REGION I EMERGENCY MEDICAL SERVICES

Standing Medical Orders

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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	40 kg	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	DSI Meds	Alt Meds	Formulary

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Fluid Bolus:

- Adult – standard dosing – 250 ml; reassess patient; repeat if indicated.
- Pediatrics – standard dosing – 20 ml/kg.
- Sepsis patients – standard dosing as above.
- Burns:
  - Advanced Burn Life Support initial fluid rates for patients with visibly large burns are based on patient age:
    - 5 years old and younger – 125 ml per hour
    - 6-13 years old – 250 ml per hour
    - 14 years and older – 500 ml per hour

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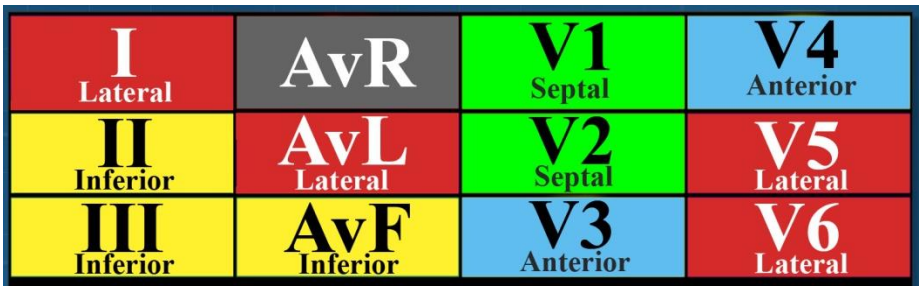
Key Considerations: EMT (BLS) services will be allowed to acquire and transmit 12-Lead ECGs. EMT will not be expected to interpret the ECG findings but will be expected to report the computerized interpretation to Medical Control.

Procedure:

A. 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.
B. 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.
C. 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.
D. Encourage the patient to remain as still as possible. You may need to support the patient's arms during acquisition.
E. Acquire the 12-Lead ECG as directed by the manufacturer of the monitor.
F. 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".
G. Establish contact with Medical Control. Give a brief patient assessment, condition and treatment report. If transmission is feasible alert Medical Control receiving hospital that you will be transmitting the patient's 12-Lead ECG. EMT (BLS) services will be expected to report the 12-Lead computerized interpretation. Advanced EMT/Intermediate and Paramedic (ALS) services will be expected to interpret and report as to whether they feel that the ECG represents a STEMI or non-STEMI.
H. 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.
I. If 12 Lead ECG shows an inferior MI (elevation in II, III, and AVF) obtain right-sided leads if time permits.
J. 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.
K. If patient condition changes consider repeating ECG.

Localizing ECG Changes



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Key Considerations: Consider level of discomfort, associated symptoms, GI symptoms, urination, gynecological symptoms, and medical history.

Treatment:

A. Routine Medical Care.
B. Nothing by mouth (NPO).
C. Consider ILS/ALS intercept.
D. Ondansetron for nausea and vomiting.
E. 12 lead ECG, Cardiac monitor.
F. IV access.
G. If hypotensive (SBP<90 mmHG and signs of poor perfusion): fluid bolus, reassess and repeat if indicated.
H. Pain Management per SMO.

Pediatric Patients

A. Routine Pediatric Care.
B. Pediatric dosing for medications listed above.

Key Considerations:

A. Bruises/welts/lacerations.
B. Injuries that are unexplained/poorly explained/incompatible with the explanation.
C. Burns shape and size often reflect object used to burn.
D. Repeated injuries.
E. Frequent hospitalization.
F. Repeated use of Emergency Department services for injury.
G. Discrepancies between history and presenting illness.
H. Time delay between injury and coming to hospital (1-2 days).
I. Reluctance to discuss circumstances surrounding injury.
J. Unexplained injuries.
K. Alleged third party inflicted injuries.

Treatment:

A. Scene safety, notify law enforcement if needed.
B. Routine Medical Care, Routine Pediatric Care, and/or Routine Trauma Care.
C. Treat injuries see appropriate SMO, such as Pain Management SMO.
D. If a parent or caregiver refuses to allow transport of the patient notify the police and stay on scene until they arrive.
E. Attempt to preserve evidence.
F. All suspected abuse must be reported to the appropriate agency.

Resources:

- **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**.
- **Department of Children and Family Services – 1-800-25ABUSE (1-800-252-2873).**
- **Domestic Abuse -** 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):**
  - Adult Protective Services, **1-866-800-1409**.
  - In Winnebago and Boone counties, the Visiting Nurse Association of Rockford (VNA) is designated by the Department of Aging to investigate all possible elder abuse cases. A report can be made directly to VNA at **(815) 971-3550**, 24 hours a day, seven days a week.
- **Nursing Home Abuse -** Suspected victims of nursing home abuse or neglect are to be reported to the proper authority as mandated by Illinois State Law PA 82-120, "The Abused and Neglected Long Term Care Facility Residents Reporting Act". This authority is the Division of Enforcement, Illinois Department of Public Health: call **1-800-252-4343** or the Ombudsman Program at **815-316-0040**.
- **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**.

Key Considerations: 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:

A. Assess airway patency utilizing adjuncts as indicated.
B. 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.
C. Manage Foreign Body Airway Obstruction per American Heart Association standards.
D. Consider NG tube for gastric decompression.
E. Assess airway patency utilizing adjuncts as indicated:
   - OPA
   - NPA
   - Supraglottic airway per EMS System approval according to manufacturer's guidelines
     - Kings Airway sizing
     - I-GEL Airway sizing
   - Sedation for Airway Management
   - Needle Cricothyrotomy
   - Surgical Cricothyrotomy
   - Commercial cricothyrotomy device with prior Medical Director approval (prior to Medical Directors' approval training must be submitted to IDPH with plans to assure ongoing competency).
F. 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

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Pediatric Patients

Key Considerations: Pediatric intubation for patients < 30 kg has been devalued based on evidence studies showing aggressive airway management without intubation results in improved outcomes. In extreme or rare circumstances (tracheostomy patient, excessive bleeding in airway) when other measures have failed, intubation may be considered.

TREATMENT:

A. Pediatric Routine Care.
B. Pediatric dosing for medications and age appropriate treatments listed above.

Kings Airway Chart

Size	Patient Criteria	Color	Inflation Volume	NG Max Size
0	< 5 kg (12.5 lbs)	Clear	10 ml	10 F
1	5-12 kg (12.5-26.4 lbs)	White	20 ml	10 F
2	12-25 kg (26.4-55 lbs)	Green	35 ml	16 F
2.5	25-35 kg (55-77 lbs)	Orange	40-45 ml	16 F
3	4-5 ft	Yellow	45-60 ml	18 F
4	5-6 ft	Red	60-80 ml	18 F
5	> 6 ft	Purple	70-90 ml	18 F

I-GEL Airway Chart

Size	Patient Criteria	Color
1.0	Neonate – 2-5 kg	Pink
1.5	Infant - 5-12 kg	Blue
2.0	Small Pediatric – 10-25 kg	Grey
2.5	Large Pediatric – 25-35 kg	White
3	Small Adult – 30-60 kg	Yellow
4	Medium Adult – 50-90 kg	Green
5	Large Adult – 90+ kg	Orange

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Key Considerations: Amount of alcohol/drugs ingested, possibility of other drugs involved, medical history (trauma, tranquilizers, anticonvulsants, diabetes), altered mental status (AVPU), conditions that mimic intoxication (hypoglycemia, hypoxia, head injury, behavioral emergency).

TREATMENT:

A. Routine Medical Care.
B. Protect airway. Anticipate the possibility of respiratory arrest, seizures and/or vomiting.
C. O_2 and airway management as indicated.
D. Consider advanced Airway Management if GCS < or = to 8.
E. Obtain IV access.
F. If there is impending respiratory arrest and narcotic use is suspected or if patient unable to protect airway, consider Naloxone.
G. Obtain glucose check for adult:
   - If <80 mg/dl, **and/or** the patient is symptomatic, and if gag reflex is intact, consider Oral Glucose.
   - If <80 mg/dl, **and/or** the patient is symptomatic, and if the gag reflex is not intact, give Dextrose IV; see Dextrose Dosing Chart.
   - If <80 mg/dl, **and/or** the patient is symptomatic, and no IV give Glucagon IM.
H. Follow appropriate SMOs for:
   - Seizures:
     Seizures/Status Epilepticus
   - Respiratory/ cardiac arrest:
     Asystole/PEA
     V-Fib/V-Tach
     Neonatal Resuscitation
     Pediatric Respiratory Distress/Failure/Obstruction/Arrest
   - Hypoglycemia
     Diabetic Emergencies
   - Refusal of Transport
     Refusal of Medical Care or Transport

Pediatric Patients

A. Routine Pediatric Care.
B. Obtain glucose check:
   - If <60 mg/dl, **and/or** the patient is symptomatic, and if gag reflex is intact, consider Oral Glucose.
   - If <60 mg/dl, **and/or** the patient is symptomatic, and the gag reflex is not intact, give Dextrose IV; see Dextrose Dosing Chart.
   - If <60 mg/dl **and/or** the patient is symptomatic, and no IV give Glucagon IM.

Key Considerations: Always assess for treatable etiologies (hypoglycemia, opiate overdose, dysrhythmias, etc.) of the altered mental status before performing advanced airway procedures.

Treatment:

A. Routine Medical Care.
B. Collect and document all medications that the patient is prescribed for administration at home.
C. Oral Glucose for conscious patient with gag reflex intact and BS < 80 mg/dl **and/or** symptomatic. If you are unable to measure blood glucose level, assume hypoglycemia.
D. IV access.
E. Dextrose IV if adult blood glucose <80 mg/dl **and/or** if patient is symptomatic; repeat as indicated.
F. If unable to establish an IV to administer Dextrose, Dextrose Dosing Chart and patient is without gag reflex with a blood glucose < 80mg/dl and/or the patient is symptomatic administer Glucagon IM.
G. Advanced airway management as indicated.
H. Naloxone IN, IV 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).
I. Administer fluid bolus for hypotension.

Pediatric Patients

A. Routine Pediatric Care.
B. Check blood glucose level.
C. Blood glucose level less than 60 mg/dl child or less than 40 mg/dl newborn **and/or** if patient is symptomatic:
   - Administer Oral Glucose if patient is able to swallow, maintain their airway, and follow commands.

D. Establish IV/IO of Normal Saline at TKO rate.
E. 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.

F. Airway management as indicated – see Airway Management SMO.
G. Consider Naloxone if suspected or possible overdose with respiratory depression.
H. Administer Naloxone as indicated.
I. Administer Fluid Bolus for hypotension. Reassess and repeat to desired systolic B/P: 80-90 mmHG +2 (age in years).

Key Considerations: While uncommon in Illinois, Altitude Illness is defined in terms of Acute Mountain Sickness (typically greater than 5,000 ft), High Altitude Pulmonary Edema (HAPE), and High Altitude Cerebral Edema (HACE) (both typically greater than 8,000 feet). The highest elevation in Illinois is 1,235 feet in Scales Mound, Illinois in JoDaviess County. If Altitude Illness is suspected assessment should also consider alternate causes of the symptoms.

TREATMENT:

A. Stop ascent.
B. Airway Management, as symptoms dictate.
C. Descend as soon as scene conditions permit.
D. Consider treatment for:
- Pulmonary Edema
- CPAP
- Hypoglycemia
- Hypo/Hyperthermia
- Carbon Monoxide Poisoning (for patients who may have been cooking within an enclosed space)
- Altered Mental Status
- Pain Management
- Dehydration
- Exhaustion

E. If needed, administer oxygen to saturations ≥ 90%.
F. If needed, establish IV and perform fluid bolus to maintain systolic BP > 90 mmHg.

Pediatric Patients:

A. Routine Pediatric Care.
B. Pediatric dosing for fluid bolus, if needed, as above.

TREATMENT:

Mild Reaction – Adult

Key Considerations – Hives, rash.

A. Routine Medical Care.
B. Remove etiologic agent if possible or relocate patient.
C. Oxygen as indicated.
D. For extensive hives, administer Diphenhydramine OTC, IM, or IV – OTC Diphenhydramine may be utilized by BLS services. Services must supply their own OTC products and utilize per manufacturers recommendations. OTC is not recommended for ALS units.
E. Immediate transport.

Moderate Reaction – Adult

Key Considerations – Hives, rash, mild bronchospasm, normotensive.

A. Routine Medical Care.
B. Remove etiologic agent if possible or relocate patient.
C. Oxygen as indicated.
D. Albuterol / DuoNeb (Albuterol/Ipratropium Bromide).
E. ADULTS - First medication dose of Albuterol or DuoNeb (Albuterol/Ipratropium Bromide) via nebulizer, repeat with Albuterol only prn until relief of symptoms.
F. IV access.
G. Diphenhydramine OTC, IV (or IM if can't establish IV access).
H. Methylprednisolone IM/IV/IO.
I. If no response and patient bronchospasm persists or worsens, Consult Medical Control for use of Epinephrine (concentration 1 mg/1 ml) IM or Epi Injector IM. Consult Medical Control to repeat in five minutes one time.
J. Immediate transport.

Severe Reaction – Adult

Key Considerations – Altered mental status, hypotension (SBP < 90 mmHG and evidence of hypoperfusion), bronchospasm and/or angioedema.

A. Routine Medical Care.
B. Remove etiologic agent if possible or relocate patient.
C. IV access.
D. If no IV access, Epinephrine (concentration 1 mg/1 ml) IM *OR* Epi Injector IM.
E. Diphenhydramine OTC, IV (or IM if can't establish IV access).
F. Consider administration of the following medications based on patient assessment:
   - Methylprednisolone IM/IV/IO.
   - 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.
G. Advanced Airway Management as indicated.
H. Immediate transport.

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Pediatric Patients

Treatment: *Mild* Reaction

Key Considerations – Hives, rash.

A. Routine Pediatric Care.
B. Remove etiologic agent if possible or relocate patient.
C. For extensive hives, administer Diphenhydramine OTC, IM, or IV – OTC Diphenhydramine may be utilized by BLS services. Services must supply their own OTC products and utilize per manufacturers recommendations. OTC is not recommended for ALS units.
D. Immediate transport.

Moderate Reaction – Pediatric

Key Considerations – Hives, rash, mild bronchospasm, normotensive for age, tachycardic, SaO2 > 95%.

A. Routine Pediatric Care.
B. Remove etiologic agent if possible or relocate patient.
C. Albuterol in nebulizer.
D. Diphenhydramine OTC, IV (or IM if can't establish IV access).
E. Methylprednisolone IM, IV, IO
F. **Consult Medical Control for use of Epinephrine**.
G. **BLS:**
   - Epi Injector - JR for children weighing 33 pounds (15 kg) to 66 pounds (30kg)
   - Epi 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 Injector or Epinephrine (concentration 1 mg/1 ml). May repeat in 15 minutes one time

H. Fluid bolus, reassess and repeat prn to 60 ml/kg.
I. Immediate transport.

Severe Reaction – Pediatric

See next page

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Severe Reaction – Pediatric

Key Considerations – Angioedema, abnormal appearance (agitation, restlessness, somnolence), diminished perfusion, respiratory failure, stridor, bradycardia, SaO2 < 95%.

A. Routine Pediatric Care.

B. Remove etiologic agent if possible or relocate patient.

C. IV access.

D. Epinephrine:

BLS:

- Epi Injector - JR for children weighing 33 pounds (15 kg) to 66 pounds (30kg)
- Epi 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: – may use Epi Injector or

- IM: Epinephrine (concentration 1 mg/1 ml), repeat in 15 minutes one time prn, maximum single dose 0.3 mg

E. Administer the following medications based on patient assessment:

- Diphenhydramine OTC, IV (or IM if can't establish IV access)
- Methylprednisolone IM, IV, IO
- Albuterol in nebulizer.
- Fluid bolus, reassess and repeat prn to 60 ml/kg.

I. Advanced Airway Management as indicated.

J. Immediate transport.

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Asystole/Pulseless Electrical Activity (PEA) –1.009

Key Considerations: Pulseless, apneic, organized electrical activity on the monitor (not VT or V-Fib), asystole or PEA as confirmed by the monitor, heart rate < 60 with poor perfusion despite oxygenation and ventilation, identification of treatable causes (H's and T's).

TREATMENT:

A. 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.
B. Determine unresponsiveness; open airway (manually); assess for breathing/gasping; suction as needed; simultaneously assess pulse; if not definitively felt in <10 seconds begin quality CPR with compressions.
C. Apply defib pads with chest compressions in progress as soon as AED (BLS)/ monitor (ALS) is available.
D. 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; see Airway Management SMO.
E. Establish vascular access IV or IO, initiate Normal Saline.
F. Epinephrine 1 mg/10 ml IV or IO, repeat every 3 to 5 minutes as long as CPR continues.
G. Consider causes:
   - Administer fluid bolus if suspected hypovolemia.
   - Dextrose 10% for blood glucose < 80mg/dL Dextrose Dosing Chart.
H. Naloxone IN, IM, IV if suspected narcotic overdose. Repeat doses may be necessary.
I. Calcium Gluconate IV or IO for suspected hyperkalemia (history of renal failure, dialysis, or potassium ingestion).
J. Sodium Bicarbonate for patients with prolonged resuscitation, diabetic patient with possibility of DKA, or tricyclic or phenobarbital overdose; see Toxic Exposure SMO.
K. If ROSC occurs, acquire 12 lead ECG. If acute MI suspected, call STEMI alert.

Pediatric Patients

Treatment:

A. Start or continue high quality CPR per AHA guidelines.
B. Attach AED or monitor/defibrillator and analyze.
C. Administer oxygen via bag-valve-mask device or airway adjuncts as indicated; see Airway Management SMO.
D. Reassess patient every two minutes to assure adequacy of compressions and ventilations.
E. Epinephrine: see current Medication Administration Chart or Broselow for pre-calculated dosing; IV/IO (1mg/10 ml) – repeat every 3-5 minutes.
F. IV Fluid Bolus of 20 ml/kg for suspected hypovolemia; repeat as needed.
G. If shockable rhythm continues/returns administer shocks according to AHA guidelines and revert to appropriate rhythm specific algorithm.
H. Treat as appropriate any reversible causes that are identified (H's and T's).
I. Calcium Gluconate IV or IO for suspected hyperkalemia (history of renal failure, dialysis, or potassium ingestion.
J. If ROSC (return of spontaneous circulation) analyze pulse, blood pressure, and respiratory status.
K. If patient is in respiratory failure or arrest only ventilate once every 3-5 seconds.

Consider	Definition	Potential Causes	Treatment
Hydrogen Ions	Improper PH level caused by too much acid (lactic acidosis)	• Respiratory • Metabolic	Respiratory - ventilate Metabolic – Sodium Bicarb
Hyperkalemia	Too much potassium in the body	• Kidney disease/failure • Diuretics • DKA	Calcium Gluconate 1 Gram – may repeat every 5 min up to 2 Grams Sodium Bicarb 1 meq/kg; may repeat half dose in 10 minutes
Hypokalemia	Too little potassium in the body	• Kidney disease/failure • Diuretics • DKA	
Hypoglycemia			Glucose
Hypothermia	When the body loses the ability to keep itself warm (body temperature below 95° F)	Extreme/prolonged exposure to cold weather and/or water	Apply active and passive warming measures
Hypovolemia	Sudden and significant decrease in the volume of blood and fluids in the body	• Blood loss (internal and external) • Inadequate intake of fluids • Excessive vomiting or diarrhea	IV/IO fluid bolus Rapid Transport; possible surgical intervention
Hypoxia	When the body is deprived of a sufficient supply of oxygen	• Lack of oxygen • Lung disease • Chemical or gas poisoning	• Increase O_2 intake • Ventilate • Advanced airway
Tamponade (pericardial tamponade)	Build-up of blood or fluid in the pericardial space	• Chest Trauma • Myocardial rupture • Pericarditis	• IV/IO fluids • Rapid Transport
Tension Pneumothorax			Plural decompression
Thrombosis – (acute coronary syndrome)	Blockage of the heart's coronary artery/arteries	• Blood clot(s) • Myocardial infarction	Rapid transport; consider Cath Lab capable hospital
Thrombosis (pulmonary embolus)	Blockage of the lung's main artery	• Blood clot(s) • Pulmonary embolism	
Toxins	Overdose, either intentional or accidental	• Street drugs • Prescription or OTC drugs • Chemical exposure	Opiate – Naloxone Beta Blocker OD – Glucagon TCA – Sodium Bicarb Organophosphate OD - Atropine

Medication Administration Chart
H's and T's Resource – 1.065
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Key Considerations: 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).

Procedures:

Patient with ICD:

A. Routine Medical Care.
B. Cardiac monitor.
C. Treat dysrhythmias per standing SMO:
   - Bradycardia
   - Tachycardia
D. Avoid direct placement of defib pads over the ICD unit as this could damage the unit.
E. 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.
F. Notify receiving hospital early in order to enable them to get magnet ready to deactivate AICD.
G. If the AICD is malfunctioning and patient is hemodynamically stable and in pain from repeated shocks; see Pain Management SMO.

Patient with LifeVest:

A. Routine Medical Care.
B. 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 contact with the patient during treatment sequence of the LifeVest.
   - If the LifeVest has blue stains the device has delivered a shock.
C. 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.
D. Cardiac monitor.
E. Treat dysrhythmias per standing SMO:
   - Bradycardia
   - Tachycardia
F. 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.

Patient with Pacemaker:

A. Routine Medical Care.
B. Cardiac monitor – Note when the pacemaker "fires" a pacer spike may or may not be visible on the monitor.
C. Treat dysrhythmias per standing SMO:
    - Bradycardia
    - Tachycardia
D. Avoid direct placement of defib pads over the pacemaker unit as this could damage the unit.

Patient with VAD

A. Routine Medical Care.
B. Contact Implant Coordinator:
    - Patient should have information sheet with number; they may be the best resource.
C. There are multiple devices in use; internal and external.
D. 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
E. No chest compressions unless approved by Implant Coordinator.
F. Defibrillation - standard method, do not put PADS over hardware.
G. VAD generally have two alarms:
    - Yellow – advisory
    - Red – critical
H. If patient hypotensive fluids may be useful to increase preload but be cautious to not overload.
I. Nitrates may be detrimental due to the reduction in preload.
J. Patients are typically on anticoagulant / antiplatelet medication.
K. Patient could be in VF and awake if the pump is working.

Key Considerations: abnormal emotional behavior could be the result of injuries or disease. Initiate treatment as required. Consider at attempt to evaluate for possible causes of behavioral problems. Behaviors may range from hostility and anxiety to withdrawn. Consider altered mental status and injuries if patient has self-destructive behaviors. Search for a medical alert bracelet or card.

TREATMENT:

A. Scene safety—STAY ALERT – at all times avoid placing yourself in danger.
B. Contact Resource Hospital, police, and/or Fire Department back-up as appropriate.
C. Routine Medical Care or Routine Trauma Care.
D. Identify yourself clearly.
E. 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.
F. Get patient's permission to do your assessment before touching patient.
G. Transport female with another non-threatening female bystander or relative, if possible.
H. 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.

RESTRAINTS:

Key Considerations: Physical and/or chemical restraints are a last resort in caring for the emotionally disturbed patients. 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.

- 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
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RESTRAINTS PROCEDURE:

A. 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.

B. Utilize verbal de-escalation methods whenever possible - consider physical/chemical restraints a last resort when verbal control is ineffective.

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

D. Consider chemical restraint enroute when physical restraints have not been effective - prepare and have medication ready to administer - Ketamine or Midazolam (light dose).

E. Once restrained, place patient in semi-fowlers or recovery position to maximize breathing.

F. Apply Capnography and pulse-ox.

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

H. 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).

Resources/Precautions:

- Ketamine is contraindicated in pregnant patients. Use caution in patients with any history of cardiac and/or thyroid disorder. Ketamine may cause hypotension and increased ocular pressure.
- 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. If it is necessary to transport a patient against their will, a Petition for Involuntary/Judicial Admission (Form 5) needs to be completed by the person who heard the patient state they are a danger to themselves or others.
- It may be necessary to get contact information from a family member for forms to be completed by EMS/Police/Hospital staff.

Pediatric Patients

Key Considerations: 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. The State of Illinois permits Emancipated Minors to be treated as adults.

PROCEDURE:

A. 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.

B. 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.

Medication Administration Chart
Return to Table of Contents

Key Considerations: Consider localized reactions such as puncture marks, lacerations, avulsions, rash, hives, localized erythema, edema, and/or decreased pain or touch sensation. Consider systemic reactions such as respiratory distress, wheezing, stridor, diaphoresis, hypotension, tachycardia and/or tachypnea

TREATMENT:

A. Routine Medical Care.
B. See Allergic Reaction and Anaphylaxis SMO, if needed.
C. If patient is hypotensive, treat for shock:
   - Consider IV fluid bolus.
   - Consider Dopamine after adequate fluid resuscitation.
D. Scrape off any remaining stinger or tentacles.
E. Clean the affected area with saline and cover with sterile dressing.
F. 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.
G. Pain Management SMO.

Pediatric Patients

A. Routine Pediatric Care.
B. Pediatric dosing for medications listed above.
C. Contact Medical Control for approval and dosing of Dopamine.

Key Considerations: 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. 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.

Recommendations:

A. 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.
B. 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.
C. 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.
D. 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)
E. The appropriate person in the receiving hospitals emergency department will evaluate the exposure to determine if a significant exposure has occurred.
F. 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.
G. 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.
H. 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.
I. 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.
J. 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.

Key Considerations: Assume all patients are carriers of infectious / contagious disease. If a specific contagion is identified respond with addition PPE protection. If disease etiology dictates provide PPE for patient. Consider potential respiratory contagion in a closed ambulance and ventilate accordingly. Consider contagions from bodily fluids, mucous membranes, non-intact skin, body issues, and medications/drugs/illicit substances when handling blood.

GENERAL TREATMENT:

A. Gloves will be worn whenever personnel are in contact with a patient. Consider double gloves when handling blood, body fluids, mucous membranes, non-intact skin, body tissues, and medications/drugs/illicit substances.
B. New gloves should be worn for each patient contact. Hands must be washed (wet or dry wash) after glove removals and between patient contacts.
C. Procedure masks will be worn whenever personnel are in contact with a patient. Consider N-95 masks for high risk patients and/or aerosol generating procedures.
D. If emergency ventilatory support is necessary a resuscitation mask with one-way valve and filter or bag valve mask should be used.
E. Do not recap needles. Promptly place sharps in a designated puncture resistance, protected lid container.
F. Place all soiled linen in a properly marked laundry bag before sending in to laundry or leaving at hospital.
G. Do not launder contaminated clothes with regular laundry. Wash separately then rinse washer with at least a 1-10 bleach solution.
H. 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.
I. 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.
J. Keep vaccinations current and have proper annual testing
K. Significant exposure to and possible contamination from blood or body fluids should be reported immediately (ask for receiving hospital's Exposure Report Form).
L. Patients should be asked if they are allergic to latex. Non-latex equipment should be used on all patients that have latex allergies.

HIGH-RISK TREATMENT:

A. A full face shield and wrap around eye protection or goggles should be worn for respiratory emergencies involving an airway procedure (intubation, suctioning, aerosol treatment, etc) or patient with an active cough from an apparent infectious source.
B. Consider providing the patient with a procedure mask.
C. An impermeable gown should be worn for any situation likely to generate splash/liquid exposures.
D. If possible, isolate the cab of the ambulance during transport.
E. Consider ventilation for aerosol procedures in the ambulance.
F. Include information regarding aerosol procedures for high-risk patients during inbound report. Aerosol procedures may need to be discontinued while transporting the patient through the Emergency Department.

Medication Administration Chart
Body Substance Isolation (Universal Precautions) - 1.014 Return to Table of Contents

Key Considerations: Symptomatic bradycardia is a patient with a pulse rate <60 bpm and any one or more of the following serious signs or symptoms: SBP <90 mmHG 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), and/or ischemic chest pain. See definition for pediatric bradycardia below.

Treatment:

A. Routine Medical Care.
B. Attach monitor, 12 lead ECG if available (do not delay therapy).
C. IV/ IO of Normal Saline.
D. Consider fluid bolus.
E. Perform 12 lead:
   - If STEMI or LBBB, use caution when considering Atropine administration.
   - If Non-STEMI then may proceed to administer Atropine. May repeat every 3-5 minutes.
   - Use caution before administering Atropine for patients with STEMI or cardiac ischemia present on 12 lead as resultant tachycardia could worsen ischemia.
F. Transcutaneous pacing (TCP).
G. Use Midazolam (light dose) IV for sedation prior to TCP if patient conscious and Systolic BP >100 mmHG.
H. If patient remains symptomatic, but hypotension persists:
   - Repeat Fluid Bolus.
   - Dopamine titrated to SBP > 90 mmHG.
I. Consider Pain Management SMO as appropriate.

Pediatric Patients:

Key Considerations: In children bradycardia almost always means hypoxia. Treat for hypoxia first. Clinical signs of respiratory distress or failure/hypoxemia including apnea, slowed or absent capillary refill (< 3 seconds), hypotension, retractions (flaring or grunting) and/or signs of decreased perfusion including altered mental status, abnormal appearance, inequality of central and distal pulses, and/or loss of distal pulses.

TREATMENT:

A. Routine Pediatric Care.
B. ABC's – oxygenation and ventilation, oxygen high flow by NRB mask; if not response assist ventilations using BVM and 100% oxygen.
C. Heart rate < 60/minute with poor perfusion despite oxygenation and ventilation begin high quality CPR per AHA guidelines.
D. Cardiac monitor.
E. Advanced airway if ventilations are inadequate; see Airway Management SMO.
F. IV or IO access.
G. Epinephrine: See current Medication Administration Chart or Broselow for calculated dosing: IV/IO (1mg/10 ml); repeat every 3-5 minutes.
H. Consider Atropine IV or IO for increased vagal tone or primary AV Block may repeat once.
   - Atropine is rarely effective in treating pediatric bradycardia. Be sure the patient is adequately oxygenated and ventilated.

Key Considerations: Consider mental status, skin signs, perfusion, respiratory rate, rhythm, pattern and work of breathing, lung sounds, blood pressure, heart rate, rhythm, oxygen saturation, rash, urticaria, evidence of trauma. Consider asthma exacerbation, chronic obstructive pulmonary disease (COPD) exacerbation, wheezing from suspected pulmonary infection (pneumonia, bronchitis).

TREATMENT:

A. Routine Medical Care.
B. First medication dose of DuoNeb (Albuterol/ Ipratropium Bromide) via nebulizer, repeat with Albuterol only.
C. CPAP.
D. Administer the following medications based on patient assessment:
   - For patients with severe refractory bronchospasm, increased effort of breathing and/or a history of coronary artery disease or hypertension:
     - Methylprednisolone IM, IV, IO (anticipated onset of effect approximately one hour).
     - Magnesium Sulfate – see Magnesium Sulfate Administration Chart.
     - Consult Medical Control for permission for use of Epinephrine.
       - Epi Injector OR
       - Epinephrine (concentration 1 mg/1 ml)
E. Rapid transport.

Pediatric Patients

Key Considerations: Pediatric dosing for Magnesium Sulfate not recommended without a pump.

TREATMENT:

A. Routine Pediatric Care.
B. Albuterol.
C. Call Medical Control for administration of one or more of the following:
   - Methylprednisolone IM, IV, IO (anticipated onset of effect approximately one hour).

   For patient with severe refractory bronchospasm and a history of coronary artery disease or hypertension:
   - Epi Injector JR for children weighing 33 pounds (15 kg) to 66 pounds (30 kg).
   - Epi Injector for children weighing greater than 66 pounds (30 kg).

Key Considerations: evidence of inhalation injury or tox exposure (e.g. carbonaceous sputum, hoarseness, singed nasal hairs), extent of burns (depth – full or partial thickness and Total Body Surface Area (TBSA) affected. 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:

A. Prepare for rapid transport.
B. Routine Trauma Care.
C. Frequent evaluation and re-dosing of pain medications for burn victims; see Pain Management SMO.
D. IV access. Per Advanced Burn Life Support initial fluid rates for patients with visibly large burns are based on patient age:
   - 5 years old and younger – 125 ml per hour
   - 6-13 years old – 250 ml per hour
   - 14 years and older – 500 ml per hour
E. Transport as soon as possible.
F. Consider ALS Intercept as appropriate.

Thermal

A. Stop the burning process if needed. Flush with cool water but do not immerse in ice.
B. Remove jewelry and non-adhered clothing, do not break blisters.
C. Cover affected body surface with dry dressing.
D. Prevent hypothermia.
E. Control airway. Use appropriate oxygen and airway adjuncts as needed. Early intubation for patients with evidence of inhalation injury should strongly be considered.
F. Cover other open wounds with sterile, dry dressings.
G. Reassess airway frequently.
H. Fluid bolus as listed above if partial or total thickness burns >10% TBSA. Repeat if indicated.
I. Monitor lung sounds.
J. If symptoms of Shock are present consider other causes.

Chemical

A. Decontamination and HazMat procedures, refer to MSDS.
B. Stop the burning process. Remove jewelry, contact lens, and clothing.
C. Brush off powder, if present.
D. If appropriate, irrigate with copious amounts of water for at least 20 minutes continuing irrigation enroute.
E. Prevent hypothermia.
F. Cover other open wounds with sterile dressings.

