but not limited to:</td>
<td></td>
</tr>
<tr>
<td>- Hypertension-tachycardia</td>
<td></td>
</tr>
<tr>
<td>- Increases myocardial oxygen demand and potentially increases myocardial ischemia</td>
<td></td>
</tr>
<tr>
<td>Adult Administration:</td>
<td><strong>Cardiopulmonary Arrest:</strong></td>
</tr>
<tr>
<td></td>
<td>IV/IO: 1 mg of 1:10 ml. If rhythm persists repeat every 3-5 minutes</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td><strong>Bronchospasm:</strong></td>
</tr>
<tr>
<td></td>
<td>IM: 0.3 mg of 1:1 ml, may repeat at 20 minute intervals</td>
</tr>
<tr>
<td></td>
<td><strong>Anaphylaxis and Allergic Reaction:</strong></td>
</tr>
<tr>
<td></td>
<td>IM: 0.3 mg of 1:1 ml, may repeat at 20 minute intervals for a total of 2 doses</td>
</tr>
<tr>
<td></td>
<td><strong>Hypotension/Airway Compromise:</strong></td>
</tr>
<tr>
<td></td>
<td>IM: 0.3-0.5 mg of 1:1 ml every 15 minutes if there is no improvement</td>
</tr>
<tr>
<td></td>
<td><strong>Impending Arrest:</strong></td>
</tr>
<tr>
<td></td>
<td>IV/IO: (0.1 mg/1 ml) of 1:10 ml slow over 5 minutes</td>
</tr>
</tbody>
</table>

**Formulary:** Epinephrine (Adrenalin)
### 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, 0.1 mL/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>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>Contraindications:</td>
<td>o 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

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Pharmacology Chart
<table>
<thead>
<tr>
<th>Duration:</th>
<th>20 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pregnancy Safety:</strong></td>
<td>Category C</td>
</tr>
<tr>
<td><strong>Precautions and Comments:</strong></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>

**Used in SMO:**  
- Bronchospasm  
- Anaphylaxis and Allergic Reaction  
- Pediatric Anaphylaxis and Allergic Reaction  

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**Etomidate**

<table>
<thead>
<tr>
<th><strong>Classification:</strong></th>
<th>General anesthetic and hypnotic without analgesic properties</th>
</tr>
</thead>
<tbody>
<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>Myoclonic skeletal muscle movements, Nausea and vomiting post procedure, Apnea, Hypoventilation or hyperventilation, Laryngospasm, Hypertension or hypotension, Tachycardia or bradycardia</td>
</tr>
</tbody>
</table>

**Adult Administration:**

- Packaging Information: (2 mg/ml) Vial
- IV/IO: over 30-60 seconds
- Limit to 1 dose
- See [Adult Medication Administration Chart](#) for dosing

**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

<table>
<thead>
<tr>
<th><strong>Onset:</strong></th>
<th>Within 1 minute</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Duration:</strong></td>
<td>3 to 10 minutes</td>
</tr>
<tr>
<td><strong>Pregnancy Safety:</strong></td>
<td>Category C</td>
</tr>
</tbody>
</table>

**Precautions and Comments:**

- [Pharmacology Chart](#)
- 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.
**Fentanyl**

<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. Depresses the central nervous system by interacting with receptors in the brain.</td>
</tr>
<tr>
<td>Indications:</td>
<td>Moderate to severe pain.</td>
</tr>
<tr>
<td>Contraindications include but not limited to:</td>
<td>Use with caution in patients with hypertension or hypotension, Use with caution in patients with increased ICP, Use with caution in elderly patients, Hypersensitivity to drug</td>
</tr>
<tr>
<td>Adverse effects include but not limited to:</td>
<td>Severe respiratory difficulty as a result of thoracic rigidity (if given too fast IV or IO), Respiratory depression, Hypotension/Bradycardia, Altered mental status, Nausea/vomiting</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).

* Intranasal dose – see [Fentanyl IN Dosing Chart](#) Consider lower dose (25 mcg) for smaller or elderly patients.

**Packaging Information:**

(50 mcg/ml) Vial/ampule

Must use filter needle for ampule

Restocking requires a 222 form

**Pediatric Administration:**

Given over 2 minutes IV/IO, IN*, IM Titrate to relief of pain. May repeat every 5 minutes to a maximum dose of 200 mcg.

* 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: (100 mg/10 ml) Vial | Elderly patients may experience increase in adverse drug reactions. |
| 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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### Glucagon

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Hyperglycemic agent (pancreatic hormone)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</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>Indications:</td>
<td>• Hypoglycemia</td>
</tr>
<tr>
<td></td>
<td>• Beta blocker OD</td>
</tr>
<tr>
<td></td>
<td>• Allergic reaction</td>
</tr>
<tr>
<td>Contraindications:</td>
<td>Not significant in the above indications.</td>
</tr>
<tr>
<td>Adverse effects include but not limited to:</td>
<td>➢ Nausea/vomiting</td>
</tr>
<tr>
<td></td>
<td>➢ Headache</td>
</tr>
<tr>
<td>Adult Administration:</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>Pediatric Administration:</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>Onset:</td>
<td>1-3 minutes if given IVP</td>
</tr>
<tr>
<td></td>
<td>5-20 minutes if given IM</td>
</tr>
<tr>
<td>Duration:</td>
<td>15-20 minutes if given IVP</td>
</tr>
<tr>
<td></td>
<td>15-30 minutes if given IM</td>
</tr>
<tr>
<td>Pregnancy Safety:</td>
<td>Category B</td>
</tr>
<tr>
<td>Precautions and Comments:</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>
</tbody>
</table>

**Used in SMO:**
- Alcohol Related Emergencies
- Adult Altered Mental Status
- Adult Seizures
- Adult Toxic Exposure
- Diabetic Emergencies
- Pediatric Altered Mental Status
- Pediatric Seizures
- Pediatric Toxic Exposure
- Stroke
- Syncope

---

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## Ipratropium Bromide (Atrovent)

<table>
<thead>
<tr>
<th><strong>Ipratropium Bromide</strong></th>
<th><strong>Atrovent</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification:</strong></td>
<td>Anticholinergic (parasympatholytic) which causes bronchodilation</td>
</tr>
<tr>
<td><strong>Actions:</strong></td>
<td>Chemically related to Atropine, Ipratropium Bromide inhibits vagally-medicated 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 |
| **Pharmacology Chart** | |
### Ketamine (Ketalar)

<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>
<tr>
<td>Contraindications</td>
<td>Stroke, Increased intracranial pressure, Severe hypertension, Cardiac decompensation, Hypersensitivity</td>
</tr>
<tr>
<td>Adverse effects</td>
<td>Hypertension, Myocardial oxygen demand, Increased heart rate, Hypersalivation, Hallucinations, delusions, explicit dreams, Less common side effects include hypotension, bradycardia, and respiratory depression</td>
</tr>
</tbody>
</table>

#### 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)
- **Severe unresponsive to narcotics pain management:** 0.25 mg/kg

#### 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.

#### Used in SMO:
- Delayed Sequence Intubation
- Excited Delirium
- Pain Management
- Restraints
### Ketorolac Tromethamine

<table>
<thead>
<tr>
<th><strong>Classification:</strong></th>
<th>Nonsteroidal anti-inflammatory</th>
</tr>
</thead>
<tbody>
<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:** | - Bleeding disorders  
  - Renal failure  
  - Active peptic ulcer disease  
  - Patients with allergies to aspirin or other nonsteroidal anti-inflammatory drugs  
  - 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 |
| **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 |

---

**Packaging Information:**  
(15 mg/ml) Pre-filled syringe  
**IV/IO:** 15 mg over 1 minute (for patients <65 years old or weighing more than 50 kg); may repeat one time
<table>
<thead>
<tr>
<th><strong>Lidocaine 2%</strong></th>
<th><strong>Lidocaine</strong></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*  
*May be used if patient is allergic to amiodarone |

Contraindications include but not limited to:  
- Second-degree heart block (Mobitz II) or third degree (complete) heart block in the absence of an artificial pacemaker  
- Junctional bradycardia  
- Ventricular ectopy associated with bradycardia  
- Idioventricular or escape rhythms  
- Hypersensitivity |

Adverse effects include but not limited to:  
- Lightheadedness  
- Bradycardia  
- Confusion  
- Hypotension  
- Seizures |

**Adult Administration:**  
See Adult Medication Administration Chart for weight based dosing  
May repeat using half dose to a total of 3 mg/kg |

**Packaging Information:**  
(10 mg/ml) Pre-filled syringe  
See Medication Administration Chart for weight based dosing |

**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.  
Pharmacology Chart  

**Used in SMO:**  
- Delayed Sequence Intubation  
- Intraosseous Access  
- Pediatric Arrest/Asystole/PEA  
- Pediatric Dysrhythmias/Tachycardia  
- Pediatric Toxic Exposure  
- Adult Toxic Exposure  
- Ventricular Fibrillation/Pulseless  
- Ventricular Tachycardia  
- Wide Complex Tachycardia  

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### 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 Midazolam is not available – 30 day stability if unrefrigerated** |
| **Packaging Information:** | May repeat x 1 after 5 minutes |
| (2 mg/ml) Pre-filled syringe | See Adult Weight Based Medication Administration Chart for dosing |
| 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 |
| Pharmacology Chart |  |
| Used in SMO: | Delayed Sequence Intubation |
# Magnesium Sulfate

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Antidysrhythmic, Electrolyte</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</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 - 10 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 dosing for Mag Sulfate not recommended without a pump

## 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*
* Pediatric dosing for Mag Sulfate not recommended without a pump

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 5-10 minutes</td>
</tr>
</tbody>
</table>
## Mark I Nerve Agent Kit

### Classification:
Nerve agent antidote

### Indications:

**Mild Exposures:**
- Rhinorrhea
- Chest tightness
- Dyspnea
- Bronchospasm

**Moderate Exposures:**
- Salivation
- Lacrimation
- Urination
- GI Symptoms
- Emesis
- Miosis

**Severe Exposures:**
- Jerking
- Twitching
- Staggering
- Headache
- Drowsiness
- Coma
- Seizures
- Apnea

### Contraindications:
Do not use auto-injectors in patients under 30 kg

### Adverse effects:

**Atropine:**
- Tachycardia
- Increased myocardial O2 demand
- Headache
- Dizziness
- Palpitations
- Dries mucous membranes
- Nausea/vomiting
- Flushed skin
- Dilated pupils
- Increased intraocular pressure

**Pralidoxime:**
- Hypertension
- Blurry vision
- Diplopia
- Tachycardia
- Nausea
- Increases atropine effects
| **Mark I Nerve Agent Kit**  
(continued) | **Chem Pak** |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<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 (Solu-Medrol)

<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>
<tr>
<td>Indications:</td>
<td>- Anaphylaxis</td>
</tr>
<tr>
<td></td>
<td>- Persistent asthma</td>
</tr>
<tr>
<td></td>
<td>- Unresponsive bronchospasm</td>
</tr>
<tr>
<td>Contraindications include but not limited to:</td>
<td>o Known hypersensitivity</td>
</tr>
<tr>
<td>Adverse effects include but not limited to:</td>
<td>- Headache</td>
</tr>
<tr>
<td></td>
<td>- Hypertension</td>
</tr>
<tr>
<td></td>
<td>- Sodium and water retention</td>
</tr>
<tr>
<td></td>
<td>- Hypokalemia</td>
</tr>
<tr>
<td></td>
<td>- Alkalosis</td>
</tr>
<tr>
<td>Adult Administration:</td>
<td>125 mg IV/IO over 3-5 minutes</td>
</tr>
<tr>
<td><strong>Packaging Information:</strong></td>
<td>(125 mg/2 ml) Accu-o-vial</td>
</tr>
<tr>
<td>When mixing shake gently until solution clears. Shaking faster will not speed up the process.</td>
<td></td>
</tr>
<tr>
<td>Pediatric Administration:</td>
<td>See Medication Administration Chart for weight-based dosing</td>
</tr>
<tr>
<td>2 mg/kg IV/IO up to maximum 125 mg</td>
<td></td>
</tr>
<tr>
<td>Onset:</td>
<td>1-2 hours</td>
</tr>
<tr>
<td>Duration:</td>
<td>8-24 hours</td>
</tr>
<tr>
<td>Pregnancy Safety:</td>
<td>Category C</td>
</tr>
<tr>
<td>Precautions and Comments:</td>
<td>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.</td>
</tr>
<tr>
<td><strong>Used in SMO:</strong></td>
<td>Anaphylaxis and Allergic Reaction Bronchospasm Pediatric Respiratory Distress/Arrest</td>
</tr>
</tbody>
</table>
### Metoclopramide (Reglan)

<table>
<thead>
<tr>
<th>Metoclopramide</th>
<th>Reglan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification:</strong></td>
<td>Antiemetic</td>
</tr>
<tr>
<td><strong>Actions:</strong></td>
<td>Treatment for nausea and vomiting</td>
</tr>
<tr>
<td><strong>Indications:</strong></td>
<td>Nausea and vomiting</td>
</tr>
<tr>
<td><strong>Contraindications include but not limited to:</strong></td>
<td>GI obstruction, bleeding or perforation, Hypersensitivity</td>
</tr>
<tr>
<td><strong>Adverse effects include but not limited to:</strong></td>
<td>Confusion, Depression, Drowsiness, Cardiac conduction disturbances, Fatigue, Hypotension, Hypertension</td>
</tr>
<tr>
<td><strong>Adult Administration:</strong></td>
<td>IV/IO: 10 mg one time</td>
</tr>
<tr>
<td><strong>Packaging Information:</strong></td>
<td>(10 mg/2 ml) Vial</td>
</tr>
<tr>
<td><strong>Pediatric Administration:</strong></td>
<td>Not recommended</td>
</tr>
<tr>
<td><strong>Onset:</strong></td>
<td>1-3 minutes (IV)</td>
</tr>
<tr>
<td><strong>Duration:</strong></td>
<td>1-2 hours</td>
</tr>
<tr>
<td><strong>Pregnancy Safety:</strong></td>
<td>Category B</td>
</tr>
<tr>
<td><strong>Precautions and Comments:</strong></td>
<td><strong>Use as alternate to Ondansetron shortages only</strong></td>
</tr>
<tr>
<td></td>
<td>Use caution in patients with renal disease; attributable to possible accumulation and toxicity.</td>
</tr>
<tr>
<td></td>
<td>Not recommended for patients with Parkinson’s disease.</td>
</tr>
<tr>
<td></td>
<td>Concurrent use of ethanol can increase the CNS depressant effects of metoclopramide.</td>
</tr>
</tbody>
</table>

**Pharmacology Chart**

**Used in SMO:**
- Abdominal Pain
- Routine Medical Care
**Metoprolol Tartrate**

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Beta-blocking agent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</td>
<td>Used to control ventricular response in supraventricular tachydysrhythmias (paroxysmal supraventricular tachycardia, atrial fibrillation, or atrial flutter).</td>
</tr>
<tr>
<td>Indications:</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

