REGION I EMERGENCY MEDICAL SERVICES

Standing Medical Orders

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EMS/ Region1 SMO

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

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MEDICATION ADMINISTRATION CHART Pages 281 - 333

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
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Standard Dosing	ILS/ ALS	BLS	EMR	Dextrose	Dopamine	Mag Sulfate	Fentanyl IN	Midazolam IN			Formulary

APPENDICES

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Region 1 Formulary

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

INFORMATION NEEDED

__Level of the patient's chest pain
__Patient vital signs
__Time of onset
__Pertinent medical history

OBJECTIVE FINDINGS

__Chest pain
__Shortness of breath
__Atypical chest pain symptoms such as epigastric, jaw, left arm pain, etc.
__Syncope
__Diaphoresis
__Nausea or nonspecific weakness in diabetes
__Previous MI unless a totally unrelated complaint
__At the EMT's discretion---does not meet any of the criteria but the EMT feels that a 12-Lead ECG may be helpful

PROCEDURE

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

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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-Basic (BLS) services will be expected to report the 12-Lead computerized interpretation. EMT-Intermediate (ILS) and EMT-Paramedic (ALS) services will be expected to interpret and report as to whether they feel that the ECG represents a STEMI or non-STEMI.

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

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

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

__If patient condition changes consider repeating ECG

Documentation of adherence to SMO

__Documentation of objective findings

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

__Documentation of STEMI ALERT

MEDICAL CONTROL CONTACT CRITERIA

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

__ Communicate **"STEMI ALERT"** for ST Elevation MI (STEMI) early in radio transmission to the receiving hospital or Medical Control.

PRECAUTIONS AND COMMENTS

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

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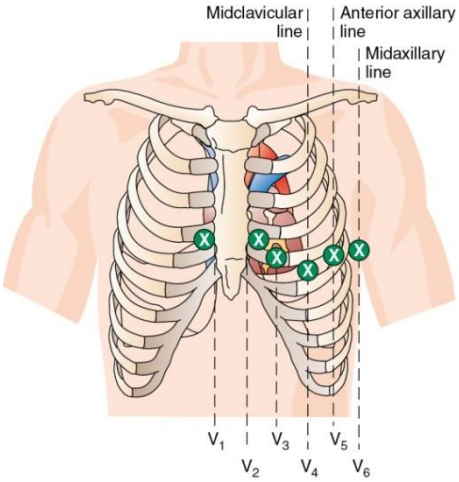
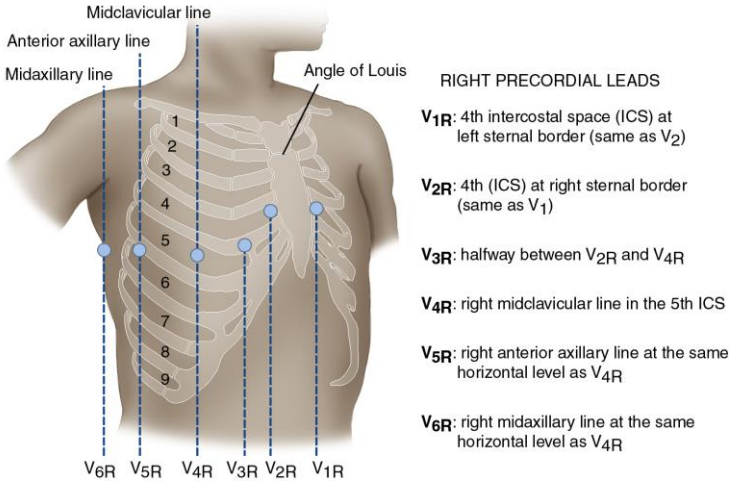
Standard 12 Lead



Lead	Positive Electrode Position	Heart Surface Viewed
V_1	Right side of sternum, fourth intercostal space	Septum
V_2	Left side of sternum, fourth intercostal space	Septum
V_3	Midway between V_2 and V_4	Anterior
V_4	Left midclavicular line, fifth intercostal space	Anterior
V_5	Left anterior axillary line; same level as V_4	Lateral
V_6	Left midaxillary line; same level as V_4	Lateral

Right Side 12 Lead



Localizing ECG Changes

I Lateral	AvR	V1 Septal	V4 Anterior
II Inferior	AvL Lateral	V2 Septal	V5 Lateral
III Inferior	AvF Inferior	V3 Anterior	V6 Lateral

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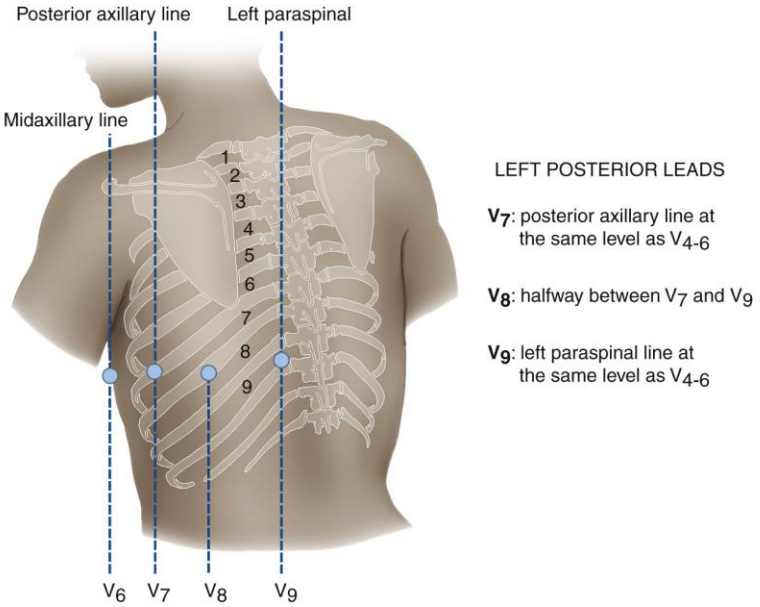
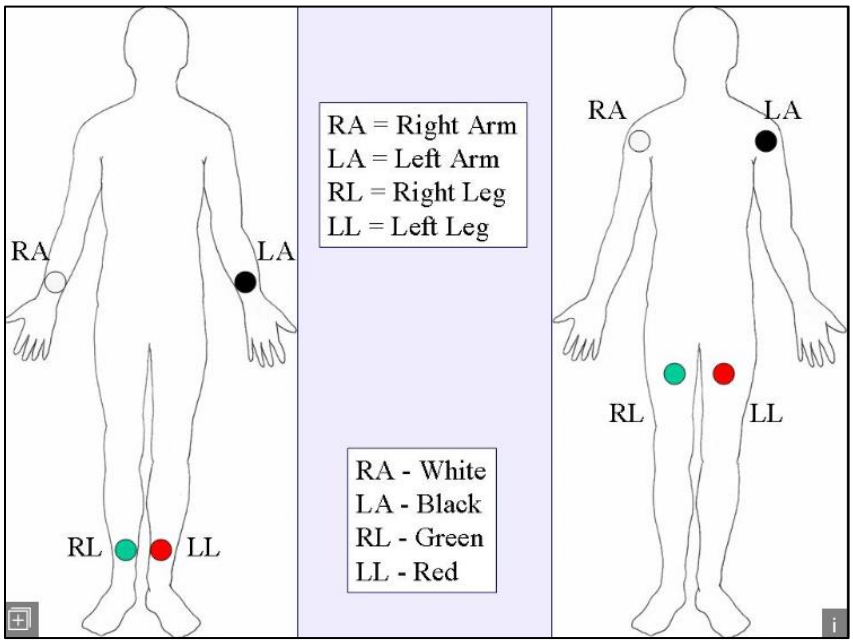
Posterior 12 Lead



12 Lead Limb Placement



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SMO: Acute Abdominal Pain

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

INFORMATION NEEDED

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

OBJECTIVE FINDINGS

__General appearance: level of distress, skin color, diaphoresis
__Abdominal tenderness (guarding, rigidity, distention)
__Quality and symmetry of femoral pulses
__Cardiac rhythm/12 lead ECG, if indicated

TREATMENT

__Routine Medical Care
__Nothing by mouth (NPO)
__Consider ILS/ALS intercept
__12 lead ECG, Cardiac monitor
__IV access
__If hypotensive (SBP<90 and signs of poor perfusion): **fluid bolus**, reassess and repeat if indicated
__**Ondansetron** for nausea and vomiting
__Pain Management per SMO

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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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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

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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

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

Nursing Home Abuse

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

Adult Protective Services

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

Supportive Living Facilities

- For residents who live in Supportive Living Facilities call the Illinois Department of Healthcare and Family Services Complaint Hotline at **1-800-226-0768**.

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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 $EtCO_2$ is in place, attempt to maintain a reading between 35-45 mmHg.

__ Manage Foreign Body Airway Obstruction per American Heart Association standards
__ Consider NG tube for gastric decompression
__ Assess airway patency utilizing adjuncts as indicated:

- OPA
- NPA
- Supraglottic airway per EMS System approval according to manufacturer's guidelines
- Endotracheal Intubation
- Needle Cricothyrotomy
- Surgical Cricothyrotomy
- Commercial cricothyrotomy device with prior Medical Director approval (prior to Medical Directors' approval training must be submitted to IDPH with plans to assure ongoing competency)

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TREATMENT (continued)

__ Confirm advanced airways and document with a minimum of three of the following:

- With $EtCO_2$ 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

MEDICATION ADMINISTRATION CHART

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SMO: Alcohol/Substance Abuse Emergencies

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.
__O_2 at 100% by NRB mask if patient producing adequate volume or BVM if inadequate ventilatory effort (volume) noted. Consider the use of a NPA. Use an OPA with caution due to risk of vomiting.
__Consider intubation if GCS < or = to 8.
__Obtain IV access
__If there is impending respiratory arrest and narcotic use is suspected or if patient unable to protect airway, consider **Naloxone.**
__Obtain glucose check:

- If <80 and if gag reflex is intact, consider **Oral Glucose**
- If <80 give **Dextrose IVP** see **Dextrose Dosing Chart**
- If <80 and no IV give **Glucagon IM**

__Follow appropriate SMO's for:

- Seizures:
  Adult Seizures/Status Epilepticus
  Pediatric Seizures/Status Epilepticus
- Respiratory/ cardiac arrest:
  Asystole/PEA – Adult
  V-Fib/V-Tach – Adult
  Pediatric Arrest: Asystole/PEA
  Pediatric V-Fib/Pulseless V-Tach
  Pediatric Respiratory Distress/Arrest
  Pediatric Neonatal Resuscitation
- Hypoglycemia
  Diabetic Emergencies

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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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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

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Documentation of adherence to SMO

__Neurologic assessment documented
__Blood glucose checked
__If blood glucose <80 mg/dl, treatment given per SMO and response documented
__ECG strip/12 lead given to receiving hospital
__If known, document name of suspected or confirmed narcotic
__Respiratory status with oxygen administration method and liter flow
__Pulse oximetry readings before and after therapeutic intervention
__Neurologic status before and after **Naloxone** administration

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

PRECAUTIONS AND COMMENTS

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

MEDICATION ADMINISTRATION CHART

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SMO: Ambulance Diversion Status Changes

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

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

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

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

__If it is decided that resource limitations affect the ability of a hospital to provide optimum emergency department care, Medical Control may choose to divert the ambulance transporting the patient to the next closest hospital.
__This diversion system is based on notification of resource limitations so that Medical Control can make an informed decision as to the receiving hospital for each patient, taking into account the nature of the patient's problem, the acuity of need, receiving hospital resource availability, transportation time, and the relative risks versus benefits to the patient of ambulance diversion.
__It is recommended that participating hospitals notify the appropriate agencies in their service area of the following resource limitations. When the appropriate guideline has been satisfied, permission for ambulance diversion can be granted. Examples of appropriate reasons for diversion include:

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

***If three or more hospitals in a geographic area are on diversion then all must come off diversion. When an ambulance diversion situation has occurred, the resource hospital, EMS office must be notified for review and Q.A. ***

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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.

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SMO: Amputated Parts

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

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

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

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

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

Medical Control Contact Criteria

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

PRECAUTIONS AND COMMENTS
- Recheck airway and breathing and circulation frequently

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SMO: Adult Anaphylaxis and Allergic Reactions

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

INFORMATION NEEDED

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

OBJECTIVE FINDINGS—MILD ALLERGIC REACTION

__Hives, rash

TREATMENT *Mild* Allergic Reaction

___Routine Medical Care
___Remove etiologic agent if possible or relocate patient
___Oxygen as indicated
___For extensive hives, administer **Diphenhydramine**
___Immediate transport

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

TREATMENT *Moderate* Allergic Reaction
__Routine Medical Care
__Remove etiologic agent if possible or relocate patient
__Oxygen as indicated
__**Albuterol** / **DuoNeb (Albuterol/Ipratropium Bromide)**
- ADULTS - First medication dose of **Albuterol** or **DuoNeb (Albuterol/Ipratropium Bromide)** via nebulizer, repeat with **Albuterol only** prn until relief of symptoms.

__IV access
__**Diphenhydramine IM or IV**
__If no response and patient bronchospasm persists or worsens, Consult Medical Control for use of **Epinephrine (1:1 ml) IM** or **Epi Auto Injector IM**. Consult Medical Control to repeat in 5 minutes one time
__**Methylprednisolone**
__Immediate transport

OBJECTIVE FINDINGS—SEVERE ALLERGIC REACTION (ANAPHYLAXIS)
___Altered mental status
___Hypotension (SBP < 90 and evidence of hypoperfusion)
___Bronchospasm and/or angioedema

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

__**Fluid bolus**, reassess and repeat if indicated
__Advanced airway management as indicated
__**Methylprednisolone**
__Immediate transport

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

- For pediatric patients see Pediatric Anaphylaxis and Allergic Reaction SMO

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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

SMO: Adult Asystole/Pulseless Electrical Activity (PEA)

Overview: The successful resuscitation of patients in cardiac arrest is dependent of 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)

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TREATMENT

__Begin BLS care- All care is organized around 2 minute cycles of CPR in C-A-B priority unless arrest is caused by hypoxic event.

__Determine unresponsiveness; open airway (manually); assess for breathing/gasping; suction as needed; simultaneously Assess pulse; if not definitively felt in <10 sec.- begin quality CPR with compressions.

__Apply defib pads with chest compressions in progress as soon as AED (BLS)/ monitor (ALS) is available.

__Airway/Ventilation-

- Check patency if choking suspected
- Ventilating with BVM and oral airway increases aspiration risk. Supraglottic airway or ETT should be placed when possible without interrupting chest compressions.

__Establish vascular access IV or IO, initiate **Normal Saline**

__**Epinephrine 1 mg IVP or IO**, repeat every 3 to 5 minutes as long as CPR continues

__Administer **fluid bolus** if suspected hypovolemia

__**Dextrose 50%** for blood glucose < 80mg/dL **Dextrose Dosing Chart**

__**Naloxone** if suspected narcotic overdose. Repeat doses may be necessary.

__**Calcium Gluconate IVP or IO** for suspected hyperkalemia (history of renal failure, dialysis, or potassium ingestion)

__**Sodium Bicarbonate** for patients with prolonged downtime, diabetic patient with possibility of DKA, or tricyclic or phenobarbital overdose

__If ROSC occurs, acquire 12 lead ECG. If acute MI suspected, call STEMI alert.

Documentation for Adherence to SMO

__CPR performed

__Intubation or BLS airway management performed

__Medication administered and response to treatment

__If a cause is documented, appropriate treatment is given, e.g. Hypovolemia-fluid bolus

__Print and provide any rhythm strips to receiving hospital

PRECAUTIONS AND COMMENTS

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

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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

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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

PROCEDURE: Automatic Implantable/Wearable Cardiac Devices

Overview:

Implantable Cardioverter Defibrillator (ICD) – Is an implanted device that can detect rhythm of the heart, can deliver electrical shocks and sometimes Pace the heart as needed.

LifeVest – This is not an implanted device but a wearable defibrillator. The LifeVest is generally uses until a determination is made that an ICD in needed or as a bridge until an ICD can be implanted.

Pacemaker – when a heart's natural pacemaker is defective an implanted pacemaker sends electrical impulses to help the heart beat in a regular rhythm.

Ventricular Assist Devise (VAD) – these devises may be used in patients with end-stage heart failure. They may be used as a bridge until a heart transplant in is found or as permanent therapy. These devises 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

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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 devises in use, internal and external

__Blood flow may be continuous

- Patient may not have a palpable pulse
- Look at other indication such as: LOC, shortness of breath, 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

__Nitrates may be detrimental due to the reduction in preload

__Patients are typically on anticoagulant / antiplatelet medication

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

Documentation of adherence to Procedure

__ Report of patient's complaint

__ Type of device patient has

__ Assessment and treatment

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

PRECAUTIONS AND COMMENTS

- Personnel in contact with the patient at the time of AICD firing will receive a shock of approximately 3 joules. This energy level constitutes NO DANGER to pre-hospital personnel (may feel a slight tingling).

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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

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Documentation of adherence to SMO

__Patient's presenting demeanor
__Reinforcements called and on scene
__Verbalizations in patient's words using quotations when possible
__Any more advanced medical interventions that were necessary

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

PRECAUTIONS AND COMMENTS

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

Hypoxia	Stroke/CVA
Hypotension	Seizures/postictal state
Hypoglycemia	Electrolyte imbalance
Trauma (head injury)	Infections/fever
Alcohol/Drug Intoxication or Reaction	Dementia (acute or organic brain syndrome)
Excited Delirium	

- At all times, EMT's should avoid placing themselves in danger; at times this may mean a delay in the initiation of treatment until the personal safety of the EMT is assured
- Use of **Naloxone** may unmask other illicit drugs such as PCP which could cause the patient to become violent. Use **Naloxone** with caution if suspected polysubstance abuse. Priority is to protect self or other Providers
- If the patient is judged to be either suicidal or lacking decision making capacity and dangerous to self or others, the treatment and transport should be carried out in the interest of the patient's welfare.
- If the patient resists police involvement is necessary. The use of reasonable force may be used to restrain the patient from doing further harm to self or others. See procedure for Restraints.
- If it is necessary to transport a patient against their will, an IDPH Form 5 needs to be completed.
- It may be necessary to get contact information from a family member for forms to be completed by EMS/Police/Hospital staff.

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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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

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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 is left imbedded.

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	Dextrose	Dopamine	Mag Sulfate	Fentanyl IN	Midazolam IN			Formulary

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.

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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.

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

PROCEDURE: Body Substance Isolation (Universal Precautions)

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

INFORMATION NEEDED

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

Use BSI:

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

RECOMMENDATIONS

__Gloves should be worn when handling blood, body fluids, mucous membranes, non-intact skin, body tissues, and medications/drugs/illicit substances. Double glove if necessary.
__New gloves should be worn for each patient contact. Hands must be washed (wet or dry wash) after glove removals and between patient contacts.
__If splash of blood or body fluid is anticipated a full face shield or goggles and facemask should be worn
__If emergency ventilatory support is 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.

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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 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.

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

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

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 **Diazepam** OR **Midazolam** IVP for sedation prior to TCP if patient conscious and Systolic BP >100

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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

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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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

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Documentation of adherence to SMO

__ Physical finding of wheezing, decreased lung sounds
__ Administration of oxygen
__ Administration of medications and response to medications

Medical Control Contact Criteria

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

PRECAUTIONS AND COMMENTS

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

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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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

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Thermal

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

Chemical

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

Electrical

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

Documentation of adherence to SMO

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

Medical Control Contact Criteria

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

PRECAUTIONS AND COMMENTS

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

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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

PROCEDURE: Capnography

Overview: Capnography is the non-invasive, continuous measurement of exhaled carbon dioxide (CO_2) in the breath. End-tidal CO_2 is the maximum CO_2 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 $EtCO_2$, a CO_2 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 $EtCO_2$ to be present the following must be taking place.
1. Metabolism
2. Perfusion
3. Ventilation

__ $EtCO_2$ value, respiratory rate and waveform = airway status
__ If $EtCO_2$ 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 $EtCO_2$ level, respiratory rate and waveform
__$EtCO_2$ levels:
- Normal 35 – 45
- If EtCO2 is low and not related to airway status think perfusion (shock)
- In Cardiac arrest $EtCO_2$ may be low due to poor perfusion and /or metabolism. In arrest if $EtCO_2$ is below 10 ensure high quality CPR is being performed.
- In an arrest a sudden increase on $EtCO_2$ may indicate ROSC.
- In patients with possible increased intracranial pressure attempt to maintain an $EtCO_2$ of approximately 35.

__When $EtCO_2$ 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
__$EtCO_2$ should be monitored as any other vital sign when assessing a patient.

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Documentation of adherence to SMO

__ $EtCO_2$ value
__ Respiratory rate
__ Waveform

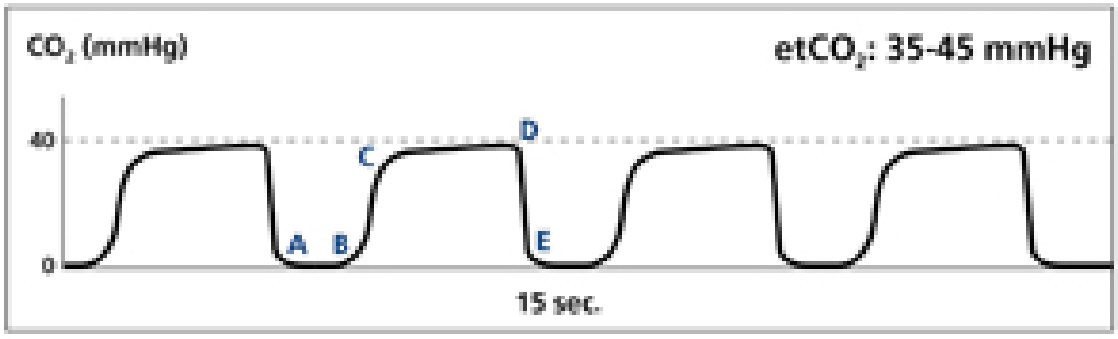
Medical Control Contact Criteria
__ Contact Medical Control whenever a question exists as to the best treatment course to the patient

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 CO_2 in breath
B-C: Rapid rise in CO_2 – middle part of exhalation
C-D: Alveolar plateau – CO_2 at steady state; alveolar emptying
D: End exhalation or end of the tidal breath ($EtCO_2$)
D-E: Inhalation



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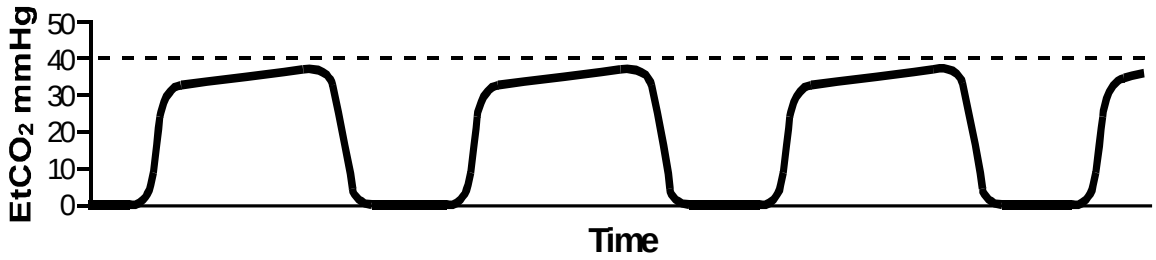
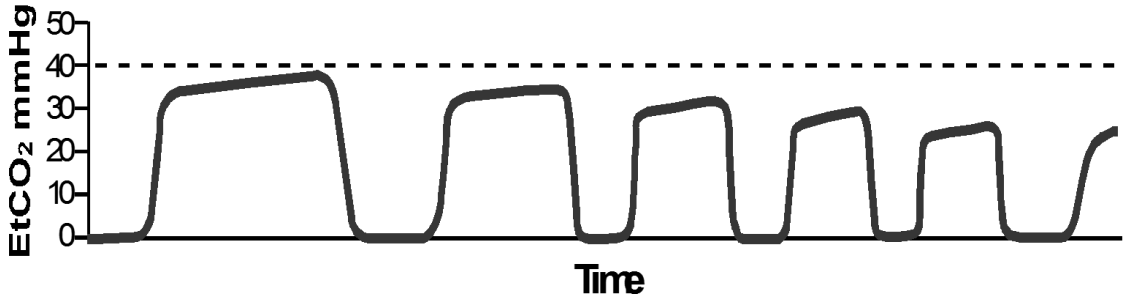
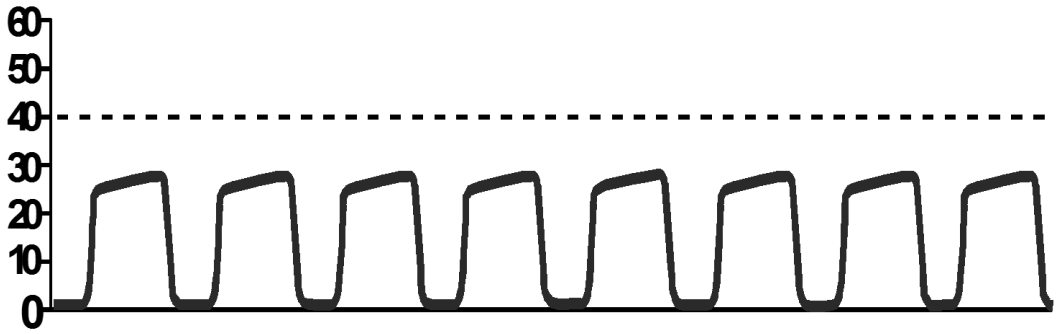
Normal waveform



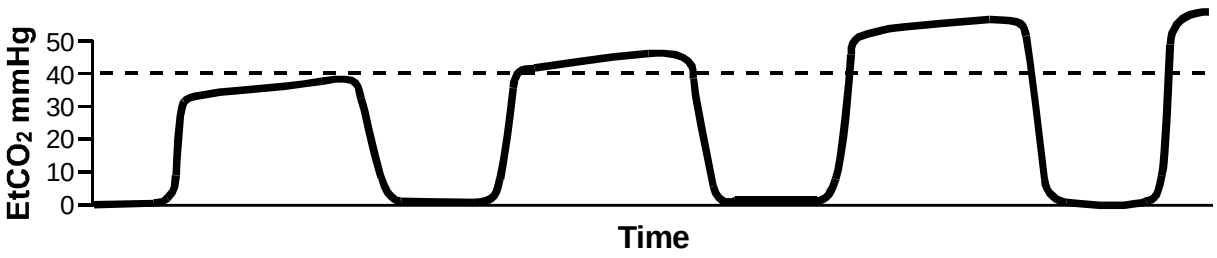
Hyperventilation



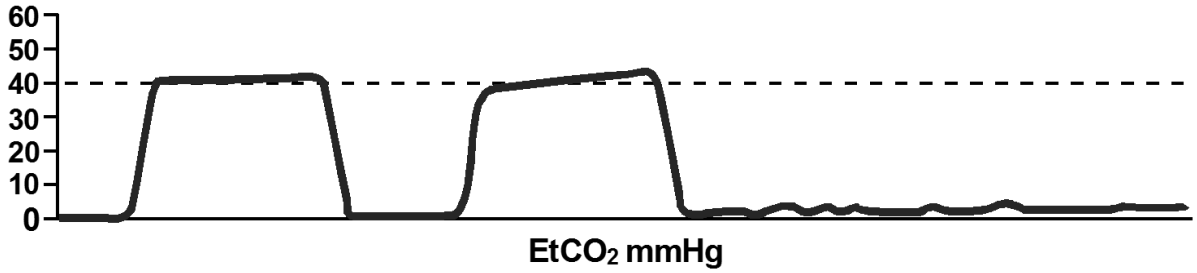
Hyperventilation



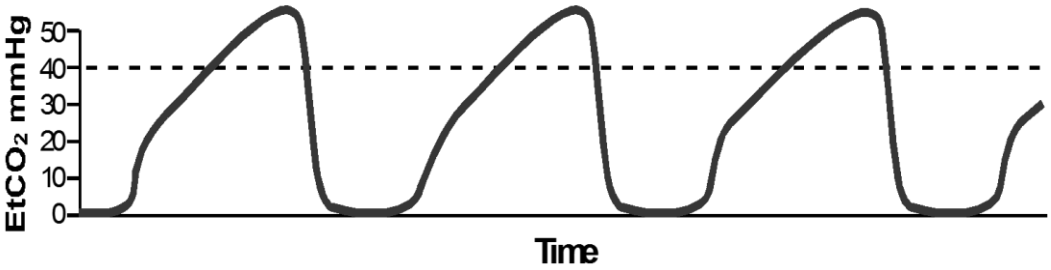
Hypoventilation



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



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' O_2 saturation
__ Keep patient quiet as possible to decrease oxygen requirements
__ Treat per appropriate SMO for:

- Cardiac Arrest:
  Asystole/PEA – Adult
  V-Fib/V-Tach – Adult
  Pediatric Arrest: Asystole/PEA
  Pediatric V-Fib/Pulseless V-Tach
  Pediatric Respiratory Distress/Arrest
  Pediatric Neonatal Resuscitation
- Cardiac Dysrhythmia
  Adult Bradycardia
  Adult Narrow Complex Tachycardia
  Adult Wide Complex Tachycardia
  Pediatric Bradycardia
  Pediatric Tachycardia
- Pulmonary Edema
  Pulmonary Edema SMO

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

CARBOXYHEMOGLOBIN LEVELS & CLINICAL MANIFESTATIONS

% COHb	MANIFESTATIONS	TREATMENT AND TRANSPORT DECISION
5	Mild headache	100% O_2
10	Mild headache, shortness of breath with vigorous exertion	100% O_2
10 - 20	Mild headache, shortness of breath with moderate exertion	100% O_2
20 - 30	Worsening headache, nausea, dizziness, fatigue	*Hyperbaric O_2
30 - 40	Severe headache, vomiting, vertigo, altered judgment	Hyperbaric O_2
40 - 50	Confusion, syncope, tachycardia	Hyperbaric O_2
50 - 60	Seizures, shock, apnea, coma	Hyperbaric O_2
60 - 70	Seizures, coma, cardiac arrhythmias, death	Hyperbaric O_2
> 70	Death within minutes	Hyperbaric O_2

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

COHb Levels in Persons 3-74 Years of Age

Smoking Status	COHb % (mean ± SD)	COHb % (98th percentile)
Nonsmokers	0.83 ± 0.67	≤ 2.50
Current Smokers	4.30 ± 2.55	≤ 10.00
All smoking statuses combined	1.94 ± 2.24	≤ 9.00

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

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Documentation of adherence to SMO

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

PRECAUTIONS AND COMMENTS

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

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
ILS, ALS

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

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TREATMENT *Procedure: Cardioversion Page 2 of 2*

__If patient is conscious and time permits, sedate patient with **Diazepam** IVP **or** **Midazolam** IVP
__Turn on defibrillator
__Apply limb leads
__Apply defibrillation pads to appropriate positions on chest wall
__Select appropriate energy level for clinical situation
__Press synchronizer switch/button
__Assure machine sensing of R wave
__Place defibrillation pads on the chest and (if paddles are used apply firm pressure). Make sure leads to defibrillator are connected properly
__Select appropriate energy level
__Charge defibrillator
__CLEAR patient
__Press discharge button and hold button until delivery of shock occurs
__Reassess patient and proceed as indicated by patient condition
__If repeat shock is indicated, ensure sync mode is activated

Documentation of adherence to this Procedure
__ Documentation of objective findings
__ Documentation of patient's cardiac rhythm

Medical Control Contact Criteria

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

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	Dextrose	Dopamine	Mag Sulfate	Fentanyl IN	Midazolam IN			Formulary

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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.

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PROCEDURE (Continued) *Procedure: Central Line/Port-A-Cath Access Page 2 of 3*

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

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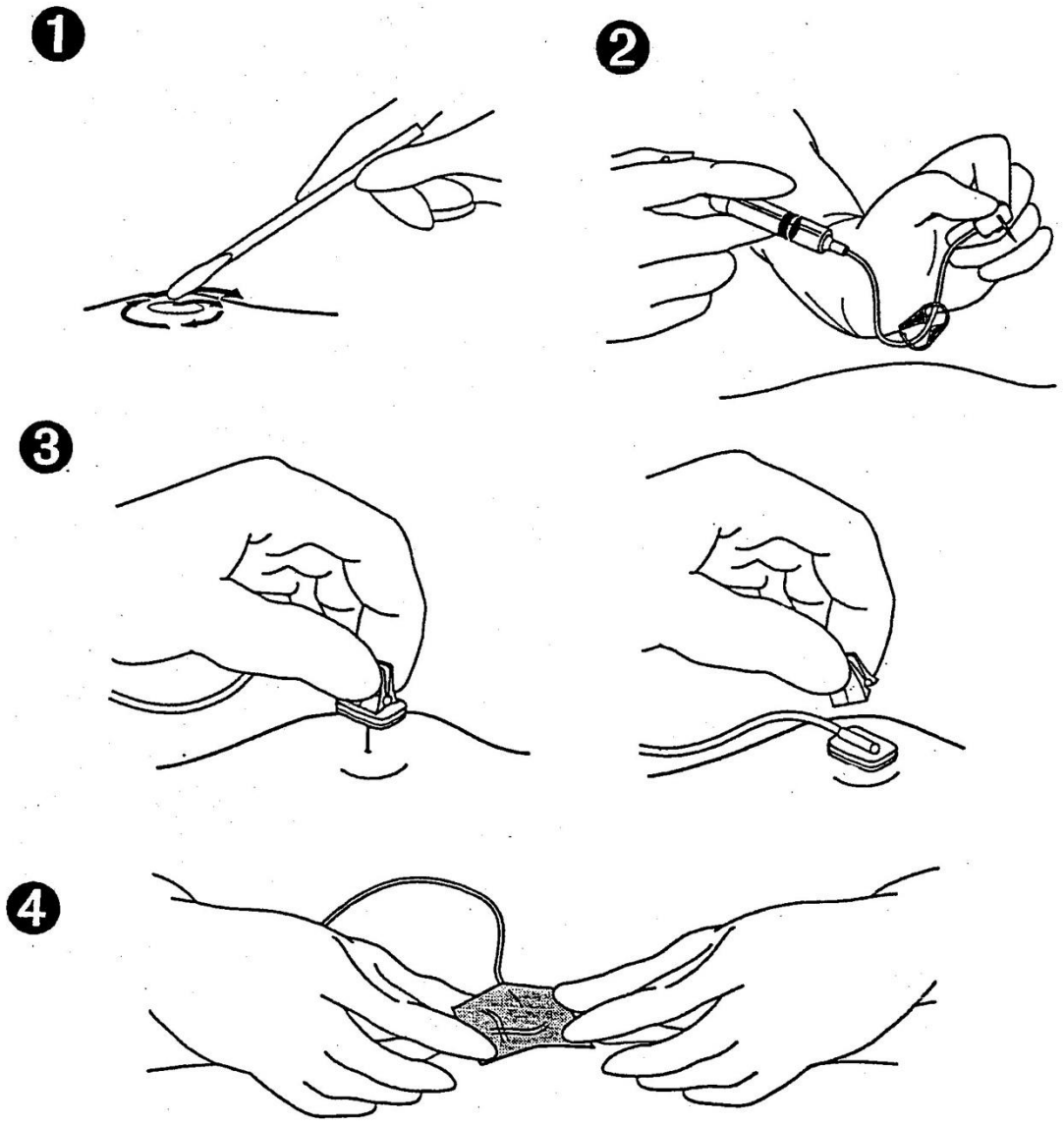
USE OF PORT-A-CATH NEEDLE SET



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

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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

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	Dextrose	Dopamine	Mag Sulfate	Fentanyl IN	Midazolam IN			Formulary

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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)

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	Dextrose	Dopamine	Mag Sulfate	Fentanyl IN	Midazolam IN			Formulary

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

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 Obstetric Emergency: Hemorrhage SMO)
__Do not hasten delivery of placenta. Do not pull on cord. May deliver spontaneously enroute if necessary

Pre-partum Hemorrhage – near term

__Assume placenta previa (painless bleeding) or abruption placenta (sharp pain)
__Check for crowning but DO NOT attempt vaginal exam
__Treat for shock (see Obstetric Emergency: Hemorrhage SMO)
__Do not pack the vagina with any material to stop bleeding. An externally placed dressing or pad should be used to absorb flow

Post-partum Hemorrhage

__Fundal massage
__Immediate transport to nearest hospital
__Do not pack the vagina with any material to stop bleeding. An externally placed dressing or pad should be used to absorb flow

Breech Delivery

__Contact Medical Control for breech delivery
__Provide airway with gloved hand for baby if needed
__If unable to deliver, left lateral Trendelenburg position and rapid transport

Prolapsed Cord

__Left lateral Trendelenburg position, elevate hips, if possible or knee-chest position
__If cord is present, manually displace presenting part off cord and maintain displacement
__Rapid transport

PRECAUTIONS AND COMMENTS

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

BLOOD LOSS ESTIMATION GUIDE

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

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

APGAR SCORE:

Appearance (skin color)	0=Body and extremities blue, pale	1=Body pink, extremities blue	2=Completely pink
Pulse	0=Absent	1=Less than 100/min	2=100/min and above
Grimace (Irritability)	0=No response	1=Grimace	2=Cough, sneeze, cry
Activity (Muscle tone)	0=Limp	1=Some flexion of the extremities	2=Active motion
Respirations	0=Absent	1=Slow and irregular	2=Strong cry

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	Dextrose	Dopamine	Mag Sulfate	Fentanyl IN	Midazolam IN			Formulary

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

SMO: Firearm Concealed Carry Act

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

INFORMATION NEEDED

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

1. The patient is at their private residence. Ask or assist the patient in removing the firearm and holster as one unit and leave it at the residence in their previously designated location (ideal situation).
2. If law enforcement is at the scene during situations such as a traffic accident or public encounter, have the officer secure and take custody of the firearm.
    a. If the patient is unable to remove the holstered firearm due to significant mechanism of injury and a full body assessment is needed, cut the holster straps and remove the holstered firearm from the patient as a unit and give to law enforcement.
    b. If the holster is contaminated with blood or bodily fluid, have the officer don gloves before touching the holstered firearm. Provide a plastic or biohazard bag if necessary.
    c. If the patient has an altered level of consciousness and is unable to comply with the request to remove the holstered firearm, safely remove the holstered firearm by whatever means necessary (cut holster straps, unbuckle straps, etc.) and give to law enforcement when available, or have the officer assist with safe removal of the firearm. Belligerent, combative, or uncooperative patients that are known to have a firearm should not be approached until law enforcement arrives or the scene is otherwise made safe.
3. If law enforcement is not on scene to take custody of the firearm, place the holstered firearm in the lockable firearm transport (see IDPH recommendation).
4. If the hospital has a secure location, such as a gun safe currently used by law enforcement, place the firearm, holstered if possible, in the gun safe and notify law enforcement or a qualified hospital security agent.
5. Make arrangements for law enforcement to meet the ambulance at the hospital and take custody upon arrival in the ambulance bay or parking area.
6. Women may carry the firearm in a purse rather than a holster. The safest approach is to leave the firearm in the purse, turning it and the contents over to law enforcement to secure the firearm. The purse can be returned to the patient once the firearm is removed and secure.

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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% O_2 by non-rebreather mask – while preparing for CPAP
__Apply CPAP per device recommendations
__Coach patient to place mask over their mouth and nose, then firmly attach mask
__If wheezing, perform in-line **Albuterol/Ipratropium Nebulizer Duo Neb** treatment
__If patient deteriorates, remove CPAP, ventilate with BVM and consider airway insertion

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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

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

PRECAUTIONS AND COMMENTS

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

Contraindications

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

Complications

- Barotrauma (very rare)
- Claustrophobia

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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REGION I EMERGENCY MEDICAL SERVICES
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SMO: Trauma – Crush Syndrome & Suspension Trauma

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 thought the body.

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

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

OBJECTIVE FINDINGS
__Time the patient has been immobilized and /or trapped
__Estimated time for extrication
__Trauma assessment
__Pertinent medical history

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

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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

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	Dextrose	Dopamine	Mag Sulfate	Fentanyl IN	Midazolam IN			Formulary

REGION I EMERGENCY MEDICAL SERVICES
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ALS

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

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

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

*****DSI to be used by approved Providers only*****
Approved provider/EMS Agency is determined by the Medical Director of their EMS System.

OBJECTIVES

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

INFORMATION NEEDED

__Initial assessment
__History of present event

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OBJECTIVE FINDINGS

__Observe the patient's respiratory rate, depth of respirations, skin color and auscultate lung, fields, assess LOC and GCS. Intubation/airway management may be indicated if assessment reveals one or more of the following:

__ Respiratory rate < 10 or > 30

__ GCS of 8 or less (depressed sensorium or head injury)

__ Burns that involve face or neck, or suspected inhalation injury with airway damage and swelling / compromise

__ Acute or impending airway loss or inability to protect the airway (facial trauma with bleeding)

__ Assess patient combativeness and spinal cord stability

Contraindication

__ Due to the fact that DSI may result in a patient who is difficult to ventilate using a BVM or intubate after complete paralysis, in order to obtain an airway after unsuccessful DSI, the operator may be required to attempt an airway using one of the following: BVM supraglottic airway device or a surgical cricothyrotomy. Therefore, if endotracheal intubation would be difficult to obtain (neck expanding hematoma, neck swelling, congenital anomalies, epiglottis, etc.) then caution should be used when deciding to paralyze these patients.

__ Hyperkalemia (dialysis patients)

__ Penetrating eye injuries

__ Known hypersensitivity to the drugs being considered

__ In addition to above **Succinylcholine**, has several contraindications, and should not be used in patients with the following conditions:

__Five (5) days or more post-burn

__Five (5) days or more post major trauma

Equipment

__ DSI Bag

__ Syringes and needles

__ Calculator

__ DSI drug dosages / indications list

__ Drugs:

__ Consider pre-medications for DSI**:**

__**Lidocaine** in the patient with suspected hyperkalemia or increased intracranial pressure

__**Atropine** for persistent bradycardia

__ Sedation Medication: **Etomidate** or **Ketamine**

If needed, and approved for paralytics:

__ Paralytic Medications: **Succinylcholine**

__ Bag-Valve-Mask (with reservoir bag and oxygen inlet)

__ Oxygen Delivery System

__ Suction equipment (with connecting tubing and tips)

__ Laryngoscope handle with functioning batteries

__ Laryngoscope blades

Equipment continued next page…

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

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

STEP 2: PREPARE
__ Prepare equipment
__Suction
__ET tube (at least 2 sizes and check bag)
__Stylet (should not extend past end of tube)
__Bougie
__Laryngoscope- check that functions appropriately
__Have Surgical Cricothyroid equipment readily available
__**IV Normal Saline**
__Cardiac Monitor
__Oxygen saturations
__Capnography

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

STEP 4: INDUCTION:
__Sedation: **Etomidate** or **Ketamine** or **Midazolam**
__Continue pre-oxygenation
__If provider/EMS agency is not approved for paralytics, skip to STEP 6

STEP 5: ***If needed, and approved for paralytics:***
PARALYSIS, then INTUBATE: **Succinylcholine (alternate Rocuronium when Succinylcholine is not available)**
__If fasciculation occurs, wait for them to stop then assess for apnea, jaw relaxation, and decreased resistance to bag / mask ventilations indicating that the patient is sufficiently relaxed to proceed with intubation.
__Intubate, check tube placement, secure tube and continue to assist respirations.
__If an extended transport time is probable additional doses of sedation may be required.

STEP 6: INTUBATE, then airway management
__Insert laryngoscope and visualize glottic opening
__Suction if necessary
__Pass ET tube plus inflate cuff
__Remove stylet, ventilate, with 100% oxygen
__Confirm tube placement: (see Airway Management SMO)
- __With $EtCO_2$ 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

__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 CO_2 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

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

Medical Control Contact Criteria

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

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

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

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	Dextrose	Dopamine	Mag Sulfate	Fentanyl IN	Midazolam IN			Formulary

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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.

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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

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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

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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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

Return to Table of Contents

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

IDPH POLST form	**P**ractitioner **O**rders for **L**ife **S**ustaining **T**reatment; provides guidance during life-threatening emergencies. Must be followed by all healthcare providers
Power of Attorney for Healthcare	Names agent: rarely contains directions for authorized practitioner
Mental Health Treatment Declaration	Directions + Agent (for authorized practitioner)
Living Will	Directions for authorized practitioner (NOT EMS)

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

   c. Comfort-Focused Treatment: Primary goal of maximizing comfort. Relieve pain and suffering through use of medications by EMS approved routes as needed; use oxygen, suction, manual treatment of airway obstruction. Do not use treatments listed in Full and Selected Treatment unless consistent with comfort goal. Transfer to hospital only if comfort needs cannot be met in current location.
5. COMPONENTS OF A VALID POLST form/ DNR order: Region I recognizes an appropriately executed IDPH POLST form and/or any other written document that has not been revoked; containing at least the following elements:
   a. Patient Name
   b. Resuscitation order (Section A)
   c. Date
   d. 3 Signatures
      i. Patient or Legal Representative Signature
      ii. Witness Signature
      iii. Authorized Practitioner Name & Signature (Physician, licensed resident (2nd year or higher), APN, PA)
6. If POLST or DNR form is valid: follow orders on form. If form is missing or inappropriately executed, contact Medical Control for guidance.
7. A patient, POA, or Surrogate that consented to the form may revoke it at any time. A POA or Surrogate should not overturn decisions made, documented, and signed by the patient.
8. If resuscitation begun prior to from presentation, follow form instructions after order validity is confirmed.
9. If orders disputed or questionable contact Medical Control and explain the situation, follow orders received.

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

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

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

Hospice patients not in cardiac/respiratory arrest:

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

Documentation of adherence to SMO

- Documentation of the patient assessment and condition
- Documentation of valid POLST/DNR form
- Document any issues or concerns with the call
- Document all contact with Medical Control
- Document whom the patient/ deceased has been transferred to

HIPAA PERMITS DISCLOSURE OF POLST TO HEALTH CARE PROFESSIONALS AS NECESSARY FOR TREATMENT

IDPH POLST

State of Illinois
Illinois Department of Public Health

IDPH UNIFORM PRACTITIONER ORDER FOR LIFE-SUSTAINING TREATMENT (POLST) FORM

For patients, use of this form is completely voluntary. Follow these orders until changed. These medical orders are based on the patient's medical condition and preferences. Any section not completed does not invalidate the form and implies initiating all treatment for that section. With significant change of condition new orders may need to be written.

Patient Last Name	Patient First Name	MI
Date of Birth (mm/dd/yy)	Gender ❑ M ❑ F	
Address (street/city/state/ZIPcode)		

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

Check One

❑ **Attempt Resuscitation/CPR** ❑ **Do Not Attempt Resuscitation/DNR**

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

When not in cardiopulmonary arrest, follow orders B and C.

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

Check One (optional)

❑ **Full Treatment: Primary goal of sustaining life by medically indicated means.** In addition to treatment described in Selective Treatment and Comfort-Focused Treatment, use intubation, mechanical ventilation and cardioversion as indicated. *Transfer to hospital and/or intensive care unit if indicated.*

❑ **Selective Treatment: Primary goal of treating medical conditions with selected medical measures.** In addition to treatment described in Comfort-Focused Treatment, use medical treatment, IV fluids and IV medications (may include antibiotics and vasopressors), as medically appropriate and consistent with patient preference. Do Not Intubate. May consider less invasive airway support (e.g. CPAP, BiPAP). *Transfer to hospital, if indicated. Generally avoid the intensive care unit.*

❑ **Comfort-Focused Treatment: Primary goal of maximizing comfort.** Relieve pain and suffering through the use of medication by any route as needed; use oxygen, suctioning and manual treatment of airway obstruction. Do not use treatments listed in Full and Selective Treatment unless consistent with comfort goal. ***Request transfer to hospital only if comfort needs cannot be met in current location.***

Optional Additional Orders _____

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

Check One (optional)

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

Additional Instructions (e.g., length of trial period) _____

D — DOCUMENTATION OF DISCUSSION (Check all appropriate boxes below)

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

Signature of Patient or Legal Representative

Signature *(required)*	Name (print)	Date

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

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

Signature *(required)*	Name (print)	Date

E — Signature of Authorized Practitioner (physician, licensed resident (second year or higher), advanced practice nurse or physician assistant)

My signature below indicates to the best of my knowledge and belief that these orders are consistent with the patient's medical condition and preferences.

Print Authorized Practitioner Name *(required)*	Phone ( ) _____ - _____
Authorized Practitioner Signature *(required)*	Date *(required)*

Page 1

Form Revision Date - April 2016 (Prior form versions are also valid.)

SEND A COPY OF FORM WITH PATIENT WHENEVER TRANSFERRED OR DISCHARGED • COPY ON ANY COLOR OF PAPER IS ACCEPTABLE • 2016

HIPAA PERMITS DISCLOSURE OF POLST TO HEALTH CARE PROFESSIONALS AS NECESSARY FOR TREATMENT

IDPH POLST ■ IDPH POLST ■ IDPH POLST ■ IDPH POLST ■ IDPH POLST ■ IDPH POLST ■ IDPH POLST ■ IDPH POLST ■ IDPH POLST ■ IDPH POLST ■ IDPH POLST ■ IDPH POLST

****THIS SIDE FOR INFORMATIONAL PURPOSES ONLY****

Patient Last Name	Patient First Name	MI

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

Advance Directive Information

I also have the following advance directives (OPTIONAL)

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

Contact Person Name	Contact Phone Number

Health Care Professional Information

Preparer Name	Phone Number
Preparer Title	**Date Prepared**

Completing the IDPH POLST Form

- **The completion of a POLST form is always voluntary, cannot be mandated and may be changed at any time.**
- A POLST should reflect current preferences of persons completing the POLST Form; encourage completion of a POAHC.
- Verbal/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
- or there is a substantial change in the patient's health status, or
- or the patient's treatment preferences change, or
- 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.
- Draw line through sections A through E and write "VOID" across page if any POLST form is replaced or becomes invalid. Beneath the written "VOID" write in the date of change and re-sign.
- If included in an electronic medical record, follow all voiding procedures of facility.