Electrical

A. Make sure electricity is off. Make sure fire is out. Stop the burning process.
B. Immediately check respiratory and circulatory status. Follow AHA guidelines for patients in cardio-pulmonary arrest.
C. Remove jewelry and non-adhered clothing. Do not break blisters.
D. Dressing on any exposed, injured areas.
E. Prevent hypothermia.
F. Cover other open wounds with sterile dressings.
G. Consider C-spine and spinal precautions.
H. Prepare to use defibrillator as needed.
I. Reassess airway and respiratory status frequently.
J. Fluid bolus as listed above if partial or total thickness burns >10% TBSA. Repeat if indicated.
K. Monitor lung sounds.

Medication Administration Chart
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Lightning Strike

A. Immediately check respiratory and circulatory status. If patient is in cardio-pulmonary arrest, follow AHA guidelines for resuscitation including high quality CPR. Lightning injuries may cause prolonged respiratory arrest.
B. Manage the airway using manual methods and mechanical devices.
C. Apply spinal motion restriction for victims of musculoskeletal trauma associated with the electrocution.
D. Initiate IV or IO access.

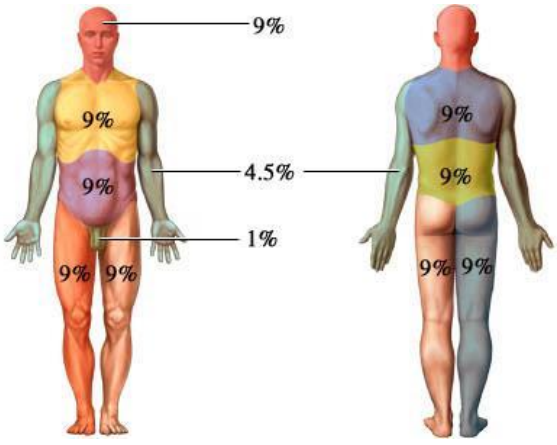
Radiation

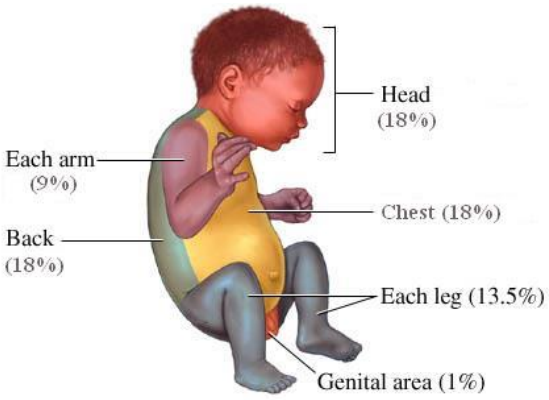
- If the patient is contaminated with radioactive material, they will need decontamination by a HAZ-MAT team specifically trained to scan and decontaminate radioactive material.
- Non-contaminated patients will present with injuries similar to thermal burns and should be treated according to THERMAL BURN procedures.
- Exposed victims do not present a hazard to responders unless they have radioactive contamination present.

Pediatric Patients

A. Routine Pediatric Care.
B. Pediatric dosing for medications listed above.

Rule of Nines





Key Considerations: In order for $EtCO_2$ to be present metabolism, perfusion, and ventilation must be taking place. EtCO2 value, respiratory rate, and waveform equals airway status. If $EtCO_2$ is low and not related to airway status consider perfusion.

PROCEDURE:

A. Attach the appropriate capnography sensor for a patient with an advanced airway or a spontaneously breathing patient.
B. Note the $EtCO_2$ level, respiratory rate and waveform.
C. $EtCO_2$ levels:
   - Normal 35 – 45.
   - If $EtCO_2$ 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.
D. 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?
E. A waveform with a "shark fin" pattern may indicate bronchospasm.
F. $EtCO_2$ should be monitored as any other vital sign when assessing a patient.

Key Considerations: Headache, irritability, vomiting, chest pain, loss of coordination, loss of consciousness, cherry red skin color (late sign). 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.

TREATMENT:

A. Remove patient from source to fresh air.
B. Assess patient's CO level (if available).
C. Routine Medical Care.
D. Administer 100% oxygen regardless of patients' O_2 saturation.
E. Keep patient quiet as possible to decrease oxygen requirements.
F. Treat per appropriate SMO for:
   - Cardiac Arrest:
     - Asystole/PEA
     - V-Fib/V-Tach
     - Neonatal Resuscitation
   - Cardiac Dysrhythmia
     - Bradycardia
     - Tachycardia
   - Pulmonary Edema
     - Pulmonary Edema SMO

% COHb	Typical Manifestations	Treatment/Transport Decisions
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 judgement	* 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 the closest hospital.

Pediatric Patients

A. Routine Pediatric Care.
B. Pediatric dosing for medications listed above.

<table>
<tr><th colspan="4">CPR GUIDELINES</th></tr>
<tr><th>Component</th><th>Adults and Adolescents</th><th>Child
(1 year to puberty)</th><th>Infant
(under 1 year of age, excluding neonates)</th></tr>
<tr><td>Airway</td><td colspan="3">Head tilt-chin lift. Jaw thrust if suspected cervical trauma</td></tr>
<tr><td>Breathing:
Without CPR</td><td>One breath every 6 seconds</td><td colspan="2">One breath every 2-3 seconds (20-30 breaths /minute)</td></tr>
<tr><td>Breathing:
CPR with advanced airway</td><td colspan="3">One breath every 6 seconds (10 breaths/min) asynchronous with chest compressions.
About one second/breath. Visible chest rise.
(If using a BVM with ventilation rate timer follow timing light)</td></tr>
<tr><td>Foreign Body:
Conscious patient</td><td colspan="2">Abdominal thrusts (use chest thrusts in pregnant and obese patients) or chest thrusts if abdominal thrusts are not effective</td><td>Five back slaps and five chest thrusts</td></tr>
<tr><td>Foreign Body:
Unconscious patient</td><td colspan="3">Lower victim to the floor. Begin CPR, starting with chest compressions. Do not check for a pulse. Before you deliver breaths, look into the mouth. If you see a foreign body that can easily be removed, remove it. Continue CPR.</td></tr>
<tr><td>Compression landmarks</td><td colspan="2">Lower half of sternum between nipples</td><td>Just below nipple line
(lower half of sternum)</td></tr>
<tr><td>Hand placement</td><td>Heel of one hand, other hand on top</td><td>As for adults (may use both hands or the heel of one hand depending on the size of the child)</td><td>Two thumbs – encircling hands preferred for two rescuers</td></tr>
<tr><td>Compression depth</td><td>At least 2 inches</td><td colspan="2">Approximately one-third anterior/posterior depth of chest
(Approximately 2 inches in child/1 ½ inches in infant)</td></tr>
<tr><td>Compression rate</td><td colspan="3">100-120 per minute</td></tr>
<tr><td>Compression – ventilation ratio without advanced airway</td><td>30:2
10:1 with continuous compressions</td><td colspan="2">30:2 (single rescuer)
15:2 (two rescuers)</td></tr>
<tr><th colspan="4">AED GUIDELINES</th></tr>
<tr><td>AED Defibrillation</td><td>Use adult pads</td><td colspan="2">Use pediatric dose-attenuator system for children and infants if available. Use pediatric pads. If unavailable, use adult pads.</td></tr>
<tr><th colspan="4">NEONATAL GUIDELINES
(Less than 30 days old)</th></tr>
<tr><td colspan="4">Assisted ventilation should be delivered at a rate of 40-60 breaths/minute
to achieve or maintain a heart rate > 100 bpm.

The ratio of compressions to ventilations should be 3:1 with 90 compressions and 30 breaths
to achieve approximately 120 events per minute.</td></tr>
</table>

Key Considerations: Interventions for treatable causes of cardiac arrest. Consider emotional needs of family present.

TREATMENT: Cardiac Arrest

	Priority of patient care:	Notes:
	▪ High quality compressions	
	▪ AED/cardiac monitor/defibrillation	
	▪ Ventilation	
	Provide high quality continuous chest compressions with:	
	▪ Full recoil.	
	▪ At a rate of 100-120 per minute (consider metronome).	
	▪ At a depth of at least two inches.	
	▪ Minimizing any pauses to < 10 seconds.	
	▪ Switching providers (if available) every two minutes.	
	Apply AED/cardiac monitor as soon as possible.	
	Ventilate the patient:	
	▪ Without advanced airway at a rate of 30:2.	
	▪ Consider supraglottic airway or ETT when possible without interruption of chest compressions.	
	○ Ventilate at a rate of every six (6) seconds/10 per minute. Stop with chest rise.	
	○ Confirm advanced airway with multiple methods.	
	Attach appropriate capnography sensor:	
	▪ Monitor $EtCO_2$ level, respiratory rate, and waveform. If waveform capnography is not available use colormetric with advanced airway.	
	▪ If $EtCO_2$ is below 10 ensure high quality CPR is being performed.	
	▪ Continuously monitor $EtCO_2$ throughout arrest. A sudden increase may indicate ROSC.	
	Apply mechanical compression device if available and indicated:	
	▪ AutoPulse Device:	
	○ 18 years and older (may consider use in a large, younger patient)	
	○ Not for use in patients who do not fit in device	
	○ Not for use in patients with traumatic arrest	
	▪ LUCAS Device:	
	○ 12 years and older (may consider use in a large, younger patient)	
	○ Not for use in patients who do not fit in device	
	For Ventricular Fibrillation/Ventricular Tachycardia:	
	▪ Defibrillate at dose listed below or 360 j for monophasic.	
	▪ **Region 1 EMS Medical Directors recommend starting and continuing at maximum energy, if possible. Below are the recommended manufacturer settings:**	

Defibrillation Settings*	**1st**	**2nd**	**3rd**	**4th +**
Zoll Biphasic	120	150	200	200
Phillips MRX	150	170	200	200
Lifepak/Medtronic	200	300	360	360
Tempus	150	170	200	200

	▪ *If other manufacturer refer to their specific settings*	
	▪ Obtain IV/IO access without pausing compressions:	

	▪ Medications as listed below. Medication Administration Chart:	
	○ Epinephrine 1 mg (1mg/10ml) – repeat every 3-5 minutes as long as CPR continues.	
	○ If Polymorphic VT – Magnesium Sulfate – 2 Grams over 5-10 minutes	
	○ Amiodarone OR Lidocaine **(Select one medication – do not use both)**	
	• Amiodarone V-Fib/Pulseless VT 300 mg /repeat at 150 mg	
	• Lidocaine (refer to weight-based dosing)	
	○ Consider H's or T's (see below)	
	Resource: H's and T's: - Hypoxia (ventilate/O2) - Tamponade, cardiac (IV boluses) - Hypothermia (core warm) - Tension Pneumothorax (plural decompression) - Hypovolemia (IV boluses) - Thrombosis – coronary/pulmonary - Hypokalemia - * Toxins (opiate-Naloxone/TCA-Sodium Bicarb/Beta Blocker overdose – Glucagon/ Organophosphate overdose - Atropine) - * Hydrogen ion (acidosis) * (ventilate for respiratory/Sodium Bicarbonate for metabolic) - Hypoglycemia (Glucose) - * Hyperkalemia - Calcium Gluconate 1 Gram – may repeat every 5 minutes up to 3 Grams/ * Sodium Bicarbonate 1 meq/kg; may repeat at half dose in 10 minutes	
	For Asystole/PEA:	
	▪ Obtain IV/IO access without pausing compressions:	
	▪ Medications as listed below:	
	○ Epinephrine 1 mg (1mg/10 ml) – repeat every 3-5 minutes as long as CPR continues	
	○ Consider H's or T's (see above)	

TREATMENT: Cardiac Arrest – POST RESUSCITATION

	Obtain 12 Lead as soon as possible. Evaluate/transmit for potential STEMI.	
	Titrate oxygen to the lowest level required to achieve Spo2 ≥ 94-99%.	
	Monitor EtCo2.	
	▪ Do not hyperventilate	
	▪ Optimal EtCo2 is 35-45 (may need to adjust ventilation rate)	
	If hypotensive (systolic <90 mmHG) consider Cardiogenic Shock:	
	▪ Treat underlying dysrhythmias	
	▪ Fluid bolus of 250 ml for patients with clear lungs	
	▪ Determine body weight; start Dopamine (weight-based dosing)	
	Consider anti-dysrhythmic given if not given in resuscitation noted above and patient was in V-Fib/V-Tach:	
	▪ Amiodarone (150 mg over 10 minutes)	
	▪ Lidocaine (refer to weight-based dosing)	
	Provide sedation or Pain Management as indicated:	
	▪ Fentanyl – weight-based dosing	
	▪ Morphine – weight-based dosing	
	▪ Midazolam (light dose) – dosing chart	

PROCEDURE: In-Field Termination

	AHA Guidelines recommends resuscitation for a minimum of 20 minutes.	
	At 20 minutes consider transporting the patient, continuing treatment, or discontinuing treatment.	
	When termination or transport is being considered:	
	▪ Availability of local resources (e.g., time for coroner to arrive if care is terminated vs time of transport)	
	▪ Trauma codes	
	▪ Scene is unsafe	
	▪ Family members present	
	▪ Age/condition of patient	
	▪ $EtCO_2$	
	▪ Obvious death at a crime scene	
	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 in the county of patient death. The Coroner should be contacted for all out of hospital deaths:	
	▪ Note time of death and confirm signs. Remain on scene until coroner, law enforcement, or other appropriate professional arrives.	
	▪ Do not transport patient who is dead at the scene unless other directed by the coroner.	
	▪ If termination occurs during transport do not cross county lines without approval of the coroner.	

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Key Considerations: Interventions for treatable causes of cardiac arrest. Consider emotional needs of family present.

TREATMENT: Cardiac Arrest

	Priority of patient care:	Notes:
	▪ High quality compressions	
	▪ AED/cardiac monitor/defibrillation	
	▪ Ventilations	
	Provide high quality continuous chest compressions with:	
	▪ Full recoil	
	▪ At a rate of 100-120 per minute (consider metronome).	
	▪ Compression depth at approximately one-third anterior/posterior depth of chest	
	o Approximately two inches in child/1 ½ inches for infant	
	▪ Minimizing any pauses to < 10 seconds.	
	▪ Switching providers (if available) every two minutes.	
	Apply AED/cardiac monitor as soon as possible.	
	▪ Use pediatric dose-attenuator system for children and infants if available. Use pediatric pads. If unavailable, use adult pads.	
	▪ For manual defibrillation use appropriate weight-based energy as appropriate	
	Ventilate the patient:	
	▪ Without advanced airway at a rate of 30:2 for single rescuer/15:2 for two rescuers	
	▪ Consider supraglottic airway when possible without interruption of chest compressions or ETT when other measures are ineffective. Ventilate at a rate of once every 2-3 seconds until chest rise.	
	Attach appropriate capnography sensor:	
	▪ Monitor $EtCO_2$ level, respiratory rate, and waveform. If waveform capnography is not available use colormetric with advanced airway. If patient is under 15 kg use pediatric colormetric.	
	▪ If $EtCO_2$ is below 10 ensure high quality CPR is being performed.	
	▪ Continuously monitor $EtCO_2$ throughout arrest. A sudden increase may indicate ROSC.	
	Apply mechanical compression device if available and indicated:	
	▪ AutoPulse Device:	
	o 18 years and older (may consider use in a large, younger patient)	
	o Not for use in patients who do not fit in device	
	o Not for use in patients with traumatic arrest	
	▪ LUCAS Device:	
	o 12 years and older (may consider use in a large, younger patient)	
	o Not for use in patients who do not fit in device	
	For Ventricular Fibrillation/Ventricular Tachycardia:	
	▪ Defibrillate at 2 J/kg. Repeat at 4 J/kg if ineffective. Subsequent doses greater than or equal to 4 J/kg to a max of 10 J/kg or adult dose.	
	▪ Obtain IV/IO access without pausing compressions:	

	▪ Medications as listed below. It is recommended that the Broselow tape or Medication Administration Chart is utilized for dosing pediatric patients.	
	○ Epinephrine– Weight-based dosing. Repeat every 3-5 minutes as long as CPR continues.	
	○ Amiodarone OR Lidocaine (Select one medication – do not use both)	
	• Amiodarone V-Fib/Pulseless VT 5 mg/kg - repeat at 5 mg/kg to a max of 15 mg/kg	
	• Lidocaine 1 mg/kg	
	○ Magnesium Sulfate is not recommended for pediatric patients without the use of a pump.	
	○ Consider H's or T's (see below)	
	Resource: H's and T's: - Hypoxia (ventilate/O2) - Tamponade, cardiac (20 ml/kg) - Hypothermia (core warm) - Tension Pneumothorax (plural decompression) - Hypovolemia (20 ml/kg) - Thrombosis – coronary/pulmonary - Hypokalemia - * Toxins (opiate-Naloxone/TCA-Sodium Bicarb/Beta-Blocker overdose – Glucagon/ Organophosphate overdose - Atropine) - * Hydrogen ion (acidosis) * (ventilate for respiratory/Sodium Bicarbonate for metabolic) - Hypoglycemia (glucose) - * Hyperkalemia - Calcium Gluconate 60 mg/kg weight-based dosing ○ * Sodium Bicarbonate 1 meq/kg weight-based dosing	
	For Asystole/PEA:	
	Obtain IV/IO access without pausing compressions:	
	▪ Medications as listed below:	
	▪ Epinephrine Weight-based dosing. Repeat every 3-5 minutes as long as CPR continues.	
	○ Consider H's or T's (see above)	

TREATMENT: Cardiac Arrest – POST RESUSCITATION

	Obtain 12 Lead as soon as possible. Evaluate/transmit for potential STEMI.	
	Titrate oxygen to the lowest level required to achieve Spo2 ≥ 94-99%.	
	Monitor $EtCo_2$.	
	▪ Do not hyperventilate	
	▪ Optimal $EtCo_2$ is 35-45	
	If hypotensive consider Cardiogenic Shock:	
	▪ Treat underlying dysrhythmias	
	▪ Fluid bolus of 10 ml/kg for patients with clear lungs	
	▪ Call Medical Control for approval and dosing of Dopamine (weight-based dosing)	
	Consider anti-dysrhythmic given if not given in resuscitation noted above and patient was in V-Fib/V-Tach:	
	▪ Amiodarone V-Fib/Pulseless VT 5 mg/kg – may repeat at 5 mg/kg to a max of 15 mg/kg	
	▪ Lidocaine (refer to weight-based dosing)	
	Provide sedation or Pain Management as indicated:	
	▪ Fentanyl – weight-based dosing	
	▪ Morphine – weight-based dosing	
	▪ Midazolam (light dose) – dosing chart	

PROCEDURE: In-Field Termination

	AHA Guidelines recommends resuscitation for a minimum of 20 minutes.	
	At 20 minutes consider transporting the patient, continuing treatment, or discontinuing treatment.	
	When termination or transport is being consider:	
	▪ Availability of local resources (e.g., time for coroner to arrive if care is terminated vs time of transport)	
	▪ Trauma codes	
	▪ Scene is unsafe	
	▪ Family members present	
	▪ Age/condition of patient	
	▪ $EtCO_2$	
	▪ Obvious death at a crime scene	
	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 in the county of patient death. The Coroner should be contacted for all out of hospital deaths:	
	▪ Note time of death and confirm signs. Remain on scene until coroner, law enforcement, or other appropriate professional arrives.	
	▪ Do not transport patient who is dead at the scene unless other directed by the coroner.	
	▪ If termination occurs during transport do not cross county lines without approval of the coroner.	

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Key Considerations: If patient has Return of Spontaneous Circulation (ROSC) consider that hyperventilation reduces venous return and may cause hypotension. Additional causes of post-resuscitation hypotension include hypovolemia and pneumothorax, especially in the presence of positive pressure ventilation.

TREATMENT:

A. Perform 12-lead ECG as soon as possible. Evaluate/transmit the ECG for potential STEMI.
B. Optimize ventilation and oxygenation:
   - Advanced Airway Management as indicated.
   - Titrate oxygen to the lowest level required to achieve $SpO_2 \geq 94\text{-}99\%$.
   - Monitor $EtCO_2$. Do not hyperventilate.
   - Optimal $EtCO_2$ is 35-45 (may need to adjust ventilation rate).
C. If hypotensive (systolic BP < 90 mmHG or MAP < 65) consider Cardiogenic Shock SMO. Maintain a systolic BP of >90 mmHG or MAP > 65.
   - Treat underlying dysrhythmias.
     - Bradycardia
     - Tachycardia
   - Fluid bolus for patients with clear lungs. May repeat one time.
   - Determine body weight; start Dopamine. Dopamine Drip Chart.
D. If VF/pulseless VT was present consider administration of an anti-dysrhythmia medication:
   - If no anti-dysrhythmic given prior to ROSC administer Lidocaine or Amiodarone.
E. Provide sedation or Pain Management as indicated:
   - Fentanyl
   - Morphine
   - Midazolam (light dose)

Pediatric Patients

A. Fluid bolus for patients with clear lungs.
B. Contact Medical Control for approval and dosing of Dopamine.
C. Pediatric dosing for medications listed above.

Cardiogenic Shock

Key Considerations: profound hypotension (systolic BP usually < 80 mmHg), pulmonary congestion (crackles), hypoxemia, acidosis, altered level of consciousness, sinus tachycardia or other dysrhythmias, cool, clammy, cyanotic, ashen skin, tachypnea.

TREATMENT:

A. Routine Medical Care.
B. Oxygen as indicated.
C. Cardiac monitor.
D. IV of Normal Saline.
E. Treat underlying dysrhythmias per appropriate SMO.
F. 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 mmHG.
G. Determine body weight; start Dopamine Drip. Individual dosage requirements may vary widely.
H. Rapid transport.

Heart Failure/Pulmonary Edema

Key Considerations: Mental status, skin signs, perfusion status, respiratory rate (rhythm, pattern, and work of breathing), lung sounds, heart rate (rhythm and blood pressure trends), pedal edema, and JVD.

TREATMENT:

A. Routine Medical Care.
B. Position of comfort, usually upright.
C. Oxygen as indicated.
D. If patient is wheezing see Bronchospasm SMO.
E. Cardiac Monitor.
F. IV Access.
G. 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).
H. NTG (IV not required prior to 1st dose of NTG administration but IV should be started before subsequent doses of NTG if possible).
I. CPAP (Per CPAP Procedure Nitroglycerin tablets must be fully dissolved before resuming CPAP).
J. If patient has signs of fluid overload and systolic pressure >160 mmHG consider Furosemide one time. Do not use if pneumonia or dehydration is suspected.
K. Consider Nitropaste for patients on CPAP after initial sublingual dose and/or prolonged transport.
L. If systolic BP < 90 mmHG, see Cardiogenic Shock above.

Pediatric Patients

Key Considerations: Cardiogenic shock is not typical in pediatric patients and is generally a result of congenital issues.

Treatment:

A. Routine Pediatric Care.
B. Pediatric dosing for medications listed above.
C. Contact Medical Control for approval and dosing of Dopamine.

Key Considerations: Evidence of hemodynamic instability in the presence of specific dysrhythmia:

- Hypotension with SBP
- Evidence of congestive heart failure: crackles, JVD, peripheral edema
- Chest pain suggestive of myocardial ischemia
- Evidence of neurologic dysfunction suggest of neurologic ischemia

PROCEDURE:

A. If patient is conscious and time permits sedate patient with Midazolam IV (light dose).
B. Turn on defibrillator.
C. Apply limb leads.
D. Place defibrillation pads on the chest and make sure leads to defibrillator are connected properly.
E. If paddles are used apply firm pressure.
F. Select appropriate energy level for clinical situation (use the following OR manufacturers' recommendation):
   - For irregular wide-complex tachycardia consistent with unstable polymorphic V-Tach treat with unsynchronized defibrillation dose.
G. Press synchronizer switch/button.
H. Assure machine is sensing R-wave.
I. Charge defibrillator.
J. CLEAR patient.
K. Press discharge button and hold button until delivery of shock occurs.
L. Reassess patient and proceed as indicated by patient condition.
M. If repeat shock is indicated increase to next energy level and ensure sync mode is activated.

Manufacturers' Recommendations:

Cardioversion Settings	1st	2nd	3rd	4th
Zoll Biphasic	100	150	200	200
Phillips MRX	100	150	200	200
Lifepak/Medtronic	100	200	300	360
Tempus	100	150	200	200

Defibrillation Settings	1st	2nd	3rd	4th
Zoll Biphasic	120	150	200	200
Phillips MRX	150	170	200	200
Lifepak/Medtronic	200	300	360	360
Tempus	150	170	200	200

***Or per other specific monitor manufacturer settings**

Key Considerations: Access only for patient who is critically ill or has an immediate need for fluids. Patient's type of central line/implanted port and compatibility of needle. Use a sterile kit. If central line or port does not flush easily do not force fluid through the port.

Equipment:

- Sterile kit (must have the sterile kit with specialized needle for Port-A-Cath – no substitutions may be made)

PROCEDURE:

Implanted Port Access (Port-a-Cath, etc.)

A. Open the dressing change tray package in a sterile manner.
B. Prepare the portal site for sterile needle insertion. Cleanse three times from the insertion site outward in a circular motion. Allow to air dry.
C. Remove the needle guard and flush the port-a-cath gripper needle set with Normal Saline.
D. Leave the syringe attached to the set with 10 ml of Normal Saline remaining in the syringe.
E. Stabilize the implanted port between two gloved fingers.
F. Grasp the gripper tab and insert the needle into the center of the port. Remove the gripper tab.
G. Pull back on the attached syringe and obtain a blood return from the port.
H. Insert the 10 ml of Normal Saline from the syringe.
I. Place a transparent dressing over the gripper base ensuring that a minimum 4 cm area surrounding the base is covered.
J. Remove the syringe (making sure the tube is clamped) and attach IV fluid. Open clamp. Infuse IV fluid as needed.

Central Line Access

A. Cleanse the central line catheter three times.
B. Attach 10 ml syringe filled with Normal Saline to an 18 G lumen on the center catheter line.
C. Pull back on the attached syringe to obtain blood return.
D. Flush with the 10 ml of Normal Saline.
E. Carefully remove the syringe from the central line (assure the central line is clamped).
F. Screw IV tubing in to the central line.
G. Open clamp and infuse IV fluid as needed.

Key Considerations: 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, and vital signs.

Treatment:

A. Routine Medical Care.
B. Reassure patient and place in position of comfort, or supine if patient's systolic BP is < 90 mmHG.
C. Cardiac Monitor, 12 lead ECG, if available, as soon as possible.
D. If STEMI is identified notify the receiving hospital as soon as possible.
E. Medication Administration Chart.
F. Aspirin (even if the patient has taken their daily dose).
G. 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).
H. IV Normal Saline at TKO rate – consider fluid bolus if hypotensive or inferior MI suspected.
I. NTG (IV not required prior to 1st dose of NTG administration but IV should be started before subsequent doses of NTG if possible).
J. If inferior MI is suspected consider a fluid bolus and contact Medical Control prior to giving NTG.
K. If right-sided MI is confirmed, contact Medical Control for possible NTG administration.
L. If discomfort persists pain may be treated per Pain Management SMO.
M. If hypotension develops consider fluid bolus, and/or Dopamine - see Cardiogenic Shock SMO.

Key Considerations: Inspect the perineal area for fluid, bleeding, crowning (check during contractions), abnormal presentation (breech, extremity, cord). Spontaneous abortion of fetus (> 20 weeks) should be considered a Neonatal Resuscitation.

TREATMENT:

A. Routine Medical Care.
B. If birth is not imminent, place patient in left lateral position.
C. IV access (two lines).

Normal Delivery

A. Assist with delivery.
B. Sterile technique.
C. 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.
D. Check for nuchal cord – slide over head if possible. If tight, clamp and cut, unwind, and deliver baby quickly
E. Proceed to control and guide delivery of the body.
F. Suction mouth first, then nares.
G. Clamp and cut cord – clamps should be placed at approximately 6 inches and 9 inches from baby, then cut between clamps.
H. Dry and wrap infant for warmth (especially the head); if possible, place with mother for shared body heat.
I. Note time of delivery.
J. Assess infant's status using APGAR score at 1 and 5 minutes post-delivery.
K. Evaluate mother post-delivery for evidence of shock due to excessive bleeding. (See Gynecological Emergency: Hemorrhage SMO).
L. Do not hasten delivery of placenta. Do not pull on cord. May deliver spontaneously enroute if necessary.

Pre-Partum Hemorrhage – near term

A. Assume placenta previa (painless bleeding) or abruption placenta (sharp pain).
B. Check for crowning but DO NOT attempt vaginal exam.
C. Treat for shock; see Obstetric Emergency: Hemorrhage SMO.
D. 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

A. Fundal massage.
B. Immediate transport to nearest hospital.
C. Do not pack the vagina with any material to stop bleeding. An externally placed dressing or pad should be used to absorb flow.
D. For significant bleeding, tachycardia, and/or hypotension consider Tranexamic Acid (TXA).

TREATMENT (continued):

Breech Delivery

A. Contact Medical Control for breech delivery.
B. Provide airway with gloved hand for baby if needed.
C. If unable to deliver, left lateral Trendelenburg position and rapid transport.

Prolapsed Cord

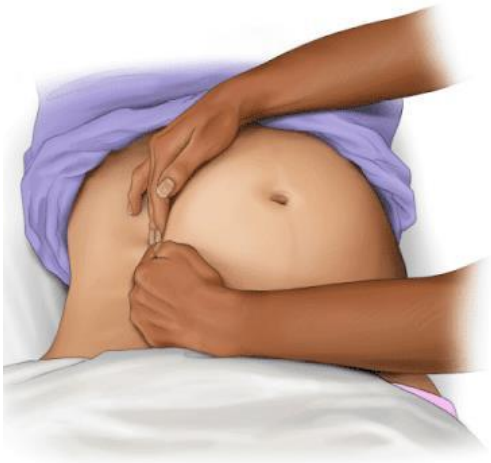
A. Left lateral Trendelenburg position, elevate hips, if possible or knee-chest position.
B. If cord is present, manually displace presenting part off cord and maintain displacement.
C. Rapid transport. Baby should not be delivered in the field.

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

Cardiac Arrest

A. Manage rhythm per appropriate cardiac arrest algorithm.
B. CPR with continuous manual left lateral uterine displacement using the two-handed method.
C. Ensure BVM ventilations are with high flow oxygen utilizing a two-person (if available) technique to prevent gastric inflation.
D. The gravid uterus must remain displaced during transport.



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Key Considerations: Indications include congestive heart failure, pulmonary edema, COPD, asthma, pneumonia, near drowning, other causes of respiratory distress. If a sublingual medication such as Nitroglycerin has been administered assure the tablet is fully dissolved prior to applying/resuming CPAP.

Respiratory distress includes two or more of the following:

- Retraction or use of accessory muscles.
- Respiratory rate great than 25.
- Pulse oximeter less than 92%.

PROCEDURE:

A. Routine Medical Care with continuous pulse ox monitoring.
B. Refer to Pulmonary Edema SMO and Bronchospasm SMO as necessary.
C. 100% O_2 by non-rebreather mask while preparing for CPAP.
D. Apply CPAP per device recommendations.
E. Coach patient to place mask over their mouth and nose, then firmly attach mask.
F. For patients experiencing anxiety consider Midazolam (anxiety dose).
G. If wheezing perform in-line Albuterol/Ipratropium Nebulizer Duo Neb treatment.
H. If patient deteriorates remove CPAP, ventilate with BVM, and consider airway insertion.

Key Considerations: time the patient has been immobilized and/or trapped, estimated time for extrication, trauma assessment, and pertinent medical history.

TREATMENT:

A. Routine Trauma Care.
B. Consider Spinal Restriction; see Spinal Restriction SMO.
C. ***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.
D. ***For Crush Trauma*** – consider placing tourniquets in a ready position before lifting the weight from patient in the event of excessive bleeding.
E. Cardiac monitor as soon as possible.
F. Pain Management as needed see: Pain Management SMO.
G. IV Normal Saline.
H. Albuterol.
I. If hyperkalemia suspected due to abnormal ECG rhythm, peaked t-waves, or widened QRS Calcium Gluconate bolus.
J. If acidosis is suspected consider Sodium Bicarbonate.

Pediatric Patients

A. Routine Pediatric Care.
B. Pediatric dosing for medications listed above.

Sedation for Airway Management/Delayed Sequence Airway Management/Intubation –1.029

Key Considerations: ***DSI may only be used by approved EMS providers***. ***The EMSMD may give approval to agencies for sedation or sedation and paralytics. Approved providers or EMS agencies are determined by the EMSMD of their EMS System.***

Observe the patient's respiratory rate, depth of respirations, and skin color. Auscultate lung, fields, and assess LOC and GCS. Intubation/airway management may be indicated if assessment reveals on 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.

Ketamine is contraindicated in pregnant patients. Use caution in patients with any history of cardiac and/or thyroid disorder. Ketamine may cause hypotension and increased ocular pressure.

PROCEDURE:

Step 1: PREOXYGENATE

- Position the patient and pre-oxygenate with high flow oxygen by mask for 2-5 minutes; consider CPAP per SMO.
- Use BVM to provide respiratory support, if needed.

Step 2: PREPARE

- Prepare equipment:
  - Suction, ET tube (at least two sizes), stylet, Bougie, functioning laryngoscope
  - Have Surgical Cricothyroid equipment readily available
  - IV Normal Saline
  - Cardiac monitor
  - Oxygen saturations
  - Capnography

Step 3: PRE-MEDICATION (DSI Weight Based Dosing Chart)

- Lidocaine for the patient with suspected hyperkalemia or increased cranial pressure.
- Atropine for persistent bradycardia.