<table>
<thead>
<tr>
<th>Packaging Information:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pediatric Administration:</td>
<td>Not recommended</td>
</tr>
<tr>
<td>Onset:</td>
<td>1-2 minutes</td>
</tr>
<tr>
<td>Duration:</td>
<td>3-4 hours</td>
</tr>
<tr>
<td>Pregnancy Safety:</td>
<td>Category C</td>
</tr>
</tbody>
</table>

**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

---

**Formulary: Metoprolol Page 1 of 1**

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*Return to Formulary Table of Contents*
## 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>
<tr>
<td>Indications:</td>
<td>Seizures, Agitation in intubated patient, Induction for Delayed Sequence Intubation</td>
</tr>
<tr>
<td>Contraindications include but not limited to:</td>
<td>Hypotension, Shock, Coma, Alcohol intoxication, Depressed vital signs, Hypersensitivity</td>
</tr>
<tr>
<td>Adverse effects include but not limited to:</td>
<td>Hypotension, Respiratory depression or arrest, Fluctuations in vital signs, Hiccups/cough, Headache, Nausea/vomiting</td>
</tr>
<tr>
<td>Adult Administration:</td>
<td>IV/IO/IM: See <a href="#">Adult Medication Administration Chart</a> for dosing</td>
</tr>
<tr>
<td>Packaging Information:</td>
<td>(5 mg/ml) Vial</td>
</tr>
<tr>
<td>Pediatric Administration:</td>
<td>See <a href="#">Medication Administration Chart</a> for weight-based dosing</td>
</tr>
<tr>
<td>Onset:</td>
<td>IV/IO: 3-5 minutes, dose dependent</td>
</tr>
<tr>
<td>Duration:</td>
<td>2-6 hours, dose dependent</td>
</tr>
<tr>
<td>Pregnancy Safety:</td>
<td>Category D</td>
</tr>
<tr>
<td>Precautions and Comments:</td>
<td>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.</td>
</tr>
<tr>
<td>Used in SMO:</td>
<td>Bradycardia, Cardioversion, CPAP, Excited Delirium, Intranasal Medications (MAD Device), Narrow Complex Tachycardia, Pain Management, Pediatric Tachycardia, Pediatric Seizure, Pre-Eclampsia/Eclampsia, Restraints, Seizures, Stroke, Wide Complex Tachycardia</td>
</tr>
</tbody>
</table>

* 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: Produces analgesia by inhibiting the ascending pain pathways. Depresses the central nervous system by interacting with receptors in the brain. Causes venous pooling due to peripheral vasodilation resulting in decreased systemic vascular resistance and decreased venous return.</td>
<td></td>
</tr>
<tr>
<td>Indications:</td>
<td>• Moderate to severe pain &lt;br&gt; • Pain associated with transcutaneous pacing &lt;br&gt; • Chest pain</td>
</tr>
<tr>
<td>Contraindications include but not limited to:</td>
<td>o Patients with altered level of consciousness &lt;br&gt; o Pain of unknown etiology &lt;br&gt; o Patients at risk of respiratory depression &lt;br&gt; o Head injury &lt;br&gt; o Hypovolemia &lt;br&gt; o Blood pressure &lt;100 &lt;br&gt; o Multi-system trauma</td>
</tr>
<tr>
<td>Adverse effects include but not limited to:</td>
<td>➢ Respiratory depression &lt;br&gt; ➢ Hypotension &lt;br&gt; ➢ Seizures &lt;br&gt; ➢ Bradycardia &lt;br&gt; ➢ Altered mental status</td>
</tr>
<tr>
<td>Adult Administration:</td>
<td>See Adult Medication Administration Chart for dosing</td>
</tr>
<tr>
<td>Packaging Information:</td>
<td>IN - Fentanyl is the preferred analgesic agent for intranasal delivery due to absorption and bioavailability concerns with Morphine</td>
</tr>
<tr>
<td>Pediatric Administration:</td>
<td>See Medication Administration Chart for weight-based dosing</td>
</tr>
<tr>
<td>Onset:</td>
<td>Immediate if given IV; 5-30 minutes if given IM</td>
</tr>
<tr>
<td>Duration:</td>
<td>3-5 hours</td>
</tr>
<tr>
<td>Pregnancy Safety:</td>
<td>Category C</td>
</tr>
<tr>
<td>Precautions and Comments:</td>
<td>Pharmacology Chart</td>
</tr>
<tr>
<td>Used in SMO:</td>
<td>Intranasal Medications/MAD Device &lt;br&gt; Narrow Complex Tachycardia &lt;br&gt; Pain Management</td>
</tr>
</tbody>
</table>
### Naloxone Hydrochloride (Narcan)

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Opioid antagonist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</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:**

<table>
<thead>
<tr>
<th>Narcan Standard Dosing Chart</th>
<th>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.</th>
</tr>
</thead>
</table>
| Packaging Information:       | (2 mg/2 ml) Pre-filled syringe  
|                              | ET: 1 mg diluted to 5-10 mL. May repeat in 5 minutes if no response (IN/IM routes are preferred if no IV). |
| Pediatric Administration:    | See Medication Administration Chart for weight-based dosing  
<p>| Return to SMO Table of Contents |<br />
| Return to Formulary Table of Contents |</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></td>
</tr>
<tr>
<td>Check and remove any transdermal systemic opioid patch.</td>
<td></td>
</tr>
<tr>
<td>The goal of Naloxone administration is to improve respiratory drive, not to return the patient to their full mental capacity.</td>
<td></td>
</tr>
<tr>
<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>
<td></td>
</tr>
<tr>
<td>Observe for: seizures, hypertension, chest pain, and/or severe headache.</td>
<td></td>
</tr>
</tbody>
</table>

**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 Toxic Exposure
- Poisoning and Overdose
- Syncope

**Pharmacology Chart**
**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: | SL: 0.4 mg (1 tab) – may repeat every 5 minutes to up to 3 doses. Contact Medical Control for any additional doses. |
| Pediatric Administration: | Not recommended |
| 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  
                             • Erectile dysfunction meds within 24 hrs |
| Pharmacology Chart |  
| Used in SMO: | Chest Pain of Suspected Cardiac Origin  
                   Pulmonary Edema |
Ondansetron (Zofran)

**Classification:** Antiemetic

**Actions:** Prevents nausea/vomiting

**Indications:** Treatment of nausea/vomiting

**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:**
4 mg IV/IO/IM/ODT – IV over 30 seconds or more. IV is the preferred route of administration.

**Packaging Information:**
- (4 mg/ml) Vial
- (4 mg) ODT

**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:**
- 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.

**Used in SMO:**
- Abdominal Pain
- Pain Assessment and Management
- Routine Medical Care

EMT's may administer to adults only
### Oral Glucose/Glucose Tablets

<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  
**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:**
- Alcohol/Substance Abuse Emergencies
- 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>Classification</th>
<th>Naturally occurring atmospheric gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</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>Classification:</th>
<th>Phenothiazine antiemetic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</td>
<td>Antiemetic</td>
</tr>
<tr>
<td>Indications:</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**  
| Pharmacology Chart |     
| **Used in SMO:** | Abdominal Pain  
|                 | Routine Medical Care  

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Return to Formulary Table of Contents
**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: | o Hypersensitivity to neuromuscular blocking agents  
  o Known neuromuscular disease |
| Adverse effects:          | ➢ Transient hypotension or hypertension |
| Adult Administration:     | See [Adult Medication Administration Chart](#) for dosing |
| **Packaging Information:** | (10 mg/ml) Vial |
| Pediatric Administration: | 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

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: | See [Medication Administration Chart](#) for weight-based dosing |
| 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.  
                                      [Pharmacology Chart](#) |

**Used in SMO:**
- Asystole/PEA  
- Crush Syndrome  
- Excited Delirium  
- Pediatric Toxic Exposure  
- Toxic Exposure  
- Ventricular Fibrillation/Pulseless Ventricular Tachycardia

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*Formulary: Sodium Bicarbonate Page 1 of 1*  
*Return to Formulary Table of Contents*
<table>
<thead>
<tr>
<th>Sodium Chloride 0.9%</th>
<th>Normal Saline</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification:</strong></td>
<td>Isotonic solution</td>
</tr>
<tr>
<td><strong>Actions:</strong></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 |
| **Onset:** | Immediate |
| **Duration:** | Remains in intravascular space less than one hour |
| **Pregnancy Safety:** | Category A |
| **Precautions and Comments:** | Monitor infusion rate closely and auscultate breath sounds prior to administration. |

**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: | Neumromuscular blocking agents will produce respiratory paralysis. Intubation and ventilatory support must be readily available. |

- **Used in SMO:** **Delayed Sequence Intubation**

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.
### Tetracaine Hydrochloride

<table>
<thead>
<tr>
<th><strong>Classification:</strong></th>
<th>Topical ophthalmic anesthetic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Actions:</strong></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.  
                                      Incompatible with mercury or silver salts often found in ophthalmic products. |

**Used in SMO:**  
- Ophthalmic Trauma
### Tranexamic Acid

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Synthetic amino acid (lysine)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</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  
  o Evidence of Disseminated Intravascular Coagulation (DIC)  
  o Patients < 14 years old  
  o 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 |
| Pharmacology Chart | Used in SMO:  
  Shock/Hemorrhagic Fluid Resuscitation  
  Obstetrics: Childbirth  
  Gynecological: Hemorrhagic  
  Gynecological: Rape/Sexual Assault |

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## Vecuronium

<table>
<thead>
<tr>
<th>Vecuronium</th>
<th>Norcuron</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification:</strong></td>
<td>Non-depolarizing neuromuscular blocker</td>
</tr>
<tr>
<td><strong>Actions:</strong></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>
<tr>
<td><strong>Indications:</strong></td>
<td>• Facilitate intubation</td>
</tr>
</tbody>
</table>
| **Contraindications include but not limited to:** | o Inability to control airway and/or support ventilations  
 o Bradycardia  
 o Dysrhythmias  
 o Hypotension  
 o 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 |
| **Pediatric Administration:** | See [Medication Administration Chart](#) for dosing |
| **Onset:** | Within one minute |
| **Duration:** | 25-40 minutes (depending on dose) |
| **Pregnancy Safety:** | Category C |
| **Precautions and Comments:** | [Pharmacology Chart](#) |
| **Used in SMO:** | Vecuronium is used as a backup paralytic agent. Preferred paralytic is Succinylcholine. |

**Packaging Information:** (10 mg Powder) Vial
FORMULARY RESOURCES
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 – Titrate to effect up to listed dose

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>
</tr>
<tr>
<td>5</td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>22</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>24</td>
<td>1.1</td>
</tr>
<tr>
<td>8</td>
<td>26</td>
<td>1.2</td>
</tr>
<tr>
<td>9</td>
<td>28</td>
<td>1.3</td>
</tr>
<tr>
<td>10</td>
<td>30</td>
<td>1.4</td>
</tr>
<tr>
<td>11</td>
<td>32</td>
<td>1.4</td>
</tr>
<tr>
<td>12</td>
<td>34</td>
<td>1.5</td>
</tr>
<tr>
<td>Small Teen</td>
<td>40</td>
<td>1.8</td>
</tr>
<tr>
<td>Adult</td>
<td>&gt;50</td>
<td>2</td>
</tr>
</tbody>
</table>

*For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose*
# 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></td>
<td>Adenosine</td>
<td>Adenocard</td>
<td>6 mg/2 ml Syringe</td>
<td>18 mg</td>
</tr>
<tr>
<td></td>
<td>Albuterol 0.083%</td>
<td>Proventil or Ventolin</td>
<td>2.5 mg/3 ml Neb</td>
<td>5 mg</td>
</tr>
<tr>
<td></td>
<td>Albuterol/Ipratropium</td>
<td>DuoNeb</td>
<td>2.5 mg/0.5 mg/3 ml Neb</td>
<td>5/1 mg</td>
</tr>
</tbody>
</table>

**NOTE: Carry 2 additional Ipratropium/Albuterol if no Duo-Neb**

- Amiodarone: Cordarone 150 mg/3 ml Vial 450 mg
- Aspirin Chewable: 81 mg Tablet 648 mg
- Atropine Sulfate: 1 mg/10 ml Syringe 4 mg
- Calcium Gluconate: 1 gram/10 mL Vial 3 grams
- D10: 50 grams/500ml Bag 500 ml
- D50: Dextrose 50% 25 g/50 ml Syringe 50 grams

**Diazepam** 
**Valium** 10 mg/2 ml Syringe 30 mg (30 mg max)

- Diphenhydramine: Benadryl 50 mg/ml Vial 100 mg
- Dopamine: Intropin 400 mg/250 ml Bag 400 mg
- Epinephrine 1 mg/ml: Epi Pen 0.3 mg/0.3 ml Auto Injector 1
- Epinephrine 1 mg/ml: Adrenalin 1 mg/ml Vial 2 mg
- Epinephrine 1 mg/ml: Adrenalin 30 mg/30 ml Vial 30 mg
- Epinephrine 1mg/2ml: Epi Pen Jr 0.15 mg/0.3 ml Auto Injector 1
- Epinephrine 0.10 mg/ml: Adrenalin 1 mg/10 ml Syringe 4 mg
- Etomidate: Amidate 40 mg/20 ml Vial 40 mg (max 80 mg)
- Fentanyl: Sublimaze 50 mcg/ml Vial 400 mcg (400 mcg max)
- Furosemide: Lasix 100 mg/10 ml Vial 100 mg
- Glucagon: GlucaGen 1 mg/ml Vial 1 mg
<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>Ketalar</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>Ativan</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/5 ml 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><strong>Ondansetron</strong></td>
<td>Zofran ODT</td>
<td>4 mg ODT</td>
<td>8 mg</td>
</tr>
<tr>
<td><strong>Rocuronium</strong></td>
<td>Zemuron</td>
<td><strong>10 mg/ml Vial</strong></td>
<td><strong>150 mg (150 mg max)</strong></td>
</tr>
<tr>
<td>Sodium Bicarbonate</td>
<td>NaCHO₃ 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>
</tr>
<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>Cyklokapron</td>
<td>1000 mg/10 ml Vial</td>
<td>1000 mg</td>
</tr>
<tr>
<td><strong>Vecuronium</strong></td>
<td>Norcuron</td>
<td><strong>10 mg Powder Vial</strong></td>
<td><strong>30 mg (30 mg max)</strong></td>
</tr>
</tbody>
</table>

**Mercyhealth Additional Medications**

<table>
<thead>
<tr>
<th>Name: Generic</th>
<th>Name: Trade</th>
<th>Strength &amp; unit of use</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium Chloride 10% Solution</td>
<td></td>
<td>1 GM/10 ml preload syringe</td>
<td></td>
</tr>
<tr>
<td>Diltiazem</td>
<td>Cardizem</td>
<td>5 mg/ml – 5 ml vial</td>
<td></td>
</tr>
<tr>
<td>Hydromorphone</td>
<td>Dilaudid</td>
<td>1 mg/ml</td>
<td></td>
</tr>
<tr>
<td>Magnesium Sulfate 50%</td>
<td></td>
<td>5 GM/10 ml preload syringe or 2 GM bags</td>
<td></td>
</tr>
</tbody>
</table>
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>
Key to FDA Use-In-Pregnancy Ratings

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>
### Formulary Abbreviations

*This list of abbreviations only covers this Prehospital Formulary.