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

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

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

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

IOCI 16-425 Page 2

SEND A COPY OF FORM WITH PATIENT WHENEVER TRANSFERRED OR DISCHARGED • COPY ON ANY COLOR OF PAPER IS ACCEPTABLE • 2016

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

Return to Table of Contents

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 submersions 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

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	Dextrose	Dopamine	Mag Sulfate	Fentanyl IN	Midazolam IN			Formulary

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

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, re-hydration 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* **
__ SpO_2 ** *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

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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 SpO_2 ** 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:

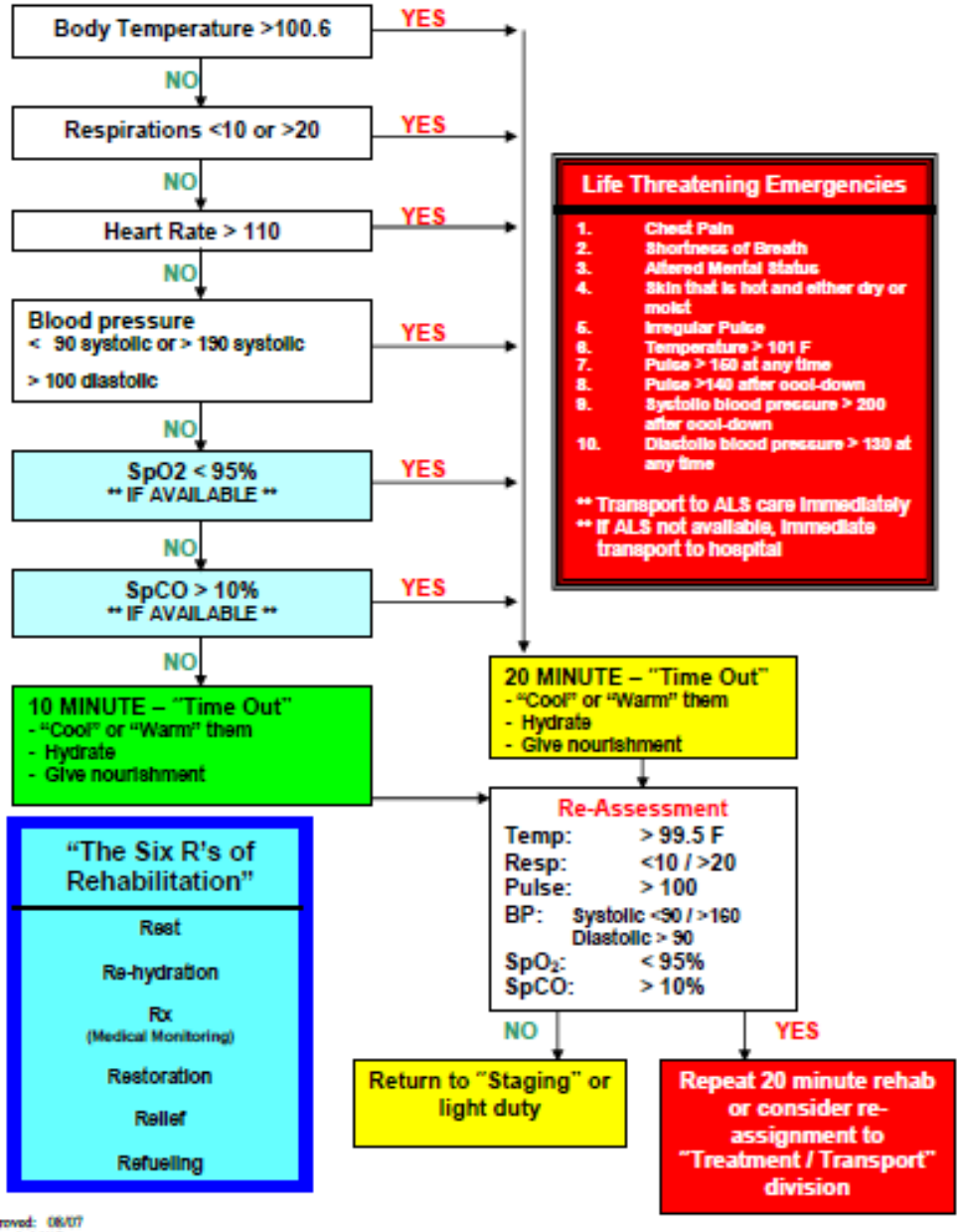
- Treatment is defined as any other care beyond vital signs in this Standing Medical Order
- Refusal / Release of Service is not required unless treatment is done
- No treatment can be performed as part of this Standing Medical Order
- If treatment is required, the emergency responder must be transferred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

Rate of Perceived Exertion Scale

RPE Scale (Rate of Perceived Exertion)	
1	Very Light Activity (anything other than complete rest)
2-3	Light activity (feels like you can maintain for hours, easy to breath and carry on a conversation)
4-5	Moderate Activity (feel like you can exercise for long periods of time, able to talk and hold short conversations)
6-7	Vigorous Activity (on the verge of becoming uncomfortable, short of breath, can speak a sentence)
8-9	Very Hard Activity (difficult to maintain exercise intensity, hard to speak more than a single word)
10	Max Effort (feels impossible to continue, completely out of breath, unable to talk)

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

Emergency Incident Rehabilitation Flowchart



Approved: 08/07
Revised: 06/17
Region 1 EMS SMO

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EMERGENCY INCIDENT REHABILITATION REPORT

EMERGENCY INCIDENT REHABILITATION REPORT
IDPH Region 1 EMS - MABAS Divisions

INCIDENT: _____
DATE: ___/___/___ TIME START: _____ END:_____
EIR Division Officer: _____
EIR Area Name: _____

TIMES	NAME / AGENCY	TEMP	RESP	PULSE	B/P	SpO_2	SpCO	COMMENTS / CONCERNS	TRANSFERRED TO TREATMENT DIVISION
IN					/				
					/				
OUT					/				
IN					/				
					/				
OUT					/				
IN					/				
					/				
OUT					/				
IN					/				
					/				
OUT					/				
IN					/				
					/				
OUT					/				
IN					/				
					/				
OUT					/				

Medical Monitoring Reference:
Acceptable Values
(< - less than // > - greater than)

Body Temperature < 100.6
Respirations 10 to 20

Heart Rate < 110
SpO2 > 95 / SpCO <10

Blood Pressure: **INITIAL** Sys: >90 & <190 Dias: <100
Re-Assessment Sys: >90 / <160 Dias: <90

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

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

SMO: Excited Delirium – Extremely Agitated Patients

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

N – Patient is **naked** and sweating from hyperthermia
O – Patient exhibiting violence against **object**, especially glass
T – Patient is **tough** and unstoppable, with super human 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

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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 of others (see Restraints Procedure)
__Sedate the patient by administering **Ketamine** **OR** **Midazolam**
__Obtain vital signs, pulse oximetry, capnography, and body temperature if possible, and repeat frequently
__If hyperthermia signs are present, cool patient by applying cooling packs to neck, axilla, and groin
__Once patient is calm establish IV access with **fluid at TKO**
__Apply cardiac monitor to assess rhythm and rate
__Obtain 12 lead ECG. Address and treat signs of hyperkalemia:

- **Albuterol Nebulizer** (*not* **Duo-Neb)**
- **Sodium Bicarbonate**
- **Calcium Gluconate IV/IO**
- **Fluid bolus** to hasten the reversal of metabolic acidosis and prevent potentially life threatening levels of potassium

Documentation of adherence to SMO

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

Medical Control Contact Criteria

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

PRECAUTIONS AND COMMENTS

- Remember that abnormal emotional behavior could be the result of injuries or disease. Initiate treatment as required. Consider and attempt to evaluate for possible causes of behavioral problems:
  - Hypoxia
  - Hypotension
  - Hypoglycemia
  - Trauma (head injury)
  - Alcohol/Drug Intoxication or Reaction
  - Electrolyte Imbalances
  - Infection/fever
- At all times, EMT's should avoid placing themselves in danger, at times this may mean a delay in the initiation of treatment until the personal safety of the EMT is assured.
- If the patient is judged to be either suicidal or incompetent and dangerous to self and others the treatment and transport should be carried out in the interest of the patient's welfare. If the patient resists, police involvement is necessary and the use of reasonable force may be used to restrain the patient from doing harm to self and others.

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

Return to Table of Contents

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

SMO: Gynecological Emergencies: Hemorrhage

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

INFORMATION NEEDED

__Patient age
__Medical history
__Last menstrual period and possibility of pregnancy
__Duration and amount of bleeding
__If pregnant, gestational age of fetus, gravida/para, and anticipated problems (placenta previa, pre-eclampsia, prenatal care, drug/alcohol abuse)
__Presence of contractions, cramping or discomfort
__If trauma, mechanism of injury

OBJECTIVE FINDINGS

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

TREATMENT

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

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Documentation and adherence to SMO

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

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

PRECAUTIONS AND COMMENTS

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

BLOOD LOSS ESTIMATION GUIDE

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

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

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	Dextrose	Dopamine	Mag Sulfate	Fentanyl IN	Midazolam IN			Formulary

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

Return to Table of Contents

Medical Control Contact Criteria

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

PRECAUTIONS AND COMMENTS

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

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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

SMO: Hyperthermia

Overview: Heat illness results from one of two basic causes:

- Normal mechanisms that regulate the body's thermostat are overwhelmed by environmental conditions such as heat stress or increased exercise in moderate to extreme environmental conditions.
- Failure of the body's regulatory mechanisms especially in older adults, young children, babies and ill or debilitated patients.

INFORMATION NEEDED

__Patient activity
__Medications: tranquilizers, alcohol, diuretics, antidepressants, amphetamines, cocaine, and other illicit (street) drugs
__Associated symptoms: chest pain, cramps, headache, orthostatic symptoms, nausea, weakness
__Air temperature and humidity; presence of excess clothing

HEAT CRAMPS
OBJECTIVE FINDINGS

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

TREATMENT Heat Cramps

__Routine Medical Care
__Note patient's temperature if possible
__Remove excess clothing
__Move patient to cool area—protect patient from shivering by protecting with light covering
__Give cool/cold liquids PO as tolerated
__Consider glucose check; if hypoglycemic, see Diabetic Emergencies SMO.
__Stretch cramped muscles to reduce pain

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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

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

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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

SMO: Hypothermia

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

INFORMATION NEEDED

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

OBJECTIVE FINDINGS

MILD HYPOTHERMIA

__Alert to impaired judgment
__Possible slurred speech
__Shivering
__Evidence of local injury; blanching, blistering, erythema of extremities, ears, nose

MODERATE HYPOTHERMIA

All of the above *PLUS:*

__Respiratory depression
__Myocardial irritability
__Bradycardia
__Atrial Fibrillation

TREATMENT Mild or Moderate Hypothermia

__ Routine Medical Care
__ Note patient's temperature if possible
__ Remove all clothing: dry patient, cover with blankets to prevent further heat loss
__ Maintain warm environment
__ IV access
__ Encourage transport for evaluation of injuries/ hypothermia

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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 < 89º F. For temperatures > 89º F medications should be given at standard doses but longer intervals between doses. This prevents toxic accumulation of the drug. Contact Medical Control for further assistance in medication administration in these patients.
__ Apply warm packs to central pulse areas (carotid, axilla, femoral). Avoid peripheral warming.
__ Rapid transport
*** TRIPLE ZERO/INFIELD PRONOUNCEMENT CANNOT BE CONFIRMED FROM THE FIELD ON THESE PATIENTS ***

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

PRECAUTIONS AND COMMENTS

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

MEDICATION ADMINISTRATION CHART

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
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Procedure: Inbound Report and Alert Notification

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

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

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

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

INFORMATION NEEDED

__ Age
__ Sex
__ Complaint/Injury
__ SMO being utilized
__ Triage category based upon vital signs, LOC and response to treatments.
__ Alert notifications in the following critical / time sensitive patients:

- STEMI
- Stroke
- Trauma
- Burns
- Unstable Pediatric
- Sepsis

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OBJECTIVE FINDINGS
__ Mechanism of Injury/Pathology of Complaint (Cardiac, Respiratory, OB, etc)
__ Level of Consciousness (AVPU and GCS)
__ Stability of vital signs
__ Initiation of proper SMO/Treatment and the patient's response

Alert Notifications

__ **STEMI Alert** should be called:
- When the EMS provider identifies a STEMI
- The EMS provider should call in the STEMI Alert and transmit the ECG if possible

__ **Stroke Alert** should be called:
- When Stroke Screening checklist/FAST Exam is positive
- Give last known well time

__ **Trauma Alert** should be called:
- Category I and II Trauma (see In-Field Trauma Triage Criteria)
- Adult Trauma Score of 10 or less or Pediatric Score of 8 or less
- Airway difficulties
- Trauma with altered respiratory rate > 35/ minute or < 12/ minute
- Any trauma patient with signs of hypoperfusion (shock)

__ **Burns Alert** should be called:
- Full thickness: ≥ 10% of TBSA
- Partial thickness: ≥ 20% of TBSA.
- Burns of airway, face, eyes, hands, feet or genital area.
- Chemical inhalation or electrical burns.

__ **Unstable Pediatric Alert** should be called:
- Altered LOC
- Airway difficulties
- Signs of hypoperfusion (shock)

__ **Sepsis Alert** should be called:
- When the Sepsis Screening Tool is positive

Heads-up Radio Report: PROCEDURE

__Transporting unit identification
__Type of patient, any alert notification
__This may be as short as "we have a _____ patient, ETA __ ____ minutes, details to follow
__Additional information to follow
__This report may be given by someone other than the providers involved in patient care or very early in patient care so information may be limited.

Abbreviated Radio Report: PROCEDURE

__Transporting unit identification
__Age, sex and complaint
__SMO utilized, treatments given, and response
__Triage category (Red, Yellow or Green)
__ETA

Detailed Radio Report: PROCEDURE

__ Identify the ambulance's call letters and level of care of the ambulance (BLS, ILS, or ALS)
__ Patient's age, sex, and estimated weight
__ Chief Complaint
- Symptoms - degree of distress, level of consciousness
- Findings from observation of patient and environment

__ Vital Signs
- Pulse - rate, quality, regularity
- Blood Pressure - auscultated or palpated
- Respirations - rate, pattern, depth
- Skin - color, temperature, moisture, turgor, pulse oximeter reading

__ Medical History
S - Symptoms
A - Allergies
M - Medications - bring all meds to ED
P - Past history of pertinent illness/injury
L - Last oral intake (food or fluid), if known
E - Events surrounding incident

__ Physical examination - ECG findings, Level of Consciousness, Vital Signs, Use AVPU for patients with altered level of consciousness
__ Treatments rendered at time of transmission and response to treatment
__ EMS personnel are to inquire as to any EMS Medical Control additional orders and/or direction and confirm any orders/direction by voice
__ Provide an ETA to the receiving hospital

PRECAUTIONS AND COMMENTS

- This SMO is to be used as a guideline. Transporting units may add information that may be pertinent to the triage process ("The patient is on CPAP and is not responding well" "Fall on blood thinners", etc)
- Medical Control may request additional information
- The term "radio report" in this SMO is used it include radio and phone report

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

SMO: In Field Termination

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

SPECIAL SITUATIONS

__ Patient with DNR/POLST (follow DNR/POLST SMO)
__ Patient with definitive signs of death include at least one of the following:

- rigor mortis
- dependent lividity
- decomposition of body tissues
- fatal/unsurvivable injury(s)-an injury clearly incompatible with life:
  - decapitation
  - incineration
  - separation of vital internal organs from the body or total destruction of organs
  - 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)

Documentation of adherence to SMO

__ Patient assessment findings
__ Following patient assessment; CPR is initiated
__ Airway management
__ Application of AED/cardiac monitor
__ Information regarding DNR/POLST
__ Appropriate AHA treatments provided
__ Contact with Medical Control and name of physician
__ Time of death

Medical Control Contact Criteria

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

PRECAUTIONS AND COMMENTS

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

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

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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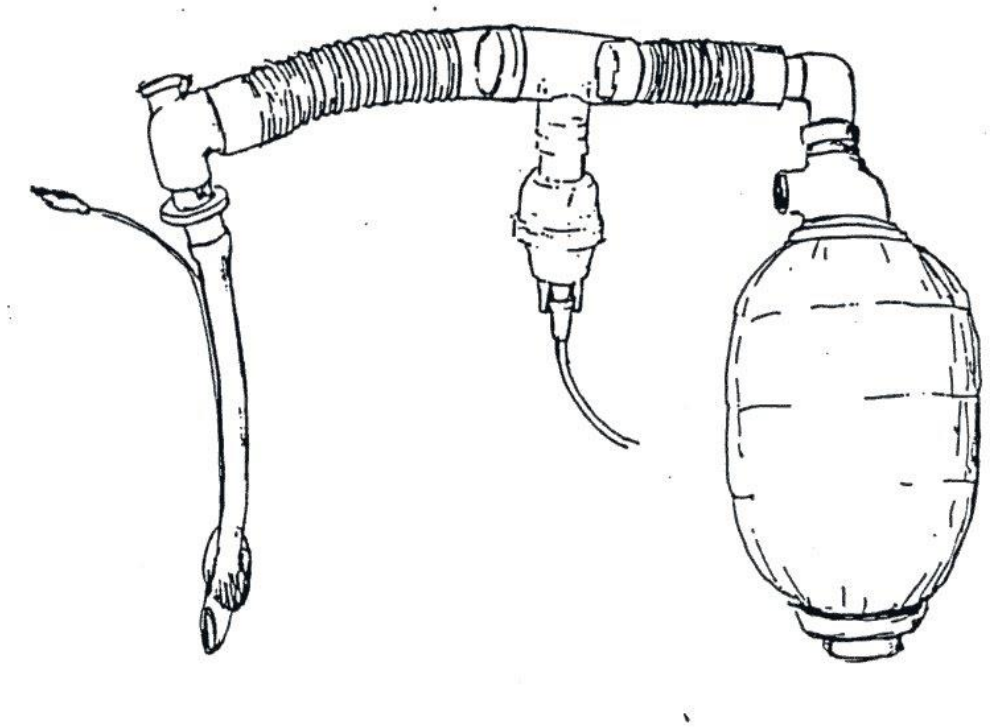
PRECAUTIONS AND COMMENTS

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



MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS, ILS, ALS

SMO: Intercept Criteria

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

INFORMATION NEEDED

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

OBJECTIVE FINDINGS—ALS care should be initiated according to the following guidelines

__Patient with abnormal vital signs—use assessment skills and common sense. The following guidelines for adults:

- Pulse < 60 or > 130; or irregularity
- Respirations <10 or > 28; or irregularity
- Systolic BP < 90 or diastolic > 110
- Pulse oximeter reading < 90

__Any patient with a potentially life-threatening condition which exists or might develop during transport. Examples of situations in which ALS care is usually indicated include, but are not limited to:

- Altered mental status and/or unconsciousness
- Chest pain
- Ongoing seizures
- Neurologic deficit/ stroke
- Syncope
- Abdominal pain
- Shortness of breath
- Signs of impending hypovolemic shock
- Complication of pregnancy or emergency childbirth
- GI bleeding
- Significant trauma patient (Category I or II)
- Overdose/ Poisoning
- Patient condition warrants advanced prehospital medical care

__ Call for ILS/ALS intercept EARLY. NEVER discontinue ILS/ALS care once initiated.

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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

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

PRECAUTIONS AND COMMENTS

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

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

SMO: Interhospital/ Interfacility Transport

Overview: Frequently, patients need to be transported between hospitals for higher level of care or more specific care procedures. Patients are to be treated during transport in accordance with existing standing operating procedures and policies & procedures. EMS 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

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

PRECAUTIONS AND COMMENTS

- An EMS agency / provider may be approved as a Critical Care Provider – Tier I, II or III. These agencies / providers may have additional SMO and policies for interhospital / interfacility transports

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

SMO: Intranasal Medication - Mucosal Atomization Device (MAD)

Overview: In the absence of an established IV, intranasal is a rapid route offering high level of bio-availability 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

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

PRECAUTIONS AND COMMENTS

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

MEDICATION ADMINISTRATION CHART

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
ILS, ALS

PROCEDURE: Intraosseous Access

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

Indications

__Peripheral IV is unavailable
and patient exhibits one or more of the following:
__Cardiac arrest
__Hemodynamic instability
__Patient in immediate need of medication and/or fluids

Contraindications

__Fracture of the bone selected for IO site (consider alternate site)
__Excessive tissue at insertion site with the absence of anatomical landmarks (consider alternate site)
__Local infection at the IO site (consider alternate site)
__Previous significant orthopedic procedures, including IO within 24 hours (consider alternate site)
__Bone disorders: osteogenesis imperfecta

Locating Appropriate Insertion Sites

Proximal Tibia

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

Proximal Humerus

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

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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 be 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

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	Dextrose	Dopamine	Mag Sulfate	Fentanyl IN	Midazolam IN			Formulary

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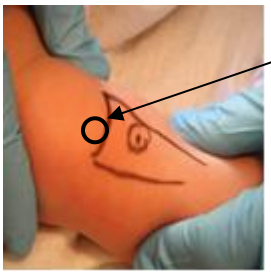
PRECAUTIONS AND COMMENTS

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

Proximal Tibia

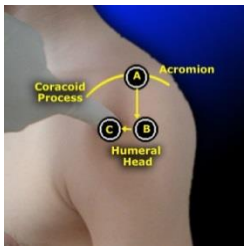
___Locate the tibial tuberosity
___Move 1 – 2 cm medially
___Then move 1 – 2 cm distally



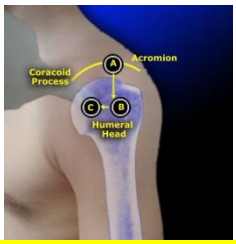
Humeral Head

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

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

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PROCEDURE (continued)

__Insert laryngoscope and visualize glottic opening
__Suction if necessary
__Pass ET tube plus inflate cuff
__Remove stylet, ventilate, with 100% oxygen
__Three methods of confirmation:

- With $EtCO_2$ 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

__Secure tube

Documentation of adherence to procedure

__Respiratory exam
__Indications for intubation
__Evaluation for possibility of trauma, if present spinal restriction
__Oxygen saturation
__Number of attempts (passage of ETT past teeth)
__Confirmation of tube placement with three verification methods
__Patient condition reassessed
__Failure of BLS airway maneuvers to successfully ventilate

PRECAUTIONS AND COMMENTS

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

REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
ILS, ALS

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

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.

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UNSTABLE-defined as:
__ Signs of poor perfusion:
__ Decreased level of consciousness
__ SBP<90 (with signs/symptoms of hypoperfusion)
__ CHF (rales)
__ Moderate to severe chest pain

TREATMENT - Unstable
__Routine Medical Care
__Regular reassessment of vital signs and signs of perfusion
__**Diazepam IVP** or **Midazolam IVP** for sedation prior to cardioversion if patient SBP ≥100 mmHg
May repeat dose up to maximum of 10 mg.
__Synchronized cardioversion:
__Narrow Regular - 50-100 J
__Narrow Irregular120-200J
__Wide Regular 100 J, biphasic
__**Fentanyl** or **Morphine Sulfate** IVP for pain control if needed if patient SBP ≥ 100 mm Hg. (see Pain Management SMO)
__Obtain 12 Lead ECG and print rhythm strips for receiving hospital

Documentation of Adherence to SMO
__Stability documented (chart contains word "stable" or "unstable" and the criteria on which that determination was made)
__Stable patients receive either Valsalva maneuver or **Adenosine**
__Cardioverted patients receive sedation as indicated and SBP ≥ 100.
__Correct doses of medications administered

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

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
ALS

PROCEDURE: Needle Cricothyrotomy

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

OBJECTIVE FINDINGS

__Patient unconscious
__Unable to ventilate despite attempts to relieve obstruction
__Patient's skin color may be pale, cyanotic, and/or ashen
__Possible facial trauma restricting normal intubation as an option

EQUIPMENT NEEDED:

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

PROCEDURE

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

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PROCEDURE (continued)

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

Documentation of adherence to Procedure
__ Reason for procedure including physical findings
__ Attempts to secure the airway by less invasive means (if applicable). If you did not make any attempts to secure the airway with any other means document why not.
__ Size catheter used
__ Method of ventilation and O2 liter flow
__ Additional catheters placed to assist exhalation (if applicable)
__ Results of procedure including patient's physical condition
__ Total length of time the transtracheal catheter served as the only airway

PRECAUTIONS AND COMMENTS
__Complications:

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

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

REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
ILS, ALS

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

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PROCEDURE

__Identify probable pneumothorax. Observe Universal Precautions. Use sterile gloves if possible.
__Locate the 2nd intercostal space in the midclavicular line on the side of the pneumothorax
__Cleanse the site with antiseptic solution and maintain as much of a sterile field as possible.
__Attach a 12-20 ml syringe to the appropriate angiocath
__Puncture the skin perpendicularly, just superior to the 3rd rib and into the thoracic cavity. A "pop" should be felt as well as a "rush of air" along with the plunger of the syringe moving outward.
__Advance the catheter
__Remove the needle and syringe
__Secure the catheter in the chest wall with a dressing and tape
__If tension re-occurs, repeat procedure
__Monitor the patient closely, continue to reassess, and continue trauma care, transport ASAP.

Documentation of adherence to procedure

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

PRECAUTIONS AND COMMENTS

- Strongly consider needle decompression in any patient receiving positive pressure ventilation who deteriorates or remains unimproved
- Nerve bundles and blood vessels are located under the ribs and puncturing them could cause nerve damage and excessive bleeding. Ensure that the puncture is being made over the top of the 3rd rib.
- If you needle decompress a chest, leave any and all needle decompression catheters in place even if attempt did not result in clinical improvement. Be sure to report to ED staff the number and placement of attempts.
- Should a decompression needle become dislodged replace only if the patient's clinical condition warrants it. You must report any/all dislodged needle decompression attempts to ED staff.

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

SMO: Notification of Coroner

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 of 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

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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

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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

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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

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

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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
__ Administer for mild to moderate pain:

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

__For severe pain administer **Morphine**, **Fentanyl** or **Ketorolac** if patient's systolic BP ≥ 100 mmHg and respirations ≥ 12 per minute. Titrate to effect per Medication Administration Chart. Contact Medical Control if higher dose is required.

- **Ketamine IM** for extreme pain unresponsive to narcotics.
- Repeat assessment, including vital signs, level of consciousness, oxygen saturation, and effect after each dose.
- If signs of narcotic over dosage develop (i.e. respiratory depression, significantly diminished mental status) administer **Naloxone**.
- NOTE: all patients receiving narcotics and/or **Naloxone** **must be transported** to the hospital. Patients who have received narcotics are NOT considered competent to sign refusal. In those patients who receive **Naloxone** the coma/depressed respirations may reoccur when the **Naloxone** wears off.

__ Paramedics may consider ***one*** of the following as an alternative to the medications listed above:

- **Diazepam** or **Midazolam** for musculoskeletal type pain.

Documentation of adherence to SMO

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

Medical Control Contact Criteria
__ 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 narcotic pain medications with significant potential for abuse and addiction. EMS agencies must have a mechanism to secure and account for all narcotics.
- Monitor patient's respiratory effort and effectiveness. If needed assist ventilations and use airway adjuncts as necessary.
- Monitor pulse oximetry and $EtCO_2$ 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**.

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
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Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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

SMO: Pediatric Airway Management

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

INFORMATION NEEDED

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

OBJECTIVE FINDINGS

__Mental status (AVPU)
__Airway patency (head-tilt chin lift OR modified jaw thrust for unconscious patient or if C-spine trauma is a possibility)
__Oxygenation and Circulatory status (pulse oximetry, vital signs)

TREATMENT

__ Routine Pediatric Care
__ Manage Foreign Body Airway Obstruction per American Heart Association standards
__ Consider NG tube for gastric decompression
__ Assess airway patency utilizing adjuncts as indicated

- OPA
- NPA
- Supraglottic Airway per EMS System approval following manufacturer's guidelines
- Pediatric intubation for patients < 30 kg has been eliminated based on evidence based studies showing aggressive airway management without intubation results in improved outcomes

__ If $EtCO_2$ 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 $EtCO_2$ if available (most preferred method)
- __Colorimetric device
- __Visualization
- __Auscultation
- __Absence of gastric sounds
- __Bi-lateral chest rise

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Documentation of adherence to SMO

__Indications for airway management
__Methods utilized
__Three methods of confirmation for advanced airway:

- With $EtCO_2$ if available (most preferred method)
- Colorimetric device
- Visualization
- Auscultation
- Absence of gastric sounds
- Bi-lateral chest rise

__Patient condition reassessed

Medical Control Contact Criteria

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

PRECAUTIONS AND COMMENTS

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

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	Dextrose	Dopamine	Mag Sulfate	Fentanyl IN	Midazolam IN			Formulary

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

SMO: Pediatric 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.

ALLERGIC REACTION
INFORMATION NEEDED

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

OBJECTIVE FINDINGS
MILD
__Hives, rash

TREATMENT- Mild

__Routine Pediatric Care
__Remove etiologic agent if possible or relocate patient
__For extensive hives, Give **Diphenhydramine**
__Immediate transport

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

TREATMENT- Moderate
__ Routine Pediatric Care
__ Remove etiologic agent if possible or relocate patient
__ **Albuterol** in a nebulizer
__ **Diphenhydramine**
__ Consult Medical Control for use of **Epinephrine**

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

ILS / ALS
- **Epi Auto Injector** or **Epinephrine** (1:1 ml). May repeat in 15 minutes one time (see Precautions and Comments)

__ **Fluid bolus**, reassess and repeat prn to 60 ml/kg
__ Immediate Transport

OBJECTIVE FINDINGS
SEVERE (ANAPHYLAXIS)
__Angioedema (swollen or protruding tongue, swollen lips)
__Abnormal appearance (agitation, restlessness, somnolence)
__Signs of diminished perfusion including weak brachial pulse, delayed capillary refill, pale or cool skin
__Respiratory failure (grunting, flaring, severe retractions)
__Stridor
__Bradycardia
__SaO_2 < 95% on room air

TREATMENT - Severe

__Routine Pediatric Care
__Remove etiologic agent if possible or relocate patient
__IV access
__**Epinephrine** (see Precautions and Comments):

BLS

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

ILS / ALS – may use **Epi Auto Injector** or

- IM: If no ET or IV access **Epinephrine (1:1 ml)**, repeat in 15 minutes one time prn, maximum single dose 0.3 mg
- INTRAVENOUS: **Epinephrine (1:10 ml)**; may repeat one time in 5 minutes as level of distress indicates.
- ENDOTRACHEAL: If patient intubated and no IV access, **Epinephrine (1:1 ml)** ET may repeat one time in 5 minutes.

__**Diphenhydramine**
__**Albuterol** in a nebulizer
__**Fluid bolus** reassess and repeat prn to 60 ml/kg if indicated
__Advanced airway management as indicated
__Immediate transport

Documentation of adherence to SMO

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

PRECAUTIONS AND COMMENTS

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

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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

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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

SMO: Pediatric Altered Mental Status

Overview: Performing a neurologic examination on an infant or child is more difficult 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.

INFORMATION NEEDED:

__Change in mental status: baseline status, onset and progression of altered mental state (Use Glasgow Coma Scale for Infant or Adult as appropriate)
__Antecedent symptoms such as fever, respiratory distress, headache, nuchal rigidity, seizures, confusion, trauma, nutritional intake/output
__Primary Assessment ABCDE
__Nature of illness/mechanism of injury-SAMPLE, OPQRST, or DCAP-BTLS (see acronym descriptions in Appendix)
__Secondary Assessment
__Ongoing Assessment
__Contributing factors: (AEIOU-TIPS) Alcohol, Epilepsy, Infection, Overdose, Uremia, Trauma, Insulin, Poisoning, Stroke

OBJECTIVE FINDINGS

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

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TREATMENT

__Routine Pediatric Care
__Check blood glucose
__Blood glucose level less than 80 mg/dl child or less than 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

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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

SMO: Pediatric Arrest – Asystole, PEA

Overview
When rhythm disturbances occur in children, they are usually the result of hypoxia, acidosis, hypotension, or structural heart disease. Assessment and history to identify treatable causes cannot be over emphasized.

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

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

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

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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 $EtCO_2$ if available (most preferred method)
- __Colorimetric device
- __Visualization
- __Auscultation
- __Absence of gastric sounds
- __Bi-lateral chest rise

__Rhythm analysis after each treatment
__Patient status checks every two minutes and after medication or fluid administration
__IV or IO flow rates for fluid
__Epinephrine dosing including route and concentration

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

PRECAUTIONS AND COMMENTS

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

Reversible causes H's and T's

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

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	Dextrose	Dopamine	Mag Sulfate	Fentanyl IN	Midazolam IN			Formulary

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

SMO: Pediatric Bradycardia

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

INFORMATION NEEDED

__ History, onset and duration of symptoms, appearance, and neurological baseline
__ History of respiratory 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

__Clinical signs of respiratory distress or Failure/hypoxemia
- Apnea
- Slowed or absent capillary refill < 3 seconds)
- Hypotension
- Retractions, flaring or grunting

__ Signs of decreased perfusion
- AMS/Abnormal appearance
- Inequality of central and distal pulses
- Loss of distal pulses

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

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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

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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[3]
__ Complicating or contributing factors: confined space, length of exposure, alcohol or drug involvement
__ Primary Assessment ABCDE
__ Nature of illness/Mechanism of injury-SAMPLE, OPQRST, or DCAP-BTLS
__ Secondary Assessment findings
__ Ongoing Assessment findings
__ Consider abuse and/or neglect; if present contact proper authorities

OBJECTIVE FINDINGS

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

TREATMENTS

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

THERMAL

__ Manage the airway using manual methods and mechanical devices
__ If inhalation is suspected a false positive pulse oximetry reading may present. Use a RAD 57 analyzer, if available to confirm potential carbon monoxide or other chemical inhalation
__ Stop the burning process: Remove burning or smoldering clothing or jewelry and cool skin that is still hot to the touch. Do not break blisters. Cooling should take no more than 1-2 minutes with room temperature water.
__ Cover affected body surface area with DRY sterile dressing or sheet
__ Prevent hypothermia
__ Establish IV or IO access if a site is available

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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

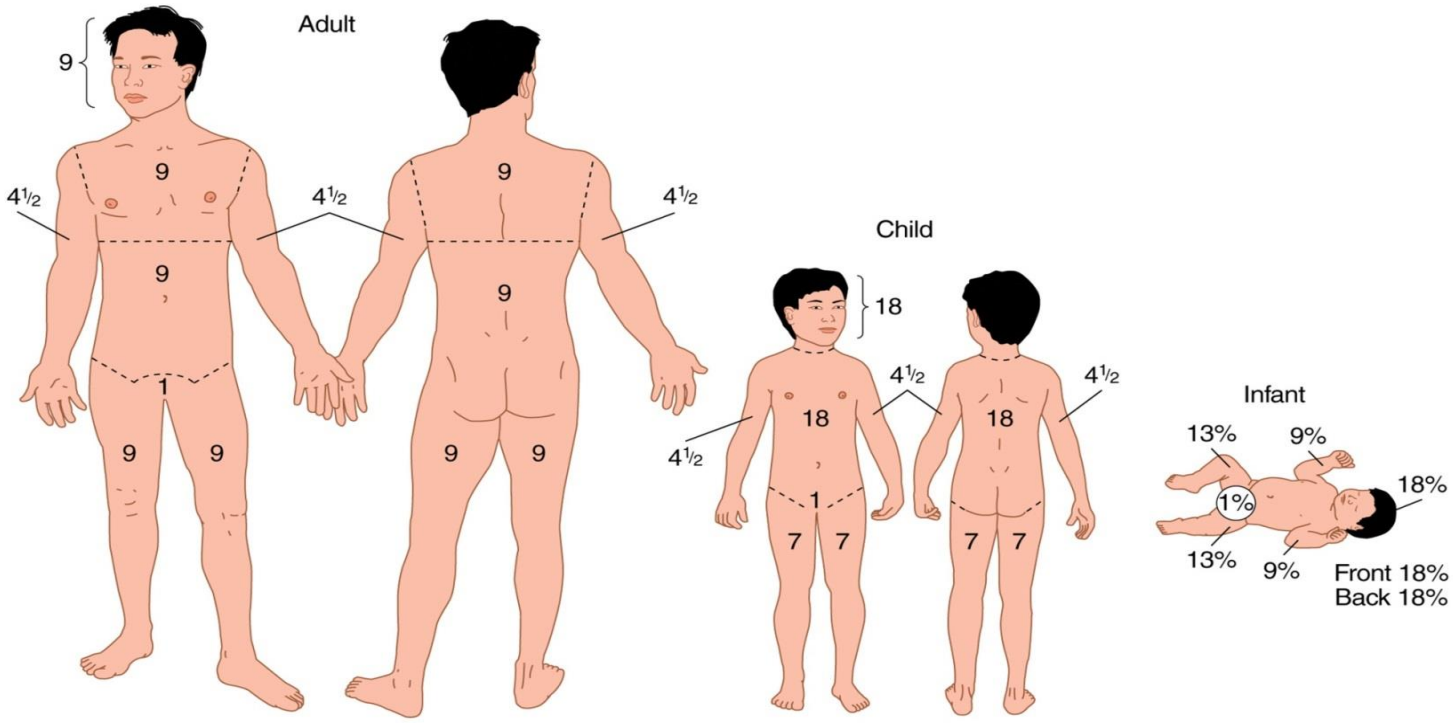
PRECAUTIONS AND COMMENTS

- 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.
- The Parkland Formula is the standard calculation for fluid administration in burn victims. The formula is as follows: **4 ml** X **% burn area** X **body weight (kg)** = isotonic fluid infusion within 24 hours. One half of this should be administered within the first 8 hours.
    - Parkland Formula Prehospital: **0.25 ml x % burn area x body weight (kg)**
- Burns that would benefit from care at a burn center:
    - Partial-thickness burns greater than 10% TBSA
    - Burns that involve the face, hands, feet, gentialia, 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

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

RULE OF NINES CHART



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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

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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

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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

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

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 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**

Sinus Tachycardia:
- Onset
- Progression
- Fluid loss
- Trauma
- Rate: infant usually <220 bpm, child usually < 180 bpm

SVT
- Onset; sudden
- Rate: infant usually >220bpm child usually > 180bpm

Ventricular Tachycardia
- Onset, sudden
- Rate: >120 bpm

Signs of Unstable Patient

Clinical signs of resp. distress or failure/hypoxemia
- Apnea
- Retractions, flaring or grunting

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

TREATMENT

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

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TREATMENT (continued)

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

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

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

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

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

Medical Control Contact Criteria

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

PRECAUTIONS AND COMMENTS

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

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	Dextrose	Dopamine	Mag Sulfate	Fentanyl IN	Midazolam IN			Formulary

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

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

SMO: Pediatric Head Trauma

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

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

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

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

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TREATMENT (continued)

GCS < 12 (Moderate to Severe)
__ Oxygen as indicated (see Pediatric Airway Management SMO)
__ Support ventilation with BVM; assist to maintain adequate ventilations especially for suspected increased intracranial pressure. When ventilating patient maintain $EtCO_2$ 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

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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REGION I EMERGENCY MEDICAL SERVICES
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SMO: Neonatal Resuscitation

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

INFORMATION NEEDED

__Gestational age
__Infant is part of a multiple birth or NICU graduate
__Meconium stained during birth (See Meconium Staining section below)
__Mother use of drugs or alcohol
__Known infant history
__Presence of special need (e.g. apnea monitor, etc)
__If just born, time since birth

OBJECTIVE FINDINGS

__If just born 30 second cardiopulmonary assessment
- Airway, breathing (respiratory rate, quality, work of breathing, presence of cry)
- Circulation (skin color, temperature, pulses, capillary refill, mental status)

__If infant less than 30 days same arrest intervention as just born
__Airway interventions and keep baby warm

TREATMENT – MECONIUM STAINING NOTED

__As soon as head is delivered attempt to suction before baby starts to breath
__If thick meconium or secretion present and signs of respiratory distress thoroughly suction mouth, then nose

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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 hearts rate 80-100 bpm. Give 100% oxygen by BVM. Reassess heart rate after 15-30 seconds.
__ If heart rate greater than 100 bpm, check skin color. If peripheral cyanosis give oxygen by mask.
__ If unable to ventilate effectively with BVM consider supraglottic device.
__ Confirm proper airway device placement and ventilate 30 times a minute with continued chest compressions.
__ Airway adjuncts per Pediatric Airway Management SMO
__ Establish an IV or IO and give **Epinephrine** if heart rate below 60; reassess heart rate and respirations; may repeat in 3-5 minutes if indicated.
__ If hypovolemia suspected, **Normal Saline** 10 ml/kg over 5 to 15 minutes
__ Continue to reassess respiratory rate and heart rate while enroute

Documentation of adherence to SMO

__ 30-second cardiopulmonary assessment
__ Administration of oxygen
__ Document all cardiac interventions and response
__ Medication administration
__ Airway management

Medical Control Contact Criteria

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

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PRECAUTIONS AND COMMENTS

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

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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

SMO: Pediatric Respiratory Distress/ Obstruction/Arrest

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

INFORMATION NEEDED

__Onset, duration
__Foreign body aspiration
__Fever
__Drooling, sore throat
__Sputum production
__Medications
__History of asthma, exposures (allergens, toxins, smoke), trauma (blunt/penetrating)

OBJECTIVE FINDINGS

__Deteriorating level of consciousness
__Intercostal, subcostal, supraclavicular retractions
__Apnea or bradypnea/ tachypnea
__Absent breath sounds
__Drooling with history of fever, sore throat
__Tripod position
__Pulse oximetry
__Abdominal breathing
__Tachycardia/ bradycardia
__Cyanosis- central
__Nasal flaring
__Stridor
__Choking
__Grunting

TREATMENT

__ Routine Pediatric Care

Foreign Body Airway Obstruction

__ Relieve obstruction per AHA guidelines
__ If BLS measures fails, proceed to Magill Forceps and Direct Laryngoscopy for purposes of removing foreign body

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TREATMENT (continued)

Lower Airway (Wheezing)

__ **Albuterol**:

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

__Severe refractory bronchospasm:

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

__ Call Medical Control for persistent bronchospasm, considering:

- Consider **Magnesium Sulfate** – see **Magnesium Sulfate Administration Chart**
- **Methylprednisolone** (anticipated onset of effect approximately 1 hour)

Respiratory Compromise

__ Position of comfort
__ Avoid invasive procedures or agitation
__ Ensure proper airway positioning
__ Ventilate and airway adjunct as needed
__ Rapid transport

Documentation of adherence to SMO

__If obstruction suspected, BLS/ALS maneuvers to relieve obstruction
__Medications given

Medical Control Contact Criteria

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

PRECAUTIONS AND COMMENTS

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

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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

SMO: Pediatric Seizures / Status Epilepticus

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

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

INFORMATION NEEDED

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

OBJECTIVE FINDINGS

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

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TREATMENT

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

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

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

Documentation of adherence to SMO

__Airway patency/ interventions
__Administration of O_2
__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

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

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
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SMO: Pediatric Shock

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

INFORMATION NEEDED

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

OBJECTIVE FINDINGS

COMPENSATED

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

DECOMPENSATED

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

TREATMENT

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

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

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

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

Documentation of adherence to SMO

__Oxygen given
__Airway status
__Respiratory status
__Circulation status
__IV/IO established
__Pertinent findings
__Patient response to intervention

Medical Control Contact Criteria

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

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

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
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SMO: Pediatric Toxic Exposure

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

INFORMATION NEEDED

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

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

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ANTIPSYCHOTICS WITH EXTRAPYRAMIDAL REACTION
__ Routine Pediatric Care
__ Collect information
__ **Diphenhydramine**

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

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

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

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

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

Documentation of adherence to SMO

__All interventions completed
__Response to interventions
__Information regarding substances involved e.g. ingested, toxic exposure to suicidal thoughts, etc.
__If **Naloxone** given: AMS, respiratory depression documented

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)

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

REGION I EMERGENCY MEDICAL SERVICES
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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 and pulseless.
__ Defibrillate at 2 J/kg repeat every 2 minute at 4 J/kg
__ IV/IO access
__ Airway management per Pediatric Airway Management SMO
__ **Epinephrine**
__ **Amiodarone** or **Lidocaine**
__ If defibrillation is successful at any point, and normal sinus rhythm, sinus tachycardia, or another supraventricular rhythm with pulses results, administer **Amiodarone** or **Lidocaine** if it has not been administered
__ If rhythm changes, check for pulses, and proceed to appropriate Pediatric Cardiac Arrest SMO (Pediatric Arrest: Asystole/PEA or Pediatric V-Fib/Pulseless V-Tach) or Pediatric Dysrhythmia SMO (Pediatric Bradycardia or Pediatric Tachycardia) as indicated

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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

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	Dextrose	Dopamine	Mag Sulfate	Fentanyl IN	Midazolam IN			Formulary

REGION I EMERGENCY MEDICAL SERVICES
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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.

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RN or NON-AGENCY EMS PROVIDER ON SCENE

__ An RN or non-agency EMS provider on scene may assist to the level of First Aid. If additional skill are needed (e.g. IV initiation) Medical Control MUST be contacted for permission to utilize this person in an expanded role.

__ An RN or non-agency EMS provider on scene must provide proof of State of Illinois licensure and a picture ID.

__ He/she must agree to follow the directions of the EMSMD or his/her designee.

Documentation of adherence to SMO

__Notification of Medical Control as outlined above.

__Any deviation from SMO as discussed with Medical Control.

__Documentation of name, State of Illinois license number, and picture ID produced as outlined above.

Medical Control Contact Criteria

__ Immediately upon scene physician's request to assume responsibility at the scene.

__ If any question exists as to best treatment option for the patient.

PRECAUTIONS AND COMMENTS

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

EMS REGION 1

ON-SITE PHYSICIAN RESPONSIBILITY ACKNOWLEDGMENT

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

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

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

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

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

Please print except for your signature:

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

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

_____ All patients at the scene, **OR**

_____ The following patients: _____

_____

_____

_____ _____/_____/_____

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

Thank you for your interest.

Region 1 EMS Personnel to complete:	White:	Chart
Date _____/_____/_____	Yellow:	EMS Office
Run Identification _____	Pink:	Provider
EMT Initials _____	Gold:	Physician

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

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

SMO: Pre-eclampsia/ Eclampsia

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

INFORMATION NEEDED

__ Patient complaint
__ Mechanism of injury
__ Gestational age, single or multi fetus
__ Age of mother
__ Number of pregnancies

OBJECTIVE FINDINGS

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

TREATMENT

__Prepare for rapid transport
__Routine Medical Care
__Oxygen as indicated
__Seizure precautions

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

__Position patient on left side or raise right side of backboard and transport as soon as possible
__If seizure occurs, protect patient from harming self; if possible, place nasopharyngeal airway as needed
__If seizure occurs, **Midazolam** or **Diazepam**
__ **Magnesium Sulfate** (see **Magnesium Sulfate Administration Chart**) after initial dose of **Midazolam** or **Diazepam** for seizure

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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/GYNE Eclampsic or Pre-Eclampsic patient

PRECAUTIONS AND COMMENTS

- GENTLE HANDLING. Minimal CNS stimulation. Do NOT check pupillary reflexes.

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	Dextrose	Dopamine	Mag Sulfate	Fentanyl IN	Midazolam IN			Formulary

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

SMO: Trauma in Pregnancy

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

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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

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	Dextrose	Dopamine	Mag Sulfate	Fentanyl IN	Midazolam IN			Formulary

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

SMO: Acute Pulmonary Edema

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

INFORMATION NEEDED

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

OBJECTIVE FINDINGS

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

TREATMENT

__Routine Medical Care
__Position of comfort, usually upright
__Oxygen as indicated
__If patient is wheezing see Bronchospasm SMO
__IV Access
__**NTG** **by EMTs** for systolic >100 mmHG

- For patients with coronary artery disease and a prescription of **NTG** may administer initial dose from EMS supply (offline medical control). Contact Medical Control for further dosing.
- Reassess blood pressure. **NTG** (for patients who have not been prescribed NTG) may administer with an order from Medical Control (online medical control)

__**NTG** (IV not required prior to 1st dose of **NTG** administration but IV should be started before subsequent doses of **NTG** if possible**)**
__CPAP (see CPAP Procedure) **Nitroglycerin** tablets must be fully dissolved before resuming CPAP.
__If patient has signs of fluid overload consider **Furosemide**, may repeat one time if indicated. Do not use if pneumonia is suspected.
__If systolic BP under 90, see Cardiogenic Shock SMO

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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

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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

SMO: Gynecologic Emergencies: Rape / Sexual Assault

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

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

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

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

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

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

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

SMO: Refusal of Medical Care or Transport

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

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Refusal of Treatment by Competent Adult Patients

__Patients have the right to refuse treatment and/or transport

__The patient will be informed of the risk of refusal of possibility of deterioration of medical condition, up to and including death

__Attempt to assess vital signs and SAMPLE history if possible

__For high risk refusals, as defined above:

- Consider contacting Medical Control
- Attempt to leave patient in care of a responsible party
- Provide post refusal instructions as indicated
- Inform patient to call back if conditions changes or decision to refuse treatment is reconsidered

__Once the allowed assessment is performed, and the patient persists in refusing care and/or transport, the patient will be asked to sign the Region One Prehospital Refusal form (or a form mandated by the agency's EMS MD). The refusal form must also be signed by the EMT and by one other witness (preferably law enforcement or family) if available.

Multiple Victims Refusal of Consent for Treatment

__To ensure the efficient use of resources, if an incident is declared an MVI or Disaster by the on scene commander, a reasonable/ common sense approach should be used and provider safety must be considered. If mechanism of the incident indicates the potential for victims or the Incident Commander has declared and MVI or Disaster, and the patients are refusing treatment, the Region One Multiple Victim Release Form may be completed in lieu of individual Patient Refusal Form.

__One EMS Run Report must be completed and a copy of the Multiple Victim Release form must be attached to the Run Report.

Minor in Need of Emergency Care who Refuses Treatment

__All reasonable attempts should be made to release a minor to a legal guardian. If a legal guardian cannot be located document attempts made to contact.

- Minor may be turned over to local police or juvenile authority, or
- Minor may be released if legal guardian is contacted by phone and consent for release is given. Document phone call, name of guardian, and witness.

__If the need for emergency care exists or if the behavior of the patient suggests a lack of capacity to make a refusal in a valid manner continue to render care, up to and including transport.

Post-Treatment Refusals

This section applies to when treatment has been given by EMS and the patient considers their condition improved to the point that they refuse transport, such as:

- Hypoglycemic patient
- Overdose patient
- Asthma/respiratory
- Chest pain
- Syncope
- Pain control

Important points to discuss with patient before obtaining refusal:

- EMS evaluation and/or treatment is not a substitute for medical evaluation and treatment by a doctor. EMS will advise the patient to see a doctor or go to a hospital. The patient will be given the Discharge Instruction form. EMS will circle the appropriate potential diagnosis with the patient and document this discussion on the refusal form.
- If patient's condition was discussed with Medical Control on scene, inform them that this also does not substitute for medical evaluation.
- Patient's condition may be worse than originally evaluated. Without treatment, patient's condition or problem could become worse.
- If patient changes their mind or condition becomes worse, patient should be made aware that they may call 911 and EMS will respond as always.

Medical Control Contact Criteria
__ Contact Medical Control whenever a question exists as to the best treatment course for the patient __ Issues regarding decision-making capacity of patients should be managed directly with Medical Control __ Contact Medical Control if there is a question regarding need for evaluation/ treatment (based on mechanism of injury, etc.)

PRECAUTIONS AND COMMENTS

- Important points to discuss with patient before obtaining refusal:
  - EMS evaluation and/or treatment is not a substitute for medical evaluation and treatment by a doctor. EMS will advise the patient to see a doctor or go to a hospital. If patient's condition was discussed with Medical Control on scene, inform them that this also does not substitute for medical evaluation.
  - Patient's condition may be worse than originally evaluated. Without treatment, patient's condition or problem could become worse.
  - If patient changes their mind or condition becomes worse, patient should be made aware that they may call 911 and EMS will respond as always.
- FOR MINORS: Instruct the patient's legal guardian that in this situation, they are acting on behalf of the patient and they understand the above information regarding refusal of treatment or transport, and accept responsibility for the patient.
- Certain injuries, illnesses, ingestions, or injected substances can alter behavior and create a situation whereby the capacity to make a valid judgment by the patient no longer exists. It is better to treat and prevent any further harm to the patient who may not be able to judge his/her own condition.
- The State of Illinois permits Emancipated Minors to be treated as adults and therefore allows them to make the decision regarding consent for treatment or refusal of services.

Region One Prehospital Refusal Form

Region One Prehospital Refusal

Date: ___/___/___ Location of Call: _____ Type of Call: _____

Time: _____ Dispatched: _____ Enroute: _____ Arrived: _____ Completed: _____

Agency: _____ Unit #: _____ Call #: _____

Patient Information

Name: _____ Guardian Name: _____

Address: _____ City: _____ State: _____ Zip: _____

D.O.B.: ___/___/___ Age: _____ Gender: ☐ Male ☐ Female

Assessment of Patient

Medical Hx: _____ Allergies: _____

Medications: _____

BP: ____/____ Pulse: _____ Resp.: _____ Skin: _____ Pupils: R-_____ / L-_____ ☐ Refused V/S

Check appropriate response: ***Draw an "X" through the most appropriate box – Y is yes and N is no***

Is the patient oriented to: **Person** Y N **Place** Y N **Time** Y N **Situation** Y N

***NOTE: Any "No" answer from above requires contact of Medical Control*

Suspicion of intoxication? Y N

*** NOTE: A "YES" answer requires contact of Medical Control*

Medical Control Contacted? Y N M.D. / ECRN Name: _____

Patient left in care of: _____ Phone Number: (____)_____

If any treatment (other than vitals) was performed or if Medical Control was required to be contacted, then an EMS PCR must be completed

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 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 requesting transport to _____ Hospital. I have been informed that this facility lies outside the responding agency's territorial range of transport. I am refusing transport to a hospital within this territorial range.

RISKS

All 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.

_____ X_____ ___/___/___
Printed name of patient / person authorized to consent for patient — Signature of patient / person authorized to consent for patient — Date

_____ X_____ ___/___/___
Printed name of witness — Signature of witness — Date

Comments: _____

_____

X _____ X _____
Signature of Crewmember #1/License # — Signature of Crewmember #2 License #

SHMS-7782 11/2017 White: Agency Copy Yellow: EMS Copy Pink: Patient Copy

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Refusal / Discharge Instructions (Front Page)

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.

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 now only in 1 area
- You vomit (throw up) blood or find blood in your bowel movement
- You become dizzy or faint
- Your abdomen becomes distended 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 if:

- You have shooting pains into your buttocks, groin, legs, or arms or the pain increases.
- You have trouble urinating or lose control of your stools or urine.
- You have numbness or weakness in your legs, feet, arms, or hands.