Step 4: SEDATION/INDUCTION (DSI Weight Based Dosing Chart)

- Sedation: Etomidate or Midazolam (heavy dose).
- (**DSI approved agencies ONLY** may use Ketamine. Use Ketamine IV according to DSI Dosing)
- Continue pre-oxygenation

If provider/EMS agency is not approved for paralytics, skip to Step 6

If provider/EMS agency is not approved for paralytics, skip to Step 6

STEP 5: PARALYSIS (for approved EMS Agencies only), then INTUBATION (DSI Weight Based Dosing Chart)

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

STEP 6: INTUBATION, 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.

STEP 7: POST-INTUBATION

- Pain Management as indicated.

Key Considerations: Altered level of consciousness, combativeness, cold/clammy skin, seizure, dizziness, weakness, odor of breath, blood glucose level.

TREATMENT:

A. Routine Medical Care.
B. Determine blood glucose level.
C. If adult patient with glucose <80 mg/dl **and/or** symptomatic:
   - 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 D-10. 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.
D. For suspected ketoacidosis run fluid bolus. Repeat as indicated.
E. Reassess patient after medication is given. If no change in condition contact Medical Control for further orders.

Pediatric Patients

A. Routine Pediatric Care.
B. If patient with glucose <60 mg/dl **and/or** symptomatic follow pediatric dosing for medications listed above.
C. D-10 should be used in patients under 2 years of age. If D-50 is carried as an alternative it must be diluted prior to administration.

Key Considerations: Assessment of LOC and ABC's, significant mechanisms of injury/nature of illness, evidence of head or neck trauma and other associated injuries (consider Spinal Restriction), neurologic status, 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.

TREATMENT:

A. Routine Medical Care.
B. If pulseless, start high quality CPR per AHA guidelines.
C. AED or Cardiac Monitor - treat per appropriate SMO.
D. If hypothermic, see Hypothermia SMO.
E. Evaluation for possibility of neck injury, see Spinal Restriction SMO.
F. If other trauma is suspected refer to appropriate trauma SMO or Routine Trauma Care.
G. BLS/ALS maneuvers to remove Foreign Body Airway Obstruction, if indicated.
H. Reassess BLS/ALS methods to maintain airway patency and good ventilation.
I. IV access.

SCUBA Injury

Key Considerations: Any incident while using SCUBA equipment, or breathing in a pressurized environment or altitude chamber, may result in sudden depressurization. Consider: fatigue, vertigo, focal weakness, visual disturbances, speech difficulty, marbled rash, numbness, tingling, confusion, seizure, and/or cardiac arrest.

TREATMENT:

A. Remove SCUBA equipment.
B. Follow treatment above for drowning/near-drowning, as appropriate.
C. Routine Medical Care.
D. Routine Trauma Care, as appropriate.
E. Airway Management as appropriate. Ensure oxygen saturation between 94-99%.
F. Cardiac Monitor.
G. IV access.
H. Consider ALS Intercept.

Pediatric Patients

A. Routine Pediatric Care.
B. Follow pediatric dosing for medications listed in referred SMOs above.

Key Considerations: This is not a routine restraint procedure. Pay close attention to the symptoms listed below. Ketamine is contraindicated in pregnant patients. Use caution in patients with any history of cardiac and/or thyroid disorder. Ketamine may cause hypotension and increased ocular pressure.

Physical signs include unusual agitation or excitement, profuse sweating, high body temperature, skin discoloration, foaming at the mouth, uncontrollable shaking and/or respiratory distress.
Behavioral signs include intense paranoia, extreme agitation, hallucinating, delusional screaming for no apparent reason, aggression toward inanimate objects (such as glass), naked or partially disrobed, resists violently during detainment, and diminished sense of pain.

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

TREATMENT:

A. Have enough provider/police on the scene to handle the situation.
B. Routine Medical Care.
C. Involve police to restrain patient when needed.
D. Use restraints if the patient is a threat to himself of others; see Restraints Procedure.
E. Sedate the patient by administering Ketamine **OR** Midazolam (heavy dose).
F. Obtain vital signs, pulse oximetry, Capnography, and body temperature if possible, and repeat frequently.
G. If hyperthermia signs are present, cool patient by applying cooling packs to neck, axilla, and groin.
H. Once patient is calm establish IV access with fluid rate at TKO.
I. Apply cardiac monitor to assess rhythm and rate.
J. 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

Pediatric Patients

A. Routine Pediatric Care.
B. Follow pediatric dosing for medications listed above.

Key Considerations: Attempt to estimate vaginal blood loss (number of pads, towels, or other absorbent items used, or area of pooled blood). Visualize the perineal area if necessary to confirm bleeding. Do not perform a digital inspection. Consider pre-eclampsia or eclampsia if patient has blurred vision, spots before the eyes, headache, seizures, or hypertension. Check for hyper-reflex and/or fluid collection in the lower extremities (edema).

TREATMENT:

A. Routine Medical Care.
B. Suspected trauma, consider Spinal Restrictions.
C. Care for other Trauma as indicated in appropriate trauma SMO.
D. Place patient in position of comfort.
E. IV access with Normal Saline and consider a fluid bolus if SBP <100 mmHG and patient is symptomatic (dyspneic, tachycardic, altered mental status).
F. Apply cardiac monitor.
G. Control bleeding with pad or bulky dressing applied externally.
H. For significant bleeding consider Shock.
I. For significant bleeding, tachycardia, and/or hypotension consider Tranexamic Acid (TXA).
J. Transport as soon as possible.

Key Considerations: Patient activity, medications (tranquilizers, alcohol, diuretics, antidepressants, amphetamines, cocaine, and other illicit drugs), chest pain, cramps, headache, orthostatic symptoms, nausea, and weakness.

Heat Cramps/Heat Exhaustion

Key Considerations:

- Temperature – usually normal to slightly elevated.
- Mental Status – alert to slightly confused.
- Skin – may by warm or cool to touch (for heat exhaustion – usually hot to touch).
- Ability to perspire – present or absent?
- Neuro exam – normal except for muscle cramps (usually legs) or weakness.

TREATMENT:

A. Routine Medical Care.
B. Note patient's temperature if possible.
C. Remove excess clothing. Apply cold packs at neck, axilla, and groin, if needed.
D. Move patient to cool area—protect patient from shivering by providing a light covering. Consider less aggressive cooling measures if patient begins shivering. Consider Midazolam (light dose) for excessive shivering.
E. Give cool/cold liquids PO as tolerated.
F. Cardiac monitor.
G. IV Normal Saline.
H. Consider glucose check; if hypoglycemic, see Diabetic Emergencies SMO.
I. Stretch cramped muscles to reduce pain.
J. Oxygen as indicated.

Heat Stroke

Key Considerations:

- 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:

A. Routine Medical Care.
B. Note patient's temperature if possible.
C. Remove excess clothing. Apply cold packs at neck, axilla, and groin.
D. Move patient to cool area—protect patient from shivering by providing a light covering. Consider less aggressive cooling measures if patient begins shivering. Consider Midazolam (light dose) for excessive shivering.
E. Spray or sprinkle tepid water and use fan to cool.
F. Cardiac monitor.
G. IV access with large bore IV Normal Saline.
H. If hypotensive (SBP <90 mmHG or signs of poor perfusion): fluid bolus (reassess and repeat if indicated).
I. Continue COOLING measures during transport.
J. Consider glucose check; if hypoglycemic, see Diabetic Emergencies SMO.
K. Transport to closest facility.

Pediatric Patients

A. Routine Pediatric Care.
B. Follow pediatric dosing for medications listed above.

Medication Administration Chart
Hyperthermia – 1.034
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Key Considerations: 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]).

Mild/Moderate Hypothermia

Key Considerations: With mild symptoms patient may exhibit impaired judgment, possible slurred speech, shivering and or evidence of local injury; blanching, blistering, erythema of extremities, ears, nose.

Moderate hypothermia may include mild symptoms and respiratory depression, myocardial irritability, bradycardia, and/or atrial fibrillation.

TREATMENT:

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

Severe Hypothermia

Key Considerations: Cold skin, skin color changes, altered mental status, no shivering, fixed and dilated pupils, weak, thready pulse, possible cardiac arrest and/or spontaneous ventricular fibrillation

TREATMENT:

A. Assess breathing and pulse for full 30-45 seconds.
B. If not breathing and/ or pulseless, start CPR.
C. Apply AED or cardiac monitor: If the patient is in V-fib or pulseless V-Tach, defibrillate up to a maximum of 3 shocks.
D. Ensure adequacy of CPR.
E. Obtain IV access—administer Normal Saline.
F. 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.
G. Apply warm packs to central pulse areas (carotid, axilla, femoral). Avoid peripheral warming.
H. Rapid transport.

*** TRIPLE ZERO/INFIELD PRONOUNCEMENT CAN BE DIFFICULT TO CONFIRM IN THE FIELD. CONTACT MEDICAL CONTROL FOR THESE PATIENTS ***

Pediatric Patients

A. Routine Pediatric Care.
B. Follow pediatric dosing for medications listed above.

Key Considerations:

SPECIAL SITUATIONS

A. Patient with DNR/POLST (follow DNR/POLST Policy).
B. 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)
C. Patients meeting the above conditions do not require Medical Control contact prior to calling Coroner.
D. 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.
E. 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.
F. 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.
G. Correctable causes or special resuscitation circumstances have been considered and addressed.
H. Family requests for termination should be relayed to Medical Control.

PROCEDURE:

A. CPR initiated.
B. Airway Management per Airway Management SMO.
C. AED/cardiac monitor applied.
D. AHA Guidelines followed for a minimum of 20 minutes. At 20 minutes consider transporting the patient, continuing treatment, or discontinuing treatment. When termination or transport is being consider:
    - Availability of local resources (e.g., time for coroner to arrive if care is terminated vs time of transport)
    - Trauma codes
    - Scene is unsafe
    - Family members present
    - Age/condition of patient
    - $EtCO_2$
    - Obvious death at crime scene
E. Contact Medical Control for termination.
F. 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.
G. If termination is approved contact Coroner in the county of patient death. The Coroner should be contacted for all out of hospital deaths.
    - Note time of death and confirm signs. Remain on scene until coroner, law enforcement, or other appropriate professional arrives.
    - Do not transport patient who is dead at the scene unless otherwise directed by the coroner.

Key Considerations: 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. **If transport time to the receiving hospital is less than the time to complete an ALS intercept initiate rapid BLS transport.**

ALS care should be initiated according to the following guidelines:

A. Symptomatic 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 mmHG or diastolic > 110 mmHG
   - Pulse oximeter reading < 90

B. 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:
   - Impending airway compromise
   - Altered mental status and/or unconsciousness
   - Persistent cardiac related 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

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

D. Consider ALS intercept time versus BLS transport.

PROCEDURE:

A. Upon request of BLS ambulance for assistance, an ILS/ALS crew may board the BLS vehicle and begin care of the patient.

B. ILS/ALS equipment must be transferred to the BLS ambulance to render a higher level of care.

C. The ILS/ALS provider will assume responsibility from the EMTs for the care and treatment of the patient.

D. EMTs should assist the ILS/ALS provider enroute and on the scene and work together as a team to provide the best patient care possible.

E. The BLS ambulance will be approved by the Department to function as an ILS/ALS ambulance for the transport.

F. Report to Medical Control will be the responsibility of the ILS/ALS provider.

Intranasal Medication – Mucosal Atomization Device (MAD) – 1.038

Key Considerations:

- The *ideal* volume for intranasal administration is 0.2-0.3 ml and the maximum recommended volume per nostril is 1 ml. If dose is greater than 0.5 ml, 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 0.9 ml be sure to take the dead space into account by adding 0.1 ml to the final volume (i.e. volume of dose + 0.1 ml).

Contraindications:

A. Epistaxis (nosebleed)
B. Nasal Trauma
C. Nasal septal abnormalities
D. 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:

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

Pediatric Patients

- Follow pediatric dosing for medications listed above.

Key Considerations:

Indications

Peripheral IV is unavailable and patient exhibits one or more of the following:

- Cardiac arrest
- Hemodynamic instability
- Patient is in immediate need of medication and/or fluids

Locating Appropriate Insertion Sites

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 - 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 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.

Pain Management

A. IO infusions for conscious patients has been noted to cause severe discomfort.
B. Ensure patient has no contraindication for Lidocaine (e.g., third degree heart block).
C. Lidocaine 2% may be administered to conscious patient for pain control before continuous IO infusion.
Adult patients - slowly administer 20-40 mg Lidocaine 2%.

PROCEDURE:

A. BSI/Universal Precautions.
B. Prepare equipment to be used.
C. Identify land for venipuncture (see above), preferably the anteromedial aspect of the proximal tibia and approximately 1 to 3 cm below the tibial tuberosity.
D. Cleanse the puncture site.
E. Insert IO needle per manufacturer's recommendations.
F. Remove the stylet.
G. Flush the intraosseous needle and observe for infiltration.
H. Attach the IV and adjust the flow rate. Note IO may not run by gravity. Pressure may be needed.
I. Secure the IO needle.
J. Following the administration of a medication, 10 ml of saline should be administered to expedite absorption.
K. Monitor the site and attempt alternative IV access as soon as the patient's condition allows.

Pediatric Patients

A. Routine Pediatric Care.
B. For pain management slowly administer 0.5 mg/kg Lidocaine 2% (not to exceed 20 mg).

Medication Administration Chart
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Key Considerations: Patient is unconscious and cannot be ventilated despite attempts to relieve the obstruction. Patient's skin color may be pale, cyanotic, and/or ashen. There may be possible facial trauma restricting normal intubation as an option. This method of ventilation can be used for 20-30 minutes. If patient's transport time will exceed this time frame or if the patient shows signs of hypoxia consider Surgical Cricothyroidotomy.

PROCEDURE:

A. Unless contraindicated by trauma please a small roll under patient's shoulder to slightly extend the neck.
B. Locate cricothyroid membrane by tilting patient's head back and palpating for the V-notch of the thyroid cartilage (Adam's Apple).
C. Prepare the skin with antiseptic solution and maintain aseptic technique.
D. Stabilize the thyroid cartilage between the thumb and middle finger of one hand.
E. Press index finger of same hand between the thyroid and cricoid cartilage to identify cricothyroid membrane.
F. 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.
G. Make a puncture in the midline with a smooth motion.
H. Insert cannula at a 45-60° angle.
I. After entry into trachea, begin removing needle and advancing cannula into place.
J. Advance cannula into trachea at a 45° angle with tip toward patient's feet; care must be taken not to kink the catheter when removing the needle and syringe.
K. Draw back on the syringe to aspirate an air bubble to confirm placement in the trachea.
L. Tape cannula securely in place and hold the hub of the catheter to prevent accidental dislodgement while providing ventilation.
M. Attach 3.0 mm ETT adaptor to the end of the catheter.
N. 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).
O. 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.
P. Continue to assess for adequate air exchange.
Q. Provide update of patient's status to hospital and transport immediately.

Pediatric Patients

A. Assess airway patency and need for needle cricothyrotomy as necessary.
B. If transport time will exceed 20-30 minutes consider Surgical Cricothyrotomy.

Key Considerations: Signs and symptoms of a patient suffering a tension pneumothorax may include: restlessness and agitation; severe respiratory distress; increased airway resistance on ventilating patient; JVD, abdominal rigidity; tracheal deviation; subcutaneous emphysema; unequal breath sounds and/or absent on the affected side; hyper-resonance to percussion on the affected side; hypotension; cyanosis; and, traumatic cardiac and/or respiratory arrest.

Equipment:

A. Adult – 14 or larger gauge 3.25" angiocath
B. 12-20 ml syringe
C. Antiseptic solution

PROCEDURE:

A. Identify probable pneumothorax. Observe Universal Precautions. Use sterile gloves if possible.
B. Locate the 2nd intercostal space in the midclavicular line or the 5th intercostal space in the mid-axillary on the side of the pneumothorax.
C. Cleanse the site with antiseptic solution and maintain as much of a sterile field as possible.
D. Attach a 12-20 ml syringe to the appropriate angiocath.
E. Puncture the skin perpendicularly, just superior to the 3rd rib, 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.
F. Advance the catheter.
G. Remove the needle and syringe.
H. Secure the catheter in the chest wall with a dressing and tape.
I. If tension reoccurs repeat procedure. Leave all needle catheters in place even if the attempt did not result in clinical improvement.
J. If a decompression needle becomes dislodged replace it only if the patient condition warrants it.
K. Monitor the patient closely, continue to reassess, and continue trauma care. Rapid transport.

Pediatric Patients

Key Considerations:

Equipment:

- Pediatric – 18 gauge 1.88" angiocath

Key Considerations:

A. 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)
   - APGAR Score
B. If infant less than 30 days same arrest intervention as just born.
C. Airway interventions and keep baby warm.

TREATMENT:

Meconium Staining Noted

A. As soon as head is delivered attempt to suction before baby starts to breath.
B. If thick meconium or secretion present and signs of respiratory distress thoroughly suction mouth, then nose.

No Meconium Staining Noted

A. Assess patient, dry immediately if wet and stimulate.
B. Assess airway patency. Secure the airway.
C. Suction mouth then nasopharynx.
D. Cover head with stocking cap or equivalent.
E. Clamp and cut the cord if necessary.
F. 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.
G. Check heart rate at base of umbilical cord or auscultate precordium as indicated. Further treatment depends on heart rate.
H. If heart rate less than 60 bpm, continue assisted ventilations and begin chest compressions at 120 min.
I. 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.
J. If hearts rate 80-100 bpm. Give 100% oxygen by BVM. Reassess heart rate after 15-30 seconds.
K. If heart rate greater than 100 bpm, check skin color. If peripheral cyanosis give oxygen by mask.
L. If unable to ventilate effectively with BVM consider supraglottic device.
M. Confirm proper airway device placement and ventilate 30 times a minute with continued chest compressions.
N. Airway adjuncts per Airway Management SMO.
O. 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.
P. If hypovolemia suspected, Normal Saline 10 ml/kg over 5 to 15 minutes.
Q. Continue to reassess respiratory rate and heart rate while enroute.

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Key Considerations: General appearance of patient, age, mental status (AVPU), skin condition, perfusion status, respiratory rate, breathing rhythm and pattern (patient positioning, such as tripoding), and blood pressure. Ketamine is contraindicated in pregnant patients. Use caution in patients with any history of cardiac and/or thyroid disorder. Ketamine may cause hypotension and increased ocular pressure. The signature and license number of the provider administering medication is required. A second signature is required from a second crew member of ED RN for witnessing discarded or unused medication.

Pain Assessment (**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?

TREATMENT:

A. Perform patient assessment and record vital signs, level of consciousness and oxygen saturation.
B. Reassure and comfort patient.
C. Provide care based on other SMOs related to the patient's presenting complaint.
D. Place the patient in position of comfort. If risk of spine injury, institute spinal restrictions.
E. Coach the patients breathing – calm, deep inhalations and slow relaxed exhalations.
F. Distract patient or encourage them to focus on something other than their injury or pain.
G. IV with Normal Saline at TKO.
H. Consider Ondansetron prior to narcotic administration (EMT's – adults only).
I. 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.
J. For moderate to 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 IV/IO/IM for severe pain such as pelvic fracture, significant burns, multiple long bone fractures, and entrapped patients.
   - 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.
K. Paramedics may consider the following as an alternative to the medications listed above:
   - Midazolam (light dose) for musculoskeletal type pain.

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

Medication Administration Chart
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Pediatric Patients

Key Considerations: Consider use the FLACC Scale for patients 0-7 years of age

TREATMENT:

A. Perform patient assessment and record vital signs, level of consciousness and oxygen saturation.
B. Reassure and comfort patient.
C. Provide care based on other SMOs related to the patient's presenting complaint.
D. Place the patient in position of comfort. If risk of spine injury, institute spinal restrictions.
E. Coach the patients breathing – calm, deep inhalations and slow relaxed exhalations.
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I. 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.
J. For moderate to 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.
   - 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.
K. Paramedics may consider the following as an alternative to the medications listed above:
   - Midazolam (light dose) for musculoskeletal type pain.

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

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FLACC Scale[2]	0	1	2
1 Face	No particular expression or smile.	Occasional grimace or frown, withdrawn, disinterested.	Frequent to constant frown, clenched jaw, quivering chin.
2 Legs	Normal position or relaxed.	Uneasy, restless, tense.	Kicking, or legs drawn up.
3 Activity	Lying quietly, normal position, moves easily.	Squirming, shifting back and forth, tense.	Arched, rigid or jerking.
4 Cry	No crying (awake or asleep).	Moans or whimpers; occasional complaint.	Crying steadily, screams or sobs, frequent complaints.
5 Consolability	Content, relaxed.	Reassured by occasional touching, hugging or being talked to, distractible.	Difficult to console or comfort.

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Pediatric ALTE/BRUE Event – 1.044

Definition: A Brief Resolved Unexplained Event (BRUE) or Apparent Life Threatening Event (ALTE) is an event in an infant < 2 years old lasting less than one minute. Underlying causes can include pneumonia, bronchiolitis, seizure, sepsis, intracranial hemorrhage, and/or meningitis and characterized by one or more of the following:

A. Cyanosis or pallor.
B. Absent, decreased, or irregular breathing.
C. Marked change in muscle tone (hypertonia or hypotonia).
D. Altered level of consciousness.
E. Choking or gagging not associated with feeding or a witnessed foreign body aspiration.
F. Seizure-like activity.
G. Assess for signs of hypoglycemia - patient with glucose <60 mg/dl (neonates <45) **and/or** exhibiting signs of hypoglycemia.

Key Considerations: ALTE/BRUE is a group of symptoms but not a specific disease. Consider overdose, hypoglycemia, trauma (accidental and non-accidental) and/or seizure.

TREATMENT:

A. Routine Pediatric Care.
B. Follow Airway Management SMO, as indicated.
C. Obtain and document any complications of pregnancy, birthdate and gestational age at birth, fever or recent infection, prior ALTE/BRUE episodes, and underlying medical conditions.
D. Place on cardiac monitor. Follow appropriate SMO:
    - Bradycardia
    - Tachycardia
E. Assess blood glucose; see Diabetic Emergencies SMO.

Pediatric Respiratory Distress/Failure/Obstruction/Arrest – 1.045

Key Considerations: 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). Respiratory failure may be a sign of toxic ingestion or anaphylaxis.

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

TREATMENT:

A. Routine Pediatric Care
B. For special needs, including patients with tracheostomies and ventilators refer to Special Needs Patients.

Foreign Body Airway Obstruction

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

Lower Airway - Bronchospasm *(Wheezing)* - Refer to Bronchospasm/Asthma SMO

Adequate or Inadequate Respiratory Effort:

A. Airway Management.
B. Consider potential cause and refer to appropriate SMO:
   Anaphylaxis
   Toxin/Poisoning
C. Cardiac Monitor.
D. IV Access.
E. Consider Shock, if appropriate.
F. Medication Administration Chart.
G. Contact Medical Control for Epinephrine (concentration 1 mg/1 ml) and/or Naloxone administration, if appropriate.

Inadequate Chest Rise or Respiratory Arrest*:*

A. Airway Management.
B. Begin CPR if no pulse or heart rate <60 with poor perfusion.

Cardiopulmonary Arrest:

A. Asystole/PEA if appropriate.
B. Bradycardia for heart rate <60.
C. Tachycardia, if appropriate.
D. V-Fib/V-Tach, if appropriate.
D. ROSC, if appropriate.

Pre-eclampsia/Eclampsia – Pre and Post-Partum – 1.046

Key Considerations: Abnormal weight gain, edema of legs, arms, and face, visual disturbances, seizures/coma, blood pressure > 140/90 mmHG, presence/absence of fetal heart tones (if possible), and/or fetal movement as reported by the mother.

Pre-eclampsia/Eclampsia may occur both pre and post-partum. Most cases of post-partum pre-eclampsia occur within 48 hours following childbirth but may develop up to six weeks after childbirth.

TREATMENT:

A. Prepare for rapid transport.
B. Routine Medical Care.
C. Oxygen as indicated.
D. Seizure precautions:
    - GENTLE HANDLING. Minimal CNS stimulation. Do NOT check pupillary reflexes.
    - Minimize external stimulation - avoid sirens, bright lights and loud music if possible.
E. Position patient on left side or raise right side of backboard and transport as soon as possible.
F. IV access.
G. If seizure occurs, protect patient from harming self; if possible, place nasopharyngeal airway as needed. See Seizure/Status Epilepticus.
H. If seizure occurs, administer Midazolam (heavy dose).
I. Magnesium Sulfate (see Magnesium Sulfate Administration Chart) after initial dose of Midazolam (heavy dose) for seizure.

Pediatric Patients

A. Routine Pediatric Care.
B. Follow pediatric dosing for medications listed above.

Key Considerations: After managing all threats to life proceed with care by providing emotional support to the victim. The victims may behave in a variety of ways: calm and seemingly in control of their emotions; agitated; apprehensive; distraught; and/or tearful. Do not leave the victim alone. When possible, and EMT of the same gender should be present for any required medical care.

TREATMENT:

A. Routine Trauma Care where indicated or Routine Medical Care.
B. Victims of sexual assault should not be questioned in detail about the incident.
C. Limit the history to elements necessary to provide emergency medical care.
D. Consider Shock, if appropriate.
E. 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.
F. For suspected internal bleeding, tachycardia, and/or hypotension consider Tranexamic Acid (TXA).

Pediatric Patients

A. Refer to Abuse/Neglect: Child SMO
B. Routine Pediatric Care.
C. Administration of TXA for children 14 and older.

Key Considerations: Certain injuries, illnesses, ingestions, or injected substances can alter behavior and create a situation where the patients' capacity to make a valid judgment 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. A patient is conscious and determined to have decision-making capacity (defined as oriented to person, place, time, and event) with no suspicion of being under the influence of drugs or alcohol.

A patient is considered high-risk for signing a refusal under the following circumstances:

A. Concern with decision-making capacity.
B. A minor with no legal guardian available.
C. Suspected high risk medical conditions, such as:
    - Chest pain
    - Syncope
    - Altered Mental Status
    - Stroke/TIA
    - Abnormal vital signs
    - EMS provider impression

PROCEDURE:

Refusal of Treatment by Adult Patients with Decision-Making Capacity

A. Patients have the right to refuse treatment and/or transport.
B. The patient will be informed of the risk of refusal of possibility of deterioration of medical condition up to and including death.
C. Attempt to assess vital signs and SAMPLE history if possible.
D. 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.
E. 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.
F. Complete patient care report.

Multiple Victims Refusal of Consent for Treatment

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

Pediatric Patients

Key Considerations: 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. The State of Illinois permits Emancipated Minors to be treated as adults.

PROCEDURE:

A. 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.

B. 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.

Key Considerations:

Post-Treatment Refusals

When treatment has been given by EMS and the patient considers their condition improved to the point that they refuse transport, including treatments for:

- Hypoglycemia
- Overdose
- Asthma/respiratory
- Chest pain
- Syncope
- Pain control

PROCEDURE:

- 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.
- Complete patient care report.

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Key Considerations: Status of airway, breathing, and circulation. Patients' chief complaint, allergies, and medications with special attention to patient prescription for blood thinners.

TREATMENT:

A. Appropriate blood and body secretions precautions should be used at all times by all personnel.
B. Perform patient assessment and determine chief complaint.
C. If load and go situation is found, transport immediately. Depending on time of transport consider ILS/ALS intercept.
D. 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.
E. 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 .
F. $EtCO_2$ (if available).
G. Assess blood glucose for all suspected medical conditions including, but not limited to: altered mental status, diabetic emergencies, hypothermia, and multi-system trauma.
H. Evaluate cardiac rhythm/12-lead ECG 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.
I. Establish INT/IV/IO as indicated.
J. Fluid Bolus if indicated.
K. Two lines of Normal Saline are preferred for:
   - GI Bleed
   - Stroke
   - STEMI
   - Unstable vital signs
   - Sepsis
L. IV's are indicated for patients who require immediate or potential fluid/volume replacement and/or medication administration prior to hospital arrival. Attempts to establish IV's should not delay transport. One attempt should be made at scene or enroute. If unsuccessful, one additional attempt may be made enroute. Maximum number of attempts should be limited to no more than 2 attempts per Provider with a maximum of 4 attempts per patient.
M. If patient conditions warrants or IV access unsuccessful, establish IO access.
N. If significant nausea / vomiting administer Ondansetron.
O. Pain Management, as appropriate.
P. All patients receive a set of vital signs at the beginning of patient care. A second vital signs will be taken, preferably just prior to transfer of care. Repeat vital signs every 10 minutes for ALS patients, after administration of medications, and more frequently as needed.
Q. Assess response to interventions and medication (to include repeat vital signs).
R. Contact receiving hospital as soon as possible with patient assessment and treatment.
S. 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.

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Key Considerations: Patient age, weight, scene assessment, nature of illness/mechanism of injury. 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.
- 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.

TREATMENT:

AIRWAY

A. Self-maintained.
B. Maintainable with positioning or assistance: held tilt/chin lift, jaw thrust, tripod, high fowlers.
C. Maintainable with adjuncts: Use Broselow tape for correct size.
D. Maintainable with suction.
E. Most pediatric patients can be successfully ventilated using BVM.
F. BVM, supraglottic are preferred airways for pediatric patients.

BREATHING

A. Rate - compare to normal for age. Rate greater than 60/min is critical in all ages.
B. Rhythm: regular; irregular; patterned, Cheyne-stokes, agonal, biots, Kussmaul.
C. Quality: work of breath; use of accessory muscles, head bobbing, see-saw breathing, retractions, nasal flaring.
D. Auscultate respiratory sounds for absence, presence, snoring, stridor, crackles, gurgling, wheezing, grunting.
E. Pulse oximetry and capnography.
F. Administer oxygen of 02 sat <94 and/or other signs of respiratory compromise:
   - Blow by
   - Nasal cannula
   - Non-rebreather
   - BVM

Medication Administration Chart

CIRCULATION

A. Heart rate – compare to normal for age.
B. Central/truncal pulses (apical, femoral, carotid) – strong, weak, absent.
C. Peripheral pulses – present/absent, strong, weak, thready.
D. Skin/mucous membrane color.
E. Skin temperature – hot, warm, or cool.
F. Blood pressure – use appropriate sized cuff: Use Broselow tape for correct size.
G. Use the Broselow Pediatric Trauma Score for B/P determination if appropriate cuff is unavailable or capillary refill time (children under age 3).
H. Hydration status – infant anterior fontanel status, mucous membranes, skin turgor, tears, urine output history.
I. Cardiac Monitor, as indicated.
J. IV/IO access as indicated.
K. Fluid bolus as indicated; may repeat as indicated to a total of 60 ml/kg.

DISABILITY

A. Use AVPU to assess responsiveness.
B. Assess pupil response.
C. Assess distal neurologic status – numbness or tingling.
D. Assess blood glucose.
E. Ondansetron for nausea/vomiting.
F. Pain Management, as appropriate.

EXPOSURE

A. Assess for hypo/hyperthermia. See: Hyperthermia SMO or Hypothermia SMO.
B. Check for significant bleeding.
C. Check for petechiae or purpura (purple discolorations that do not blanch with skin pressure).
D. Be aware of signs of child abuse and, if present, report to authorities.

Considerations for Children with Special Healthcare Needs (CSHN)

A. Refer to child's emergency care plan formulated by their medical providers, if available.
B. 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.
C. 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
D. Assess in a systematic and thorough manner, regardless of underlying conditions. Use parents/caregivers as medical resources.
E. 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.
F. Communicate with the child in an age appropriate manner. Maintain communication with and remain sensitive to the parents/caregivers and child.
G. The most common emergency encountered with the pediatric patient is respiratory related and so familiarity with respiratory emergency interventions/adjuncts/treatment is appropriate.

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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	5% (50 ml/kg)	10% (100 ml/kg)	15% (150 ml/kg
Child	3% (30 ml/kg)	6% (60 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

Key Considerations: 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.

TREATMENT:

A. Scene Assessment:
- 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.

B. Patient Treatment:
- 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.
- $EtCO_2$ (if available).
- 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 Criteria.
- If significant nausea / vomiting administer Ondansetron.
- Pain Management as appropriate
- IV access with Normal Saline as needed.
- See Shock Treatment SMO if SBP < 90 mmHg for patient management.
- Assess disability: AVPU, pupils and Glasgow Coma Scale.
- If altered mental status, check blood glucose.
- 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 serial vital signs. Repeat vital signs every 10 minutes for ALS patients, after administration of medications, and more frequently as needed.
- Perform Secondary Assessment.
- Assess for pelvic instability. If present, apply pelvic binder, commercial or improvised.
- Splint fractures and bandage wounds, control bleeding. Re-check PMS.
- Reassessment of critical patients frequently.