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR</td>
<td>Adverse Drug Reaction</td>
</tr>
<tr>
<td>ASA</td>
<td>Aspirin</td>
</tr>
<tr>
<td>BP</td>
<td>Blood pressure</td>
</tr>
<tr>
<td>BPM</td>
<td>Beats per minute</td>
</tr>
<tr>
<td>BS</td>
<td>Blood sugar</td>
</tr>
<tr>
<td>CNS</td>
<td>Central nervous system</td>
</tr>
<tr>
<td>dL</td>
<td>Deciliter</td>
</tr>
<tr>
<td>ECG</td>
<td>Electrocardiogram</td>
</tr>
<tr>
<td>ET</td>
<td>Endotracheal</td>
</tr>
<tr>
<td>GCS</td>
<td>Glasgow Coma Scale</td>
</tr>
<tr>
<td>GI</td>
<td>Gastrointestinal</td>
</tr>
<tr>
<td>gm or GM or G</td>
<td>Gram</td>
</tr>
<tr>
<td>gtt(s) or Gtt(s)</td>
<td>Drop(s)</td>
</tr>
<tr>
<td>HR</td>
<td>Heart rate</td>
</tr>
<tr>
<td>IM</td>
<td>Intramuscularly</td>
</tr>
<tr>
<td>IN</td>
<td>Intranasal</td>
</tr>
<tr>
<td>IO</td>
<td>Intraosseous</td>
</tr>
<tr>
<td>IV</td>
<td>Intravenous</td>
</tr>
<tr>
<td>IVP</td>
<td>Intravenous push</td>
</tr>
<tr>
<td>kg</td>
<td>Kilogram</td>
</tr>
<tr>
<td>lb</td>
<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>
<tr>
<td>mEq or meq</td>
<td>Milliequivalent</td>
</tr>
<tr>
<td>mg</td>
<td>Milligram</td>
</tr>
<tr>
<td>NS</td>
<td>Normal Saline</td>
</tr>
<tr>
<td>OD</td>
<td>Overdose</td>
</tr>
<tr>
<td>OPP</td>
<td>Organophosphate poisoning</td>
</tr>
<tr>
<td>PEA</td>
<td>Pulseless electrical activity</td>
</tr>
<tr>
<td>PO</td>
<td>By mouth</td>
</tr>
<tr>
<td>PVC</td>
<td>Premature ventricular contraction</td>
</tr>
<tr>
<td>Sub-Q or subq</td>
<td>Subcutaneous</td>
</tr>
<tr>
<td>U</td>
<td>Unit</td>
</tr>
<tr>
<td>μg</td>
<td>Microgram</td>
</tr>
<tr>
<td>Treatment Capacity:</td>
<td>454 Patients</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Medication</td>
<td>Unit Pack</td>
</tr>
<tr>
<td>Mark I auto-injector</td>
<td>240</td>
</tr>
<tr>
<td>Atropine Sulfate 0.4 mg/ml 20 mL</td>
<td>100</td>
</tr>
<tr>
<td>Pralidoxime 1 GM injection 20 mL</td>
<td>276</td>
</tr>
<tr>
<td>Atropen 0.5 mg</td>
<td>144</td>
</tr>
<tr>
<td>Atropen 1.0 mg</td>
<td>144</td>
</tr>
<tr>
<td>Diazepam 5 mg/mL auto-injector</td>
<td>150</td>
</tr>
<tr>
<td>Diazepam 5 mg/mL Vial 10 mL</td>
<td>25</td>
</tr>
<tr>
<td>Sterile Water for injection 20 mL vials</td>
<td>100</td>
</tr>
<tr>
<td>Mark I Auto Injector</td>
<td>Atropine/Pralidoxime</td>
</tr>
<tr>
<td>----------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td><strong>Classification:</strong></td>
<td>Nerve agent antidote</td>
</tr>
</tbody>
</table>
| **Indications:**     | **Mild Exposures:** Rhinorrhea  
                       | Chest tightness  
                       | Dyspnea  
                       | Bronchospasm  
                       | **Moderate Exposures:** Salivation  
                       | Lacrimation  
                       | Urination  
                       | GI Symptoms  
                       | Emesis  
                       | Miosis  
                       | **Severe Exposures:** Jerking  
                       | Twitching  
                       | Staggering  
                       | Headache  
                       | Drowsiness  
                       | Coma  
                       | Seizures  
                       | Apnea |
| **Contraindications:** | Do not use auto-injectors in patients under 30 kg |
| **Adverse effects:** | **Atropine:**  
                       | Tachycardia  
                       | Increased myocardial O\text{2} demand  
                       | Headache  
                       | Dizziness  
                       | Palpitations  
                       | Dries mucous membranes  
                       | Nausea/vomiting  
                       | Flushed skin  
                       | Dilated pupils  
                       | Increased intraocular pressure  
                       | **Pralidoxime:**  
                       | Hypertension  
                       | Blurry vision  
                       | Diplopia  
                       | Tachycardia  
                       | Nausea  
                       | Increases atropine effects |
| **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  
<pre><code>                   | Atropine: 10 minutes |
</code></pre>
<p>| <strong>Pregnancy Safety:</strong> | Category C |</p>
<table>
<thead>
<tr>
<th>Precautions and Comments:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Kit contains:</strong></td>
</tr>
<tr>
<td>- Atropine 2 mg/0.7 mL auto-injector</td>
</tr>
<tr>
<td>- Pralidoxime 600 mg/2 mL auto-injector</td>
</tr>
<tr>
<td><strong>Nerve agents</strong> 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.</td>
</tr>
</tbody>
</table>

Return to SMO Table of Contents

Return to Formulary Table of Contents
**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

*Formulary Resources Chem Pack – Atropine Page 1 of 4*
### Pediatric Administration (continued):

Auto-injector/Atropen information:

- For children 0-2 years old (<18 kg) use 0.5 mg Atropen
- For children 2-10 years old (18-30 kg) use 1.0 mg Atropen
- For patients ≥ 10 years old (>30 kg) use 2 mg atropine auto-injector

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>
</tr>
</thead>
<tbody>
<tr>
<td>Duration:</td>
<td>20 minutes</td>
</tr>
<tr>
<td>Pregnancy Safety:</td>
<td>Category C</td>
</tr>
<tr>
<td>Precautions and Comments:</td>
<td>Atropine should be given prior to 2-Pam.</td>
</tr>
<tr>
<td><strong>Chem Pack – Pralidoxime</strong></td>
<td><strong>2-Pam, Protopam</strong></td>
</tr>
<tr>
<td>----------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td><strong>Classification:</strong></td>
<td>Cholinesterase reactivator</td>
</tr>
</tbody>
</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

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Benzodiazepine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</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>Indications:</td>
<td>Seizures as a result of nerve agent exposure</td>
</tr>
<tr>
<td>Contraindications:</td>
<td>o Hypersensitivity to benzodiazepines</td>
</tr>
<tr>
<td></td>
<td>o Myasthenia gravis</td>
</tr>
<tr>
<td>Adverse Effects:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Drowsiness</td>
</tr>
<tr>
<td></td>
<td>Fatigue</td>
</tr>
<tr>
<td></td>
<td>Ataxia</td>
</tr>
<tr>
<td></td>
<td>Confusion</td>
</tr>
<tr>
<td></td>
<td>Constipation</td>
</tr>
<tr>
<td></td>
<td>Depression</td>
</tr>
<tr>
<td></td>
<td>Diplopia</td>
</tr>
<tr>
<td></td>
<td>Dysarthria</td>
</tr>
<tr>
<td></td>
<td>Headache</td>
</tr>
<tr>
<td></td>
<td>Hypotension</td>
</tr>
<tr>
<td></td>
<td>Incontinence</td>
</tr>
<tr>
<td></td>
<td>Jaundice</td>
</tr>
<tr>
<td></td>
<td>Nausea</td>
</tr>
<tr>
<td></td>
<td>Rash</td>
</tr>
<tr>
<td></td>
<td>Tremor</td>
</tr>
<tr>
<td></td>
<td>Urinary retention</td>
</tr>
<tr>
<td></td>
<td>Vertigo</td>
</tr>
<tr>
<td></td>
<td>Blurred vision</td>
</tr>
<tr>
<td></td>
<td>Anxiety</td>
</tr>
<tr>
<td></td>
<td>Injection site reaction</td>
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**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

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REGION I
EMERGENCY MEDICAL SERVICES

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.

Original SMO Date: 06/16
Reviewed: 06/17; 09/19; 06/20
Last Revision: 06/17

SMO: Body Substance Isolation (Universal Precautions)

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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.
**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.
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
EMR

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

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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 cardiopulmonary 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
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.
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: ______________________________________

________________________________________

________________________________________

________________________________________

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

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   Return to EMR Table of Contents

Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 06/17

Current Version: 2020.1
Issued: 07/20
EMS Region1 SMO
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

Original SMO Date: 07/04
Reviewed: 02/06; 06/17; 09/19; 06/20
Last Revision: 02/06; 06/17

Return to EMR 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 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 authority 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

Return to EMR Table of Contents
**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

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 Hc: __________ Allergies: __________________________

Medications: __________________________

BP: __________ Pulse: _______ Resp: _______ Skin: _______ Pupils: R-_____/L-_____/ □ Refused V/S

Check appropriate response: __________________________

Is the patient oriented to: _______ Person □ Place □ Time □ Situation □ N

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 statement(s))

□ 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 am refusing transport to the nearest hospital.

□ I am requesting transport to _______ Hospital. I have been informed that this facility lies outside the range of the agency’s ability to transport, I am refusing transport to a hospital within this territorial range.

RISKS

All refusals 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.

Printed name of patient/person authorized to consent for patient __________________________

Signature of patient/person authorized to consent for patient __________________________ Date: __/__/____

Printed name of witness __________________________

Signature of witness __________________________ Date: __/__/____

Comments: __________________________

_________________________ __________________________

Signature of Client Name #1 License #

_________________________ __________________________

Signature of Client Name #2 License #

SHSU-7782 11/2/2017 White, Agency Copy

Yellow, EMS Copy

Pink, Patient Copy

Current Version: 2020.1

Issued: 07/20

EMS/Region1 SMO
Region 1 Discharge Instructions

Refusal / Discharge Instructions

Universal Instructions:
- You have not received a complete medical evaluation. See a physician as soon as possible.
- If 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.

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 new and only in one area.
  - You vomit (throw up) blood or food following your bowel movement.
  - You become dizzy or faint.
  - You are nauseous become confused or uncoordinated.
  - You have a temperature over 102°F.
  - You have trouble passing urine.
  - 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 small activities when you can do them without causing pain.
- When riding in a car, keep your head and torso perfectly still.
- You have trouble swallowing or have trouble opening your mouth.
- You have a temperature over 102°F.
- You have trouble passing urine.
- You have numbness or weakness in your legs, feet, arms, or hands.

Head Injury:
- Immediate loss of consciousness and vomiting may occur.
- Individuals who have sustained a head injury must be checked, and the case is necessary evaluated every 2 hours for the first 24 hours.
- Ice may be placed on the injury area to decrease pain and swelling.
- Only drink clear liquids such as juices, soft drinks, or water, for the first 12 hours after injury.
- Avoid any strenuous activity or vigorous exercise for 48 hours.
- Call or see a physician, go to the emergency department, or call 911 immediately if:
  - The injury is painful and persistent vomiting is not able to be controlled, there is a clear blood coming from the ears or nose, or there is strange behavior.

Insect Bite/Sting:
- A bite or sting typically leaves a red lump which may have a hole in the center. You may have pain, swelling, and a rash. Severe 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 application 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 pain.
- Call or see a physician, go to the emergency department, or call 911 immediately if:
  - You develop any skin rash or difficulty breathing.
  - The area becomes red, warm, tender, and swollen beyond the area of the bite or sting.
  - You develop a temperature over 101°F.

Respiratory Distress:
- Respiratory Distress is also known as shortness of breath or difficulty breathing.
- Causes of Respiratory Distress include reactions to drugs, dust, allergies, mold, foods, drugs, infections, smoke, and respiratory conditions such as asthma and COPD. If any possible latent effects can produce respiratory distress.
- If you have a physician for this problem, take all medications as instructed.
- 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 pains.
  - Palpitations (palpitations as seen to yellow, green, grey, or becomes too weak.
  - You are unable to perform normal activities.

Extremity Injury:
- Extremity injuries may consist of cuts, scrapes, bruises, sprains, or broken bones.
- Apply ice to the injury for 15 to 20 minutes each hour for the first 1 to 2 days.
- Elevate the extremity above the heart 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 area becomes red, warm, tender, and swollen beyond the area of the injury.
  - You develop a temperature over 101°F.

Vomiting/Diarrhea:
- Vomiting or diarrhea can be caused by many things. It is common in children, but should be watched closely.
- Diarrhea is 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 24 hours until the vomiting or diarrhea has stopped.
- Adults should drink at least 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 for more than 24 hours.
  - You cannot keep fluids down or the vomiting is noted in 4 hours.

Wound Care:
- Wounds include cuts, scrapes, bites, abrasions, or puncture wounds.
  - If the wound becomes infected, apply pressure over the wound with a clean bandage and elevate the wound above the heart for 5 to 10 minutes.
  - If the wound is infected, apply pressure over the wound with a clean bandage and elevate the wound above the heart for 5 to 10 minutes.
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  - If the wound is infected, apply pressure over the wound with a clean bandage and elevate the wound above the heart for 5 to 10 minutes.
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 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, hiatal hernia, acid reflux, pneumonia, pleurisy, pulmonary embolism, panic attacks, bone pain from 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:
  • If nausea, pain or pressure in chest
  • Sweating
  • Unexplained weakness, dizziness, shortness of breath
  • Nausea or vomiting
  • Fast or irregular heartbeat

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, hypoglycemia, certain medications, emotional stress, standing up too quickly, head 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, light-headedness
  • Slow or fast heartbeat
  • Nausea or vomiting
  • Pain or pressure in the chest
  • Fast or irregular heartbeat

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 24 hours a day 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 sudden.
• Some symptoms include: shaky, sweating, fast heartbeat, dizziness, hunger, irritability, weakness, or fatigue.
• If you feel like you need sugar, check your blood glucose. If you can’t check your glucose, treat anyway.
• Treat by eating glucose tablets, candy bars, juice, or juice irregularly and often.
• Check bloodglucose again.
• Eat something in addition to the sugar. Eat something with protein and carbohydrates 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 is slow.
• Some symptoms include: sweating, need to urinate often, dry mouth, extreme hunger.
• 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 877-603-6338
• National hotline 1-800-799-7237
• TTY 900-787-3234
• http://www.dsvab.org/

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.