FEVER:

- Always take medications as directed. Tylenol and Ibuprofen can be taken at the same time.
- If you are taking antibiotics, take them until they are gone, not until you are feeling better.
- Drink extra liquids (1 glass of water, soft drink or Gatorade per hour of fever for an adult)
- If the temperature is above 103° F, it can be brought down by a sponge bath with room temperature water. Do not use cold water, a fan, or an alcohol bath.
- Temperature should be taken every 4 hours.

Call or see a physician, go to the emergency department, or call 911 immediately if:

- Temperature is greater than 101° F for 24 hours
- A child becomes less active or alert.
- The Temperature does not come down with Acetaminophen (Tylenol) or Ibuprofen with the appropriate dose.

HEAD INJURY:

- Immediately after a blow to the head, nausea, and vomiting may occur.
- Individuals who have sustained a head injury must be checked, and if necessary awakened, every 2 hours for the first 24 hours.
- Ice may be placed on the injured area to decrease pain and swelling.
- Only drink clear liquids such as juices, soft drinks, or water the first 12 hours after injury.
- Acetaminophen (Tylenol) or Ibuprofen only may be used for pain.

Call or see a physician, go to the emergency department, or call 911 immediately if:

- The injured person has persistent vomiting, is not able to be awakened, has trouble walking or using an arm or leg, has a seizure, develops unequal pupils, has a clear or bloody fluid coming from the ears or nose, or has strange behavior.

INSECT BITE/STING:

- A bite or sting typically is a red lump which may have a hole in the center. You may have pain, swelling and a rash. 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 ice (applied to the area 10 to 20 minutes each hour) will decrease pain and swelling.
- Diphenhydramine (Benadryl) may be used as directed to control itching and hives.

Call or see a physician, go to the emergency department, or call 911 immediately if:

- You develop any chest pain or difficulty breathing.
- The area becomes red, warm, tender, and swollen beyond the area of the bite or sting.
- You develop a temperature above 101° F.

RESPIRATORY DISTRESS:

- Respiratory Distress is also known as shortness of breath or difficulty breathing.
- Causes of Respiratory Distress include reactions to pollen, dust, animals, molds, foods, drugs, infections, smoke, and respiratory conditions such as Asthma and COPD. If possible avoid any causes which produce respiratory distress.
- If you have seen a physician for this problem, take all medication's as directed.

Call or see a physician, go to the emergency department, or call 911 immediately if:

- Temperature is greater than 101° F.
- The cough, wheezing, or breathing difficulty becomes worse or does not improve even when taking medications.
- You have Chest Pain.
- Sputum (spit) changes from clear to yellow, green, grey, or becomes bloody.
- You are not able to perform normal activities.

EXTREMITY INJURY:

- Extremity Injuries may consist of cuts, scrapes, bruises, sprains, or broken bones (fractures).
- Apply ice on the injury for 15 to 20 minutes each hour for the first 1 to 2 days.
- Elevate the extremity above the heart as possible for the first 48 hours to decrease pain and swelling.
- Use the extremity as pain allows.

Call or see a physician, go to the emergency department, or call 911 immediately if:

- Temperature is greater than 101° F.
- The bruising, swelling, or pain gets worse despite the treatment listed above.
- Any problems listed on the **Wound Care instructions** are noted.
- You are unable to move the extremity 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 8 to 12 glasses of fluids per day with diarrhea. Children should drink 1 cup of fluid for each loose bowel movement.

Call or see a physician, go to the emergency department, or call 911 immediately if:

- Temperature is greater than 101° F.
- Vomiting or Diarrhea lasts longer than 24 hours, gets worse, or blood is noted.
- You cannot keep fluids down or no urination **is** noted in 8 hours.

WOUND CARE:

- Wounds include cuts, scrapes, bites, abrasions, or puncture wounds.
- If the wound begins to bleed, apply pressure over the wound with a clean bandage and elevate the wound above the heart for 5 to 10 minutes.
- Unless instructed otherwise, clean the wound twice daily with soapy water, and keep the wound dry. It is safe to take a shower but do not place the wound in bath or dish water.
- See a physician for a tetanus shot if it has been 10 years or more since your last one.

Call or see a physician, go to the emergency department, or call 911 immediately if:

- See the **Extremity Injury instructions**.
- Temperature is greater than 101° F.
- Bruising, swelling, or pain gets worse or bleeding is not controlled as directed above.
- Any signs of infection, such as redness, drainage of yellow fluid or pus, red streaks extending from the wound, or a bad smell is noted.

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Refusal / Discharge Instructions (Back Page)

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, esophagus disorders, pneumonia, pleurisy, pulmonary embolism, panic attacks or inflammation in your chest.
- Some of these problems can be serious and life threating.
- Chest Pain should be evaluated by a physician.

Call or see a physician, go to the emergency department, or call 911 immediately if:

- If increase in pain or pressure in chest.
- Sweating
- Unexplained weakness, dizziness, lightheadedness
- Shortness of breath
- Nausea or vomiting
- Fast or irregular heart beat

Syncope - Fainting :

- Fainting is a temporary loss of consciousness.
- There are many causes for fainting.
- Fainting usually occurs when your blood pressure drops suddenly and a decrease in blood flow to the brain results.
- Some of the causes include: heart problems, 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, lightheadedness continues.
- Shortness of breath
- Nausea or vomiting
- Pain or pressure in the chest
- Fast or irregular heart beat

Hypertension – High Blood Pressure:

- High blood pressure is a common condition that may cause health problems, such as heart disease.
- You can have high blood pressure for years without any symptom.
- 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, irritable, weakness or fatigue.
- If you feel like your blood sugar is low, check your blood glucose. If you can't check your glucose, treat anyway.
- Treat by eating glucose tablets, candies, fruit juice or regular soda pop.
- Check blood glucose again.
- Eat something in addition to the sugar. Eat something with protein and/or carbohydrates to last longer.

Call or see a physician, go to the emergency department, or call 911 immediately if:

- If symptoms do not improve or stop.

High Blood Sugar:

- Causes of high blood sugar: too much food, too little insulin or diabetes's 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 877-863-6338**
- **National hotline 800-799-7233 / TTY 800-787-3224**
- **http://www.ilcadv.org/**

Narcan:

- You have received Narcan for an apparent Narcotic overdose. You were unconscious and breathing was compromised. Narcan was administered to save your life.
- **We strongly recommend that you go to the hospital for additional medical care.** The Narcan may wear off before the Narcotic is out of your system. If that happen you could die
- We cannot take you against your will.
- We recommend that you do not do any more drugs or alcohol.

EMERGENCY MEDICAL SERVICES

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.**

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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: _____

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

PROCEDURE: Restraints

Overview: Patients will only be restrained if clinically necessary. The use of restraints is only utilized if the patient is violent and may cause harm to themselves or others. Physical and/or chemical restraints are a last resort in caring for the emotionally disturbed patient. Never apply physical restraints for punitive reasons, or in a manner that restricts breathing and circulation, or in places that restrict access for monitoring the patient.

PROCEDURE

__Scene size-up:

- Assess the patient and surroundings for potential weapons.
- When dealing with an agitated and combative patient consider law enforcement to help gain control of the situation.
- If scene is unsafe, back out and call law enforcement.

__Utilize verbal de-escalation methods whenever possible - consider physical restraints a last resort when verbal control is ineffective.

__To safely restrain a patient use a minimum of 4 people, if possible.

__Consider chemical restraint enroute - prepare and have medication ready to administer - **Ketamine** or **Midazolam**

__Once restrained, place patient in semi-fowlers or recovery position to maximize breathing

__Assess and address any medical conditions after the patient is safely restrained.

__If law enforcement restrains a patient with handcuffs, an officer with a key must accompany the patient during transport (it is preferred that the officer accompanies in the ambulance, but in certain circumstances, possibly based on location in Region 1, the law enforcement may follow in their vehicle).

Documentation of adherence to SMO

__Behavior noted as evidence that the patient is at risk of self-harm or harm to others.

__Type of restraint used and if partial or full restraints were used

__Constant observation of patient while restraints in place.

__Neurovascular status check noted every 10 minutes while restraints in place.

__If handcuffs are used by a law enforcement officer, officer that has the key to the handcuffs must accompany the patient (see above: may be in his/her own vehicle)

__Time medical control was contacted

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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

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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 O_2 sats 94% to 99%
  - If history of COPD sats 90% to 92% are preferred to avoid respiratory depression.
  - Don't withhold high flow O2 from cyanotic, confused, or distressed patient because of a history of COPD.
- O_2 2-6 liters by nasal cannula
- O_2 10-15 liters by non-rebreather mask
- CPAP as indicated
- O_2 100% by BVM and move to Airway Management SMO or Pediatric Airway Management

__ $EtCO_2$ as indicated (if available)

TREATMENT (continued)

__ Assess blood sugar as indicated

__ Evaluate cardiac rhythm/12-lead for typical or atypical cardiac symptoms, electrical injuries, syncope, all patients who appear critical, and otherwise as indicated. Transmit 12-lead to the receiving hospital. If STEMI is noted call Medical Control ASAP to initiate STEMI Alert.

__ Establish INT/IV/IO as indicated

__ **Fluid Bolus** if indicated

__Two lines of **Normal Saline** are preferred for:

- GI Bleed
- Stroke
- STEMI
- Unstable vital signs
- Sepsis

__IV's are indicated for patients who require immediate or potential fluid/volume replacement and/or medication administration prior to hospital arrival. Attempts to establish IV's should not delay transport. One attempt should be made at scene or enroute. If unsuccessful, one additional attempt may be made enroute. *Maximum number of attempts will be no more than 2 attempts per Provider with a maximum of 4 attempts per patient.*

__If patient conditions warrants or IV access unsuccessful, establish IO access

__If significant nausea / vomiting administer **Ondansetron**

__ Repeat vital signs every 10 minutes for ALS patients, after administration of medications, and more frequently as needed

__ Assess response to interventions and medication (to include repeat vital signs)

__ Contact receiving hospital as soon as possible with patient assessment and treatment.

__ DO NOT delay transport. Treatment SMOs are guidelines, and are not intended to be completed while on the scene, but continued enroute. All possible effort should be made to minimize scene time.

Documentation of adherence to SMO

__Status of airway, breathing, circulation

__Patient's chief complaint

__Medications

__Allergies

__Interventions and response

__When significant, print rhythm strip and provide to receiving facility

Medical Control Contact Criteria

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

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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

SMO: Routine Pediatric Care

Overview: Pediatric patients account for about 10% or less of EMS emergency responses. Caring for these patients presents unique challenges related to size, physical and intellectual maturation, and diseases specific to neonates, infants, and children. It is important to maintain and improve knowledge and clinical skills for these patients through continuing education programs and clinical applications specific to this age group.

The importance of assessing and maintaining AIRWAY, BREATHING, & CIRCULATION (A-B-C) in the pediatric patient cannot be overemphasized.

INFORMATION NEEDED
__Patient age and weight
__Scene assessment
__Primary assessment
__Nature of illness/mechanism of injury
__Focused history/physical Assessment
__Ongoing assessment

General Approach to the Pediatric Patient
Assessments and interventions must be tailored to each child in terms of age, size, and development. Providers must be familiar with assessment algorithms for medical emergencies, assessment mnemonics such as DCAP-BTLS for trauma emergencies, and use the current edition of the Broselow tape for determining appropriate equipment sizes, IV fluid rates, and medication dosing.

Consider the following when performing a pediatric patient assessment:

- Smile if appropriate to the situation
- Keep voice at an even quiet tone
- Speak slowly using simple, age appropriate terms
- Use toys or penlight as distracters
- Keep small children with their caregiver(s), allowing the caregiver to hold the child and assist with the assessment if necessary. Child must be properly restrained during transport.
- Kneel down to the level of the child if possible

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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)

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

PRECAUTIONS AND COMMENTS

Considerations for Children with Special Healthcare Needs (CSHN)

- Refer to child's emergency care plan formulated by their medical providers, if available.
- Understanding the child's baseline will assist in determining the significance of altered physical findings. Parents/caregivers are the best source of information on: medications, baseline vitals, functional/normal mentation, likely medical complications, equipment operation and troubleshooting, emergency procedures.
- It may be helpful to use the DOPE mnemonic to assess problems with ventilation equipment or long-term catheters for feeding tubes. DOPE stands for:
    - D – Dislodged tube
    - O – Obstructed tube
    - P – Pneumothorax
    - E – Equipment failure
- Assess in a systematic and thorough manner, regardless of underlying conditions. Use parents/caregivers as medical resources.
- Be prepared for differences in airway anatomy, physical development, cognitive development, surgical alterations, or mechanical adjuncts. Common home therapies include: respiratory support, nutritional therapy, intravenous therapy, urinary catheterization, dialysis, biotelemetry, ostomy care, orthotic devices, communication or mobility devices, or hospice care.
- Communicate with the child in an age appropriate manner. Maintain communication with and remain sensitive to the parents/caregivers and child.
- The most common emergency encountered with the pediatric patient is respiratory related and so familiarity with respiratory emergency interventions/adjuncts/treatment is appropriate.

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

Pediatric Glasgow Coma Scale

Eye Opening:
4-Spontanous
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

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DEGREE OF DEHYDRATION ASSESSMENT

Clinical Parameters	Mild	Moderate	Severe
Body weight loss Infant Child	 5% (50 ml/kg) 3% (30 ml/kg)	 10% (100 ml/kg) 6% (60 ml/kg)	 15% (150 ml/kg 9% (90 ml/kg)
Fontanelle	Flat or depressed	Depressed	Significant depression
Mucous Membranes	Dry	Very dry	Parched
Skin Perfusion	Warm / normal color	Cool extremities / pale	Cold extremities
Heart Rate	Mild tachycardia	Moderate tachycardia	Extreme tachycardia
Peripheral Pulse	Normal	Diminished	Absent
Blood Pressure	Normal	Normal	< 70 + 2x age in years
Sensorium	Normal-irritable	Irritable-lethargic	Unresponsive

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
- $EtCO_2$ 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.

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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
- 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

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	Dextrose	Dopamine	Mag Sulfate	Fentanyl IN	Midazolam IN			Formulary

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

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

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

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TREATMENT

__Routine Medical Care
__Assure patency of airway and be prepared with suction.
__Oxygen if indicated, assist ventilations with BVM as needed.
__C-spine restriction if any suspicion of head/ spinal trauma.
__Protect patient from injury; do not restrain during tonic/clonic movements
__Obtain blood glucose level. If glucose level < 80, administer **Oral Glucose** if patient is conscious or **Glucagon** **IM** if the patient is unresponsive or has a questionable gag reflex.
__Obtain IV or IO access and administer **Dextrose IV**, if glucose remains decreased**.**
__ Transport in left lateral recumbent position if no C-spine injury is suspected.
__For generalized convulsive (tonic-clonic) seizure, **Diazepam** OR **Midazolam**
__If unable to secure IV or IO, give **Diazepam** **IM** OR **Midazolam** **IM/IN.**

Documentation of adherence to SMO

__Airway patency/ interventions
__Administration of O_2
__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

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	Dextrose	Dopamine	Mag Sulfate	Fentanyl IN	Midazolam IN			Formulary

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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., $PaCO_2$<32 mmHg; $SpO_2 \leq 92\%$
- Tachycardia > 90 bpm
- Systolic BP < 90 mmHg
- MAP < 65

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TREATMENT

__Routine Medical Care/Routine Pediatric Care

__Initiate IV **fluid bolus**

- 30 ml per kg bolus
- If history of CHF or pediatric patient reduce fluid bolus to 20 ml per kg

__If after fluid bolus given and SBP < 90 mmHg or MAP remains less than 65, administer **Dopamine drip**

Documentation of adherence to SMO

All documentation must include the following criteria in the narrative:

- Supporting signs and symptoms relating to the infection
- Specific results of temperature, pulse, respirations, blood pressure and pulse oximeter readings
- Time the Sepsis Alert was called
- Amount of **Normal Saline** given

Precautions and Comments

- When giving fluid bolus frequently assess vital signs and lung sounds.

Medical Control Contact Criteria

__ If you have 2 or more signs of infection, a Sepsis Alert should be called via Merci or Telemetry and the appropriate SMO followed

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

General Information:

Mean Arterial Blood pressure is calculated as follows

$$\frac{(2 \text{ X Diastolic Blood Pressure}) + \text{Systolic Blood Pressure}}{3}$$

If BP = 90/40

$$\text{MAP} = \frac{(2X40) + 90}{3} = 57$$

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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SEPSIS SCREENING TOOL

Is the patient's presentation suggestive of any of the following infections?			
	Pneumonia (cough/thick sputum)		Abdominal pain, distension and/or diarrhea
	Urinary tract infection		Wound infection, cellulitis
	Altered mental status		Skin/soft tissue infection
	Blood stream/catheter related		Device-related infection
Are any two of the following:			
	Temperature > 100.4◦F		
	Temperature < 96.8º F		
	Tachypnea > 20/m, PaCO2< 32 mmHg; SpO2 ≤ 92%		
	Tachycardia > 90 bpm		
	Systolic BP < 90 mm/Hg		
If presentation suggestive of infection and more than 2 the vital signs changes are positive, call a SEPSIS ALERT and follow SMO			

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

SMO: Trauma Hemorrhage/Shock Treatment

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

	Hypovolemic Shock		Non-hemorrhagic Shock	
	Compensated Shock	De-compensated Shock	Neurogenic Shock	Obstructive(Cardiogenic) Shock
Skin temperature/quality	White, cool, moist	White, cold, waxy	Warm, dry	Cool, clammy
Skin color	Normal to Pale	Pale, cyanotic	Pink	Pale, cyanotic
Blood Pressure	Normal	Decreased	Decreased	Decreased
Pulse	Tachycardia	Tachycardia, that can progress to bradycardia	Bradycardia	Tachycardia
Level of consciousness	Unaltered or slightly anxious	Altered-anxiety, confusion, or unresponsive	Unaltered, can be altered in head injury	Altered
Capillary Refill Time	Normal	Delayed	Normal	Delayed
Pulse Pressure	Normal or narrowed	Decreased	Decreased	Decreased

TREATMENT

- Prepare for rapid transport
- Assess patient, scene safety, mental status (AVPU)
- Control airway. See Airway Management SMO or Pediatric Airway Management.
- Control external bleeding with direct pressure , apply tourniquet, or place patient in pelvic binder as needed
- While not required, hemostatic agents and/or IT clamps may be utilized per manufacturer's instructions per EMS System approval (prior to Medical Directors' approval training must be submitted to IDPH with plans to assure ongoing competency)
- Spinal Restriction, if indicated
- Apply cardiac monitor
- IV/IO access (see fluid treatment below)

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	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
- 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:

$$\frac{2\text{x Diastolic Blood Pressure} + \text{Systolic Blood Pressure}}{3}$$

If BP = 90/40

$$\text{MAP} = \frac{(2\text{x}40) + 90}{3} = 57$$

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
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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

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TREATMENT

__ Routine Medical Care or Routine Trauma Care
__ Bring care plans or Emergency Information Forms (EIF) to the hospital with the patient
__ Assess and communicate with the patient as much as possible. Do not make assumptions about their level of understanding based on their appearance.
__ Bring necessary specialized equipment and medication with the patient, if possible

TRACHEOSTOMY

__ Assessment for displaced or obstructed tubes
__ Assessment for pneumothorax, pneumonia, reactive airway, and/or aspiration
__ Assessment for equipment issues such as ventilator malfunction, oxygen depletion, kinked tubing
__ Assessment for infection
__ If patient is on a ventilator, disconnect and attempt to oxygenate with bag using tracheostomy adaptor (if present) or mask over trach opening or stoma
__ If patient is not on a ventilator administer oxygen with bag or mask over trach as needed
__ Suction as needed, no more than 10 seconds. Insert no more than ¾ length of neck. If unable to suction because of thick secretions instill **2-3 ml NS**, then suction
__ If inner cannula present request that the caregiver remove and clean with saline
__ If unable to ventilate cover opening and ventilate with bag and mask over mouth and nose (consider using a small pediatric mask even on adult patients)
__ If above does not work, remove tube and either reinsert new tube or use endotracheal tube of same approximate size.
__ If unable to find the opening, thread suction catheter through new tracheostomy tube or endotracheal tube and use catheter tip to probe opening, sliding tube over catheter into opening and then removing catheter. Attempt to ventilate and check breath sounds.

CENTRAL INTRAVENOUS CATHETER

__ Assessment for displaced or obstructed tubing
__ Assessment for pericardial tamponade
__ Assessment for pneumothorax, and/or pulmonary embolism
__ Assessment for infection
__ Assessment for equipment issues such as kinked or cracked tubing and infusion pump failure
__ For bleeding at site apply direct pressure
__ Clamp or tie the tubing if it is leaking
__ Refer to Central Line/Port-A-Cath Access SMO to access the central line
__ Administer IV/IO fluids for signs of shock

CSF SHUNT

__ Assessment for infection
__ Assessment for signs of increased intracranial pressure
__ Ventilate patient if signs of brain herniation (unresponsiveness with equal pupils, fixed, dilated, or unresponsive pupils, or increased blood pressure and decreased heart rate). Ventilation rate should be the higher end of normal or to an $EtCO_2$ 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 there is 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

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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.

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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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

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

PRECAUTIONS AND COMMENTS

__ Spinal precaution for at-risk patients is paramount. This is true whether or not a backboard is utilized. Minimal patient movement and the patient's security to stretcher and /or backboard are necessary.
__ Backboards should be used judiciously where the possible benefits outweigh the risks. Long backboards can cause discomfort and agitation in a patient, but the concerns and benefits of spinal restriction should take prevalence.
__ In the event a patient is placed on a restriction device for extrication or before the arrival of the transporting unit a decision may be made by transporting unit whether the patent should be left on a restriction device for transport using guideline noted in this SMO.

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

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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TREATMENT – continued

__Initiate **IV Normal Saline** at TKO rate for normotensive patient
__If altered sensorium, seizure, or focal neurological deficit, obtain and record blood sugar level.
- If blood sugar < 80 administer **Glucagon** or **Dextrose** **IVP** and note response

__If seizure activity, **Diazepam** or **Midazolam** **(**contact Medical Control for subsequent doses)
__Monitor and record neurological status and any changes
__Protect paralyzed limbs from injury.
__RAPID transport per algorithm

Documentation of adherence to SMO

__Level of consciousness
__Blood glucose level
__Thorough completion of EMS Stroke Screening checklist
__Submit EMS Stroke Screening checklist with paper run sheet to receiving RN

Medical Control Contact Criteria

__ Contact Medical Control whenever a question exists as to the best treatment course for the patient
__ Contact EARLY to ready hospital for arrival of patient.
__ For subsequent doses of **Diazepam** or **Midazolam** for seizure activity.

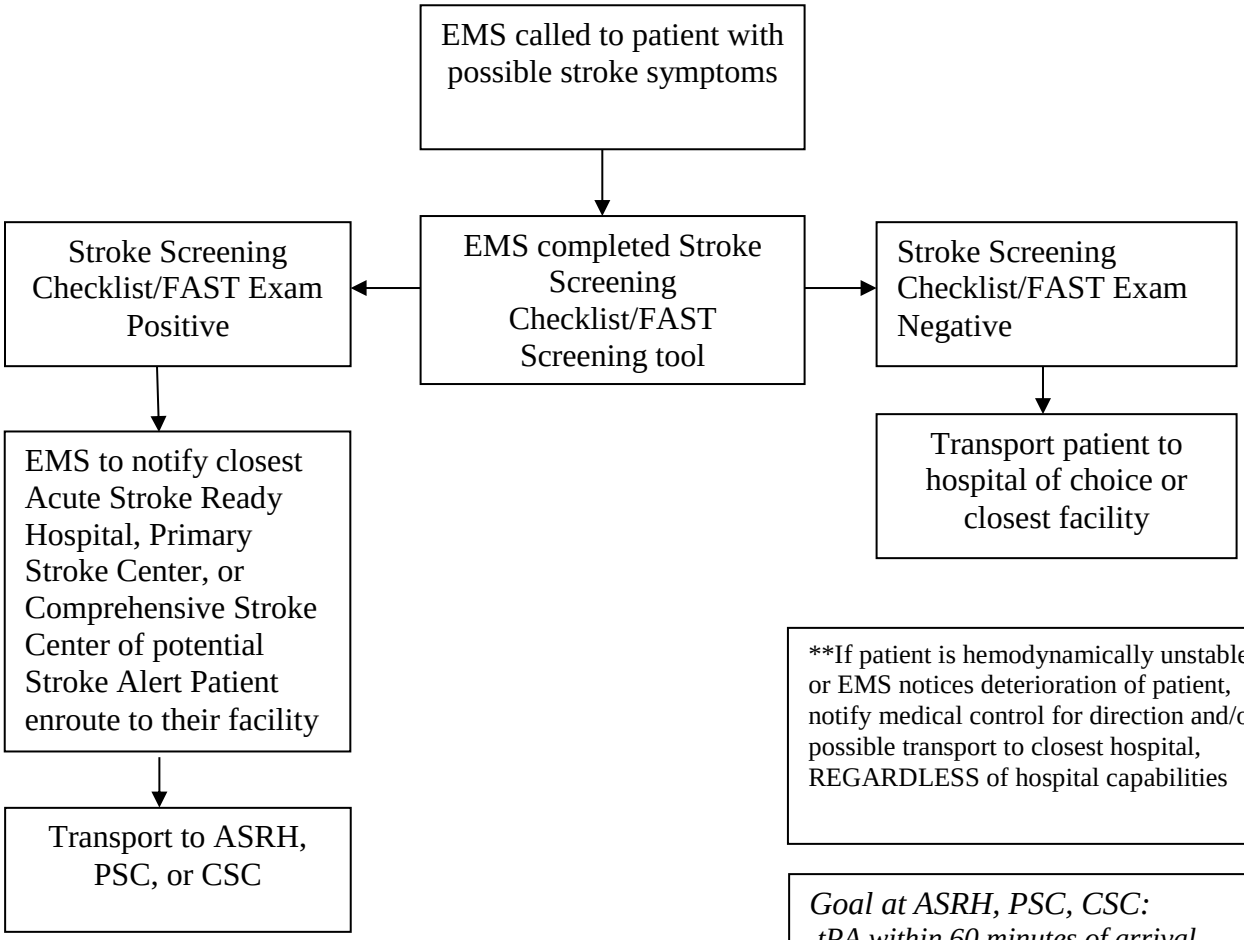
PRECAUTIONS AND COMMENTS

- 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

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

EMS Region 1 Suspected Stroke Patient Transport Algorithm



**If patient is hemodynamically unstable or EMS notices deterioration of patient, notify medical control for direction and/or possible transport to closest hospital, REGARDLESS of hospital capabilities

Goal at ASRH, PSC, CSC:
tPA within 60 minutes of arrival

1. Door to MD ≤10 minutes
2. Door to Stroke Team ≤ 15 minutes
3. Door to CT time ≤ 25 minutes
4. Door to CT results ≤ 45 minutes
5. Door to Lab results ≤ 45 minutes
6. Check for contraindications for tPA
7. Administer tPA if no contraindications
8. Transfer to higher level of care if indicated (ASRH not capable of treating post tPA patient, patient need for intervention, etc)

ASRH: Acute Stroke Ready Hospital-a hospital that has been designated by IDPH as meeting the criteria for providing emergency stroke care
PSC: Primary Stroke Center-a hospital that has been certified by a Department-approved nationally recognized certifying body and designated by IDPH
CSC: Comprehensive Stroke Center- a hospital that has been certified by a Department-approved nationally recognized certifying body and designated by IDPH

Region 1 EMS Stroke Screening Checklist:

Date: _____

Time Stroke Report sent via radio/phone from EMS to Receiving Hospital: _____

Signs and Symptoms at time of event:

____Sudden Numbness or weakness of face, arm, leg, especially one side
____Sudden confusion, trouble speaking or understanding
____Sudden trouble walking, dizziness, loss of balance or coordination
____Sudden severe headache with no known cause
____Sudden trouble with vision or seeing in one or both eyes

AND:

____**BGM/Glucose** Level Checked: **RESULT**: _____

DATE AND TIME PATIENT LAST KNOWN WELL: _____
DATE AND TIME SYMPTOMS STARTED: _____
CONTACT PERSON AND PHONE NUMBER: _____

CINCINNATI PRE-HOSPITAL STROKE SCALE/FAST:

FACIAL DROOP: Ask the person to smile and/or show their teeth

_____**Normal**: Both sides of the face are equal, there is no droop noted to one side
_____**ABNORMAL**: One side the mouth or face is drooping, drooling or does not look the same

ARM DRIFT: Ask the person to hold both arms out in front of them for the count of 10

_____**Normal**: Both arms move equally
_____**ABNORMAL**: One arm drifts down or does not move at all, the other is normal

SPEECH: Have the person say a sentence (example: You can't teach an old dog new tricks.)

_____**Normal**: Sentence sounds normal, no slurring words and person uses correct words
_____**ABNORMAL**: Patient unable to speak (mute), words are slurred, incorrect words used

TIME: If the time of **Last Known Well** is **GREATER** than **8 hours**, then a stroke alert is **NOT** paged because the patient is outside of acute window.

If any of the above questions is scored abnormal, the chances are high that a stroke may be occurring. Notify Closest Emergent Stroke Ready Hospital or Primary Stroke Center Emergency Department with the above information to alert them of a potential stroke alert patient enroute to their facility.

YES / NO ____Hospital (Receiving Facility) notified prior to arrival of possible stroke symptoms in patient.

EMS Personnel Signature:_____ Date:_____ Time:_____

Ambulance: _____

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
ALS

PROCEDURE: Surgical Cricothyrotomy

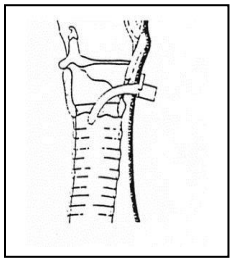
Overview: To provide emergency airway access. To relieve life-threatening upper airway obstruction in situations where manual maneuvers to establish an airway and attempts at ventilation have failed and endotracheal intubation cannot be performed.

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.

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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

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

SMO: Syncope

Overview: Syncope is caused by a sudden decrease in cerebral perfusion. Various causes of syncope exist such as cardiac dysrhythmias, stroke, drug or alcohol intoxication, aortic stenosis, pulmonary embolism, and hypoglycemia.

INFORMATION NEEDED

__Duration of the syncopal episode
__Symptoms before syncopal episode (palpitation, seizure, incontinence, aura)
__Previous episodes of syncope
__Circumstances of occurrence (e.g. patient's position before the event, severe pain, emotional stress)
__Other associated symptoms

OBJECTIVE FINDINGS

__Vital signs (especially pulse rate, quality, regularity)
__Other information as listed above

TREATMENT

CONSCIOUS, ALERT, ORIENTED WITH HISTORY OF SYNCOPAL EPISODE

__ Routine Medical Care
__ Cardiac monitoring
__ Obtain and record blood sugar level.
__ Consider possible causes of syncope and/or altered sensorium:

T	-	Trauma/Temperature
I	-	Infection
P	-	Psychiatric
S	-	Stroke, Subarachnoid, Shock
A	-	Alcohol and other Toxins
E	-	Endocrine
I	-	Insulin
O	-	Oxygen/Opiates
U	-	Uremia

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TREATMENT

ALTERED SENSORIUM, UNCONSCIOUS, OR SIGNS OF HYPOPERFUSION AND/OR SYSTOLIC BP < 90

__ Routine Medical Care
__ Cardiac monitoring, 12 lead if capable
__ IV access
__ If blood sugar level < 80, administer:
- **Oral Glucose** for conscious patient with gag reflex intact
- **Dextrose IVP**; if blood glucose <80 mg/dl **Dextrose Dosing Chart**
- If unable to establish an IV to administer Dextrose, and patient is without gag reflex **Glucagon IM**

__ **Naloxone** IN, IVP or IM for suspected opiate overdose with respiratory depression consisting of respirations < 12 and or very shallow respirations and/or signs of shock (titrate IV **Naloxone** to overcome respiratory depression and repeat as needed)
__ **Fluid bolus** in 250 ml increments (20 ml / kg in Peds) with signs of hypotension

Documentation of adherence to SMO

__ Cardiac rhythm
__ Associated information such as duration of incident, blood sugar level and treatment given

PRECAUTIONS AND COMMENTS

- Because of the possible causes of syncope, encourage the patient with a syncopal episode to be transported for medical evaluation.

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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

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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** 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

__ **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.

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

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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

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
ILS, ALS

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

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 $EtCO_2$.
__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, O_2 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).

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

SMO: Transfer of Responsibility of Patient Care

Overview: Patients entrust the medical community to care for them to the highest level possible. To that end, this policy is to delineate proper transfer of responsibility of patient care from the prehospital providers to hospital personnel.

INFORMATION NEEDED

__ Level of care patient is currently receiving (BLS/ ALS)
__ Level of care to which patient is being transferred

TRANSFER OF RESPONSIBILITY FOR PATIENT CARE

Emergency Department:

__When a patient is transported to an emergency department, the transporting crew shall not leave the patient unattended in the department.
__Written or verbal acceptance of responsibility for the patient should be obtained.
__An ALS patient must be turned over to a registered nurse or physician.
__Care of a BLS patient may be turned over to Emergency Room Technician personnel.

Other Hospital Departments or Medical Facilities (e.g., Nursing Homes):

__When a patient is transported to a location in a hospital other than the emergency department or to a nursing home or other health care facility, the ambulance crew shall remain with the patient until a registered nurse, physician or appropriate healthcare provider accepts responsibility for the patient.
__Written or verbal acceptance of responsibility for the patient should be obtained.
__An ALS patient must be turned over to a registered nurse or physician.
__Care of a BLS patient may be turned over to an appropriate healthcare provider.

Transfer of patient care to another prehospital care provider (in a situation other than a disaster or triage situation):

__When the care of a patient is going to be transferred to another prehospital care provider, the ambulance crew shall remain with the patient until the second care provider arrives and accepts responsibility for the care of the patient.
__Written or verbal acceptance of responsibility for the patient should be obtained.
__The second provider shall not accept responsibility for the patient until the report is given. When care of patient is transferred to another prehospital provider, that provider must be of at least an equal, if not higher, degree of training (e.g., BLS crew must transfer to at least another BLS ambulance; care of the ALS patient may not be transferred to a BLS crew).

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TRANSFER OF RESPONSIBILITY FOR PATIENT CARE (continued)

INTER-HOSPITAL TRANSFERS:

__ If a patient is receiving medications or is connected to medical equipment, and these medications and/or equipment are not within the scope of practice for this System's Emergency Medical Services personnel, a nurse, physician or appropriate healthcare provider must be present on the transfer. A provider is prohibited from transferring such a patient without a nurse, physician or appropriate healthcare provider present during transfer.

Documentation of adherence to SMO

__ Document to whom the patient is being transferred to include level of licensure.

Medical Control Contact Criteria

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

PRECAUTIONS AND COMMENTS

- Abandonment is defined as terminating medical care without legal excuse or turning care over to personnel who do not have training and expertise appropriate for the medical needs of the patient.

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

SMO: Transport Template (Transporting to Other Than the Closest Hospital)

*****Please note: Until this Template is completed and approved by EMS System and IDPH please utilize the SMO for Closest Hospital Transport*****

Overview: This template may be completed by Provider agencies with a specific plan of which hospital to transport patients to. This plan must be coordinated with their EMS System and approved by their EMSMD. The plan will take into account local resources. It can be added to the providers system plan and then function as off-line medical control.

Name of Provider agency: _____

Provider Number: _____

EMS System: _____

Hospitals the Provider Agency Transports to:	
Name of Hospital	***Average Transport Time**

* 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:

  _____

  _____

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 then 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**

Region One Hospitals
Specialty Capabilities

Hospital	Location	Chest Pain Center	EDAP	IDPH Resource Hospital	Stroke Center	Trauma Center
Beloit Memorial Hospital	Beloit, WI	Cath Lab			Primary Stroke Center	Wisconsin Level III
CGH Medical Center	Sterling, IL	Cath Lab			Acute Stroke Ready Hospital	
FHN	Freeport, IL	Cath Lab			Acute Stroke Ready Hospital	
Katharine Shaw Bethea (KSB)	Dixon, IL	Cath Lab	SEDP		Acute Stroke Ready Hospital	
Mercy Harvard Hospital	Harvard, IL	No Cath Lab	SEDP		Acute Stroke Ready Hospital	
Mercy Hospital	Dubuque, IA	Cath Lab	EDAP	x	Primary Stroke Center	Illinois Level 2 Iowa Level III
Mercy Medical Center	Clinton, IA					Iowa Level IV
MercyHealth	Rockford, IL	Chest Pain Center with Primary PCI	Pediatric Critical Care Center	x	Primary Stroke Center	Illinois Level 1
Midwest Medical Center	Galena, IL	No Cath Lab			Acute Stroke Ready Hospital	
Monroe Clinic	Monroe, WI	Cath Lab				Wisconsin - Unclassified
Morrison Hospital	Morrison, IL	No Cath Lab				
Northwestern Medicine Kishwaukee Hospital	DeKalb, IL	Cath Lab	EDAP	x	Acute Stroke Ready Hospital	
Northwestern Medicine Valley West Hospital	Sandwich, IL	No Cath Lab	EDAP		Acute Stroke Ready Hospital	
OSF Saint Anthony Medical Center	Rockford, IL	Cath Lab	EDAP	x	Comprehensive Stroke Center	Illinois Level 1
Perry Memorial Hospital	Princeton, IL	No Cath Lab			Acute Stroke Ready Hospital	
Rochelle Community Hospital	Rochelle, IL	No Cath Lab			Acute Stroke Ready Hospital	
St Margaret's Hospital	Spring Valley, IL	No Cath Lab			Acute Stroke Ready Hospital	
SwedishAmerican Hospital	Rockford, IL	Chest Pain Center with Primary PCI	EDAP	x	Primary Stroke Center	Illinois Level 2
SwedishAmerican Medical Center	Belvidere, IL	No Cath Lab			Primary Stroke Center	
Unity Point Health - Findley Hospital	Dubuque, IA	Cath Lab	EDAP		Primary Stroke Center	Iowa Level III

Definitions/Abbreviations:

Iowa Resource Trauma Center	Level I
Iowa Regional Trauma Center	Level II
Iowa Area Trauma Center	Level III
Iowa Community Trauma Facility	Level IV

Wisconsin Trauma Designation Level 1 (American College of Surgeons)	Hospital is characterized by capability to provide leadership and total care for every aspect of traumatic injury from prevention through rehabilitation, including research.
Wisconsin Trauma Designation Level 2	Hospital provides the initial definitive trauma care regardless of the severity of injury, but differs from Level I in teaching and research capability.
Wisconsin Trauma Designation Level 3	Hospital provides assessment, resuscitation, stabilization, and emergency surgery and arranges transfer to a Level I or II facility for definitive surgical and intensive care as necessary.
Wisconsin Trauma Designation Level 4	Facility provides stabilization and advanced trauma life support prior to patient transfer to a Level I or II.
Wisconsin Trauma Designation Unclassified	Hospital has chosen not to be part of the Trauma Care System or has not been approved as a Level I, II, III or IV.

Emergency Department Approved for Pediatrics	EDAP
Stand-By Emergency Department for Pediatrics	SEDP

Acute Stroke Ready Hospital	An Acute Stroke Ready Hospital meets specific requirements for The Joint Commission that focus on emergency intervention and allow the patient to be treated and transferred.
Primary Stroke Center	A Primary Stroke Center, in addition to emergency intervention, has a dedicated stroke unit that provides standardized care with a focus on patient outcome.
Comprehensive Stroke Center	A Comprehensive Stroke Center, in addition to emergency intervention, has staff and specialized facilities that treat complex stroke cases such as large vessel occlusions.

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

SMO: Closest Hospital Transport

Overview: All patients in EMS Region 1should be transported by EMS Region 1 vehicles to the closest hospital except in one of the following situations (see flowchart):

GUIDELINES

A. **Stable Patients**

If the patient is *stable* and the *medical benefits* to transport to other than the closest hospital outweigh the *risks* to the patient, the patient may be transported to the requested hospital if:

1. The patient release form is completed
2. Determined by the EMSMD or designee, after contacting Medical Control, transfer is appropriate

In each of these situations the patient must be determined to be medically stable. The EMT, once the request is made known to them, should contact Medical Control and discuss the request with the EMSMD or designee. If it is determined that transporting the patient to a more distant medical center does not present undue risk after discussing the case with the EMSMD or designee, the EMSMD or designee will contact the receiving medical center and give them a full report on the patient's condition.

Unless the receiving hospital is on bypass status, it will be assumed that they will have the capacity and willingness to treat such a patient since they will be open to receive any and all ambulance runs.

B. Unstable Patients

If the patient is unstable and refusing to go to the closest hospital, this will be communicated to the EMSMD or designee at Emergency Department Medical Control. He/she will evaluate all risks and benefits and direct the EMTs as he/she sees appropriate. Sole responsibility of where the patient is transported rests with the EMSMD or designee through the Emergency Department Medical Control in such cases. Unstable patient bypasses must be documented on the telemetry log.

C. Trauma Patients

Trauma patients should be brought to the closest trauma center based on IDPH and Region I Trauma recommendations.

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Documentation of adherence to protocol:

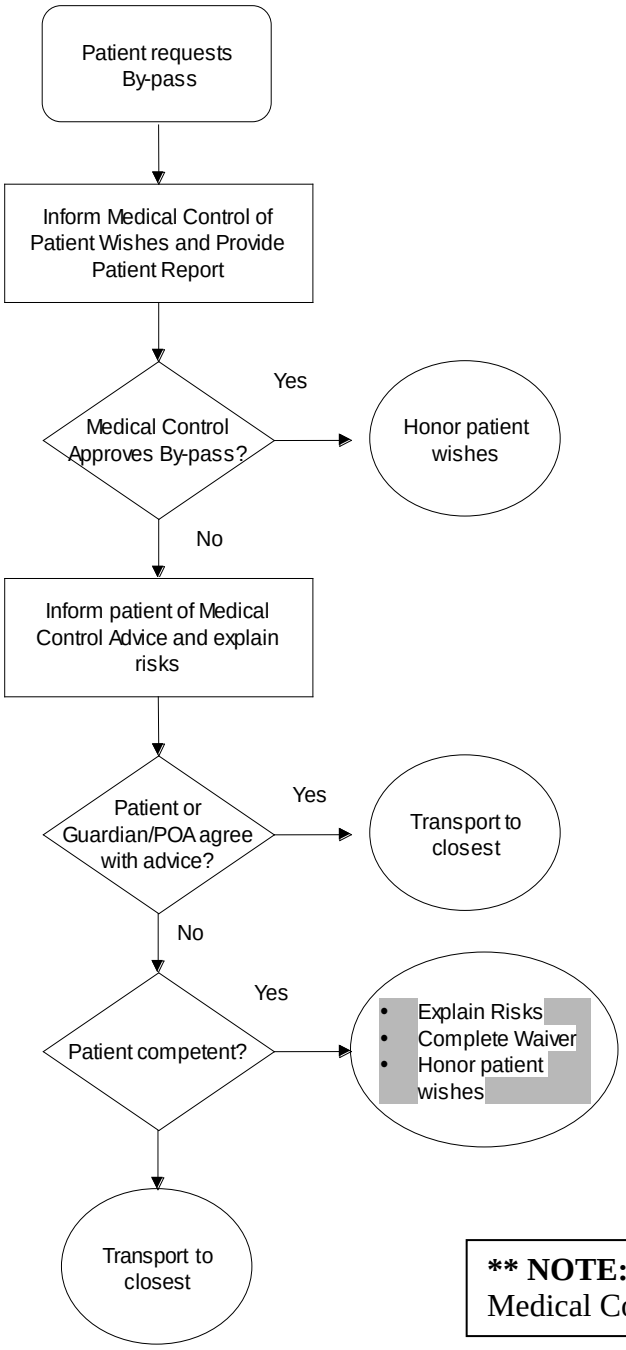
__Contact with Medical Control to establish state of hospital diversion status
__Orders received from Medical Control regarding patient destination.

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 Closest Hospital Transport.
- Be advised to call Medical Control EARLY to determine patient destination.

Patient Request to By-pass Closest Facility



**** NOTE:** Notification and permission from Medical Control will be done from the scene

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

SMO: Traumatic Arrest

Overview: In the event of traumatic arrest safe and rapid transport is the priority. Care should be initiated and scene time should be limited.

INFORMATION NEEDED
__Witnessed trauma event and estimated down time
__Any bystander CPR and / or treatment prior to arrival
__Mechanism of injury (blunt versus penetrating trauma)

OBJECTIVE FINDINGS
__ Physical signs of trauma and / or blood loss
__ GCS = 3
__ No respiratory effort
__ No pulse

TREATMENT
__Routine Trauma Care
__Assess patient and confirm pulselessness
__If no signs of life consider pronouncement in the field (Notification of Coroner SMO)
__Start CPR
__Attach defibrillator, check for pulses, and confirm rhythm
__If V-Fib or PEA, follow V-Fib and PEA SMO
__If possible, control external bleeding with direct pressure
__Needle Decompression if tension pneumothorax suspected
__Obtain quick, resuscitation-oriented patient history
__Transport as soon as possible

Documentation of adherence to SMO
__Mechanism of injury
__Vital signs on arrival
__Time CPR started
__Time defibrillator applied
__Documentation of appropriate cardiac SMO procedure if indicated
__Advanced airway and IV access interventions documented

PRECAUTIONS AND COMMENTS
- Consider cardiac etiology in older patients with low probability - mechanism of injury
- Consider minimal disturbance of a potential crime scene

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

SMO: Ventricular Fibrillation/ Pulseless Ventricular Tachycardia

Overview: Pulseless Ventricular Tachycardia is characterized by the presence of wide complexes of ventricular origin without the presence of a pulse. It is treated in the same manner as Ventricular Fibrillation.

Torsade's de Pointes is an Atypical Ventricular tachycardia (Torsade's de Pointes or twisting of the pointes) is where the QRS axis swings from a positive to a negative direction in a single lead. This rhythm is responsive to **Magnesium Sulfate**.

Ventricular Fibrillation is the totally disorganized depolarization and contraction of small areas of ventricular myocardium – there is no effective ventricular pumping activity. The ECG of ventricular fibrillation shows a fine to coarse zigzag pattern without discernible P waves or QRS complexes. V-Fib is never accompanied by a pulse or a blood pressure.

INFORMATION NEEDED

__History of arrest
__Witnessed collapse (time down and preceding symptoms)
__Unwitnessed collapse (time down and preceding symptoms if known)
__Bystander CPR and treatments, including First Responder, AED or PAD defibrillation, given prior to arrival
__Past medical history: diagnosis, medications
__Scene (evidence of drug ingestion, hypothermia, trauma, valid DNR/POLST form, nursing home, or hospice patient)
__Continue resuscitation for at least 20 minutes (non-trauma) before moving or seeking order to cease resuscitation (see In-Field Termination SMO)

OBJECTIVE FINDINGS:
__Confirm apnea, pulselessness
__Confirm V-Fib or V-Tach on monitor

TREATMENT

__ Assess ABC's
__ CPR/AED per AHA guidelines
__ Defibrillate at 360J for monophasic; OR equivalent biphasic (see Precautions and Comments)
__ Resume CPR immediately, CPR and defibrillation is the primary treatment, the following should be added as soon possible however **prevent and minimize CPR interruptions**.

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TREATMENT – continued

__ IV or IO placement
__ **Epinephrine**
__ **Amiodarone** OR **Lidocaine**
__ Advanced Airway Management; See Airway Management SMO
__If available, attach waveform capnography to ET tube for confirmation of ET tube placement and verification of high quality CPR. $EtCO_2$ reading $\geq$ 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, $EtCO_2$ readings between 35-45 mmHg are optimal.
__Perform 12 lead ECG if available

Medical Control Contact Criteria

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

Documentation for Adherence to SMO

__ Proper defibrillation (monophasic 360j or equivalent biphasic)
__ Intubation with confirmation of proper placement
__ IV placement

PRECAUTIONS AND COMMENTS

- Defibrillation energy levels vary according to the type of waveform, monophasic or biphasic. Many devices used for public access defibrillation programs have a single energy setting.
- For equivalent biphasic energy level use manufactures recommendations, typically 120 to 200 J, if unknown select 200 J.
- **Epinephrine, Atropine, Lidocaine, and Naloxone** may be administered via ETT. ET drug doses are double the standard IV dose. Maximum total doses of drugs are also doubled for ETT administration. Relative effectiveness of ET drug administration is in question. See Medication Administration Chart.
- If using **Amiodarone** drip, add 150 mg to 100ml bag with 60drip tubing and attach to existing line and run wide open (over 10 minutes).
- **MEDICATION ADMINISTRATION CHART**

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
ILS, ALS

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

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

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TREATMENT

__Routine Medical Care

__Synchronized cardioversion (defibrillate for polymorphic)**:** 100 J biphasic, if unsuccessful increase in a step-wise fashion. Consider **Midazolam** or **Diazepam** for sedation if patient is awake.

__Upon successful cardioversion, or if cardioversion fails use of one of the following:

__**Lidocaine**

__**Amiodarone**

__**Magnesium Sulfate** (see **Magnesium Sulfate Administration Chart**) for Polymorphic VT (Torsade's de Points)

Medical Control Contact Criteria

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

Documentation of adherence to SMO

__Stability documented (chart contains the word "stable" or "unstable")

__Unstable patients that receive cardioversion

PRECAUTIONS AND COMMENTS

- A widened QRS complex is defined as greater than or equal to 0.12 seconds.
- A wide complex tachycardia is most often ventricular in origin but may be supraventricular tachycardia with aberrant conduction.