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C. Injury Specific Treatment:

- Abdominal/Pelvic Trauma (Blunt, Penetrating/Perforating Injuries)
  - Evisceration – use moist, bulky dressings.
  - Impaled Object – stabilize, do not remove object unless it blocks airway or CPR.
  - Pelvic Fracture – do not log roll. Stabilize with pelvic splint or improvised method (such as sheets).
- Amputated Parts:
  - 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.
- Blast Injuries:
  - Consider tissue damage, dismemberment, Pulmonary Edema, GI bleed, penetrating trauma, Crush Injuries, Burns, inhalation injuries, deployment of Toxic Agents, and Shock.
- Burns
- Conducted Electrical Weapon (TASER):
  - If barbs are deployed to the eye/eyelid, ear, nose, female breast, or genitalia transport the patient for removal. Refer to local police protocols for all other barb removal. If the police are unable to remove the barb transport the patient for removal.
  - Consider Restraints as needed.
  - Consider symptoms and treat for Excited Delirium, if indicated.
  - Consider cardiac monitor for patients with cardiac history and/or abnormal vital signs.
- Chest/Thoracic Trauma:
  - For sucking chest wounds utilize a non-porous dressing and seal on three sides.
  - For flail chest ventilate if necessary.
  - Needle Decompression if tension pneumothorax suspected.
- Facial/Dental Trauma:
  - See Airway Management, as appropriate.
  - See Ophthalmic Trauma, as appropriate.
  - Dental – placed avulsed tooth in saline. Avoid touching the root.
  - Unstable mandible – transport patient sitting up with emesis basin/suction available (if no suspected spinal injury).
  - Nose/ear avulsion – place recovered tissue in dry, sterile gauze in a plastic bag, on ice, if available. Cover severe ear and nose lacerations with a protective, moist, sterile dressing.
  - Epistaxis – squeeze nose (or have patient do so) for 10-15 minutes continuously.
- Head Trauma:
  - Elevate head approximately 15-30 degree unless the patient is hypotensive.
  - Monitor level of consciousness.
  - Monitor for Seizures.
- Hemorrhage Management/Wound Packing
- Musculoskeletal Trauma:
  - Assess pulse, motor, and sensation distal to injury.
  - Joints should be splinted in position found.

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- Ophthalmic Trauma:

  General: Transport patient in a seated position unless contraindicated.

  Chemical Splash/Burn -
  - Thoroughly and continuously irrigate affected eye(s) using copious amounts of saline instilled through IV tubing. Start irrigation as soon as possible and continue throughout transport.

  Penetrating Injury/Ruptured Globe –
  - Do not removed impaled object; do not irrigate eye
  - Avoid all pressure on injured eye. Cover with cup or metal/plastic protective patch and cover the uninjured eye.

  Corneal Abrasions/Foreign Body –
  - Do not wipe eye. Consider irrigation.
  - Shade patients' eyes from light.

PEDIATRIC PATIENTS

A. Routine Pediatric Care.
B. Refer to the Pediatric Section of the Spinal Restriction SMO for consideration of safe transportation.
C. Consider Abuse/Neglect: Child for injuries that are presented with an inconsistent history or discrepancy between the history of the injury and the physical exam.
D. Pediatric Head Trauma:
   - Consider oxygen/ventilation as needed
   - Pulse ox as available
   - Pediatric Glasgow Coma Scale
   - PGCS 13-15 – Mild
     - Control Hemorrhage
   - PGCS 9-12 - Moderate
     - Airway Management
   - PGCS ≤ 8 – Severe
     - Seizure SMO, as appropriate

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
- 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

Medication Administration Chart

IV. Motor Vehicle Incidents

A. Extrication time of 20 minutes or more
B. Passenger space invaded by 12 or more inches
C. Ejection
D. Fatality at the scene within the same motor vehicle
E. Rollover
F. Child under 12 years struck by car
G. Child 5 years old or younger involved in any MVA without age appropriate restraint (under age 4 or less than 40 pounds require a car seat)
H. Motorcycle crash greater than 20 mph and separation of rider from bike

V. Major Burns

A. 20% total body surface of 2nd and 3rd degree burns
B. Any burn patient with obvious head, neck or airway involvement

VI. Pediatric Trauma with one or more of the following:

A. HEAD TRAUMA WITH PERSISTENT ALTERED LEVEL OF CONSCIOUSNESS OBVIOUS CHEST OR ABDOMINAL TRAUMA, EITHER PENETRATING OR BLUNT
B. Pediatric Trauma Score of 8 or less
C. Child under 12 struck by car
D. Child 5 years old or younger involved in any MVA without age appropriate restraint (under age 4 or less than 40 pounds require a car seat)

VII. Maternal Trauma Patients with significant mechanism and/or obvious signs of Trauma

A. THE PREGNANT PATIENT 20 – 32 WEEKS
B. The pregnant patient 32 – 40 weeks
C. Maternal patient who meets any other trauma criteria

VIII. Blunt and Penetrating Traumatic Arrests are at the discretion of Medical Control

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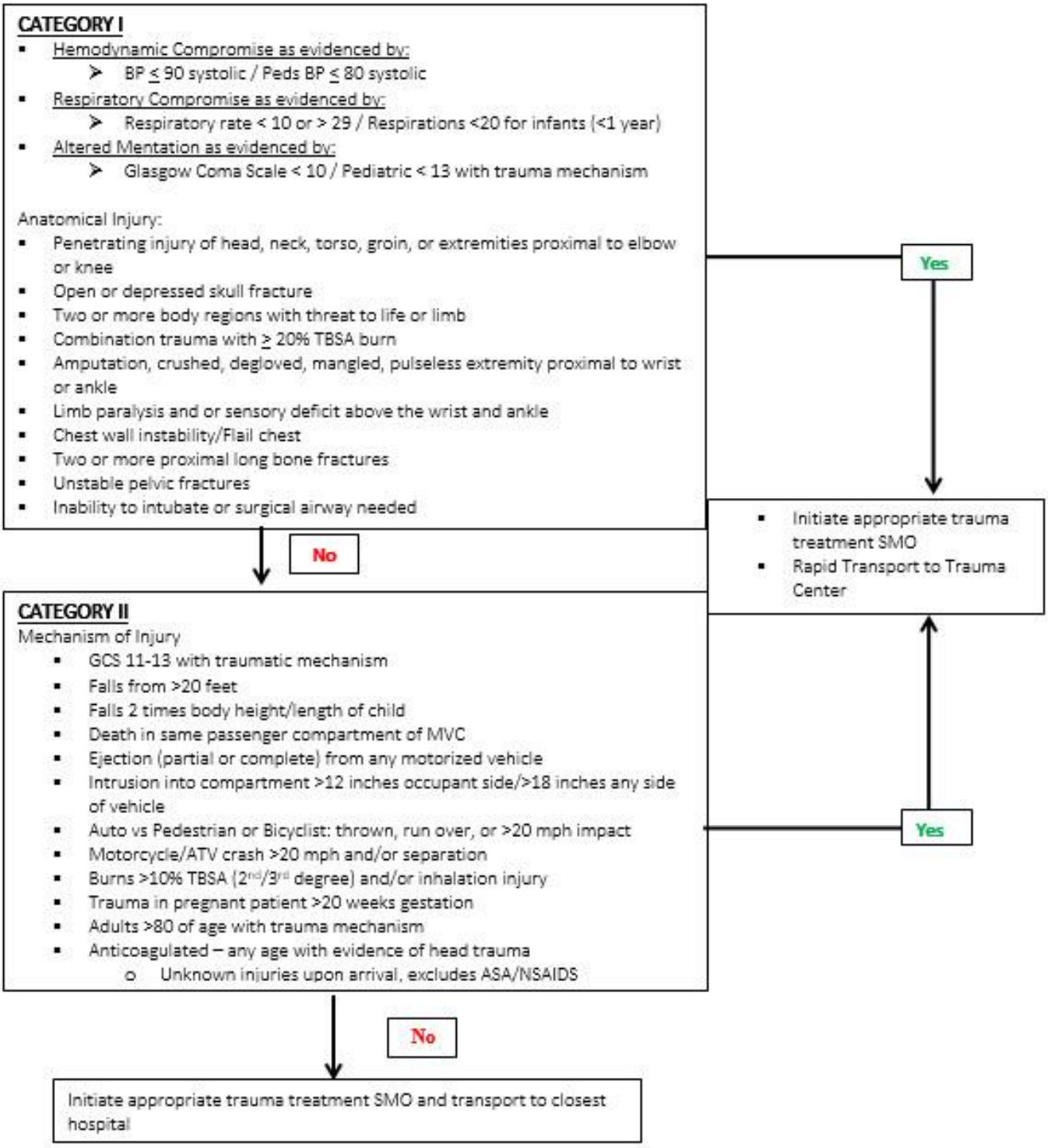

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ADULT GLASGOW COMA SCORE

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	≤ 8
	Moderate Head Injury	9 – 12
	Minor Head Injury	13 - 15

ADULT TRAUMA SCORE

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

RESPIRATORY RATE (spontaneous patient-initiated inspirations/ minute)	10 - 29 / minute	4
	greater than 29	3
	6 - 9 minutes	2
	1 - 5 / minute	1
	None	0
SYSTOLIC BLOOD PRESSURE	Greater than 89	4
	76 - 89 mm Hg	3
	50 - 75 mm Hg	2
	1 - 49 mm Hg	1
	No pulse	0
GLASGOW COMA SCALE (see above)	13 – 15	4
	9 – 12	3
	6 – 8	2
	4 – 5	1
	3	0
TOTAL POSSIBLE SCORE		0 – 12

PEDIATRIC GLASGOW COMA SCORE

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**

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 mmHg	50 – 90 mmHg	≤ 50 mmHg
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

Key Considerations: Surroundings (syringes, medications, blood glucose monitoring supplies, insulin), LOC and neuro assessment, bowel/bladder incontinence, oral trauma (biting of tongue), signs of trauma, witnessed onset, pupil size and reactivity, needle tracks, medical information tags (bracelets or medallions), and/or blood glucose level. Consider treatable etiologies (hypoglycemia, hypoxia).

TREATMENT:

A. Routine Medical Care.
B. Seizure precautions.
   - GENTLE HANDLING. Minimal CNS stimulation. Do NOT check pupillary reflexes.
   - Minimize external stimulation - avoid sirens, bright lights and loud music if possible.
C. Assure patency of airway and be prepared with suction.
D. Oxygen if indicated, assist ventilations with BVM as needed.
E. C-spine restriction if any suspicion of head/ spinal trauma.
F. Protect patient from injury; do not restrain during tonic/clonic movements
G. Obtain blood glucose level. If adult glucose level < 80 mg/dl and/or symptomatic, administer Oral Glucose if patient is conscious or Glucagon IM if the patient is unresponsive or has a questionable gag reflex. See Diabetic Emergencies SMO.
H. Obtain IV or IO access and administer Dextrose IV, if glucose remains decreased.
I. Transport in left lateral recumbent position if no C-spine injury is suspected.
J. Midazolam (heavy dose) for actively seizing patients.

Pediatric Patients

A. Routine Pediatric Care.
B. If patient with glucose <60 mg/dl **and/or** patient is symptomatic follow pediatric dosing for medications listed above.

Key Considerations:

A. 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

B. Any patient exhibiting signs of infection will be assessed for the following:
   - Temperature > 100.4˚ F
   - Temperature < 96.8˚ F
   - Tachypnea > 20/min., PaCO2<32 mmHg; SpO2 ≤ 92%
   - Tachycardia > 90 bpm
   - Systolic BP < 90 mmHg
   - MAP < 65

TREATMENT:

A. See Adult Sepsis Screening Tool.
B. Routine Medical Care.
C. If patient meets sepsis criteria initiate IV fluid bolus. May repeat as clinically indicated up to two liters.
D. Consider Dopamine for adult patients with SBP < 90 mmHg or MAP remains less than 65 after fluid bolus, Dopamine drip.

Pediatric Patients

A. See Pediatric Sepsis Screening Tool.
B. Routine Pediatric Care.
C. If patient meets sepsis criteria initiate IV fluid bolus to 20 ml/kg.
D. Contact Medical Control for approval and dosing of Dopamine.

ADULT 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%		
	Adult Tachycardia > 90 bpm Pediatric Tachycardia (add chart) 0d – 3m >180		
	Systolic BP < 90 mmHg Pediatric Systolic BP 0d-3m - <50		
If presentation suggestive of infection and more than 2 the vital signs changes are positive, call a SEPSIS ALERT and follow SMO			

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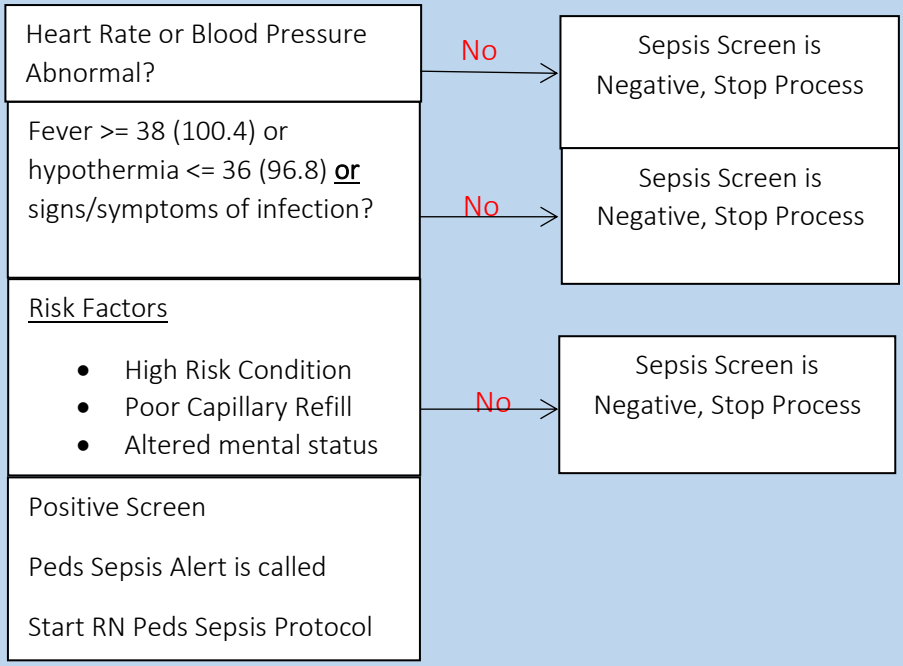
Pediatric Sepsis Screening Tool



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

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

Vital Sign Limits		
Age	Heart Rate	Systolic BP
0d-3m	>180	<50
3m-1Y	>170	<70
1Y-4Y	>150	<75
4Y-12Y	>130	<80
>=12Y	>120	<85

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Key Considerations: 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:

A. Control airway. See Airway Management SMO.
B. Control external bleeding with direct pressure, apply tourniquet, or place patient in pelvic binder as needed:
   - Direct pressure is the primary method of controlling most external bleeding and should be used as soon as possible.
   - Tourniquets
     Consider tourniquets when direct pressure does not control bleeding
     - Tourniquets may not be practical on proximal extremity locations
     - Cut away clothing
     - Tighten per manufacturers' instructions until hemorrhage stops
     - Secure tourniquets per manufacturers' recommendations
     - Note time of tourniquets application and provide this information to receiving care provider. Do not remove any tourniquet without authorization from Medical Control.
     - If one tourniquet is not sufficient to control bleeding consider a second tourniquet proximal to the first
   - Wound Packing
     - Consider wound packing for life threatening bleed from a penetrating injury to the buttock, pelvis (pelvic girdle), axilla (armpit), or neck. Also, consider for penetrating injuries to extremity with significant bleeding that cannot be controlled with direct pressure or tourniquets.
     - Wound packing is contraindicated for the chest, back, head, abdomen, and dialysis graft bleeding.
   - Wound packing procedure:
     - Attempt to control bleeding with direct pressure.

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- Cut away clothing at wound site.
- Have wound packing supplies on hand – use a roll of plain gauze.
- Carefully remove any obvious foreign object from the wound (splintered wood, etc.)
- Apply direct pressure just proximal to the wound to reduce bleeding. With one finger of the other hand push the end of the gauze as deeply into the wound as possible. Continue to feed the gauze deep into the wound in small increments. Do not attempt to feed a large amount of gauze all at once.
- Continue to pack gauze deeply and tightly in order to apply direct pressure over the source of the bleed. When the packing reaches the level of the skin apply any remaining gauze over the wound to help apply pressure.
- Hold direct pressure over the wound for at least ten minutes. Do not release this pressure to "check" for bleeding.
- If possible, wrap with gauze to maintain pressure.
- Note: this is a very painful procedure, provide Pain Management per SMO.

C. 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).
D. Spinal Restriction, if indicated.
E. Apply cardiac monitor.
F. Medication Administration Chart.
G. IV/IO access (see fluid treatment below):

	Controlled Hemorrhage	Uncontrolled Hemorrhage	Neurogenic
Fluid	250ml/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 mmHG and hypotension SBP <100 mmHG and time less than 3 hour from injury.	**Dopamine** 5-10 mcg/kg/min if bleeding controlled and volume replaced

H. Patients with neurogenic shock can also have underlying hemorrhage. For patients with head trauma, manage hemorrhage to maintain perfusion to the brain.
I. Suspect obstructive shock (tension pneumothorax), perform Needle Decompression if present.
J. Cover open wounds with sterile dressings.
K. Reassess airway, breathing and circulation frequently.
L. Transport as soon as possible.

Pediatric Patients

A. Fluid bolus.
B. TXA for patients 14 years of age or older.
C. Contact Medical Control for approval and dosing of Dopamine.

Key Considerations:

A. 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

B. 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

C. Identify the functional need from the patient, the patient's family, bystanders, medic alert bracelets or documents, or the patient's adjunct assistance devices. Attempt to identify the normal baseline vital signs.

D. 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.

E. 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.

F. Presence of technology assisted devices, such as ventilators or central intravenous catheter and feeding tube pumps.
   - Consider utilizing patient's medical equipment/supplies for optimal results and appropriate sizing.

G. Use parents/caregivers/home health nurse as a medical resource at home and enroute.

TREATMENT:

TRACHEOSTOMY/Ventilator Dependent Patients

A. Assessment for displaced or obstructed tubes.
B. Assessment for pneumothorax, pneumonia, reactive airway, and/or aspiration.
C. Assessment for equipment issues such as ventilator malfunction, oxygen depletion, kinked tubing.
D. Assessment for infection.
E. 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.
F. If patient is not on a ventilator administer oxygen with bag or mask over trach as needed.
G. 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.
H. If inner cannula present request that the caregiver remove and clean with saline.
I. 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).
J. If above does not work, remove tube and either reinsert new tube or use endotracheal tube of same approximate size.

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K. 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

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

CSF SHUNT

A. Assessment for infection.
B. Assessment for signs of increased intracranial pressure.
C. 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

A. Assessment for infection, irritation/trauma, or peritonitis.
B. Direct pressure if bleeding at site.
C. Saline moistened sterile dressing covered by dry dressing if stoma is exposed.
D. Administer IV/IO fluids if signs of dehydration or shock.

GASTROSTOMY (FEEDING) TUBE

A. Assessment for displaced or obstructed tube.
B. Assessment for peritonitis or perforation of the stomach/bowel.
C. Assessment for equipment issues, such as kinked or cracked tubing or infusion pump failure.
D. Direct pressure if there is bleeding at the site.
E. Dry, sterile dressing over the area if tube is dislodged, or tape partially dislodged tube in place.
F. 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.
G. Bring tubing with patient to the hospital for sizing purposed and reinsertion/replacement of the tube.
H. Administer IV/IO fluids if there are signs of dehydration or shock.
I. Transport patient on their right side or sitting up to avoid potential aspiration.

URETEROSTOMY OR NEPHROSTOMY TUBE (OR FOLEY CATHETER)

A. Assessment for infection, irritation/trauma, peritonitis, blocked urinary drainage.
B. Direct pressure if bleeding at site.
C. Saline moistened sterile dressing covered by dry dressing if stoma is exposed.
D. Administer IV/IO fluids if signs if dehydration/shock.

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FISTULA, SHUNT, OR ARTERIOVENOUS GRAFT (AV SHUNT)

A. Blood pressure should not be taken in an arm with an AV Shunt.
B. IV should not be started in an arm with an AV Shunt.
C. Direct pressure to control bleeding at site.

OTHER SPECIAL NEEDS SITUATIONS

- 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.

Key Considerations: Indication for spinal restriction includes any patient that experiences a mechanism of injury that creates the potential for spinal injury. Consider the patients' mental status and neuro assessment (LOC, pupils, and ability to move and feel extremities.

PROCEDURE:

Selective Spinal Restriction

A. 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.

B. If none of the above is present, spinal restriction is not required.

Spinal Restriction Techniques

A. Assessment
   - Assess motor and sensory function before and after spinal restriction and regularly during transport.
   - Consider the use of S_PO_2 and $EtCO_2$ to monitor respiratory function.

B. 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.

C. 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.

D. Penetration trauma
   - Patients without spinal pain or neuro deficits do not need spinal restriction.

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Pediatric Patients

- Routine Pediatric Care.
- 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 include them 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.

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

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Key Considerations: 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:

A. Routine Medical Care.
B. Protect airway, suction as necessary; refer to Airway Management SMO.
C. Seizure and vomiting precautions; refer to Seizure SMO.
D. Apply cardiac monitor; treat dysrhythmias according to appropriate SMO:
    - Bradycardia SMO
    - Tachycardia SMO
E. Maintain head and neck in neutral alignment - do NOT flex the neck.
F. If BP > 90 mmHg, elevate head of bed 15 - 30°.
G. Initiate IV Normal Saline at TKO rate for normotensive patient.
H. If altered sensorium, seizure, or focal neurological deficit, obtain and record blood sugar level.
I. If blood glucose is < 80 mg/dl **and/or** patient is symptomatic administer Glucagon or Dextrose IV and note response.
J. If active Seizure, administer Midazolam (heavy dose) **(**contact Medical Control for subsequent doses).
K. Monitor and record neurological status and any changes.
L. Protect paralyzed limbs from injury.
M. RAPID transport per algorithm.

PEDIATRIC PATIENTS

Key Considerations: Although rare in children, strokes can occur at any age.

TREATMENT:

A. Routine Pediatric Care.
B. Administer pediatric dosing for medications listed above.

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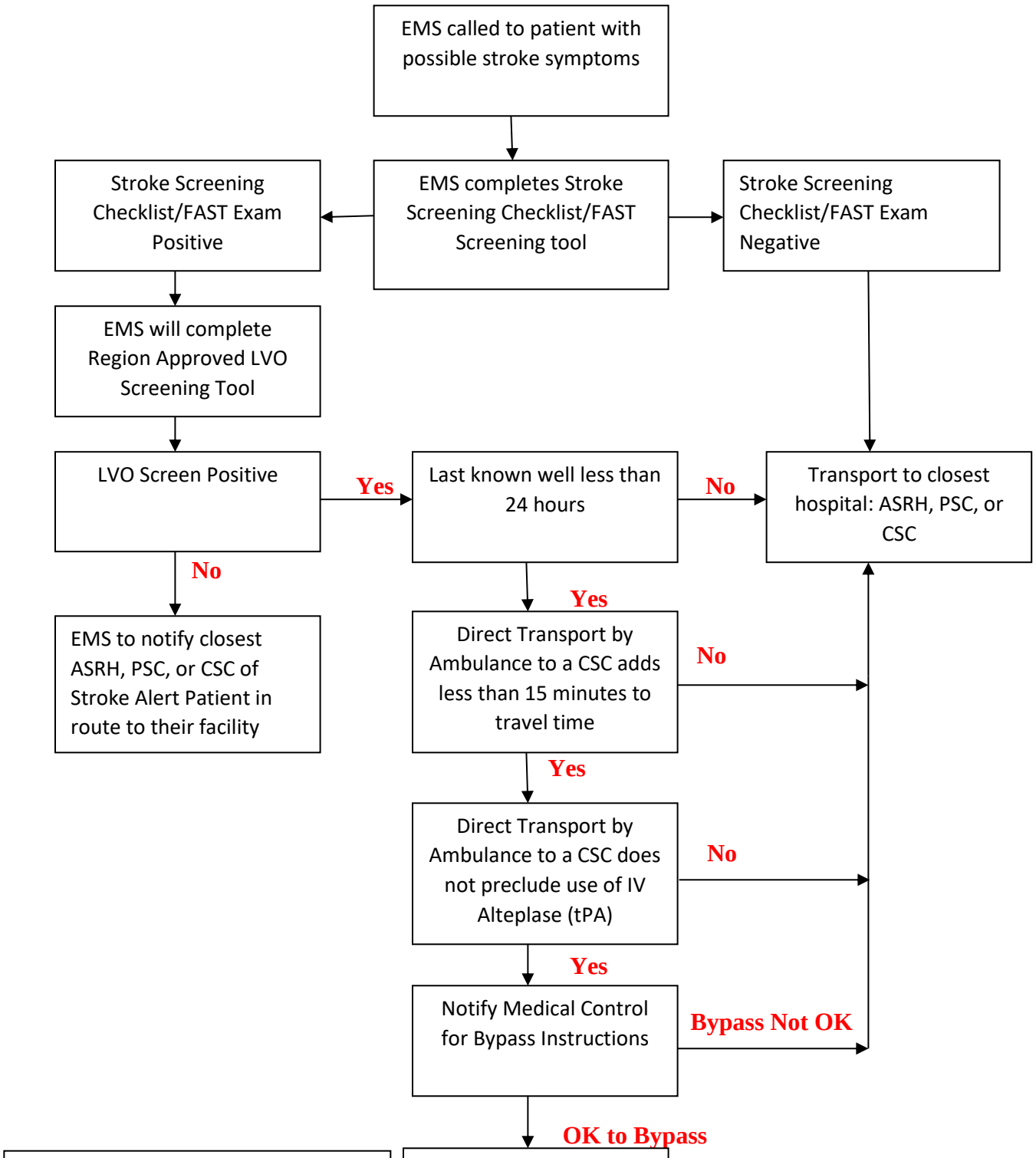
EMS Region 1 Suspected Stroke Patient Transport Algorithm



**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

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

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

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

LVO-Large Vessel Occlusion

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

Goal at ASRH, PSC, CSC:

tPA within 60 minutes of arrival

1. Door to MD ≤10 minutes
2. Door to Stroke Team ≤ 15 minutes
3. Door to CT time ≤ 20 minutes
4. Door to CT results ≤ 40 minutes
5. Door to Lab results ≤ 45 minutes
6. Check for contraindications for tPA
7. Administer tPA if no contraindications
8. Transfer to higher level of care if indicated (ASRH or PSC not capable of treating post tPA patient, patient need for neuro intervention, etc.)

G-FAST Screen:

GAZE DEVIATION: Does the person stare to one side and cannot move their eyes back to center
_____Normal: Patient able to move eyes from side to side and back to midline
_____ABNORMAL: Patient stares to one side and cannot move eyes back to midline or to look elsewhere

FACIAL DROOP: Ask the person to smile and/or show their teeth
_____Normal: Both sides of the face are equal, there is no droop noted to one side
_____ABNORMAL: One side the mouth or face is drooping, drooling or does not look the same

ARM DRIFT: Ask the person to hold both arms out in front of them for the count of 10
_____Normal: Both arms move equally
_____ABNORMAL: One arm drifts down or does not move at all, the other is normal

SPEECH: Have the person say a sentence (example: You can't teach an old dog new tricks.)
_____Normal: Sentence sounds normal, no slurring words and person uses correct words
_____ABNORMAL: Patient unable to speak (mute), words are slurred, incorrect words used

TIME: If the time of **Last Known Well** is GREATER than 24 hours, then a stroke alert is NOT paged because the patient is outside of acute treatment window.

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Key Considerations: Unconscious patient with unsuccessful attempts to relieve an obstruction. Also consider patient with facial trauma that restricts normal intubation. Skin color may be pale, cyanotic, and/or ashen. See Facial Trauma SMO.

PROCEDURE:

A. 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.
B. 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).
C. Prepare the skin with antiseptic solution and maintain aseptic technique.
D. Stabilize the thyroid cartilage between thumb and middle finger of one hand.
E. Press index finger of same hand between the thyroid and cricoid cartilage to identify cricothyroid membrane.
F. Using a short scalpel, make a 2cm ***vertical*** incision through the skin, to visualize the cricothyroid membrane.
G. After identifying the cricothyroid membrane, make a ***horizontal*** incision using the short scalpel blade. An adequate incision eases the introduction of the trach tube.
H. Maintain opening in cricothyroid membrane with finger/Bougie/ handle of scalpel.
I. Carefully insert the tracheostomy tube supplied in the surgical cricothyrotomy kit or ET tube (generally a size 6.0 for adults). Inflate the cuff.
J. Provide ventilation by a bag-valve device with 100% oxygen.
K. Determine adequacy of ventilation through bilateral auscultation, epigastrium auscultation, and observation of rise and fall of the chest and adjust the tube if necessary.
L. Securely fix the trach tube or ET tube in place, including manually guarding if necessary.
M. Provide update of patient's status to hospital and transport immediately.

Pediatric Patients

A. Use needle cricothyrotomy (transtracheal ventilation) for children under 10 years of age; see Needle Cricothyrotomy.

Key Considerations: Duration of the syncopal episode, symptoms before episode (palpitation, seizure, incontinence, aura), previous episodes of syncope, circumstances of occurrence (patient position, severe pain, emotional stress), vital signs (especially pulse rate, quality, regularity).

TREATMENT:

CONSCIOUS, ALERT, ORIENTED WITH HISTORY OF SYNCOPAL EPISODE

A. Routine Medical Care.
B. Cardiac monitoring.
C. Obtain and record blood sugar level.
D. 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

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

A. Routine Medical Care.
B. Cardiac monitoring, 12 lead if capable.
C. IV access.
D. If adult blood glucose < 80 mg/dl **and/or** patient is symptomatic, administer:
   - Oral Glucose for conscious patient with gag reflex intact.
   - Dextrose IV; 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.
E. Naloxone IN, IV 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).
F. Fluid bolus in 250 ml increments with signs of hypotension.
G. Consider Spinal Restriction.

Pediatric Patients

A. Routine Pediatric Care.
B. If patient with glucose <60 mg/dl **and/or** patient is symptomatic follow pediatric dosing for medications listed above.
C. Fluid bolus for signs of hypotension.

Tachycardia - Narrow Complex Regular/Stable and Unstable – 1.061

Key Considerations: Mental status, blood pressure, evidence of CHF, and heart rate. 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.

Treatment/Stable: Stable is defined as normal mental status and/or signs of normal or mildly decreased perfusion.

A. Routine Medical Care.
B. Pulse oximetry.
C. Shock position.
D. Regular assessment of vital signs and signs of perfusion.
E. If the rhythm is sinus tachycardia treat the underlying causes. Do not attempt to terminate the rhythm.
F. Obtain 12-Lead ECG and print rhythm strips for receiving hospital.
G. Consider vagal maneuvers (valsalva, cough, or breath holding).
H. IV access – large bore proximal location
I. Adenosine flushed with 20 ml Normal Saline or dilute to a volume of 20 ml with Normal Saline, then push.
J. If dysrhythmia persists 1-2 minutes after initial dose repeat Adenosine (increased dose) flushed with 20 ml Normal Saline.
K. If dysrhythmia persists 1-2 minutes after repeat dose contact Medical Control.

Treatment/Unstable: Un-stable is includes signs of poor perfusion including' decreased level of consciousness, SBP <90 mmHG (with signs /symptoms of hypo-perfusion), CHF (rales), and moderate to severe chest pain.

A. Routine Medical Care.
B. Regular reassessment of vital signs and signs of perfusion.
C. Midazolam IV (light dose) for sedation prior to cardioversion if patient SBP ≥ 100 mmHg. May repeat dose up to max of 10 mg.
D. Synchronized cardioversion:
   - Narrow Regular –Use **Cardioversion** Settings below
   - Narrow Irregular – Use **Cardioversion** Settings below
   - Wide Regular – Use **Cardioversion** Settings below
   - Wide Polymorphic, unsynchronized defibrillation dose – Use **Defibrillation Settings** below

E. Fentanyl or Morphine Sulfate IV for pain control if needed if patient SBP ≥ 100 mmHg; see Pain Management SMO.
F. If cardioversion unsuccessful increase joules in a stepwise fashion.
G. Obtain 12-lead ECG and print rhythm strips for receiving hospital.

Cardioversion Settings	1st	2nd	3rd	4th
Zoll Biphasic	100	150	200	200
Phillips MRX	100	150	200	200
Lifepak/Medtronic	100	200	300	360
Tempus	100	150	200	200

Defibrillation Settings	1st	2nd	3rd	4th
Zoll Biphasic	120	150	200	200
Phillips MRX	150	170	200	200
Lifepak/Medtronic	200	300	360	360
Tempus	150	170	200	200

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Stable Wide Complex Tachycardia

Key Considerations: Mental status will be normal and there will be no signs of poor perfusion.

TREATMENT:

A. Routine Medical Care.
B. For regular monomorphic Wide Complex Tachycardia ***consider*** Adenosine.
C. 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.
D. For monomorphic Wide Complex Tachycardia administer Amiodarone **OR** Lidocaine.
E. If at any time the patient becomes unstable proceed to unstable SMO and cardioversion.

Unstable Wide Complex Tachycardia

Key Considerations: Altered mental status and signs of poor perfusion (chest pain, dyspnea, rales, hypotension – BP <90 mmHG related to the tachycardia.

TREATMENT:

A. Routine Medical Care.
B. Synchronized cardioversion per **Cardioversion Settings** below.. If unsuccessful increase in a stepwise fashion. Consider Midazolam (heavy dose) IV/IO/IM for sedation is patient is awake.
C. If polymorphic, use Defibrillation Settings below.
D. Upon successful cardioversion or, if cardioversion fails, use one of the following:
   - Magnesium Sulfate; see Magnesium Sulfate Administration Chart for Polymorphic VT (Torsade's de Points)
   - Amiodarone
   - Lidocaine

Cardioversion Settings	1st	2nd	3rd	4th
Zoll Biphasic	100	150	200	200
Phillips MRX	100	150	200	200
Lifepak/Medtronic	100	200	300	360
Tempus	100	150	200	200

Defibrillation Settings	1st	2nd	3rd	4th
Zoll Biphasic	120	150	200	200
Phillips MRX	150	170	200	200
Lifepak/Medtronic	200	300	360	360
Tempus	150	170	200	200

* Or per other specific monitor manufacturer settings.