Local Phone Numbers

Current Version: 2020.1
Issued: 07/20
EMS/Region1 SMO
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
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
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.
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
EMR

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 \(S_pO_2\) 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 precedence.
- 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 patent should be left on a restriction device for transport using guideline noted in this SMO.
REGION I EMERGENCY MEDICAL SERVICES
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EMR

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.

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.
# Medical and Trauma Emergencies

*For Emergency Medical Responders*

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Current Version: 2020.1
Issued: 07/20
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
  - BVM/Pocket Mask
  - 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.
REGION I EMERGENCY MEDICAL SERVICES
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SMO: Routine Medical Care

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 SMO
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.
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SMO: Medical Emergencies

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 of 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** 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. 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, end state overdose, administer naloxone if available per protocol.

3. Look for no breathing or only gasping and check pulse (simultaneously). Is pulse definitely felt within 10 seconds?

   No breathing or only gasping, no pulse

   Normal breathing, has pulse

   No normal breathing, has pulse

4. Begin cycles of 30 compressions and 2 breaths. Use AED as soon as it is available.

5. AED arrives.

6. Check rhythm: Shokable rhythm?

   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.

   No, nonshockable

   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.

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.

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. If available, administer Albuterol Neb or 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.
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.

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 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.
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
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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 Restriction.
   - 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.

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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. Direct pressure is the primary method of controlling most external bleeding and should be used as soon as possible.
4. Tourniquets:
   - Consider tourniquets when direct pressure does not control breathing
   - Tourniquets may not be practical on proximal extremity locations
   - Cut away clothing
   - Tighten per manufacturers’ instructions until hemorrhage stops
   - Secure tourniquets per manufacturers’ recommendations
   - Note time of tourniquets application and provide this information to receiving care provider. Do not remove any tourniquet without authorization from Medical Control.
   - If one tourniquet is not sufficient to control bleeding consider a second tourniquet proximal to the first
5. Wound Packing:
   - Consider wound packing for life threatening bleed from a penetrating injury to the buttock, pelvis (pelvic girdle), axilla (armpit), or neck. Also, consider for penetrating injuries to extremity with significant bleeding that cannot be controlled with direct pressure or tourniquets.
   - Wound packing is contraindicated for the chest, back, head, abdomen, and dialysis graft bleeding.
   - Wound packing procedure:
     - Attempt to control bleeding with direct pressure.
     - Cut away clothing at wound site.
     - Have wound packing supplies on hand – use a roll of plain gauze.
     - Carefully remove any obvious foreign object from the wound (splintered wood, etc.)
     - Apply direct pressure just proximal to the wound to reduce bleeding. With one finger of the other hand push the end of the gauze as deeply into the wound as possible. Continue to feed the gauze deep into the wound in small increments. Do not attempt to feed a large amount of gauze all at once.
     - Continue to pack gauze deeply and tightly in order to apply direct pressure over the source of the bleed. When the packing reaches the level of the skin apply any remaining gauze over the wound to help apply pressure.
     - Hold direct pressure over the wound for at least ten minutes. Do not release this pressure to “check” for bleeding.
     - If possible, wrap with gauze to maintain pressure.
   - Note: this is a very painful procedure, provide Pain Management per SMO.

6. 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
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
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>
</tr>
</thead>
<tbody>
<tr>
<td>Pediatric Airway Management</td>
<td>Pediatric</td>
</tr>
<tr>
<td>Pediatric Medical Emergencies</td>
<td>Pediatric</td>
</tr>
<tr>
<td>Pediatric Neonatal Resuscitation</td>
<td>Pediatric</td>
</tr>
<tr>
<td>Pediatric Trauma Emergencies</td>
<td>Pediatric</td>
</tr>
<tr>
<td>Routine Pediatric Care</td>
<td>Pediatric</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 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

<table>
<thead>
<tr>
<th>AIRWAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-maintained</td>
</tr>
<tr>
<td>Maintainable with positioning or assistance: held tilt/chin lift, jaw thrust, tripod, high fowlers</td>
</tr>
<tr>
<td>Maintainable with adjuncts</td>
</tr>
<tr>
<td>Maintainable with suction</td>
</tr>
<tr>
<td>Most pediatric patients can be successfully ventilated using BVM</td>
</tr>
<tr>
<td>BVM, supraglottic are preferred airways for pediatric patients</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BREATHING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate - compare to normal for age. Rate greater than 60/min is critical in all ages</td>
</tr>
<tr>
<td>Rhythm: regular; irregular; patterned, Cheyne-stokes, agonal, biots, Kussmaul</td>
</tr>
<tr>
<td>Quality: work of breath; use of accessory muscles, head bobbing, see-saw breathing, retractions, nasal flaring</td>
</tr>
<tr>
<td>Auscultate respiratory sounds for absence, presence, snoring, stridor, crackles, gurgling, wheezing, grunting</td>
</tr>
<tr>
<td>Pulse oximetry</td>
</tr>
<tr>
<td>Administer oxygen of 02 sat &lt;94 and/or other signs of respiratory compromise</td>
</tr>
<tr>
<td>Blow by</td>
</tr>
<tr>
<td>Nasal cannula</td>
</tr>
<tr>
<td>Non-rebreather</td>
</tr>
<tr>
<td>BVM</td>
</tr>
</tbody>
</table>
### CIRCULATION
- Heart rate – compare to normal for age.
- Central/trunkal 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
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
## 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>Body weight loss</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>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>
<td>Mild tachycardia</td>
<td>Moderate tachycardia</td>
<td>Extreme tachycardia</td>
</tr>
<tr>
<td>Peripheral Pulse</td>
<td>Normal</td>
<td>Diminished</td>
<td>Absent</td>
</tr>
<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: 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
  - BVM/ Pocket Mask
  - OPA
  - NPA
  - Per EMS System approval supraglottic airway per manufacturer’s instructions
- Confirm advanced airways and document:
  - Auscultation
  - Absence of gastric sounds
  - Chest rise

Original SMO Date: 06/17
Reviewed: 06/17; 09/19; 06/20
Last Revision: 09/19

Return to EMR Table of Contents
**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 that 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 40mg/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. Provide rescue breathing: 1 breath every 3-5 seconds, or about 12-20 breaths/min. Add compressions if pulse remains ≤60/min with signs of poor perfusion.*
   - Add compressions if pulse remains ≤60/min with signs of poor perfusion.*
   - Activate emergency response system (if not already done) after 2 minutes.
   - Continue rescue breathing; check pulse about every 2 minutes. If no pulse, begin CPR (go to “CPR” box).
4. Witnessed sudden collapse?
   - Yes
   - Activate emergency response system (if not already done), and retrieve AED/defibrillator.
   - No
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?
   - 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.
   - No, nonshockable
   - 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, decreased responsiveness, weak pulses, pallor, 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 [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]).
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, including medications (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. If available, administer **Albuterol Neb** or 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 (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.
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
EMR

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 is 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
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. Direct pressure is the primary method of controlling most external bleeding and should be used as soon as possible.
4. **Tourniquets:**
   - Consider tourniquets when direct pressure does not control breathing
   - Tourniquets may not be practical on proximal extremity locations
   - Cut away clothing
   - Tighten per manufacturers’ instructions until hemorrhage stops
   - Secure tourniquets per manufacturers’ recommendations
   - Note time of tourniquets application and provide this information to receiving care provider. Do not remove any tourniquet without authorization from Medical Control.
   - If one tourniquet is not sufficient to control bleeding consider a second tourniquet proximal to the first
5. **Wound Packing:**
   - Consider wound packing for life threatening bleed from a penetrating injury to the buttock, pelvis (pelvic girdle), axilla (armpit), or neck. Also, consider for penetrating injuries to extremity with significant bleeding that cannot be controlled with direct pressure or tourniquets.
   - Wound packing is contraindicated for the chest, back, head, abdomen, and dialysis graft bleeding.
   - Wound packing procedure:
     - Attempt to control bleeding with direct pressure.
     - Cut away clothing at wound site.
o Have wound packing supplies on hand – use a roll of plain gauze.
o Carefully remove any obvious foreign object from the wound (splintered wood, etc.)
o Apply direct pressure just proximal to the wound to reduce bleeding. With one finger of the other hand push the end of the gauze as deeply into the wound as possible. Continue to feed the gauze deep into the wound in small increments. Do not attempt to feed a large amount of gauze all at once.
o Continue to pack gauze deeply and tightly in order to apply direct pressure over the source of the bleed. When the packing reaches the level of the skin apply any remaining gauze over the wound to help apply pressure.
o Hold direct pressure over the wound for at least ten minutes. Do not release this pressure to “check” for bleeding.
o If possible, wrap with gauze to maintain pressure.
o Note: this is a very painful procedure, provide Pain Management per SMO.

6. 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 per 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. \(O_2\) as indicated
Appendices
For
Emergency Medical Responders

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Appendix: 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 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)
<table>
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<td>Centimeter</td>
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<td>Ears, Nose and Throat</td>
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<td>HEENT</td>
<td>Head, Eyes, Ears, Nose and Throat</td>
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<td>LLQ</td>
<td>Left lower quadrant</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>NRB mask</td>
<td>Non-rebreather mask</td>
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<td>Normal saline</td>
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<td>Normal sinus rhythm</td>
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<td>Pneumatic anti-shock garment</td>
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<td>Paroxysmal atrial tachycardia</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>PJC</td>
<td>Premature junctional contraction</td>
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<td>Right</td>
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<td>Sub-Q or subq</td>
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<td>Supraventricular tachycardia</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>Ventricular fibrillation</td>
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<tr>
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<td>Without</td>
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<tr>
<td>WNL</td>
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<td>At</td>
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<td>&gt;</td>
<td>Greater than</td>
</tr>
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<td>Less than</td>
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<td>Basic Trauma Life Support</td>
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<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 The Joint Commission 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 Region 1 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

## AREAS OF RESPONSE

<table>
<thead>
<tr>
<th>EYE OPENING</th>
<th>Response</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></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>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VERBAL RESPONSE</th>
<th>Response</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></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>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MOTOR RESPONSE</th>
<th>Response</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></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>decerbrate</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

<table>
<thead>
<tr>
<th>Injury Description</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<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>
# 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**
## PEDIATRIC GLASGOW COMA SCORE

<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></td>
<td><em>Obey Commands</em> to move</td>
<td>6</td>
</tr>
<tr>
<td><em>Localized Painful</em> stimuli</td>
<td></td>
<td><em>Localized Painful</em> stimuli</td>
<td>5</td>
</tr>
<tr>
<td><em>Withdraw</em> from painful stimulus</td>
<td></td>
<td><em>Flexion—normal</em></td>
<td>4</td>
</tr>
<tr>
<td><em>Flexion</em>, abnormal <em>decorticate</em> posturing</td>
<td></td>
<td><em>Flexion</em>, abnormal <em>decorticate</em> posturing</td>
<td>3</td>
</tr>
<tr>
<td><em>Extension</em>, abnormal <em>decerebrate</em> posturing</td>
<td></td>
<td><em>Extension</em>, abnormal <em>decerebrate</em> posturing</td>
<td>2</td>
</tr>
<tr>
<td>No movement or posturing</td>
<td></td>
<td>No movement or posturing</td>
<td>1</td>
</tr>
<tr>
<td><strong>VERBAL RESPONSE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Oriented</em> and converses</td>
<td></td>
<td>Appropriate words &amp; phrases for age</td>
<td>5</td>
</tr>
<tr>
<td><em>Disoriented</em> but converses <em>Inappropriate</em> words</td>
<td></td>
<td>Inappropriate words</td>
<td>4</td>
</tr>
<tr>
<td><em>Incomprehensible</em> words</td>
<td></td>
<td>Cries and/or screams</td>
<td>3</td>
</tr>
<tr>
<td>No response</td>
<td></td>
<td>Grunts</td>
<td>2</td>
</tr>
</tbody>
</table>

| TOTAL POSSIBLE SCORE | 3 - 15 |

*Return to EMR Table of Contents*
## 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
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

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.
- 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: 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 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.

Medical Control Contact Criteria

Original SMO Date: 07/04
Reviewed: 06/17; 09/19; 06/20
Last Revision: 06/17

Appendix: Use of SMO’s

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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:

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Reference: Jones and Bartlett Learning LLC, 2013 pp 1574-1628

IDPH Approval
Date: December 6, 2017
Reviewed: June, 2020
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<td>Oral Glucose</td>
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**Albuterol Sulfate** (Proventil, Ventolin)

**Classification:** Bronchodilator

**Actions:** Relaxes bronchial smooth muscle by stimulating beta_2_ receptors resulting in bronchodilation.

**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.

Use with caution in patients with:
- Heart disease
- Hypertension
- Tachy-dysrhythmias
- Patients being treated with MAO inhibitors and tricyclics may experience tachycardia and hypertension
- Patients who are hypersensitive to sympathomimetics

**Used in SMO:**
- Adult Respiratory Distress
- Pediatric Respiratory Distress
## 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.</td>
</tr>
<tr>
<td></td>
<td>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>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>
</tbody>
</table>

**Pharmacology Chart**

**Used in SMO:**
- Chest Pain of Suspected Cardiac Origin
### Epinephrine Auto-injector

<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>- Shortness of breath (wheezing, hoarseness, other abnormal breath sounds)</td>
</tr>
<tr>
<td></td>
<td>- Itching/hives that are severe and rapidly progressing</td>
</tr>
<tr>
<td></td>
<td>- Oral swelling/laryngospasm/difficulty swallowing</td>
</tr>
<tr>
<td></td>
<td>- Hypotension/unresponsiveness</td>
</tr>
<tr>
<td></td>
<td>- 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>
<tr>
<td>Adult Administration:</td>
<td></td>
</tr>
<tr>
<td><strong>Packaging Information:</strong></td>
<td></td>
</tr>
<tr>
<td>Epinephrine (0.3 mg/0.3 ml) auto-injector</td>
<td></td>
</tr>
<tr>
<td>Epinephrine (0.15 mg/0.3 ml) auto-injector</td>
<td></td>
</tr>
<tr>
<td>Patients over 30 kg (66 pounds):</td>
<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>
<tr>
<td>Pediatric Administration:</td>
<td></td>
</tr>
<tr>
<td>Patient 15-30 kg (33-66 pounds):</td>
<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>
<tr>
<td>Onset:</td>
<td>5-10 minutes</td>
</tr>
<tr>
<td>Duration:</td>
<td>20 minutes</td>
</tr>
<tr>
<td>----------</td>
<td>------------</td>
</tr>
<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:**
- Adult Anaphylaxis and Allergic Reaction
- Pediatric Anaphylaxis and Allergic Reaction

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[Return to EMR Formulary Table of Contents](#)
# Naloxone Hydrochloride (Narcan)

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Opioid antagonist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions:</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:
- Use caution with narcotic-dependent patients who may experience withdrawal syndrome
- 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:
See [Pharmacology Chart](#)

## Pediatric Administration:
See [Pharmacology Chart](#)
<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>
</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.