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

SMO's that have been removed or renamed from the previous version:

REMOVED		Removed	Renamed
AV Fistula/Graft Access	Procedures	x	
Closest Hospital Transport	General Guidelines		x
Cardiac Arrest Overview	Cardiac	x	
CO Oximetry	Procedures	x	
Combitube	Procedures	x	
Defibrillation	Procedures	x	
Dysrhythmia Overview	Cardiac	x	
Extremity Trauma	Trauma	x	
Kings Airway	Procedures	x	
Latex Precautions	Procedures	x	
Load and Go	General Guidelines	x	
Nausea and Vomiting	General Guidelines	x	
Nebulizer Inhalation Administration	Procedures	x	
Pediatric Intubation	Procedures		x
Pediatric Trauma	Pediatrics	x	
PVC	Cardiac	x	
Renal Emergencies	Adult Medical	x	
ROSC	Cardiac	x	
Saline Lock	Procedures	x	
SARS	Adult Medical	x	
Trauma - Chest and Abdomen	Trauma	x	
Trauma – Head and Facial	Trauma	x	
Trauma - Neck and Spinal Cord	Trauma	x	

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REGION I EMERGENCY MEDICAL SERVICES

Appendices

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EMS/ Region1 SMO

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

SMO: Region 1 Acceptable Abbreviations

A & O x 4	Alert, oriented person to date, time, place
Abd	Abdomen
ALS	Advanced life support
AM or a.m.	Between 12 midnight and 12 noon
AMA	Against Medical Advice
AMI or MI	Acute Myocardial Infarction
AMP	Ampule
Approx	Approximate or Approximately
ASHD	Arteriosclerotic Heart Disease
Assist or asst	Assistance
BBB	Bundle Branch Block
Bilat	Bilateral
BLS	Basic life support
BM	Bowel Movement
BOW	Bag of Waters
BP	Blood Pressure
CA	Cancer
CAD	Coronary Artery Disease
C-collar	Cervical Collar
CHF	Congestive heart failure
cm	Centimeter
CMS	Circulation, Motion, Sensation
CNS	Central nervous system
C/O	Complains of
COPD	Chronic Obstructive Pulmonary Disease
C-section or C-sect	Cesarean Section
CSF	Cerebral spinal fluid
C-spine	Cervical spine
CVA	Cerebrovascular accident
DC or dc	Discontinue
Dept	Department
Dx	Diagnosis
DTs	Delirium Tremens
D5W	5% Dextrose in water
ECG or EKG	Electrocardiogram
EDC	Expected date of confinement
ENT	Ears, Nose and Throat
ED	Emergency Department
ET	Endotracheal
ETOH	Alcohol
Exam	Examination
Extr or EXT	Extremities
Return to Table of Contents	

FB	Foreign Body
FHT	Fetal Heart Tones
Fib	Fibrillation
Fx	Fracture
GCS	Glasgow Coma Score
GI	Gastrointestinal
Gram	Gram
gr	Grain
gtt(s)	Drop(s)
GU	Genitourinary
H20	Water
HEENT	Head, Eyes, Ears, Nose and Throat
HIV	Human Immunodeficiency Virus
H/O	History of
HPI	History of present illness
hr	Hour
HR	Heart rate
HTN	Hypertension
Hx	History
ILS	Intermediate Life Support
IM	Intramuscular
IN	Intranasal
irreg	Irregular
IV	Intravenous
JVD	Jugular vein distention
K	Potassium
kg	Kilogram
Lt	Left
L or l	Liter
lb	Pound
LLQ	Left lower quadrant
LMP	Last menstrual period
LOC	Loss of consciousness
LUQ	Left upper quadrant
mcg	micrograms
Med(s)	Medication(s)
mEq or meq	Milliequivalent
mg	Milligrams
mL	Milliliter
mod	Moderate
N & V or N/V	Nausea and vomiting
N/A or NA	Not applicable
NAD	No acute distress
NaHCO3	Sodium Bicarbonate
Neg	Negative
Neuro	Neurology / Nervous system
NKA	No known allergies
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NPO	Nothing by mouth
NRB mask	Non-rebreather mask
NS	Normal saline
NSR	Normal sinus rhythm
NTG	Nitroglycerin
O2	Oxygen
OB	Obstetric
OD	Overdose
P	Pulse
PAC	Premature atrial contraction
PASG	Pneumatic anti-shock garment
PAT	Paroxysmal atrial tachycardia
PE	Physical examination
PE	Pulmonary Embolism
PEDS	Pediatric
PERRL	Pupils equal, round and reactive to light
PMH	Past medical history
PJC	Premature junctional contraction
PM or p.m.	Between 12 noon and 12 midnight
PND	Paroxysmal nocturnal dyspnea
PRN	As occasion requires / as needed
Pt	Patient
PVC	Premature ventricular contraction
q	Every
R or resp	Respiration
Rt	Right
Reg	Regular
RLQ	Right lower quadrant
RUQ	Right upper quadrant
Rx	Treatment, Take prescription
SL	Sublingual
SMO	Standing Medical Orders
SOB	Shortness of breath
Sub-Q or subq	Subcutaneous
Stat	Immediate
STD	Sexually transmitted disease
SVT	Supraventricular tachycardia
Temp	Temperature
TB	Tuberculosis
TKO	To keep open
URI	Upper respiratory infection
V-fib	Ventricular fibrillation
V-tach	Ventricular tachycardia
w/	With
w/o	Without
W/O	Wide open
WNL	Within normal limits
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Wt	weight
@	At
>	Greater than
<	Less than
ACLS	Advanced Cardiac Life Support
A/BDLS	Advanced/ Basic Disaster Life Support
AEIOUTIPS	Acidosis, alcohol; epilepsy; infection; overdose; uremia; tumor, trauma, toxin; insulin; psychosis, poison; stroke, seizure
AVPU	Alert, Verbal, Pain, Unresponsive
BTLS	Basic Trauma Life Support
DCAP-BTLS-IC	Deformities, Contusions, Abrasions, Penetrations or Punctures, Burns, Tenderness, Lacerations, Swelling, Instability, Crepitus
GEMS	Geriatrics Emergency Medical Services
Id-me	Immediate, Delayed, Minimal, Expectant
MASS	Move, Assess, Sort, Send
OPQRST	Onset, Provokes, Quality, Radiation, Severity, Time
PALS	Pediatric Advanced Life Support
PEPP	Pediatric Education Pre-hospital Provider
PHTLS	Pre-Hospital Trauma Life Support
SAMPLE	Signs & Symptoms, Allergies, Medications, Past medical history, Last oral intake, Events leading to incident
START	Simple Triage and Rapid Transport

NOTE: Based on JCAHO National Patient Safety Goals, these acceptable abbreviations are to minimize confusion when using abbreviations. Commonly used abbreviations such as *MS, OU, OD, OS, and cc* are not allowed to be utilized under Region1 EMS Acceptable Medical Abbreviations.

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
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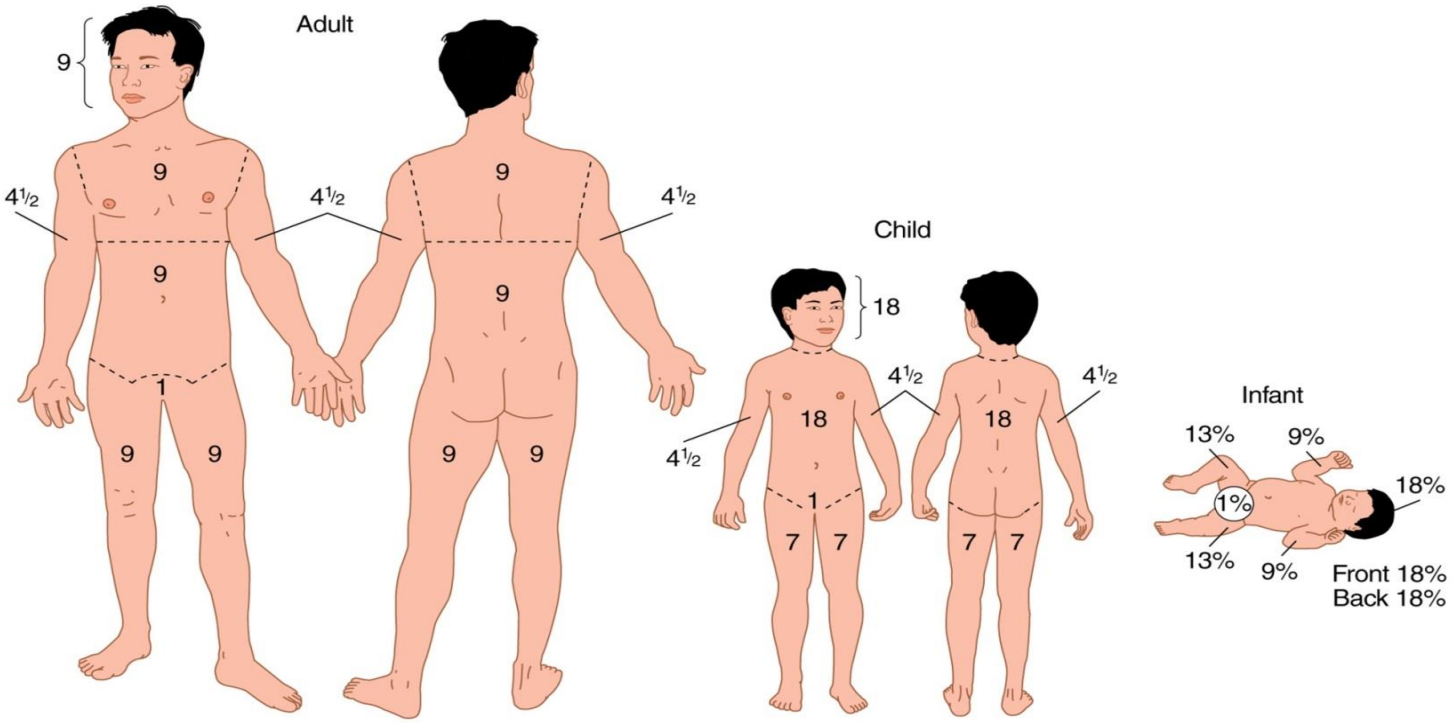
APPENDIX: Adult/ Pediatric Burn Reference Guide

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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REGION I EMERGENCY MEDICAL SERVICES
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APPENDIX: Glasgow Coma Score/ Revised Trauma Score

ADULT GLASGOW COMA SCORE

AREAS OF RESPONSE		
EYE OPENING	Eyes open ***Spontaneously***	4
	Eyes open in response to ***Voice***	3
	Eyes open in response to ***Pain***	2
	No eye opening response	1
VERBAL RESPONSE	***Oriented*** (e.g., to person, place, time)	5
	Confused, speaks but is disoriented	4
	Inappropriate but comprehensible words	3
	Incomprehensible sounds but no words are spoken	2
	None	1
MOTOR RESPONSE	***Obeys Commands*** to move	6
	Localized Painful stimuli	5
	Withdraws from painful stimulus	4
	Flexion, abnormal *decorticate* posturing	3
	Extension, abnormal *decerebrate* posturing	2
	No movement or posturing	1
TOTAL POSSIBLE SCORE		**3 - 15**
Severe Head Injury **Moderate Head Injury** **Minor Head Injury**		≤ 8 9 – 12 13 - 15

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ADULT TRAUMA SCORE

The Trauma Score is a numerical grading system for estimating the severity of injury. The score is composed of the Glasgow Coma Scale (reduced to approximately one-third value) and measurements of cardiopulmonary function. Each parameter is given a number (high for normal and low for impaired function). Severity of injury is estimated by summing the numbers. The lowest score is 0, and the highest score is 12.

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**

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PEDIATRIC GLASGOW COMA SCORE

AREAS OF RESPONSE	>1 year	< 1 year	GCS
EYE OPENING	Spontaneously	Spontaneously	4
	To ***Verbal Command***	To ***Shout***	3
	To ***Pain***	To ***Pain***	2
	No eye opening response	No eye opening response	1
MOTOR RESPONSE	***Obeys Commands*** to move	***Obeys Commands*** to move	6
	Localized Painful stimuli	***Localized Painful*** stimuli	5
	Withdraws from painful stimulus	***Flexion—normal***	4
	Flexion, abnormal *decorticate* posturing	***Flexion,*** abnormal *decorticate* posturing	3
	Extension, abnormal *decerebrate* posturing	***Extension***, abnormal *decerebrate* posturing	2
	No movement or posturing	No movement or posturing	1

VERBAL RESPONSE	> 5 years	< 2 – 5 years	0 - 23 months	
	Oriented and converses	Appropriate words & phrases for age	Smiles, coos, cries appropriately	5
	Disoriented but converses	Inappropriate words	Cries	4
	Inappropriate words	Cries and/or screams	Inappropriate crying and/or screaming	3
	Incomprehensible	Grunts	Grunts	2
	No response	No response	No response	1
TOTAL POSSIBLE SCORE				**3 - 15**

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PEDIATRIC TRAUMA SCORE

	VALUES		
COMPONENT	**+2**	**+1**	**-1**
Size	≥ 20 kg	10 – 20 kg	≤ 10 kg
Airway	Normal	Maintainable	Unable to maintain
CNS	Awake	Obtunded	Coma
Systolic BP	≥ 90 mm Hg	50 – 90 mm Hg	≤ 50 mm Hg
Open wound	None	Minor	Major
Skeletal Injuries	None	Closed fracture	Open or multiple fractures

Revised Trauma Score

Glasgow Coma Scale (GCS)	Systolic Blood Pressure (SBP)	Respiratory Rate (RR)	Coded Value
13-15	>89	10-29	**4**
9-12	76-89	>29	**3**
6-8	50-75	6-9	**2**
4-5	1-49	1-5	**1**
3	0	0	**0**

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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
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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.

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
    - Diazepam
    - Morphine
    - Fentanyl
- If a medication has been approved to be used past the manufacturers' expiration date due to a shortage it will be posted on the FDA website. The Resource Hospital, and in some cases, the Region I EMS Advisory Executive Council may also need to approve the extension of medication expirations dates due to a shortage.
- If a medication is no longer available and there is no Region I approved alternative the EMS agency must continue to provide care to the best of its ability. EMS Agencies must follow their regionally approved SMO's to the best of their ability with the medications available to them.

Region I EMS Alternative Medication Formulary

Effective Date: December 6, 2017

Current Medication	Alternative A	Alternative B	Alternative C	Notes
Ondansetron (Zofran)	Diphenhydramine 25-50 mg IV/IM	Metoclopramide (Reglan) 10 mg IV/IM	Prochlorperazine (Compazine) 12.5 mg IV	ADULT ONLY Anti-emetic Ondansetron 4 mg ODT also an option
Etomidate	Midazolam C_{IV} (Versed) 5 mg IV	Ketamine C_{III} 1 mg/kg IV	Lorazepam C_{IV} (Ativan) 2 mg IV	Induction Ativan (Lorazepam) must be refrigerated following manufacturers guidelines
Morphine C_{II}	Fentanyl C_{II} 50 mcg IV	Ketorolac (Toradol) 30 mg IV/IM		Pain Management SMO ONLY
Fentanyl C_{II}	Morphine C_{II} 4-6 mg IV	Ketorolac (Toradol) 30 mg IV/IM		Pain Management SMO ONLY
Midazolam C_{IV} (Versed)	Diazepam C_{IV} (Valium) 5 mg IV	Lorazepam C_{IV} (Ativan) 2 mg or 0.05 mg/kg IV		Seizure Management
Diazepam C_{IV} (Valium)	Midazolam C_{IV} (Versed) 5 mg IV	Lorazepam C_{IV} (Ativan) 2 mg IV		Seizure Management
Ketorolac	Fentanyl 50 mcg IV	Morphine C_{II}		NSAID pain management (not mandatory substitution because of cost)
Ketamine C_{III}	Etomidate 0.1 mg/kg IV	Midazolam C_{IV} (Versed) 5 mg IV	Fentanyl 50 mcg IV	
Midazolam C_{IV} (Versed)	Ketamine 1-3 mg/kg IM			Sedation

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Appendix: Medication Shortages Page 3 of 4

				Appendix: Medication Shortages Page 4 of 4
Epinephrine 1:10 ml	Epinephrine 1:1 ml 30 mL Vial 1. Expel 1mL of Normal Saline from a 10 mL prefilled syringe 2. Instill 1 mg (mL) of Epinephrine 1:1 ml from 20 mL vial into prefilled syringe 3. 30 mL vials are to be single patient use only	Epinephrine 1:1 ml Ampule 1. Expel 1mL of Normal Saline from a 10 mL prefilled syringe. 2. Instill 1 mg (mL) of Epinephrine 1:1 ml from ampule into a prefilled syringe.		
Glucose Gel	Glucose Tabs			

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.

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

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

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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 GLASCOW 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

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

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.

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Region I EMS Request Form

Date submitted to EMS System Coordinator: _____

Printed name of EMS System Coordinator receiving application: _____

Submitted by Name (print):_____

Signature: _____

Agency: _____

Contact Phone: _____

Email: _____

Sponsoring System Medical Director (print): _____

Signature: _____

Official Use Only

Date received by Region I EMS System Coordinator: _____

Review Date: _____ Approved / Denied

If approved, Region I EMS Advisory review date: _____ Approved / Denied

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

APPENDIX: Secondary Assessment

Overview: The Secondary assessment is the systematic assessment and complaint focused relevant physical examination of the patient. The secondary assessment may be done concurrently with the patient history and should be performed after:

- The Primary Assessment and initial treatment and stabilization of life-threatening airway, breathing and circulation difficulties
- Spinal restriction as needed
- Beginning transport in the potentially unstable or critical patient
- A rapid head-to-toe assessment in the case of significant trauma
- Investigation of the chief complaint and associated complaints, signs or symptoms
- An initial set of vital signs—pulse, respirations, blood pressure
- Lung sounds
- Cardiac rhythm (if indicated)
- Consider orthostatic vital signs when needed to assess volume status
- Pulse oximetry and $EtCO_2$ (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.

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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

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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/**C**repitus
  Abrasion
  Puncture
  Bruising/**B**leeding
  Tenderness
  Laceration
  Swelling

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

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

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GUIDELINES (continued)

E. Extremity
   1. Multiple orthopedic injuries (>1 long bone fracture)
   2. Major extremity injury with vascular compromise (blunt and penetrating)
   3. Traumatic amputation proximal to the wrist or ankle

III. Deceleration Injury

A. High energy dissipation—rapid acceleration with blunt chest or abdominal injury
B. Falls of 20 feet or greater with the adult patient
C. Falls of 3 times the height of the pediatric patient

IV. Motor Vehicle Incidents

A. Extrication time of 20 minutes or more
B. Passenger space invaded by 12 or more inches
C. Ejection
D. Fatality at the scene within the same motor vehicle
E. Rollover
F. Child under 12 years struck by car
G. Child 5 years old or younger involved in any MVA without age appropriate restraint (under age 4 or less than 40 pounds require a car seat)
H. Motorcycle crash greater than 20 mph and separation of rider from bike

V. Major Burns

A. 20% total body surface of 2nd and 3rd degree burns
B. Any burn patient with obvious head, neck or airway involvement

VI. Pediatric Trauma with one or more of the following:

A. HEAD TRAUMA WITH PERSISTENT ALTERED LEVEL OF CONSCIOSNESS 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 ≤ 90 systolic / Peds BP ≤ 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 ≥ 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

Yes

- Initiate appropriate trauma treatment SMO
- Rapid Transport to Trauma Center

No

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

Yes

No

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.

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

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.

Medical Control Contact Criteria

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III. GENERAL GUIDELINES

1. Color coding.
   - BLS providers will follow SMOs in Black with no highlight color.
   - ILS providers will follow SMOs in Black with Yellow highlighting.
   - ALS Providers will follow SMOs in Black, with both Yellow and Pink highlighting.
2. Pre-hospital personnel will initiate BLS measures, and then proceed to ALS measures as dictated by the patient assessment and scope of practice.
3. Medication dosing is generally not present in the SMO's. Please refer to the medication chart for all dosing information. Broselow tape may be used for pediatric patients. Medications will be in **bold blue** print in all SMO's.
4. Pre-hospital personnel will utilize good clinical judgment and consider additional resources as needed.
5. BLS personnel will request an ALS response unit to the scene or rapidly transport the patient to the nearest hospital according to EMS Region 1 "Transport to Other Than the Closest Hospital SMO."
6. Routine Medical Care, Routine Trauma Care, and/or Routine Trauma Care should be provided to every patient as guided by assessment of the scene and the patient's condition.
7. The Resource Hospital or Associate Hospital Physician or ECRN provides on-line Medical Control.
8. Optional Scope practices will be identified in each EMS Systems specific SMOs.

IV. DEFINITIONS

Advanced Life Support (ALS) Services – an advanced level of pre-hospital and inter-hospital emergency care and non-emergency medical care that includes basic life support care, cardiac monitoring, cardiac defibrillation, electrocardiography, intravenous therapy, administration of medications, drugs and solutions, use of adjunctive medical devices, trauma care, and other authorized techniques and procedures as outlined in the Advanced Life Support National Curriculum of the United States Department of Transportation and any modifications to that curriculum specified in this Part. (Section 3.10 of the Act)

Alternate EMS Medical Director or Alternate EMSMD – the physician who is designated by the Resource Hospital to direct the ALS/ILS/BLS operations in the absence of the EMS Medical Director.

Ambulance – any publicly or privately owned vehicle that is specifically designed, constructed or modified and equipped for, and is intended to be used for, and is maintained or operated for, the emergency transportation of persons who are sick, injured, wounded or otherwise incapacitated or helpless, or the non-emergency medical transportation of persons who require the presence of medical personnel to monitor the individual's condition or medical apparatus being used on such an individual. (Section 3.85 of the Act)

Ambulance Service Provider or Ambulance Provider – any individual, group of individuals, corporation, partnership, association, trust, joint venture, unit of local government or other public or private ownership entity that owns and operates a business or service using one or more ambulances or EMS vehicles for the transportation of emergency patients.

Associate Hospital – a hospital participating in an approved EMS System in accordance with the EMS System Program Plan, fulfilling the same clinical and communications requirements as the Resource Hospital. This hospital has neither the primary responsibility for conducting training programs nor the responsibility for the overall operation of the EMS System program. The Associate Hospital must have a basic or comprehensive Emergency Department with 24-hour physician coverage. It must have a functioning Intensive Care Unit and/or a Cardiac Care Unit.

Basic Life Support (BLS) Services – a basic level of pre-hospital and inter-hospital emergency care and non-emergency medical care that includes airway management, cardiopulmonary resuscitation (CPR), control of shock and bleeding and splinting of fractures, as outlined in a Basic Life Support National Curriculum of the United States Department of Transportation and any modifications to that curriculum specified in this Part. (Section 3.10 of the Act)

Dysrhythmia – a variation from the normal electrical rate and sequences of cardiac activity, also including abnormalities of impulse formation and conduction.

Emergency – a medical condition of recent onset and severity that would lead a prudent layperson, possessing an average knowledge of medicine and health, to believe that urgent or unscheduled medical care is required. (Section 3.5 of the Act)

Emergency Medical Services (EMS) System or System – an organization of hospitals, vehicle service providers and personnel approved by the Department in a specific geographic area, which coordinates and provides pre-hospital and inter-hospital emergency care and non-emergency medical transports at a BLS, ILS and/or ALS level pursuant to a System Program Plan submitted to and approved by the Department and pursuant to the EMS Regional Plan adopted for the EMS Region in which the System is located. (Section 3.20 of the Act)

Emergency Medical Technician – a person who has successfully completed a course of instruction in basic life support as prescribed by the Department, is currently licensed by the Department in accordance with standards prescribed by the Act and this Part and practices within an EMS System. (Section 3.50 of the Act)

Emergency Medical Technician-Intermediate or EMT-I – a person who has successfully completed a course of instruction in intermediate life support as prescribed by the Department, is currently licensed by the Department in accordance with standards prescribed by the Act and this Part and practices within an EMS System. (Section 3.50 of the Act)

EMS Medical Director or EMSMD – the physician, appointed by the Resource Hospital, who has the responsibility and authority for total management of the EMS System.

Emergency Medical Responder – a person who has successfully completed a course of instruction in emergency first response as prescribed by the Department, who provides first response services prior to the arrival of an ambulance or specialized emergency medical services vehicle, in accordance with the level of care established in the emergency first response course. (Section 3.60 of the Act)

Intermediate Life Support (ILS) Services – an intermediate level of pre-hospital and inter-hospital emergency care and non-emergency medical care that includes basic life support care, plus intravenous cannulation and fluid therapy, invasive airway management, trauma care, and other authorized techniques and procedures as outlined in the Intermediate Life Support National Curriculum of the United States Department of Transportation and any modifications to that curriculum specified in this Part. (Section 3.10 of the Act)

Paramedic – a person who has successfully completed a course of instruction in advanced life support care as prescribed by the Department, is licensed by the Department in accordance with standards prescribed by the Act and this Part and practices within an Advanced Life Support EMS System. (Section 3.50 of the Act)

Pediatric Trauma Patient – trauma patient from birth to 17 years of age.

Pre-Hospital Care – those emergency medical services rendered to emergency patients for analytic, resuscitative, stabilizing, or preventive purposes, precedent to and during transportation of such patients to hospitals. (Section 3.10 of the Act)

Pre-Hospital Care Provider – a System Participant or any EMT-B, I, P, Ambulance, Ambulance Provider, EMS Vehicle, Associate Hospital, Participating Hospital, EMS System Coordinator, Associate Hospital EMS Coordinator, Associate Hospital EMS Medical Director, ECRN or Physician serving on an ambulance or giving voice orders over an EMS System and subject to suspension by the EMS Medical Director of that System in accordance with the policies of the EMS System Program Plan approved by the Department.

Sustained Hypotension – two systolic blood pressures of 90 mmHg five minutes apart or, in the case of a pediatric patient, two systolic blood pressures of 80 mmHg five minutes apart.

Trauma – any significant injury which involves single or multiple organ systems. (Section 3.5 of the Act)

Vehicle Service Provider – an entity licensed by the Department to provide emergency or non-emergency medical services in compliance with the Act and this Part and an operational plan approved by its EMS System(s), utilizing at least ambulances or specialized emergency medical service vehicles (SEMSV). (Section 3.85 of the Act)
(Source: Amended at 27 Ill. Reg. 13507, effective July 25, 2003)

V. AUTHORITY

A. Illinois Department of Public Health Rules and Regulations, Subchapter f, Emergency Services and Highway Safety [Title 77 Index] 77 Ill. Adm. Code Part 515 Emergency Medical Services and Trauma Center Code

REGION I EMERGENCY MEDICAL SERVICES

MEDICATION ADMINISTRATION CHART

As prepared by:

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IDPH Approval
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EMS/ Region1 SMO

IV Doses, volumes, and concentrations used in

PEDIATRIC RESUSCITATION
and
ADULT WEIGHT-BASED DOSING

Last updated August 2018
Doses adapted from
BROSELOW Pediatric Emergency Tape Version 2017
Edition A
The Harriet Lane Handbook Twenty-first Edition
For ET doses refer to Broselow Tape

MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	**Dextrose**	**Dopamine**	**Mag Sulfate**	**Fentanyl IN**	**Midazolam IN**			**Formulary**

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

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GREY

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

GREY

PEDIATRIC RESUSCITATION – 3 KG

3 kg
Resuscitation/Cardiac

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE 1 mg/10 ml (1:10 ml) Pre-filled syringe	0.01 mg/kg	0.03 mg	0.3 ml
ATROPINE (1mg/10ml) Pre-filled syringe	0.02 mg/kg	0.06 mg	0.6 ml
SODIUM BICARBONATE (5 meq/10 ml)Pre-filled syringe	1 meq/kg	3 meq	6 ml
CALCIUM GLUCONATE (1gm/10 ml) Pre-filled syringe	60 mg/kg	180 mg	1.8 ml
LIDOCAINE (100 mg/5 ml) Pre-filled syringe	1 mg/kg	3 mg	0.15 ml
AMIODARONE (50mg/ml) vial	5 mg/kg	15 mg	0.3 ml
ADENOSINE (6mg/2 ml) Pre-filled syringe	0.1 mg/kg 0.2 mg/kg	1st - 0.3 mg 2nd - 0.6 mg	0.1 ml 0.2 ml

GREY

3 kg
Delayed Sequence Intubation (DSI)

FOR DSI APPROVED SERVICES ONLY

GREY

	DOSE/KG	DOSE	VOLUME
ATROPINE (1mg/10ml) Pre-filled syringe Consider if age <1 or increased secretions	0.02mg/kg	0.06 mg	0.6 ml
LIDOCAINE (100 mg/5 ml) Pre-filled syringe	1 mg/kg	3 mg	0.15 ml
ETOMIDATE 2 mg/ml Vial	0.3mg/kg	0.9 mg	0.45 ml
FENTANYL * (50mcg/ml) vial/amp Must use filter needle for amp	1 mcg/kg	3 mcg *	0.06 ml
KETAMINE IV 10 mg/ml Vial	2 mg/kg	6 mg	0.6 ml
MIDAZOLAM * 5 mg/ml Vial	0.3 mg/kg	0.9 mg *	0.18 ml
SUCCINYLCHOLINE 20 mg/ml Vial	2 mg/kg	6 mg	0.3 ml
ROCURONIUM 10 mg/ml Vial	1 mg/kg	3 mg	0.3 ml
VECURONIUM (10 mg vial for recon. Add 10 ml NS for final conc. 1mg/ml)	0.2 mg/kg	0.6 mg	0.6ml

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GREY

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GREY

3 kg
Anaphylaxis/Antidote

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE (1mg/1ml) vial/amp Must use filter needle for amp	**0.01 mg/kg**	**0.03 mg**	**0.03 ml**
DIPHENHYDRAMINE (50 mg/1 ml) Vial	**1 mg/kg**	**3 mg**	**0.06 ml**
METHYLPREDNISONE (125 mg/2 ml) Vial	**2 mg/kg**	**6 mg**	**0.096 ml**
ALBUTEROL (2.5 mg/ml) Ampule	**0.15 mg/kg**	**0.45 mg**	**0.18 ml**
NALOXONE (1 mg/ml) Pre-filled syringe	**0.1 mg/kg**	**0.3 mg**	**0.3 ml**
GLUCAGON (1 mg/ml) Vial	**Standard Dose Not Weight-Based**	**0.5 mg**	**0.5 ml**

GREY

GREY

3 kg
Asthma

	DOSE/KG	DOSE	VOLUME
ALBUTEROL (2.5 mg/ml) Ampule	**0.15 mg/kg**	**0.45 mg**	**0.18 ml**
CONTINUOUS ALBUTEROL	**0.5 mg/kg**	**1.5 mg**	**0.6 ml**
METHYLPREDNISONE (125 mg/2 ml) Vial	**2 mg/kg**	**6 mg**	**0.096 ml**
EPINEPHRINE (1mg/1ml) vial/amp Must use filter needle for amp	**0.01 mg/kg**	**SUB Q 0.03 mg**	**0.03 ml**
MAGNESIUM SULFATE (2 grams/50 ml) Solution for Inj	**50 mg/kg**	**150 mg**	**3.75 ml**

3 kg
Seizures

	DOSE/KG	DOSE	VOLUME
DIAZEPAM * (5 mg/ml) Pre-filled syringe	0.2 mg/kg	0.6 mg *	0.12 ml
LORAZEPAM * (2 mg/ml) Pre-filled syringe	0.1 mg/kg	0.3 mg *	0.15 ml
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	0.3 mg *	0.06 ml

GREY

GREY

3 kg
Antiemetic/Pain/Agitation

	DOSE/KG	DOSE	VOLUME
ONDANSETRON (2 mg/ml) Vial	0.15 mg/kg	0.45 mg	0.225 ml
FENTANYL * (50mcg/ml) vial/amp Must use filter needle for amp	1 mcg/kg	3 mcg *	0.06 ml
MORPHINE * (10 mg/1 ml) Pre-filled syringe	0.1 mg/kg	0.3 mg *	0.03 ml
KETOROLAC (15 mg/ml) Pre-filled syringe	0.5 mg/kg	1.5 mg	0.1 ml
ETOMIDATE (2 mg/ml) Vial	0.2 mg/kg	0.6 mg	0.3 ml
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	0.3 mg *	0.06 ml
KETAMINE IM ONLY (100 mg/ml) Vial	4 mg/kg	12 mg	0.12 ml

GREY

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

GREY

PEDIATRIC RESUSCITATION – 4 KG

4 kg
Resuscitation/Cardiac

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE 1 mg/10 ml (1:10 ml) Pre-filled syringe	0.01 mg/kg	0.04 mg	0.4 ml
ATROPINE (1mg/10ml) Pre-filled syringe	0.02 mg/kg	0.08 mg	0.8 ml
SODIUM BICARBONATE (5 meq/10 ml)Pre-filled syringe	1 meq/kg	4 meq	8 ml
CALCIUM GLUCONATE (1gm/10 ml) Pre-filled syringe	60 mg/kg	240 mg	2.4 ml
LIDOCAINE (100 mg/5 ml) Pre-filled syringe	1 mg/kg	4 mg	0.2 ml
AMIODARONE (50mg/ml) vial	5 mg/kg	20 mg	0.4 ml
ADENOSINE (6mg/2 ml) Pre-filled syringe	0.01 mg/kg 0.02 mg/kg	1st - 0.4 mg 2nd - 0.8 mg	0.13 ml 0.26 ml

GREY

4 kg
Delayed Sequence Intubation (DSI)

FOR DSI APPROVED SERVICES ONLY

GREY

	DOSE/KG	DOSE	VOLUME
ATROPINE (1mg/10ml) Pre-filled syringe Consider if age <1 or increased secretions	0.02mg/kg	0.08 mg	0.8 ml
LIDOCAINE (100 mg/5 ml) Pre-filled syringe	1 mg/kg	4 mg	0.2 ml
ETOMIDATE 2 mg/ml Vial	0.3mg/kg	1.2 mg	0.6 ml
FENTANYL * (50mcg/ml) vial/amp Must use filter needle for amp	1 mcg/kg	4 mcg *	0.08 ml
KETAMINE IV 10 mg/ml Vial	2 mg/kg	8 mg	0.8 ml
MIDAZOLAM * 1 mg/ml Vial	0.3 mg/kg	1.2 mg *	1.2 ml
SUCCINYLCHOLINE 20 mg/ml Vial	2 mg/kg	8 mg	0.4 ml
ROCURONIUM 10 mg/ml Vial	1 mg/kg	4 mg	0.4 ml
VECURONIUM (10 mg vial for recon. Add 10 ml NS for final conc. 1mg/ml)	0.2 mg/kg	0.8 mg	0.8ml

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GREY

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GREY

4 kg
Anaphylaxis/Antidote

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE (1mg/1ml) vial/amp Must use filter needle for amp	0.01 mg/kg	IM 0.04 mg	0.04 ml
DIPHENHYDRAMINE (50 mg/1 ml) Vial	1 mg/kg	4 mg	0.08 ml
METHYLPREDNISONE (125 mg/2 ml) Vial	2 mg/kg	8 mg	0.128 ml
ALBUTEROL (2.5 mg/ml) Ampule	0.15 mg/kg	0.6 mg	0.24 ml
NALOXONE (1 mg/ml) Pre-filled syringe	0.1 mg/kg	0.4 mg	0.4 ml
GLUCAGON (1 mg/ml) Vial	Standard Dose Not Weight-Based	0.5 mg	0.5 ml

4 kg
Asthma

	DOSE/KG	DOSE	VOLUME
ALBUTEROL (2.5 mg/ml) Ampule	0.15 mg/kg	0.6 mg	0.24 ml
CONTINUOUS ALBUTEROL	0.5 mg/kg	2 mg	0.8 ml
METHYLPREDNISONE (125 mg/2 ml) Vial	2 mg/kg	8 mg	0.128 ml
EPINEPHRINE (1mg/1ml) vial/amp Must use filter needle for amp	0.01 mg/kg	SUB Q 0.04 mg	0.04 ml
MAGNESIUM SULFATE (2 grams/50 ml) Solution for Injection	50 mg/kg	200 mg	5 ml

4 kg
Seizures

	DOSE/KG	DOSE	VOLUME
DIAZEPAM * (5 mg/ml) Pre-filled syringe	0.2 mg/kg	0.8 mg *	0.16 ml
LORAZEPAM * (2 mg/ml) Pre-filled syringe	0.1 mg/kg	0.4 mg *	0.2 ml
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	0.4 mg *	0.08 ml

4 kg
Antiemetic/Pain/Agitation

	DOSE/KG	DOSE	VOLUME
ONDANSETRON (2 mg/ml) Vial	0.15 mg/kg	0.6 mg	0.3 ml
FENTANYL * (50mcg/ml) vial/amp Must use filter needle for amp	1 mcg/kg	4 mcg *	0.08 ml
MORPHINE * (10 mg/1 ml) Pre-filled syringe	0.1 mg/kg	0.4 mg *	0.04 ml
KETOROLAC (15 mg/ml) Pre-filled syringe	0.5 mg/kg	2 mg	0.14 ml
ETOMIDATE (2 mg/ml) Vial	0.2 mg/kg	0.8 mg	0.4 ml
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	0.4 mg *	0.8 ml
KETAMINE IM ONLY (100 mg/ml) Vial	4 mg/kg	16 mg	0.16 ml

GREY

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

GREY

PEDIATRIC RESUSCITATION – 5 KG

5 kg
Resuscitation/Cardiac

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE 1 mg/10 ml (1:10 ml) Pre-filled syringe	0.01 mg/kg	0.05 mg	0.5 ml
ATROPINE (1mg/10ml) Pre-filled syringe	0.02 mg/kg	0.1 mg	1 ml
SODIUM BICARBONATE (5 meq/10 ml)Pre-filled syringe	1 meq/kg	5 meq	10 ml
CALCIUM GLUCONATE (1gm/10 ml) Pre-filled syringe	60 mg/kg	300 mg	3 ml
LIDOCAINE (100 mg/5 ml) Pre-filled syringe	1 mg/kg	5 mg	0.25 ml
AMIODARONE (50mg/ml) vial	5 mg/kg	25 mg	0.5 ml
ADENOSINE (6mg/2 ml) Pre-filled syringe	0.1 mg/kg 0.2 mg/kg	1st - 0.5 mg 2nd - 1 mg	0.16 ml 0.33 ml

GREY

5 kg
Delayed Sequence Intubation (DSI)

FOR DSI APPROVED SERVICES ONLY

GREY

	DOSE/KG	DOSE	VOLUME
ATROPINE (1mg/10ml) Pre-filled syringe Consider if age <8 or increased secretions	0.02 mg/kg	0.1 mg	1 ml
LIDOCAINE (100 mg/5 ml) Pre-filled syringe	1 mg/kg	5 mg	0.25 ml
ETOMIDATE 2 mg/ml Vial	0.3mg/kg	1.5 mg	0.75 ml
FENTANYL * (50mcg/ml) vial/amp Must use filter needle for amp	1 mcg/kg	5 mcg *	0.1 ml
KETAMINE IV 10 mg/ml Vial	2 mg/kg	10 mg	1 ml
MIDAZOLAM * 1 mg/ml Vial	0.3 mg/kg	1.5 mg *	1.5 ml
SUCCINYLCHOLINE 20 mg/ml Vial	2 mg/kg	10 mg	0.5 ml
ROCURONIUM 10 mg/ml Vial	1 mg/kg	5 mg	0.5 ml
VECURONIUM (10 mg vial for recon. Add 10 ml NS for final conc. 1mg/ml)	0.2 mg/kg	1 mg	1 ml

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GREY

Current Version 2018.1
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GREY

5 kg
Anaphylaxis/Antidote

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE (1mg/1ml) vial/amp Must use filter needle for amp	**0.01 mg/kg**	**0.05 mg**	**0.05 ml**
DIPHENHYDRAMINE (50 mg/1 ml) Vial	**1 mg/kg**	**5 mg**	**0.1 ml**
METHYLPREDNISONE (125 mg/2 ml) Vial	**2 mg/kg**	**10 mg**	**0.16 ml**
ALBUTEROL (2.5 mg/ml) Ampule	**0.15 mg/kg**	**0.75 mg**	**0.3 ml**
NALOXONE (1 mg/ml) Pre-filled syringe	**0.1 mg/kg**	**0.5 mg**	**0.5 ml**
GLUCAGON (1 mg/ml) Vial	**Standard Dose Not Weight-Based**	**0.5 mg**	**0.5 ml**

GREY

GREY

5 kg
Asthma

	DOSE/KG	DOSE	VOLUME
ALBUTEROL (2.5 mg/ml) Ampule	**0.15 mg/kg**	**0.75 mg**	**0.3 ml**
CONTINUOUS ALBUTEROL	**0.5 mg/kg**	**2.5 mg**	**1 ml**
METHYLPREDNISONE (125 mg/2 ml) Vial	**2 mg/kg**	**10 mg**	**0.16 ml**
EPINEPHRINE (1mg/1ml) vial/amp Must use filter needle for amp	**0.01 mg/kg**	**SUB Q 0.05 mg**	**0.05 ml**
MAGNESIUM SULFATE (2 grams/50 ml) Solution for Inj	**50 mg/kg**	**250 mg**	**6.25 ml**

GREY

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

GREY

5 kg
Seizures

	DOSE/KG	DOSE	VOLUME
DIAZEPAM * (5 mg/ml) Pre-filled syringe	0.2 mg/kg	1 mg *	0.2 ml
LORAZEPAM * (2 mg/ml) Pre-filled syringe	0.1 mg/kg	0.5 mg *	0.25 ml
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	0.5 mg *	0.1 ml

GREY

GREY

5 kg
Antiemetic/Pain/Agitation

	DOSE/KG	DOSE	VOLUME
ONDANSETRON (2 mg/ml) Vial	0.15 mg/kg	0.75 mg	0.375 ml
FENTANYL * (50mcg/ml) vial/amp Must use filter needle for amp	1 mcg/kg	5 mcg *	0.1 ml
MORPHINE * (10 mg/1 ml) Pre-filled syringe	0.1 mg/kg	0.5 mg *	0.05 ml
KETOROLAC (15 mg/ml) Pre-filled syringe	0.5 mg/kg	2.5 mg	0.16 ml
ETOMIDATE (2 mg/ml) Vial	0.2 mg/kg	1 mg	0.5 ml
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	0.5 mg *	0.1 ml
KETAMINE IM ONLY (100 mg/ml) Vial	4 mg/kg	20 mg	0.2 ml

GREY

Current Version 2018.1
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GREY

6 - 7 kg
Resuscitation

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE 1 mg/10 ml (1:10 ml) Pre-filled syringe	**0.01 mg/kg**	**0.065 mg**	**0.65 ml**
ATROPINE (1mg/10ml) Pre-filled syringe	**0.02 mg/kg**	**0.13 mg**	**1.3 ml**
SODIUM BICARBONATE (5 meq/10 ml)Pre-filled syringe	**1 meq/kg**	**6.5 meq**	**13 ml**
CALCIUM GLUCONATE (1gm/10 ml) Pre-filled syringe	**60 mg/kg**	**390 mg**	**3.9 ml**
LIDOCAINE (100 mg/5 ml) Pre-filled syringe	**1 mg/kg**	**6.5mg**	**0.33 ml**
AMIODARONE (50mg/ml) vial	**5 mg/kg**	**32 mg**	**0.65 ml**
ADENOSINE (6mg/2 ml) Pre-filled syringe	**0.1 mg/kg** **0.2 mg/kg**	**1st - 0.65mg** **2nd - 1.3 mg**	**0.21 ml** **0.43 ml**

PINK

6 - 7 kg
Delayed Sequence Intubation (DSI)

FOR DSI APPROVED SERVICES ONLY

PINK

	DOSE/KG	DOSE	VOLUME
ATROPINE (1mg/10ml) Pre-filled syringe Consider if age <8 or increased secretions	**0.02 mg/kg**	**0.13 mg**	**1.3 ml**
LIDOCAINE (100 mg/5 ml) Pre-filled syringe	**1 mg/kg**	**6.5 mg**	**0.33 ml**
ETOMIDATE 2 mg/ml Vial	**0.3mg/kg**	**2 mg**	**1 ml**
FENTANYL * (50mcg/ml) vial/amp Must use filter needle for amp	**1 mcg/kg**	**6 mcg ***	**0.12 ml**
KETAMINE IV 10 mg/ml Vial	**2 mg/kg**	**13 mg**	**1.3 ml**
MIDAZOLAM * 1 mg/ml Vial	**0.3 mg/kg**	**2 mg ***	**2 ml**
SUCCINYLCHOLINE 20 mg/ml Vial	**2 mg/kg**	**13 mg**	**0.7 ml**
ROCURONIUM 10 mg/ml Vial	**1 mg/kg**	**7 mg**	**0.7 ml**
VECURONIUM (10 mg vial for recon. Add 10 ml NS for final conc. 1mg/ml)	**0.2 mg/kg**	**1.3 mg**	**1.3 ml**

6 - 7 kg
Anaphylaxis/Antidote

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE (1mg/1ml) vial/amp Must use filter needle for amp	**0.01 mg/kg**	**0.07 mg**	**0.07 ml**
DIPHENHYDRAMINE (50 mg/1 ml) Vial	**1 mg/kg**	**7 mg**	**0.14 ml**
METHYLPREDNISONE (125 mg/2 ml) Vial	**2 mg/kg**	**136 mg**	**0.096 ml**
ALBUTEROL (2.5 mg/ml) Ampule	**0.15 mg/kg**	**1 mg**	**0.4 ml**
NALOXONE (1mg ml) Pre-filled syringe	**0.1 mg/kg**	**0.7 mg**	**0.7 ml**
GLUCAGON (1 mg/ml) Vial	**Standard Dosing Not Weight-Based**	**0.5 mg**	**0.5 ml**

6 - 7 kg
Asthma

	DOSE/KG	DOSE	VOLUME
ALBUTEROL (2.5 mg/ml) Ampule	**0.15 mg/kg**	**1 mg**	**0.4 ml**
CONTINUOUS ALBUTEROL	**0.5 mg/kg**	**3.4 mg**	**1.4 ml**
METHYLPREDNISONE (125 mg/2 ml) Vial	**2 mg/kg**	**13 mg**	**0.208 ml**
EPINEPHRINE (1mg/1ml) vial/amp Must use filter needle for amp	**0.01 mg/kg**	**SUB Q 0.07 mg**	**0.07 ml**
MAGNESIUM SULFATE (2 grams/50 ml) Solution for Inj	**50 mg/kg**	**335 mg**	**8.37 ml**

6 - 7 kg
Seizures

	DOSE/KG	DOSE	VOLUME
DIAZEPAM * (5 mg/ml) Pre-filled syringe	0.2 mg/kg	1.3 mg *	0.26 ml
LORAZEPAM * (2 mg/ml) Pre-filled syringe	0.1 mg/kg	0.7 mg *	0.35 ml
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	0.7 mg *	0.14 ml

6 - 7 kg
Antiemetic/Pain/Agitation

	DOSE/KG	DOSE	VOLUME
ONDANSETRON (2 mg/ml) Vial	0.15 mg/kg	1 mg	0.5 ml
FENTANYL * (50mcg/ml) vial/amp Must use filter needle for amp	1 mcg/kg	6 mcg *	0.12 ml
MORPHINE * (10 mg/1 ml) Pre-filled syringe	0.1 mg/kg	0.7 mg *	0.07 ml
KETOROLAC (15 mg/ml) Pre-filled syringe	0.5 mg/kg	3.35 mg	0.23 ml
ETOMIDATE (2 mg/ml) Vial	0.2 mg/kg	1.3 mg	0.65 ml
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	0.7 mg *	0.14 ml
KETAMINE IM ONLY (100 mg/ml) Vial	4 mg/kg	26 mg	2.6 ml

RED

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

RED

PEDIATRIC RESUSCITATION – 8-9 KG

8 - 9 kg
Resuscitation

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE 1 mg/10 ml (1:10 ml) Pre-filled syringe	0.01 mg/kg	0.085 mg	0.85 ml
ATROPINE (1mg/10ml) Pre-filled syringe	0.02 mg/kg	0.17 mg	1.7 ml
SODIUM BICARBONATE (5 meq/10 ml)Pre-filled syringe	1 meq/kg	8.5 meq	17 ml
CALCIUM GLUCONATE (1gm/10 ml) Pre-filled syringe	60 mg/kg	510 mg	5.1 ml
LIDOCAINE (100 mg/5 ml) Pre-filled syringe	1 mg/kg	8.5 mg	0.42 ml
AMIODARONE (50mg//ml) vial	5 mg/kg	42 mg	0.85 ml
ADENOSINE (6mg/2 ml) Pre-filled syringe	0.1 mg/kg 0.2 mg/kg	1st - 0.85mg 2nd - 1.7 mg	0.28 ml 0.56 ml

RED

RED

8 - 9 kg
Delayed Sequence Intubation (DSI)

FOR DSI APPROVED SERVICES ONLY

	DOSE/KG	DOSE	VOLUME
ATROPINE (1mg/10ml) Pre-filled syringe Consider if age <8 or increased secretions	0.02 mg/kg	0.17 mg	1.7 ml
LIDOCAINE (100 mg/5 ml) Pre-filled syringe	1 mg/kg	8.5 mg	0.42 ml
ETOMIDATE 2 mg/ml Vial	0.3mg/kg	2.5 mg	1.25 ml
FENTANYL * (50mcg/ml) vial/amp Must use filter needle for amp	1 mcg/kg	8 mg *	0.16 ml
KETAMINE IV 10 mg/ml Vial	2 mg/kg	17 mg	1.7 ml
MIDAZOLAM * 1 mg/ml Vial	0.3 mg/kg	2.5 mg *	2.5 ml
SUCCINYLCHOLINE 20 mg/ml Vial	2 mg/kg	17 mg	0.85 ml
ROCURONIUM 10 mg/ml Vial	1 mg/kg	9 mg	0.9 ml
VECURONIUM (10 mg vial for recon. Add 10 ml NS for final conc. 1mg/ml)	0.2 mg/kg	1.7 mg	1.7 ml

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RED

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RED

8 - 9 kg
Anaphylaxis/Antidote

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE (1mg/1ml) vial/amp Must use filter needle for amp	0.01 mg/kg	0.085 mg	0.085 ml
DIPHENHYDRAMINE (50 mg/1 ml) Vial	1 mg/kg	8.5 mg	0.17 ml
METHYLPREDNISONE (125 mg/2 ml) Vial	2 mg/kg	17 mg	0.27 ml
ALBUTEROL (2.5 mg/ml) Ampule	0.15 mg/kg	1.28 mg	0.5 ml
NALOXONE (1mg/ml) Pre-filled syringe	0.1 mg/kg	0.9 mg	0.9 ml
GLUCAGON (1mg/ml) Vial	Standard Dose Not Weight-Based	0.5 mg	0.5 ml

RED

RED

8 - 9 kg
Asthma

	DOSE/KG	DOSE	VOLUME
ALBUTEROL (2.5 mg/ml) Ampule	0.15 mg/kg	1.28 mg	0.5 ml
CONTINUOUS ALBUTEROL	0.5 mg/kg	4.25 mg	1.7 ml
METHYLPREDNISONE (125 mg/2 ml) Vial	2 mg/kg	17 mg	0.27 ml
EPINEPHRINE (1mg/1ml) vial/amp Must use filter needle for amp	0.01 mg/kg	SUB Q 0.085 mg	0.085 ml
MAGNESIUM SULFATE (2 grams/50 ml) Solution for Inj	50 mg/kg	425 mg	10.63 ml

8 - 9 kg
Seizures

	DOSE/KG	DOSE	VOLUME
DIAZEPAM * (5 mg/ml) Pre-filled syringe	0.2 mg/kg	1.7 mg *	0.34 ml
LORAZEPAM * (2 mg/ml) Pre-filled syringe	0.1 mg/kg	0.9 mg *	0.45 ml
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	0.9 mg *	0.18 ml

8 - 9 kg
Antiemetic/Pain/Agitation

	DOSE/KG	DOSE	VOLUME
ONDANSETRON ODT & (2 mg/ml) Vial	0.15 mg/kg	1.28 mg	0.64 ml
FENTANYL * (50mcg/ml) vial/amp Must use filter needle for amp	1 mcg/kg	8 mcg *	0.16 ml
MORPHINE * (10 mg/1 ml) Pre-filled syringe	0.1 mg/kg	0.9 mg *	0.09 ml
KETOROLAC (15 mg/ml) Pre-filled syringe	0.5 mg/kg	4.25 mg	0.28 ml
ETOMIDATE (2 mg/ml) Vial	0.2 mg/kg	1.7 mg	0.85 ml
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	0.9 mg *	0.18 ml
KETAMINE IM ONLY (100 mg/ml) Vial	4 mg/kg	34 mg	0.34 ml

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

PURPLE

PEDIATRIC RESUSCITATION – 10-11 KG

10 - 11 kg
Resuscitation

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE 1 mg/10 ml (1:10 ml) Pre-filled syringe	0.01 mg/kg	0.1 mg	1 ml
ATROPINE (1mg/10ml) Pre-filled syringe	0.02 mg/kg	0.21 mg	2.1 ml
SODIUM BICARBONATE (5 meq/10 ml)Pre-filled syringe	1 meq/kg	10 meq	20 ml
CALCIUM GLUCONATE (1gm/10 ml) Pre-filled syringe	60 mg/kg	630 mg	6.3 ml
LIDOCAINE (100 mg/5 ml) Pre-filled syringe	1 mg/kg	10 mg	0.5 ml
AMIODARONE (50 mg/1 ml) Vial	5 mg/kg	50 mg	1 ml
ADENOSINE (6mg/2 ml) Pre-filled syringe	0.1 mg/kg 0.2 mg/kg	1st - 1 mg 2nd - 2.1 mg	0.35 ml 0.7 ml

PURPLE

10 - 11 kg
Delayed Sequence Intubation (DSI)

FOR DSI APPROVED SERVICES ONLY

PURPLE

	DOSE/KG	DOSE	VOLUME
ATROPINE (1mg/10ml) Pre-filled syringe	0.02 mg/kg	0.21 mg	2.1 ml
LIDOCAINE (100 mg/5 ml) Pre-filled syringe	1 mg/kg	10 mg	0.5 ml
ETOMIDATE 2 mg/ml Vial	0.3 mg/kg	3.2 mg	1.6 ml
FENTANYL * (50mcg/ml) vial/amp Must use filter needle for amp	1 mcg/kg	10 mcg *	0.2 ml
KETAMINE IV 10 mg/ml Vial	2 mg/kg	20 mg	2 ml
MIDAZOLAM * 1 mg/ml Vial	0.3 mg/kg	3.2 mg *	3.2 ml
SUCCINYLCHOLINE 20 mg/ml Vial	2 mg/kg	20 mg	1 ml
ROCURONIUM 10 mg/ml Vial	1 mg/kg	10 mg	1 ml
VECURONIUM (10 mg vial for recon. Add 10 ml NS for final conc. 1mg/ml)	0.2 mg/kg	2.1 mg	2.1 ml

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PURPLE

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PURPLE

10 - 11 kg
Anaphylaxis/Antidote

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE (1mg/1ml) vial/amp Must use filter needle for amp	0.01 mg/kg	IM 0.1 mg	0.1 ml
DIPHENHYDRAMINE (50 mg/1 ml) Vial	1 mg/kg	10 mg	0.2 ml
METHYLPREDNISONE (125 mg/2 ml) Vial	2 mg/kg	20 mg	0.32 ml
ALBUTEROL (2.5 mg/ml) Ampule	0.15 mg/kg	1.5 mg	0.6 ml
NALOXONE (1mg/ml) Pre-filled syringe	0.1 mg/kg	1 mg	1 ml
GLUCAGON (1mg/ml) Vial	Standard Dose Not Weight-Based	0.5 mg	0.5 ml