Medication Administration Chart
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Key Considerations:

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:

A. Routine Pediatric Care, Rapid Transport.
B. IV/IO access as needed.
C. Identify and treat underlying cause.
D. Fluid bolus, repeat times 3 as indicated.
E. Reassess, if signs of hypovolemic shock, refer to Pediatric Shock SMO.

Stable SVT

A. Attempt vagal maneuvers.
B. Diminished perfusion, but patient is responsive, Adenosine.

Unstable SVT

A. Synchronized cardioversion, 0.5 - 1.0 joule/kg. Reassess and repeat if not effective, increased to 2 joule/kg.
B. Consider fluid bolus.

Stable Ventricular Tachycardia

A. Consider Adenosine if rhythm regular and QRS monomorphic.
B. Contact Medical Control for administration of Lidocaine or Amiodarone.

Unstable Ventricular Tachycardia

A. Synchronized cardioversion, 0.5 - 1.0 joule/kg. Reassess and repeat if not effective, increased to 2 joule/kg.
B. If ventricular tachycardia persists, per medical control, Lidocaine or Amiodarone.
C. Consider fluid bolus.

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Key Considerations: Breath odor, needle tracks, medic alert tags/bracelets/medallions, cardiac rhythm, blood glucose, pulse oximetry, vital signs, pupil size, skin appearance (color and/or temperature), lung sounds, airway secretions, dry or moist mucous membranes, respiratory depression or arrest due to overdose. Consider contacting Poison Control at 1-800-222-1222 for substance information. For patients exposed to potential chemical/biological weapons, such as anthrax, sarin, cyanide, etc, ensure each patient has been adequately decontaminated prior to initiating patient care.

TREATMENT:

A. Routine Medical Care.
B. Cardiac monitor.
C. IV/IO access as indicated.
D. If hypotensive, administer fluid bolus. Reassess and repeat as indicated.
E. Airway Management. Advanced airway, if indicated.
F. Collect information regarding substance.
G. See Toxidrome Table below for specifically identified toxic substances.

UNKNOWN SUBSTANCE

A. If blood glucose < 80mg/dl or if **adult** patient is symptomatic:
   - Oral glucose administration if patient is able to maintain their airway and follow commands.
   - Glucagon IV or IM if patient is unable to maintain their airway and follow commands.
B. If glucose level is normal:
   - Consider Naloxone IN, IV or IM for altered mental status with severe respiratory depression or arrest; signs and symptoms of shock; or hypoventilation with a pulse oximetry reading < 94%.
   - Continuously monitor vital signs and cardiac rhythm during transport.

Pediatric Patients

A. Routine Pediatric Care.
B. Follow pediatric dosing for medications listed above.
C. If patient with glucose <60 mg/dl **and/or** patient is symptomatic follow pediatric dosing for medications listed for UNKNOWN SUBSTANCE.

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Toxidrome Table			
Toxidrome	**Examples**	**Symptoms**	**Antidotes/Treatment**
ACE Inhibitors	Captopril Enalapril Lisinopril Quinapril	Hypotension	Supportive treatment IV fluids
Anticholinergic	Atropine Jimson Weed Scopolamine Diphenhydramine	Delirium Hyperthermia Tachycardia Warm, dry skin	Supportive treatment
Anti-Psychotic	**Typical:** Chlorpromazine (Thorazine) Haloperidol (Haldol) Trifluoperazine (Stelazine) **Atypical:** Aripiprazole (Abilify) Clozapine (Clozaril) Quetiapine (Seroquel) Risperidone (Risperdal) Ziprasidone (Geodon)	Hypotension Tachycardia QRS prolongation Arrhythmias Flushed skin Altered mental status	Supportive treatment Midazolam (heavy dose)
Blister Agents	Lewisite Nitrogen Mustard Sulfur Mustard Phosgene Oxime	Upper airway irritation Laryngospasm Hypovolemic shock Nausea/Vomiting Erythema with burning	Supportive Treatment Pulmonary Edema Seizure Airway Management Shock
Biological Agents	**Category A** Anthrax Botulism Plague **Category B** Ricin Cholera T2 Mycotoxin **Category C** Viruses that cause: Encephalitis Hantavirus Influenza	Respiratory distress Hypotension Hypoxemia Chest pain Tachycardia Confusion Vomiting Seizures GI bleed Shock Sepsis Diaphoresis	Supportive Treatment Seizure Airway Management CPAP Shock Sepsis

Medication Administration Chart
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Toxidrome Table			
Toxidrome	**Examples**	**Symptoms**	**Antidotes/Treatment**
Cardiotoxic Drugs	**Beta-blockers:** Metoprolol (Lopressor) Nadolol (Corgard) Propranolol (Inderal) **Calcium channel blockers:** Amiodipine (Norvasc) Verapamil (Verelan) Nifedipine (Procardia) Cardizem (diltiazem)	Bradycardia Conduction issues Hypotension	Supportive Treatment For bradycardia and/or hypotension high dose Glucagon. Atropine Calcium Gluconate IV or IO for symptomatic calcium channel blocker overdose
Cholinergic (Anti-cholinesterase)	**Pesticides:** Carbamates Organophosphates **Nerve Agents:** Sarin Soman Tabun VX	**Muscarinic *** **Nicotinic **** **Central *****	Supportive Treatment Atropine – repeat every 2-5 minutes until airway symptoms subside Pralidoxime (2-PAM) Chem-Pak
Cyanide Agents *Consider: combustible materials from house fires (plastics/furniture)*	**Hydrogen Cyanide (AC):** Formonitrile **Cyanogen Chloride (CK):** Chlorine cyanide	Respiratory arrest Hypotension Nausea/vomiting Chemical conjunctivitis	Supportive treatment Early notification to hospital for cyanide kit
Hallucinogens	PCP LSD Mescaline	Hyperthermia Tachycardia Hypertension	Supportive Treatment Midazolam (heavy dose)
Opioid	Fentanyl Heroin Hydromorphone Methadone Oxycodone	Depressed mental status Hypoventilation Constricted pupils	Supportive Treatment Naloxone (IN, IM, IV)
Pulmonary Agents	Phosgene Diphosgene Chlorine Anhydrous Ammonia	Pharyngitis Hypovolemia Shock Chemical Burns	Supportive Treatment CPAP Shock Pulmonary Edema
Riot Control	Tear gas Mace Pepper Spray	Increased heart rate Increased blood pressure	Supportive Treatment Irrigate as appropriate Airway Management CPAP Shock

*Muscarinic	**Nicotinic	***Central
Diarrhea, Urination, Miosis, Bradycardia, Bronchospasm, Bronchorrhea, Emesis, Lacrimation, Salivation, Sweating	Mydriasis, Tachycardia, Weakness, Hypertension, Hyperglycemia, Fasciculations	Confusion, Convulsions, Coma

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Toxidrome Table			
Toxidrome	**Example**	**Symptoms**	**Antidotes/Treatment**
Sedative – Hypnotic	Amobarbital Barbiturates Benzodiazepines GHB Pentobarbital Rohypnol	Depressed mental status Hypotension Hypothermia	Supportive Treatment
Sodium Channel Blockade	Tricyclic antidepressants ▪ Type 1A – quinidine, procainamide Type 1C – felcainide, propafenone	Altered mental status Hypotension Seizures Wide-Complex Tachycardia	Support Treatment Sodium Bicarbonate for hypotension, seizure, and/or QRS widening > 0.10 seconds. Midazolam (heavy dose) for Seizures
Sympathomimetic	Adderall Cocaine Methamphetamine	Agitation Diaphoresis Hypertension Hyperthermia Dilated pupils Tachycardia	Supportive Treatment Midazolam (heavy dose)

Key Considerations: Good skin contact is needed; shave chest hair as needed.

PROCEDURE:

A. Explain procedure to patient.
B. IV / IO access.
C. Consider sedation.
D. Apply external pacer pads.
E. Turn on pacer.
F. Set the rate for pacing, start at 70 BPM, this may be adjusted for patient's condition.
G. 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.
H. Check for signs of mechanical capture – improvement in pulse, blood pressure, skin and increased $EtCO_2$. If not present, increase mA until mechanical capture (palpable pulse) is evident.
I. If procedure is unsuccessful follow the appropriate SMO as indicated by the presenting cardiac rhythm.
J. If procedure is successful, secure IV, O_2 and assist ventilations as indicated.
K. Continuously monitor patient enroute.
L. If patient deteriorates at any time proceed to appropriate SMO.

Pediatric Patients

Key Considerations: The need for pacing in a pediatric patient is likely related to a congenital condition.

TREATMENT:

A. Airway Management.
B. Treatment for Shock as appropriate.

Ventricular Fibrillation/Pulseless Ventricular Tachycardia – 1.064

Key Considerations: Confirm apnea, pulselessness, V-Fib or V-Tach on monitor. Search and treat possible contributing factors (H's and T's).

TREATMENT:

A. Assess ABC's.
B. CPR/AED per AHA guidelines.
C. Defibrillate at 360J for monophasic; OR equivalent biphasic. Refer to chart below.
D. Resume CPR immediately, CPR and defibrillation is the primary treatment, the following should be added as soon possible however **prevent and minimize CPR interruptions**.
E. IV or IO placement.
F. Epinephrine.
G. If Polymorphic VT (Torsade's de Pointes) Magnesium Sulfate – Magnesium Sulfate Administration Chart
H. Amiodarone OR Lidocaine.
I. Advanced Airway Management; see Airway Management SMO.
J. 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 is optimal.
K. Calcium Gluconate for suspected hyperkalemia (renal failure, dialysis, potassium ingestion), or tricyclic or phenobarbital overdose.
L. 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.
M. If patient is hypotensive (SBP < 90 mmHG) consider fluid bolus and refer to Cardiogenic Shock SMO.
N. If waveform capnography is in place, $EtCO_2$ readings of 35-45 are optimal.
O. Perform 12 lead ECG if available.
P. **Region 1 EMS Medical Directors recommend starting and continuing at maximum energy, if possible**. Below are the recommended manufacturer settings.

Defibrillation Settings	1st	2nd	3rd	4th
Zoll Biphasic	120	150	200	200
Phillips MRX	150	170	200	200
Lifepak/Medtronic	200	300	360	360
Tempus	150	170	200	200

* **Or per other specific monitor manufacturer settings**.

Pediatric Patients

A. Routine Pediatric Care.
B. Follow pediatric dosing for medications listed above.
C. Defibrillate at 2 J/kg. Repeat at 4 j/kg if ineffective. Subsequent doses greater than or equal to 4 J/kg to a max of 10 J/kg or adult dose.

Resources: H's and T's

Review of Standing Medical Orders

Ongoing review of Region I EMS Standing Medical Orders is required to remain current with interventions known to be effective in prehospital care and should be the responsibility of each provider in Region I. It is expected that each provider maintain a functional knowledge of the Standing Medical Orders and apply them appropriately during all patient interactions.

Updates and new Standing Medical Orders are noted with either the "Original SMO Date" or "Last Revision" within each SMO. The most current version and implementation date of the entire document is noted in the footer on each page. Distribution and education regarding any updates remains the purview of each Region I EMS Resource Hospital.

The Standing Medical Orders have been developed and approved through a collaborative process involving the Medical Directors listed below:

_____

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

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IV Doses, volumes, and concentrations used in

PEDIATRIC RESUSCITATION

and

ADULT WEIGHT-BASED DOSING

Last updated December 2021
Doses adapted from
BROSELOW Pediatric Emergency Tape Version 2019
Edition A
The Harriet Lane Handbook Twenty-Second Edition
*For ET doses refer to Broselow Tape

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	40 kg	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	DSI Meds	Alt Meds	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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Resuscitation – 3 KG

	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 **Dilute with equal volume of NS prior to administration
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

Synchronized Cardioversion

First Shock – 3 joules	Subsequent Shock – 6 joules

Defibrillation

First Shock	6 joules
Second Shock	12 joules
Subsequent	12-30 joules

Supraglottic Airway

Kings	0 – clear
i-gel	1 - pink

Cuffed ETT Size	Blade Size
3.0	1 - straight

Normal Saline Bolus

60 ml

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Anaphylaxis/Antidote - 3 KG

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE (1mg/1ml) vial/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
METHYLPREDNILOSONE (125 mg/2 ml) Vial	2 mg/kg	6 mg	0.1 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

Asthma/ Bronchospasm - 3 KG

	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
METHYLPREDNILOSONE (125 mg/2 ml) Vial	2 mg/kg	6 mg	0.1 ml
EPINEPHRINE (1mg/1ml) vial/amp	0.01 mg/kg	SUB Q 0.03 mg	0.03 ml

Seizures - 3 KG

	DOSE/KG	DOSE	VOLUME
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	0.3 mg *	0.06 ml

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Antiemetic/Pain/Agitation - 3 kg

	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	0.05 mg/kg	0.15 mg *	0.03 ml

Delayed Sequence Intubation (DSI) - 3 KG

FOR DSI APPROVED SERVICES ONLY

	DOSE/KG	DOSE	VOLUME
ATROPINE (1mg/10ml) Pre-filled syringe Not recommended for patients <11 kg or <1 year of age	0.02mg/kg	0.06 mg	0.6 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
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

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Resuscitation – 4 KG

	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 **Dilute with equal volume of NS prior to administration
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

Synchronized Cardioversion

First shock – 4 joules	Subsequent shock – 8 joules

Defibrillation

First shock	8 joules
Second shock	16 joules
Subsequent	16-40 joules

Supraglottic Airway

Kings Airway	0 – clear
i-gel	1 – pink

Cuffed ETT Size	Blade Size
3.0	1 - Straight

Normal Saline Bolus

80 ml

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Anaphylaxis/Antidote – 4 KG

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE (1mg/1ml) vial/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
METHYLPREDNILOSONE (125 mg/2 ml) Vial	2 mg/kg	8 mg	0.13 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

Asthma – 4 KG

	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
METHYLPREDNILOSONE (125 mg/2 ml) Vial	2 mg/kg	8 mg	0.13 ml
EPINEPHRINE (1mg/1ml) vial/amp Must use filter needle for amp	0.01 mg/kg	SUB Q 0.04 mg	0.04 ml

Seizures – 4 KG

	DOSE/KG	DOSE	VOLUME
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	0.4 mg *	0.08 ml

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Antiemetic/Pain/Agitation – 4 KG

	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	0.05 mg/kg	0.2 mg *	0.4 ml

Delayed Sequence Intubation (DSI) – 4 KG

FOR DSI APPROVED SERVICES ONLY

	DOSE/KG	DOSE	VOLUME
ATROPINE (1mg/10ml) Pre-filled syringe Not recommended for patients <11 KG or < 1 year of age	0.02mg/kg	0.08 mg	0.8 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
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

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Resuscitation – 5 KG

	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 **Dilute with equal volume of NS prior to administration
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

Synchronized Cardioversion

First shock – 5 joules	Subsequent shock – 10 joules

Defibrillation

First shock	10 joules
Second Shock	20 joules
Subsequent	20-15 joules

Supraglottic Airway

Kings Airway	1 - white
i-gel	1 - pink

Cuffed ETT	Blade Size
3.0	1 - Straight

Normal Saline Bolus

100 ml

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Anaphylaxis/Antidote – 5 KG

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE (1mg/1ml) vial/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
METHYLPREDNILOSONE (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

Asthma – 5 KG

	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
METHYLPREDNILOSONE (125 mg/2 ml) Vial	2 mg/kg	10 mg	0.16 ml
EPINEPHRINE (1mg/1ml) vial/amp	0.01 mg/kg	SUB Q 0.05 mg	0.05 ml

Seizures – 5 KG

	DOSE/KG	DOSE	VOLUME
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	0.5 mg *	0.1 ml

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Antiemetic/Pain/Agitation – 5 KG

	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	0.05 mg/kg	0.25 mg *	0.05 ml

Delayed Sequence Intubation (DSI) – 5 KG

FOR DSI APPROVED SERVICES ONLY

	DOSE/KG	DOSE	VOLUME
ATROPINE (1mg/10ml) Pre-filled syringe Not recommended for patients < 11 KG or < 1 year of age	0.02 mg/kg	0.1 mg	1 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
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

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PINK

Resuscitation 6-7 KG

	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

Synchronized Cardioversion

First Shock – 7 joules	Subsequent Shock – 13 joules

Defibrillation

First Shock	13 joules
Second Shock	26 joules
Subsequent	26-60 joules

Supraglottic Airway

Kings Airway	1 – white
i-gel	1.5 - blue

Cuffed ETT Size	Blade Size
3.0	1 - Straight

Normal Saline Bolus

130 ml

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PINK

Anaphylaxis/Antidote – 6-7 KG

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE (1mg/1ml) vial/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
METHYLPREDNILOSONE (125 mg/2 ml) Vial	2 mg/kg	13 mg	0.21 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

Asthma – 6-7 KG

	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
METHYLPREDNILOSONE (125 mg/2 ml) Vial	2 mg/kg	13 mg	0.21 ml
EPINEPHRINE (1mg/1ml) vial/amp	0.01 mg/kg	SUB Q 0.07 mg	0.07 ml

Seizures – 6-7 KG

	DOSE/KG	DOSE	VOLUME
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	0.7 mg *	0.14 ml

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PINK

Antiemetic/Pain/Agitation – 6-7 KG

	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	0.05 mg/kg	0.3 mg *	0.07 ml

Delayed Sequence Intubation (DSI) – 6-7 KG

FOR DSI APPROVED SERVICES ONLY

	DOSE/KG	DOSE	VOLUME
ATROPINE (1mg/10ml) Pre-filled syringe Not recommended for patients < 11 KG or < 1 year of age	0.02 mg/kg	0.13 mg	1.3 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
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

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Resuscitation – 8-9 KG

	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

Synchronized Cardioversion

First Shock – 8 joules	Subsequent Shock – 17 joules

Defibrillation

First Shock	17 joules
Second Shock	33 joules
Subsequent	33-80 joules

Supraglottic Airway

Kings Airway	1 – white
i-gel	1.5 - blue

Cuffed ETT Size	Blade Size
3.0	1 – Straight

Normal Saline Bolus

170 ml

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Anaphylaxis/Antidote 8-9 KG

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE (1mg/1ml) vial/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
METHYLPREDNILOSONE (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

Asthma 8-9 KG

	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
METHYLPREDNILOSONE (125 mg/2 ml) Vial	2 mg/kg	17 mg	0.27 ml
EPINEPHRINE (1mg/1ml) vial/amp	0.01 mg/kg	SUB Q 0.085 mg	0.085 ml

Seizures 8-9 KG

	DOSE/KG	DOSE	VOLUME
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	0.9 mg *	0.18 ml

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Antiemetic/Pain/Agitation – 8-9 KG

	DOSE/KG	DOSE	VOLUME
ONDANSETRON (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	0.05 mg/kg	0.4 mg *	0.09 ml

Delayed Sequence Intubation (DSI) – 8-9 KG

FOR DSI APPROVED SERVICES ONLY

	DOSE/KG	DOSE	VOLUME
ATROPINE (1mg/10ml) Pre-filled syringe Not recommended for patients < 11 KG or < 1 year of age	0.02 mg/kg	0.17 mg	1.7 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
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

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Resuscitation - 10 - 11 kg

	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

Synchronized Cardioversion

First Shock – 10 joules	Subsequent shock – 20 joules

Defibrillation

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

Supraglottic Airway

Kings Airway	1 – white
i-gel	1.5 - blue

Cuffed ETT Size	Blade Size
3.5	1-1.5 - Straight

Normal Saline Bolus

210 ml

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Anaphylaxis/Antidote – 10-11 KG

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE (1mg/1ml) vial/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
METHYLPREDNILOSONE (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

Asthma – 10-11 KG

	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
METHYLPREDNILOSONE (125 mg/2 ml) Vial	2 mg/kg	20 mg	0.32 ml
EPINEPHRINE (1mg/1ml) vial/amp	0.01 mg/kg	SUB Q 0.1 mg	0.1 ml

Seizures – 10-11 KG

	DOSE/KG	DOSE	VOLUME
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	1 mg *	0.2 ml

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Antiemetic/Pain/Agitation- 10-11 KG

	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	0.05 mg/kg	0.5 mg *	0.1 ml

Delayed Sequence Intubation (DSI) - 10 - 11 kg

FOR DSI APPROVED SERVICES ONLY

	DOSE/KG	DOSE	VOLUME
ATROPINE (1mg/10ml) Pre-filled syringe Not recommended for patients < 11 KG or < 1 year of age	0.02 mg/kg	0.21 mg	2.1 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
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

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YELLOW

Resuscitation – 12-14 KG

	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

Synchronized Cardioversion

First Shock – 13 joules	Subsequent shock – 26 joules

Defibrillation

First Shock	26 joules
Second Shock	52 joules
Subsequent	52-130 joules

Supraglottic Airway

Kings Airway	2 – green
i-gel	2 - gray

Cuffed ETT Size	Blade Size
4.0	2 - Straight

Normal Saline Bolus

260 ml

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YELLOW

YELLOW

Anaphylaxis/Antidote – 12-14 KG

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE (1mg/1ml) vial/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
METHYLPREDNILOSONE (125 mg/2 ml) Vial	2 mg/kg	26 mg	0.42 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

Asthma – 12-14 KG

	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
METHYLPREDNILOSONE (125 mg/2 ml) Vial	2 mg/kg	26 mg	0.42 ml
EPINEPHRINE (1mg/1ml) vial/amp	0.01 mg/kg	SUB Q 0.13 mg	0.13 ml

Seizures – 12-14 KG

	DOSE/KG	DOSE	VOLUME
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	1.3 mg *	0.26 ml

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YELLOW

YELLOW

Antiemetic/Pain/Agitation – 12-14 KG

	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	0.05 mg/kg	0.65 mg *	0.13 ml

Delayed Sequence Intubation (DSI) – 12-14 KG

FOR DSI APPROVED SERVICES ONLY

	DOSE/KG	DOSE	VOLUME
ATROPINE (1mg/10ml) Pre-filled syringe	0.02 mg/kg	0.26 mg	2.6 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
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

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Resuscitation – 15-18 KG

	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

Synchronized Cardioversion

First shock – 17 joules	Subsequent shock – 33 joules

Defibrillation

First shock	33 joules
Second shock	66 joules
Subsequent	66-160 joules

Supraglottic Airway

Kings Airway	2 – green
i-gel	2 - gray

Cuffed ETT Size	Blade Size
4.5	2 - Straight

Normal Saline Bolus

325 ml

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Anaphylaxis/Antidote – 15-18 KG

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE (1mg/1ml) vial/amp (or Epi Jr)	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
METHYLPREDNILOSONE (125 mg/2 ml) Vial	2 mg/kg	34 mg	0.5 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

Asthma – 15-18 KG

	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
METHYLPREDNILOSONE (125 mg/2 ml) Vial	2 mg/kg	34 mg	0.5 ml
EPINEPHRINE (1mg/1ml) vial/amp	0.01 mg/kg	SUB Q 0.17 mg	0.17 ml

Seizures – 15-18 KG

	DOSE/KG	DOSE	VOLUME
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	1.7 mg *	0.34 ml

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Antiemetic/Pain/Agitation – 15-18 KG

	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	0.05 mg/kg	0.8 mg *	0.16 ml

Delayed Sequence Intubation (DSI) – 15-18 KG

FOR DSI APPROVED SERVICES ONLY

	DOSE/KG	DOSE	VOLUME
ATROPINE (1mg/10ml) Pre-filled syringe	0.02 mg/kg	0.33 mg	3.3 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
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

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Resuscitation – 19-23 KG

	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

Synchronized Cardioversion

First Shock – 20 joules	Subsequent Shock – 40 joules

Defibrillation

First Shock	40 joules
Second Shock	80 joules
Subsequent	80-200 joules

Supraglottic Airway

Kings Airway	2 – green
i-gel	2 - grey

Cuffed ETT Size / Blade Size

5.0	2 – Straight or Curved

Normal Saline Bolus

420 ml

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Anaphylaxis/Antidote – 19-23 KG

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE (1mg/1ml) vial/amp (or Epi Jr)	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
METHYLPREDNILOSONE (125 mg/2 ml) Vial	2 mg/kg	42 mg	0.7 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

Asthma – 19-23 KG

	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
METHYLPREDNILOSONE (125 mg/2 ml) Vial	2 mg/kg	42 mg	0.7 ml
EPINEPHRINE (1mg/1ml) vial/amp	0.01 mg/kg	SUB Q 0.21 mg	0.21 ml

Seizures – 19-23 KG

	DOSE/KG	DOSE	VOLUME
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	2.1 mg *	0.42 ml

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Antiemetic/Pain/Agitation – 19-23 KG

	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	0.05 mg/kg	2.1 mg *	0. 2 ml

Delayed Sequence Intubation (DSI) – 19-23 KG

FOR DSI APPROVED SERVICES ONLY

	DOSE/KG	DOSE	VOLUME
ATROPINE (1mg/10ml) Pre-filled syringe	0.02 mg/kg	0.42 mg	4.2 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
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

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Resuscitation – 24-29 KG

	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

Synchronized Cardioversion

First Shock – 27 joules	Subsequent Shock – 53 joules

Defibrillation

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

Supraglottic Airway

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

Cuffed ETT Size	Blade Size
6.0	2 – Straight or Curved

Normal Saline Bolus

530 ml

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Anaphylaxis/Antidote – 24-29 KG

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE (1mg/1ml) vial/amp (or Epi Jr)	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
METHYLPREDNILOSONE (125 mg/2 ml) Vial	2 mg/kg	54 mg	0.86 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

Asthma – 24-29 KG

	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
METHYLPREDNILOSONE (125 mg/2 ml) Vial	2 mg/kg	54 mg	0.86 ml
EPINEPHRINE (1mg/1ml) vial/amp	0.01 mg/kg	SUB Q 0.27 mg	0.27 ml

Seizures – 24-29 KG

	DOSE/KG	DOSE	VOLUME
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	2.7 mg *	0.54 ml

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Antiemetic/Pain/Agitation – 24-29 KG

	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	0.05 mg/kg	1.3 mg *	0.26 ml

Delayed Sequence Intubation (DSI) 24-29 KG

FOR DSI APPROVED SERVICES ONLY

	DOSE/KG	DOSE	VOLUME
ATROPINE (1mg/10ml) Pre-filled syringe	0.02 mg/kg	0.5 mg	5 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
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

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Resuscitation – 30-36 KG

	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	5 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

Synchronized Cardioversion

First Shock – 30 joules	Subsequent Shock – 66 joules

Defibrillation

First Shock	66 joules
Second Shock	130 joules
Subsequent	130-330 joules

Supraglottic Airway

Kings Airway	2.5 – orange
i-gel	3 - yellow

Cuffed ETT Size	Blade Size
6.5	3 – Straight or Curved

Normal Saline Bolus

660 ml

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Anaphylaxis/Antidote 30-36 KG

	DOSE/KG	DOSE	VOLUME
EPINEPHRINE (1mg/1ml) vial/amp (or Epi Pen adult)	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
METHYLPREDNILOSONE (125 mg/2 ml) Vial	2 mg/kg	66 mg	1.1 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

Asthma – 30-36 KG

	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
METHYLPREDNILOSONE (125 mg/2 ml) Vial	2 mg/kg	66 mg	1.1 ml
EPINEPHRINE (1mg/1ml) vial/amp	0.01 mg/kg	SUB Q 0.33 mg	0.33 ml

Seizures – 30-36 KG

	DOSE/KG	DOSE	VOLUME
MIDAZOLAM * (5 mg/ml) Vial	0.1 mg/kg	3.3 mg *	0.66 ml

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Antiemetic/Pain/Agitation – 30-36 KG

	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	0.05 mg/kg	1.7 mg *	0.34 ml

Delayed Sequence Intubation (DSI) 30-36 KG

FOR DSI APPROVED SERVICES ONLY

	DOSE/KG	DOSE	VOLUME
ATROPINE (1mg/10ml) Pre-filled syringe	0.02 mg/kg	0.5 mg	5 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
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

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40 KG

DRUG	DOSE/KG	DOSE	VOLUME	Notes
Etomidate (2 mg/ml) vial	0.2 mg/kg	8 mg	4 mL	May repeat x 1 after 5 minutes
Fentanyl * (50 mcg/ml) vial/amp Must use filter for amp	1 mcg/kg	40 mcg *	0.8 mL	May repeat x 1 after 5 minutes
Ketamine IM Only Excited Delirium (100 mg/ml) vial	4 mg/kg	160 mg	1.6 ml	Additional dose online only
Ketamine IM/IV * Pain Management Restraints (100 mg/ml) vial	0.25 mg/kg	10 mg *	0.1 ml	Use 1 ml syringe IM – no dilution IV – dilute with NS to 1 ml and push over 2 minutes
Lidocaine 2% (20 mg/ml) syringe	1 mg/kg	40 mg	2 mL	May repeat using half dose to a total of 3 mg/kg
Morphine * (10 mg/1 mL) pre-filled syringe	0.05 mg/kg	2 mg *	0.2 mL	May repeat x 1 after 5 minutes
Sodium Bicarbonate (1 mEq/ml) syringe	1 mEq/kg	40 mEq	40 mL	May follow with half dose every 10 minutes

See dosing for Midazolam on the Pharmacology page.

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* 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
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	1 mcg/kg	50 mcg*	1 ml	May repeat x1 after 5 minutes
Ketamine IM Only Excited Delirium (100 mg/ml) vial	4 mg/kg	200 mg	2 ml	Additional dose online only
Ketamine IM/IV * Pain Management Restraints (100 mg/ml) vial	0.25 mg/kg	12.5 mg*	0.125 ml	Use 1 ml syringe IM – no dilution IV – dilute with NS to 1 ml and push over 2 minutes
Lidocaine 2% (20 mg/ml) syringe	1 mg/kg	50 mg	2.5 ml	May repeat using half dose to a total of 3 mg/kg
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
Sodium Bicarbonate (1 mE1/ml) syringe	1 mEq/KG	50 mEq	50 ml	May follow with half dose every 10 minutes

See dosing for Midazolam on the Pharmacology page.

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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
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 user filter for amp	1 mcg/kg	60 mcg *	1.2 ml	May repeat x 1 after 5 minutes
Ketamine IM Only Excited Delirium (100 mg/ml) vial	4 mg/kg	240 mg	2.4 ml	Additional dose online only
Ketamine IM/IV * Pain Management Restraints (100 mg/ml) vial	0.25 mg/kg	15 mg *	0.15 ml	Use 1 ml syringe IM – no dilution IV – dilute with NS to 1 ml and push over 2 minutes
Lidocaine 2% (20 mg/ml) syringe	1 mg/kg	60 mg	3 ml	May repeat using half dose to a total of 3 mg/kg
Morphine * (10 mg/1 ml) pre-filled syringe	0.05 mg/kg	3 mg *	0.3 ml	May repeat x 1 after 5 minutes
Sodium Bicarbonate (1 mEq/ml) syringe	1 mEq/kg	60 mEq	60 ml	May follow with half dose every 10 minutes

See dosing for Midazolam on the Pharmacology page.

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

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70 KG

DRUG	DOSE/KG	DOSE	VOLUME	Notes
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	1 mcg/kg	70 mcg *	1.4 ml	May repeat x 1 after 5 minutes
Ketamine IM Only Excited Delirium (100 mg/ml) vial	4 mg/kg	280 mg	2.8 ml	Additional dose online only
Ketamine IM/IV * Pain Management Restraints (100 mg/ml) vial	0.25 mg/kg	17.5 mg *	0.175 ml	Use 1 ml syringe IM – no dilution IV – dilute with NS to 1 ml and push over 2 minutes
Lidocaine 2% (20 mg/ml) syringe	1 mg/kg	70 mg	3.5 ml	May repeat using half dose to a total of 3 mg/kg
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
Sodium Bicarbonate (1 mEq/ml) syringe	1 mEq/kg	70 mEq	70 ml	May follow with half dose every 10 minutes

See dosing for Midazolam on the Pharmacology page.

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

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80 KG

DRUG	DOSE/KG	DOSE	VOLUME	Notes
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	1 mcg/kg	80 mcg *	1.6 ml	May repeat x 1 after 5 minutes
Ketamine IM Only Excited Delirium (100 mg/ml) vial	4 mg/kg	320 mg	3.2 ml	Additional dose online only
Ketamine IM/IV * Pain Management Restraints (100 mg/ml) vial	0.25 mg/kg	20 mg *	0.2 ml	Use 1 ml syringe IM – no dilution IV – dilute with NS to 1 ml and push over 2 minutes
Lidocaine 2% (20 mg/ml) syringe	1 mg/kg	80 mg	4 ml	May repeat using half dose to a total of 3 mg/kg
Morphine * (10 mg/1 ml) pre-filled syringe	0.05 mg/kg	4 mg *	0.4 ml	May repeat x 1 after 5 minutes
Sodium Bicarbonate (1 mEq/ml) syringe	1 mEq/kg	80 mEq	80 ml	May follow with half dose every 10 minutes

See dosing for Midazolam on the Pharmacology page.