**Pharmacology Chart**

**Used in SMO:**
- Adult Altered Mental Status
- Intranasal Medication/MAD Device
- Pediatric Altered Mental Status
- Pediatric Poisoning and Overdose
- Poisoning and Overdose Adult
## Oral Glucose

<table>
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<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>
<tr>
<td>Adverse effects include but not limited to:</td>
<td></td>
</tr>
<tr>
<td>Adult Administration:</td>
<td>15 GM/37.5 GM tube</td>
</tr>
<tr>
<td>Pediatric Administration:</td>
<td>Up to 15 GM as tolerated</td>
</tr>
<tr>
<td>Onset:</td>
<td>5-10 minutes</td>
</tr>
<tr>
<td>Duration:</td>
<td>Variable</td>
</tr>
<tr>
<td>Pregnancy Safety:</td>
<td>Category A</td>
</tr>
<tr>
<td>Precautions and Comments:</td>
<td>Not a substitute for IV dextrose in extreme cases of hypoglycemia (blood sugar &lt;40) unless IV access is unobtainable.</td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>Used in SMO:</td>
<td>Adult Altered Mental Status</td>
</tr>
<tr>
<td></td>
<td>Pediatric Altered Mental Status</td>
</tr>
<tr>
<td></td>
<td>Stroke</td>
</tr>
<tr>
<td>Alternative:</td>
<td>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.</td>
</tr>
<tr>
<td>Alternative:</td>
<td>Glucose tablets – tablets are not recommended for patients who cannot protect their airway or of an appropriate age to swallow a tablet.</td>
</tr>
</tbody>
</table>
### Key to FDA Use-In-Pregnancy Ratings

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>
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<th>Category</th>
<th>Interpretation</th>
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<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>
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REGION I
EMERGENCY MEDICAL SERVICES
Disaster Preparedness
Standing Medical Orders

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<tr>
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<td></td>
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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
DISASTER PREPAREDNESS

General Principles

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 affected.

**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 PROTOCOLs. 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.

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Original SMO Date: 03/12
Reviewed: 11/11; 06/17; 09/19; 06/20
Last Revision: 11/11, 06/17

SMO: Chemical Weapons – Blistering Agents
Page 2 of 2
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.
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 Orthochlorobenzildene 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.
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.
REGION 1 EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Disaster – Chemical Weapons: Nerve Agents

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:_ Bradyarrhythmias, 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.
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.

Return to SMO Table of Contents
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.
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.
REGION 1 EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Disaster – Radiologic Threats

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 supersede 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.
REGION 1 EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS
______________________________

SMO: Disaster – START Triage

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:
Respirations above 30:
Respirations below 30:

DEAD/NON-SALVAGEABLE (BLACK)
CRITICAL / IMMEDIATE (RED)
CONTINUE ASSESSMENT TO NEXT STEP

STEP 3: Assess Perfusion in Remaining Patients

No Radial Pulse:
Pulse Present:

CRITICAL / IMMEDIATE (RED)
CONTINUE ASSESSMENT TO NEXT STEP

STEP 4: Assess Neurologic Status

Unconscious /
Altered Mental Status:
Normal Mentation Processes:

CRITICAL / IMMEDIATE (RED)
DELAYED (YELLOW)
REGION 1 EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Disaster – JumpSTART Triage

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

Medical Control Contact Criteria
- Incident command should contact areas hospitals as soon as possible to advise them of the MCI.

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.
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.

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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-transported 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

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:

Greg Conrad, MD, EMSMD
Northwestern Medicine Kishwaukee Hospital EMS System
1 Kish Hospital Drive, DeKalb, IL

Lisa Pyatt, DO, EMSMD
OSF Northern Region EMS System
5666 East State Street, Rockford, IL

John Underwood, DO, EMSMD
SwedishAmerican Hospital EMS System
1401 East State Street, Rockford, IL

Jay MacNeil, DO, EMSMD
Mercyhealth Prehospital and Emergency Services Center
2400 North Rockton Avenue, Rockford, IL
REGION I EMERGENCY MEDICAL SERVICES

Region 1 Bylaws
Region 1 Policies and Procedures

As prepared by:

Dr. Jay MacNeal, EMSMD, Mercyhealth EMS System
Dr. Greg Conrad, EMSMD, Northwestern Medicine Kishwaukee Hospital EMS System
Dr. Daniel Butterbach, EMSMD, OSF Northern Region EMS System
Dr. Erin Rigert, EMSMD, OSF Northern Region EMS System
Dr. John Underwood, EMSMD, SwedishAmerican Hospital EMS System

Don Crawford, Mercyhealth EMS System
Anthony Woodson, Northwestern Medicine Kishwaukee Hospital EMS System
Susan L. Fagan, OSF Northern Region EMS System
Mark Loewecke, OSF Northern Region EMS System
James Graham, OSF Northern Region EMS System
Richard Robinson, SwedishAmerican Hospital EMS System

IDPH Approval: July, 2020
Date: June, 2020
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ARTICLE I  
Advisory Board Establishment and Member Appointments

The Illinois Department of Public Health Emergency Medical Services Region 1 Advisory Council (Advisory Council) is established pursuant to Section 3.25, 210 ILCS 50/et.seq of the Emergency Medical Services (EMS) Systems Act and Section 515.210 of the Emergency Medical Services and Trauma Center Code, 77 Illinois Administrative Code Part 515. The Advisory Council is composed of the following members approved by the Director of the Illinois Department of Public Health:

4 - One (1) EMS Medical Director from each of the EMS resource hospitals located in Region 1
4 - One (1) EMS System Coordinator from each of the EMS resource hospitals located in Region 1
3 - One (1) Trauma Medical Director from each of the Trauma Centers located in Region 1
3 - One (1) Trauma System Coordinator from each of the Trauma Centers located in Region 1
1 - One (1) Associate Hospital representative affiliated with a Region 1 EMS Resource hospital
1 - One (1) Participating Hospital representative located in Region 1
1 - One (1) representative from the highest volume EMS provider agency
4 - One (1) municipal EMS provider representative from each EMS resource hospital located in Region 1
4 - One (1) private EMS provider representative from each EMS resource hospital located in Region 1
1 - One (1) pediatric champion physician/EDAP representative from the EMS Region 1 PCCC hospital

26 - Total representatives as of 10/15/2018

Membership of the Region 1 EMS Advisory Council will be comprised of representatives from outlined agencies or organizations serving residents of Region

1. The agencies or organizations governing body or chief executive will appoint a representative to the council. Each member will have one vote; certain staff and others outlined are non-voting members.

2. Once the initial agency or organization representative is identified as Region 1 EMS Advisory Council member, their membership will be automatically renewed each year.
3. A member’s agency or organization by resolution of its governing body or corporation will submit written notice of its intent to withdraw from the Region 1 EMS Advisory Council.

4. The Executive Committee will schedule a meeting to review any application for membership to the Advisory Council and will refer for action all eligible applicants to a regular or special meeting of the full Advisory Council. Advisory Council will define potential value of applying agency to the existing organization. Applications will be acted upon within ninety (90) days of receipt of a request for membership. Applicants will be notified within 10 days of EMS Advisory Council action.

5. Openings due to resignation or removal will be filled as soon as possible as scheduled by the Region 1 EMS Advisory Council Chairperson.
ARTICLE II Officers

The Region 1 EMS Advisory Council/committees/subcommittees will rotate from its membership, every two years, one chairperson.

1. The Chairperson is a member of all standing committees and is responsible for:
   A. Calling all regular and special meetings of the Region 1 EMS Advisory Council.
   B. Presiding at all regular and special meetings. Robert’s Rules of Order will govern the procedures at all meetings of the Region 1 EMS Advisory Council in matters not otherwise governed by these Bylaws.
   C. Appointing all committees, task forces and special study groups.
   D. Working with the EMS Coordinator to prepare meeting agendas.
   E. Representing the Region 1 EMS Advisory Council to other groups and external organizations.
   F. Appointing the chairperson and additional members as needed for all committees.

2. The Region 1 Advisory Council EMS Coordinator is a member of the Region 1 EMS Advisory Council and subcommittees. The Advisory Council EMS Coordinator is responsible for:
   A. Coordinating all meetings of the Region 1 EMS Advisory Council
   B. Participating as an ex-officio member on all committees and subcommittees.
   C. Representing the Region 1 EMS Advisory Council to other groups and external organizations.
   D. Maintaining records of meetings
   E. Providing surveillance of national, state, regional, and local EMS issues, thereby keeping the Region 1 EMS Advisory Council members informed of potential impact.
   F. Assuring accurate recording of minutes from Region 1 EMS Advisory Council or other committee meetings.
   G. Providing other duties as assigned by the Region 1 EMS Advisory Council, and endorsed by the Illinois Department of Public Health.
3. The Region 1 EMS Coordinator is a member of the Region 1 EMS Advisory Council and subcommittees. The Region 1 EMS Coordinator will act in an advisory capacity providing guidance and information in all matters related to Region and State items and business.
ARTICLE III  Meetings and Voting

1. The Executive Committee will determine the Schedule of regular Region 1 EMS Advisory Council meetings. The chairperson, the Executive Committee, or a majority of the members expressing their desire to the chairperson in writing may call special meetings of the EMS Advisory Council. EMS Advisory committees, subcommittees, and task forces will meet as needed.

2. Regularly scheduled EMS Advisory Council meetings will be held quarterly. Special meetings of the Region 1 EMS Advisory Council will be held with written notice. The Advisory Council EMS Coordinator will ensure the timely mailing of the notices of Region 1 EMS Advisory Council meetings.

3. For Region 1 EMS Advisory Council meetings and special Region 1 EMS Advisory Council meetings, the agenda and location will be mailed/e-mailed no less than 48 hours in advance of the meeting. The EMS Chair will coordinate the development and distribution of the Region 1 EMS Advisory Council agenda with the Advisory Council EMS Coordinator. Emergency meetings of the Advisory Council may be convened with prior notice as soon as possible.

4. Business will be conducted by a quorum.

5. Except where indicated, the desired method for approving all business actions is through majority of the quorum (26 voting members, quorum is 13). A three-fourths of the quorum of the Council will be required to approve changes to Region 1 EMS Advisory Council membership or bylaws.

6. With advanced notice and approval of the chairperson members may attend via teleconference (or by phone). Should any votes be necessary all attending via teleconference must vote by a call of the roll. Region 1 Executive Council members should attend all meetings in person.

7. Any vote by proxy will be submitted in writing to the chairperson prior to the meeting being convened. The chairperson will notify all in attendance of any proxies presented for that meeting.

8. Executive committee and other sub-committee meetings may be held in closed session to discuss issues, ideas, and concerns.

9. No final action may be taken on public business in a closed session (5 ILCS 120/2).
ARTICLE IV  Standing EMS Advisory Council Committees

Executive Committee

1. The Executive Committee membership will include a Medical Director and EMS Coordinator from each participating EMS System in Region 1.

2. The Executive Committee will, in addition to those activities charged by the Region 1 EMS Advisory Council, be responsible for the following:
   a. Ensuring issues and charges to committees of the Region 1 EMS Advisory Council are addressed in a timely manner and provide monitoring of activities.
   b. Developing and reviewing Region 1 EMS Advisory Council agendas prior to Region 1 EMS Advisory Council meetings.
   c. Reviewing Committee recommendations.
   d. Reviewing and making recommendations on requests for Region 1 EMS Advisory Council membership and membership credentialing.
   e. Serving, with the input of others, as the nominating body for Region 1 EMS Advisory Council Representatives.
   f. Serving as the nominating body for the appointment of Committee chairpersons.
   g. Assigning issues or activities to committees in order to facilitate Region 1 EMS Advisory Council and committee action.
   h. Reporting to the Region 1 EMS Advisory Council, at regular meetings, a summary of previous meetings and activities.
   i. Design and write bylaw requirements for new Standing Committees or Sub-Committees.
   j. Voting for the Region 1 EMS Executive Committee will be completed by the EMS Medical Directors in person or by proxy. Three-quarters majority of all EMS Medical Directors is required to pass a vote.
ARTICLE V Review or Amendment of the Bylaws

Review of these Bylaws should occur as needed, as determined by the Executive Committee of the Region 1 EMS Advisory Council.

Amendments to Bylaws

1. Amendments to these Bylaws may be proposed by any member of the Region 1 EMS Advisory Council. A proposed amendment to these Bylaws must be submitted to the Executive Committee in writing.

2. Amendments to these Bylaws will become effective only after a regular or special meeting scheduled no less than thirty (30) days following the Region 1 EMS Advisory Council meeting where the amendment was introduced.

3. Amendments to the Bylaws must be approved by three-fourths of the quorum of the Region 1 EMS Advisory Council.
Policy: Resolving Regional or Inter-System Conflicts

Purpose:
Coordination of EMS in Region 1 is essential to providing optimal patient care. Should a conflict occur the following policy should be utilized to resolve the issue.

Process:
Generally, conflicts are addressed within an EMS agency or EMS System. Should a regional or inter-system conflict occur the following steps should be followed for resolution:

1. Any Region 1 provider or agency can bring issues to the Region 1 EMS Advisory Council and/or Executive Committee in writing or person.
2. All relevant information surrounding the issue in dispute is required to be provided to the Council. Issues related to EMS will be reviewed by the Region 1 Executive Committee. Issues related to trauma care may be referred to the Region 1 Trauma Committee as needed.
3. After resolution, the Region 1 EMS Executive Committee will respond to the dispute with the involved parties in writing on or before the next scheduled meeting. It is the responsibility of the Council Chairperson to initiate this written response.
4. If the Region 1 EMS Executive Committee is unable to resolve the issue the following will be sent to the IDPH Director per Section 515.230 of the Administrative Code:
   a. All relevant information surrounding the issue being disputed.
   b. A statement from the Region 1 EMS Executive Committee supporting their position; and the name, phone number and address of one person who should be contacted if further information is needed.
   c. A statement from the Region 1 Trauma Center Medical Director or Trauma Committee, whichever is applicable, supporting their position; and the name, phone number, and address of one person who should be contacted if further information is needed.
5. The IDPH Director will make a determination within 10 working days after receipt of the above information. The determination may be on or the other position or may be another option developed by the IDPH Director.
6. Once the determination is received from the IDPH Director it is the responsibility of the Chairperson of the Region 1 Executive Committee to share the determination with the other Committee members and the involved parties. The determination will be read into the Region 1 Executive Committee meeting minutes for the purpose of documentation of the resolution of the dispute.


Policy: Continuing Education

**Purpose:** To define the requirements for Continuing Education of EMS licensed providers in EMS Region 1. To identify the process of applying for Continuing Education hours in the Region, these hours need to be approved by EMS System and Illinois Department of Public Health.