10 - 11 kg
Asthma

	DOSE/KG	DOSE	VOLUME
ALBUTEROL (2.5 mg/ml) Ampule	0.15 mg/kg	1.5 mg	0.6 ml
CONTINUOUS ALBUTEROL	0.5 mg/kg	5 mg	2 ml
METHYLPREDNISONE (125 mg/2 ml) Vial	2 mg/kg	20 mg	0.32 ml
EPINEPHRINE (1mg/1ml) vial/amp Must use filter needle for amp	0.01 mg/kg	SUB Q 0.1 mg	0.1 ml
MAGNESIUM SULFATE (2 grams/50 ml) Solution for Injection	50 mg/kg	500 mg	12.5 ml

10 - 11 kg
Seizures

	DOSE/KG	DOSE	VOLUME
DIAZEPAM * (5 mg/ml) Pre-filled syringe	0.2 mg/kg	2 mg *	0.4 ml
LORAZEPAM * (2 mg/ml) Pre-filled syringe	0.1 mg/kg	1 mg *	0.5 ml
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	1 mg *	0.2 ml

PURPLE

PURPLE

10 - 11 kg
Antiemetic/Pain/Agitation

	DOSE/KG	DOSE	VOLUME
ONDANSETRON (2 mg/ml) Vial	0.15 mg/kg	1.5 mg	0.75 ml
FENTANYL * (50mcg/ml) vial/amp Must use filter needle for amp	1 mcg/kg	10 mcg *	0.2 ml
MORPHINE * (10 mg/1 ml) Pre-filled syringe	0.1 mg/kg	1 mg *	0.1 ml
KETOROLAC (15 mg/ml) Pre-filled syringe	0.5 mg/kg	5 mg	0.33 ml
ETOMIDATE (2 mg/ml) Vial	0.2 mg/kg	2 mg	1 ml
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	1 mg *	0.2 ml
KETAMINE IM ONLY (100 mg/ml) Vial	4 mg/kg	40 mg	ml

YELLOW

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

YELLOW

PEDIATRIC RESUSCITATION – 12-14 KG

12 - 14 kg
Resuscitation

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE 1 mg/10 ml (1:10 ml) Pre-filled syringe	**0.01 mg/kg**	**0.13 mg**	**1.3 ml**
ATROPINE (1mg/10ml) Pre-filled syringe	**0.02 mg/kg**	**0.26 mg**	**2.6 ml**
SODIUM BICARBONATE (5 meq/10 ml)Pre-filled syringe	**1 meq/kg**	**13 meq**	**26 ml**
CALCIUM GLUCONATE (1gm/10 ml) Pre-filled syringe	**60 mg/kg**	**780 mg**	**7.8 ml**
LIDOCAINE (100 mg/5 ml) Pre-filled syringe	**1 mg/kg**	**13 mg**	**0.65 ml**
AMIODARONE (50 mg/1 ml) Vial	**5 mg/kg**	**65 mg**	**1.3 ml**
ADENOSINE (6mg/2 ml) Pre-filled syringe	**0.1 mg/kg** **0.2 mg/kg**	**1st – 1.3 mg** **2nd – 2.6 mg**	**0.43 ml** **0.86 ml**

YELLOW

12 – 14 kg
Delayed Sequence Intubation (DSI)

FOR DSI APPROVED SERVICES ONLY

YELLOW

	DOSE/KG	DOSE	VOLUME
ATROPINE (1mg/10ml) Pre-filled syringe Not recommended in patients >1 year of age	**0.02 mg/kg**	**0.26 mg**	**2.6 ml**
LIDOCAINE (100 mg/5 ml) Pre-filled syringe	**1 mg/kg**	**13 mg**	**0.65 ml**
ETOMIDATE 2 mg/ml Vial	**0.3 mg/kg**	**4 mg**	**2 ml**
FENTANYL * (50mcg/ml) vial/amp Must use filter needle for amp	**1 mcg/kg**	**13 mcg ***	**0.26 ml**
KETAMINE IV 10 mg/ml Vial	**2 mg/kg**	**26 mg**	**2.6 ml**
MIDAZOLAM * 1 mg/ml Vial	**0.3 mg/kg**	**4 mg ***	**4 ml**
SUCCINYLCHOLINE 20 mg/ml Vial	**2 mg/kg**	**26 mg**	**1.3 ml**
ROCURONIUM 10 mg/ml Vial	**1 mg/kg**	**13 mg**	**1.3 ml**
VECURONIUM (10 mg vial for recon. Add 10 ml NS for final conc. 1mg/ml)	**0.2 mg/kg**	**2.6 mg**	**2.6 ml**

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YELLOW

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YELLOW

YELLOW

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

YELLOW

12 - 14 kg
Anaphylaxis/Antidote

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE (1mg/1ml) vial/amp Must use filter needle for amp	**0.01 mg/kg**	**IM** **0.13 mg**	**0.13 ml**
DIPHENHYDRAMINE (50 mg/1 ml) Vial	**1 mg/kg**	**13 mg**	**0.26 ml**
METHYLPREDNISONE (125 mg/2 ml) Vial	**2 mg/kg**	**26 mg**	**0.2 ml**
ALBUTEROL (2.5 mg/ml) Ampule	**0.15 mg/kg**	**1.95 mg**	**0.78 ml**
NALOXONE (1mg/ml) Pre-filled syringe	**0.1 mg/kg**	**1.3 mg**	**1.3 ml**
GLUCAGON (1mg/ml) Vial	**Standard Dose** **Not Weight-Based**	**0.5 mg**	**0.5 ml**

YELLOW

YELLOW

12 - 14 kg
Asthma

	DOSE/KG	**DOSE**	**VOLUME**
ALBUTEROL (2.5 mg/ml) Ampule	**0.15 mg/kg**	**1.95 mg**	**0.78 ml**
CONTINUOUS ALBUTEROL	**0.5 mg/kg**	**6.5 mg**	**2.6 ml**
METHYLPREDNISONE (125 mg/2 ml) Vial	**2 mg/kg**	**26 mg**	**0.2 ml**
EPINEPHRINE (1mg/1ml) vial/amp Must use filter needle for amp	**0.01 mg/kg**	**SUB Q** **0.13 mg**	**0.13 ml**
MAGNESIUM SULFATE (2 grams/50 ml) Solution for Injection	**50 mg/kg**	**650 mg**	**16.25 ml**

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YELLOW

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YELLOW

12 - 14 kg
Seizures

	DOSE/KG	DOSE	VOLUME
DIAZEPAM * (5 mg/ml) Pre-filled syringe	0.2 mg/kg	2.6 mg *	0.52 ml
LORAZEPAM * (2 mg/ml) Pre-filled syringe	0.2 mg/kg	1.3 mg *	0.65 ml
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	1.3 mg *	0.26 ml

YELLOW

YELLOW

12 - 14 kg
Antiemetic/Pain/Agitation

	DOSE/KG	DOSE	VOLUME
ONDANSETRON (2 mg/ml) Vial	0.15 mg/kg	1.95 mg	0.97 ml
FENTANYL * (50mcg/ml) vial/amp Must use filter needle for amp	1 mcg/kg	13 mcg *	0.26 ml
MORPHINE * (10 mg/1 ml) Pre-filled syringe	0.1 mg/kg	2.6 mg *	0.26 ml
KETOROLAC (15 mg/ml) Pre-filled syringe	0.5 mg/kg	6.5 mg	0.43 ml
ETOMIDATE (2 mg/ml) Vial	0.2 mg/kg	2.6 mg	1.3 ml
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	1.3 mg *	0.26 ml
KETAMINE IM ONLY (100 mg/ml) Vial	4 mg/kg	52 mg	0.52 ml

15 - 18 kg
Resuscitation

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE 1 mg/10 ml (1:10 ml) Pre-filled syringe	**0.01 mg/kg**	**0.17 mg**	**1.7 ml**
ATROPINE (1mg/10ml) Pre-filled syringe	**0.02 mg/kg**	**0.33 mg**	**3.3 ml**
SODIUM BICARBONATE (5 meq/10 ml)Pre-filled syringe	**1 meq/kg**	**16.5 meq**	**33 ml**
CALCIUM GLUCONATE (1gm/10 ml) Pre-filled syringe	**60 mg/kg**	**990 mg**	**9.9 ml**
LIDOCAINE (100 mg/5 ml) Pre-filled syringe	**1 mg/kg**	**17 mg**	**0.85 ml**
AMIODARONE (50 mg/1 ml) Vial	**5 mg/kg**	**80 mg**	**1.6 ml**
ADENOSINE (6mg/2 ml) Pre-filled syringe	**0.1 mg/kg** **0.2 mg/kg**	**1st – 1.7 mg** **2nd - 3.3 mg**	**0.56 ml** **1.1 ml**

WHITE

15 – 18 kg
Delayed Sequence Intubation (DSI)
FOR DSI APPROVED SERVICES ONLY

WHITE

	DOSE/KG	DOSE	VOLUME
ATROPINE (1mg/10ml) Pre-filled syringe Not recommended in patients >1 year of age	**0.02 mg/kg**	**0.33 mg**	**3.3 ml**
LIDOCAINE (100 mg/5 ml) Pre-filled syringe	**1 mg/kg**	**17 mg**	**0.85 ml**
ETOMIDATE 2 mg/ml Vial	**0.3 mg/kg**	**5 mg**	**2.5 ml**
FENTANYL * (50mcg/ml) vial/amp Must use filter needle for amp	**1 mcg/kg**	**16 mcg ***	**0.32 ml**
KETAMINE IV 10 mg/ml Vial	**2 mg/kg**	**33 mg**	**3.3 ml**
MIDAZOLAM * 1 mg/ml Vial	**0.3 mg/kg**	**5 mg ***	**5 ml**
SUCCINYLCHOLINE 20 mg/ml Vial	**2 mg/kg**	**34 mg**	**1.7 ml**
ROCURONIUM 10 mg/ml Vial	**1 mg/kg**	**17 mg**	**1.7 ml**
VECURONIUM (10 mg vial for recon. Add 10 ml NS for final conc. 1mg/ml)	**0.2 mg/kg**	**3.4 mg**	**3.4 ml**

15 - 18 kg
Anaphylaxis/Antidote

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE (1mg/1ml) vial/amp Must use filter needle for amp	**0.01 mg/kg**	**IM** **0.17 mg**	**0.17 ml**
DIPHENHYDRAMINE (50 mg/1 ml) Vial	**1 mg/kg**	**17 mg**	**0.34 ml**
METHYLPREDNISONE (125 mg/2 ml) Vial	**2 mg/kg**	**34 mg**	**0.272 ml**
ALBUTEROL (2.5 mg/ml) Ampule	**0.15 mg/kg**	**2.55 mg**	**1 ml**
NALOXONE (1mg/ml) Pre-filled syringe	**0.1 mg/kg**	**1.6 mg**	**1.6 ml**
GLUCAGON (1mg/ml) Vial	**Standard Dose** **Not Weight-Based**	**0.5 mg**	**0.5 ml**

15 - 18 kg
Asthma

	DOSE/KG	DOSE	VOLUME
ALBUTEROL (2.5 mg/ml) Ampule	**0.15 mg/kg**	**2.55 mg**	**1 ml**
CONTINUOUS ALBUTEROL	**0.5 mg/kg**	**8.5 mg**	**3.4 ml**
METHYLPREDNISONE (125 mg/2 ml) Vial	**2 mg/kg**	**34 mg**	**0.272 ml**
EPINEPHRINE (1mg/1ml) vial/amp Must use filter needle for amp	**0.01 mg/kg**	**SUB Q** **0.17 mg**	**0.17 ml**
MAGNESIUM SULFATE (2 grams/50 ml) Solution for Injection	**50 mg/kg**	**850 mg**	**21.25 ml**

15 - 18 kg
Seizures

	DOSE/KG	DOSE	VOLUME
DIAZEPAM * (5 mg/ml) Pre-filled syringe	**0.2 mg/kg**	**3.4 mg ***	**0.68 ml**
LORAZEPAM * (2 mg/ml) Pre-filled syringe	**0.1 mg/kg**	**1.7 mg ***	**0.85 ml**
MIDAZOLAM * (5 mg/ml) Vial	**0.1 mg/kg**	**1.7 mg ***	**0.34 ml**

15 - 18 kg
Antiemetic/Pain/Agitation

	DOSE/KG	DOSE	VOLUME
ONDANSETRON (2 mg/ml) Vial	**0.15 mg/kg**	**2.55 mg**	**1.27 ml**
FENTANYL * (50mcg/ml) vial/amp Must use filter needle for amp	**1 mcg/kg**	**16 mcg ***	**0.32 ml**
MORPHINE * (10 mg/1 ml) Pre-filled syringe	**0.1 mg/kg**	**1.7 mg ***	**0.17ml**
KETOROLAC (15 mg/ml) Pre-filled syringe	**0.5 mg/kg**	**8.5 mg**	**0.56 ml**
ETOMIDATE (2 mg/ml) Vial	**0.2 mg/kg**	**3.4 mg**	**1.7 ml**
MIDAZOLAM * (5 mg/ml) Vial	**0.1 mg/kg**	**1.7 mg ***	**0.34 ml**
KETAMINE IM ONLY (100 mg/ml) Vial	**4 mg/kg**	**68 mg**	**0.68 ml**

19 - 23 kg
Resuscitation

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE 1 mg/10 ml (1:10 ml) Pre-filled syringe	0.01 mg/kg	0.21 mg	2.1 ml
ATROPINE (1mg/10ml) Pre-filled syringe	0.02 mg/kg	0.42 mg	4.2 ml
SODIUM BICARBONATE (5 meq/10 ml)Pre-filled syringe	1 meq/kg	21 meq	42 ml
CALCIUM GLUCONATE (1gm/10 ml) Pre-filled syringe	60 mg/kg	1260 mg	12.6 ml
LIDOCAINE (100 mg/5 ml) Pre-filled syringe	1 mg/kg	20 mg	1 ml
AMIODARONE (50 mg/1 ml) Vial	5 mg/kg	105 mg	2.1 ml
ADENOSINE (6mg/2 ml) Pre-filled syringe	0.1 mg/kg 0.2 mg/kg	1st – 2.1 mg 2nd – 4.2 mg	0.7 ml 1.4 ml

BLUE

19 - 23 kg
Delayed Sequence Intubation (DSI)

FOR DSI APPROVED SERVICES ONLY

BLUE

	DOSE/KG	DOSE	VOLUME
ATROPINE (1mg/10ml) Pre-filled syringe Not recommended in patients >1 year of age	0.02 mg/kg	0.42 mg	4.2 ml
LIDOCAINE (100 mg/5 ml) Pre-filled syringe	1 mg/kg	20 mg	1 ml
ETOMIDATE 2 mg/ml Vial	0.3 mg/kg	6.3 mg	3.15 ml
FENTANYL * (50mcg/ml) vial/amp Must use filter needle for amp	1 mcg/kg	21 mcg *	0.42 ml
KETAMINE IV 10 mg/ml Vial	2 mg/kg	42 mg	4.2 ml
MIDAZOLAM * 1 mg/ml Vial	0.3 mg/kg	6.3 mg *	6.3 ml
SUCCINYLCHOLINE 20 mg/ml Vial	2 mg/kg	40 mg	2 ml
ROCURONIUM 10 mg/ml Vial	1 mg/kg	21 mg	2.1 ml
VECURONIUM (10 mg vial for recon. Add 10 ml NS for final conc. 1mg/ml)	0.2 mg/kg	4.2 mg	4.2 ml

19 - 23 kg
Anaphylaxis/Antidote

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE (1mg/1ml) vial/amp Must use filter needle for amp	0.01 mg/kg	IM 0.21 mg	0.21 ml
DIPHENHYDRAMINE (50 mg/1 ml) Vial	1 mg/kg	21 mg	0.42 ml
METHYLPREDNISONE (125 mg/2 ml) Vial	2 mg/kg	42 mg	0.336 ml
ALBUTEROL (2.5 mg/ml) Ampule	0.15 mg/kg	2.5 mg	1 ml
NALOXONE (1mg/ml) Pre-filled syringe	0.1 mg/kg	2 mg	2 ml
GLUCAGON (1mg/ml) Vial	Standard Dose Not Weight-Based	1 mg	1 ml

BLUE

BLUE

19 - 23 kg
Asthma

	DOSE/KG	DOSE	VOLUME
ALBUTEROL (2.5 mg/ml) Ampule	0.15 mg/kg	2.5 mg	1 ml
CONTINUOUS ALBUTEROL	0.5 mg/kg	10 mg	4 ml
METHYLPREDNISONE (125 mg/2 ml) Vial	2 mg/kg	42 mg	0.34 ml
EPINEPHRINE (1mg/1ml) vial/amp Must use filter needle for amp	0.01 mg/kg	SUB Q 0.21 mg	0.21 ml
MAGNESIUM SULFATE (2 grams/50 ml) Solution for Injection	50 mg/kg	1050 mg	26.25 ml

19 - 23 kg
Seizures

	DOSE/KG	DOSE	VOLUME
DIAZEPAM * (5 mg/ml) Pre-filled syringe	**0.2 mg/kg**	**4.2 mg ***	**0.84 ml**
LORAZEPAM * (2 mg/ml) Pre-filled syringe	**0.1 mg/kg**	**2.1 mg ***	**2 ml**
MIDAZOLAM * (5 mg/ml) Vial	**0.1 mg/kg**	**2.1 mg ***	**0.42 ml**

BLUE

BLUE

19 - 23 kg
Antiemetic/Pain/Agitation

	DOSE/KG	DOSE	VOLUME
ONDANSETRON (2 mg/ml) Vial	**0.15 mg/kg**	**3.15 mg**	**1.6 ml**
FENTANYL * (50mcg/ml) vial/amp Must use filter needle for amp	**1 mcg/kg**	**21 mcg ***	**0.42 ml**
MORPHINE * (10 mg/1 ml) Pre-filled syringe	**0.1 mg/kg**	**2.1 mg ***	**0.21 ml**
KETOROLAC (15 mg/ml) Pre-filled syringe	**0.5 mg/kg**	**10.5 mg**	**0.7 ml**
ETOMIDATE (2 mg/ml) Vial	**0.2 mg/kg**	**4.2 mg**	**2.1 ml**
MIDAZOLAM * (5 mg/ml) Vial	**0.1 mg/kg**	**2.1 mg ***	**0.42 ml**
KETAMINE IM ONLY (100 mg/ml) Vial	**4 mg/kg**	**84 mg**	**0.84 ml**

ORANGE

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

ORANGE

PEDIATRIC RESUSCITATION – 24-29 KG

24 - 29 kg
Resuscitation

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE 1 mg/10 ml (1:10 ml) Pre-filled syringe	0.01 mg/kg	0.27 mg	2.7 ml
ATROPINE (1mg/10ml) Pre-filled syringe	0.02 mg/kg	0.5 mg	5 ml
SODIUM BICARBONATE (5 meq/10 ml)Pre-filled syringe	1 meq/kg	27 meq	54 ml
CALCIUM GLUCONATE (1gm/10 ml) Pre-filled syringe	60 mg/kg	1590 mg	15.9 ml
LIDOCAINE (100 mg/5 ml) Pre-filled syringe	1 mg/kg	27 mg	1.35 ml
AMIODARONE (50 mg/1 ml) Vial	5 mg/kg	130 mg	2.6 ml
ADENOSINE (6mg/2 ml) Pre-filled syringe	0.1 mg/kg 0.2 mg/kg	1st - 2.7mg 2nd - 5.4 mg	0.9 ml 1.8 ml

ORANGE

24 - 29 kg
Delayed Sequence Intubation (DSI)
FOR DSI APPROVED SERVICES ONLY

ORANGE

	DOSE/KG	DOSE	VOLUME
ATROPINE (1mg/10ml) Pre-filled syringe Not recommended in patients >1 year of age	0.02 mg/kg	0.5 mg	5 ml
LIDOCAINE (100 mg/5 ml) Pre-filled syringe	1 mg/kg	27 mg	1.35 ml
ETOMIDATE 2 mg/ml Vial	0.3 mg/kg	8 mg	4 ml
FENTANYL * (50mcg/ml) vial/amp Must use filter needle for amp	1 mcg/kg	26 mcg *	0.52 ml
KETAMINE IV 10 mg/ml Vial	2 mg/kg	50 mg	5 ml
MIDAZOLAM * 1 mg/ml Vial	0.3 mg/kg	8 mg *	8 ml
SUCCINYLCHOLINE 20 mg/ml Vial	2 mg/kg	54 mg	2.7 ml
ROCURONIUM 10 mg/ml Vial	1 mg/kg	27 mg	2.7 ml
VECURONIUM (10 mg vial for recon. Add 10 ml NS for final conc. 1mg/ml)	0.2 mg/kg	5.4 mg	5.4 ml

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ORANGE

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Issued 08/18

ORANGE

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

ORANGE

24 - 29 kg
Anaphylaxis/Antidote

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE (1mg/1ml) vial/amp Must use filter needle for amp	0.01 mg/kg	IM 0.27 mg	0.27 ml
DIPHENHYDRAMINE (50 mg/1 ml) Vial	1 mg/kg	27 mg	0.54 ml
METHYLPREDNISONE (125 mg/2 ml) Vial	2 mg/kg	54 mg	0.43 ml
ALBUTEROL (2.5 mg/ml) Ampule	0.15 mg/kg	2.5 mg	1 ml
NALOXONE (1mg/ml) Pre-filled syringe	0.1 mg/kg	2 mg	2 ml
GLUCAGON (1mg/ml) Vial	Standard Dose Not Weight-Based	1 mg	1 ml

ORANGE

ORANGE

24 - 29 kg
Asthma

	DOSE/KG	DOSE	VOLUME
ALBUTEROL (2.5 mg/ml) Ampule	0.15 mg/kg	2.5 mg	1 ml
CONTINUOUS ALBUTEROL	0.5 mg/kg	10 mg	4 ml
METHYLPREDNISONE (125 mg/2 ml) Vial	2 mg/kg	54 mg	0.43 ml
EPINEPHRINE (1mg/1ml) vial/amp Must use filter needle for amp	0.01 mg/kg	SUB Q 0.27 mg	0.27 ml
MAGNESIUM SULFATE (2 grams/50 ml) Solution for Injection	50 mg/kg	1350 mg	33.75 ml

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ORANGE

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ORANGE

24 - 29 kg
Seizures

	DOSE/KG	DOSE	VOLUME
DIAZEPAM * (5 mg/ml) Pre-filled syringe	0.2 mg/kg	5.4 mg *	1.08 ml
LORAZEPAM * (2 mg/ml) Pre-filled syringe	0.1 mg/kg	2.7 mg *	1.35 ml
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	2.7 mg *	0.54 ml

ORANGE

ORANGE

24 - 29 kg
Antiemetic/Pain/Agitation

	DOSE/KG	DOSE	VOLUME
ONDANSETRON (2 mg/ml) Vial	0.15 mg/kg	4 mg	2 ml
FENTANYL * (50mcg/ml) vial/amp Must use filter needle for amp	1 mcg/kg	26 mcg *	0.52 ml
MORPHINE * (10 mg/1 ml) Pre-filled syringe	0.1 mg/kg	2.7 mg *	0.27 ml
KETOROLAC (15 mg/ml) Pre-filled syringe	0.5 mg/kg	13.5 mg	0.9 ml
ETOMIDATE (2 mg/ml) Vial	0.2 mg/kg	5.4 mg	2.7 ml
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	2.7 mg *	0.54 ml
KETAMINE IM ONLY (100 mg/ml) Vial	4 mg/kg	108 mg	1.08 ml

GREEN

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

GREEN

30 - 36 kg
Resuscitation

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE 1 mg/10 ml (1:10 ml) Pre-filled syringe	**0.01 mg/kg**	**0.33 mg**	**3.3 ml**
ATROPINE (1mg/10ml) Pre-filled syringe	**0.02 mg/kg**	**0.5 mg**	**5 ml**
SODIUM BICARBONATE (5 meq/10 ml)Pre-filled syringe	**1 meq/kg**	**33 meq**	**66 ml**
CALCIUM GLUCONATE (1gm/10 ml) Pre-filled syringe	**60 mg/kg**	**1980 mg**	**19.8 ml**
LIDOCAINE (100 mg/5 ml) Pre-filled syringe	**1 mg/kg**	**33 mg**	**1.7 ml**
AMIODARONE (50 mg/1 ml) 50% Vial	**50 mg/kg**	**165 mg**	**3.3 ml**
ADENOSINE (6mg/2 ml) Pre-filled syringe	**0.1 mg/kg** **0.2 mg/kg**	**1st – 3.3 mg** **2nd – 6 mg**	**1.1 ml** **2 ml**

GREEN

30 - 36 kg
Delayed Sequence Intubation (DSI)
FOR DSI APPROVED SERVICES ONLY

GREEN

	DOSE/KG	DOSE	VOLUME
ATROPINE (1mg/10ml) Pre-filled syringe Not recommended in patients >1 year of age	**0.02 mg/kg**	**0.5 mg**	**5 ml**
LIDOCAINE (100 mg/5 ml) Pre-filled syringe	**1 mg/kg**	**33 mg**	**1.7 ml**
ETOMIDATE 2 mg/ml Vial	**0.3 mg/kg**	**10 mg**	**5 ml**
FENTANYL * (50mcg/ml) vial/amp Must use filter needle for amp	**1 mcg/kg**	**33 mcg ***	**0.66 ml**
KETAMINE IV 10 mg/ml Vial	**2 mg/kg**	**66 mg**	**6.6 ml**
MIDAZOLAM * 1 mg/ml Vial	**0.3 mg/kg**	**10 mg ***	**10 ml**
SUCCINYLCHOLINE 20 mg/ml Vial	**2 mg/kg**	**66 mg**	**3.3 ml**
ROCURONIUM 10 mg/ml Vial	**1 mg/kg**	**33 mg**	**3.3 ml**
VECURONIUM (10 mg vial for recon. Add 10 ml NS for final conc. 1mg/ml)	**0.2 mg/kg**	**6.6 mg**	**6.6 ml**

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GREEN

Current Version 2018.1
Issued 08/18

GREEN

30 – 36 kg
Anaphylaxis/Antidote

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE (1mg/1ml) vial/amp Must use filter needle for amp	0.01 mg/kg	IM 0.33 mg	0.33 ml
DIPHENHYDRAMINE (50 mg/1 ml) Vial	1 mg/kg	33 mg	0.66 ml
METHYLPREDNISONE (125 mg/2 ml) Vial	2 mg/kg	66 mg	0.53 ml
ALBUTEROL (2.5 mg/ml) Ampule	0.15 mg/kg	2.5 mg	1 ml
NALOXONE (1mg/ml) Pre-filled syringe	0.1 mg/kg	2 mg	2 ml
GLUCAGON (1mg/ml) Vial	Standard Dose Not Weight-Based	1 mg	1 ml

GREEN

GREEN

30 - 36 kg
Asthma

	DOSE/KG	DOSE	VOLUME
ALBUTEROL (2.5 mg/ml) Ampule	0.15 mg/kg	0.6 mg	0.24 ml
CONTINUOUS ALBUTEROL	0.5 mg/kg	10mg	4 ml
METHYLPREDNISONE (125 mg/2 ml) Vial	2 mg/kg	66 mg	0.53 ml
EPINEPHRINE (1mg/1ml) vial/amp Must use filter needle for amp	0.01 mg/kg	SUB Q 0.33 mg	0.33 ml
MAGNESIUM SULFATE (2 grams/50 ml) Solution for Injection	50 mg/kg	1650 mg	41.25 ml

30 - 36 kg
Seizures

	DOSE/KG	DOSE	VOLUME
DIAZEPAM * (5 mg/ml) Pre-filled syringe	0.2 mg/kg	6.6 mg *	1.32 ml
LORAZEPAM * (2 mg/ml) Pre-filled syringe	0.1 mg/kg	3.3 mg *	1.65 ml
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	3.3 mg *	0.66 ml

GREEN

GREEN

30 - 36 kg
Antiemetic/Pain/Agitation

	DOSE/KG	DOSE	VOLUME
ONDANSETRON (2 mg/ml) Vial	0.15 mg/kg	4 mg	2 ml
FENTANYL * (50mcg/ml) vial/amp Must use filter needle for amp	1 mcg/kg	33 mcg *	0.66 ml
MORPHINE * (10 mg/1 ml) Pre-filled syringe	0.1 mg/kg	3.3 mg *	0.33 ml
KETOROLAC (15 mg/ml) Pre-filled syringe	0.5 mg/kg	15 mg	1 ml
ETOMIDATE (2 mg/ml) Vial	0.2 mg/kg	6.6 mg	3.3 ml
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	3.3 mg *	0.66 ml
KETAMINE IM ONLY (100 mg/ml) Vial	4 mg/kg	132 mg	1.32 ml

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

50 KG

DRUG	DOSE/KG	DOSE	VOLUME	Notes
Diazepam * (5 mg/ml) pre-filled syringe	**0.2 mg/kg**	**10 mg ***	**2 mL**	Additional dose online only
Etomidate (2 mg/ml) Vial	**0.2 mg/kg**	**10 mg**	**5 mL**	May repeat x 1 after 5 minutes
Fentanyl * (50 mcg/ml) vial/amp Must use filter for amp	**0.5 mcg/kg**	**25 mcg ***	**0.5 mL**	May repeat x 1 after 5 minutes
Ketamine IM ONLY (100 mg/mL) vial	**4 mg/kg**	**200 mg**	**2 mL**	Additional dose online only
Ketamine IV **For DSI ONLY** (10 mg/mL) vial	**1.5 mg/kg**	**75 mg**	**7.5 mL**	Additional dose online only
Lidocaine 2% (10 mg/ml) syringe	**20 mg/ml**	**50 mg**	**2.5 mL**	May repeat using half dose to a total of 3 mg/kg
Lorazepam * (2 mg/ml) pre-filled syringe	**0.1 mg/kg**	**5 mg ***	**2.5 mL**	May repeat x 1 after 5 minutes
Midazolam * (5 mg/ml) Vial	**0.1 mg/kg**	**5 mg ***	**1 mL**	May repeat x 1 after 5 minutes
Morphine * (10 mg/1 mL) pre-filled syringe	**0.05 mg/kg**	**2.5 mg ***	**0.25 mL**	May repeat x 1 after 5 minutes
Rocuronium (10mg/ml) vial	**1 mg/kg**	**50 mg**	**5 mL**	Additional dose online only
Sodium Bicarbonate (1 mEq/ml) Syringe	**1 mEq/kg**	**50 mEq**	**50 mL**	May follow with half dose every 10 minutes
Succinylcholine (20 mg/ml) vial	**1.5 mg/kg**	**75 mg**	**3.75 mL**	Additional dose online only
Vecuronium (1 mg/ml) *(10 mg vial for recon. Add 10 ml NS for final conc.)	**0.1 mg/kg**	**5 mg**	**5 mL**	Additional dose online only
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* For pain and sedation doses:
Start dose low – slowly increase –
Titrate to effect up to listed dose

60 KG

DRUG	DOSE/KG	DOSE	VOLUME	Notes
Diazepam * (5 mg/ml) pre-filled syringe	**0.2 mg/kg**	**12 mg ***	**2.4 mL**	Additional dose online only
Etomidate (2 mg/ml) Vial	**0.2 mg/kg**	**12 mg**	**6 mL**	May repeat x 1 after 5 minutes
Fentanyl * (50 mcg/ml) vial/amp Must use filter for amp	**0.5 mcg/kg**	**30 mcg ***	**0.6 mL**	May repeat x 1 after 5 minutes
Ketamine IM ONLY (100 mg/mL) vial	**4 mg/kg**	**240 mg**	**2.4 mL**	Additional dose online only
Ketamine IV **For DSI ONLY** (10 mg/mL) vial	**1.5 mg/kg**	**90 mg**	**9 mL**	Additional dose online only
Lidocaine 2% (10 mg/ml) syringe	**20 mg/ml**	**60 mg**	**3 mL**	May repeat using half dose to a total of 3 mg/kg
Lorazepam * (2 mg/ml) pre-filled syringe	**0.1 mg/kg**	**6 mg ***	**3 mL**	May repeat x 1 after 5 minutes
Midazolam * (5 mg/ml) Vial	**0.1 mg/kg**	**6 mg ***	**1.2 mL**	May repeat x 1 after 5 minutes
Morphine * (10 mg/1 mL) pre-filled syringe	**0.05 mg/kg**	**3 mg ***	**0.3 mL**	May repeat x 1 after 5 minutes
Rocuronium (10mg/ml) vial	**1 mg/kg**	**60 mg**	**6 mL**	Additional dose online only
Sodium Bicarbonate (1 mEq/ml) Syringe	**1 mEq/kg**	**60 mEq**	**60 mL**	May follow with half dose every 10 minutes
Succinylcholine (20 mg/ml) vial	**1.5 mg/kg**	**90 mg**	**4.5 mL**	Additional dose online only
Vecuronium (1 mg/ml) *(10 mg vial for recon. Add 10 ml NS for final conc.)	**0.1 mg/kg**	**6 mg**	**6 mL**	Additional dose online only
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* For pain and sedation doses:
Start dose low – slowly increase –
Titrate to effect up to listed dose

70 KG

DRUG	DOSE/KG	DOSE	VOLUME	Notes
Diazepam * (5 mg/ml) pre-filled syringe	**0.2 mg/kg**	**14 mg ***	**2.8 mL**	Additional dose online only
Etomidate (2 mg/ml) Vial	**0.2 mg/kg**	**14 mg**	**7 mL**	May repeat x 1 after 5 minutes
Fentanyl * (50 mcg/ml) vial/amp Must use filter for amp	**0.5 mcg/kg**	**35 mcg ***	**0.7 mL**	May repeat x 1 after 5 minutes
Ketamine IM ONLY (100 mg/mL) vial	**4 mg/kg**	**280 mg**	**2.8 mL**	Additional dose online only
Ketamine IV **For DSI ONLY** (10 mg/mL) vial	**1.5 mg/kg**	**105 mg**	**10.5 mL**	Additional dose online only
Lidocaine 2% (10 mg/ml) syringe	**20 mg/ml**	**70 mg**	**3.5 mL**	May repeat using half dose to a total of 3 mg/kg
Lorazepam * (2 mg/ml) pre-filled syringe	**0.1 mg/kg**	**7 mg ***	**3.5 mL**	May repeat x 1 after 5 minutes
Midazolam * (5 mg/ml) Vial	**0.1 mg/kg**	**7 mg ***	**1.4 mL**	May repeat x 1 after 5 minutes
Morphine * (10 mg/1 mL) pre-filled syringe	**0.05 mg/kg**	**3.5 mg ***	**0.35 mL**	May repeat x 1 after 5 minutes
Rocuronium (10mg/ml) vial	**1 mg/kg**	**70 mg**	**7 mL**	Additional dose online only
Sodium Bicarbonate (1 mEq/ml) Syringe	**1 mEq/kg**	**70 mEq**	**70 mL**	May follow with half dose every 10 minutes
Succinylcholine (20 mg/ml) vial	**1.5 mg/kg**	**105 mg**	**5.25 mL**	Additional dose online only
Vecuronium (1 mg/ml) *(10 mg vial for recon. Add 10 ml NS for final conc.)	**0.1 mg/kg**	**7 mg**	**7 mL**	Additional dose online only
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* For pain and sedation doses:
Start dose low – slowly increase –
Titrate to effect up to listed dose

80 KG

DRUG	DOSE/KG	DOSE	VOLUME	Notes
Diazepam * (5 mg/ml) pre-filled syringe	**0.2 mg/kg**	**16 mg ***	**3.2 mL**	Additional dose online only
Etomidate (2 mg/ml) Vial	**0.2 mg/kg**	**16 mg**	**8 mL**	May repeat x 1 after 5 minutes
Fentanyl * (50 mcg/ml) vial/amp Must use filter for amp	**0.5 mcg/kg**	**40 mcg ***	**0.8 mL**	May repeat x 1 after 5 minutes
Ketamine IM ONLY (100 mg/mL) vial	**4 mg/kg**	**320 mg**	**3.2 mL**	Additional dose online only
Ketamine IV **For DSI ONLY** (10 mg/mL) vial	**1.5 mg/kg**	**120 mg**	**12 mL**	Additional dose online only
Lidocaine 2% (10 mg/ml) syringe	**20 mg/ml**	**80 mg**	**4 mL**	May repeat using half dose to a total of 3 mg/kg
Lorazepam * (2 mg/ml) pre-filled syringe	**0.1 mg/kg**	**8 mg ***	**4 mL**	May repeat x 1 after 5 minutes
Midazolam * (5 mg/ml) Vial	**0.1 mg/kg**	**8 mg ***	**1.6 mL**	May repeat x 1 after 5 minutes
Morphine * (10 mg/1 mL) pre-filled syringe	**0.05 mg/kg**	**4 mg ***	**0.4 mL**	May repeat x 1 after 5 minutes
Rocuronium (10 mg/ml) vial	**1 mg/kg**	**80 mg**	**8 mL**	Additional dose online only
Sodium Bicarbonate (1 mEq/ml) Syringe	**1 mEq/kg**	**80 mEq**	**80 mL**	May follow with half dose every 10 minutes
Succinylcholine (20 mg/ml) vial	**1.5 mg/kg**	**120mg**	**6 mL**	Additional dose online only
Vecuronium (1 mg/ml) *(10 mg vial for recon. Add 10 ml NS for final conc.)	**0.1 mg/kg**	**8 mg**	**8 mL**	Additional dose online only
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* For pain and sedation doses:
Start dose low – slowly increase –
Titrate to effect up to listed dose

90 KG

DRUG	DOSE/KG	DOSE	VOLUME	Notes
Diazepam * (5 mg/ml) pre-filled syringe	**0.2 mg/kg**	**18 mg ***	**3.6 mL**	Additional dose online only
Etomidate (2 mg/ml) Vial	**0.2 mg/kg**	**18 mg**	**9 mL**	May repeat x 1 after 5 minutes
Fentanyl * (50 mcg/ml) vial/amp Must use filter for amp	**0.5 mcg/kg**	**45 mcg ***	**0.9 mL**	May repeat x 1 after 5 minutes
Ketamine IM ONLY (100 mg/mL) vial	**4 mg/kg**	**360 mg**	**3.6 mL**	Additional dose online only
Ketamine IV **For DSI ONLY** (10 mg/mL) vial	**1.5 mg/kg**	**135 mg**	**13.5 mL**	Additional dose online only
Lidocaine 2% (10 mg/ml) syringe	**20 mg/ml**	**90 mg**	**4.5 mL**	May repeat using half dose to a total of 3 mg/kg
Lorazepam * (2 mg/ml) pre-filled syringe	**0.1 mg/kg**	**9 mg ***	**4.5 mL**	May repeat x 1 after 5 minutes
Midazolam * (5 mg/ml) Vial	**0.1 mg/kg**	**9 mg ***	**1.8 mL**	May repeat x 1 after 5 minutes
Morphine * (10 mg/1 mL) pre-filled syringe	**0.05 mg/kg**	**4.5 mg ***	**0.45 mL**	May repeat x 1 after 5 minutes
Rocuronium (10mg/ml) vial	**1 mg/kg**	**90 mg**	**9 mL**	Additional dose online only
Sodium Bicarbonate (1 mEq/ml) Syringe	**1 mEq/kg**	**90 mEq**	**90 mL**	May follow with half dose every 10 minutes
Succinylcholine (20 mg/ml) vial	**1.5 mg/kg**	**135 mg**	**6.75 mL**	Additional dose online only
Vecuronium (1 mg/ml) *(10 mg vial for recon. Add 10 ml NS for final conc.)	**0.1 mg/kg**	**9 mg**	**9 mL**	Additional dose online only
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* For pain and sedation doses:
Start dose low – slowly increase –
Titrate to effect up to listed dose

100 KG

DRUG	DOSE/KG	DOSE	VOLUME	Notes
Diazepam * (5 mg/ml) pre-filled syringe	**0.2 mg/kg**	**20 mg ***	**4 mL**	Additional dose online only
Etomidate (2 mg/ml) Vial	**0.2 mg/kg**	**20 mg**	**10 mL**	May repeat x 1 after 5 minutes
Fentanyl * (50 mcg/ml) vial/amp Must use filter for amp	**0.5 mcg/kg**	**50 mcg ***	**1 mL**	May repeat x 1 after 5 minutes
Ketamine IM ONLY (100 mg/mL) vial	**4 mg/kg**	**400 mg**	**4 mL**	Additional dose online only
Ketamine IV **For DSI ONLY** (10 mg/mL) vial	**1.5 mg/kg**	**150 mg**	**15 mL**	Additional dose online only
Lidocaine 2% (10 mg/ml) syringe	**20 mg/ml**	**100 mg**	**5 mL**	May repeat using half dose to a total of 3 mg/kg
Lorazepam * (2 mg/ml) pre-filled syringe	**0.1 mg/kg**	**10 mg ***	**5 mL**	May repeat x 1 after 5 minutes
Midazolam * (5 mg/ml) Vial	**0.1 mg/kg**	**10 mg ***	**2 mL**	May repeat x 1 after 5 minutes
Morphine * (10 mg/1 mL) pre-filled syringe	**0.05 mg/kg**	**5 mg ***	**0.5 mL**	May repeat x 1 after 5 minutes
Rocuronium (10mg/ml) vial	**1 mg/kg**	**100 mg**	**10 mL**	Additional dose online only
Sodium Bicarbonate (1 mEq/ml) Syringe	**1 mEq/kg**	**100 mEq**	**100 mL**	May follow with half dose every 10 minutes
Succinylcholine (20 mg/ml) vial	**1.5 mg/kg**	**150 mg**	**7 mL**	Additional dose online only
Vecuronium (1 mg/ml) *(10 mg vial for recon. Add 10 ml NS for final conc.)	**0.1 mg/kg**	**10 mg**	**10 mL**	Additional dose online only
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* For pain and sedation doses:
Start dose low – slowly increase –
Titrate to effect up to listed dose

110 KG

DRUG	DOSE/KG	DOSE	VOLUME	Notes
Diazepam * (5 mg/ml) pre-filled syringe	**0.2 mg/kg**	**22 mg ***	**4.4 mL**	Additional dose online only
Etomidate (2 mg/ml) Vial	**0.2 mg/kg**	**22 mg**	**11 mL**	May repeat x 1 after 5 minutes
Fentanyl * (50 mcg/ml) vial/amp Must use filter for amp	**0.5 mcg/kg**	**55 mcg ***	**1.1 mL**	May repeat x 1 after 5 minutes
Ketamine IM ONLY (100 mg/mL) vial	**4 mg/kg**	**440 mg**	**4.4 mL**	Additional dose online only
Ketamine IV **For DSI ONLY** (10 mg/mL) vial	**1.5 mg/kg**	**165 mg**	**16.5 mL**	Additional dose online only
Lidocaine 2% (10 mg/ml) syringe	**20 mg/ml**	**110 mg**	**5.5 mL**	May repeat using half dose to a total of 3 mg/kg
Lorazepam * (2 mg/ml) pre-filled syringe	**0.1 mg/kg**	**11 mg ***	**5.5 mL**	May repeat x 1 after 5 minutes
Midazolam * (5 mg/ml) Vial	**0.1 mg/kg**	**11 mg ***	**2.2 mL**	May repeat x 1 after 5 minutes
Morphine * (10 mg/1 mL) pre-filled syringe	**0.05 mg/kg**	**5.5 mg ***	**0.55 mL**	May repeat x 1 after 5 minutes
Rocuronium (10mg/ml) vial	**1 mg/kg**	**110 mg**	**11 mL**	Additional dose online only
Sodium Bicarbonate (1 mEq/ml) Syringe	**1 mEq/kg**	**110 mEq**	**110 mL**	May follow with half dose every 10 minutes
Succinylcholine (20 mg/ml) vial	**1.5 mg/kg**	**165 mg**	**8.25 mL**	Additional dose online only
Vecuronium (1 mg/ml) *(10 mg vial for recon. Add 10 ml NS for final conc.)	**0.1 mg/kg**	**11 mg**	**11 mL**	Additional dose online only
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* For pain and sedation doses:
Start dose low – slowly increase –
Titrate to effect up to listed dose

120 KG

DRUG	DOSE/KG	DOSE	VOLUME	Notes
Diazepam * (5 mg/ml) pre-filled syringe	0.2 mg/kg	24 mg *	4.8 mL	Additional dose online only
Etomidate (2 mg/ml) Vial	0.2 mg/kg	24 mg	12 mL	May repeat x 1 after 5 minutes
Fentanyl * (50 mcg/ml) vial/amp Must use filter for amp	0.5 mcg/kg	60 mcg *	1.2 mL	May repeat x 1 after 5 minutes
Ketamine IM ONLY (100 mg/mL) vial	4 mg/kg	480 mg	4.8 mL	Additional dose online only
Ketamine IV For DSI ONLY (10 mg/mL) vial	1.5 mg/kg	180 mg	18 mL	Additional dose online only
Lidocaine 2% (10 mg/ml) syringe	20 mg/ml	120 mg	6 mL	May repeat using half dose to a total of 3 mg/kg
Lorazepam * (2 mg/ml) pre-filled syringe	0.1 mg/kg	12 mg *	6 mL	May repeat x 1 after 5 minutes
Midazolam * (5 mg/ml) Vial	0.1 mg/kg	12 mg *	2.4 mL	May repeat x 1 after 5 minutes
Morphine * (10 mg/1 mL) pre-filled syringe	0.05 mg/kg	6 mg *	0.6 mL	May repeat x 1 after 5 minutes
Rocuronium (10mg/ml) vial	1 mg/kg	120 mg	12 mL	Additional dose online only
Sodium Bicarbonate (1 mEq/ml) Syringe	1 mEq/kg	120 mEq	120 mL	May follow with half dose every 10 minutes
Succinylcholine (20 mg/ml) vial	1.5 mg/kg	180 mg	9 mL	Additional dose online only
Vecuronium (1 mg/ml) *(10 mg vial for recon. Add 10 ml NS for final conc.)	0.1 mg/kg	12 mg	12 mL	Additional dose online only
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* For pain and sedation doses:
Start dose low – slowly increase –
Titrate to effect up to listed dose

130 KG

DRUG	DOSE/KG	DOSE	VOLUME	Notes
Diazepam * (5 mg/ml) pre-filled syringe	**0.2 mg/kg**	**26 mg ***	**5.2 mL**	Additional dose online only
Etomidate (2 mg/ml) Vial	**0.2 mg/kg**	**26 mg**	**13 mL**	May repeat x 1 after 5 minutes
Fentanyl * (50 mcg/ml) vial/amp Must use filter for amp	**0.5 mcg/kg**	**65 mcg ***	**1.3 mL**	May repeat x 1 after 5 minutes
Ketamine IM ONLY (100 mg/mL) vial	**4 mg/kg**	**500 mg**	**5 mL**	Additional dose online only
Ketamine IV **For DSI ONLY** (10 mg/mL) vial	**1.5 mg/kg**	**195 mg**	**19.5 mL**	Additional dose online only
Lidocaine 2% (10 mg/ml) syringe	**20 mg/ml**	**130 mg**	**6.5 mL**	May repeat using half dose to a total of 3 mg/kg
Lorazepam * (2 mg/ml) pre-filled syringe	**0.1 mg/kg**	**13 mg ***	**6.5 mL**	May repeat x 1 after 5 minutes
Midazolam * (5 mg/ml) Vial	**0.1 mg/kg**	**13 mg ***	**2.6 mL**	May repeat x 1 after 5 minutes
Morphine * (10 mg/1 mL) pre-filled syringe	**0.05 mg/kg**	**6.5 mg ***	**0.65 mL**	May repeat x 1 after 5 minutes
Rocuronium (10mg/ml) vial	**1 mg/kg**	**130 mg**	**13 mL**	Additional dose online only
Sodium Bicarbonate (1 mEq/ml) Syringe	**1 mEq/kg**	**130 mEq**	**130 mL**	May follow with half dose every 10 minutes
Succinylcholine (20 mg/ml) vial	**1.5 mg/kg**	**195 mg**	**9.75 mL**	Additional dose online only
Vecuronium (1 mg/ml) *(10 mg vial for recon. Add 10 ml NS for final conc.)	**0.1 mg/kg**	**13 mg**	**13 mL**	Additional dose online only
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* For pain and sedation doses:
Start dose low – slowly increase –
Titrate to effect up to listed dose

140 KG

DRUG	DOSE/KG	DOSE	VOLUME	Notes
Diazepam * (5 mg/ml) pre-filled syringe	**0.2 mg/kg**	**28 mg ***	**5.6 mL**	Additional dose online only
Etomidate (2 mg/ml) Vial	**0.2 mg/kg**	**28 mg**	**14 mL**	May repeat x 1 after 5 minutes
Fentanyl * (50 mcg/ml) vial/amp Must use filter for amp	**0.5 mcg/kg**	**70 mcg ***	**1.4 mL**	May repeat x 1 after 5 minutes
Ketamine IM ONLY (100 mg/mL) vial	**4 mg/kg**	**500 mg**	**5 mL**	Additional dose online only
Ketamine IV **For DSI ONLY** (10 mg/mL) vial	**1.5 mg/kg**	**200 mg**	**20 mL**	Additional dose online only
Lidocaine 2% (10 mg/ml) syringe	**20 mg/ml**	**140 mg**	**7 mL**	May repeat using half dose to a total of 3 mg/kg
Lorazepam * (2 mg/ml) pre-filled syringe	**0.1 mg/kg**	**14 mg ***	**7 mL**	May repeat x 1 after 5 minutes
Midazolam * (5 mg/ml) Vial	**0.1 mg/kg**	**14 mg ***	**2.8 mL**	May repeat x 1 after 5 minutes
Morphine * (10 mg/1 mL) pre-filled syringe	**0.05 mg/kg**	**7 mg ***	**0.7 mL**	May repeat x 1 after 5 minutes
Rocuronium (10mg/ml) vial	**1 mg/kg**	**140 mg**	**14 mL**	Additional dose online only
Sodium Bicarbonate (1 mEq/ml) Syringe	**1 mEq/kg**	**140 mEq**	**140 mL**	May follow with half dose every 10 minutes
Succinylcholine (20 mg/ml) vial	**1.5 mg/kg**	**210 mg**	**10.5 mL**	Additional dose online only
Vecuronium (1 mg/ml) *(10 mg vial for recon. Add 10 ml NS for final conc.)	**0.1 mg/kg**	**14 mg**	**14 mL**	Additional dose online only
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* For pain and sedation doses:
Start dose low – slowly increase –
Titrate to effect up to listed dose

150 KG or greater

DRUG	DOSE/KG	DOSE	VOLUME	Notes
Diazepam * (5 mg/ml) pre-filled syringe	**0.2 mg/kg**	**30 mg ***	**6 mL**	Additional dose online only
Etomidate (2 mg/ml) Vial	**0.2 mg/kg**	**30 mg**	**15 mL**	May repeat x 1 after 5 minutes
Fentanyl * (50 mcg/ml) vial/amp Must use filter for amp	**0.5 mcg/kg**	**75 mcg ***	**1.5 mL**	May repeat x 1 after 5 minutes
Ketamine IM ONLY (100 mg/mL) vial	**4 mg/kg**	**500 mg**	**5 mL**	Additional dose online only
Ketamine IV **For DSI ONLY** (10 mg/mL) vial	**1.5 mg/kg**	**200 mg**	**20 mL**	Additional dose online only
Lidocaine 2% (10 mg/ml) syringe	**20 mg/ml**	**150 mg**	**7.5 mL**	May repeat using half dose to a total of 3 mg/kg
Lorazepam * (2 mg/ml) pre-filled syringe	**0.1 mg/kg**	**15 mg ***	**7.5 mL**	May repeat x 1 after 5 minutes
Midazolam * (5 mg/ml) Vial	**0.1 mg/kg**	**15 mg ***	**3 mL**	May repeat x 1 after 5 minutes
Morphine * (10 mg/1 mL) pre-filled syringe	**0.05 mg/kg**	**7.5 mg ***	**0.75 mL**	May repeat x 1 after 5 minutes
Rocuronium (10mg/ml) vial	**1 mg/kg**	**150 mg**	**15 mL**	Additional dose online only
Sodium Bicarbonate (1 mEq/ml) Syringe	**1 mEq/kg**	**150 mEq**	**150mL**	May follow with half dose every 10 minutes
Succinylcholine (20 mg/ml) vial	**1.5 mg/kg**	**225 mg**	**11.25 mL**	Additional dose online only
Vecuronium (1 mg/ml) *(10 mg vial for recon. Add 10 ml NS for final conc.)	**0.1 mg/kg**	**15 mg**	**15 mL**	Additional dose online only
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* For pain and sedation doses:
Start dose low – slowly increase –
Titrate to effect up to listed dose