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

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90 KG

DRUG	DOSE/KG	DOSE	VOLUME	Notes
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	1 mcg/kg	90 mcg *	1.8 ml	May repeat x 1 after 5 minutes
Ketamine IM Only Excited Delirium (100 mg/ml) vial	4 mg/kg	360 mg	3.6 ml	Additional dose online only
Ketamine IM/IV * Pain Management Restraints (100 mg/ml) vial	0.25 mg/kg	22.5 mg*	0.225 ml	Use 1 ml syringe IM – no dilution IV – dilute with NS to 1 ml and push over 2 minutes
Lidocaine 2% (20 mg/ml) syringe	1 mg/kg	90 mg	4.5 ml	May repeat using half dose to a total of 3 mg/kg
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
Sodium Bicarbonate (1 mEq/ml) syringe	1 mEq	90 mEq	90 ml	May follow with half dose every 10 minutes

See dosing for Midazolam on the Pharmacology page.

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

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100 KG

DRUG	DOSE/KG	DOSE	VOLUME	Notes
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	1 mcg/kg	100 mcg*	2 ml	May repeat x 1 after 5 minutes
Ketamine IM Only Excited Delirium (100 mg/ml) vial	4 mg/kg	400 mg	4 ml	Additional dose online only
Ketamine IM/IV * Pain Management Restraints (100 mg/ml) vial	0.25 mg/kg	25 mg *	0.25 ml	Use 1 ml syringe IM – no dilution IV – dilute with NS to 1 ml and push over 2 minutes
Lidocaine 2% (20 mg/ml) syringe	1 mg/kg	100 mg	5 ml	May repeat using half dose to a total of 3 mg/kg
Morphine * (10 mg/1 ml) pre-filled syringe	0.05 mg/kg	5 mg *	0.5 ml	May repeat x 1 after 5 minutes
Sodium Bicarbonate (1 mEq/ml) syringe	1 mEq/kg	100 mEq	100 ml	May follow with half dose every 10 minutes

See dosing for Midazolam on the Pharmacology page.

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

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110 KG

DRUG	DOSE/KG	DOSE	VOLUME	Notes
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	1 mcg/kg	100 mcg*	2 ml	May repeat x 1 after 5 minutes
Ketamine IM Only Excited Delirium (100 mg/ml) vial	4 mg/kg	440 mg	4.4 ml	Additional dose online only
Ketamine IM/IV * Pain Management Restraints (100 mg/ml) vial	0.25 mg/kg	27.5 mg*	0.275 ml	Use 1 ml syringe IM – no dilution IV – dilute with NS to 1 ml and push over 2 minutes
Lidocaine 2% (20 mg/ml) syringe	1 mg/kg	110 mg	5.5 ml	May repeat using half dose to a total of 3 mg/kg
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
Sodium Bicarbonate (1 mEq/ml) syringe	1 mEq/kg	110 mEq	110 ml	May follow with half dose every 10 minutes

See dosing for Midazolam on the Pharmacology page.

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

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120 KG

DRUG	DOSE/KG	DOSE	VOLUME	Notes
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	1 mcg/kg	100 mcg*	2 ml	May repeat x 1 after 5 minutes
Ketamine IM Only Excited Delirium (100 mg/ml) vial	4 mg/kg	480 mg	4.8 ml	Additional dose online only
Ketamine IM/IV * Pain Management Restraints (100 mg/ml) vial	0.25 mg/kg	30 mg *	0.3 ml	Use 1 ml syringe IM – no dilution IV – dilute with NS to 1 ml and push over 2 minutes
Lidocaine 2% (20 mg/ml) syringe	1 mg/kg	120 mg	6 ml	May repeat using half dose to a total of 3 mg/kg
Morphine * (10 mg/1 ml) pre-filled syringe	0.05 mg/kg	6 mg *	0.6 ml	May repeat x 1 after 5 minutes
Sodium Bicarbonate (1 mEq/ml) syringe	1 mEq/kg	120 mEq	120 ml	May follow with half dose every 10 minutes

See dosing for Midazolam on the Pharmacology page.

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

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130 KG

DRUG	DOSE/KG	DOSE	VOLUME	Notes
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	1 mcg/kg	100 mcg*	2 ml	May repeat x 1 after 5 minutes
Ketamine IM Only Excited Delirium (100 mg/ml) vial	4 mg/kg	500 mg	5 ml	Additional dose online only
Ketamine IM/IV * Pain Management Restraints (100 mg/ml) vial	0.25 mg/kg	32.5 mg *	0.325 ml	Use 1 ml syringe IM – no dilution IV – dilute with NS to 1 ml and push over 2 minutes
Lidocaine 2% (20 mg/ml) syringe	1 mg/kg	130 mg	6.5 ml	May repeat using half dose to a total of 3 mg/kg
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
Sodium Bicarbonate (1 mEq/ml) syringe	1 mEq/kg	130 mEq	130 ml	May follow with half dose every 10 minutes

See dosing for Midazolam on the Pharmacology page.

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

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140 KG

DRUG	DOSE/KG	DOSE	VOLUME	Notes
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	1 mcg/kg	100 mcg*	2 ml	May repeat x 1 after 5 minutes
Ketamine IM Only Excited Delirium (100 mg/ml) vial	4 mg/kg	500 mg	5 ml	Additional dose online only
Ketamine IM/IV * Pain Management Restraints (100 mg/ml) vial	0.25 mg/kg	35 mg *	0.35 ml	Use 1 ml syringe IM – no dilution IV – dilute with NS to 1 ml and push over 2 minutes
Lidocaine 2% (20 mg/ml) syringe	1 mg/kg	140 mg	7 ml	May repeat using half dose to a total of 3 mg/kg
Morphine * (10 mg/1 ml) pre-filled syringe	0.05 mg/kg	7 mg *	0.7 ml	May repeat x 1 after 5 minutes
Sodium Bicarbonate (1 mEq/ml) syringe	1 mEq/kg	140 mEq	140 ml	May follow with half dose every 10 minutes

See dosing for Midazolam on the Pharmacology page.

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

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150 KG

DRUG	DOSE/KG	DOSE	VOLUME	Notes
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	1 mcg/kg	100 mcg*	2 ml	May repeat x 1 after 5 minutes
Ketamine IM Only Excited Delirium (100 mg/ml) vial	4 mg/kg	500 mg	5 ml	Additional dose online only
Ketamine IM/IV * Pain Management Restraints (100 mg/ml) vial	0.25 mg/kg	37.5 mg*	0.375 ml	Use 1 ml syringe IM – no dilution IV – dilute with NS to 1 ml and push over 2 minutes
Lidocaine 2% (20 mg/ml) syringe	1 mg/kg	150 mg	7.5 ml	May repeat using half dose to a total of 3 mg/kg
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
Sodium Bicarbonate (1 mEq/ml) syringe	1 mEq/kg	150 mEq	150 ml	May follow with half dose every 10 minutes

See dosing for Midazolam on the Pharmacology page.

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

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Delayed Sequence Intubation

For agencies approved for paralytics

40 KG

DRUG	DOSE/KG	DOSE	VOLUME	NOTES
Lidocaine (20 mg/ml)	1 mg/kg	40 mg	2 ml	May repeat using half dose to a total of 3 mg/ml
Atropine	Not weight based			IV/IO 1 mg every 5 min to max of 3 mg
Etomidate (2 mg/ml) Vial	0.2 mg/kg	8 mg	4 ml	May repeat x1 after 5 minutes
Ketamine IV (10 mg/ml) Vial	1.5 mg/kg	60 mg	6 ml	Additional dose online only
Midazolam (5 mg/ml) Vial	0.025 mg/kg	1 mg	0.2 ml	May repeat x1 after 5 minutes
Succinylcholine (20 mg/ml) vial	1.5 mg/kg	60 mg	3 ml	Additional dose online only

50 KG

DRUG	DOSE/KG	DOSE	VOLUME	NOTES
Lidocaine (20 mg/ml)	1 mg/kg	50 mg	2.5 ml	May repeat using half dose to a total of 3 mg/ml
Atropine	Not weight based			IV/IO 1 mg every 5 min to max of 3 mg
Etomidate (2 mg/ml) Vial	0.2 mg/kg	10 mg	5 ml	May repeat x1 after 5 minutes
Ketamine IV (10 mg/ml) Vial	1.5 mg/kg	75 mg	7.5 ml	Additional dose online only
Midazolam (5 mg/ml) Vial	0.025 mg/kg	1.25 mg	0.25 ml	May repeat x1 after 5 minutes
Succinylcholine (20 mg/ml) vial	1.5 mg/kg	75 mg	3.75 ml	Additional dose online only

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Delayed Sequence Intubation

For agencies approved for paralytics

60 KG

DRUG	DOSE/KG	DOSE	VOLUME	NOTES
Lidocaine (20 mg/ml)	1 mg/kg	60 mg	3 ml	May repeat using half dose to a total of 3 mg/ml
Atropine	Not weight based			IV/IO 1 mg every 5 min to max of 3 mg
Etomidate (2 mg/ml) Vial	0.2 mg/kg	12 mg	6 ml	May repeat x1 after 5 minutes
Ketamine IV (10 mg/ml) Vial	1.5 mg/kg	90 mg	9 ml	Additional dose online only
Midazolam (5 mg/ml) Vial	0.025 mg/kg	1.5 mg	0.3 ml	May repeat x1 after 5 minutes
Succinylcholine (20 mg/ml) vial	1.5 mg/kg	90 mg	4.5 ml	Additional dose online only

70 KG

DRUG	DOSE/KG	DOSE	VOLUME	NOTES
Lidocaine (20 mg/ml)	1 mg/kg	70 mg	3.5 ml	May repeat using half dose to a total of 3 mg/ml
Atropine	Not weight based			IV/IO 1 mg every 5 min to max of 3 mg
Etomidate (2 mg/ml) Vial	0.2 mg/kg	14 mg	7 ml	May repeat x1 after 5 minutes
Ketamine IV (10 mg/ml) Vial	1.5 mg/kg	105 mg	10.5 ml	Additional dose online only
Midazolam (5 mg/ml) Vial	0.025 mg/kg	1.75 mg	0.35 ml	May repeat x1 after 5 minutes
Succinylcholine (20 mg/ml) vial	1.5 mg/kg	105 mg	5.25 ml	Additional dose online only

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Delayed Sequence Intubation

For agencies approved for paralytics

80 KG

DRUG	DOSE/KG	DOSE	VOLUME	NOTES
Lidocaine (20 mg/ml)	1 mg/kg	80 mg	4 ml	May repeat using half dose to a total of 3 mg/ml
Atropine	Not weight based			IV/IO 1 mg every 5 min to max of 3 mg
Etomidate (2 mg/ml) Vial	0.2 mg/kg	16 mg	8 ml	May repeat x1 after 5 minutes
Ketamine IV (10 mg/ml) Vial	1.5 mg/kg	120 mg	12 ml	Additional dose online only
Midazolam (5 mg/ml) Vial	0.025 mg/kg	2 mg	0.4 ml	May repeat x1 after 5 minutes
Succinylcholine (20 mg/ml) vial	1.5 mg/kg	120 mg	6 ml	Additional dose online only

90 KG

DRUG	DOSE/KG	DOSE	VOLUME	NOTES
Lidocaine (20 mg/ml)	1 mg/kg	90 mg	4.5 ml	May repeat using half dose to a total of 3 mg/ml
Atropine	Not weight based			IV/IO 1 mg every 5 min to max of 3 mg
Etomidate (2 mg/ml) Vial	0.2 mg/kg	18 mg	9 ml	May repeat x1 after 5 minutes
Ketamine IV (10 mg/ml) Vial	1.5 mg/kg	135 mg	13.5 ml	Additional dose online only
Midazolam (5 mg/ml) Vial	0.025 mg/kg	2.25 mg	0.45 ml	May repeat x1 after 5 minutes
Succinylcholine (20 mg/ml) vial	1.5 mg/kg	135 mg	6.75 ml	Additional dose online only

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Delayed Sequence Intubation

For agencies approved for paralytics

100 KG

DRUG	DOSE/KG	DOSE	VOLUME	NOTES
Lidocaine (20 mg/ml)	1 mg/kg	100 mg	5 ml	May repeat using half dose to a total of 3 mg/ml
Atropine	Not weight based			IV/IO 1 mg every 5 min to max of 3 mg
Etomidate (2 mg/ml) Vial	0.2 mg/kg	20 mg	10 ml	May repeat x1 after 5 minutes
Ketamine IV (10 mg/ml) Vial	1.5 mg/kg	150 mg	15 ml	Additional dose online only
Midazolam (5 mg/ml) Vial	0.025 mg/kg	2.5 mg	0.5 ml	May repeat x1 after 5 minutes
Succinylcholine (20 mg/ml) vial	1.5 mg/kg	150 mg	7.5 ml	Additional dose online only

110 KG

DRUG	DOSE/KG	DOSE	VOLUME	NOTES
Lidocaine (20 mg/ml)	1 mg/kg	110 mg	5.5 ml	May repeat using half dose to a total of 3 mg/ml
Atropine	Not weight based			IV/IO 1 mg every 5 min to max of 3 mg
Etomidate (2 mg/ml) Vial	0.2 mg/kg	22 mg	11 ml	May repeat x1 after 5 minutes
Ketamine IV (10 mg/ml) Vial	1.5 mg/kg	165 mg	16.5 ml	Additional dose online only
Midazolam (5 mg/ml) Vial	0.025 mg/kg	2.75 mg	0.55 ml	May repeat x1 after 5 minutes
Succinylcholine (20 mg/ml) vial	1.5 mg/kg	165 mg	8.25 ml	Additional dose online only

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Delayed Sequence Intubation

For agencies approved for paralytics

120 KG

DRUG	DOSE/KG	DOSE	VOLUME	NOTES
Lidocaine (20 mg/ml)	1 mg/kg	120 mg	6 ml	May repeat using half dose to a total of 3 mg/ml
Atropine	Not weight based			IV/IO 1 mg every 5 min to max of 3 mg
Etomidate (2 mg/ml) Vial	0.2 mg/kg	24 mg	12 ml	May repeat x1 after 5 minutes
Ketamine IV (10 mg/ml) Vial	1.5 mg/kg	180 mg	18 ml	Additional dose online only
Midazolam (5 mg/ml) Vial	0.025 mg/kg	3 mg	0.6 ml	May repeat x1 after 5 minutes
Succinylcholine (20 mg/ml) vial	1.5 mg/kg	180 mg	9 ml	Additional dose online only

130 KG

DRUG	DOSE/KG	DOSE	VOLUME	NOTES
Lidocaine (20 mg/ml)	1 mg/kg	130 mg	6.5 ml	May repeat using half dose to a total of 3 mg/ml
Atropine	Not weight based			IV/IO 1 mg every 5 min to max of 3 mg
Etomidate (2 mg/ml) Vial	0.2 mg/kg	26 mg	13 ml	May repeat x1 after 5 minutes
Ketamine IV (10 mg/ml) Vial	1.5 mg/kg	195 mg	19.5 ml	Additional dose online only
Midazolam (5 mg/ml) Vial	0.025 mg/kg	3.25 mg	0.65 ml	May repeat x1 after 5 minutes
Succinylcholine (20 mg/ml) vial	1.5 mg/kg	195 mg	9.75 ml	Additional dose online only

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Delayed Sequence Intubation

For agencies approved for paralytics

140 KG

DRUG	DOSE/KG	DOSE	VOLUME	NOTES
Lidocaine (20 mg/ml)	1 mg/kg	140 mg	7 ml	May repeat using half dose to a total of 3 mg/ml
Atropine	Not Weight Based			IV/IO 1 mg every 5 min to max of 3 mg
Etomidate (2 mg/ml) Vial	0.2 mg/kg	28 mg	14 ml	May repeat x1 after 5 minutes
Ketamine IV (10 mg/ml) Vial	1.5 mg/kg	200 mg	20 ml	Additional dose online only
Midazolam (5 mg/ml) Vial	0.025 mg/kg	3.5 mg	0.7 ml	May repeat x1 after 5 minutes
Succinylcholine (20 mg/ml) vial	1.5 mg/kg	210 mg	10.5 ml	Additional dose online only

150 KG or greater

DRUG	DOSE/KG	DOSE	VOLUME	NOTES
Lidocaine (20 mg/ml)	1 mg/kg	150 mg	7.5 ml	May repeat using half dose to a total of 3 mg/ml
Atropine	Not weight based			IV/IO 1 mg every 5 min to max of 3 mg
Etomidate (2 mg/ml) Vial	0.2 mg/kg	30 mg	15 ml	May repeat x1 after 5 minutes
Ketamine IV (10 mg/ml) Vial	1.5 mg/kg	200 mg	20 ml	Additional dose online only
Midazolam (5 mg/ml) Vial	0.025 mg/kg	3.75 mg	0.75 ml	May repeat x1 after 5 minutes
Succinylcholine (20 mg/ml) vial	1.5 mg/kg	225 mg	11.25 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	Single syringe administration of diluted Adenosine in saline flush	6 mg may repeat 12 mg if needed Peds: Wt based dosing
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 May dilute with NS for pediatric dosing	2.5 mg May repeat as needed Peds: Call Medical Control for additional dosing
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 Peds: Wt based dosing
Amiodarone (Cordarone) Loading Dose	VT with a pulse (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
Aspirin (chewable tablets)	Chest Pain suggestive of ACS	Recent GI bleed, Allergy, Bleeding Disorders Use caution during CPAP	PO Chewed	324 mg Peds: Not recommended
Atropine Sulfate	Symptomatic Bradycardia	Caution with acute MI	IV / IO / ETT (Fast)	1 mg max of 3 mg Peds: Wt based dosing
Atropine Sulfate for Organophosphate Poisoning	Organophosphate Poisoning, Nerve agent exposure	None	IV/IO	2 mg repeated every 5 minutes until symptom resolution. No max dose.

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GENERIC NAME	INDICATIONS	CONTRAINDICATIONS	ROUTE	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) Peds: Wt based dosing
Dextrose 10%	Hypoglycemia		IV/IO	25 GM Peds: Wt based dosing
Diphenhydramine (Benadryl)	Allergic Reaction	Acute Asthma, COPD, Glaucoma	IV / IM Oral (BLS only)	25-50 mg Peds: Wt based dosing
Dopamine (Intropin)	Cardiogenic Shock, Symptomatic Bradycardia, Post-Cardiac Arrest, Distributive shock	Hypovolemia	IV / IO (Drip)	See drip chart Peds: Not recommended
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 Peds: Not recommended – consider Albuterol

** 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*

Epi Injector (Adrenalin)	Anaphylaxis / allergic reaction bronchoconstriction / wheezing refractory to neb	Caution in patients with severe cardiac disease	IM	Patients over 30 KG (66 pounds) 0.3 mg Patients 15-30 KG(33-66 pounds 0.15 mg
Epinephrine 1 mg/1 ml	Anaphylaxis / allergic reaction bronchoconstriction / wheezing refractory to neb	Caution in patients with severe cardiac disease	IM	0.3 mg. May repeat dose Contact Medical Control Peds: Wt based dosing
Epinephrine 1 mg/10 ml	Cardiac arrest - Pulseless V-Tach, V-Fib, Asystole, PEA	Undiluted 1mg/1 ml IV (Must be diluted prior to administration)	IV / IO / ETT	1 mg (ACLS algorithm) Peds: Wt based dosing
Etomidate (Amidate)	Sedation, Induction of general anesthesia		IV / IO	Wt based Peds: Wt based dosing
Fentanyl (Fentanyl Citrate) *	Pain Control	Caution in patients with hypertension, hypotension or increase ICP	IV / IO / IM / MAD	Wt based Peds: Wt based dosing

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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
Furosemide (Lasix)	Pulmonary Edema with signs of fluid overload	Hypovolemia, dehydration, BP < 90	IV / IO / IM	40 mg May repeat one dose Peds: Not recommended
Glucagon	Hypoglycemia, Beta blocker OD		IM / IV	1 mg Peds: Wt based dosing
Ketamine (Ketalar) *	Pain unresponsive to narcotics, restraints as part of behavioral management	Increased intracranial pressure, severe hypertension	IM / IV	0.25 mg/kg Wt based Peds: Not recommended
Ketamine (Ketalar)	Excited Delirium	Increased intracranial pressure, severe hypertension	IM	4 mg/kg Wt based Peds: Not recommended
Ketamine (Ketalar)	Induction for DSI only for agencies approved for DSI	Increased intracranial pressure, severe hypertension	IV / IO (must be diluted prior to administration	Wt based Peds: Not recommended
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 Peds: Not recommended for patients < 1 year old
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 Peds: Wt based dosing

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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 Pediatric dosing for Mag Sulfate not recommended without a pump
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 Pediatric dosing for Mag Sulfate not recommended without a pump
Magnesium Sulfate	Torsade's de Pointes pulseless	AV Blocks	IV/IO	2 Grams over 1-2 minutes Online for further doses Pediatric dosing for Mag Sulfate not recommended without a pump
Magnesium Sulfate	Eclampsia	AV Blocks	IV/IO	2 Grams over 5-10 minutes Online for further doses Pediatric dosing for Mag Sulfate not recommended without a pump
Methylprednisolone (Solu-Medrol)	Shortness of Breath with bronchoconstriction / wheezing, Allergic Reaction, Anaphylaxis		IV / IO / IM	125 mg Peds: Wt based dosing

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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
Midazolam (Versed) * "Heavy"	- Seizure - Excited Delirium - Pre-Eclampsia/ Eclampsia (Seizure) -Sedation/ Induction for DSI - Stroke (Seizure) - Toxic Overdose of Anti-Psychotic, Hallucinogens, Sodium Channel Blockade or Sympathomimetic (Seizure)	Shock	IV / IO / MAD / IM *	5 mg May repeat one time Peds: Wt based dosing
Midazolam (Versed) * "Light"	Behavioral/Restraint Bradycardia Cardioversion ROSC Hyperthermia Pain Management Tachycardia	Shock	IV / IO / MAD / IM *	2.5 mg May repeat one time (if patient is intubated may repeat every 5 minutes to maintain sedation) Peds: Wt based dosing
Midazolam (Versed) * "Anxiety"	CPAP	Shock	IV / IO / MAD / IM *	0.5 mg May repeat one time
Morphine Sulfate *	Pain Control	BP < 100, Hypovolemia	IV / IO / MAD / IM *	Wt based Peds: Wt based dosing
Naloxone (Narcan)	Opioid overdose with respiratory depression (typically 4 mg should reverse most opioids, however some synthetics may require additional doses)	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 Peds: Wt based dosing
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 Peds: Not recommended
Nitroglycerin Paste	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.	Topical	0.5 – 2 inches Peds: Not recommended

GENERIC NAME	INDICATIONS	CONTRAINDICATIONS	ROUTE	DOSE
Ondansetron (Zofran)	Nausea/Vomiting		IV / IO (slow) ODT-oral	4 mg Peds: IV Wt based dosing No tablets for patients under 40 KG
Oral Glucose	Hypoglycemia	Patient who is not able to follow commands (no gag reflex)	PO	15 grams Peds: Up to 15 GM as tolerated
Sodium Bicarbonate	Cardiac Arrest, Metabolic Acidosis, Hyperkalemia, Tricyclic Antidepressant Overdose, Crush injuries/suspension trauma	Alkalosis, hypocalcemia, hypochloremia	IV / IO	Wt based Peds: Wt based dosing
Succinylcholine (Anectine)	Paralytic for DSI	Hyperkalemia, increased intracranial pressure	IV/IO	Wt based Peds: Wt based dosing
Tranexamic Acid (Cyklokapron)	Traumatic hemorrhagic shock w/ suspected need for massive blood transfusion	Injury greater than 3 hours old Patients < 14 years old	IV / IO Drip	2 grams in 100 ml over 10- 20 minutes For children >14 years old – same dosing

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

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 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
Diphenhydramine (Benadryl)	Allergic Reaction	Acute Asthma, COPD, Glaucoma	OTC	Formulations dosed per manufacturers recommendations
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
Ondansetron	Nausea/Vomiting	Tablets are not able to be divided. For adults only.	ODT-oral	4 mg
Oral Glucose	Hypoglycemia	Patient who is not able to follow commands	PO	15 grams off-line

See next page for Pediatric Patients

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Pharmacology BLS Only

Pediatric Patients

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 may 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	**NA not used in pediatric patients**			**NA not used in pediatric patients**
Epi Injector (Adrenalin)	Anaphylaxis / allergic reaction bronchoconstriction / wheezing refractory to neb	Caution in patients with severe cardiac disease	IM	Epi Jr. 0.15 mg for patient 15 to less than 30 kg Epi 0.3 mg for patient greater than 30 kg (66 pounds) - under 15 kg (33 pounds) call Medical Control off-line Anaphylaxis on-line allergic reaction
DuoNeb (Albuterol / Ipratropium)	NA not used in pediatric patients			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*				
Diphenhydramine (Benadryl)	Allergic Reaction	Acute Asthma, COPD, Glaucoma	OTC	Formulations dosed per manufacturers recommendations
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	**NA not used in pediatric patients**			**NA not used in pediatric patients**
Oral Glucose	Hypoglycemia	Patient who is not able to follow commands (no gag reflex)	PO	15 grams off-line

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	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	PO Chewed	324 mg (4 - 81 mg) off-line
Epi 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

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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 O_2	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	NA not used in pediatric patients			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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Intranasal (IN) Dosing for Fentanyl

Fentanyl 50 µg/ml IN Dosing Chart

Notes:	Patient Weight KG	Fentanyl dose µg	Fentanyl Dose ml
* 2-3 µg/kg * Administer 1/2 dose per nare	3-5 kg	10	0.3
* 1/4 to 1/2 ml is ideal	6-10 kg	20	0.5
* Volumes >2 ml may be titrated with 2nd dose 5-10 minutes later	11-15 kg	30	0.7
* Monitor for respiratory depression	16-20 kg	40	0.9
* May repeat ½ dose every 5-10 minutes until desired effect	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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Midazolam IN Dosing Chart 5 mg/ml (10 mg/2 ml)		
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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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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Dopamine Administration 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	11.3	16.9	22.5	33.8	45
	drops/min	5	6	11	17	23	34	45
70	ml/hr	5.3	6.6	13.1	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	16.9	25.3	33.8	50.6	67.6
	drops/min	7	8	17	25	34	51	68
100	ml/hr	7.5	9.4	18.8	28.1	37.5	56.3	75
	drops/min	8	9	19	28	38	56	75
110	ml/hr	8.3	10.3	20.6	30.9	41.3	61.8	82.6
	drops/min	8	10	21	31	41	62	83
120	ml/hr	9	11.3	22.5	33.8	45	67.5	90
	drops/min	9	11	23	34	45	68	90
130	ml/hr	9.8	12.2	24.4	36.6	48.8	73.1	97.6
	drops/min	10	12	24	37	49	73	98
140	ml/hr	10.5	13.1	26.2	39.3	52.4	78.6	104.8
	drops/min	11	13	26	39	52	79	105
150	ml/hr	11.3	14.1	28.1	42.2	56.3	84.4	112.5
	drops/min	11	14	28	42	56	84	113

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Magnesium Sulfate Administration Rate*

* Pediatric dosing for Mag Sulfate not recommended without a pump

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 5-10 minutes

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Dosing Chart for Alternative Medications

GENERIC NAME	INDICATIONS	CONTRAINDICATIONS	Route	Dose
Dextrose 25%, 50%	Hypoglycemia	None	IV / IO	See Alternative Dosing Chart See chart for dose May repeat dose x 1 Peds: Wt based dosing
Diazepam (Valium)	Seizures, Moderate Sedation	Drug abuse, coma, shock, or head injury induced CNS depression	IV/IO/IM (slowly)	Wt based Peds: Wt based dosing
Lorazepam * (back-up if Midazolam is not available)	Seizures, Moderate Sedation, Pre-treatment for DSI	Coma (unless seizing), altered mental status of unknown age, severe hypotension, shock, respiratory insufficiency	IM / IV / IO *	Wt based Peds: Wt based dosing
Rocuronium Bromide (back-up if Succinylcholine not available)	Paralytic for DSI	Hypersensitivity to neuromuscular blocking agents, known neuromuscular disease	IV / IO	Wt based Peds: Wt based dosing
Vecuronium (back-up if Succinylcholine not available)	Paralytic for DSI	Bradycardia, dysrhythmias, hypotension, muscular disease	IV / IO	Wt based Peds: Wt based dosing

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Diazepam

Wt	DOSE/KG	DOSE	VOLUME	Notes
3 KG	0.2 mg/kg	0.6 mg	0.12 ml	Additional dose Online only
4 KG		0.8 mg	0.16 ml	
5 KG		1 mg	0.2 ml	
6-7 KG		1.3 mg	0.26 ml	
8-9 KG		1.7 mg	0.34 ml	
10-11 KG		2 mg	0.4 ml	
12-14 KG		2.6 mg	0.65 ml	
15-18 KG		3.4 mg	0.68 ml	
19-23 KG		4.2 mg	0.84 ml	
24-29 KG		5.4 mg	1.08 ml	
30-36 KG		6.6 mg	1.32 ml	
40 KG	0.2 mg/kg	8 mg	1.6 ml	
50 KG		10 mg	2 ml	
60 KG		12 mg	2.4 ml	
70 KG		14 mg	2.8 ml	
80 KG		16 mg	3.2 ml	
90 KG		18 mg	3.6 ml	
100 KG		20 mg	4 ml	
110 KG		22 mg	4.4 ml	
120 KG		24 mg	4.8 ml	
130 KG		26 mg	5.2 ml	
140 KG		28 mg	5.6 ml	
150 KG	0.2 mg/kg	30 mg	6 ml	Additional dose Online only

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Lorazepam

Wt	DOSE/KG	DOSE	VOLUME	Notes
3 KG	0.1 mg/kg	0.3 mg	0.15 ml	May repeat x1 after5 minutes
4 KG		0.4 mg	0.2 ml	
5 KG		0.5 mg	0.25 ml	
6-7 KG		0.7 mg	0.35 ml	
8-9 KG		0.9 mg	0.45 ml	
10-11 KG		1 mg	0.5 ml	
12-14 KG		1.3 mg	0.65 ml	
15-18 KG		1.7 mg	0.85 ml	
19-23 KG		2.1 mg	1 ml	
24-29 KG		2.7 mg	1.35 ml	
30-36 KG		3.3 mg	1.65 ml	
40 KG	0.1 mg/kg	4 mg	2 ml	May repeat x1 after5 minutes
50 KG		5 mg	2.5 ml	
60 KG		6 mg	3 ml	
70 KG		7 mg	3.5 ml	
80 KG		8 mg	4 ml	
90 KG		9 mg	4.5 ml	
100 KG		10 mg	5 ml	
110 KG		11 mg	5.5 ml	
120 KG		12 mg	6 ml	
130 KG		13 mg	6.5 ml	
140 KG		14 mg	7 ml	
150 KG	0.1 mg/kg	15 mg	7.5 ml	May repeat x1 after 5 minutes

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Rocuronium

Wt	DOSE/KG	DOSE	VOLUME	Notes
3 KG	1 mg/kg	3 mg	0.3 ml	May repeat x1 after5 minutes
4 KG		4 mg	0.4 ml	
5 KG		5 mg	0. 5 ml	
6-7 KG		7 mg	0.7 ml	
8-9 KG		9 mg	0.9 ml	
10-11 KG		10 mg	1 ml	
12-14 KG		13 mg	1.3 ml	
15-18 KG		17 mg	1.7 ml	
19-23 KG		21 mg	2.1 ml	
24-29 KG		27 mg	2.7 ml	
30-36 KG		33 mg	3.3 ml	
40 KG	1 mg/kg	40 mg	4 ml	May repeat x1 after5 minutes
50 KG		50 mg	5 ml	
60 KG		60 mg	6 ml	
70 KG		70 mg	7 ml	
80 KG		80 mg	8 ml	
90 KG		90 mg	9 ml	
100 KG		100 mg	10 ml	
110 KG		110 mg	11 ml	
120 KG		120 mg	12 ml	
130 KG		130 mg	13 ml	
140 KG		140 mg	14 ml	
150 KG	1 mg/kg	150 mg	15 ml	May repeat x1 after 5 minutes

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Vecuronium

Wt	DOSE/KG	DOSE	VOLUME	Notes
3 KG	0.2 mg/kg	0.6 mg	0.6 ml	Additional dose online only
4 KG		0.8 mg	0.8 ml	
5 KG		1 mg	1 ml	
6-7 KG		1.3 mg	1.3 ml	
8-9 KG		1.7 mg	1.7 ml	
10-11 KG		2.1 mg	2.1 ml	
12-14 KG		2.6 mg	2.6 ml	
15-18 KG		3.4 mg	3.4 ml	
19-23 KG		4.2 mg	4.2 ml	
24-29 KG		5.4 mg	5.4 ml	
30-36 KG		6.6 mg	6.6 ml	
40 KG	0.1 mg/kg	4 mg	4 ml	Additional dose online only
50 KG		5 mg	5 ml	
60 KG		6 mg	6 ml	
70 KG		7 mg	7 ml	
80 KG		8 mg	8 ml	
90 KG		9 mg	9 ml	
100 KG		10 mg	10 ml	
110 KG		10 mg	10 ml	
120 KG		10 mg	10 ml	
130 KG		10 mg	10 ml	
140 KG		10 mg	10 ml	
150 KG	0.1 mg/kg	10 mg	10 ml	Additional dose online only

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REGION I EMERGENCY MEDICAL SERVICES

Formulary

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EMT Medications

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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	Single syringe IV administration of 6 mg Adenosine with 20 ml Normal Saline. If dysrhythmia persists, follow with 12 mg Adenosine/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:** Tachycardia - Narrow & Wide Complex	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 single syringe 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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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:** Anaphylaxis and Allergic Reaction Bronchospasm/Asthma/COPD Crush Syndrome and Suspension Trauma Excited Delirium	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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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 one time following initial treatment (2 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:** Anaphylaxis and Allergic Reaction Bronchospasm CPAP Toxic Exposure	Monitor blood pressure and heart rate closely. Stop treatment if: • Pulse rate increases by 20 beats/minute • Frequent PVC's develop • Any tachydysrhythmias other than sinus tachycardia develop Use with caution in patients with: • Heart disease • Hypertension • Palpitations Patients being treated with MAO inhibitors and tricyclics may experience tachycardia and hypertension

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Amiodarone	(Cordarone, Pacerone)
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:** Asystole/PEA Cardiac Arrest Post Resuscitation Tachycardia- Narrow and Wide Ventricular Fibrillation/Pulseless Ventricular 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. Return to Formulary Table of Contents *Formulary Amiodarone Page 1 of 1*

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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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 1 mg every 5 min to max of 3 mg Poisoning and Overdose: IV/IO 2 mg every 5 minutes until symptoms clear
Pediatric Administration:	See Medication Administration Chart for weight based dosing and administration rates
Onset:	2-5 minutes
Duration:	20 minutes
Pregnancy Safety:	Category C
Precautions and Comments: Pharmacology Chart **Used in SMO:** **Adult & Pediatric:** Bradycardia Toxic Exposure **Adult Only:** Delayed Sequence Airway Management	• 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). Return to Formulary Table of Contents *Formulary Atropine Page 1 of 1*

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:** Asystole/PEA Crush Syndrome & Suspension Trauma Excited Delirium Toxic Exposure	The faster Calcium Gluconate is given the faster the body eliminates it. For prolonged transports repeat doses may be needed. Flush before and after each dose.