**Required number of hours and renewal process:**

1. Region 1 EMS requires the following hours of continuing education to be completed in each 4 year renewal.
   a. 100 hours – Paramedic and PHRN
   b. 80 hours – EMT-Intermediate / Advanced EMT
   c. 60 hours - EMT
   d. 24 hours – First Responders / Emergency Medical Responders

2. All provider agencies that have in-house Continuing Education will maintain records that includes the following:
   a. Date
   b. Topic
   c. Site code if required
   d. List of those attending
   e. Total time of education

3. The provider agency will make these records available to their EMS System.

4. Each prehospital provider is responsible for keeping their own records and maintaining a copy of time accrued. The responsibility for completing Illinois Department of Public Health required Continuing Education hours in a timely manner rests fully with the individual.

5. First Responder, EMT-Basic, EMT-Intermediate, EMT-Paramedic, ECRN and Prehospital RN providers must submit renewal information to their EMS System. The System will then reviews Continuing Education for appropriateness and endorse the provider to Illinois Department of Public Health for license renewal. License renewal forms are available at your Systems EMS office.

6. Renewal requests are due at your System EMS office 30 days prior to expiration.

7. Each prehospital provider is responsible to complete the child support and conviction statement, as well as the appropriate fee to IDPH.

8. Requests for extensions will not be considered unless for illness or extreme circumstances.
Policy: Continuing Education

Approval of Hours:
The EMS Medical Director will determine if a particular didactic Continuing Education program is acceptable for credit within their EMS System. Approval for all hours rests with EMS System.

Required Breakdown of Hours:
Region 1 EMS requires the breakdown of hours in core content areas. The breakdown is as listed in the chart below. From January 2018 until January 2021, should a provider be unable to meet this requirement, the provider may document the hardship in writing to the EMSMD. The EMSMD will approve or deny the renewal on a case by case basis. After this January 2021 deadline this requirement must be met.

<table>
<thead>
<tr>
<th>CORE CONTENT</th>
<th>Paramedic</th>
<th>I/AEMT</th>
<th>EMT</th>
<th>FRD/EMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparatory</td>
<td>8</td>
<td>6</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Safety and well-being, Roles &amp; Responsibilities, Prevention, Legal, Ethical, A &amp; P, Medical Terminology, Pharmacology</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Airway Management &amp; Ventilation</td>
<td>12</td>
<td>10</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Patient Assessment</td>
<td>8</td>
<td>6</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Patient Assessment, History Taking, Communication, Documentation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trauma</td>
<td>12</td>
<td>10</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>MOI, Bleeding, Soft Tissue, Burns, Head, Face, Spine, Thoracic, Abdominal, Musculoskeletal, Environmental</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cardiology</td>
<td>16</td>
<td>13</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Medical</td>
<td>20</td>
<td>16</td>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>Respiratory, Nervous System, Endocrine, Immune System, GI, Renal, Toxicology, Infectious Diseases, Psychiatric Disorders, Substance Abuse</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Considerations</td>
<td>16</td>
<td>13</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Obstetrics, Gynecology, Neonatology, Abuse &amp; Assault, Patient with Special Challenges, Chronic Illness Patients</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operations</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Crime Scene, Vehicle Operations, Rescue Awareness and Operations, Haz Mat, Tactical EMS, Disaster Preparedness, Triage</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Additional hours may be from any of the topics or educational options</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>100</td>
<td>80</td>
<td>60</td>
<td>24</td>
</tr>
</tbody>
</table>
**Policy: Continuing Education**

**Required Education**
The following is a list of required education for each level of EMS provider:

1. **First Responder / Emergency Medical Responders**
   a. Current Health Care Provider CPR card (American Heart or Red Cross)

2. **EMT**
   a. Current Health Care Provider CPR card (American Heart or Red Cross)
   b. System Competencies – including skills validation and any required System education that may be needed

3. **EMT-I / AEMT**
   a. Current Health Care Provider CPR card (American Heart or Red Cross)
   b. ACLS (American Heart)
   c. PALS / PEPP (American Heart or American Academy of Pediatrics)
   d. PHTLS / ITLS / TNCC / TNS
   e. System Competencies – including skills validation and any required System education that may be needed

4. **Paramedic / PHRN**
   a. Current Health Care Provider CPR card (American Heart or Red Cross)
   b. ACLS (American Heart)
   c. PALS / PEPP (American Heart or American Academy of Pediatrics)
   d. PHTLS / ITLS / TNCC / TNS
   e. System Competencies – including skills validation and any required System education that may be needed

**Note:** any equivalent courses to the ones listed in the required education section above must have prior System approval. Some online courses have a certification card that looks equivalent, however they may not require any skills or testing – these will not be approved.

**Standard Documentation**
Documentation is required to validate the completion of all continuing education. All continuing education must be approved by the EMS Medical Director. The following should be noted to ensure that credit can be provided.

1. Courses that have an Illinois site code and/or a CAPCE number are approved for credit
2. Course completion cards may be submitted for approved courses.
3. Sign-in rosters for agency in-house training should have the following documented:
   a. Topic
   b. Date / time
   c. Signed by instructor or authorized person
4. Name of participant
5. Number of hours awarded – This needs to be actual hour for hour time, e.g. if a training session was pre-approved for 2 hours but only 1 hour was spent, 1 hour should be awarded.
**Policy: Continuing Education**

**Options for Accruing Didactic Hours:**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Documentation</th>
<th>Hours</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial education (Life Support courses):</strong> ABLS, ACLS, AMLS, EMPACT, ITLS, NRP, PALS, PEPP (ALS), PHTLS etc., CPR instructor</td>
<td>Standard documentation</td>
<td>Hr/Hr up to 16 hours for each course</td>
<td>May not exceed 20% of total hours for one subject area. Up to 50% of total hours may be earned by teaching participants at a lower level of licensure. Should be considered on a case by case basis for any topics in EMS education standards.</td>
</tr>
<tr>
<td>Advanced Trauma Life Support, Teaching EMS-related courses/CE, Wilderness EMS Training, TEMS, MIH Community PM, Critical Care PM</td>
<td>Standard documentation</td>
<td>Hr/Hr for EMS content of course</td>
<td></td>
</tr>
<tr>
<td><strong>Refresher/renewal education (Life Support courses):</strong> ABLS, ACLS, AMLS, EMPACT, ITLS, NRP, PALS, PEPP (ALS), PHTLS etc., CPR instructor</td>
<td>Standard documentation</td>
<td>Hr/Hr up to 8 hours</td>
<td></td>
</tr>
<tr>
<td>EMTs: PEPP (BLS) course</td>
<td>Standard documentation</td>
<td>Hr/Hr up to 8 hours</td>
<td></td>
</tr>
<tr>
<td><strong>Initial courses:</strong> CPR Instructor, Emergency Vehicle Operators course, Emergency Medical Dispatch course</td>
<td>Standard documentation</td>
<td>Hr/Hr up to 12 hours max</td>
<td></td>
</tr>
<tr>
<td><strong>Locally offered CE programs</strong></td>
<td>Standard documentation</td>
<td>Hr/Hr to max content hours</td>
<td>May not exceed 20% of total minimum required hours in one subject area</td>
</tr>
<tr>
<td>Audit of entry level EMT, AEMT, Paramedic courses</td>
<td>Standard documentation</td>
<td>Hr/Hr to max content hours</td>
<td>Unlimited hours if subject matter is at the appropriate level for the participant’s license. May not exceed 20% of total required hours in one subject area, e.g., cardiac, trauma, rescue, etc.</td>
</tr>
<tr>
<td><strong>Clinical preceptor or evaluator</strong></td>
<td>Signed letter from EMS Coordinator or lead instructor</td>
<td>Hr/Hr to max hours allowable</td>
<td>May not exceed 20% of total minimum required CE hours.</td>
</tr>
<tr>
<td>Emergency Preparedness</td>
<td>Written statement of participation from EMSC/EMSMD or exercise director.</td>
<td>Hr/Hr up to 12 hours (Paramedic/PHRN) 10 hours (EMT-I) 8 hours (EMT)</td>
<td>EMS personnel must be able to demonstrate an active participating role during the preparedness event, exercise or training.</td>
</tr>
<tr>
<td>Prevention Programs: Safe Kids, Drug Prevention, Community awareness, Prom Night</td>
<td>Written statement of participation from EMSC/EMSMD or exercise director.</td>
<td>Hr/Hr up to Max hours In content area</td>
<td>EMS personnel must be able to demonstrate an active participating role during the preparedness event, exercise or training.</td>
</tr>
<tr>
<td>Operations Topics: Rescue, Extrication, Hazardous Material, Helicopter Safety, Emergency Driving</td>
<td>Written statement of participation from EMSC/EMSMD or exercise director.</td>
<td>Hr/Hr up to Max hours In content area</td>
<td>EMS personnel must be able to demonstrate an active participating role during the preparedness event, exercise or training.</td>
</tr>
<tr>
<td>College courses: Health-related courses that relate to the role of an EMS professional (A&amp;P, assessment, physiology, biology, chemistry, microbiology, pharmacology, psychology, sociology, nursing/PA courses, etc.)</td>
<td>Catalog description of course and evidence of successful completion through minimum grade of C (official transcripts or evidence from school)</td>
<td>Hr/Hr 1 college credit = 8 CEU</td>
<td>May not exceed 20% of total hours for one subject area. Should be considered on a case by case basis for any topics in EMS education standards.</td>
</tr>
<tr>
<td>Activity</td>
<td>Documentation</td>
<td>Hours</td>
<td>Comment</td>
</tr>
<tr>
<td>----------</td>
<td>---------------</td>
<td>-------</td>
<td>---------</td>
</tr>
<tr>
<td><strong>Seminars/Conferences: EMS related education approved by CECBEMS or medical or nursing accrediting body</strong></td>
<td>Copy of agenda/program plus certificate of attendance</td>
<td>Hr/Hr up to max content hours</td>
<td>May not exceed 20% of total minimum required hours in one subject area, e.g., cardiac, trauma, rescue, etc.</td>
</tr>
<tr>
<td><strong>Commercial CE: Electronic digital media (e.g. videotapes/CDs), journal articles with publication dates of 5 years or less prior to the date of CE completion. Approved by CECBEMS or medical or nursing accrediting body</strong></td>
<td>Standard documentation</td>
<td>Hr/Hr up to max content hours</td>
<td>May not exceed 20% of total minimum required hours in one subject area, e.g., cardiac, trauma, rescue, etc.</td>
</tr>
<tr>
<td><strong>Trauma Nurse Specialist or TNS Review Courses:</strong> May audit for CE with prior approval of TNS Course Coordinator to ensure space availability</td>
<td>Standard documentation</td>
<td>Hr/Hr up to max content hours</td>
<td>May not exceed 20% of total minimum required hours in one subject area. Course covers multiple areas of A&amp;P, fluid &amp; electrolytes, acid base balance, shock pathophysiology and systems trauma appropriate for PMs and PHRNs for full credit.</td>
</tr>
<tr>
<td><strong>ECRN Course (apart from Life Support courses):</strong> May audit for CE with prior approval of Course Lead Instructor to ensure space availability</td>
<td>Standard documentation</td>
<td>Hr/Hr up to max content hours</td>
<td>May not exceed 20% of total minimum required hours in one subject area. Course may cover multiple across the spectrum of EMS appropriate for PMs and PHRNs for full credit</td>
</tr>
<tr>
<td><strong>On-line options</strong> Webinars and on-line offerings with subject matter found in the EMS Education Standards [e.g. sponsored by a governmental agency (infectious diseases, emergency preparedness) legal experts (documentation HIPAA) organizations or commercial offerings].</td>
<td>Standard documentation</td>
<td>Hr/Hr up to max content hours</td>
<td>May not exceed 20% of total minimum required hours in one subject area,</td>
</tr>
</tbody>
</table>

**Assigning hours into core content area**

All education should be documented into core content areas to ensure proper credit is given. These core content areas are listed in the Required Breakdown Chart above. Some courses or training sessions may fall into several core content areas, hours may be divided into these different areas. The assigning of hours to core content areas is subject to your Systems approval. Following is a list of examples/preapproved assignment of courses:

1. ACLS Renewal – 8 hours in cardiac or 6 hours cardiac 1 hour airway and 1 hour pharmacology
2. PALS Renewal - 8 hours in pediatric or 6 hours pediatric 1 hour airway and 1 hour pharmacology
3. PHTLS Renewal – 8 hours in trauma or 7 hours trauma 1 hour airway
4. CPR Renewal – 4 hours in cardiac or 3 hours cardiac 1 hour airway
5. System annual skills validation cover a variety of topic over the core content areas, they are considered “Wild card” and may be assigned to any of the core content areas.
Policy: Protocol for Disbursement of IDPH Department Grants

**Purpose**
To provide equal opportunity and instructions for application by Region 1 EMS Agencies for EMS Assistance Funds Grants, when available.

**Process**
1. When EMS Assistance Grants are available the Region 1 EMS Coordinators will forward information to their agencies including all appropriate deadlines and parameters.
2. The EMS Agency will complete the application as defined in 515.3000 of the Administrative Code.
3. Incomplete applications will not be considered.
4. The Region 1 EMS Coordinators, or their designee, prioritize the completed applications.
5. The Chairperson of the Region 1 Executive Committee, or designee, forwards the prioritized list to IDPH in the prescribed manner.
6. When the recipients of the grant are announced the agencies will be notified by IDPH.
7. Questions regarding any agency application should be directed to the agency’s EMS System Coordinator.
## REGION I EMERGENCY MEDICAL SERVICES
### Region 1 Policy

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**Policy: Medical Control**

### Purpose
To provide a definition of who can provide Medical Control to Region 1 EMS providers or agencies.

### Process

1. Region 1 EMS Systems have the responsibility and authority to provide Medical Control for their providers.
2. Medical Control is defined as an Emergency Department Physician (including MD-1) or licensed ECRN.
   a. Emergency Department Physicians may provide direction in the provider’s scope of practice.
   b. ECRN’s may provide directions as outlined in the Region 1 SMO’s.
   c. Should another individual be approved by a receiving hospital to answer the radio/ inbound report they must call the physician or ECRN should orders be necessary or given.
3. Region 1 has an inter-system agreement on providing Medical Control.
   a. Medical Control may come from the EMS System or receiving hospital.
   b. In order for the receiving hospital to function as Medical Control they must be a Resource, Associate, or Participating that has been approved by their EMS System and IDPH.
   c. All Medical Control directions must be recorded.
4. The Resource for a provider or agency has the authority to override medical direction as needed.
5. Any concerns or conflicts should be referred to the Region 1 Executive Committee.
Policy: EMS Patient Care Reports

Purpose: To ensure that all required documentation occurs when services are provided by a Region One EMS provider.

Overview: Documentation of patient contacts and care is a vital aspect of assuring continuity of care, providing a means of quality assurance and historical documentation of the event. It is just as important as the care itself and should be an accurate reflection of the events that transpired. When a Region 1 EMS provider interacts with a patient, documentation will occur. It is imperative that written documentation is left with the patient at the receiving facility.