Pharmacology BLS/ILS/ALS

GENERIC NAME	INDICATIONS	CONTRAINDICATIONS	Route	Dose
Adenosine (Adenocard)	SVT, Stable Monomorphic Wide Complex Tachycardia of UKN Origin, generally over the rate of 150	Bronchoconstriction or Bronchospasm (Asthma), 2nd or 3rd degree heart blocks, Sick sinus syndrome	Fast IV followed with 20 ml flush	6 mg followed by 12 mg max of 18 mg
Amiodarone (Cordarone)	V-Fib, Pulseless V-T	Bradycardia/heart blocks, Cardiogenic shock, Iodine allergies	IV / IO push	300 mg Repeat at 150 mg Max of 450 mg
Amiodarone (Cordarone) Loading Dose	Stable VT (wide-complex tachycardia)	Bradycardia/heart blocks, Cardiogenic shock, Iodine allergies	IV / IO (Drip over 10 minutes; 10 drop/mL tubing=103 drops/minute)	150 mg over 10 min May repeat one time for reoccurrence
Albuterol Sulfate	Shortness of Breath with bronchoconstriction / wheezing, Allergic Reaction, Hyperkalemia	Caution in tachycardia patients with severe cardiac disease	Nebulizer with 8 lpm O2, inline CPAP	2.5 mg May repeat as needed
Aspirin chewable tablets	Chest Pain suggestive of ACS	Recent GI bleed, Allergy, Bleeding Disorders Use caution during CPAP	PO Chewed	324 mg
Atropine Sulfate	Symptomatic Bradycardia	Caution with acute MI	IVP / IO / ETT (Fast)	0.5 mg max of 3 mg
Atropine Sulfate for Organophosphate Poisoning	Organophosphate Poisoning, Nerve agent exposure	None	IVP/IO	2 mg repeated every 5 minutes until symptom resolution. No max dose.
Calcium Gluconate	Hyperkalemia, hypocalcemia, hypermagnesemia	Digitalis toxicity, hypercalcemia	IV / IO	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)
Dextrose 10%, 25%, 50%	Hypoglycemia		IV / IO	See chart for dose May repeat dose x 1
Diazepam (Valium) *	Seizures, Moderate Sedation	Shock	IV / IO / IM (slowly) *	Wt based
Diphenhydramine (Benadryl)	Allergic Reaction	Acute Asthma, COPD, Glaucoma	IV / IM	25-50 mg
Dopamine (Intropin)	Cardiogenic Shock, Symptomatic Bradycardia, Post-Cardiac Arrest, Distributive shock	Hypovolemia	IV / IO (Drip)	See drip chart
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* For pain and sedation doses:
Start dose low – slowly increase –
Titrate to effect up to listed dose

GENERIC NAME	INDICATIONS	CONTRAINDICATIONS	ROUTE	DOSE
Epi Auto-Injector (Adrenalin)	Anaphylaxis / allergic reaction bronchoconstriction / wheezing refractory to neb	Caution in patients with severe cardiac disease	IM	0.3 mg
Epinephrine 1:1 ml	Anaphylaxis / allergic reaction bronchoconstriction / wheezing refractory to neb	Caution in patients with severe cardiac disease	IM	0.3 mg. Repeat dose of 0.5 mg. Max 2 doses.
Epinephrine 1:10 ml	**Severe Allergic reaction** / anaphylaxis (**impending cardiac arrest**)	Caution in patients with severe cardiac disease	IV (slow) over 3 minutes	1 mg over 3 minutes. Contact online if symptoms persist.
Epinephrine 1:10 ml	Cardiac arrest - Pulseless V-Tach, V-Fib, Asystole, PEA	Undiluted 1:1 ml IV (Must dilute prior to administration)	IV / IO / ETT	1 mg (ACLS algorithm)
Etomidate (Amidate)	Sedation, Induction of general anesthesia		IV / IO	Wt based
Fentanyl (Fentanyl Citrate) *	Pain Control	Caution in patients with hypertension, hypotension or increase ICP	IV / IO /MAD *	Wt based
Furosemide (Lasix)	Pulmonary Edema with signs of fluid overload	Hypovolemia, dehydration, BP < 90	IV / IO / IM	40 mg May repeat one dose
Ipratropium Bromide 0.02%	Shortness of Breath with bronchoconstriction / wheezing, Allergic Reaction	Caution in tachycardia patients with severe cardiac disease	Nebulizer with 8 lpm O2, inline CPAP	0.5 mg
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 and Diazepam are 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

GENERIC NAME	INDICATIONS	CONTRAINDICATIONS	ROUTE	DOSE
Magnesium Sulfate	Shortness of breath with bronchoconstriction / wheezing	AV Blocks	IV / IO	2 Grams over 20 minutes Online for further doses
Magnesium Sulfate	Polymorphic V-T, Torsade's de Pointes with pulse	AV Blocks	IV/IO	2 Grams over 5-10 minutes Online for further doses
Magnesium Sulfate	Torsade's de Pointes pulseless	AV Blocks	IV/IO	2 Grams over 1-2 minutes Online for further doses
Magnesium Sulfate	Eclampsia	AV Blocks	IV/IO	2 Grams over 5 minutes Online for further doses
Methylprednisolone (Solu-Medrol)	Shortness of Breath with bronchoconstriction / wheezing, Allergic Reaction, Anaphylaxis		IV / IO	125 mg
Metoprolol Tartrate (Lopressor)	Chest Pain suggestive of ACS, Hypertensive Crisis	BP < 100, HR < 60, 2nd or 3rd degree heart block (unless functional pacemaker present), cardiogenic shock, uncompensated heart failure, any suspected substance abuse	IV / IO	5 mg
Midazolam (Versed) *	Seizures, Moderate Sedation, Pre-treatment for DSI	Shock	IV / IO / MAD / IM *	Wt based
Morphine Sulfate *	Pain Control	BP < 100, Hypovolemia	IV / IO / MAD / IM *	Wt based
Naloxone (Narcan) Naloxone	Opioid overdose with respiratory depression (typically 4 mg should reverse most opioids, however some synthetics may require up to 10 mg)	Caution with narcotic-dependent patients who may experience withdrawal syndrome (**using higher doses may cause pulmonary edema**)	IV / IO / MAD / IM	0.4 - 2 mg (titrate to effect up to 2 mg) May repeat as needed
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	0.4 mg Repeat every 5 min 3 doses
Ondansetron (Zofran)	Nausea/Vomiting		IV / IO (slow) ODT-oral	4 mg
Oral Glucose	Hypoglycemia	Patient who is not able to follow commands	PO	15 grams
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* For pain and sedation doses:
Start dose low – slowly increase –
Titrate to effect up to listed dose

GENERIC NAME	INDICATIONS	CONTRAINDICATIONS	ROUTE	DOSE
Sodium Bicarbonate	Cardiac Arrest, Metabolic Acidosis, Hyperkalemia, Tricyclic Antidepressant Overdose, Crush injuries/suspension trauma	Alkalosis, hypocalcemia, hypochloremia	IV / IO	Wt based
Succinylcholine (Anectine)	Paralytic for DSI	Hyperkalemia	IV / IO	Wt based
Tetracaine	Eye anesthetic to irrigate eyes	Open injury to the eye	1-2 drops	
Tranexamic Acid (Cyklokapron)	Traumatic hemorrhagic shock w/ suspected need for massive blood transfusion	Injury greater than 3 hours old	IV / IO Drip	1 gram in 100 ml over 10 min
Rocuronium Bromide (back-up if Succinylcholine not available)	Paralytic for DSI	-	IV / IO	Wt based
Vecuronium (back-up if Succinylcholine not available)	Paralytic for DSI		IV / IO	Wt based

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Pharmacology BLS Only

Adult Patients

GENERIC NAME	INDICATIONS	CONTRAINDICATIONS	Route	Dose
Albuterol Sulfate	Shortness of Breath with bronchoconstriction / wheezing, Allergic Reaction, Hyperkalemia	Caution in tachycardia patients with severe cardiac disease	Nebulizer with 8 lpm O2, inline CPAP	2.5 mg (in 3 ml) may repeat if needed off-line
Aspirin chewable tablets	Chest Pain suggestive of ACS	Recent GI bleed, Allergy, Bleeding Disorders Use caution for patients on CPAP	PO Chewed	324 mg (4 - 81 mg) off-line
Epi Auto-Injector (Adrenalin)	Anaphylaxis / allergic reaction bronchoconstriction / wheezing refractory to neb	Caution in patients with severe cardiac disease	IM	0.3 mg off-line Anaphylaxis on-line allergic reaction
DuoNeb (Albuterol / Ipratropium)	Shortness of Breath with bronchoconstriction / wheezing, Allergic Reaction	Caution in tachycardia patients with severe cardiac disease	Nebulizer with 8 lpm O2, inline CPAP	Use DuoNeb for first dose* repeat with Albuterol if needed
** 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	0.4 mg If patient prescribed nitro, repeat every 5 min x 3 doses total Off-line (use EMS supply) On-line for pt not prescribed nitro
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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Pediatric Patients

GENERIC NAME	INDICATIONS	CONTRAINDICATIONS	Route	Dose
Albuterol Sulfate	Shortness of Breath with bronchoconstriction / wheezing, Allergic Reaction, Hyperkalemia	Caution in tachycardia patients with severe cardiac disease	Nebulizer with 8 lpm O2, inline CPAP	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
Aspirin chewable tablets	Chest Pain suggestive of ACS	Recent GI bleed, Allergy, Bleeding Disorders	PO Chewed	**NA not used in pediatric patients**
Epi Auto-Injector (Adrenalin)	Anaphylaxis / allergic reaction bronchoconstriction / wheezing refractory to neb	Caution in patients with severe cardiac disease	IM	Epi Jr. 0.15 for patient 15 to 30 kg Epi 0.3 for patient greater than 30 kg (66 pounds) - under 15 kg (33 pounds) call Medical Control off-line Anaphylaxis on-line allergic reaction
DuoNeb (Albuterol / Ipratropium)	Shortness of Breath with bronchoconstriction / wheezing, Allergic Reaction	Caution in tachycardia patients with severe cardiac disease	Nebulizer with 8 lpm O2, inline CPAP	NA not used in pediatric patients
** 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	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
Naloxone (Narcan)	Opioid overdose with respiratory depression	Caution with narcotic-dependent patients who may experience withdrawal syndrome	MAD / IM	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
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.	SL	**NA not used in pediatric patients**
Oral Glucose	Hypoglycemia	Patient who is not able to follow commands	PO	15 grams off-line

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Pharmacology EMR Only

Adult Patients

GENERIC NAME	INDICATIONS	CONTRAINDICATIONS	Route	Dose
Aspirin chewable tablets	Chest Pain suggestive of ACS	Recent GI bleed, Allergy, Bleeding Disorders	PO Chewed	324 mg (4 - 81 mg) off-line
Epi Auto-Injector (Adrenalin)	Anaphylaxis / allergic reaction bronchoconstriction / wheezing refractory to neb	Caution in patients with severe cardiac disease	IM	0.3 mg off-line Anaphylaxis on-line allergic reaction
Naloxone (Narcan)	Opioid overdose with respiratory depression	Caution with narcotic-dependent patients who may experience withdrawal syndrome	MAD	2 mg (in 2 ml) MAD is preferred route 1/2 in each nare may repeat X 1 dose off-line
Oral Glucose	Hypoglycemia	Patient who is not able to follow commands	PO	15 grams off-line

Pediatric Patients

GENERIC NAME	INDICATIONS	CONTRAINDICATIONS	Route	Dose
Aspirin chewable tablets	Chest Pain suggestive of ACS	Recent GI bleed, Allergy, Bleeding Disorders	PO Chewed	NA not used in pediatric patients
Epi Auto-Injector (Adrenalin)	Anaphylaxis / allergic reaction bronchoconstriction / wheezing refractory to neb	Caution in patients with severe cardiac disease	IM	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
Naloxone (Narcan)	Opioid overdose with respiratory depression	Caution with narcotic-dependent patients who may experience withdrawal syndrome	MAD	1 mg for patients 10-20 kg (22-44 pounds)2 mg for patients over 20 kg (44 pounds) 1/2 in each nareMay repeat X 1 doseoff-line
Oral Glucose	Hypoglycemia	Patient who is not able to follow commands	PO	15 grams off-line

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REGION I EMERGENCY MEDICAL SERVICES

PREHOSPITAL FORMULARY

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REGION I EMERGENCY MEDICAL SERVICES
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MEDICATION ADMINISTRATION CHART

Peds	3 kg	4 kg	5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Adult	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg	110 kg	120 kg	130 kg	140 kg	150 + kg
Standard Dosing	ILS/ ALS	BLS	EMR	Dextrose	Dopamine	Mag Sulfate	Fentanyl IN	Midazolam IN			Formulary

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FORMULARY – Adenosine (Adenocard)

Adenosine	(Adenocard)
Classification:	Antidysrhythmic Agent
Actions:	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).
Indications:	Supraventricular tachycardia (stable) Monomorphic wide-complex tachycardia (stable)
Contraindications include but not limited to:	○ 2nd or 3rd degree heart block ○ Sick sinus syndrome ○ 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: **Packaging Information:** (6 mg/2 ml) Pre-filled syringe	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.
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: Pharmacology Chart **Used in SMO:** Narrow Complex Tachycardia Pediatric Dysrhythmias – Tachycardia Wide Complex Tachycardia	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.

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FORMULARY – Albuterol Sulfate

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: Packaging Information: (2.5 mg/3 ml) Ampule/Nebulizer	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: Pharmacology Chart Used in SMO: Adult Anaphylaxis and Allergic Reaction Bronchospasm Crush Syndrome and Suspension Trauma Pediatric Anaphylaxis and Allergic Reaction Pediatric Respiratory Distress	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

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FORMULARY – Albuterol Sulfate/Ipratropium Bromide (DuoNeb)

Albuterol Sulfate Ipratropium Bromide	(DuoNeb)
Classification:	Albuterol is a bronchodilator Ipratropium is an anticholinergic bronchodilator
Actions:	Relaxes bronchial smooth muscle by stimulating beta$_2$ receptors resulting in bronchodilation.
Indications:	• Acute asthma attack • Bronchospasm associate with emphysema/bronchitis • COPD • Wheezing in croup or bronchiolitis
Contraindications include but not limited to :	○ Signs of an MI ○ Cardiac arrhythmias associated with tachycardia ○ Patients taking Spiriva/other bronchodilator ○ Known hypersensitivity to Albuterol/Ipratropium
Adverse effects include but not limited to :	➢ Tachycardia ➢ Hypertension ➢ Palpitations ➢ Dizziness ➢ Dysrhythmias ➢ Restlessness/Nervousness ➢ Nausea/Vomiting
Adult Administration: Packaging Information: 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 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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FORMULARY – Amiodarone (Cordarone)

Amiodarone	(Cordarone, Pacerone)
Classification:	Antiarrhythmic agent
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 :	○ Cardiogenic shock ○ Bradycardia/heart blocks ○ Iodine allergies
Adverse effects include but not limited to :	➢ Hypotension ➢ Bradycardia ➢ AV block ➢ Asystole ➢ PEA ➢ Hepatoxicity
Adult Administration: **Packaging Information:** (150 mg/ 3 ml) Vial	VF/VT (pulseless) – 300 mg slow IV/IO push (over 1-2 minutes) followed in 5 minutes by 150 mg IV/IO push VT (with pulse) – IV/IO – slowly infuse 150 mg over 10 minutes. Mix with 100 ml Normal Saline and infuse at a rate of 618 ml/hr. May repeat one time.
Pediatric Administration:	VF/VT (pulseless) – see Medication Administration Chart for weight based dosing and administration rates VT (with pulse) – see Medication Administration Chart for weight based dosing and administration rates
Onset:	2-3 minutes
Duration:	Days to weeks
Pregnancy Safety:	Category D
Precautions and Comments: Pharmacology Chart **Used in SMO:** Pediatric Tachycardia Pediatric Arrest/Asystole/PEA Poisoning and Overdose Ventricular Fibrillation/Pulseless Ventricular Tachycardia Wide Complex Tachycardia	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.

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FORMULARY – Aspirin

Aspirin	(ASA)
Classification:	Antiplatelet, Analgesic, Antipyretic, Anti-inflammatory
Actions:	Inhibition of platelet aggregation and platelet synthesis. Reduction of risk of death in patients with a history of myocardial infarction or unstable angina.
Indications:	Chest pain with suspected myocardial ischemia
Contraindications include but not limited to:	○ Allergy to ASA/NSAID ○ Peptic ulcer disease ○ Hypersensitivity to salicylates
Adverse effects include but not limited to:	➢ Nausea, GI upset ➢ Hepatotoxicity ➢ Occult blood loss ➢ Anaphylaxis
Adult Administration: Packaging Information: (81 mg) Chewable Tablet	324 mg / 4 tablets
Pediatric Administration:	Not recommended
Onset:	30-60 minutes
Duration:	4-6 hours
Pregnancy Safety:	Category D in the third trimester: use ONLY if benefit to mother justifies the risk to the fetus.
Precautions and Comments: Pharmacology Chart Used in SMO: Chest Pain of Suspected Cardiac Origin	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.

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FORMULARY – Atropine Sulfate

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	Bradycardia: IV/IO every 5 minutes to max of 3 mg Poisoning and Overdose: IV/IO every 5 minutes until symptoms clear
Pediatric Administration:	See Medication Administration Chart for weight based dosing and administration rates
Onset:	2-5 minutes
Duration:	20 minutes
Pregnancy Safety:	Category C
Precautions and Comments: Used in SMO: Bradycardia (Adult) Delayed Sequence Intubation Pediatric Bradycardia Pediatric Toxic Exposure Poisoning and Overdose (Adult) Return to SMO Table of Contents Return to Formulary Table of Contents *Formulary Atropine Page 1 of 1*	• 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).

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FORMULARY – Calcium Gluconate

Calcium Gluconate	
Classification:	Calcium salts
Actions:	Soluble calcium ions bind with soluble fluoride ions to produce the insoluble and therefore inactive calcium fluoride salt.
Indications:	• Hyperkalemia • Hypocalcemia • Hypermagnesemia
Contraindications include but not limited to :	○ Digitalis toxicity ○ Hypercalcemia
Adverse effects include but not limited to:	➢ May induce cardiac dysrhythmias ➢ IM administration may cause severe tissue necrosis ➢ If calcium overdosing adverse effects may be: ❖ Dry mouth ❖ Headache ❖ Anxiety ❖ Thirst ❖ Metal taste ❖ Vomiting/diarrhea
Adult Administration: **Packaging Information:** (1 GM/10 ml) Vial	IV/IO – 1 Gram – may repeat every 5 minutes two times for a total of 3 Grams (12-lead EKG recommended prior to each administration for non-code). In a cardiac arrest situation give 3 Grams rapidly.
Pediatric Administration:	See Medication Administration Chart for weight based dosing and administration rates
Onset:	Immediate
Duration:	30 minutes to 2 hours
Pregnancy Safety:	Category C
Precautions and Comments: Pharmacology Chart **Used in SMO:** Adult Asystole/PEA Crush Syndrome and Suspension Trauma Excited Delirium Adult V-Fib/V-Tach	The faster Calcium Gluconate is given the faster the body eliminates it. For prolonged transports repeat doses may be needed.

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FORMULARY – Dextrose

Dextrose	D50, D10
Classification:	Hyperglycemic agent, hypertonic solutions
Actions:	Provides immediate source of glucose, which is rapidly utilized for cellular metabolism
Indications:	Altered level of consciousness due to suspected hypoglycemia
Contraindications:	None
Adverse effects include but not limited to :	➢ CVA ➢ Intracranial hemorrhage ➢ Thrombophlebitis ➢ Rhabdomyolysis
Adult Administration: **Packaging Information:** D50 – (25 G/50 ml) Pre-filled syringe D10 – (10 G/ 100 ml) Bag	See Dextrose Administration Chart
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: Pharmacology Chart **Used in SMO:** Alcohol Related Emergencies Altered Mental Status (Adult) Asystole/PEA (Adult) Diabetic Emergencies Pediatric Altered Mental Status Pediatric Seizures Stroke Syncope	• 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

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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

Patient weight	Dose (Grams)	Dextrose 10% (0.1 Gm/mL)	Dextrose 25% (0.25 Gm/mL)	Dextrose 50% (0.5 Gm/mL)
3 kg	1.5 G	15 mL	6 mL	-
4 kg	2 G	20 mL	8 mL	-
5 kg	2.5 G	25 mL	10 mL	-
Pink (6 - 7 kg)	3.25 G	32 mL	13 mL	6.5 mL Dilute 1:1
Red (8 - 9 kg)	4.25 G	42.5 mL	17 mL	8.5 mL Dilute 1:1
Purple (10 - 11kg)	5.25 G	52.5 mL	21 mL	10.5 mL
Yellow (12 - 13 kg)	6.5 G	65 mL	26 mL	13 mL
White (15 - 18 kg)	8.25 G	82.5 mL	33 mL	16.5 mL
Blue (19 - 21 kg)	10.5 G	105 mL	42 mL	21 mL
Orange (24 - 29 kg)	13.3 G	133 mL	53.2 mL	26.6 mL
Green (33 - 36 kg)	16.5 G	165 mL	68 mL	33 mL
Adult	25 G	250 ml	100 ml	50 ml

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

FORMULARY – Diazepam (Valium)

Diazepam	Valium
Classification:	Benzodiazepine derivative
Actions:	Tranquilizer, anticonvulsant, skeletal muscle relaxant through effects on the central nervous system
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: **Packaging Information:** (5 mg/ml) Pre-filled syringe	See Adult Medication Administration Chart 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 **Used in SMO:** Pain Management Pediatric Seizure Pre-Eclampsia/Eclampsia Sedation for Pacing/Cardioversion Seizures (Adult)	• 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, $EtCO_2$)

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FORMULARY – Diphenhydramine (Benadryl)

Diphenhydramine	Benadryl
Classification:	Antihistamine
Actions:	Competes with histamines at receptor sites. Reverses muscle spasms associated with dystonic reactions (phenothiazine).
Indications:	• Allergic reactions • Muscle spasms associated with dystonic reactions
Contraindications include but not limited to:	○ Glaucoma ○ Acute asthma ○ 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	IM or IV 25-50 mg
Pediatric Administration:	See Medication Administration Chart for weight based dosing and administration rates IM or IV
Onset:	1-5 minutes if given IV/IO push 15 minutes if given IM/PO
Duration:	3-4 hours
Pregnancy Safety:	Category B
Precautions and Comments: Pharmacology Chart **Used in SMO:** Anaphylaxis and Allergic Reaction (Adult) Pediatric Anaphylaxis and Allergic Reaction Pediatric Toxic Exposure Poisoning and Overdose (Adult)	• May caused depressed level of consciousness in elderly patients. • May have additive effect with alcohol or depressants.

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FORMULARY – Dopamine (Intropin)

Dopamine	Intropin
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: **Packaging Information:** (400 mg/250 ml) Bag	IV – usual infusion rate 2-20 mcg/kg/min; titrate response; taper slowly See Dopamine Drip Chart for weight based dosing and administration rates
Pediatric Administration:	Not recommended
Onset:	5 minutes
Duration:	5-10 minutes
Pregnancy Safety:	Category C – avoid use in pregnant patients
Precautions and Comments: Pharmacology Chart **Used in SMO:** Bites and Stings Bradycardia (Adult) Cardiogenic Shock Chest Pain of Suspected Cardiac Origin Sepsis Trauma Shock/Hemorrhage Control	• Not for use in hypovolemia • Causes tissue necrosis if injected into interstitial space • MAO inhibitors may increase its effects

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FORMULARY – Dopamine Drip Chart

Dopamine

400 mg in 250 ml or 1.6 mg/ml

Drops per minute based on microdrip Tubing (60 drops/ml)

Mcg/Kg/Min

		2	2.5	5	7.5	10	15	20
Weight KG								
50	ml/hr	3.75	4.7	9.4	14	18.8	28	37.6
	drops/min	4	5	9	14	19	28	38
60	ml/hr	4.5	5.6	11	16.9	22.5	33.8	45
	drops/min	5	6	11	17	23	34	45
70	ml/hr	5.3	6.6	13	19.7	26.3	39.4	52.6
	drops/min	5	7	13	20	26	39	53
80	ml/hr	6	7.5	15	22.5	30	45	60
	drops/min	6	8	15	23	30	45	60
90	ml/hr	6.8	8.4	17	25.3	33.8	50.6	67.6
	drops/min	7	8	17	25	34	51	68
100	ml/hr	7.5	9.4	19	28.1	37.5	56.3	75
	drops/min	8	9	19	28	38	56	75
110	ml/hr	8.3	10.3	21	30.9	41.3	61.8	82.6
	drops/min	8	10	21	31	41	62	83
120	ml/hr	9	11.3	23	33.8	45	67.5	90
	drops/min	9	11	23	34	45	68	90
130	ml/hr	9.8	12.2	24	36.6	48.8	73.1	97.6
	drops/min	10	12	24	37	49	73	98
140	ml/hr	10.5	13.1	26	39.3	52.4	78.6	104.8
	drops/min	11	13	26	39	52	79	105
150	ml/hr	11.3	14.1	28	42.2	56.3	84.4	112.5
	drops/min	11	14	28	42	56	84	113

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FORMULARY – Epinephrine (Adrenalin)

Epinephrine 1:1 ml and 1:10 ml	Adrenalin
Classification:	Sympathomimetic agent (Catecholamine)
Actions:	Acts directly on Alpha and Beta receptors of the SNS. Beta effect is more profound than Alpha effects. Effects include: • Increased heart rate (chronotropy) • Increased cardiac contractile force (inotropy) • Increased electrical activity within myocardium (dromotropy) • Increased systemic vascular resistance • Increased blood pressure • Increased automaticity • Increased bronchial smooth muscle dilation • Increases coronary perfusion during CPR by increasing aortic diastolic pressure
Indications:	• Cardiopulmonary arrest: - Ventricular Fibrillation/Pulseless Ventricular Tachycardia - Asystole/PEA • Allergic reaction/anaphylaxis • Asthma • Refractory pediatric bradycardia, unresponsive to O_2 and ventilation • Stridor (croup, airway burns, laryngeal edema)
Contraindications include but not limited to:	○ Hypertension ○ Undiluted 1:1 ml IVP
Adverse effects include but not limited to:	➢ Hypertension-tachycardia ➢ Increases myocardial oxygen demand and potentially increases myocardial ischemia
Adult Administration: Return to SMO Table of Contents Return to Formulary Table of Contents	*Cardiopulmonary Arrest*: IV/IO: 1 mg of 1:10 ml. If rhythm persists repeat every 3-5 minutes ET: 2 mg of 1:1 ml diluted to 5-10 mL. Followed with 5 normal ventilations. If rhythm persists repeat every 3 to 5 minutes. *Bronchospasm:* IM: 0.3 mg of 1:1 ml, may repeat at 20 minute intervals *Anaphylaxis and Allergic Reaction:* Bronchospasm: IM: 0.3 mg of 1:1 ml, may repeat at 20 minute intervals for a total of 2 doses Hypotension/Airway Compromise: IM: 0.3-0.5 mg of 1:1 ml every 15 minutes if there is no improvement Impending Arrest: IV/IO: (0.1 mg/1 ml) of 1:10 ml slow over 5 minutes *Formulary: Epinephrine Page 1 of 2*

Adult Administration (continued) **Packaging Information:** 1 mg/10 ml (1:10 ml) Pre-filled syringe 1 mg/1 ml (1:1 ml) vial 30 ml	*Formulary: Epinephrine Page 2 of 2* Stridor: Patient in cardiac arrest from anaphylaxis: IV or IO of 1:10 ml First dose: 1 mg Repeat doses 3-5 mg every 3 minutes if arrest persists If no IV/IO then ET 1:1 ml – 2.5 mg diluted in 5-10 mL NS followed by 5 ventilations every 3 minutes if arrest persists
Pediatric Administration:	Please see Medication Administration Chart for weight-based dosing. *Cardiac Arrest:* IV/IO: Initial dose: 0.01 mg//kg (1:10 ml, 0.1 mL/kg) IV/IO: Repeat doses: 0.01 mg/kg (1:10 ml, 0.1mL/kg). If rhythm persists repeat every 3-5 minutes. *Bronchospasm:* IM: 0.01 mg/kg (max 0.3 mg) of 1:1 ml. May repeat in 10-20 minutes for a total of 2 doses. *Refractive Bradycardia:* IV/IO: 0.01 mg/kg (1:10 ml, 0.1 mL/kg Repeat dose is same as the initial dose, every 3-5 minutes *Anaphylaxis/Allergic Reaction:* Bronchospasm: IM: 0.01 mg/kg of 1:1 ml every 15 minutes if there is no clinical improvement. Hypotension/Airway Compromise: IM: 0.01 mg (max 0.3 mg) every 15 minutes if there is no clinical improvement Impending Arrest: IV/IO: 0.01 mg/kg, diluted with Normal Saline to 10 mL slow push over 5 minutes and then every 1-2 minutes if there is inadequate response to treatment.
Onset:	Immediate if given IVP. 5-10 minutes if given SQ/IM.
Duration:	3-5 minutes if given IVP/. 20 minutes if given SQ/IM.
Pregnancy Safety:	Category C
Precautions and Comments: **Used in SMO:** Anaphylaxis and Allergic Reaction (Adult) Asystole/PEA Bronchospasm Pediatric Anaphylaxis and Allergic Reaction Pediatric Arrest Pediatric Bradycardia Pediatric Respiratory Arrest Pediatric Ventricular Fibrillation/PVT Ventricular Fibrillation/Pulseless Ventricular Tachycardia	Pharmacology Chart Return to SMO Table of Contents Return to Formulary Table of Contents *Formulary: Epinephrine Page 2 of 2*

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FORMULARY – Epinephrine Auto-Injector (Adrenalin)

Epinephrine Auto-injector	Adrenalin, Epinephrine Hydrochloride
Classification:	Sympathomimetic agent (Catecholamine)
Actions:	Acts directly on Alpha and Beta receptors of the SNS. Beta effect is more profound than Alpha effects. Effects include: • Increased heart rate (chronotropy) • Increased cardiac contractile force (inotropy) • Increased electrical activity within myocardium (dromotropy) • Increased systemic vascular resistance • Increased blood pressure • Increased bronchial smooth muscle dilation

Indications:	• Allergic Reaction
	  ○ Shortness of breath (wheezing, hoarseness, other abnormal breath sounds)
	  ○ Itching/hives that are severe and rapidly progressing
	  ○ Oral swelling/laryngospasm/difficulty swallowing
	  ○ Hypotension/unresponsiveness
	  ○ Patients with an exposure to known allergen with progressively worsening symptoms (i.e., hives)
	• Severe Asthma

Contraindications:	○ None when indicated
Adverse effects include but not limited to:	➢ Hypertension-tachycardia ➢ Tremor, weakness ➢ Pallor, sweating, nausea, vomiting ➢ Nervousness, anxiety ➢ Increases myocardial oxygen demand and potentially increases myocardial ischemia
Adult Administration: **Packaging Information:** Epinephrine (0.3 mg/0.3 ml) auto-injector Epinephrine (0.15 mg/0.3 ml)auto-injector	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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Duration:	*Formulary: Epinephrine Auto-Injector Page 2 of 2* 20 minutes
Pregnancy Safety:	Category C
Precautions and Comments: Pharmacology Chart **Used in SMO:** Bronchospasm Pediatric Anaphylaxis and Allergic Reaction	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)
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FORMULARY – Etomidate (Amidate)

Etomidate	Amidate
Classification:	General anesthetic and hypnotic without analgesic properties
Actions:	Depresses the activity of the brain stem reticular activating system
Indications:	Induction of general anesthesia and sedation of critically ill or injured patients and prior to cardioversion or intubation
Contraindications include but not limited to:	Known hypersensitivity
Adverse effects include but not limited to:	➢ Myoclonic skeletal muscle movements ➢ Nausea and vomiting post procedure ➢ Apnea ➢ Hypoventilation or hyperventilation ➢ Laryngospasm ➢ Hypertension or hypotension ➢ Tachycardia or bradycardia
Adult Administration: **Packaging Information:** (2 mg/ml) Vial	See Adult Medication Administration Chart for dosing IV/IO: over 30-60 seconds Limit to 1 dose
Pediatric Administration:	See Medication Administration Chart for weight-based dosing (>10 years old): IV/IO: 0.2-0.4 mg/kg for sedation infused over 30-60 seconds. Maximum dose: 20 mg
Onset:	Within 1 minute
Duration:	3 to 10 minutes
Pregnancy Safety:	Category C
Precautions and Comments: Pharmacology Chart **Used in SMO:** Delayed Sequence Intubation	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.

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

FORMULARY – Fentanyl (Fentanyl Citrate)

Fentanyl	Fentanyl Citrate
Classification:	Narcotic analgesic
Actions:	Produces analgesia by inhibiting the ascending pain pathways. Depresses the central nervous system by interacting with receptors in the brain.
Indications:	Moderate to severe pain.
Contraindications include but not limited to:	○ 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
Adverse effects include but not limited to:	➢ 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
Adult Administration: **Packaging Information:** (50 mcg/ml) Vial/ampule Must use filter needle for ampule Restocking requires a 222 form	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
Pediatric Administration:	See Medication Administration Chart for weight-based dosing 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: Pharmacology Chart **Used in SMO:** Intranasal Medications (MAD device) Narrow Complex Tachycardia Pain Management Return to SMO Table of Contents *Formulary Fentanyl Page 1 of 1* Return to Formulary Table of Contents	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).

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FORMULARY – Furosemide (Lasix)

Furosemide	Lasix
Classification:	Loop diuretic
Actions:	Inhibits reabsorption of sodium in the proximal tubule and descending loop of Henle.
Indications:	Acute pulmonary edema and congestive heart failure.
Contraindications include but not limited to:	○ Hypovolemia ○ Dehydration ○ Electrolyte depletion ○ Known hypersensitivity ○ Anuria
Adverse effects include but not limited to:	➢ Hypotension ➢ ECG changes ➢ Chest pain ➢ Hypokalemia ➢ Hyponatremia ➢ Hyperglycemia
Adult Administration: Packaging Information: (100 mg/10 ml) Vial	IV/IO: 40 mg over 1-2 minutes. If no response, dose may be repeated. 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: Pharmacology Chart Used in SMO: Pulmonary Edema	Furosemide may result in sodium and potassium depletion and may potentiate digitalis and lithium toxicity.

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FORMULARY – Glucagon

Glucagon	
Classification:	Hyperglycemic agent (pancreatic hormone)
Actions:	Elevates blood glucose by converting liver glycogen into glucose. Increases cardiac output by increasing inotropy and chronotropy. Stimulate the release of catecholamine. Relaxes smooth muscle of the gastrointestinal tract, bronchioles, and blood vessels.
Indications:	• Hypoglycemia • Beta blocker OD • Allergic reaction
Contraindications:	Not significant in the above indications.
Adverse effects include but not limited to:	➢ Nausea/vomiting ➢ Headache
Adult Administration: **Packaging Information:** (1 mg/ml) Vial	Hypoglycemia: 1 mg IM – may repeat in 7-10 minutes Beta Blocker OD: 2-4 mg IV/IO
Pediatric Administration:	See Medication Administration Chart for weight-based dosing Hypoglycemia: 0.1 mg/kg IM Beta Blocker OD: 0.1 mg/kg IV/IO
Onset:	1-3 minutes if given IVP 5-20 minutes if given IM
Duration:	15-20 minutes if given IVP 15-30 minutes if given IM
Pregnancy Safety:	Category B
Precautions and Comments: Pharmacology Chart **Used in SMO:** Alcohol Related Emergencies Adult Altered Mental Status Diabetic Emergencies Pediatric Altered Mental Status Pediatric Seizures Pediatric Toxic Exposure	Use with caution in patients with cardiovascular and renal disease. Glucagon is an antagonist to insulin.

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FORMULARY – Ipratropium Bromide (Atrovent)

Ipratropium Bromide	Atrovent
Classification:	Anticholinergic (parasympatholytic) which causes bronchodilation
Actions:	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
Indications:	• Asthma and bronchospasm associated with COPD • Bronchospasm related to chronic bronchitis or emphysema
Contraindications include but not limited to:	○ Not the primary treatment for bronchospasm ○ Known hypersensitivity
Adverse effects include but not limited to:	➢ Palpitations ➢ Dizziness ➢ Anxiety ➢ Headache ➢ Eye pain ➢ Urinary retention ➢ Nervousness
Adult Administration: **Packaging Information:** (0.5 mg/2.5 ml) Ampule	Nebulize a total 3 ml (when used as part of DuoNeb). After DuoNeb administer Albuterol if additional doses needed.
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: Pharmacology Chart	• 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

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FORMULARY – Ketamine (Ketalar)

Ketamine	Ketalar
Classification:	Non-barbiturate anesthetic
Actions:	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.
Indications:	Pain control
Contraindications include but not limited to:	○ Stroke ○ Increased intracranial pressure ○ Severe hypertension ○ Cardiac decompensation ○ Hypersensitivity
Adverse effects include but not limited to:	➢ Hypertension ➢ Increased heart rate ➢ Hypersalivation ➢ Hallucinations, delusions, explicit dreams ➢ Less common side effects include hypotension, bradycardia, and respiratory depression
Adult Administration: **Packaging Information:** (100 mg/ml) 5 ml Vial – Excited Delirium (10 mg/ml) 20 ml Vial - DSI	See Adult Medication Administration Chart for dosing *←-- Excited Delirium:* IM: 4 mg/kg *←--Delayed Sequence Intubation*: 1-2 mg/kg IV/IO (must be diluted prior to administration)
Pediatric Administration: *IM ADMINISTRATION ONLY*	See Medication Administration Chart for weight-based dosing > 2 years old: 2-4 mg/kg IM
Onset:	Within 30 seconds
Duration:	5-10 minutes
Pregnancy Safety:	Category C
Precautions and Comments: Pharmacology Chart **Used in SMO:** Delayed Sequence Intubation Excited Delirium Pain Management Restraints	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.

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FORMULARY – Ketorolac Tromethamine (Toradol)

Ketorolac Tromethamine	Toradol
Classification:	Nonsteroidal anti-inflammatory
Actions:	An anti-inflammatory that also exhibits peripherally acting nonnarcotic analgesic activity by inhibiting prostaglandin synthesis.
Indications:	Short term management of moderate to severe pain
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: **Packaging Information:** (15 mg/ml) Pre-filled syringe	IM: 1 dose of 15 mg; may repeat one time IV/IO: 15 mg over 1 minute (for patients <65 years old or weighing more than 50 kg); 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: Pharmacology Chart **Used in SMO:** Pain Management	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.

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FORMULARY – Lidocaine 2% (Xylocaine)

Lidocaine 2%	Lidocaine
Classification:	Antidysrhythmic, anesthetic
Actions:	Suppressed ventricular dysrhythmias by decreasing ventricular irritability.
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: **Packaging Information:** (10 mg/ml) Pre-filled syringe	See Adult Medication Administration Chart for weight based dosing May repeat using half dose to a total of 3 mg/kg
Pediatric Administration:	See Medication Administration Chart for weight based dosing
Onset:	45-90 seconds
Duration:	10-20 minutes
Pregnancy Safety:	Category B
Precautions and Comments: **Used in SMO:** Delayed Sequence Intubation Intraosseous Access Pediatric Arrest/Asystole/PEA Pediatric Toxic Exposure Adult Toxic Exposure Ventricular Fibrillation/Pulseless Ventricular Tachycardia Wide Complex Tachycardia	• If bradycardia occurs along with premature ventricular contractions, always treat the bradycardia first. • Discontinue if signs of toxicity occur. Pharmacology Chart

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

FORMULARY – Lorazepam

Lorazepam	Ativan
Classification:	Benzodiazepine
Actions:	A sedative, anticonvulsant, and amnestic (induces amnesia)
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:	○ Coma (unless seizing) ○ Altered mental status of unknown age ○ Severe hypotension ○ Shock ○ Respiratory insufficiency
Adverse effects include but not limited to:	➢ Respiratory depression ➢ Tachycardia/bradycardia ➢ Hypotension ➢ Sedation ➢ Ataxia ➢ Confusion ➢ Blurred vision
Adult Administration: **Packaging Information:** (2 mg/ml) Pre-filled syringe	**Used as a back-up if Diazepam/Midazolam are not available – 30 day stability if unrefrigerated** See Adult Weight Based Medication Administration Chart May repeat x 1 after 5 minutes
Pediatric Administration:	See Medication Administration Chart for dosing
Onset:	5 minutes (IV)
Duration:	6-8 hours
Pregnancy Safety:	Category D
Precautions and Comments: Pharmacology Chart **Used in SMO:** Delayed Sequence Intubation	• 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

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FORMULARY – Magnesium Sulfate

Magnesium Sulfate	($MgSO_4$)
Classification:	Antidysrhythmic, Electrolyte
Actions:	Controls ventricular response rate. Increases the movement of potassium into cells. Blocks the release of acetylcholine.
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:	○ Hypersensitivity ○ Sinus bradycardia ○ Hypermagnesemia
Adverse effects include but not limited to:	➢ Hypotension ➢ Hypertension ➢ Dysrhythmias ➢ Facial flushing ➢ Diaphoresis ➢ Depressed reflexes ➢ Bradycardia
Adult Administration: See Pharmacology Chart for specific dosing See Magnesium Sulfate Dosing Chart **Packaging Information:** (2 Grams/50 ml) Solution for injection	*Torsades De Pointe pulseless:* 2 GM over 1-2 minutes; online for further dosing *Torsades De Pointe with pulse:* 2 GM over 5-10 minutes; online for further dosing *Eclampsia:* 2 GM over 5 minutes; online for further dosing *Bronchoconstriction:* 2 GM over 20 minutes; online for further dosing
Pediatric Administration:	See Medication Administration Chart for weight-based dosing
Onset:	Immediate
Duration:	3-4 hours
Pregnancy Safety:	Category A
Precautions and Comments: **Used in SMO:** Pediatric Respiratory Distress/Arrest Pre-Eclampsia/Eclampsia Ventricular Fibrillation/Pulseless Ventricular Tachycardia Wide Complex Tachycardia Return to SMO Table of Contents Return to Formulary Table of Contents	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. *Formulary Magnesium Sulfate Page 1 of 1*

Magnesium Sulfate Administration Rate

Chart for 2 grams in 50 ml

Drops/ml setup	50 ml administered over __ minutes		
	5 minutes	10 minutes	20 minutes
10	100 drops/min	50 drops/min	25 drops/min
15	150 drops/min	75 drops/min	38 drops/min
20	200 drops/min	100 drops/min	50 drops/min

Indication	Dose
Shortness of breath with bronchoconstriction / wheezing	2 grams over 20 minutes
Polymorphic V-T, Torsade's de Pointes with a pulse	2 grams over 5-10 minutes
Torsade's de Pointes pulseless	2 grams over 1 - 2 minutes (may use 60 ml syringe and push over 1-2 minutes)
Eclampsia	2 grams over 5 minutes

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FORMULARY – Mark I Nerve Agent Kit (ChemPak)

Mark I Nerve Agent Kit	Chem Pak
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 O_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
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	Formulary: Mark I Nerve Agent Antidote Kit Page 2of 2
Mark I Nerve Agent Kit (continued)	Chem Pak
Onset:	Immediate – 15 minutes
Duration:	Half-life – 2-Pam 74-77 minutes; Atropine 10 minutes
Pregnancy Safety:	Category C
Precautions and Comments: See Resources for additional information on the Chem Pak	• 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.

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FORMULARY – Methylprednisolone (Solu-Medrol)

Methylprednisolone	Solu-Medrol
Classification:	Glucocorticoid
Actions:	Suppresses acute and chronic inflammation, potentiates vascular smooth muscle relaxation, and may alter airway hyperactivity.
Indications:	• Anaphylaxis • Persistent asthma • Unresponsive bronchospasm
Contraindications include but not limited to:	○ Known hypersensitivity
Adverse effects include but not limited to:	➢ Headache ➢ Hypertension ➢ Sodium and water retention ➢ Hypokalemia ➢ Alkalosis
Adult Administration: **Packaging Information:** (125 mg/2 ml) Accu-o-vial	125 mg IV/IO over 3-5 minutes When mixing shake gently until solution clears. Shaking faster will not speed up the process.
Pediatric Administration:	See Medication Administration Chart for weight-based dosing 2 mg/kg IV/IO up to maximum 125 mg
Onset:	1-2 hours
Duration:	8-24 hours
Pregnancy Safety:	Category C
Precautions and Comments: Pharmacology Chart **Used in SMO:** Anaphylaxis and Allergic Reaction Bronchospasm Pediatric Respiratory Distress/Arrest	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.

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FORMULARY – Metoclopramide (Reglan)

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

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FORMULARY – Metoprolol Tartrate (Lopressor)

Metoprolol Tartrate	Lopressor
Classification:	Beta-blocking agent
Actions:	Used to control ventricular response in supraventricular tachydysrhythmias (paroxysmal supraventricular tachycardia, atrial fibrillation, or atrial flutter).
Indications:	• Patients with suspected MI and unstable angina in the absence of contraindications
Contraindications include but not limited to:	○ Suspected cocaine use ○ Hemodynamically unstable patients ○ Bradycardia
Adverse effects include but not limited to:	➢ Bradycardia ➢ Hypotension ➢ Palpitations ➢ Nausea and vomiting
Adult Administration: **Packaging Information:** (5 mg/5 ml) Vial	5 mg slow, steady IV/IO push. Push each ml over one minute. Avoid pulse dosing.
Pediatric Administration:	Not recommended
Onset:	1-2 minutes
Duration:	3-4 hours
Pregnancy Safety:	Category C
Precautions and Comments: Pharmacology Chart **Used in SMO:** Chest Pain of Suspected Cardiac Origin Hypertensive Crisis	• Give slowing IV over 5 minutes • Use caution in patients with liver or renal dysfunction

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

FORMULARY – Midazolam (Versed)

Midazolam	Versed
Classification:	Short acting benzodiazepine, CNS depressant
Actions:	Reduces anxiety, depresses CNS function, and induces amnesia
Indications:	• Seizures • Agitation in intubated patient • Induction for Delayed Sequence Intubation
Contraindications include but not limited to:	○ Hypotension ○ Shock ○ Coma ○ Alcohol intoxication ○ Depressed vital signs ○ Hypersensitivity
Adverse effects include but not limited to:	➢ Hypotension ➢ Respiratory depression or arrest ➢ Fluctuations in vital signs ➢ Hiccups/cough ➢ Headache ➢ Nausea/vomiting
Adult Administration: **Packaging Information:** (5 mg/ml) Vial	IV/IO/IM: See Adult Medication Administration Chart for dosing IN – See Midazolam IN Dosing Chart
Pediatric Administration:	See Medication Administration Chart for weight-based dosing IN: See Midazolam IN Dosing Chart
Onset:	IV/IO: 3-5 minutes, dose dependent
Duration:	2-6 hours, dose dependent
Pregnancy Safety:	Category D
Precautions and Comments: Pharmacology Chart **Used in SMO:** Bradycardia Excited Delirium Intranasal Medications (MAD Device) Narrow Complex Tachycardia Pain Management Pediatric Tachycardia Pediatric Seizure Pre-Eclampsia/Eclampsia Seizures Stroke Wide Complex Tachycardia	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 $EtCO_2$, if available. Return to SMO Table of Contents Return to Formulary Table of Contents

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

FORMULARY – Morphine Sulfate

Morphine Sulfate	
Classification:	Narcotic analgesic
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.
Indications:	• Moderate to severe pain • Pain associated with transcutaneous pacing • Chest pain
Contraindications include but not limited to:	○ Patients with altered level of consciousness ○ Pain of unknown etiology ○ Patients at risk of respiratory depression ○ Head injury ○ Hypovolemia ○ Blood pressure <100 ○ Multi-system trauma
Adverse effects include but not limited to:	➢ Respiratory depression ➢ Hypotension ➢ Seizures ➢ Bradycardia ➢ Altered mental status
Adult Administration: **Packaging Information:** (10 mg/1 ml) Pre-filled syringe Restocking requires 222 form	See Adult Medication Administration Chart for dosing IN - *Fentanyl is the preferred analgesic agent for intranasal delivery due to absorption and bioavailability concerns with Morphine*
Pediatric Administration:	See Medication Administration Chart for weight-based dosing
Onset:	Immediate if given IV; 5-30 minutes if given IM
Duration:	3-5 hours
Pregnancy Safety:	Category C
Precautions and Comments: Pharmacology Chart **Used in SMO:** Intranasal Medications/MAD Device Narrow Complex Tachycardia Pain Management	Return to SMO Table of Contents *Formulary: Morphine Page 1 of 1* Return to Formulary Table of Contents

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FORMULARY – Naloxone Hydrochloride (Narcan)

Naloxone Hydrochloride	Narcan
Classification:	Opioid antagonist
Actions:	Reverses the effects of narcotics by competing for opiate receptor sites in the central nervous system.
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: Narcan Standard Dosing Chart **Packaging Information:** (2 mg/2 ml) Pre-filled syringe	IV: 0.4 mg in 1 minute increments slow IV push titrated to effect to maximum of 2 mg per dose. May repeat as needed to maximum dose. IN: 2 mg to maximum of 1 mL per nostril. May repeat as needed to maximum dose. IM: 1-2 mg if unable to establish IV. May repeat as needed to maximum dose. 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
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Onset:	Within 2 minutes
Duration:	20-30 minutes
Pregnancy Safety:	Category B
Precautions and Comments: Pharmacology Chart **Used in SMO:** Alcohol Related Emergencies Adult Altered Mental Status Asystole/PEA Behavioral Emergencies Intranasal Medication/MAD Device Pain Management Pediatric Altered Mental Status Pediatric Seizure Pediatric Toxic Exposure Poisoning and Overdose Syncope	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.

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FORMULARY – Nitroglycerine

Nitroglycerine	
Classification:	Vasodilator
Actions:	Decreases the workload of the heart and lowers myocardial oxygen demand.
Indications:	• Ischemic chest pain • Pulmonary edema • Congestive heart failure • AMI
Contraindications include but not limited to:	○ Volume depletion ○ Hypotension ○ Head injury ○ Symptomatic bradycardia ○ Symptomatic tachycardia ○ Right ventricular infarction ○ Cerebral hemorrhage ○ Recent use of Cialis, Levitra, or Viagra ○ Aortic stenosis
Adverse effects include but not limited to:	➢ Transient headache ➢ Tachycardia ➢ Hypotension ➢ Nausea/vomiting ➢ Postural syncope ➢ Diaphoresis ➢ Flushing
Adult Administration: **Packaging Information:** (0.4 mg SL Tablet) Bottle	SL: 0.4 mg (1 tab) – may repeat every 5 minutes to up to 3 doses. Contact Medical Control for any additional doses.
Pediatric Administration:	Not recommended
Onset:	1-3 minutes
Duration:	30-60 minutes
Pregnancy Safety:	Category C
Precautions and Comments: Pharmacology Chart **Used in SMO:** Chest Pain of Suspected Cardiac Origin Pulmonary Edema	• 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

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FORMULARY – Ondansetron (Zofran)

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: **Packaging Information:** (4 mg/ml) Vial (4 mg) ODT	4 mg IV/IO/IM/ODT – IV over 30 seconds or more. IV is the preferred route of administration.
Pediatric Administration:	See Medication Administration Chart for weight-based dosing **Tablet dosing: 1 mg/10 kg up to 4 mg** **Patients 4 years old to adult (>34 kg):** 4 mg IV/IO/IM – IV over 30 seconds or more. May repeat once 10 minutes after initial dose. **Patients 1 year old to 4 years old**: 2 mg IV/IO/IM – IV over 30 seconds or more. May repeat once 10 minutes after initial dose. (For this age group use IV/IO/IM only) Contact Medical Control for patients <1 year old.
Onset:	Up to 30 minutes with usual response in 5-10 minutes
Duration:	Half-life is four hours
Pregnancy Safety:	Category B
Precautions and Comments: Pharmacology Chart **Used in SMO:** Abdominal Pain Routine Medical Care	Administer slowly (over at least 30 seconds) in order to avoid hypotension. Use with caution in patients with hepatic impairment. Tablets are not able to be divided.