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Dextrose	D10 *D50 - Alternate*
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:** D10 – (10 G/ 100 ml) Bag D50 – (25 G/50 ml) Pre-filled syringe	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 Asystole/PEA Diabetic Emergencies Seizure 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 <45 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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Diazepam	Valium (alternative to Midazolam)
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.
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 Alternative 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 as alternative only:** Pain Management Seizure Sedation for Pacing/Cardioversion	• 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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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 Tablet - OTC	IM or IV 25-50 mg EMT's – OTC
Pediatric Administration:	See Medication Administration Chart for weight based dosing and administration rates IM or IV
Onset:	1-5 minutes if given IV/IO push 15 minutes if given IM/PO
Duration:	3-4 hours
Pregnancy Safety:	Category B
Precautions and Comments: Pharmacology Chart **Used in SMO:** Anaphylaxis and Allergic Reaction Toxic Exposure	• May caused depressed level of consciousness in elderly patients. • May have additive effect with alcohol or depressants.

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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:	Contact Medical Control for pediatric dosing and approval
Onset:	5 minutes
Duration:	5-10 minutes
Pregnancy Safety:	Category C – avoid use in pregnant patients
Precautions and Comments: Pharmacology Chart **Used in SMO:** **Adults Only:** Bites and Stings Bradycardia (Adult) Cardiac Arrest Post Resuscitation 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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Epinephrine 1:1 ml and 1:10 ml	Adrenalin
Classification:	Sympathomimetic agent (Catecholamine)
Actions:	Acts directly on Alpha and Beta receptors of the SNS. 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: **Packaging Information:** 1 mg/10 ml (1:10 ml) Pre-filled syringe 1 mg/1 ml (1:1 ml) vial 30 ml	*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 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
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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: Pharmacology Chart **Used in SMO:** **Adult and Pediatric:** Anaphylaxis and Allergic Reaction Asystole/PEA Bronchospasm/Asthma/COPD Ventricular Fibrillation/Pulseless Ventricular Tachycardia **Pediatric Only:** Bradycardia Neonatal Resuscitation Pediatric Respiratory Distress/Failure/ Obstruction/Arrest	Return to Formulary Table of Contents

Epinephrine 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 o Shortness of breath (wheezing, hoarseness, other abnormal breath sounds) o Itching/hives that are severe and rapidly progressing o Oral swelling/laryngospasm/difficulty swallowing o Hypotension/unresponsiveness o Patients with an exposure to known allergen with progressively worsening symptoms (i.e., hives) • Severe Asthma
Contraindications:	o 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) injector Epinephrine (0.15 mg/0.3 ml) injector	Patients over 30 kg (66 pounds): Epinephrine 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 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.
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Onset:	5-10 minutes
Duration:	20 minutes
Pregnancy Safety:	Category C
Precautions and Comments: Pharmacology Chart	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) Return to Formulary Table of Contents
Used in SMO: Anaphylaxis and Allergic Reaction Bronchospasm	

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 Airway Management	The most common interaction of Etomidate is with prescription medications such as alpha blockers, beta blockers, and antipsychotics causing an increased risk of hypotension. Administration to patients taking Verapamil may also result in increased hypotension as well as AV delay. Be ready to support ventilations if the patient develops apnea.

Fentanyl	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:** Cardiac Arrest Post Resuscitation Intranasal Medications (MAD device) Narrow Complex Tachycardia Pain Management	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).
Return to Formulary Table of Contents	* For pain and sedation doses: Start dose low – slowly increase – Titrate to effect up to listed dose *Formulary Fentanyl Page 1 of 1*

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.

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/Substance Abuse Emergencies Altered Mental Status Diabetic Emergencies Seizures Stroke Syncope Toxic Exposure	Use with caution in patients with cardiovascular and renal disease. Glucagon is an antagonist to insulin.

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

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 ➢ Myocardial oxygen demand ➢ 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	See Adult Medication Administration Chart for dosing ←-- *Excited Delirium:* IM: 4 mg/kg ←--*Delayed Sequence Intubation*: IV - 1-2 mg/kg IV/IO (must be diluted prior to administration) ←--*Pain Management*: IV/IM - 0.25 mg/kg Use 1 ml syringe IM – no dilution IV – dilute with NS to 1 ml and push over 2 minutes
Pediatric Administration:	Not recommended
Onset:	Within 30 seconds
Duration:	5-10 minutes
Pregnancy Safety:	Not
Precautions and Comments: Pharmacology Chart **Used in SMO:** Behavioral Management/Restraints Delayed Sequence Airway Management Excited Delirium Pain Management	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.

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:	Weight-based dosing for children > 1 year old
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.

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:** Cardiac Arrest Post Resuscitation Delayed Sequence Airway Management Intraosseous Access Tachycardia 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 *Formulary Lidocaine 2% Page 1 of 1* Return to Formulary Table of Contents

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 Midazolam is 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 Airway Management	• 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

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 - 10 minutes; online for further dosing *Bronchoconstriction:* 2 GM over 20 minutes; online for further dosing
Pediatric Administration:	Pediatric dosing for Mag Sulfate not recommended without a pump
Onset:	Immediate
Duration:	3-4 hours
Pregnancy Safety:	Category A
Precautions and Comments: **Used in SMO:** Bronchospasm Pre-Eclampsia/Eclampsia Tachycardia Ventricular Fibrillation/Pulseless Ventricular Tachycardia 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*

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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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.

Formulary: Mark I Nerve Agent Antidote Kit Page 2 of 2

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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/IM 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	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.

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: **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.

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:** Behavioral Emergencies/Restraints Bradycardia Cardiac Arrest Post Resuscitation Cardioversion CPAP Excited Delirium Hyperthermia Intranasal Medications (MAD Device) Pain Management Pre-Eclampsia/Eclampsia Sedation for Airway Management Seizure Stroke Toxic Exposure 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 Formulary Table of Contents *Formulary: Midazolam Page 1 of 1*

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: Cardiac Arrest Post Resuscitation Intranasal Medications/MAD Device Narrow Complex Tachycardia Pain Management Tachycardia – Narrow Complex	*Formulary: Morphine Page 1 of 1* Return to Formulary Table of Contents

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
Onset:	Within 2 minutes
Duration:	20-30 minutes
Pregnancy Safety:	Category B
Precautions and Comments: Pharmacology Chart **Used in SMO:** Alcohol/Substance Abuse Emergencies Altered Mental Status Asystole/PEA Intranasal Medication/MAD Device Pain Management Syncope Toxic Exposure	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.

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 • Erectile dysfunction meds within 24 hrs

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 Pain Assessment and Management 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. EMT's may administer to adults only

Oral Glucose/Glucose Tablets	
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:** Alcohol/Substance Abuse Emergencies Altered Mental Status Diabetic Emergencies Seizure/Status Epilepticus Syncope Toxic Exposure	Not a substitute for IV dextrose in extreme cases of hypoglycemia (blood sugar <40) unless IV access is unobtainable.

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: **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

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 Airway Management	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.

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: o Not effective in hypercarbic acidosis (e.g., cardiac arrest and CPR without intubation) o Severe pulmonary edema
Adverse effects include but not limited to:	➢ Metabolic alkalosis ➢ Pulmonary Edema ➢ Hypoxia ➢ Electrolyte imbalance ➢ Seizure
Adult Administration: **Packaging Information:** (50 mEq/50 ml)	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 Toxic Exposure Ventricular Fibrillation/Pulseless Ventricular Tachycardia	Flush IV tubing before and after administration. Maintain adequate ventilation. Pharmacology Chart *Formulary: Sodium Bicarbonate Page 1 of 1* Return to Formulary Table of Contents

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.
<u>Used in SMO:</u> 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 Routine Medical Care Routine Pediatric Care	<u>Used in SMO (continued):</u> Sepsis Shock/Hemorrhagic Fluid Resuscitation Special Needs Patients Stroke Syncope Transcutaneous Pacing Traumatic Arrest

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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 Airway Management	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.

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 2 Grams in 100 mL Normal Saline. Infuse over 10 – 20 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 Obstetrics: Childbirth Gynecological: Hemorrhagic Gynecological: Rape/Sexual Assault	• Hypotension has been observed when TXA is administered too fast • TXA should **NEVER** be administered “wide open” • Female patients taking birth control are at increased risk for blood clots and TXA significantly increases that risk

Vecuronium	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 Airway Management	Vecuronium is used as a backup paralytic agent. Preferred paralytic is Succinylcholine.

Region 1 Emergency Medical Services

Region 1 Bylaws

Region 1 Policies and Procedures

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Appendices

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Bylaws: Article 1 – Board Establishment and Member Appointments

ARTICLE I Advisory Board Establishment and Member Appointments

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

- 4 - One (1) EMS Medical Director from each of the EMS resource hospitals located in Region 1
- 4 - One (1) EMS System Coordinator from each of the EMS resource hospitals located in Region 1
- 3 - One (1) Trauma Medical Director from each of the Trauma Centers located in Region 1
- 3 - One (1) Trauma System Coordinator from each of the Trauma Centers located in Region 1
- 1 - One (1) Associate Hospital representative affiliated with a Region 1 EMS Resource hospital
- 1 - One (1) Participating Hospital representative located in Region 1
- 1 - One (1) representative from the highest volume EMS provider agency
- 4 - One (1) municipal EMS provider representative from each EMS resource hospital located in Region 1
- 4 - One (1) private EMS provider representative from each EMS resource hospital located in Region 1
- 1 - One (1) pediatric champion physician/EDAP representative from the EMS Region 1 PCCC hospital
- 26 - Total representatives as of 10/15/2018

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

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

2. Once the initial agency or organization representative is identified as Region 1 EMS Advisory Council member, their membership will be automatically renewed each year.

3. A member's agency or organization by resolution of its governing body or corporation will submit written notice of its intent to withdraw from the Region 1 EMS Advisory Council.

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

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

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Last Revision: 09/18
Reviewed: 06/21

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ARTICLE II Officers

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

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

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

3. The Region 1 EMS Coordinator is a member of the Region 1 EMS Advisory Council and subcommittees.The Region 1 EMS Coordinator will act in an advisory capacity providing guidance and information in all matters related to Region and State items and business.

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Last Revision: 09/18
Reviewed: 06/21

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ARTICLE III Meetings and Voting

1. The Executive Committee will determine the Schedule of regular Region 1 EMS Advisory Council meetings. The chairperson, the Executive Committee, or a majority of the members expressing their desire to the chairperson in writing may call special meetings of the EMS Advisory Council. EMS Advisory committees, subcommittees, and task forces will meet as needed.
2. Regularly scheduled EMS Advisory Council meetings will be held quarterly. Special meetings of the Region 1 EMS Advisory Council will be held with written notice. The Advisory Council EMS Coordinator will ensure the timely mailing of the notices of Region 1 EMS Advisory Council meetings.
3. For Region 1 EMS Advisory Council meetings and special Region 1 EMS Advisory Council meetings, the agenda and location will be mailed/e-mailed no less than 48 hours in advance of the meeting. The EMS Chair will coordinate the development and distribution of the Region 1 EMS Advisory Council agenda with the Advisory Council EMS Coordinator. Emergency meetings of the Advisory Council may be convened with prior notice as soon as possible.
4. Business will be conducted by a quorum.
5. Except where indicated, the desired method for approving all business actions is through majority of the quorum (26 voting members, quorum is 13). A three-fourths of the quorum of the Council will be required to approve changes to Region 1 EMS Advisory Council membership or bylaws.
6. With advanced notice and approval of the chairperson members may attend via teleconference (or by phone). Should any votes be necessary all attending via teleconference must vote by a call of the roll. Region 1 Executive Council members should attend all meetings in person.
7. Any vote by proxy will be submitted in writing to the chairperson prior to the meeting being convened. The chairperson will notify all in attendance of any proxies presented for that meeting.
8. Executive committee and other sub-committee meetings may be held in closed session to discuss issues, ideas, and concerns.
9. No final action may be taken on public business in a closed session (5 ILCS 120/2).

Original Policy Date: 04/08
Last Revision: 09/18
Reviewed: 06/21

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ARTICLE IV Standing EMS Advisory Council Committees

Executive Committee

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

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

Original Policy Date: 04/08
Last Revision: 09/18
Reviewed: 06/21

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ARTICLE V Review or Amendment of the Bylaws

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

Amendments to Bylaws

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

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

3. Amendments to the Bylaws must be approved by three-fourths of the quorum of the Region 1 EMS Advisory Council.

Original Policy Date: 04/08
Last Revision: 09/18
Reviewed: 06/21

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Policy: 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:

A. 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.

B. 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.

C. 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. ***

Original Policy Date: 07/04
Last Revision: 09/19
Reviewed: 06/21

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Policy: Closest Hospital Transport

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

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.

Original Policy Date: 07/04
Last Revision: 07/18
Reviewed: 06/21

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Policy: Concealed Carry of a Firearm

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

INFORMATION NEEDED

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

1. The patient is at their private residence. Ask or assist the patient in removing the firearm and holster as one unit and leave it at the residence in their previously designated location (ideal situation).
2. If law enforcement is at the scene during situations such as a traffic accident or public encounter, have the officer secure and take custody of the firearm.
    a. If the patient is unable to remove the holstered firearm due to significant mechanism of injury and a full body assessment is needed, cut the holster straps and remove the holstered firearm from the patient as a unit and give to law enforcement.
    b. If the holster is contaminated with blood or bodily fluid, have the officer don gloves before touching the holstered firearm. Provide a plastic or biohazard bag if necessary.
    c. If the patient has an altered level of consciousness and is unable to comply with the request to remove the holstered firearm, safely remove the holstered firearm by whatever means necessary (cut holster straps, unbuckle straps, etc.) and give to law enforcement when available, or have the officer assist with safe removal of the firearm. Belligerent, combative, or uncooperative patients that are known to have a firearm should not be approached until law enforcement arrives or the scene is otherwise made safe.
3. If law enforcement is not on scene to take custody of the firearm, place the holstered firearm in the lockable firearm transport (see IDPH recommendation).
4. If the hospital has a secure location, such as a gun safe currently used by law enforcement, place the firearm, holstered if possible, in the gun safe and notify law enforcement or a qualified hospital security agent.
5. Make arrangements for law enforcement to meet the ambulance at the hospital and take custody upon arrival in the ambulance bay or parking area.
6. Women may carry the firearm in a purse rather than a holster. The safest approach is to leave the firearm in the purse, turning it and the contents over to law enforcement to secure the firearm. The purse can be returned to the patient once the firearm is removed and secure.
7. If the patient has the firearm in a pocket without a holster, use extreme caution in retrieving it from the clothing, handling it only by the handle. Never attempt to unload the firearm or handle the trigger area. Avoid trying to manipulate or change the safety on a firearm. Have one crewmember place the gun in a safe or secure location in the home or lockable firearm transport box in the ambulance until law enforcement arrives.
8. If the patient is to be transported by helicopter from the scene or a rendezvous point, leave the firearm with first arriving law enforcement or notify local law enforcement of the situation. Do not send the firearm in the helicopter.
9. It may be considered a refusal of care if a patient will not remove or relinquish their firearm. Contact Medical Control for any situation of this type.

PRECAUTIONS AND COMMENTS

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

Original Policy Date: 06/16
Last Revision: 06/16
Reviewed: 06/21

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Policy: Continuing Education

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

Required number of hours and renewal process:

1. Region 1 EMS requires the following hours of continuing education to be completed in each 4 year renewal.
    a. 100 hours – Paramedic and PHRN
    b. 80 hours – EMT-Intermediate / Advanced EMT
    c. 60 hours - EMT
    d. 24 hours – First Responders / Emergency Medical Responders
2. All provider agencies that have in-house Continuing Education will maintain records that includes the following:
    a. Date
    b. Topic
    c. Site code if required
    d. List of those attending
    e. Total time of education
3. The provider agency will make these records available to their EMS System.
4. Each prehospital provider is responsible for keeping their own records and maintaining a copy of time accrued. The responsibility for completing Illinois Department of Public Health required Continuing Education hours in a timely manner rests fully with the individual.
5. First Responder, EMT-Basic, EMT-Intermediate, EMT-Paramedic, ECRN and Prehospital RN providers must submit renewal information to their EMS System. The System will then reviews Continuing Education for appropriateness and endorse the provider to Illinois Department of Public Health for license renewal. License renewal forms are available at your Systems EMS office.
6. Renewal requests are due at your System EMS office 30 days prior to expiration.
7. Each prehospital provider is responsible to complete the child support and conviction statement, as well as the appropriate fee to IDPH.
8. Requests for extensions will not be considered unless for illness or extreme circumstances.

Approval of Hours:

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

Required Breakdown of Hours:

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

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

<u>Required Education</u>

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

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

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

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

Standard Documentation

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

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

Options for Accruing Didactic Hours:

Activity	Documentation	Hours	Comment
Initial education (Life Support courses): ABLS, ACLS, AMLS, EMPACT, ITLS, NRP, PALS, PEPP (ALS), PHTLS etc., CPR instructor	Standard documentation	Hr/Hr up to 16 hours for each course	
Advanced Trauma Life Support, Teaching EMS-related courses/ CE, Wilderness EMS Training, TEMS, MIH Community PM, Critical Care PM	Standard documentation	Hr/Hr for EMS content of course	May not exceed 20% of total hours for one subject area. Up to 50% of total hours may be earned by teaching participants at a lower level of licensure. Should be considered on a case by case basis for any topics in EMS education standards
Refresher/renewal education (Life Support courses): ABLS, ACLS, AMLS, EMPACT, ITLS, NRP, PALS, PEPP (ALS), PHTLS etc., CPR instructor	Standard documentation	Hr/Hr up to 8 hours	
EMTs: PEPP (BLS) course	Standard documentation	Hr/Hr up to 8 hours	

Activity	Documentation	Hours	Comment
Initial courses: CPR Instructor, Emergency Vehicle Operators course, Emergency Medical Dispatch course	Standard documentation	Hr/Hr up to 12 hours max	
Locally offered CE programs	Standard documentation	Hr/Hr to max content hours	May not exceed 20% of total minimum required hours in one subject area
Audit of entry level EMT, AEMT, Paramedic courses	Standard documentation	Hr/Hr to max content hours	Unlimited hours if subject matter is at the appropriate level for the participant's license. May not exceed 20% of total required hours in one subject area, e.g., cardiac, trauma, rescue, etc.
Clinical preceptor or evaluator	Signed letter from EMS Coordinator or lead instructor	Hr/Hr to max hours allowable	May not exceed 20% of total minimum required CE hours.
Emergency Preparedness	Written statement of participation from EMSC/ EMSMD or exercise director.	Hr/Hr up to 12 hours (Paramedic/PHRN) 10 hours (EMT-I) 8 hours (EMT)	EMS personnel must be able to demonstrate an active participating role during the preparedness event, exercise or training.
Prevention Programs: Safe Kids, Drug Prevention, Community awareness, Prom Night	Written statement of participation from EMSC/ EMSMD or exercise director.	Hr/Hr up to Max hours In content area	EMS personnel must be able to demonstrate an active participating role during the preparedness event, exercise or training.
Operations Topics: Rescue, Extrication, Hazardous Material, Helicopter Safety, Emergency Driving	Written statement of participation from EMSC/ EMSMD or exercise director.	Hr/Hr up to Max hours In content area	EMS personnel must be able to demonstrate an active participating role during the preparedness event, exercise or training.
College courses: Health-related courses that relate to the role of an EMS professional (A&P, assessment, physiology, biology, chemistry, microbiology, pharmacology, psychology, sociology, nursing/PA courses, etc.)	Catalog description of course and evidence of successful completion through minimum grade of C (official transcripts or evidence from school)	Hr/Hr 1 college credit = 8 CEU	May not exceed 20% of total hours for one subject area. Should be considered on a case by case basis for any topics in EMS education standards.
Seminars/Conferences: EMS related education approved by CECBEMS or medical or nursing accrediting body	Copy of agenda/program plus certificate of attendance	Hr/Hr up to max content hours	May not exceed 20% of total minimum required hours in one subject area, e.g., cardiac, trauma, rescue, etc.
Commercial CE: Electronic digital media (e.g. videotapes/CDs), journal articles with publication dates of 5 years or less prior to the date of CE completion. Approved by CECBEMS or medical or nursing accrediting body	Standard documentation	Hr/Hr up to max content hours	May not exceed 20% of total minimum required hours in one subject area, e.g., cardiac, trauma, rescue, etc.
Trauma Nurse Specialist or TNS Review Courses: May audit for CE with prior approval of TNS Course Coordinator to ensure space availability	Standard documentation	Hr/Hr up to max content hours	May not exceed 20% of total minimum required hours in one subject area. Course covers multiple areas of A&P, fluid & electrolytes, acid base balance, shock pathophysiology and systems trauma appropriate for PMs and PHRNs for full credit.

Activity	Documentation	Hours	Comment
ECRN Course (apart from Life Support courses): May audit for CE with prior approval of Course Lead Instructor to ensure space availability	Standard documentation	Hr/Hr up to max content hours	May not exceed 20% of total minimum required hours in one subject area. Course may cover multiple across the spectrum of EMS appropriate for PMs and PHRNS for full credit
On-line options Webinars and on-line offerings with subject matter found in the EMS Education Standards [e.g. sponsored by a governmental agency (infectious diseases, emergency preparedness) legal experts (documentation HIPAA) organizations or commercial offerings].	Standard documentation	Hr/Hr up to max content hours	May not exceed 20% of total minimum required hours in one subject area,

Assigning hours into core content area

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

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

Original Policy Date: 04/08
Last Revision: 09/18
Reviewed: 06/21

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Policy: DNR/POLST/Advanced Directives

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 Policy 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 Policy 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.

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. Three Signatures
        i. Patient or Legal Representative Signature
        ii. Witness Signature
        iii. Authorized Practitioner Name & Signature (Physician, licensed resident (2nd year or higher), APN, PA)
6. If POLST or DNR form is valid: follow orders on form. If form is missing or inappropriately executed, contact Medical Control for guidance.
7. A patient, POA, or Surrogate that consented to the form may revoke it at any time. A POA or Surrogate should not overturn decisions made, documented, and signed by the patient.
8. If resuscitation begun prior to 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.

Original Policy Date: 06/16
Last Revision: 06/17
Reviewed: 06/21

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Policy: Emergency Incident Rehabilitation

Overview: The Emergency Incident Rehabilitation (EIR) Policy is provided for guidance on the implementation and use of rehabilitation process as a tactical requirement of the incident management system at the scene of an emergency incident or training exercise. It will ensure that emergency responders who 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.

Objective Findings:

- Rate of Perceived Exertion (see below).
- Respiratory, pulse, and 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 (other than vital signs) will be transferred to EMS evaluation/transport division.

Medical Monitoring:

- Ensure personal safety.
- Perform a visual check of an individual.
- Perform LOC assessment.
- Evaluate the emergency responders using the RPE/Borg Scale (see below).
- Perform and record vital signs.
- Perform and record SpCO, if available.
- Preform 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.

Comments:

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

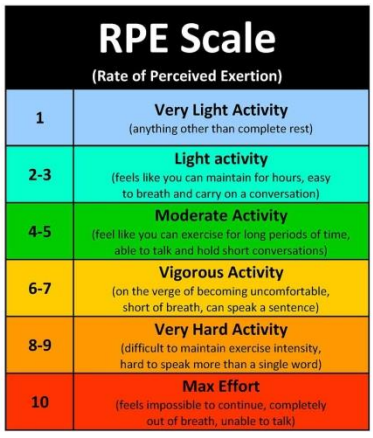
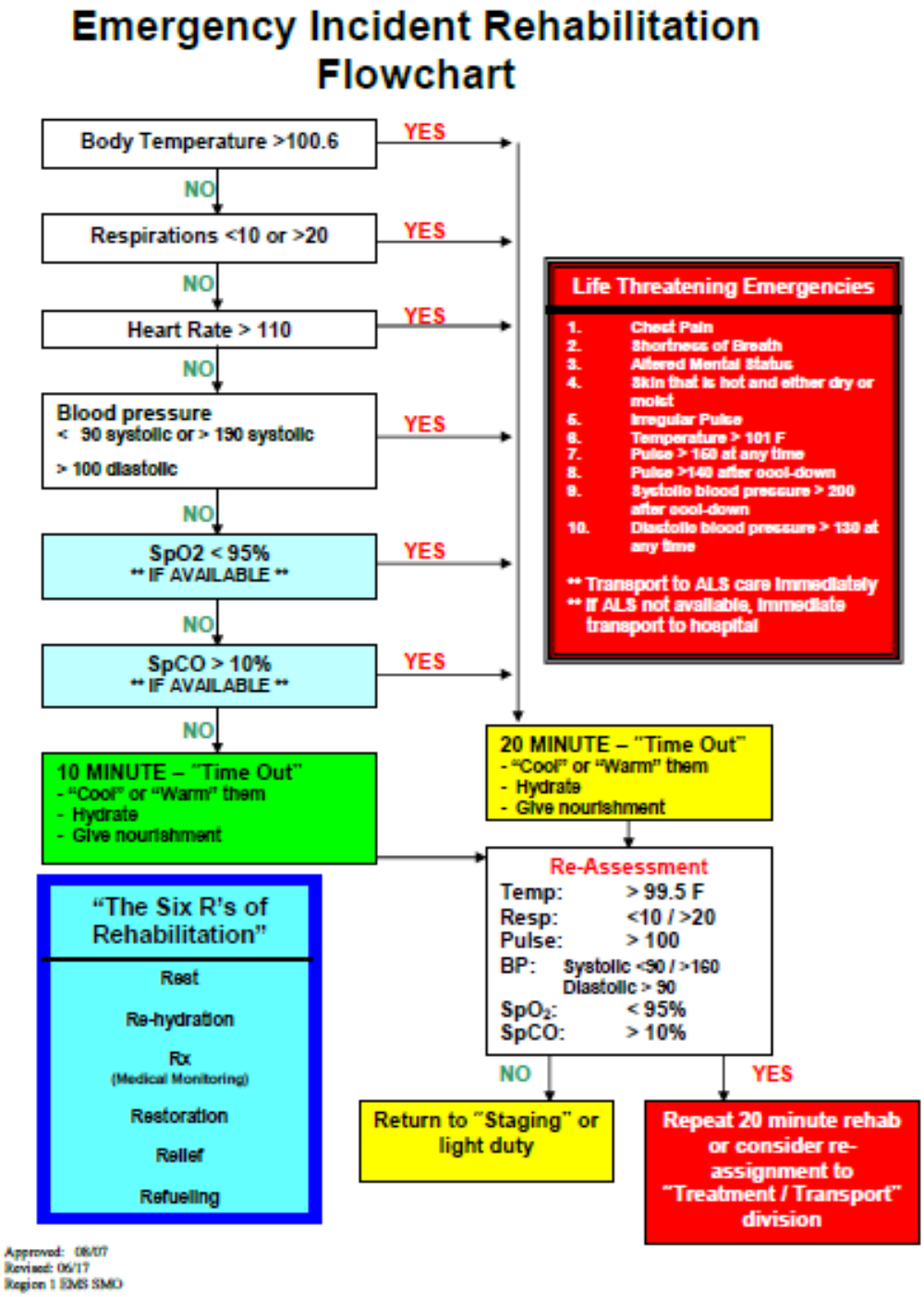


*photo per SB Fitness Magazine @ https://www.sbfitnessmagazine.com/articles/rate-perceived-exertion-scale/

Emergency Incident Rehabilitation Flowchart



Original Policy Date: 08/07
Last Revision: 06/17
Reviewed: 06/21

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Policy: EMS Patient Care Reports

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

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

Patient Care Reports:

1. A patient care report (PCR) will be accurately completed for each patient interaction. This includes EMS responses (emergency and non-emergency) in which patient contact is made.
2. All EMS personnel who participate in patient care or assessment will be listed on the patient care report, as well as the interventions or assessments he or she performed.
3. Ideally, a PCR will be completed in its entirety and provided to the receiving facility immediately after transferring care to the ED staff and prior to departing the hospital. The PCR left will be in full compliance with Region 1 policies, IDPH rules and regulations, and NEMSIS rules and regulations.
4. If a PCR cannot be completed prior to departing the ED, then a Region 1 Short/Non-Transport Form (Appendix B) must be fully completed and left with the ED staff.
5. If the Short/Non-Transport Form is utilized the PCR should then be completed and sent (faxed or electronically) within 2 hours of completion of the call.
6. Each agency who utilized the Short/Non-Transport Form must keep a log of when they used it, which patient they used it for, the date of the transport, the time they left the Short Form at the hospital, and the time they submitted the PCR to the hospital. This form will be submitted to the agency's EMS Coordinator on a monthly basis.
7. Each Resource Hospital will submit this information to IDPH on a monthly basis including any QI conducted as part of any run report reviews.
8. If an agency repeatedly violates this policy regarding the use of the Short Form the utilization of the Short Form will no longer be an option for that agency. Suspension or termination of use will be determined by the EMSMD for that agency and details will be provided to that agency in writing.

Original Policy Date: 04/08
Last Revision: 09/18
Reviewed: 06/21

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Policy: Inbound Report and Alert Notifications

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

Alert Notifications

STEMI Alert should be called:

- When the EMS provider identifies a STEMI
- The EMS provider should call in the STEMI Alert and transmit the ECG if possible

Stroke Alert should be called:

- When Stroke Screening checklist/FAST/GFAST Exam is positive
- Give last known well time

Trauma Alert should be called:

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

Burns Alert should be called:

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

Unstable Pediatric Alert should be called:

- Altered LOC
- Airway difficulties
- Signs of hypoperfusion (shock)

Sepsis Alert should be called:

- When the Sepsis Screening Tool is positive

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 Policy 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 Policy is used it include radio and phone report

Original Policy Date: 06/17
Last Revision: 09/19
Reviewed: 06/21

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Policy: 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 SMOs 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.
- 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.

Original Policy Date: 07/04
Last Revision: 06/17
Reviewed: 06/21

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Policy: Medical Control

Purpose

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

Process

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

Original Policy Date: 04/08
Last Revision: 09/18
Reviewed: 06/21

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Policy: Medication and Equipment Exchange

Purpose

To provide instructions for the exchange of medications and equipment at Region 1 Resource Hospitals.

Process

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

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

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

4. Any billing for medications or equipment is conducted between the EMS agency and the receiving hospital.

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Last Revision: 09/18
Reviewed: 06/21

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

I. DEFINITIONS

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

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

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

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

II. POLICY

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

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

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

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

III. PROCEDURE

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

A. Prerequisites

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

B. Didactic component

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

C. Psychomotor component

1. PHRN students must complete all mandatory skill competency labs/exams. Mandatory skill competencies include, but may not be limited to:
    a. Assessment: Adult, pediatric, and infant
    b. Airway access: Manual opening; NPA, OPA, suction; obstructed airway maneuvers; oral endotracheal, sedation, DSI, in-line, digital, and nasal intubation; Supraglottic airway, needle and surgical cricothyrotomy.
    c. Oxygen delivery/ventilatory support: Use and maintenance of portable O2 cylinders; NC, NRM, CPAP, BVM; SpO2 and capnography monitoring
    d. Cardiovascular support: Peripheral venous & intraosseous access; infusions, cardiac monitoring using 3 and 12 leads; cardioversion, defibrillation, transcutaneous pacing; and code management
    e. Drug administration techniques used in Regional / System SMOs
    f. Spinal Restriction: KED, helmet removal, splinting techniques: limb splints, traction splints,
    g. Misc.: Capillary glucose monitoring, pleural decompression, use of restraints, etc.

D. Hospital clinical component

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

E. Capstone Field Internship

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

F. PHRN testing:

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

G. Terminal Competency and PHRN recognition:

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

H. Records maintenance:

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

I. 77 Ill Adm.

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

J. PHRN recertification:

Recertification is required every four years. A PHRN shall maintain their credential in the same manner as a Paramedic.