Patient Care Reports:

1. A patient care report (PCR) will be accurately completed for each patient interaction. This includes EMS responses (emergency and non-emergency) in which patient contact is made.
2. All EMS personnel who participate in patient care or assessment will be listed on the patient care report, as well as the interventions or assessments he or she performed.
3. Ideally, a PCR will be completed in its entirety and provided to the receiving facility immediately after transferring care to the ED staff and prior to departing the hospital. The PCR left will be in full compliance with Region 1 policies, IDPH rules and regulations, and NEMSIS rules and regulations.
4. If a PCR cannot be completed prior to departing the ED, then a Region 1 Short/Non-Transport Form (Appendix B) must be fully completed and left with the ED staff.
5. If the Short/Non-Transport Form is utilized the PCR should then be completed and sent (faxed or electronically) within 2 hours of completion of the call.
6. Each agency who utilized the Short/Non-Transport Form must keep a log of when they used it, which patient they used it for, the date of the transport, the time they left the Short Form at the hospital, and the time they submitted the PCR to the hospital. This form will be submitted to the agency’s EMS Coordinator on a monthly basis.
7. Each Resource Hospital will submit this information to IDPH on a monthly basis including any QI conducted as part of any run report reviews.
8. If an agency repeatedly violates this policy regarding the use of the Short Form the utilization of the Short Form will no longer be an option for that agency. Suspension or termination of use will be determined by the EMSMD for that agency and details will be provided to that agency in writing.
9. Non-transport agencies and non-emergency transports must have a PCR completed within 24 hours.
10. Documentation must be completed on a Region 1 approved electronic documentation system or approved Region 1 forms.
11. Responsibility for completing the PCR rests with the crew members listed on the report. Failure to leave written documentation and agencies and/or personnel failing to comply with documentation requirements can be considered falsification of a medical record and may result in a formal investigation by the EMS Medical Director and/or IDPH.
12. All EMS assists and refusals where patient contact is made will have an electronic PCR completed including all necessary signatures.
13. In cases of MCI, an electronic PCR may impede turnaround time of necessary resources. If not requested back to the scene of an MCI, a PCR will be completed.
14. Copies of all PCR’s must be provided to your respective Region 1 EMS Office.

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**Medical Control Contact Criteria**

When utilizing the I Region 1 – Patient Care Report Short Form if any discrepancy or significant omission of information is noted by the crew when filling out the full run report, they are to contact the receiving ED by phone and fax the additional information to the ED.

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Purpose: A Special Event Form is to be completed as an amendment to an existing EMS System Plan by an ambulance provider who will be providing coverage at a specific event when the coverage will change the normal response pattern of the provider. This form with attachments, if appropriate, should be submitted to the EMS System Office ideally 60 days prior to the event. The form will be filed in the EMS System Office and will be sent to the Illinois Department of Public Health if requested.

Process: A copy of the Special Events Form and the items required by the EMS System for each level of care can be found on the IDPH Department of EMS website or requested from the EMS System Office, titles Emergency Medical Services (EMS) Systems Special Events Request Application.

Special event resources may include:

1. Assist Vehicles included, but not limited to:
   a. Bicycle
   b. Boat
   c. Fire/EMS Apparatus
2. Transport/Non-Transport Vehicle Assist
3. Advanced Life Support Transport Vehicles
Policy: Vehicle Staffing Requirements

Purpose: To identify minimum acceptable staffing patterns for all Region 1 EMS vehicles.

Method of Providing EMS Services:
EMS Services in Region 1 may be provided by a variety of methods:

1. Single vehicle response and transport:
   - EMS response and transport is provided by one EMS agency.

2. Dual vehicle response:
   - EMS response includes non-transport and/or transport by:
     1. A single EMS agency
     2. Multiple EMS agencies

3. Level of first response vehicle:
   A. Ambulance Assist Vehicles
      1. Ambulance assist vehicles are dispatched simultaneously with an ambulance to assist with patient care prior to arrival of the ambulance. The vehicle will not be a transport or primary response vehicle. These vehicles will not function as an assist vehicle if staff and equipment are not available.
      2. Emergency Medical Responder/First Responder ambulance assist vehicle staffed with a minimum of one Emergency Medical Responder/First Responder (or higher level).
      3. Basic ambulance assist vehicle staffed with a minimum of one EMT (or higher level).
      4. Advanced EMT/ILS ambulance assist vehicle staffed with a minimum of one Intermediate (or higher level).
      5. ALS ambulance assist vehicle staffed with a minimum of one paramedic or one PHRN.
   B. Non-Transport Vehicles
      1. Non-transport vehicles are dispatched prior to the dispatch of the transporting ambulance. These vehicles will be staffed 24-hours per day every day of the year.
      2. Basic ambulance assist vehicle staffed with a minimum of two EMTs (or higher level).
      3. Advanced EMT/ILS ambulance assist vehicle staffed with a minimum of one Intermediate (or higher level) and one EMT level or higher.
      4. ALS ambulance assist vehicle staffed with a minimum of one paramedic or one PHRN and one EMT level or higher.
4. Level of transport vehicle:
   A. Ambulance Basic Life Support:
      All Basic Life Support vehicles are to be staffed 24 hours a day, 365 days a year with one of
      the following (drivers may be used anytime, but not in place of EMT staff):
      1. Minimum requirement - two (2) EMT-Basics, licensed appropriately per Illinois Department
         of Public Health.
      2. Vehicle can be staffed with higher level providers, such as A-EMT/Intermediate, Paramedic,
         or PHRN, but they cannot function beyond the ambulance license level unless in the
         situation of Infield Upgrade.
   
   B. Ambulance Intermediate Life Support:
      All Intermediate Life Support vehicles are to be staffed 24 hours a day, 365 days a year with
      one of the following (drivers may be used anytime, but not in place of EMT staff):
      1. Minimum requirement - one A-EMT/Intermediate and one EMT (or higher level) licensed
         appropriately per Illinois Department of Public Health.
      2. Vehicle can be staffed with higher level providers, such as A-EMT/Intermediate, Paramedic,
         or PHRN, but they cannot function beyond the ambulance license level unless in the
         situation of Infield Upgrade

   C. Ambulance Advanced Life Support:
      All Advanced Life Support vehicles are to be staffed 24 hours a day, 365 days a year with one
      of the following (drivers may be used anytime, but not in place of EMT staff):
      1. Minimum requirement – one Paramedic or PHRN and one EMT (or higher level) of any level
         licensed appropriately per Illinois Department of Public Health.
      2. Vehicle can be staffed with higher level providers, such as Paramedic or PHRN, but they
         cannot function beyond the ambulance license level unless in the situation of Infield Upgrade.

5. In-Field service level upgrade, using advanced level EMS vehicle service providers.
   A. When a lower level agency calls for an advanced level agency for assistance the advanced level
      provider may transfer all appropriate equipment and function at the higher level of care.
   B. The advanced level provider/agency will assume primary responsibility for care when they
      arrive and report is given.
   C. Should the two agencies be in different systems the advanced level provider/agency becomes
      the primary system for the response.
6. Ambulance service provider and vehicle service provider – rural population.
   A. A rural provider may upgrade as defined by their EMS System and approved by IDPH.
   B. Advanced equipment/medications must be secured per EMS System policies.

7. Alternate Rural Staffing/Alternate Response Authorization
   A. Providers that serve rural or semi-rural populations of 10,000 or less may be approved by EMS System and IDPH for alternate rural staffing.
   B. If approved for alternate rural staffing, the vehicle may be staffed with one licensed personnel at the level of the vehicle and one EMR/First Responder.

8. Use of mutual aid agreements.
   A. Mutual aid agreements may be agreements between agencies or the formal MABAS agreements.
   B. Mutual aid may be utilized for large events or multiple calls/multiple patients to provide the best patient care.
   C. To function on an EMS vehicle the individual provider should be listed on that agency’s roster and approved to function in that agency’s EMS System. In unusual or non-typical situations it may be in the patients’ best interest to utilize an EMS provider from another agency and/or EMS System. This option should only be utilized in unusual or non-typical situations and the out-of-system provider is responding under a mutual-aid agreement and the EMS provider is in good standing in the neighboring/mutual aid agency and/or EMS System.

9. In the event a caller requests the estimated time of arrival of an emergency vehicle the information will be shared with the caller using the best estimate available.

10. Staffing Waivers:
    A. In the event an EMS Agency believes a staffing waiver may be necessary they should discuss this potential need with their EMS System Coordinator/EMS Medical Director to determine the best course of action.
    B. Staffing Waivers may be approved by the EMS Medical Director. Waivers are completed and sent to Illinois Department of Public Health (on WVRI/95) for final approval. Illinois Department of Public Health will approve the waiver if it determines there is no reduction in the quality of care established by the EMS Act and/or if full compliance with the regulation in the Act at issue would constitute a hardship for the applicant.
    C. Anytime that a service cannot meet its staffing obligation due to extenuating circumstances, please contact the EMS System at once to review the problem and, if applicable, complete a staffing waiver.
POLICY: Student Clinical / Internship Agreement

Overview:
Each Region 1 EMS System, as part of its emergency medical services education and training program, wants to offer its students, through a clinical / internship program, the opportunity to receive supplemental clinical experience at other Region 1 EMS facilities.

1. The EMS Systems hope to jointly benefit by improving the students’ education through professional preparation.

2. The EMS Systems intend to structure the requirements for an educational internship in such a way as to ensure the safety and well-being of the patients, students, and organizations involved.

EMS Systems agree to the following:
1. Duties of Supplemental Clinical Experience Facility. The EMS System that receives emergency medical services students, for the purpose of providing to those students a supplemental clinical experience at its facility from the EMS System at whose facility the students primarily receive instruction and training will:

   a. The liaison between the Supplemental Clinical Experience Facility and the Primary Instructional Facility will be the Lead Instructor for the course unless otherwise designated.

   b. Maintain a curriculum that complies with the National Educational Standards for Emergency Medical Services published by the National Highway Traffic Safety Administration and the testing and licensure requirements of the Illinois Department of Public Health.

   c. Paramedic education follows all guidelines/standards as prescribed by CoAEMSP/CAAHEP accredited program.

   d. Permit students to use all facilities, equipment, and supplies used in the Supplemental Clinical Experience Facility’s ordinary course of business.
Policy: Student Clinical – Internship

2. Primary Instructional Facility Duties. The Primary Instructional Facility will:

a. Maintain a curriculum that complies with the National Educational Standards for Emergency Medical Services published by the National Highway Traffic Safety Administration and the testing and licensure requirements of the Illinois Department of Public Health.
b. Ensure the effective flow of communication between instructors and unit managers and preceptors for the purpose of providing feedback for improvement through prompt notice to the Supplemental Clinical Experience Facility of irregularities found in student evaluation forms.

c. Ensure that students and faculty comply with all applicable Supplemental Clinical Experience Facility policies and procedures.

d. Ensure that students use the Supplemental Clinical Experience Facility’s equipment and materials in a manner consistent with standard industry practice;

e. Maintain proof that all students have obtained the following:
   1. TB Test – Testing for tuberculosis is performed through a blood draw or two-step skin test.
   2. Immunizations –
      a. Mumps, measles and rubella x 2 or positive titers
      b. Tdap, which includes diphtheria, tetanus and pertussis
      c. Varicella (Chicken Pox) times 2 or positive titer
      d. Influenza (or mask during designated flu season)
   3. Hepatitis B – the vaccination series is strongly recommended but not required. If you choose not to have this you must sign a waiver.
   4. Urine Drug Screen – Per EMS System the Program Director reserves the right to conduct urine drug screen testing.

f. Maintain proof that all students have current professional liability insurance (this may be person or institutional).
g. Complete a background check and notify the Supplemental Clinical Experience Facility of any potential barriers to a student for course completion and/or licensure.

h. Maintain proof to the Supplemental Clinical Experience Facility that all students have health insurance that covers the care and treatment of emergency medical conditions, or a signed waiver of responsibility that provides that the student is responsible for any cost associated with care received.

i. Require students to display photo identification at all times while on the Supplemental Clinical Experience Facility’s premises;

j. Remove, upon request by the Supplemental Clinical Experience Facility: (i) any student whose performance is unsatisfactory, in the Supplemental Clinical Experience Facility’s sole discretion, after the Supplemental Clinical Experience Facility has given written notice to the student and allowed such student ten (10) days to cure the unsatisfactory condition; (ii) any student who knowingly violates any Supplemental Clinical Experience Facility policy or procedure, as provided to the Primary Instructional Facility pursuant to Section 2(c) of this Agreement; or (iii) any student who, due to a health condition, cannot satisfy the requirements of the internship program;

k. Take reasonable steps to ensure that its employees and agents, in performing the Primary Instructional Facility’s duties pursuant to this Agreement, comply with all Federal and State laws and regulations regarding the confidentiality of protected health information, as defined by the Health Insurance Portability and Accountability Act of 1996, as amended (“HIPAA”); and

l. Ensure that all students, prior to beginning clinical education on the Supplemental Clinical Experience Facility’s premises, satisfactorily complete a life safety training course.
PURPOSE
To provide instructions for the exchange of medications and equipment at Region 1 Resource Hospitals

PROCESS
1. Each Region 1 hospital will have their own policy regarding the exchange of medication and equipment for restocking of supplies that are provided to patients during transport to their hospital. This includes all Resource, Associate, and Participating hospitals in the Region.

2. If at all possible all medications should be replaced using the recommended concentrations on the Region 1 Restocking Form (Appendix C).

3. Medications utilized during transport will be restocked at the receiving hospital. If the medication is not available at the receiving hospital the EMS agency will contact their Resource Hospital for replacement and provide appropriate documentation (patient care report) in order to receive the replacement medication.

4. Any billing for medications or equipment is conducted between the EMS agency and the receiving hospital.
REGION I EMERGENCY MEDICAL SERVICES
Region 1 Policy

POLICY: Prehospital RN (PHRN)

Prehospital RN (PHRN),
Prehospital Advanced Practice Register Nurse (PHAPRN)
Prehospital Physician Assistant (PHPA):
Education, Certification and Recertification

I. DEFINITIONS

A Prehospital Registered Nurse (PHRN) is a registered professional nurse licensed under the Illinois Nursing Act who has successfully completed supplemental education in accordance with rules adopted by the Department pursuant to the Act and who is approved by an EMS Medical Director (EMS MD) to practice within an EMS System as emergency medical services personnel for pre-hospital and inter-hospital emergency care and non-emergency medical transports” (Section 3.80 of the Act). This individual was formerly called a Field RN.

A Prehospital Advanced Practice Registered Nurse (PHAPRN) is an advanced practice registered nurse licensed under the Nurse Practice Act who has successfully completed supplemental education in accordance with rules adopted by the Department pursuant to this Act, and who has the approval of an EMS Medical Director to practice within an EMS System as emergency medical services personnel for pre-hospital and inter-hospital emergency care and non-emergency medical transports (Section 3.80 of the Act).