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FORMULARY – Oral Glucose

Oral Glucose	
Classification:	Monosaccharide carbohydrate
Actions:	After absorption from GI tract, glucose is distributed in the tissues and provides a rapid increase in circulating blood sugar.
Indications:	Suspected or known hypoglycemia
Contraindications:	Patient who is not able to follow commands
Adverse effects include but not limited to:	• Nausea/vomiting • Aspiration • Hyperglycemia
Adult Administration:	15 GM/37.5 GM tube Alternative: Glucose tablets – 15-20 GM PO. Recheck blood sugar in 15 minutes. If BS still below 80 mg/dL and/or exhibiting signs/symptoms of hypoglycemia another 15-20 GM may be administered.
Pediatric Administration:	Up to 15 GM as tolerated Alternative: Glucose tablets – tablets are not recommended for patients who cannot protect their airway or of an appropriate age to swallow a tablet.
Onset:	5-10 minutes
Duration:	Variable
Pregnancy Safety:	Category A
Precautions and Comments: Pharmacology Chart **Used in SMO:** Adult Altered Mental Status Diabetic Emergencies Pediatric Altered Mental Status Pediatric Seizure Pediatric Toxic Exposure Poisoning and Overdose Seizure and Status Epilepticus Syncope	Not a substitute for IV dextrose in extreme cases of hypoglycemia (blood sugar <40) unless IV access is unobtainable.

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FORMULARY – Oxygen

Oxygen	O_2
Classification:	Naturally occurring atmospheric gas
Actions:	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.
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.

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FORMULARY – Prochlorperazine (Compazine)

Prochlorperazine	Compazine
Classification:	Phenothiazine antiemetic
Actions:	Antiemetic
Indications:	• Nausea and vomiting
Contraindications include but not limited to:	○ CNS depression ○ Severe liver or cardiac disease ○ 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: **Packaging Information:** (5 mg/ml) Pre-filled syringe	IV: 5 mg slow (5 mg per minute); may repeat one time IM: 5 mg
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: Pharmacology Chart **Used in SMO:** Abdominal Pain Routine Medical Care	**Use as alternative to Ondansetron shortages only** • Use caution in patients with respiratory disease, diabetes mellitus, and epilepsy

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FORMULARY – Rocuronium Bromide

Rocuronium Bromide	
Classification:	Non-depolarizing neuromuscular blocking agent
Actions:	Acts by competing for cholinergic receptors at the motor end-plate
Indications:	Used as paralytic agent for Delayed Sequence Intubation
Contraindications include but not limited to:	○ Hypersensitivity to neuromuscular blocking agents ○ Known neuromuscular disease
Adverse effects:	➢ Transient hypotension or hypertension
Adult Administration: **Packaging Information:** (10 mg/ml) Vial	See Adult Medication Administration Chart for dosing
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: Pharmacology Chart **Used in SMO:** Delayed Sequence Intubation	Patient must be on monitoring devices when a paralytic is administered, including: • Continuous ECG • $EtCO_2$ • Blood pressure • SaO_2 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. Rocuronium is used as a backup paralytic agent. Preferred paralytic is Succinylcholine.

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FORMULARY – Sodium Bicarbonate

Sodium Bicarbonate	$NaHCO_3$
Classification:	Alkalinizing agent
Actions:	Combines with hydrogen ions to form carbonic acid and increase blood pH
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: **Packaging Information:** (5 mEq/10 ml) Pre-filled syringe	See Adult Medication Administration Chart for dosing
Pediatric Administration:	See Medication Administration Chart for weight-based dosing
Onset:	Immediate
Duration:	30-60 minutes
Pregnancy Safety:	Category C
Precautions and Comments: **Used in SMO:** Asystole/PEA Crush Syndrome Excited Delirium Pediatric Toxic Exposure Poisoning and Overdose Ventricular Fibrillation/Pulseless Ventricular Tachycardia	Flush IV tubing before and after administration. Maintain adequate ventilation. Pharmacology Chart Return to SMO Table of Contents *Formulary: Sodium Bicarbonate Page 1 of 1* Return to Formulary Table of Contents

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FORMULARY – Sodium Chloride (Normal Saline)

Sodium Chloride 0.9%	Normal Saline
Classification:	Isotonic solution
Actions:	Replaces fluid and electrolytes lost from the intravascular and intracellular spaces
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: Abdominal Pain Asystole/PEA Bradycardia Burns Cardiogenic Shock Central Line/Port-A-Cath Access Crush Syndrome Delayed Sequence Intubation Excited Delirium Gynecological Hemorrhage Hyperthermia Hypothermia Adult Intubation Narrow Complex Tachycardia Pediatric Anaphylaxis and Allergic Reaction Pediatric Altered Mental Status Pediatric Burns Pediatric Head Trauma Pediatric Seizure Pediatric Shock Pediatric Trauma Trauma in Pregnancy Routine Medical Care Routine Pediatric Care	**Used in SMO (continued):** Sepsis Shock/Hemorrhagic Fluid Resuscitation Special Needs Patients Stroke Syncope Transcutaneous Pacing Traumatic Arrest
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FORMULARY – Succinylcholine Chloride (Anectine)

Succinylcholine Chloride	Anectine
Classification:	Neuromuscular blocker (depolarizing)
Actions:	The quickest onset and briefest duration of all neuromuscular blocking agents.
Indications:	To facilitate intubation
Contraindications include but not limited to:	○ Hyperkalemia ○ Hypersensitivity ○ Inability to control airway and/or support ventilations with oxygen and positive pressure ○ 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: **Packaging Information:** (20 mg/ml) Vial	See Adult Medication Administration Chart for dosing
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: Pharmacology Chart **Used in SMO:** Delayed Sequence Intubation	Neuromuscular blocking agents will produce respiratory paralysis. Intubation and ventilatory support must be readily available. If the patient is conscious, explain the effects of the medication before administration. An induction agent should be used in any conscious patient before undergoing neuromuscular blockade. Pre-medicating with Lidocaine may blunt any increase in intracranial pressure associated with intubation.

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FORMULARY – Tetracaine Hydrochloride

Tetracaine Hydrochloride	
Classification:	Topical ophthalmic anesthetic
Actions:	Rapid, brief anesthesia that inhibits conduction of nerve impulses from sensory nerves.
Indications:	• Short-term relieve from eye pain or irritation • Patient comfort before eye irrigation
Contraindications include but not limited to:	○ Hypersensitivity to the drug ○ Open injury to the eye
Adverse effects include but not limited to:	➢ Burning or stinging sensation ➢ Irritation
Adult Administration: **Packaging Information:** (20 mg/4 ml) Eye Drops	1-2 drops
Pediatric Administration:	1-2 drops
Onset:	Within 30 seconds
Duration:	10-15 minutes
Pregnancy Safety:	Category C
Precautions and Comments: Pharmacology Chart **Used in SMO:** Ophthalmic Trauma	Tetracaine can cause epithelial damage and systemic toxicity. Incompatible with mercury or silver salts often found in ophthalmic products.

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FORMULARY – Tranexamic Acid (Cyklokapron)

Tranexamic Acid	Cyklokapron
Classification:	Synthetic amino acid (lysine)
Actions:	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.
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:	○ Injuries > 3 hours old ○ Evidence of Disseminated Intravascular Coagulation (DIC) ○ Patients < 14 years old ○ Hypersensitivity to the drug
Adverse effects include but not limited to:	For patients with DIC there may a variety of signs/ symptoms: ➢ Signs of stroke, such as speech and movement problems ➢ Swelling of legs and/or redness and warmth ➢ Shortness of breath ➢ Chest pain or MI ➢ Petechiae
Adult Administration: **Packaging Information:** (1000 mg/10 ml) Vial	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: Pharmacology Chart **Used in SMO:** Shock/Hemorrhagic Fluid Resuscitation	• 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

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FORMULARY – Vecuronium

Vecuronium	Norcuron
Classification:	Non-depolarizing neuromuscular blocker
Actions:	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.
Indications:	• Facilitate intubation
Contraindications include but not limited to:	○ Inability to control airway and/or support ventilations ○ Bradycardia ○ Dysrhythmias ○ Hypotension ○ Muscular disease
Adverse effects include but not limited to:	➢ Rare hypersensitivity reactions (bronchospasm, flushing, erythema, urticaria, hypotension, sinus tachycardia).
Adult Administration: **Packaging Information:** (10 mg Powder) Vial	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:** Delayed Sequence Intubation	Vecuronium is used as a backup paralytic agent. Preferred paralytic is Succinylcholine.

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

FORMULARY – References – Intranasal (IN) Dosing for Fentanyl

Fentanyl 50 µg/ml IN Dosing Chart

Notes:

* 2-3 µg/kg
* Administer 1/2 dose per nare
* 1/4 to 1/2 ml is ideal
* Volumes >2 ml may be titrated with 2nd dose 5-10 minutes later
* Monitor for respiratory depression
* May repeat 1/2 dose every 5-10 minutes until desired effect achieved

Patient Weight KG	Fentanyl dose µg	Fentanyl Dose ml
3-5 kg	10	0.3
6-10 kg	20	0.5
11-15 kg	30	0.7
16-20 kg	40	0.9
21-25 kg	50	1.1
26-30 kg	60	1.3
31-35 kg	70	1.5
36-40 kg	80	1.7
41-45 kg	90	1.8
46-50 kg	100	2.0
51-55 kg	110	2.3
56-60 kg	120	2.5
61-70 kg	140	2.9
71-80 kg	160	3.3
81-90 kg	180	3.7
91 kg or greater	200	4.0

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

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

FORMULARY – References – Intranasal (IN) Dosing for Midazolam

Midazolam IN Dosing Chart

Age	Weight KG	Volume ml
Neonate	3	0.3
<1	6	0.4
1	10	0.5
2	14	0.7
3	16	0.8
4	18	0.9
5	20	1
6	22	1
7	24	1.1
8	26	1.2
9	28	1.3
10	30	1.4
11	32	1.4
12	34	1.5
Small Teen	40	1.8
Adult	>50	2

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FORMULARY – References – Region I Medication Restocking Form

MEDICATIONS: EMS RESTOCKING

Patient Name:_____
Account Number:_____
Agency:_____
Ambulance Number:_____
Signature:_____

Quantity	Name: Generic	Name: Trade	Strength & unit of use	Recommended Par Level/Max
	Adenosine	Adenocard	6 mg/2 ml Syringe	18 mg
	Albuterol 0.083%	Proventil or Ventolin	2.5 mg/3 ml Neb	5 mg
	Albuterol/Ipratropium	DuoNeb	2.5 mg/0.5 mg/3 ml Neb	5/1 mg
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
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	Name: Generic	Name: Trade	Strength & unit of use	Recommended Par Level/Max
	Ipratropium 0.02%	Atrovent	0.5 mg/2.5 ml Neb	2 mg
	Ketamine IM	Ketalar	500 mg/5 ml Vial	500 mg (max 500 mg)
	Ketamine IV	**Ketalar**	**200 mg/20 ml Vial**	**200 mg (200 mg max)**
	Ketorolac	Toradol	15 mg/ml Vial	45 mg
	Lidocaine 2%	Xylocaine	100 mg/5 ml Syringe	300 mg
	Lorazepam	**Ativan**	**2 mg/ml Vial/Syringe**	**8 mg (30 mg max)**
	Magnesium Sulfate	$MgSO_4$	2 GM/50 ml	2 GM
	Methylprednisolone	Solu-Medrol	125 mg/2 ml Act-O-Vial	125 mg
	Metoprolol Tartrate	Labetalol	5 mg/5ml Vial	15 ml
	Midazolam	Versed	5 mg/ml Vial	30 mg (30 mg max)
	Morphine Sulfate		10 mg/ml Syringe	20 mg (20 mg max)
	Naloxone	Narcan	2 mg/2 ml Syringe	16 mg
	Nitroglycerin	Nitrostat	0.4 mg SL Tablet	2 bottles
	Ondansetron	Zofran	4 mg/2 ml Vial	8 mg
	Ondansetron	Zofran ODT	4 mg ODT	8 mg
	Rocuronium	**Zemuron**	**10 mg/ml Vial**	**150 mg (150 mg max)**
	Sodium Bicarbonate	$NaCHO_3$ 8.4%	50 meq/50 ml Syringe	150 meq
	Sodium Chloride	NaCl 0.9%	10 ml Syringe	100 ml
	Sodium Chloride	NaCl 0.9%	100 ml Sealed bag	200 ml
	Sodium Chloride	NaCl 0.9%	500 ml Bag	1000 ml
	Sodium Chloride	NaCl 0.9%	1000 ml Bag	2000 ml
	Succinylcholine	Anectine	200 mg/10 ml Vial	200 mg (400 mg max)
	Tetracaine 0.5% eye drops	Pontacaine OP 0.5%	20 mg/4 ml Eye Drops	4 ml
	Tranexamic Acid (TXA)	Cyklokapron	1000 mg/10 ml Vial	1000 mg
	Vecuronium	**Norcuron**	**10 mg Powder Vial**	**30 mg (30 mg max)**
	Mercyhealth Additional Medications			
	Calcium Chloride 10% Solution		1 GM/10 ml preload syringe	
	Diltiazem	Cardizem	5 mg/ml – 5 ml vial	
	Hydromorphone	Dilaudid	1 mg/ml	
	Magnesium Sulfate 50%		5 GM/10 ml preload syringe or 2 GM bags	

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FORMULARY – References – Key to Controlled Substances Categories

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.

Category	Interpretation
II	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.
III	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.
IV	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.
V	Subject to state and local regulation. Abuse potential is low. A prescription may not be required.

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FORMULARY – References – Key to FDA Use-In-Pregnancy Ratings

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.

Category	Interpretation
A	**Controlled studies show no risk**. Adequate, well-controlled studies in pregnant women have failed to demonstrate risk to the fetus.
B	**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.
C	**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.
D	**Positive evidence of risk.** Investigational or post-marketing data show risk to the fetus. Nevertheless, potential benefits may outweigh the potential risk.
X	**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.

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FORMULARY – References – Formulary Abbreviations

	FORMULARYABBREVIATIONS*	
* This list of abbreviations only covers this Prehospital Formulary.	ADR	Adverse Drug Reaction
	ASA	Aspirin
	BP	Blood pressure
	BPM	Beats per minute
	BS	Blood sugar
	CNS	Central nervous system
	dL	Deciliter
	ECG	Electrocardiogram
	ET	Endotracheal
	GCS	Glasgow Coma Scale
	GI	Gastrointestinal
	gm or GM or G	Gram
	gtt(s) or Gtt(s)	Drop(s)
	HR	Heart rate
	IM	Intramuscularly
	IN	Intranasal
	IO	Intraosseous
	IV	Intravenous
	IVP	Intravenous push
	kg	Kilogram
	lb	Pound
	L	Liter
	LOC	Level of consciousness
	MAO	Monoamine oxidase
	mcgtt	Microdrip
	mEq or meq	Milliequivalent
	mg	Milligram
	NS	Normal Saline
	OD	Overdose
	OPP	Organophosphate poisoning
	PEA	Pulseless electrical activity
	PO	By mouth
	PVC	Premature ventricular contraction
	Sub-Q or subq	Subcutaneous
	U	Unit
	µg	Microgram

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FORMULARY – References – Chem Pak Information

Treatment Capacity:	454 Patients	
Medication	Unit Pack	Number of Cases
Mark I auto-injector	240	5
Atropine Sulfate 0.4 mg/ml 20 mL	100	1
Pralidoxime 1 GM injection 20 mL	276	1
Atropen 0.5 mg	144	1
Atropen 1.0 mg	144	1
Diazepam 5 mg/mL auto-injector	150	2
Diazepam 5 mg/mL Vial 10 mL	25	2
Sterile Water for injection 20 mL vials	100	2

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FORMULARY – References – Mark I Auto Injector – Atropine/Pralidoxime

Mark I Auto Injector	Atropine/Pralidoxime
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 O_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 Atropine: 10 minutes
Pregnancy Safety:	Category C
Return to Formulary Table of Contents	*Formulary Reference Material Mark I Auto-Injector Page 1 of 2* *Formulary: Chem Pack Page 2 of 7*

Precautions and Comments:	*Formulary Reference Material Mark I Auto-Injector Page 2 of 2* • 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.

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FORMULARY – References – Chem Pak – Atropine Sulfate

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 O_2 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: Return to SMO Table of Contents Return to Formulary Table of Contents	**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 Formulary: Chem Pak Page 4 of 7*

Pediatric Administration (continued):	*Formulary Resources Chem Pack – Atropine Page 2 of 2* 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
Onset:	2-5 minutes
Duration:	20 minutes
Pregnancy Safety:	Category C
Precautions and Comments:	Atropine should be given prior to 2-Pam.

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FORMULARY – References – Chem Pak – Pralidoxime Chloride (2-Pam)

Chem Pack – Pralidoxime	2-Pam, Protopam
Classification:	Cholinesterase reactivator
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.

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FORMULARY – References – Chem Pak – Diazepam (Valium)

Chem Pack – Diazepam

Classification:	Benzodiazepine	
Actions:	Decreases neurologic activity Skeletal muscle relaxant Amnesic	
Indications:	Seizures as a result of nerve agent exposure	
Contraindications:	○ Hypersensitivity to benzodiazepines ○ Myasthenia gravis	
Adverse Effects:	➢ Drowsiness ➢ Fatigue ➢ Ataxia ➢ Confusion ➢ Constipation ➢ Depression ➢ Diplopia ➢ Dysarthria ➢ Headache ➢ Hypotension	➢ Incontinence ➢ Jaundice ➢ Nausea ➢ Rash ➢ Tremor ➢ Urinary retention ➢ Vertigo ➢ Blurred vision ➢ Anxiety ➢ Injection site reaction
Onset:	1-5 minutes	
Duration:	15 minutes to 1 hour	
Pregnancy Safety:	Category D	
Precautions and Comments:	Use caution with elderly patients or patients that are under the influence of CNS depressants. Diazepam does not prevent seizures; do not give prophylactically.	

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REGION I EMERGENCY MEDICAL SERVICES

Emergency Medical Responder
Standing Medical Orders

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EMS/ Region1 SMO

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Emergency Medical Responder
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General Guidelines

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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 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.

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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.

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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.

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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.

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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 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.

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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

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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

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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

IDPH POLST form	**P**ractitioner **O**rders for **L**ife **S**ustaining **T**reatment; provides guidance during life-threatening emergencies. Must be followed by all healthcare providers
Power of Attorney for Healthcare	Names agent: rarely contains directions for authorized practitioner
Mental Health Treatment Declaration	Directions + Agent (for authorized practitioner)
Living Will	Directions for authorized practitioner (NOT EMS)

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 (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 from presentation, follow form instructions after order validity is confirmed.
9. If orders disputed or questionable contact Medical Control and explain the situation, follow orders received.

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

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

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

Hospice Patients not in cardiac/respiratory arrest:

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

Documentation of adherence to SMO

- Documentation of the patient assessment and condition
- Documentation of valid POLST/DNR form
- Document any issues or concerns with the call
- Document all contact with Medical Control
- Document whom the patient/ deceased has been transferred to

HIPAA PERMITS DISCLOSURE OF POLST TO HEALTH CARE PROFESSIONALS AS NECESSARY FOR TREATMENT

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State of Illinois
Illinois Department of Public Health

IDPH UNIFORM PRACTITIONER ORDER FOR LIFE-SUSTAINING TREATMENT (POLST) FORM

For patients, use of this form is completely voluntary. Follow these orders until changed. These medical orders are based on the patient's medical condition and preferences. Any section not completed does not invalidate the form and implies initiating all treatment for that section. With significant change of condition new orders may need to be written.

Patient Last Name	Patient First Name	MI
Date of Birth (mm/dd/yy)	Gender ❑ M ❑ F	
Address (street/city/state/ZIPcode)		

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

Check One

❑ **Attempt Resuscitation/CPR** ❑ **Do Not Attempt Resuscitation/DNR**

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

When not in cardiopulmonary arrest, follow orders B and C.

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

Check One (optional)

❑ **Full Treatment: Primary goal of sustaining life by medically indicated means.** In addition to treatment described in Selective Treatment and Comfort-Focused Treatment, use intubation, mechanical ventilation and cardioversion as indicated. *Transfer to hospital and/or intensive care unit if indicated.*

❑ **Selective Treatment: Primary goal of treating medical conditions with selected medical measures.** In addition to treatment described in Comfort-Focused Treatment, use medical treatment, IV fluids and IV medications (may include antibiotics and vasopressors), as medically appropriate and consistent with patient preference. Do Not Intubate. May consider less invasive airway support (e.g. CPAP, BiPAP). *Transfer to hospital, if indicated. Generally avoid the intensive care unit.*

❑ **Comfort-Focused Treatment: Primary goal of maximizing comfort.** Relieve pain and suffering through the use of medication by any route as needed; use oxygen, suctioning and manual treatment of airway obstruction. Do not use treatments listed in Full and Selective Treatment unless consistent with comfort goal. ***Request transfer to hospital only if comfort needs cannot be met in current location.***

Optional Additional Orders _____

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

Check One (optional)

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

Additional Instructions (e.g., length of trial period) _____

D — DOCUMENTATION OF DISCUSSION (Check all appropriate boxes below)

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

Signature of Patient or Legal Representative

Signature *(required)*	Name (print)	Date

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

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

Signature *(required)*	Name (print)	Date

E — Signature of Authorized Practitioner (physician, licensed resident (second year or higher), advanced practice nurse or physician assistant)

My signature below indicates to the best of my knowledge and belief that these orders are consistent with the patient's medical condition and preferences.

Print Authorized Practitioner Name *(required)*	Phone ( ) _____ - _____
Authorized Practitioner Signature *(required)*	Date *(required)*

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Form Revision Date - April 2016 (Prior form versions are also valid.)

SEND A COPY OF FORM WITH PATIENT WHENEVER TRANSFERRED OR DISCHARGED • COPY ON ANY COLOR OF PAPER IS ACCEPTABLE • 2016

HIPAA PERMITS DISCLOSURE OF POLST TO HEALTH CARE PROFESSIONALS AS NECESSARY FOR TREATMENT

IDPH POLST ■ IDPH POLST ■ IDPH POLST ■ IDPH POLST ■ IDPH POLST ■ IDPH POLST ■ IDPH POLST ■ IDPH POLST ■ IDPH POLST ■ IDPH POLST ■ IDPH POLST ■ IDPH POLST

****THIS SIDE FOR INFORMATIONAL PURPOSES ONLY****

Patient Last Name	Patient First Name	MI

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

Advance Directive Information

I also have the following advance directives (OPTIONAL)

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

Contact Person Name	Contact Phone Number

Health Care Professional Information

Preparer Name	Phone Number
Preparer Title	**Date Prepared**

Completing the IDPH POLST Form

- **The completion of a POLST form is always voluntary, cannot be mandated and may be changed at any time.**
- A POLST should reflect current preferences of persons completing the POLST Form; encourage completion of a POAHC.
- Verbal/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
- or there is a substantial change in the patient's health status, or
- or the patient's treatment preferences change, or
- 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.
- Draw line through sections A through E and write "VOID" across page if any POLST form is replaced or becomes invalid. Beneath the written "VOID" write in the date of change and re-sign.
- If included in an electronic medical record, follow all voiding procedures of facility.

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

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

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

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

IOCI 16-425 Page 2

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REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
EMR

SMO: Notification of Coroner

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

Return to EMR Table of Contents

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

REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
EMR

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. Chest Pain due to acute coronary syndrome – See Chest Pain in EMR Medical Guidelines
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

Return to EMR Table of Contents

TREATMENT

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

Documentation of adherence to SMO

__ Patient's presenting signs and symptoms, including vital signs, level of consciousness and oxygen saturation. Oxygen administration
__ Indication for SMO use
__ Documentation of measures utilized to make patient more comfortable i.e. reassurance, position of comfort etc.
__ Repeat assessment and vital signs as indicated.
__ Changes from baseline, if any, that occur during treatment or transport

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

REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
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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.

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RN or NON-AGENCY EMS PROVIDER ON SCENE

__ An RN or non-agency EMS provider on scene may assist to the level of First Aid. If additional skill are needed (e.g. IV initiation) Medical Control MUST be contacted for permission to utilize this person in an expanded role.

__ An RN or non-agency EMS provider on scene must provide proof of State of Illinois licensure and a picture ID.

__ He/she must agree to follow the directions of the EMSMD or his/her designee.

Documentation of adherence to SMO

__Notification of Medical Control as outlined above.

__Any deviation from SMO as discussed with Medical Control.

__Documentation of name, State of Illinois license number, and picture ID produced as outlined above.

Medical Control Contact Criteria

__ Immediately upon scene physician's request to assume responsibility at the scene.

__ If any question exists as to best treatment option for the patient.

PRECAUTIONS AND COMMENTS

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

EMS REGION 1

ON-SITE PHYSICIAN RESPONSIBILITY ACKNOWLEDGMENT

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

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

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

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

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.) 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

Return to EMR Table of Contents

REGION I EMERGENCY MEDICAL SERVICES
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SMO: Refusal of Medical Care or Transport

Overview: Generally an Emergency Medical Responder will not execute patient refusals. This SMO is provided to be informational regarding the refusal process. In the event that there is not a higher level of care present and the patient insists on refusing transport the EMR should follow this SMO as closely as possible and contact Medical Control for any high-risk refusals.

This SMO relates to those cases in which EMS has been called and the patient/patients refuse to give their consent for assessment and/or treatment and/or transport and highlights the following:

- An adult patient with decision-making capacity has the right to refuse medical treatment. An adult patient with decision-making capacity, for the purpose of this SMO, is defined as:
  - Oriented to person, place, time, and event
  - No suspicion of being under the influence of drugs or alcohol
- An adult patient cannot refuse emergency treatment if that patient has decreased level of consciousness or, in EMS personnel's judgment, cannot make competent decisions related to their emergency care.
- A patient is considered high risk for signing a refusal under the following circumstances:
  - Concern with decision-making capacity
  - A minor with no legal guardian available
  - Suspected high risk medical conditions, such as:
    - Chest pain
    - Syncope
    - Altered Mental Status
    - Stroke/TIA
    - Abnormal vital signs
    - EMS provider impression
- All patients who refuse care must be encouraged to sign a Region One Prehospital Refusal form (or a form mandated by the agency's EMS MD).

OBJECTIVE FINDINGS
__ Adult patient is conscious and competent
__ Patient injuries
__ Vital signs
__ SAMPLE history

Refusal of Treatment by Competent Adult Patients

__Patients have the right to refuse treatment and/or transport

__The patient will be informed of the risk of refusal and possibility of deterioration of medical condition, up to and including death

__Attempt to assess vital signs and SAMPLE history if possible

__For high risk refusals, as defined above:

- Consider contacting Medical Control
- Attempt to leave patient in care of a responsible party
- Provide post refusal instructions as indicated
- Inform patient to call back if conditions changes or decision to refuse treatment is reconsidered

__Once the allowed assessment is performed, and the patient persists in refusing care and/or transport, the patient will be asked to sign the Region One Prehospital Refusal form (or a form mandated by the agency's EMS MD). The refusal form must also be signed by the EMT and by one other witness (preferably law enforcement or family) if available.

Multiple Victims Refusal of Consent for Treatment

__To ensure the efficient use of resources, if an incident is declared an MVI or Disaster by the on scene commander, a reasonable/ common sense approach should be used and provider safety must be considered. If mechanism of the incident indicates the potential for victims or the Incident Commander has declared an MVI or Disaster, and the patients are refusing treatment, the Region One Multiple Victim Release Form may be completed in lieu of individual Patient Refusal Form.

__One EMS Run Report must be completed and a copy of the Multiple Victim Release form must be attached to the Run Report.

Minor in Need of Emergency Care who Refuses Treatment

__All reasonable attempts should be made to release a minor to a legal guardian. If a legal guardian cannot be located document attempts made to contact.

- Minor may be turned over to local police or juvenile authority, or
- Minor may be released if legal guardian is contacted by phone and consent for release is given. Document phone call, name of guardian, and witness.

__If the need for emergency care exists or if the behavior of the patient suggests a lack of capacity to make a refusal in a valid manner continue to render care, up to and including transport.

Post-Treatment Refusals

This section applies to when treatment has been given by EMS and the patient considers their condition improved to the point that they refuse transport, such as:

- Hypoglycemic patient
- Overdose patient
- Asthma/respiratory
- Chest pain
- Syncope
- Pain control

Important points to discuss with patient before obtaining refusal:

- EMS evaluation and/or treatment is not a substitute for medical evaluation and treatment by a doctor. EMS will advise the patient to see a doctor or go to a hospital. The patient will be given the Discharge Instruction Form. EMS will circle the appropriate potential diagnosis with the patient and document this discussion on the refusal form.
- If patient's condition was discussed with Medical Control on scene, inform them that this also does not substitute for medical evaluation.
- Patient's condition may be worse than originally evaluated. Without treatment, patient's condition or problem could become worse.
- If patient changes their mind or condition becomes worse, patient should be made aware that they may call 911 and EMS will respond as always.

Medical Control Contact Criteria
__ Contact Medical Control whenever a question exists as to the best treatment course for the patient __ Issues regarding decision-making capacity of patients should be managed directly with Medical Control __ Contact Medical Control if there is a question regarding need for evaluation/ treatment (based on mechanism of injury, etc.)

PRECAUTIONS AND COMMENTS

- Important points to discuss with patient before obtaining refusal:
  - EMS evaluation and/or treatment is not a substitute for medical evaluation and treatment by a doctor. EMS will advise the patient to see a doctor or go to a hospital. If patient's condition was discussed with Medical Control on scene, inform them that this also does not substitute for medical evaluation.
  - Patient's condition may be worse than originally evaluated. Without treatment, patient's condition or problem could become worse.
  - If patient changes their mind or condition becomes worse, patient should be made aware that they may call 911 and EMS will respond as always.
- FOR MINORS: Instruct the patient's legal guardian that in this situation, they are acting on behalf of the patient and they understand the above information regarding refusal of treatment or transport, and accept responsibility for the patient.
- Certain injuries, illnesses, ingestions, or injected substances can alter behavior and create a situation whereby the capacity to make a valid judgment by the patient no longer exists. It is better to treat and prevent any further harm to the patient who may not be able to judge his/her own condition.
- The State of Illinois permits Emancipated Minors to be treated as adults and therefore allows them to make the decision regarding consent for treatment or refusal of services.

REGION 1 EMERGENCY MEDICAL ORDERS
STANDING MEDICAL ORDERS
EMR

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 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

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PRECAUTIONS AND COMMENTS

- At no point should EMS personnel place themselves in danger. Additional manpower should be requested as needed.
- In emergency situations, an EMR may initiate application of restraints in the absence of an order from Medical Control.
- Explain the procedure to the patient (and the family) if possible. The team leader should be the one communicating with the patient.
- If attempts at verbally calming the patient have failed and the decision is made to use restraints, do not waste time bargaining with the patient.
- Remember to remove any equipment from your person which can be used as a weapon against you (i.e. trauma shears).
- Approach the patient, keeping the team leader near the head to continue communications and at least one person on each side.
- Always keep the patient informed of why the restraints are being used.
- Soft, disposable restraints are preferred for EMS use.
- No hog-tying or hobble restraints allowed. No "sandwiching" with long boards or scoop stretchers.

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 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 patent should be left on a restriction device for transport using guideline noted in this SMO.

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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

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.

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REGION I EMERGENCY MEDICAL SERVICES

Medical and Trauma Emergencies
For
Emergency Medical Responders

SMO	Section	Notes
Airway Management - Adult	Adult Medical	
EMR Medical Emergencies	Adult Medical	New
Routine Medical Care	Adult Medical	
BDLS/ADLS Triage Method	Trauma	
EMR Trauma Emergencies	Trauma	New
Routine Trauma Care	Trauma	
Triage Categorization of Patients	Trauma	

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SMO: Airway Management - Adult

Overview: Managing a patient's airway may be necessitated due to upper or lower airway obstruction, inadequate ventilation, impairment of the respiratory muscles, ventilation-perfusion mismatching, diffusion abnormalities, or impairment of the nervous system. Dyspnea often is associated with hypoxia.

INFORMATION NEEDED

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

OBJECTIVE FINDINGS

__Mental status (AVPU)
__Airway patency (head-tilt chin lift OR modified jaw thrust for unconscious patient or if C-spine trauma is a possibility)
__Oxygenation and Circulatory status (pulse oximetry, vital signs)

TREATMENT

__ Assess airway patency utilizing adjuncts as indicated
__ Oxygen as indicated for patient condition. Maintain SpO2 levels in the 94% to 99% if possible.
- Nasal cannula (2-6 L/min) for awake, oriented, stable patients without evidence of hypoperfusion
- High flow via nonrebreather mask (10-15 L/min)
- Assist ventilations with BVM and 100% oxygen if indicated.

__ Manage Foreign Body Airway Obstruction per American Heart Association standards
__ Assess airway patency utilizing adjuncts as indicated
- OPA
- NPA
- System approved Supraglottic Airway (per manufacturers guidelines)

TREATMENT (continued)

__ Confirm advanced airways and document with the following:

- Auscultation
- Absence of gastric sounds
- Bi-lateral chest rise

Documentation of adherence to SMO

__ Indications for airway management
__ Methods utilized
__ Confirmation details
__ Patient condition reassessed

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

PRECAUTIONS AND COMMENTS

- Utilize BLS methods for maintaining airway patency and good ventilations and reassess patient's oxygenation and ventilatory status BEFORE utilizing supraglottic airway methods, particularly in pediatric patients. Benefits of intubation not demonstrated well in pediatrics.

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.
3. Perform a brief assessment of the patient's responsiveness.
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 if the follow:
   __Altered mental status
   __Hypotension (SBP < 90 and evidence of hypoperfusion)
   __Bronchospasm (difficulty breathing / wheezing)
   __Swelling of the face and/or airway
3. Administer **Epinephrine Autoinjector**
   - **Epi JR. 0.15mg** for children weighing 33 pounds (15 kg) to 66 pounds (30kg)
   - **Epi 0.3mg** for patients greater than 66 pounds (30kg)
   - Consult Medical Control for children less than 33 pounds

Altered Mental Status

Overview: The term *altered mental status* describes a change from the "normal" mental state. The term *level of consciousness* indicates a patient's state of awareness. Check surroundings for syringes, blood glucose monitoring supplies, insulin, etc. Be alert to changes in mental status and symptoms such as headache, seizures, confusion, trauma, etc. Obtain medical history: psychiatric and medical problems, medications, and allergies.

1. Routine Medical Care
2. Protect the patient's airway. Watch for vomiting and have suction available.
3. Protect patient's c-spine.
4. If equipment available, determine blood glucose level – normal range 60-120mg/dL
   - Blood glucose < 80 with signs and symptom of hypoglycemia:
   - **Oral Glucose 15G** if patient is alert with intact gag reflex
5. **Naloxone (Narcan) 2mg** intranasal, for suspected opiate overdose with respiratory depression consisting of respirations < 12 and or very shallow respirations and/or signs of shock

Behavioral

Overview: "Normal" behavior is generally considered to be adaptive behavior that is accepted by society. This idea is also defined by society when the behavior:

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

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

1. Scene size-up. If scene unsafe, elicit police assistance before patient contact.
2. Routine Medical Care or Routine Trauma Care
3. Identify yourself clearly
4. Approach patient in a calm and professional manner. Talk to patient alone—request bystanders to wait in another area. Show concern for family members as well. Allow patient to verbalize his problem in his own words. Reassure patient that help is available.
5. Get patient's permission to do your assessment before touching patient
6. NEVER leave patient alone.

Bites, Stings and Envenomation

Overview: An insect, animal or human bite or sting frequently is a combination of puncture, laceration, avulsion and crush injuries. Complications are common—all patients who have been bitten/ stung should seek physician evaluation. Try to find out the type of animal or insect, time of exposure and history of previous exposures, allergic reactions, and any known specific allergen

__Routine Medical Care
__See Allergic Reaction Mild/Moderate or Allergic Reaction Severe as needed
__If patient is hypotensive, treat for Shock
__Scrape off any remaining stinger or tentacles
__Clean the affected area with saline, cover with sterile dressing
__Do not perform any of the following:

- Tourniquets or constricting bands above or below the site
- Incision and / or suction
- Application of cold for snake or spider bites

Cardiac Arrest Algorithm
Per AHA Guidelines 2015

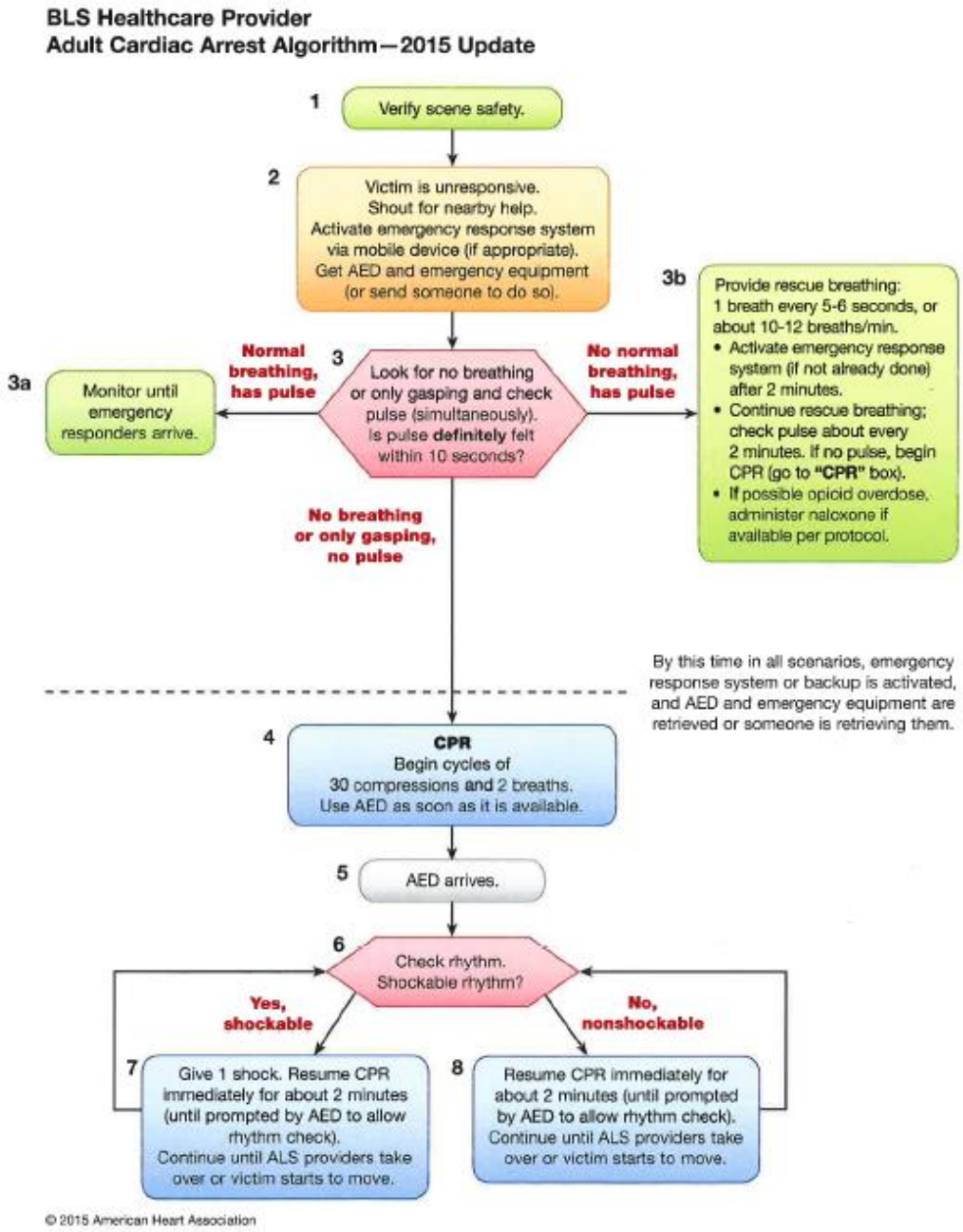

Figure 4. BLS Healthcare Provider Adult Cardiac Arrest Algorithm.

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 O_2 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 º 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 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 (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 O_2 as indicated
3. Assist with patients prescribed medication / inhalers

Seizure

Overview: A seizure is a temporary, abnormal electrical activity of the brain that results in a loss of consciousness, loss of organized muscle tone, and presence of convulsions. The patient will usually regain consciousness within 1 to 3 minutes followed by a period of confusion and fatigue (post-ictal state).

Multiple seizures in a brief time span or seizures lasting more than 5 minutes may constitute status epilepticus and require EMS intervention to stop the seizure. Causes of seizures include: epilepsy, stroke, head trauma, hypoglycemia, hypoxia, infection, a rapid change in core body temperature (e.g. febrile seizures), eclampsia, alcohol withdrawal, and overdose.

1. Routine Medical Care
2. Protect the patient from injury during the seizure. Take special care to protect the patient's head and airway (watch for vomiting and have suction available).
3. Administer O_2.

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 O_2 as indicated
5. Maintain head and neck in neutral alignment. Do NOT flex the neck.
6. If BP > 90 mmHg, elevate head of bed to 30°
7. If altered sensorium, seizure, or focal neurological deficit, obtain and record blood sugar level.
   - If blood sugar < 80 administer **Oral Glucose 15G** if patient is alert with intact gag reflex
8. Monitor and record neurological status and any changes.
9. Protect paralyzed limbs from injury.
10. Whenever possible, the EMR should establish the last known well time.

FAST EXAM:

FACIAL DROOP: Ask the person to smile and/or show their teeth

_____**Normal**: Both sides of the face are equal, there is no droop noted to one side
_____**ABNORMAL**: One side the mouth or face is drooping, drooling or does not look the same

ARM DRIFT: Ask the person to hold both arms out in front of them for the count of 10

_____**Normal**: Both arms move equally
_____**ABNORMAL**: One arm drifts down or does not move at all, the other is normal

SPEECH: Have the person say a sentence (example: You can't teach an old dog new tricks.)

_____**Normal**: Sentence sounds normal, no slurring words and person uses correct words
_____**ABNORMAL**: Patient unable to speak (mute), words are slurred, incorrect words used

TIME: If the time of **Last Known Well** is **GREATER** than **8 hours**, then a stroke alert is **NOT** paged because the patient is outside of acute window.

If any of the above questions is scored abnormal, the chances are high that a stroke may be occurring.

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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 Restrictions.
- Spinal restriction as indicated
- Assess breathing, apply oxygen as indicated:
    - Oxygen via nasal cannula (2-6 L/min) for awake, oriented, stable patients without evidence of hypoperfusion or mental status changes.
    - High-flow via non-rebreather mask (10-15 L/min) if indicated. Assist ventilations with BVM and 100% oxygen if indicated
    - Clear and maintain airway with Spinal Restriction as indicated
    - Airway management as indicated
- Chest Trauma:
    - For open chest wounds utilize occlusive dressings
- Immediately control external bleeding. Refer to Bleeding Guidelines
- Follow Shock / Internal Bleeding guidelines if SBP < 90 mm Hg for patient management
- Assess disability: AVPU, pupils and Glasgow Coma Scale, and PMS.
- If altered mental status, check blood sugar.

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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

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SMO: Trauma Emergencies

Overview: The EMR shall utilize the following guidelines for trauma emergency care situations.

Abuse: Geriatric/Spouse

1. Scene safety, notify law enforcement if necessary
2. Routine Trauma Care or Routine Medical Care as appropriate
3. Treat injuries as appropriate
4. Should patient refuse care, resource assistance information should be provided
   - Domestic Violence Hotline (**1-800-799-7233**)
   - Elder Abuse (persons 60 years of age or older) **1-800-252-8966**
   - Nursing Home Abuse – **1-800-252-4343**
   - Adult Protective Services – **1-866-800-1409**
5. Attempt to preserve evidence if needed

Amputations

1. Routine Trauma Care
2. Control bleeding
3. Place body part in plastic bag. Place plastic bag containing body part in a larger bag or container and place in container with ice/ water.
4. Use caution to not freeze body part.

Bleeding

1. Routine Trauma Care
2. For external bleeding use direct pressure, if direct pressure is not effective a tourniquet should be considered.
3. Treat for shock.

Bones and Muscles

1. Routine Trauma Care
2. Control external bleeding with direct pressure. If direct pressure is unsuccessful, consider a tourniquet to control bleeding
3. Manual stabilization - support the joint above and below the injury.
4. Cover open wounds with sterile dressing.
5. Pad to prevent pressure and discomfort.
6. Use caution to not replace protruding bones.
7. Reassess pulses as needed
8. Assess treat for shock

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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.
3. Manually stabilize object with use of bulky dressings.
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.

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SMO: Triage Categorization of Patients

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

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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

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:

Appearance (skin color)	0=Body and extremities blue, pale	1=Body pink, extremities blue	2=Completely pink
Pulse	0=Absent	1=Less than 100/min	2=100/min and above
Grimace (Irritability)	0=No response	1=Grimace	2=Cough, sneeze, cry
Activity (Muscle tone)	0=Limp	1=Some flexion of the extremities	2=Active motion
Respirations	0=Absent	1=Slow and irregular	2=Strong cry

REGION I EMERGENCY MEDICAL SERVICES

Pediatric Emergencies
For
Emergency Medical Responders

SMO	Category	Information
Pediatric Airway Management	Pediatric	New
Pediatric Medical Emergencies	Pediatric	New
Pediatric Neonatal Resuscitation	Pediatric	
Pediatric Trauma Emergencies	Pediatric	New
Routine Pediatric Care	Pediatric	New

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

REGION 1 EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
EMR

SMO: Routine Pediatric Care

Overview: Pediatric patients account for about 10% or less of EMS emergency responses. Caring for these patients presents unique challenges related to size, physical and intellectual maturation, and diseases specific to neonates, infants, and children. It is important to maintain and improve knowledge and clinical skills for these patients through continuing education programs and clinical applications specific to this age group.

The importance of assessing and maintaining AIRWAY, BREATHING, & CIRCULATION (A-B-C) in the pediatric patient cannot be overemphasized.

INFORMATION NEEDED
__Patient age and weight
__Scene assessment
__Primary assessment
__Nature of illness/mechanism of injury
__Focused history/physical Assessment
__Ongoing assessment

General Approach to the Pediatric Patient
Assessments and interventions must be tailored to each child in terms of age, size, and development. Providers must be familiar with assessment algorithms for medical emergencies, assessment mnemonics such as DCAP-BTLS for trauma emergencies.

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
- 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
- Administer oxygen of 02 sat <94 and/or other signs of respiratory compromise
- **Blow by**
- **Nasal cannula**
- **Non-rebreather**
- **BVM**

CIRCULATION

- Heart rate – compare to normal for age.
- Central/truncal pulses (apical, femoral, carotid) – strong, weak, absent
- Peripheral pulses – present/absent, strong, weak, thready
- Skin/mucous membrane color
- Skin temperature – hot, warm, cool
- Blood pressure – use appropriate sized cuff
- Use the Pediatric Trauma Score for B/P determination if appropriate cuff is unavailable or capillary refill time (children under age 3)
- Hydration status – infant anterior fontanel status, mucous membranes, skin turgor, tears, urine output history

DISABILITY

- Use AVPU to assess responsiveness.
- Assess pupil response
- Assess distal neurologic status – numbness or tingling

EXPOSURE

- Assess for hypo/hyperthermia
- Check for significant bleeding
- Check for petechiae or purpura (purple discolorations that do not blanch with skin pressure)
- Be aware of signs of child abuse and, if present, report to authorities

Documentation of adherence to SMO

__ Primary Assessment
__ Patient weight

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

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-Spontanous
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

Clinical Parameters	Mild	Moderate	Severe
Body weight loss Infant Child	 5% (50 ml/kg) 3% (30 ml/kg)	 10% (100 ml/kg) 6% (60 ml/kg)	 15% (150 ml/kg 9% (90 ml/kg)
Fontanelle	Flat or depressed	Depressed	Significant depression
Mucous Membranes	Dry	Very dry	Parched
Skin Perfusion	Warm / normal color	Cool extremities / pale	Cold extremities
Heart Rate	Mild tachycardia	Moderate tachycardia	Extreme tachycardia
Peripheral Pulse	Normal	Diminished	Absent
Blood Pressure	Normal	Normal	< 70 + 2x age in years
Sensorium	Normal-irritable	Irritable-lethargic	Unresponsive

REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
EMR

SMO: Pediatric Airway Management

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

INFORMATION NEEDED

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

OBJECTIVE FINDINGS

__Mental status (AVPU)
__Airway patency (head-tilt chin lift OR modified jaw thrust for unconscious patient or if C-spine trauma is a possibility)
__Oxygenation and Circulatory status (pulse oximetry, vital signs)

TREATMENT

__ Routine Pediatric Care
__ Manage Foreign Body Airway Obstruction per American Heart Association standards
__ Assess airway patency utilizing adjuncts as indicated
- OPA
- NPA
- Per EMS System approval supraglottic airway per manufacturer's instructions

__ Confirm advanced airways and document:
- Auscultation
- Absence of gastric sounds
- Chest rise

Documentation of adherence to SMO

__Indications for airway management
__Methods utilized
__Confirmation for advanced airway
__Patient condition reassessed

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

PRECAUTIONS AND COMMENTS

- Utilize basic methods for maintaining airway patency and good ventilations and reassess patient's oxygenation and ventilatory status BEFORE utilizing advanced airway methods.

REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
EMR

SMO: Pediatric 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 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

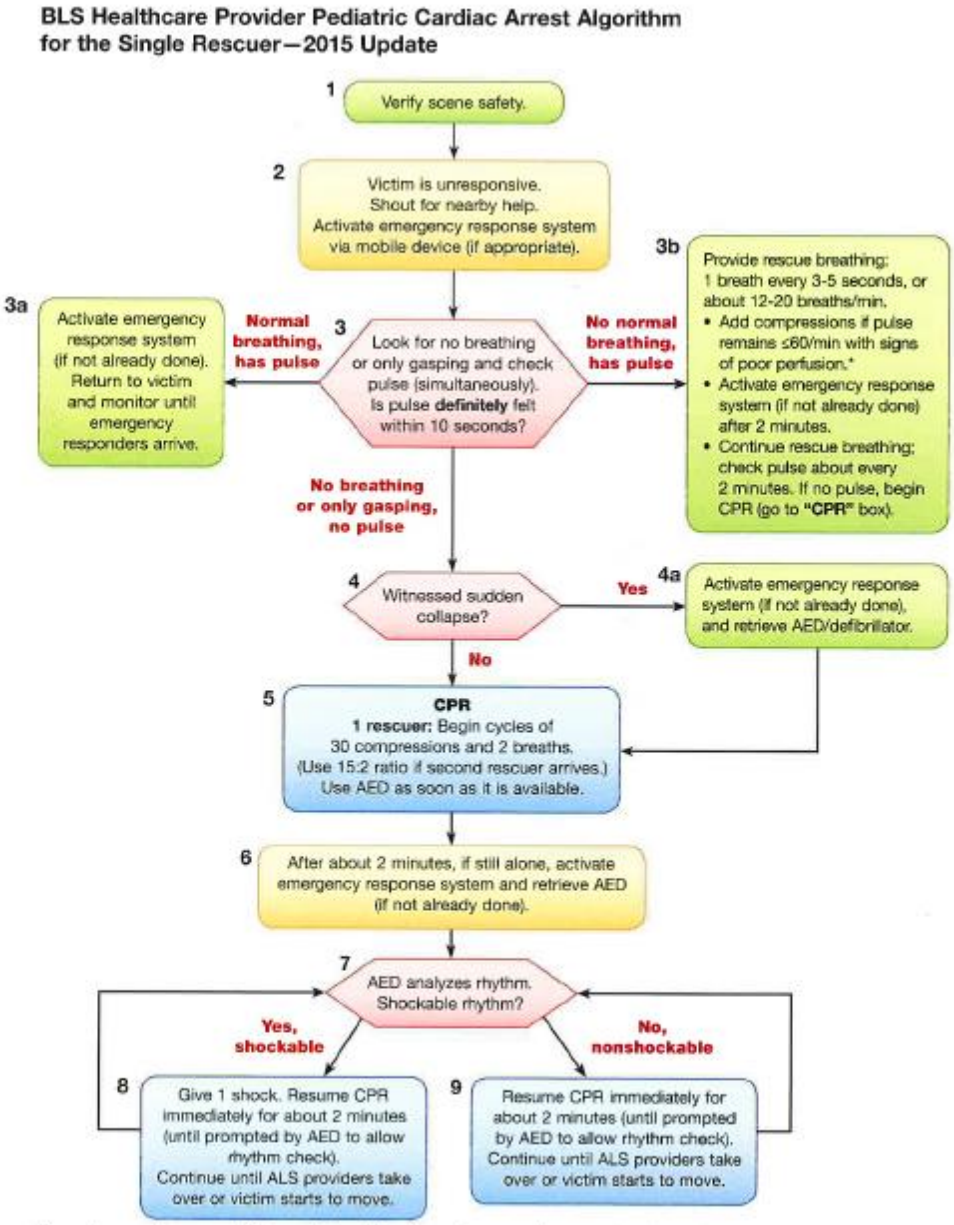

Figure 28. BLS Healthcare Provider Pediatric Cardiac Arrest Algorithm for the Single Rescuer.