K. Certificate expiration:

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

L. Requests for extension:

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

M. Inactive Status:

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

Original Policy Date: 03/20
Last Revision: 06/20
Reviewed: 06/21

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Policy: Physician/RN On Scene

Overview: When EMS Provider 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 EMS Provider 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 EMS Provider will:
  - Explain to the physician on-scene the recognized deviation from SOPs and/or policies and procedures.
  - Immediately put the physician at the scene in contact with Medical Control.
  - The EMSMD or designee will explain system SOPs and policies and procedures and attempt to reach consensus on patient care. Patient management by the licensed physician to provide supervision and direction throughout the pre-hospital care and transport process will continue until responsibility for care of the patient can be turned over directly to a physician on duty at hospital emergency department.
  - In cases where disagreements cannot be resolved, the EMSMD or designee will assume responsibility for patient care.
- In cases where the patient's personal physician is physically present, Medical Control should respect the previously established doctor/patient relationship as long as acceptable medical care is being provided.

RN or NON-AGENCY EMS PROVIDER ON SCENE

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

Original Policy Date: 07/04
Last Revision: 06/17
Reviewed: 06/21

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Policy: Protocol for Disbursement of IDPH Department Grants

Purpose

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

Process

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

Original Policy Date: 04/08
Last Revision: 09/18
Reviewed: 06/21

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Policy: Resolving Regional or Inter-System Conflicts

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

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

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

Original Policy Date: 04/08
Last Revision: 09/18
Reviewed: 06/21

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Policy: School Bus Accident Response/Alternative Transport Vehicle

Purpose:

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.

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.

- 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.

Process:

A. 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.
B. 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).

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Policy: Special Events

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

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

Special event resources may include:

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

Original Policy Date: 04/08
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Reviewed: 06/21

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Policy: Student Clinical-Internship Agreement

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

1. The EMS Systems hope to jointly benefit by improving the students' education through profession preparation.
2. The EMS Systems intent to structure the requirements for an educational internship in such a way as to ensure the safety and well-being of the patients, students, and organizations involved.

EMS Systems agree to the following:

1. Duties of Supplemental Clinical Experience Facility. The EMS System that receives emergency medical services students, for the purpose of providing to those students a supplemental clinical experience at its facility, from the EMS System at whose facility the students primarily receive instruction and training will:
    a. The liaison between the Supplemental Clinical Experience Facility and the Primary Instructional Facility will be the Lead Instructor for the course unless otherwise designated.
    b. Maintain a curriculum that complies with the National Educational Standards for Emergency Medical Services published by the National Highway Traffic Safety Administration and the testing and licensure requirements of the Illinois Department of Public Health.
    c. Paramedic education follows all guidelines/standards as prescribed by CoAEMSP/CAAHEP accredited program.
    d. Permit students to use all facilities, equipment, and supplies used in the Supplemental Clinical Experience Facility's ordinary course of business.
    e. Permit students' in-library use of books, periodicals, and other related resources.
    f. Take reasonable steps to provide a safe and healthy work environment in compliance with application State and Federal laws and regulations, and provide a secure area for students' belongings, parking facilities, and food service.
    g. All preceptors will be approved by the EMS System and receive the appropriate training. A certificate of completion of the appropriate training should be on file with the EMS System and available upon request.
    h. Appoint a preceptor who will maintain a record of orientation and complete a student evaluation of performance as requested.
    i. Ensure the cooperation and support of the Supplemental Clinical Experience Facility's staff in assisting instructors and preceptors as supplemental teachers to provide meaningful learning experiences in their areas of expertise.
    j. Allow students access to patients/clients as resources for student learning; provided however, that the Supplemental Clinical Experience Facility will assume ultimate responsibility for the care and service rendered to such patients/clients.
    k. Provide emergency medical core, or arrange transportation so that students and faculty may receive such care, if required while students and faculty are on the Supplemental Clinical Experience Facility's premises; provided however, that any costs associated with such emergency medical treatment or transportation will be borne by the students, faculty, and/or their third-party payors.
    l. Ensure that the clinical experience that each student receives is within the scope of practice permitted by that students' emergency medical services curriculum level.

2. Primary Instructional Facility Duties. The Primary Instructional Facility will:
    a. Maintain a curriculum that complies with the National Educational Standards for Emergency Medical Services published by the National Highway Traffic Safety Administration and the testing and licensure requirements of the Illinois Department of Public Health.

b. Ensure the effective flow of communication between instructors, unit managers, and preceptors for the purpose of providing feedback for the improvement through prompt notice to the Supplemental Clinical Experience Facility of irregularities in student evaluation forms.
c. Ensure that students and faculty comply with all applicable Supplemental Clinical Experience Facility policies and procedures.
d. Ensure that students use Supplemental Clinical Experience Faculty's equipment and materials in a manner consistent with standard industry practice.
e. Maintain proof that all students have obtained the following:
    1. TB Test – Testing for tuberculosis is performed through a blood draw or two-step skin test.
    2. Immunizations –
    3. Hepatitis B – the vaccination series is strongly recommended but not required. If you choose not to have this you must sign a waiver.
    4. Urine Drug Screen – Per EMS System the Program Director reserves the right to conduct urine drug screen testing.
f. Maintain proof that all students have current professional liability insurance (this may be personal or institutional).
g. Complete a background check and notify the Supplemental Clinical Experience Facility of any potential barriers to a student for course completion and/or licensure.
h. Maintain proof to the Supplemental Clinical Experience Facility that all students have health insurance that cover the care and treatment of emergency medical conditions or a signed waiver of responsibility that provides that the student is responsible for any cost associated with care received.
i. Require students to display photo identification at all times while on the Supplemental Clinical Experience Facility premises.
j. Remove, upon request by the Supplemental Clinical Experience Facility:
    i. Any student whose performance is unsatisfactory, in the Supplemental Clinical Experience Facility's sole discretion, after the Supplemental Clinical Experience Facility has given written notice to the student and allowed such student ten (10) days to cure the unsatisfactory condition.
    ii. Any student who knowingly violates any Supplemental Clinical Experience Facility policy or procedure as provided to the Primary Instructional Facility pursuant to Section 2(e) of this Agreement, or
    iii. Any student who, due to a health condition, cannot satisfy the requirements of the internship program.
k. Take reasonable steps to ensure that its employees and gents, in performing the Primary Instructional Facility duties pursuant to the Agreement comply with all Federal and State laws and regulations regarding the confidentiality of protected health information as defined by the Health Insurance Portability and Accountability Act of 1996 as amended (HIPAA).
l. Ensure that all students, prior to beginning clinical education on the Supplemental Clinical Experience Facility premises, satisfactorily complete a life safety training course.

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Last Revision: 06/20
Reviewed: 06/21

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Policy: 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

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

TRANSFER OF RESPONSIBILITY FOR PATIENT CARE

Emergency Department:

A. When a patient is transported to an emergency department, the transporting crew shall not leave the patient unattended in the department.
B. Written or verbal acceptance of responsibility for the patient should be obtained.
C. An ALS patient must be turned over to a registered nurse or physician.
D. Care of a BLS patient may be turned over to Emergency Room Technician personnel.

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

A. 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.
B. Written or verbal acceptance of responsibility for the patient should be obtained.
C. An ALS patient must be turned over to a registered nurse or physician.
D. 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):

A. 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.
B. Written or verbal acceptance of responsibility for the patient should be obtained.
C. 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).

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.

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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Policy: 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

1. 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.
2. 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.

GUIDELINES:

__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.

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.

Original Policy Date: 04/08
Last Revision: 09/18
Reviewed: 06/21

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Policy: Vehicle Staffing Requirements

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

Method of Providing EMS Services:

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

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

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

3. Level of first response vehicle:
   A. Ambulance Assist Vehicles
      1. Ambulance assist vehicles are dispatched simultaneously with an ambulance to assist with patient care prior to arrival of the ambulance. The vehicle will not be a transport or primary response vehicle. These vehicles will not function as an assist vehicle if staff and equipment are not available.
      2. Emergency Medical Responder/First Responder ambulance assist vehicle staffed with a minimum of one Emergency Medical Responder/First Responder (or higher level).
      3. Basic ambulance assist vehicle staffed with a minimum of one EMT (or higher level).
      4. Advanced EMT/ILS ambulance assist vehicle staffed with a minimum of one Intermediate (or higher level).
      5. ALS ambulance assist vehicle staffed with a minimum of one paramedic or one PHRN.
   B. Non-Transport Vehicles
      1. Non-transport vehicles are dispatched prior to the dispatch of the transporting ambulance. These vehicles will be staffed 24-hours per day every day of the year.
      2. Basic ambulance assist vehicle staffed with a minimum of two EMTs (or higher level).
      3. Advanced EMT/ILS ambulance assist vehicle staffed with a minimum of one Intermediate (or higher level) and one EMT level or higher.
      4. ALS ambulance assist vehicle staffed with a minimum of one paramedic or one PHRN and one EMT level or higher.

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

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

C. Ambulance Advanced Life Support:

All Advanced Life Support vehicles are to be staffed 24 hours a day, 365 days a year with one of the following (drivers may be used anytime, but not in place of EMT staff):

1. Minimum requirement – one Paramedic or PHRN and one EMT (or higher level) of any level licensed appropriately per Illinois Department of Public Health.
2. Vehicle can be staffed with higher level providers, such as Paramedic or PHRN, but they cannot function beyond the ambulance license unless in the situation of Infield Upgrade.

5. In-Field service level upgrade, using advanced level EMS vehicle service providers.
   A. When a lower level agency calls for an advanced level agency for assistance the advanced level provider may transfer all appropriate equipment and function at the higher level of care.
   B. The advanced level provider/agency will assume primary responsibility for care when they arrive and report is given.
   C. Should the two agencies be in different systems the advanced level provider/agency becomes the primary system for the response.

6. Ambulance service provider and vehicle service provider – rural population.
   A. A rural provider may upgrade as defined by their EMS System and approved by IDPH.
   B. Advanced equipment/medications must be secured per EMS System policies.

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

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

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

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

Original Policy Date: 04/08
Last Revision: 09/18
Reviewed: 06/21

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Appendix A: Region 1 Short/Non-Transport Form

Region 1- Patient Care Report-Short/Non-Transport Form

Company _____ Unit # _____ Date _____

Receiving Facility _____ Time _____

Patient Name _____

Address: _____

Age _____ DOB _____

Vital Signs: HR _____ RR _____ B/P _____ O2 Sat _____

Chief complaint /Mechanism of Injury _____

Crew Telephone Contact # _____

Crew Member #1 _____

Crew Member #2 _____

LOC
Alert ☐
Verbal ☐
Pain ☐
Unresponsive ☐

Glascow Coma Scale: _____

Lung Sounds
Clear ☐
Bilateral ☐
Wheezes ☐
Rales/Crackles ☐
Ronchi ☐
Diminished ☐

Gluco Check: _____

Treatments
IV/IO Rate _____ TKO ☐
Monitor On: Yes ☐ No ☐
Time: _____

12 Lead: Yes ☐ No ☐ Time: _____
STEMI: Yes ☐ No ☐
Transmitted: Yes ☐ Time: _____ No ☐
Interpretation:
NSR ☐ Brady ☐ Tach ☐ Other _____

Stroke Assessment
G - + -
F - + -
A- + -
S- + -
T- _____
Last seen normal

Skin
Normal ☐
Pale ☐
Flushed ☐
Moist ☐
Diaphoretic ☐

Pain
Yes ☐
No ☐
Severity (1-10)
On Arrival _____
At Hospital _____

Oxygen
liters/Minute _____
Nasal Cannula ☐
NRB ☐
ETT ☐
King Airway ☐
CPAP ☐

Immobilization
Yes ☐ No ☐
Long Board ☐
Cervical Collar ☐
HIM ☐

Time	BP	Pulse	Resp	02 Sat	Temp

Time	Rhythm	Time	Rhythm

Medications

Med	Time/Dose	Time/Dose	Time/Dose

Defibrillation X _____

Medical History:

Patient's Meds: None ☐

Allergies: None ☐
List:

Other Information:

Final Report Completed-Date _____ Time: _____

Final Report Faxed To Rec Hosp. Date _____ Time _____

Original-Hospital Photocopy-EMS Agency (Make a copy at the hospital) Region 1 modified June 2019

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Appendix B: Region 1 Short/Non-Transport Form Log

Short Form Utilization Log

Date of Transport	Receiving Hospital	Time Call Ended	Time Report Sent	Comments

Each agency that uses the Short Form must forward this log to their EMS System monthly

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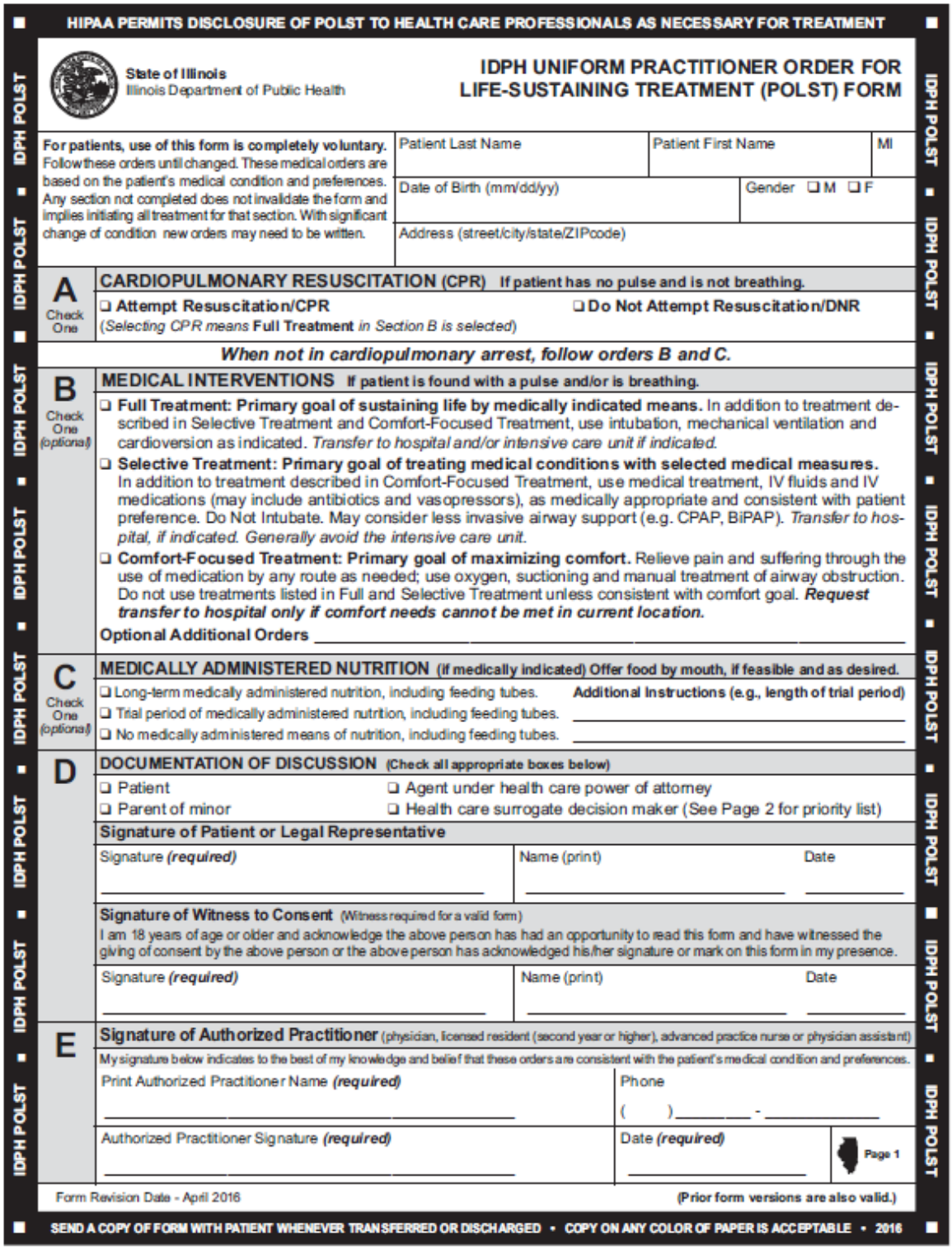
Appendix C: Illinois Department of Public Health POLST Form



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

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

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

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

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

B Check One (optional) — **MEDICAL INTERVENTIONS** If patient is found with a pulse and/or is breathing.

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

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

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

Optional Additional Orders _____

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

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

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

Page 1

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

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

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

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Appendix D: Region 1 Medication Restocking Form

MEDICATIONS: Region I Medication Restocking Form

Patient Name:_____

Account Number:_____

Agency:_____

Ambulance Number:_____

Signature:_____

Resource Hospital Signature: _____

Quantity	Name: Generic	Name: Trade	Strength & unit of use
	Adenosine	Adenocard	6 mg/2 ml Syringe
	Albuterol	Proventil or Ventolin	2.5 mg/3 ml Neb
	Albuterol/Ipratropium	DuoNeb	2.5 mg/0.5 mg/3 ml Neb
NOTE: Carry 2 additional Ipratropium/Albuterol if no Duo-Neb			
	Amiodarone	Cordarone	150 mg/ 3 ml Vial
	Aspirin Chewable		81 mg Tablet
	Atropine Sulfate		1 mg/10 ml Syringe
	Calcium Gluconate		1 gram/10 mL Vial
	D10		50 grams/500ml Bag
	Diphenhydramine	Benadryl	50 mg/ml Vial
	Dopamine	Intropin	400 mg/250 ml Bag
	Epinephrine	Epi Pen	0.3 mg/0.3 ml Auto Injector
	Epinephrine	Epi Pen Jr	0.15 mg/0.3 ml Auto Injector
	Epinephrine	Adrenalin	1 mg/ml Vial
	Epinephrine	Adrenalin	30 mg/30 ml Vial
	Epinephrine	Adrenalin	1 mg/10 ml Syringe
	Etomidate	Amidate	40 mg/20 ml Vial
	Fentanyl	Sublimaze	100 mcg/ml Vial Only
	Furosemide	Lasix	100 mg/10 ml Vial
	Glucagon	GlucaGen	1 mg/ml Vial
	Ipratropium	Atrovent	0.5 mg/2.5 ml Neb
	Ketamine IM	Ketalar	500 mg/5 ml Vial
	Ketamine IV	**Ketalar**	**200 mg/20 ml Vial**
	Ketorolac	Toradol	15 mg/ml Vial
	Lidocaine 2%	Xylocaine	100 mg/5 ml Syringe
	Revised 12/2021		
	Version 2021.1		
			Page 2 of 2

Quantity	NAME: Generic	NAME: Trade	Strength and unit of use
	Magnesium Sulfate	$MgSO_4$	2 GM/50 ml
	Methylprednisolone	Solu-Medrol	125 mg/2 ml Act-O-Vial
	Metoprolol Tartrate	Labetalol	5 mg/5ml Vial
	Midazolam	Versed	5 mg/ml Vial
	Morphine Sulfate		10 mg/ml Syringe
	Naloxone	Narcan	2 mg/2 ml Syringe
	Nitroglycerin	Nitrostat	0.4 mg SL Tablet
	Nitro Paste		
	Ondansetron	Zofran	4 mg/2 ml Vial
	Ondansetron	Zofran ODT	4 mg ODT
	Oral Glucose		
	Sodium Bicarbonate	$NaCHO_3$ 8.4%	50 meq/50 ml Syringe
	Sodium Chloride	NaCl 0.9%	10 ml Syringe
	Sodium Chloride	NaCl 0.9%	100 ml Sealed bag
	Sodium Chloride	NaCl 0.9%	1000 ml Bag
	Sodium Chloride	NaCl 0.9%	1000 ml Bag
	Succinylcholine	Anectine	200 mg/10 ml Vial
	Tranexamic Acid (TXA)	Cyklokapron	1000 mg/10 ml Vial
	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
	Lactated Ringers		1000 cc
	Region 1 Alternative Medications		
	D25/D50	Dextrose 50%	25 g/50 ml syringe
	Diazepam	Valium	10 mg/ 2 ml syringe
	Lorazepam	Ativan	2 mg/ml Vial/Syringe
	Rocuronium	Zemuron	10 mg/ml Vial
	Vecuronium	Norcuron	10 mg Powder Vial

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Appendix E: Region 1 PHRN Form

PHRN Student Clinical Experience Requirements – Credit for Previous Experience

(Template for System)

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

Students Name: _____ Date: _____

Course Location: _____ Site Code: _____

System clinical requirements for Paramedic / PHRN course:

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

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

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

_____

_____

_____

_____

_____

_____

EMS Coordinator (signature & date) _____

EMSMD (signature & date) _____

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Appendix F: Region 1 Emergency Incident Rehabilitation Form

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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Appendix G: Region 1 Physician/RN On Scene Form

EMS REGION 1

ON-SITE PHYSICIAN RESPONSIBILITY ACKNOWLEDGMENT

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

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

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

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

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

Please print except for your signature:

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

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

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

_____ The following patients: _____

_____

_____

_____ _____/_____/_____

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

Thank you for your interest.

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

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Appendix H: Region 1 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: (____) _____

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

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 pain 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.

Page 1

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.

Local Phone Numbers

Refusing against EMS advice:

Patients that have apparent decision making capacities have the right to refuse. We recommend the following:

- You seek medical care.
- You stay with a responsible adult who will observe you and call 911 if needed.
- **Please call 911 or seek medical attention if you change your mind.**

Return to Bylaws/Policies Table of Contents

Appendix J - Resuscitation Checklist - Adult

Key Considerations: Interventions for treatable causes of cardiac arrest. Consider emotional needs of family present.

TREATMENT: Cardiac Arrest

	Priority of patient care:	Notes:
	▪ High quality compressions	
	▪ AED/cardiac monitor/defibrillation	
	▪ Ventilation	
	Provide high quality continuous chest compressions with:	
	▪ Full recoil.	
	▪ At a rate of 100-120 per minute (consider metronome).	
	▪ At a depth of at least two inches.	
	▪ Minimizing any pauses to < 10 seconds.	
	▪ Switching providers (if available) every two minutes.	
	Apply AED/cardiac monitor as soon as possible.	
	Ventilate the patient:	
	▪ Without advanced airway at a rate of 30:2.	
	▪ Consider supraglottic airway or ETT when possible without interruption of chest compressions.	
	○ Ventilate at a rate of every six (6) seconds/10 per minute. Stop with chest rise.	
	○ Confirm advanced airway with multiple methods.	
	Attach appropriate capnography sensor:	
	▪ Monitor $EtCO_2$ level, respiratory rate, and waveform. If waveform capnography is not available use colormetric with advanced airway.	
	▪ If $EtCO_2$ is below 10 ensure high quality CPR is being performed.	
	▪ Continuously monitor $EtCO_2$ throughout arrest. A sudden increase may indicate ROSC.	
	Apply mechanical compression device if available and indicated:	
	▪ AutoPulse Device:	
	○ 18 years and older (may consider use in a large, younger patient)	
	○ Not for use in patients who do not fit in device	
	○ Not for use in patients with traumatic arrest	
	▪ LUCAS Device:	
	○ 12 years and older (may consider use in a large, younger patient)	
	○ Not for use in patients who do not fit in device	
	For Ventricular Fibrillation/Ventricular Tachycardia:	
	▪ Defibrillate at dose listed below or 360 j for monophasic.	
	▪ **Region 1 EMS Medical Directors recommend starting and continuing at maximum energy, if possible. Below are the recommended manufacturer settings:**	

Defibrillation Settings*	1st	2nd	3rd	4th +
Zoll Biphasic	120	150	200	200
Phillips MRX	150	170	200	200
Lifepak/Medtronic	200	300	360	360
Tempus	150	170	200	200

	▪ *If other manufacturer refer to their specific settings*	
	▪ Obtain IV/IO access without pausing compressions:	

	▪ Medications as listed below. Medication Administration Chart:	
	○ Epinephrine 1 mg (1mg/10ml) – repeat every 3-5 minutes as long as CPR continues.	
	○ If Polymorphic VT – Magnesium Sulfate – 2 Grams over 5-10 minutes	
	○ Amiodarone OR Lidocaine **(Select one medication – do not use both)**	
	• Amiodarone V-Fib/Pulseless VT 300 mg /repeat at 150 mg	
	• Lidocaine (refer to weight-based dosing)	
	○ Consider H's or T's (see below)	
	Resource: H's and T's: - Hypoxia (ventilate/O2) - Tamponade, cardiac (IV boluses) - Hypothermia (core warm) - Tension Pneumothorax (plural decompression) - Hypovolemia (IV boluses) - Thrombosis – coronary/pulmonary - Hypokalemia - * Toxins (opiate-Naloxone/TCA-Sodium Bicarb/Beta Blocker overdose – Glucagon/ Organophosphate overdose - Atropine) - * Hydrogen ion (acidosis) * (ventilate for respiratory/Sodium Bicarbonate for metabolic) - Hypoglycemia (Glucose) - * Hyperkalemia - Calcium Gluconate 1 Gram – may repeat every 5 minutes up to 3 Grams/ * Sodium Bicarbonate 1 meq/kg; may repeat at half dose in 10 minutes	
	For Asystole/PEA:	
	▪ Obtain IV/IO access without pausing compressions:	
	▪ Medications as listed below:	
	○ Epinephrine 1 mg (1mg/10 ml) – repeat every 3-5 minutes as long as CPR continues	
	○ Consider H's or T's (see above)	

TREATMENT: Cardiac Arrest – POST RESUSCITATION

	Obtain 12 Lead as soon as possible. Evaluate/transmit for potential STEMI.	
	Titrate oxygen to the lowest level required to achieve Spo2 ≥ 94-99%.	
	Monitor EtCo2.	
	▪ Do not hyperventilate	
	▪ Optimal EtCo2 is 35-45 (may need to adjust ventilation rate)	
	If hypotensive (systolic <90 mmHG) consider Cardiogenic Shock:	
	▪ Treat underlying dysrhythmias	
	▪ Fluid bolus of 250 ml for patients with clear lungs	
	▪ Determine body weight; start Dopamine (weight-based dosing)	
	Consider anti-dysrhythmic given if not given in resuscitation noted above and patient was in V-Fib/V-Tach:	
	▪ Amiodarone (150 mg over 10 minutes)	
	▪ Lidocaine (refer to weight-based dosing)	
	Provide sedation or Pain Management as indicated:	
	▪ Fentanyl – weight-based dosing	
	▪ Morphine – weight-based dosing	
	▪ Midazolam (light dose) – dosing chart	

Appendix J - Resuscitation Checklist - Adult

PROCEDURE: In-Field Termination

	AHA Guidelines recommends resuscitation for a minimum of 20 minutes.	
	At 20 minutes consider transporting the patient, continuing treatment, or discontinuing treatment.	
	When termination or transport is being considered:	
	▪ Availability of local resources (e.g., time for coroner to arrive if care is terminated vs time of transport)	
	▪ Trauma codes	
	▪ Scene is unsafe	
	▪ Family members present	
	▪ Age/condition of patient	
	▪ $EtCO_2$	
	▪ Obvious death at a crime scene	
	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 in the county of patient death. The Coroner should be contacted for all out of hospital deaths:	
	▪ Note time of death and confirm signs. Remain on scene until coroner, law enforcement, or other appropriate professional arrives.	
	▪ Do not transport patient who is dead at the scene unless other directed by the coroner.	
	▪ If termination occurs during transport do not cross county lines without approval of the coroner.	

Appendix K - Resuscitation Checklist – Pediatric

Key Considerations: Interventions for treatable causes of cardiac arrest. Consider emotional needs of family present.

TREATMENT: Cardiac Arrest

	Priority of patient care:	Notes:
	▪ High quality compressions	
	▪ AED/cardiac monitor/defibrillation	
	▪ Ventilations	
	Provide high quality continuous chest compressions with:	
	▪ Full recoil	
	▪ At a rate of 100-120 per minute (consider metronome).	
	▪ Compression depth at approximately one-third anterior/posterior depth of chest	
	○ Approximately two inches in child/1 ½ inches for infant	
	▪ Minimizing any pauses to < 10 seconds.	
	▪ Switching providers (if available) every two minutes.	
	Apply AED/cardiac monitor as soon as possible.	
	▪ Use pediatric dose-attenuator system for children and infants if available. Use pediatric pads. If unavailable, use adult pads.	
	▪ For manual defibrillation use appropriate weight-based energy as appropriate	
	Ventilate the patient:	
	▪ Without advanced airway at a rate of 30:2 for single rescuer/15:2 for two rescuers	
	▪ Consider supraglottic airway when possible without interruption of chest compressions or ETT when other measures are ineffective. Ventilate at a rate of once every 2-3 seconds until chest rise.	
	Attach appropriate capnography sensor:	
	▪ Monitor $EtCO_2$ level, respiratory rate, and waveform. If waveform capnography is not available use colormetric with advanced airway. If patient is under 15 kg use pediatric colormetric.	
	▪ If $EtCO_2$ is below 10 ensure high quality CPR is being performed.	
	▪ Continuously monitor $EtCO_2$ throughout arrest. A sudden increase may indicate ROSC.	
	Apply mechanical compression device if available and indicated:	
	▪ AutoPulse Device:	
	○ 18 years and older (may consider use in a large, younger patient)	
	○ Not for use in patients who do not fit in device	
	○ Not for use in patients with traumatic arrest	
	▪ LUCAS Device:	
	○ 12 years and older (may consider use in a large, younger patient)	
	○ Not for use in patients who do not fit in device	
	For Ventricular Fibrillation/Ventricular Tachycardia:	
	▪ Defibrillate at 2 J/kg. Repeat at 4 J/kg if ineffective. Subsequent doses greater than or equal to 4 J/kg to a max of 10 J/kg or adult dose.	
	▪ Obtain IV/IO access without pausing compressions:	

	▪ Medications as listed below. It is recommended that the Broselow tape or Medication Administration Chart is utilized for dosing pediatric patients.	
	○ Epinephrine– Weight-based dosing. Repeat every 3-5 minutes as long as CPR continues.	
	○ Amiodarone OR Lidocaine (Select one medication – do not use both)	
	• Amiodarone V-Fib/Pulseless VT 5 mg/kg - repeat at 5 mg/kg to a max of 15 mg/kg	
	• Lidocaine 1 mg/kg	
	○ Magnesium Sulfate is not recommended for pediatric patients without the use of a pump.	
	○ Consider H's or T's (see below)	
	Resource: H's and T's: - Hypoxia (ventilate/O2) - Tamponade, cardiac (20 ml/kg) - Hypothermia (core warm) - Tension Pneumothorax (plural decompression) - Hypovolemia (20 ml/kg) - Thrombosis – coronary/pulmonary - Hypokalemia - * Toxins (opiate-Naloxone/TCA-Sodium Bicarb/Beta-Blocker overdose – Glucagon/ Organophosphate overdose - Atropine) - * Hydrogen ion (acidosis) * (ventilate for respiratory/Sodium Bicarbonate for metabolic) - Hypoglycemia (glucose) - * Hyperkalemia - Calcium Gluconate 60 mg/kg weight-based dosing ○ * Sodium Bicarbonate 1 meq/kg weight-based dosing	
	For Asystole/PEA:	
	Obtain IV/IO access without pausing compressions:	
	▪ Medications as listed below:	
	▪ Epinephrine Weight-based dosing. Repeat every 3-5 minutes as long as CPR continues.	
	○ Consider H's or T's (see above)	

TREATMENT: Cardiac Arrest – POST RESUSCITATION

	Obtain 12 Lead as soon as possible. Evaluate/transmit for potential STEMI.	
	Titrate oxygen to the lowest level required to achieve Spo2 ≥ 94-99%.	
	Monitor $EtCo_2$.	
	▪ Do not hyperventilate	
	▪ Optimal $EtCo_2$ is 35-45	
	If hypotensive consider Cardiogenic Shock:	
	▪ Treat underlying dysrhythmias	
	▪ Fluid bolus of 10 ml/kg for patients with clear lungs	
	▪ Call Medical Control for approval and dosing of Dopamine (weight-based dosing)	
	Consider anti-dysrhythmic given if not given in resuscitation noted above and patient was in V-Fib/V-Tach:	
	▪ Amiodarone V-Fib/Pulseless VT 5 mg/kg – may repeat at 5 mg/kg to a max of 15 mg/kg	
	▪ Lidocaine (refer to weight-based dosing)	
	Provide sedation or Pain Management as indicated:	
	▪ Fentanyl – weight-based dosing	
	▪ Morphine – weight-based dosing	
	▪ Midazolam (light dose) – dosing chart	

PROCEDURE: In-Field Termination

	AHA Guidelines recommends resuscitation for a minimum of 20 minutes.	
	At 20 minutes consider transporting the patient, continuing treatment, or discontinuing treatment.	
	When termination or transport is being consider:	
	▪ Availability of local resources (e.g., time for coroner to arrive if care is terminated vs time of transport)	
	▪ Trauma codes	
	▪ Scene is unsafe	
	▪ Family members present	
	▪ Age/condition of patient	
	▪ $EtCO_2$	
	▪ Obvious death at a crime scene	
	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 in the county of patient death. The Coroner should be contacted for all out of hospital deaths:	
	▪ Note time of death and confirm signs. Remain on scene until coroner, law enforcement, or other appropriate professional arrives.	
	▪ Do not transport patient who is dead at the scene unless other directed by the coroner.	
	▪ If termination occurs during transport do not cross county lines without approval of the coroner.	