A Pre-Hospital Physician Assistant (PHPA) is a physician assistant licensed under the Physician Assistant Practice Act of 1987 who has successfully completed supplemental education in accordance with rules adopted by the Department pursuant to this Act, and who has the approval of an EMS Medical Director to practice within an EMS System as emergency medical services personnel for pre-hospital and inter-hospital emergency care and non-emergency medical transports (Section 3.80 of the Act).

For the purpose of this policy when PHRN is used, PHAPRN and PHPA will also apply.
II. POLICY

A. All persons that wish to be licensed as a PHRN must demonstrate the same minimum mastery of cognitive objectives and psychomotor skills as set forth in the U.S. National EMS Education Standards for Paramedics.

B. The process of credentialing specifically involves the verification by an EMSMD that the PHRN provider possesses required competencies in the domains of cognitive, affective, and psychomotor abilities.

C. Authorization to practice is a function of state licensure and local credentialing by the EMSMD.

D. Illinois EMS Rules require a PHRN candidate to complete an education curriculum formulated by an EMS System and approved by IDPH, which consists of classroom and practical training for both the adult and pediatric populations, including extrication, telecommunications, and prehospital cardiac and trauma care (Section 3.80(c)(1)(A) of the Act). They must also complete a supervised field internship as authorized by the EMS MD.

III. PROCEDURE

Nurses desiring to be approved as a PHRN shall complete the following:

A. Prerequisites

1. Registered nurse with current Illinois license in good standing in accordance with the Illinois Nurse Practice Act (PROFESSIONS, OCCUPATIONS, AND BUSINESS OPERATIONS (225 ILCS 65/) Nurse Practice Act (225 ILCS 65/Art. 60 heading);
2. Current healthcare provider CPR card through the AHA or a recognized affiliate;
3. Minimum of two year clinical practice in emergency or critical care nursing; and
   a. Current AHA* - ACLS (or equivalent) provider certification
   b. Current AHA* - PALS (or equivalent) provider certification
   c. Current AHA* - BLS (or equivalent) provider certification
   (*Equivalent AHA course must have written and skills testing component)
   d. Current Trauma provider certification (PHTLS, ITLS, TNS, TNCC)
4. Written approval to ride with for field internship purposes, or evidence of employment by, an approved Region 1 ALS Provider Agency.
5. Liability insurance coverage
6. Healthcare insurance coverage or signed waiver
7. System approved drug screening and immunizations
8. Criminal background check, any potential barrier to licensure or participating in clinical experience must be addressed by Program Director and EMSMD

Original Policy Date: 03/20
Reviewed: 06/20
Last Revision: 03/20
B. Didactic component

1. Certain principles required for prehospital ALS practice are not included in an RN's education program, so must be obtained and mastered through the PHRN or a Paramedic course. These topics include, but may not be limited to:
   a. Introduction to EMS; roles and responsibilities of EMS personnel
   b. Medical/legal issues in EMS; EMS communications
   c. Documentation using the Prehospital patient care reporting system
   d. Regional / System Standing Medical Orders
   e. ALS interventions.
   f. Scene control and patient assessment in the prehospital environment; including specific prehospital stroke, STEMI and trauma assessments
   g. Application of sensors and interpretation of capnography waveforms and numeric results.
   h. Invasive airway adjuncts and EMS oxygen delivery devices
   i. Cardiac monitoring (including interpretation of 12L ECGs) and dysrhythmia management; prehospital cardiac arrest management
   j. Pleural decompression
   k. Prehospital childbirth, newborn resuscitation
   l. Ambulance Operations - Hazardous materials awareness; rescue techniques; Patient access and conveyance options; Incident command system and triage
   m. System policies.

C. Psychomotor component

1. PHRN students must complete all mandatory skill competency labs/exams. Mandatory skill competencies include, but may not be limited to:
   a. Assessment: Adult, pediatric, and infant
   b. Airway access: Manual opening; NPA, OPA, suction; obstructed airway maneuvers; oral endotracheal, sedation, DSI, in-line, digital, and nasal intubation; Supraglottic airway, needle and surgical cricothyrotomy.
   c. Oxygen delivery/ventilatory support: Use and maintenance of portable O2 cylinders; NC, NRM, CPAP, BVM; SpO2 and capnography monitoring
   d. Cardiovascular support: Peripheral venous & intraosseous access; infusions, cardiac monitoring using 3 and 12 leads; cardioversion, defibrillation, transcutaneous pacing; and code management
   e. Drug administration techniques used in Regional / System SMOs
   f. Spinal Restriction: KED, helmet removal, splinting techniques: limb splints, traction splints,
   g. Misc.: Capillary glucose monitoring, pleural decompression, use of restraints, etc.
D. Hospital clinical component
All students must complete or show clinical experience/proficiency of all clinical experiences listed in the EMS Systems Paramedic course curriculum. All students requesting credit for prior clinical experiences must request this in writing, any credit may be approved by the EMSMD on a case by case determination.

E. Capstone Field Internship
PHRN students shall complete the same System prehospital internship requirements as paramedic students with an approved ALS provider.

F. PHRN testing:
Applicants must successfully complete all didactic requirements including paramedic course final written and practical exams.

G. Terminal Competency and PHRN recognition:
1. Applicants must successfully complete all didactic requirements including paramedic course final written and practical exams.
2. Terminal Competency, which indicates readiness to sit for state or national exam, includes:
   a. Completion of the didactic portion of the course.
   b. In-House Clinical completed.
   c. Capstone Field Internship completed.
   d. Letter from Preceptor.
   e. Student reviewed and approved by Program Director and EMS Medical Director.
3. When the above terminal competencies are met the EMSMD shall approve the PHRN candidate to take the State/National Assessment Paramedic exam.
4. Successful completion of the State/National Assessment Paramedic exam shall constitute a recommendation to license them as a PHRN in Illinois.

H. Records maintenance:
A PHRN shall notify their EMS System(s) and IDPH within 30 days after any change in name, affiliation, or address per local policy.

I. 77 Ill Adm.
Code 515.190(c) requires “all licensees and certificate and permit holders under the Act shall report all new felony convictions to the Department within seven days after conviction. Convictions shall be reported by means of a letter to the Department”.

Original Policy Date: 03/20
Reviewed: 06/20
Last Revision: 03/20
J. PHRN recertification:
Recertification is required every four years. A PHRN shall maintain their credential in the same manner as a Paramedic.

K. Certificate expiration:
The certificate of a PHRN who has failed to file an application for renewal shall terminate on the day following the expiration date shown on the license.

L. Requests for extension:
Recognition as a PHRN may be extended by IDPH only when appropriate documents substantiating hardship is provided in writing accompanied by a recommendation from the EMS MD. To request an extension, complete and submit the IDPH EMT Extension Form to their EMS System office for processing with IDPH.

M. Inactive Status:
Prior to the expiration of the current approval, a PHRN may request to be placed on inactive status. The request shall be made in writing on the IDPH Inactive/Reactivation Form. Submit the form to the local Resource Hospital EMSS office for review and processing with IDPH. The form shall contain a statement that explains the reasons for requesting inactive status and must be accompanied by the current PHRN license (copies not accepted by IDPH). IDPH will review and grant or deny requests for inactive status. If approved, the nurse may not function as a PHRN.
PHRN Student Clinical Experience Requirements – Credit for Previous Experience
(Template for System)

All students must complete or show clinical experience / proficiency of all clinical experiences listed in the EMS Systems Paramedic course curriculum. All students requesting credit for prior clinical experiences must request this in writing. All credit must be approved by the EMSMD on a case by case determination.

Students Name: ___________________________________________ Date: _______________________

Course Location: __________________________________________ Site Code: ___________________

System clinical requirements for Paramedic / PHRN course:

1. Emergency department - ____ hours
2. OR (intubation) - _____ hours/ _____ intubations
3. OB - _____ hours
4. Pediatric - _____ hours
5. Intensive Care Unit - _____ hours
6. Respiratory - _____ hours
7. Other __________________- _____ hours
8. Capstone Field Internship – _____hours/ _____ ALS runs/ _____ BLS runs

I am requesting credit for prior clinical experiences. Attached is documentation stating the requested credit and supporting documentation outlining previous clinical experience / proficiency.

The following credit for previous clinical experience / proficiency has been approved:

_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________

EMS Coordinator (signature & date) ____________________________________________
EMSMD (signature & date) ____________________________________________
Appendix A – Region 1 Short/Non-Transport Form
Appendix B – Region 1 Short/Non-Transport Form Log

<table>
<thead>
<tr>
<th>Date of Transport</th>
<th>Receiving Hospital</th>
<th>Time Call Ended</th>
<th>Time Report Sent</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Each agency that uses the Short Form must forward this log to their EMS System monthly.
### MEDICATIONS: Region I Medication Restocking Form

**Patient Name:**

**Account Number:**

**Agency:**

**Ambulance Number:**

**Signature:**

**Resource Hospital 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</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>
<td></td>
</tr>
<tr>
<td>Aspirin Chewable</td>
<td>81 mg Tablet</td>
<td>648 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atropine Sulfate</td>
<td>1 mg/10 ml Syringe</td>
<td>4 mg</td>
<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/500 ml 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>
<td></td>
</tr>
<tr>
<td>Diazepam</td>
<td>Valium</td>
<td>10 mg/2 ml Syringe</td>
<td>30 mg (30 mg max)</td>
<td></td>
</tr>
<tr>
<td>Diphenhydramine</td>
<td>Benadryl</td>
<td>50 mg/ml Vial</td>
<td>100 mg</td>
<td></td>
</tr>
<tr>
<td>Dopamine</td>
<td>Intropin</td>
<td>400 mg/250 ml Bag</td>
<td>400 mg</td>
<td></td>
</tr>
<tr>
<td>Epinephrine</td>
<td>Epi Pen</td>
<td>0.3 mg/0.3 ml Auto Injector</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Epinephrine</td>
<td>Adrenalin</td>
<td>1 mg/ml Vial</td>
<td>2 mg</td>
<td></td>
</tr>
<tr>
<td>Epinephrine</td>
<td>Adrenalin</td>
<td>30 mg/30 ml Vial</td>
<td>30 mg</td>
<td></td>
</tr>
<tr>
<td>Epinephrine</td>
<td>Epi Pen Jr</td>
<td>0.15 mg/0.3 ml Auto Injector</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Epinephrine</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>
<td></td>
</tr>
<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>Purosemide</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>
<tr>
<td>Ipratropium</td>
<td>Atrovent</td>
<td>0.5 mg/2.5 ml Neb</td>
<td>2 mg</td>
<td></td>
</tr>
<tr>
<td>Ketamine IM</td>
<td>Ketalar</td>
<td>500 mg/5 ml Vial</td>
<td>500 mg (max 500 mg)</td>
<td></td>
</tr>
<tr>
<td>Ketamine IV</td>
<td>Ketalar</td>
<td>200 mg/20 ml Vial</td>
<td>200 mg (200 mg max)</td>
<td></td>
</tr>
<tr>
<td>Ketroxolac</td>
<td>Toradol</td>
<td>15 mg/ml Vial</td>
<td>45 mg</td>
<td></td>
</tr>
<tr>
<td>Lidocaine 2%</td>
<td>Xylocaine</td>
<td>100 mg/5 ml Syringe</td>
<td>300 mg</td>
<td></td>
</tr>
<tr>
<td>Lorazepam</td>
<td>Ativan</td>
<td>2 mg/ml Vial/Syringe</td>
<td>8 mg (30 mg max)</td>
<td></td>
</tr>
<tr>
<td>Quantity</td>
<td>NAME: Generic</td>
<td>NAME: Trade</td>
<td>Strength and unit of use</td>
<td>Recommended Par Level/Max</td>
</tr>
<tr>
<td>----------</td>
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<td>-------------</td>
<td>--------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>Magnesium Sulfate</td>
<td>MgSO₄</td>
<td>2 GM/50 ml</td>
<td>2 GM</td>
<td></td>
</tr>
<tr>
<td>Methylprednisolone</td>
<td>Solu-Medrol</td>
<td>125 mg/2 ml Act-O-Vial</td>
<td>125 mg</td>
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<tr>
<td>Metoprolol Tartrate</td>
<td>Labetalol</td>
<td>5 mg/5ml Vial</td>
<td>15 ml</td>
<td></td>
</tr>
<tr>
<td>Midazolam</td>
<td>Versed</td>
<td>5 mg/ml Vial</td>
<td>30 mg (30 mg max)</td>
<td></td>
</tr>
<tr>
<td>Morphine Sulfate</td>
<td></td>
<td>10 mg/ml Syringe</td>
<td>20 mg (20 mg max)</td>
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<tr>
<td>Naloxone</td>
<td>Narcan</td>
<td>2 mg/2 ml Syringe</td>
<td>16 mg</td>
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<tr>
<td>Nitroglycerin</td>
<td>Nitrostat</td>
<td>0.4 mg SL Tablet</td>
<td>2 bottles</td>
<td></td>
</tr>
<tr>
<td>Ondansetron</td>
<td>Zofran</td>
<td>4 mg/2 ml Vial</td>
<td>8 mg</td>
<td></td>
</tr>
<tr>
<td>Ondansetron</td>
<td>Zofran OD T</td>
<td>4 mg OD T</td>
<td>8 mg</td>
<td></td>
</tr>
<tr>
<td>Oral Glucose</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rocuronium</td>
<td>Zemuron</td>
<td>10 mg/ml Vial</td>
<td>150 mg (150 mg max)</td>
<td></td>
</tr>
<tr>
<td>Sodium Bicarbonate</td>
<td>NaCHO₃ 8.4%</td>
<td>50 meq/50 ml Syringe</td>
<td>150 meq</td>
<td></td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>NaCl 0.9%</td>
<td>10 ml Syringe</td>
<td>100 ml</td>
<td></td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>NaCl 0.9%</td>
<td>100 ml Sealed bag</td>
<td>200 ml</td>
<td></td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>NaCl 0.9%</td>
<td>1000 ml Bag</td>
<td>1000 ml</td>
<td></td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>NaCl 0.9%</td>
<td>1000 ml Bag</td>
<td>2000 ml</td>
<td></td>
</tr>
<tr>
<td>Succinylcholine</td>
<td>Anectine</td>
<td>200 mg/10 ml Vial</td>
<td>200 mg (400 mg max)</td>
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</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>
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</tr>
<tr>
<td>Tranexamic Acid (TXA)</td>
<td>Cyklokapron</td>
<td>1000 mg/10 ml Vial</td>
<td>1000 mg</td>
<td></td>
</tr>
<tr>
<td>Vecuronium</td>
<td>Norcuron</td>
<td>10 mg Powder Vial</td>
<td>30 mg (30 mg max)</td>
<td></td>
</tr>
</tbody>
</table>

**Mercyhealth Additional Medications**

| Calcium Chloride 10% Solution | 1 GM/10 ml preload syringe |
| Dilbaze | 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 |
| Lactated Ringers | 1000 cc |