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 º 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 O_2 as indicated
3. Assist with patients with prescribed medication / inhalers

Seizure

Overview: A seizure is a temporary, abnormal electrical activity of the brain that results in a loss of consciousness, loss of organized muscle tone, and presence of convulsions. The patient will usually regain consciousness within 1 to 3 minutes followed by a period of confusion and fatigue (postictal state).

Multiple seizures in a brief time span or seizures lasting more than 5 minutes may constitute status epilepticus and require EMS intervention to stop the seizure. Causes of seizures include: epilepsy, stroke, head trauma, hypoglycemia, hypoxia, infection, a rapid change in core body temperature (e.g. febrile seizures), eclampsia, alcohol withdrawal, and overdose.

1. Routine Medical Care
2. Protect the patient from injury during the seizure. Take special care to protect the patient's head and airway (be prepared for vomiting and have suction available).
3. Administer O_2 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
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SMO: Neonatal Resuscitation

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

INFORMATION NEEDED

__Gestational age
__Infant is part of a multiple birth or NICU graduate
__Meconium stained during birth (See Meconium Staining section below)
__Mother use of drugs or alcohol
__Known infant history
__Presence of special need (e.g. apnea monitor, etc)
__If just born, time since birth

OBJECTIVE FINDINGS

__ If just born 30 second cardiopulmonary assessment
- Airway, breathing (respiratory rate, quality, work of breathing, presence of cry)
- Circulation (skin color, temperature, pulses, capillary refill, mental status)

__ If infant less than 30 days same arrest intervention as just born
__ Airway interventions and keep baby warm

TREATMENT – MECONIUM STAINING NOTED

__ As soon as head is delivered attempt to suction before baby starts to breath
__ If thick meconium or secretion present and signs of respiratory distress thoroughly suction mouth, then nose

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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 hearts rate 80-100 bpm. Give 100% oxygen by BVM. Reassess heart rate after 15-30 seconds.
__ If heart rate greater than 100 bpm, check skin color. If peripheral cyanosis give oxygen by mask.
__ If unable to ventilate effectively with BVM consider supraglottic device.
__ Confirm proper airway device placement and ventilate 30 times a minute with continued chest compressions.
__ Continue to reassess respiratory rate and heart rate while enroute

Documentation of adherence to SMO

__ 30-second cardiopulmonary assessment
__ Administration of oxygen
__ Document all cardiac interventions and response
__ Medication administration
__ Airway management

Medical Control Contact Criteria

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

PRECAUTIONS AND COMMENTS

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

REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
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SMO: Pediatric Trauma Emergencies

Overview: The EMR shall utilize the following guidelines for trauma emergency care situations. Children have good compensatory mechanisms up to a point. When that point is reached they deteriorate very quickly. This SMO is intended to provide the EMS Provider with guidelines to treat a pediatric trauma patient as soon as possible.

Amputations

1. Routine Trauma Care
2. Control bleeding.
3. Place body part in plastic bag. Place plastic bag containing body part in a larger bag or container and place in container with ice/ water.
4. Use caution to not freeze body part.

Bleeding

1. Routine Trauma Care
2. For external bleeding use direct pressure, if direct pressure is not effective a tourniquet should be considered.
3. Treat for shock.

Bones and Muscles

1. Routine Trauma Care
2. Control external bleeding with direct pressure. If direct pressure is unsuccessful, consider a tourniquet to control bleeding
3. Manual stabilization - support the joint above and below the injury.
4. Cover open wounds with sterile dressing.
5. Pad to prevent pressure and discomfort.
6. Use caution to not replace protruding bones.
7. Reassess pulses as needed
8. Assess treat for shock

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Burns

1. Routine Trauma Care
2. The first priority is to stop the burning process by removing the patient from the source of the burn or eliminate the source
   a. Thermal burns
      1. Monitor the airway. Examine the mouth and nose for signs of respiratory burns/ soot/singed nares.
      2. Remove clothing and jewelry from the affected site.
      3. Cover the burn with dry sterile dressing.
      4. Protect patient from hypothermia
      5. Treat for shock
   b. Chemical burns
      1. Body Substance Isolation
      2. Remove clothing and jewelry
      3. For dry chemicals brush off all visible chemical prior to beginning the water flush.
      4. The site should be flushed with copious amounts of water for 20 minutes.
   c. Electrical burns
      1. Scene safety
      2. Treat entrance and exit wounds as thermal burns.
      3. Spinal restriction is indicated with serious electrical burns.
      4. If the patient is pulseless refer to Cardiac Arrest SMO.

Chest Injuries

1. Routine Trauma Care
2. If an open wound is present (sucking chest wound), cover the wound with a 3-sided, occlusive dressing. If the patient develops increased difficulty breathing or cyanosis, temporarily release the dressing.

Child Abuse and Neglect

1. Routine Trauma Care
2. If you suspect abuse or neglect do not confront the parents. EMS's role is one of patient treatment and transporting the child.
3. Manage the scene in order to preserve evidence.
4. Insure that an EMS team member has notified medical control or other appropriate agency. EMS responders are mandatory reporters.
   a. Be objective during reporting procedures
   b. For DCFS contact 1-800-25ABUSE (1-800-252-2873)

Drowning and Near Drowning

1. Routine Trauma Care
2. Keep the victim warm. If hypothermia is suspected, handle patient gently. Remove wet clothing and apply warm blanket.
   ***NOTE**: Because of possible serious delayed reactions, all near drowning patients should be evaluated in the Emergency Department even if they appear to be uninjured at the scene*.
3. If pulseless start high quality CPR pre AHA guidelines
4. AED - treat per AHA guidelines
5 If other trauma is suspected refer to appropriate trauma SMO
6 BLS maneuvers to remove Foreign Body Airway Obstruction if indicated
7 Reassess basic methods to maintain airway patency and good ventilation

Eviscerations

1. Routine Trauma Care
2. Do not attempt to replace protruding organs.
3. Cover with thick, sterile, moist dressings.

Impaled Object

1. Routine Trauma Care
2. Do not remove object unless interferes with airway patency.
3. Manually stabilize object with use of bulky dressings.
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

REGION I EMERGENCY MEDICAL SERVICES

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 bio-availability 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)

REGION I EMERGENCY MEDICAL SERVICES
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SMO: Region 1 Acceptable Abbreviations

A & O x 4	Alert, oriented person to date, time, place
Abd	Abdomen
ALS	Advanced life support
AM or a.m.	Between 12 midnight and 12 noon
AMA	Against Medical Advice
AMI or MI	Acute Myocardial Infarction
AMP	Ampule
Approx	Approximate or Approximately
ASHD	Arteriosclerotic Heart Disease
Assist or asst	Assistance
BBB	Bundle Branch Block
Bilat	Bilateral
BLS	Basic life support
BM	Bowel Movement
BOW	Bag of Waters
BP	Blood Pressure
CA	Cancer
CAD	Coronary Artery Disease
C-collar	Cervical Collar
CHF	Congestive heart failure
cm	Centimeter
CMS	Circulation, Motion, Sensation
CNS	Central nervous system
C/O	Complains of
COPD	Chronic Obstructive Pulmonary Disease
C-section or C-sect	Cesarean Section
CSF	Cerebral spinal fluid
C-spine	Cervical spine
CVA	Cerebrovascular accident
DC or dc	Discontinue
Dept	Department
Dx	Diagnosis
DTs	Delirium Tremens
D5W	5% Dextrose in water
ECG	Electrocardiogram
EDAP	Emergency Department Approved for Pediatrics
EDC	Expected date of confinement
ENT	Ears, Nose and Throat
ED	Emergency Department
ET	Endotracheal
ETOH	Alcohol
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Exam	Examination
Extr or EXT	Extremities
FB	Foreign Body
FHT	Fetal Heart Tones
Fib	Fibrillation
Fx	Fracture
GCS	Glasgow Coma Score
GI	Gastrointestinal
Gram	Gram
gr	Grain
gtt(s)	Drop(s)
GU	Genitourinary
H20	Water
HEENT	Head, Eyes, Ears, Nose and Throat
HIV	Human Immunodeficiency Virus
H/O	History of
HPI	History of present illness
hr	Hour
HR	Heart rate
HTN	Hypertension
Hx	History
ILS	Intermediate Life Support
IM	Intramuscular
IN	Intranasal
IV	Intravenous
JVD	Jugular vein distention
K	Potassium
kg	Kilogram
Lt	Left
L or l	Liter
lb	Pound
LLQ	Left lower quadrant
LMP	Last menstrual period
LOC	Loss of consciousness
LR	Lactated ringers
LUQ	Left upper quadrant
mcg	micrograms
Med(s)	Medication(s)
mEq	Milliequivalent
mg	Milligrams
mL or ml	Milliliter
mod	Moderate
N & V or N/V	Nausea and vomiting
N/A or NA	Not applicable
NaHCO3	Sodium Bicarbonate
Neg	Negative
Neuro	Neurology / Nervous system
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NKA	No known allergies
NPO	Nothing by mouth
NRB mask	Non-rebreather mask
NS	Normal saline
NSR	Normal sinus rhythm
NTG	Nitroglycerin
O2	Oxygen
OB	Obstetric
OD	Overdose
P	Pulse
PAC	Premature atrial contraction
PASG	Pneumatic anti-shock garment
PAT	Paroxysmal atrial tachycardia
PE	Physical examination
PE	Pulmonary Embolism
PEDS	Pediatric
PERRL	Pupils equal, round and reactive to light
PMH	Past medical history
PJC	Premature junctional contraction
PM or p.m.	Between 12 noon and 12 midnight
PMS	Pulses Motor Sensation
PRN	As occasion requires / as needed
Pt	Patient
PVC	Premature ventricular contraction
q	Every
R or resp	Respiration
Rt	Right
Reg	Regular
RLQ	Right lower quadrant
RUQ	Right upper quadrant
Rx	Treatment, Take prescription
SL	Sublingual
SMO	Standing Medical Orders
SOB	Shortness of breath
Sub-Q or subq	Subcutaneous
Stat	Immediate
STD	Sexually transmitted disease
SVT	Supraventricular tachycardia
Temp	Temperature
TB	Tuberculosis
TKO	To keep open
URI	Upper respiratory infection
V-fib	Ventricular fibrillation
V-tach	Ventricular tachycardia
w/	With
w/o	Without
W/O	Wide open
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WNL	Within normal limits
wt	Weight
@	At
>	Greater than
<	Less than
ACLS	Advanced Cardiac Life Support
A/BDLS	Advanced/ Basic Disaster Life Support
AEIOUTIPS	Acidosis, alcohol; epilepsy; infection; overdose; uremia; tumor, trauma, toxin; insulin; psychosis, poison; stroke, seizure
AVPU	Alert, Verbal, Pain, Unresponsive
BTLS	Basic Trauma Life Support
DCAP-BTLS-IC	Deformities, Contusions, Abrasions, Penetrations or Punctures, Burns, Tenderness, Lacerations, Swelling, Instability, Crepitus
GEMS	Geriatrics Emergency Medical Services
Id-me	Immediate, Delayed, Minimal, Expectant
MASS	Move, Assess, Sort, Send
OPQRST	Onset, Provokes, Quality, Radiation, Severity, Time
PALS	Pediatric Advanced Life Support
PEPP	Pediatric Education Pre-hospital Provider
PHTLS	Pre-Hospital Trauma Life Support
SAMPLE	Signs & Symptoms, Allergies, Medications, Past medical history, Last oral intake, Events leading to incident
START	Simple Triage and Rapid Transport

NOTE: Based on JCAHO National Patient Safety Goals, these acceptable abbreviations are to minimize confusion when using abbreviations. Commonly used abbreviations such as *MS*, *OU*, *OD*, *OS*, *cc* are not allowed to be utilized under Region1 EMS Acceptable Medical Abbreviations.

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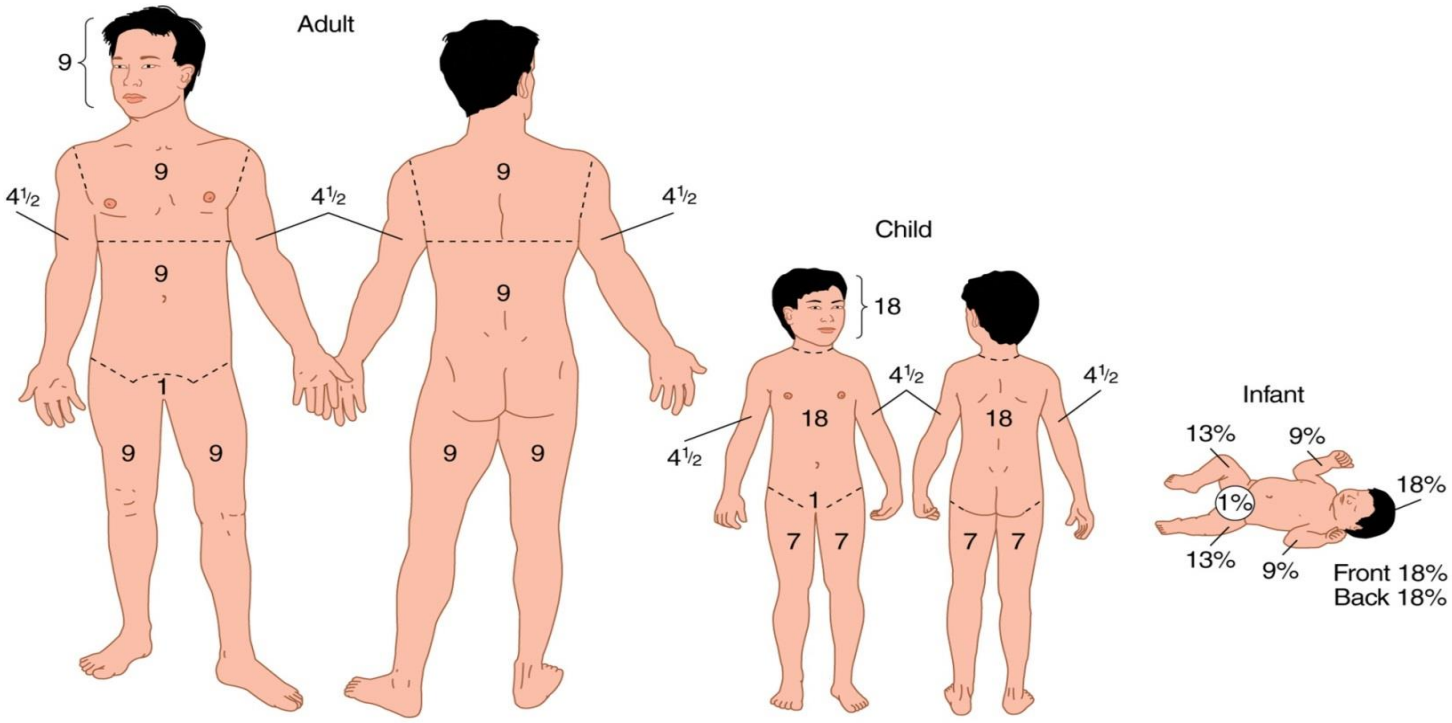
APPENDIX: Adult/ Pediatric Burn Reference Guide

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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APPENDIX: Glasgow Coma Score/ Revised Trauma Score

ADULT GLASGOW COMA SCORE

AREAS OF RESPONSE		
EYE OPENING	Eyes open ***Spontaneously***	4
	Eyes open in response to ***Voice***	3
	Eyes open in response to ***Pain***	2
	No eye opening response	1
VERBAL RESPONSE	***Oriented*** (e.g., to person, place, time)	5
	Confused, speaks but is disoriented	4
	Inappropriate but comprehensible words	3
	Incomprehensible sounds but no words are spoken	2
	None	1
MOTOR RESPONSE	***Obeys Commands*** to move	6
	Localized Painful stimuli	5
	Withdraws from painful stimulus	4
	Flexion, abnormal *decorticate* posturing	3
	Extension, abnormal *decerebrate* posturing	2
	No movement or posturing	1
TOTAL POSSIBLE SCORE		**3 - 15**
Severe Head Injury **Moderate Head Injury** **Minor Head Injury**		≤ 8 9 – 12 13 - 15

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ADULT TRAUMA SCORE

The Trauma Score is a numerical grading system for estimating the severity of injury. The score is composed of the Glasgow Coma Scale (reduced to approximately one-third value) and measurements of cardiopulmonary function. Each parameter is given a number (high for normal and low for impaired function). Severity of injury is estimated by summing the numbers. The lowest score is 0, and the highest score is 12.

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**

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PEDIATRIC GLASGOW COMA SCORE

AREAS OF RESPONSE	>1 year	< 1 year	GCS
EYE OPENING	Spontaneously	Spontaneously	4
	To ***Verbal Command***	To ***Shout***	3
	To ***Pain***	To ***Pain***	2
	No eye opening response	No eye opening response	1
MOTOR RESPONSE	***Obeys Commands*** to move	***Obeys Commands*** to move	6
	Localized Painful stimuli	***Localized Painful*** stimuli	5
	Withdraws from painful stimulus	***Flexion—normal***	4
	Flexion, abnormal *decorticate* posturing	***Flexion,*** abnormal *decorticate* posturing	3
	Extension, abnormal *decerebrate* posturing	***Extension***, abnormal *decerebrate* posturing	2
	No movement or posturing	No movement or posturing	1

VERBAL RESPONSE	> 5 years	< 2 – 5 years	0 - 23 months	
	Oriented and converses	Appropriate words & phrases for age	Smiles, coos, cries appropriately	5
	Disoriented but converses	Inappropriate words	Cries	4
	Inappropriate words	Cries and/or screams	Inappropriate crying and/or screaming	3
	Incomprehensible	Grunts	Grunts	2
	No response	No response	No response	1
TOTAL POSSIBLE SCORE			**3 - 15**	

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Pediatric Trauma Score

	VALUES		
COMPONENT	**+2**	**+1**	**-1**
Size	≥ 20 kg	10 – 20 kg	≤ 10 kg
Airway	Normal	Maintainable	Unable to maintain
CNS	Awake	Obtunded	Coma
Systolic BP	≥ 90 mm Hg	50 – 90 mm Hg	≤ 50 mm Hg
Open wound	None	Minor	Major
Skeletal Injuries	None	Closed fracture	Open or multiple fractures

Revised Trauma Score

Glasgow Coma Scale (GCS)	Systolic Blood Pressure (SBP)	Respiratory Rate (RR)	Coded Value
13-15	>89	10-29	**4**
9-12	76-89	>29	**3**
6-8	50-75	6-9	**2**
4-5	1-49	1-5	**1**
3	0	0	**0**

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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

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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 GLASCOW COMA SCALE (GCS) SCORE in Appendix

EXPOSE, EXAMINE & EVALUATE (E)

__In situations with suspected life-threatening trauma mechanism, a rapid head-to-toe assessment should be performed
__Expose head, trunk, and extremities
__Head to toe for DCAP-BTLS (see Note section of Secondary Assessment SMO)
__Treat any newly discovered life-threatening wounds as appropriate
__Assist patient with medications if appropriate

Documentation of adherence to SMO

__Findings of primary assessment, for example: alert, oriented, and verbalizing; unresponsive to painful stimuli, airway maintained with oropharyngeal airway, qualities of pulses, GCS, mechanism of injury, pulse oximetry, etc
__Any deviation from assessment and explanation of why
__Interventions for critical situations

REGION I EMERGENCY MEDICAL SERVICES
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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.

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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

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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/**C**repitus
  Abrasion
  Puncture
  Bruising/**B**leeding
  Tenderness
  Laceration
  Swelling

REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
EMR

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

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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

A. Illinois Department of Public Health Rules and Regulations, Subchapter f, Emergency Services and Highway Safety [Title 77 Index] 77 Ill. Adm. Code Part 515 Emergency Medical Services and Trauma Center Code

REGION I EMERGENCY MEDICAL SERVICES

PREHOSPITAL FORMULARY
For
Emergency Medical Responders

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

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EMS/ Region1 SMO

REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
EMR

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FORMULARY – Aspirin

Aspirin	(ASA)
Classification:	Antiplatelet, Analgesic, Antipyretic, Anti-inflammatory
Actions:	Inhibition of platelet aggregation and platelet synthesis. Reduction of risk of death in patients with a history of myocardial infarction or unstable angina.
Indications:	Chest pain with suspected myocardial ischemia
Contraindications include but not limited to:	○ Allergy to ASA/NSAID ○ Peptic ulcer disease ○ Hypersensitivity to salicylates
Adverse effects include but not limited to:	➢ Nausea, GI upset ➢ Hepatotoxicity ➢ Occult blood loss ➢ Anaphylaxis
Adult Administration: **Packaging Information:** (81 mg) Chewable Tablet	324 mg / 4 tablets
Pediatric Administration:	Not recommended
Onset:	30-60 minutes
Duration:	4-6 hours
Pregnancy Safety:	Category D in the third trimester: use ONLY if benefit to mother justifies the risk to the fetus.
Precautions and Comments: Pharmacology Chart **Used in SMO:** Chest Pain of Suspected Cardiac Origin	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.

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FORMULARY – Epinephrine Auto-Injector (Adrenalin)

Epinephrine Auto-injector	Adrenalin, Epinephrine Hydrochloride
Classification:	Sympathomimetic agent (Catecholamine)
Actions:	Acts directly on Alpha and Beta receptors of the SNS. Beta effect is more profound than Alpha effects. Effects include: • Increased heart rate (chronotropy) • Increased cardiac contractile force (inotropy) • Increased electrical activity within myocardium (dromotropy) • Increased systemic vascular resistance • Increased blood pressure • Increased bronchial smooth muscle dilation

Indications:	• Allergic Reaction
	  ○ Shortness of breath (wheezing, hoarseness, other abnormal breath sounds)
	  ○ Itching/hives that are severe and rapidly progressing
	  ○ Oral swelling/laryngospasm/difficulty swallowing
	  ○ Hypotension/unresponsiveness
	  ○ Patients with an exposure to known allergen with progressively worsening symptoms (i.e., hives)
	• Severe Asthma

Contraindications:	○ None when indicated
Adverse effects include but not limited to:	➢ Hypertension-tachycardia ➢ Tremor, weakness ➢ Pallor, sweating, nausea, vomiting ➢ Nervousness, anxiety ➢ Increases myocardial oxygen demand and potentially increases myocardial ischemia
Adult Administration: **Packaging Information:** Epinephrine (0.3 mg/0.3 ml) auto-injector Epinephrine (0.15 mg/0.3 ml)auto-injector	Patients over 30 kg (66 pounds): 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.
Pediatric Administration:	Patient 15-30 kg (33-66 pounds): 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.
Onset:	5-10 minutes
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Duration:	*Formulary: Epinephrine Auto-Injector Page 2 of 2* 20 minutes
Pregnancy Safety:	Category C
Precautions and Comments: Pharmacology Chart **Used in SMO:** Adult Anaphylaxis and Allergic Reaction Pediatric Anaphylaxis and Allergic Reaction	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)
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FORMULARY – Naloxone Hydrochloride (Narcan)

Naloxone Hydrochloride	Narcan
Classification:	Opioid antagonist
Actions:	Reverses the effects of narcotics by competing for opiate receptor sites in the central nervous system.
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
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	Formulary Naloxone Page 2 of 2
Onset:	Within 2 minutes
Duration:	20-30 minutes
Pregnancy Safety:	Category B
Precautions and Comments: 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	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.

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FORMULARY – Oral Glucose

Oral Glucose	
Classification:	Monosaccharide carbohydrate
Actions:	After absorption from GI tract, glucose is distributed in the tissues and provides a rapid increase in circulating blood sugar.
Indications:	Suspected or known hypoglycemia
Contraindications:	Patient who is not able to follow commands
Adverse effects include but not limited to:	• Nausea/vomiting • Aspiration • Hyperglycemia
Adult Administration:	15 GM/37.5 GM tube
Pediatric Administration:	Up to 15 GM as tolerated
Onset:	5-10 minutes
Duration:	Variable
Pregnancy Safety:	Category A
Precautions and Comments: Pharmacology Chart **Used in SMO:** Adult Altered Mental Status Pediatric Altered Mental Status Stroke	Not a substitute for IV dextrose in extreme cases of hypoglycemia (blood sugar <40) unless IV access is unobtainable.

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FORMULARY – References – Key to FDA Use-In-Pregnancy Ratings

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.

Category	Interpretation
A	**Controlled studies show no risk**. Adequate, well-controlled studies in pregnant women have failed to demonstrate risk to the fetus.
B	**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.
C	**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.
D	**Positive evidence of risk.** Investigational or post-marketing data show risk to the fetus. Nevertheless, potential benefits may outweigh the potential risk.
X	**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.

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Disaster Preparedness
Standing Medical Orders

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DISASTER PREPAREDNESS

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GENERAL PRINCIPLES

An event involving Weapons of Mass Destruction (WMD) is by definition a Mass Casualty Incident (MCI). These guidelines are to be used in conjunction with disaster protocols on a regional level. These guidelines will be operated under the Incident Command system, with the fire service acting as line authority and having command of the scene. These guidelines are not inclusive of all WMD agents that exist, and are not intended to replace the resources and information available from the Emergency Management Agency, Department of Health, Department of Homeland Security, and HazMat agencies. These guidelines focus on those agents that are listed as Category A agents by the Center for Disease Control (CDC) and agents that are most likely to cause higher morbidity and mortality, widespread public exposure, or create a scene where public health resources may be overwhelmed.

The first priority will be rescuer safety. No rescuer, fire, EMS, law enforcement or otherwise will proceed into the "hot zone" (a zone where decontamination has not taken place) without proper equipment and protection, and without the expressed consent of the Incident Commander. This is for the safety of the rescuer, and to prevent the rescuer from becoming a victim, compounding the problem. EMS will operate in the "cold zone" (an area designated for patient care that takes place after sufficient decontamination) and will not approach the hot zone due to possible respiratory or chemical contamination. It must also be remembered that the most commonly used weapons are explosives and secondary explosives have been used to injury or kill EMS professionals in the past. Therefore, staging EMS in the "cold zone" will help prevent secondary provider injury.

Weapons of Mass Destruction

It must be realized that chemical agents have immediate effects, whereas biological agents and radiation agents are delayed and will allow for consultation with higher authorities. Chemical agents and explosive agents however, require immediate action, and thus the protocol is aimed at these agents.

Chemical Agents

Blister Agents

Blister agents, such as mustard gas, have signs and symptoms that include red skin, blisters, dry cough, and hoarse voice.

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Blood Agents
Cyanide is the most common blood agent. Signs and symptoms range from death, coma, and seizures, to headache, chest pain, palpitations, and shortness of breath in mild exposures.

Choking Agents
Choking agents, such as chlorine, ammonia, methylisocyanate, have signs and symptoms that include cough, choking, gagging, tearing and secretions, pulmonary edema.

Nerve Agents
Nerve agents, such organophosphates, Sarin, and VX have a range of toxicity from headache, nausea and vomiting and bronchial constriction to death, paralysis, seizures, and coma. A mnemonic such as SLUDGE-M or DUMBELS may be used to remember the most common signs and symptoms. SLUDGE-M stands for Salivation, Lacrimation, Urination, Defecation, Gastrointestinal upset, Emesis, and Muscle twitching/Miosis. DUMBELS stands for Diaphoresis, Urination, Miosis, Bradycardia, Emesis /Expiratory wheezing, Lacrimation, and Salivation.

Biologic Agents
These may range from smallpox virus to anthrax or viral hemorrhagic fevers. In general, it may take several hours for a team to determine what the agent is. Therefore, prophylactic treatment is only advised with consultation of the Regional Hospital Coordination Center, county and state departments of public health, and federal authorities.

Radiological Agents
"Dirty bombs" use radioactive material to contaminate a wide-spread area. Typically their effects are not immediate, although burns may occur to individuals in close proximity to the explosion. Tissues that have rapid cell growth, such as the gut and the skin, are usually the first effected.

Nuclear Agents
Nuclear agents use radiation from the detonation of nuclear warheads or direct exposure to a radioactive source can cause illnesses such as severe radiation poisoning and cancer. The severity of the illnesses are based on the length of exposure (TIME), distance from the radioactive source (DISTANCE), and objects used to limit the amount of radiation to which patients may be exposed (SHIELDING).

Explosive Agents

Explosions in enclosed spaces cause trauma by direct and indirect means. An explosion may cause multi-system trauma, the victim may fall and sustain injury, or debris and shrapnel may impact victims. In addition, air-filled structures like bowel, tympanic membranes, and lungs are particularly susceptible to a sudden change in air pressure.

CLINICAL TREATMENT GUIDELINES FOR WMD AGENTS

UNIVERSAL PRECAUTIONS should be practiced during the treatment of all patients within the scene of known or potential contamination. Personal protective equipment to be worn includes, at minimum gloves. However, gowns, respirator masks, shoe covers, and agent specific equipment should be worn in some instances. Additional measures to be taken are noted within the guidelines.

USE THE START/JumpSTART TRIAGE 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.

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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.

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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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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.

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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.

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SMO: Disaster – Chemical Weapons: Pulmonary Agents

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.

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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.

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SMO: Disaster – Chemical Weapons: Riot Control Agents

Overview: Riot control agents are irritants of low toxicity and short duration of action. These agents are used to temporarily render the person incapable of fighting or resisting. Common agents used are Orthochlorobenzlidene malononitrile (CS; Tear Gas), Chloracetophenone (CN; Mace), Dibenzoxazepine (CR), and Oleoresin capsicum (OC; Pepper Spray). Riot control agents are solids with low vapor temperatures and are dispersed as fine particles or in solutions. Effects are transient, lasting approximately 30 minutes after exposure. Although these agents have a low toxicity and a high safety ratio, exacerbation of respiratory conditions in patients with pre-existing respiratory illnesses is possible at high concentrations.

INFORMATION NEEDED

- Name of chemical agent (if possible)
- History of current illness
- Onset of signs/symptoms
- Number of patients
- Decontamination/treatment procedures already provided

OBJECTIVE FINDINGS

__**Onset of signs/symptoms:**
Immediate
__**Respiratory:** Mild transient cough.
__**Cardiovascular:** Transient increase in heart rate and blood pressure.
__**GI/GU:** burning of mucous membranes, nausea, vomiting, and abdominal pain.
__**Skin:** irritation of the skin, especially the mucous membranes, pallor, and cyanosis.
__**HEENT:** Chemical conjunctivitis

TREATMENT

__Ensure patient has been adequately decontaminated prior to patient care.
__Immediately flush the patient's eyes with plain water.
__Assess ABCs
__Maintain patient's airway, suction if necessary
__Encourage patient to take deep breaths
__Administer high-flow oxygen via nonrebreather mask (10-15 L/min).
__Monitor for respiratory insufficiency and assist with ventilations as needed.

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TREATMENT – continued

__Treat for shock (see Adult Shock SMO or Pediatric Shock SMO)
__Consider Advanced Airway Management if patient unconscious, exhibiting signs of pulmonary edema, or is in severe respiratory distress.
__Assist ventilations with BVM and 100% oxygen if indicated
__Consider CPAP
__Cardiac Monitoring
__Establish IV access if signs of hypoperfusion are present
__For treatment of seizures or convulsions refer to the Adult Seizure SMO or Pediatric Seizure SMO

Documentation for adherence to SMO

__ History of illness
__ Oxygen provided
__ Decontamination procedures used, if any
__ Ventilatory support
__ Medications provided, if any

Medical Control Contact Criteria
__Contact Medical Control as soon as possible to seek ILS and/or ALS support

PRECAUTIONS AND COMMENTS

- It is highly recommended that each EMS provider be very familiar with decontamination techniques for this type of patient.
- Decontamination of law enforcement should be done with clean water only. Do not use water on clothing still being worn. Decontamination should be focused on the officer's face, eyes, and hair.

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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.

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OBJECTIVE FINDINGS (continued)
__**Skin:** Pallor, cyanosis, and diaphoresis
__**HEENT:** Lacrimation, blurred vision, and pupil constriction.
__**CNS:** CNS depression, coma, anxiety, headache, dizziness, weakness, loss of muscle coordination, muscle fasciculations, seizures, disorientation, confusion, drowsiness, and slurred speech.
__ **PEDIATRIC:** CNS depression, flaccid muscle tone, dyspnea, and coma.

TREATMENT

__Ensure patient has been adequately decontaminated prior to patient care. Patients not completely decontaminated can expose responders to the agent through off gassing.
__Administer **Mark 1 kit** or **DuoNeb autoinjector** if available
__Assess ABCs
__Administer oxygen by non-rebreather mask at 10-15 L/min
__Aggressive airway control may be needed and may require advanced airway insertion
__Maintain patient's airway, suction if necessary
__Assist ventilations with BVM and 100% oxygen if indicated
__Perform CPR if necessary
__Monitor for pulmonary edema
__Treat for shock (see Adult Shock SMO or Pediatric Shock SMO)
__Anticipate seizures
__Seek ALS upgrade
__Consider Advanced Airway Management if patient unconscious, has severe pulmonary edema, or is in severe respiratory distress
__Consider CPAP
__Cardiac Monitoring
__For treatment of pulmonary edema refer to the Pulmonary Edema SMO
__For treatment of seizures or convulsions refer to the Adult Seizure SMO or Pediatric Seizure SMO

Documentation for adherence to SMO

__ History of illness
__ Oxygen provided
__ Decontamination procedures used, if any
__ Ventilatory support
__ Medications provided, if any

Medical Control Contact Criteria

__Notify Medical Control of the nerve agent exposure
__Call for access to **CHEMPAK**

PRECAUTIONS AND COMMENTS

- Minimize scene time and notify the receiving hospital as soon as possible.
- Patients not completely decontaminated can expose responders to the agent through off gassing.

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

SMO: Disaster – Biological Agents: Category A

Overview: Biological agents can be made by using bacteria, viruses, and toxins as fine airborne particles. Biological agents have been biologically and genetically engineered to increase dispersal and lethality thus making them inherently different from other bacteria, viruses, and toxins. Biological agents are infectious through one or more of the following mechanisms of exposure, depending upon the particular type of agent: inhalation, ingestion, or penetration of the skin through open wounds.The U.S. Centers for Disease Control and Prevention (CDC) rates biological agents with the greatest potential for harming public health as "Category A". "**Category A" agents include anthrax, botulism, plague, small pox, 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, hemoptysis, 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

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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

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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.

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

SMO: Disaster – Biological Agents: Category C

Overview: Biological agents can be made by using bacteria, viruses, and toxins as fine airborne particles. Biological agents have been biologically and genetically engineered to increase dispersal and lethality thus making them inherently different from other bacteria, viruses, and toxins. Biological agents are infectious through one or more of the following mechanisms of exposure, depending upon the particular type of agent: inhalation, ingestion, or penetration of the skin through open wounds.The U.S. Centers for Disease Control and Prevention (CDC) rates biological agents that have the potential to be engineered for mass dissemination in the future as "Category C". "**Category C" agents include various viruses that cause encephalitis, Hantavirus, and influenza.** The onset of signs and symptoms of disease caused by these agents vary based on the incubation periods of each specific bacteria, virus, or toxin. Unless announced by the terrorist's, attacks using infectious agents will usually go unrecognized until the incubation period is complete and patients begin to flood the medical facilities. Public health and the CDC continually monitor disease reports for potential outbreaks in the United States.

INFORMATION NEEDED
__Any known exposure
__History related to the presenting condition of the patient
__Other members of the family or friends ill with similar signs and symptoms
__Any travel outside the United States, especially to regions with evidence of current disease outbreak
__Complaints of flu-like symptoms

OBJECTIVE FINDINGS
__**Onset of signs/symptoms:** Varies based on specific disease.
__**Respiratory:** Cough, hypoxemia, tachypnea, dyspnea
__**Cardiovascular:** Chest pain
__**GI/GU:** Nausea/Vomiting, diarrhea
__**Skin:** Fever/Chills, diaphoresis
__**HEENT:** Headache, sore throat
__**CNS:** Confusion, fatigue/malaise

TREATMENT
__ Ensure patient has been adequately decontaminated prior to patient care.
__ Ensure use of proper PPE
__ Provide supportive care.

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TREATMENT - continued

__Assess ABCs
__Maintain patient's airway, suction if necessary
__Assist with ventilations as needed
__Administer CPR if needed
__100% oxygen via nasal cannula (2-6 L/min) for awake, oriented, stable patients without evidence of hypoperfusion or high-flow via nonrebreather mask (10-15 L/min) if indicated.
__Treat for shock (see Adult Shock SMO or Pediatric Shock SMO)
__Consider Advanced Airway Management if patient unconscious, exhibiting signs of pulmonary edema, or is in severe respiratory distress.
__Assist ventilations with BVM and 100% oxygen if indicated
__Consider CPAP
__Cardiac Monitoring
__For treatment of Pulmonary Edema refer to the Pulmonary Edema SMO

Documentation for Adherence to SMO

__ History of illness
__ Oxygen provided
__ Decontamination procedures used, if any
__ Ventilatory support
__ Medications provided, if any

Medical Control Contact Criteria
__Contact Medical Control as soon as possible. __ Call for ILS or ALS support if there is any signs of respiratory difficulty __

PRECAUTIONS AND COMMENTS

- Notify the receiving hospital as soon as possible.
- Ensure proper use of PPE for responders.

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

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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

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

SMO: Disaster – Explosives Incidents

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.

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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.

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OBJECTIVE FINDINGS

__ **S.T.A.R.T. TRIAGE:** (Simple Triage and Rapid Transport)
In START triage the patient is assessed quickly for the following signs. Once a patient has a value, which would place him in the RED category, tag him and move on. For the initial triage all patients who can walk are considered GREEN.

GUIDELINES (SEE FLOWCHART)

__Step 1 - Clear the scene of any walking wounded
__Step 2 - Assess ventilation in the remaining patients
No respiratory effort after opening patient's airway- BLACK
Respirations above 30 - RED
Respirations below 30 - continued assessment
__Step 3 - Assess perfusion
No radial pulse - RED
Radial pulse present - continued assessment
__Step 4 - Assess neurological status
Unconscious or altered level of consciousness - RED
__Once the BLACKs, GREENs, and REDs have been designated by the above physical findings - all remaining patients are designated as YELLOW (delayed).
__Once the patients have been moved into the various treatment areas immediate re-triage should be accomplished. All BLACK category patients should be confirmed as resources are available.

Documentation of adherence to SMO

__ Assessment, reassessment and vital signs documented (identified color system
__ Treatment
__ Patient destination
__ Type of situation (chemical, trauma, etc)
__ Decontamination needed.

PRECAUTIONS AND COMMENTS

- Keep **ALL** patient communication concise to keep radio time to a minimum
- Reassess and re-triage patients as indicated
- Trauma patients pose a significant risk for exposing pre-hospital personnel at the scene to blood and body fluids. Barrier precautions should be in place before arrival at the scene and BSI should be observed at all times
- Scene Safety is paramount.
- Minimal disturbance of crime scene should be considered.

START TRIAGE SYSTEM

STEP 1: **Clear the Scene** of Any "Walking Wounded"
These Patients are considered Delayed Category (GREEN)

STEP 2: **Assess Ventilation in Remaining Patients**

No Respiratory Effort

AFTER OPENING AIRWAY:	DEAD/NON-SALVAGEABLE (BLACK)
Respirations above 30:	CRITICAL / IMMEDIATE (RED)
Respirations below 30:	CONTINUE ASSESSMENT TO NEXT STEP

STEP 3: **Assess Perfusion in Remaining Patients**

No Radial Pulse:	CRITICAL / IMMEDIATE (RED)
Pulse Present:	CONTINUE ASSESSMENT TO NEXT STEP

STEP 4: **Assess Neurologic Status**

Unconscious / Altered Mental Status:	CRITICAL / IMMEDIATE (RED)
Normal Mentation Processes:	DELAYED (YELLOW)

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 see 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 move 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.

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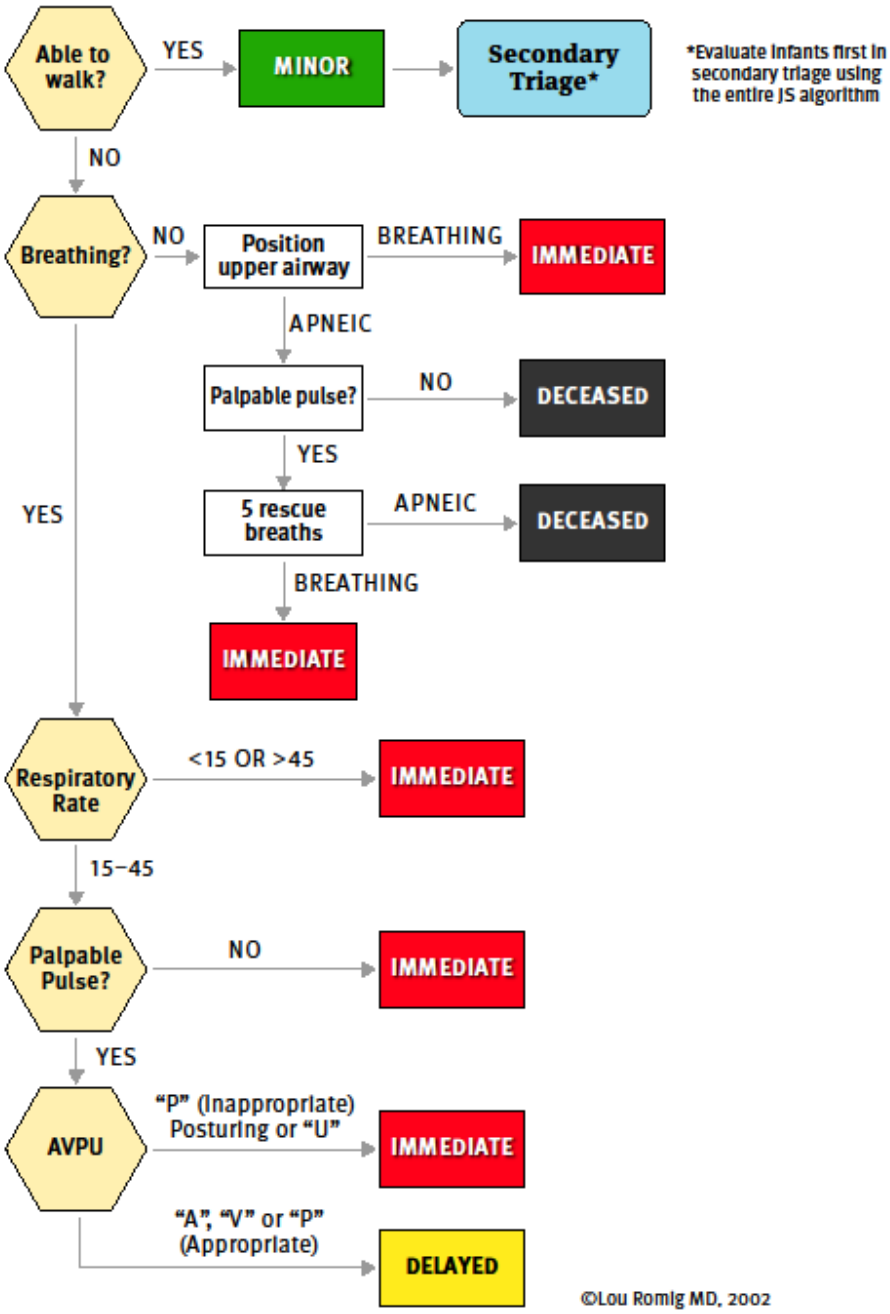
JumpSTART Pediatric MCI Triage©



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

SMO: School Bus Accident Response/ Alternative Transport Vehicle

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.

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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.

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

SMO: Mass Casualty Incidents (MCI)

Overview: A Mass Casualty Incident (MCI) is defined as any event; planned or unplanned that results in the need to provide medical care to patients outside of traditional EMS Responses. Incidents are divided into planned events (special events—like a sporting event or political protest) and unplanned incidents (such as terrorism, earthquakes, natural disasters, or weather related triggering mechanisms).
The overall operations on scene shall be managed by the NIMS Incident Command System and shall be under the direction and control of the Incident Commander (IC) normally from the agency with primary jurisdiction over the incident. Ambulance services, first responder units and EMS personnel involved in mutual aid response to a MCI will be dispatched through the responding services' communications center. These units will be dispatched only upon IC request. The on-scene medical operations shall be directed by a Medical Branch Director. **In the absence of online or on-scene medical direction, EMS will provide patient care in accordance with Region 1 Treatment Protocols.**

It is highly recommended that all EMS services participate in annual training and exercises. EMS services should encourage their personnel to participate in on-going emergency preparedness training in the Incident Command System, START and JumpSTART Triage Systems, hazard materials awareness programs and other related MCI training.

OBJECTIVE FINDINGS
__Scene safety of the responders, bystanders on the scene
__Objects or people that caused the injury
__Estimated number of injured
__Mechanisms of injury
__Any hostile parties involved, their location, and weapons
__Hazardous materials and decon efforts
__Ensure such information is passed on to responding units and IC

OPERATIONAL RESPONSIBLITIES

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.

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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.
6. Supervise the Triage Personnel, Litter Bearers, and Medical Examiner's Office personnel.
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

- "Agency for Toxic Substances and Disease Registry." *Centers for Disease Control and Prevention*. Centers for Disease Control and Prevention, 15 May 2017. Web.
- Campbell, John. *Homeland Security and Emergency Medical Response*. Boston: McGraw-Hill Higher Education, 2008. Print.
- Currance, Phillip L., Bruce Clements, and Alvin C. Bronstein. *Emergency Care for Hazardous Materials Exposure*. St. Louis: Mosby JEMS, 2007. Print.
- Currance, Phillip L. *Medical Response to Weapons of Mass Destruction*. Place of Publication Not Identified: Elsevier Mosby, 2005. Print.
- "Centers for Disease Control and Prevention." *Centers for Disease Control and Prevention*. Centers for Disease Control and Prevention, 26 Apr. 2017. Web.
- "JumpStart Triage Pediatric MCI Triage Tool." *Jumpstarttriage*.com Web. 07 June 2017.
- Texas A&M Engineering Extension Service (TEEX), and New Mexico Institute of Mining and Technology (NMT). *Medical Preparedness and Response for Bombing Incidents (MGT-348)*. 1st ed. Washington DC: United States Department of Homeland Security, Federal Emergency Management Agency, National Preparedness Directorate, National Training and Education Division, 2010. Print. Ser. 1.7.
- National Association of Emergency Medical Technicians. *PHTLS: Prehospital Trauma Life Support*. Military 7th Edition, Burlington, MA, Jones & Bartlett, 2011.

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Table of Contents Sorted by Section		
BLS, ILS, ALS Table of Contents-Section Order	**Section**	**Notes**
Abdominal Pain	Adult Medical	
Abuse: Domestic/Geriatric	Adult Medical	
Airway Management Adult	Adult Medical	
Alcohol/Substance Abuse Emergencies	Adult Medical	
Altered Mental Status Adult	Adult Medical	
Anaphylaxis and Allergic Reaction Adult	Adult Medical	
Behavioral Emergencies	Adult Medical	
Bites and Stings	Adult Medical	
Bronchospasm	Adult Medical	
Carbon Monoxide Exposure/Poisoning	Adult Medical	
Diabetic Emergencies	Adult Medical	
Drowning/Near-Drowning	Adult Medical	
Excited Delirium	Adult Medical	
Hypertensive Crisis	Adult Medical	
Hyperthermia	Adult Medical	
Hypothermia	Adult Medical	
Pulmonary Edema	Adult Medical	
Routine Medical Care	Adult Medical	
Seizure/Status Epilepticus	Adult Medical	
Sepsis	Adult Medical	New
Special Needs Patients	Adult Medical	New
Stroke	Adult Medical	
Substance Abuse Related Emergencies	Adult Medical	(Alcohol/ Substance Abuse)
Syncope	Adult Medical	
Adult Toxic Exposure (formerly Poisoning and Overdose)	Adult Medical	Renamed
Asystole/PEA Adult	Cardiac	
Bradycardia - Adult Symptomatic	Cardiac	
Cardiogenic Shock	Cardiac	
Chest Pain of Suspected Cardiac Origin	Cardiac	
Narrow Complex Tachycardia	Cardiac	
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V-Fib/V-Tach	Cardiac	
Wide Complex Tachycardia	Cardiac	
Region I Formulary	Formulary	
Ambulance Diversion Status Changes	General Guidelines	Renamed
Body Substance Exposure	General Guidelines	
Body Substance Isolation (Universal Precautions)	General Guidelines	
Concealed Carry of a Firearm	General Guidelines	
DNR	General Guidelines	
Inbound Radio Report and Alert Notifications	General Guidelines	Renamed
In-Field Termination	General Guidelines	
Intercept Criteria	General Guidelines	
Interhospital/Interfacility Transport	General Guidelines	
Notification of Coroner	General Guidelines	
Pain Assessment and Management	General Guidelines	
Physician/RN on Scene	General Guidelines	
Refusal of Medical Care or Transport	General Guidelines	Renamed
Restraints	General Guidelines	
Spinal Restrictions	General Guidelines	
Transfer of Responsibility of Patient Care	General Guidelines	
Transport Template	General Guidelines	New
Transport Template Hospital Resources	General Guidelines	New
Universal Precautions (BSI)	General Guidelines	
Medication Administration Chart	Medication Administration Chart	New
Childbirth	OB/GYNE	
Gynecological Hemorrhage	OB/GYNE	
Pre-Eclampsia/Eclampsia	OB/GYNE	
Rape/Sexual Assault	OB/GYNE	
Child Abuse/Neglect	Pediatric	
Pediatric Airway Management	Pediatric	New
Pediatric Allergic Reaction/Anaphylaxis	Pediatric	
Pediatric Altered Mental Status	Pediatric	
Pediatric Arrest/Asystole/PEA	Pediatric	
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Pediatric Bradycardia	Pediatric	
Pediatric Burns	Pediatric	
Pediatric Drowning/Near-Drowning	Pediatric	
Pediatric Dysrhythmias/Tachycardia	Pediatric	
Pediatric Head Trauma	Pediatric	
Pediatric Neonatal Resuscitation	Pediatric	
Pediatric Respiratory Distress/Arrest	Pediatric	
Pediatric Seizures	Pediatric	
Pediatric Shock	Pediatric	
Pediatric Toxic Exposure	Pediatric	
Pediatric VF/Pulseless V-Tach	Pediatric	
Routine Pediatric Care	Pediatric	New
Delayed Sequence Airway Management/ Intubation (DSI)	Procedures	Renamed
12-Lead ECG Acquisition	Procedures	
Automatic Implantable /Wearable Cardiac Devices	Procedures	
Capnography	Procedures	
Cardioversion	Procedures	
Central Line/Port-A-Cath Access	Procedures	
CPAP	Procedures	
Emergency Rehabilitation Incident	Procedures	
In-Line Nebulizer Administration	Procedures	
Intranasal Medications/MAD Device	Procedures	
Intraosseous Access	Procedures	
Intubation - Adult	Procedures	
Needle Cricothyrotomy	Procedures	
Needle Decompression of the Chest	Procedures	
Surgical Cricothyrotomy	Procedures	
Transcutaneous Pacing	Procedures	
Amputated Parts	Trauma	
Burns - Adult	Trauma	
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Crush Syndrome	Trauma	New
Hemorrhage Control	Trauma	
Ophthalmic Trauma	Trauma	
Pregnancy Trauma	Trauma	
Routine Trauma Care	Trauma	
Shock/Hemorrhagic - Fluid Resuscitation with TXA	Trauma	New
Suspension Trauma	Trauma	With Crush Trauma (New)
Traumatic Arrest	Trauma	

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Review of Standing Medical Orders

Ongoing review of Region I EMS Standing Medical Orders is required to remain current with interventions known to be effective in prehospital care and should be the responsibility of each provider in Region I. It is expected that each provider maintain a functional knowledge of the Standing Medical Orders and apply them appropriately during all patient interactions.

Updates and new Standing Medical Orders are noted with either the "Original SMO Date" or "Last Revision" within each SMO. The most current version and implementation date of the entire document is noted in the footer on each page. Distribution and education regarding any updates remains the purview of each Region I EMS Resource Hospital.

The Standing Medical Orders have been developed and approved through a collaborative process involving the Medical Directors listed below:

_____
Greg Conrad, MD, EMSMD
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1 Kish Hospital Drive, DeKalb, IL

_____
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5666 East State Street, Rockford, IL

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