



ILLINOIS REGION VIII

EMERGENCY MEDICAL SERVICES

STANDING MEDICAL ORDERS

**THESE STANDING MEDICAL ORDERS HAVE BEEN DEVELOPED AND
APPROVED THROUGH A COLLABORATIVE PROCESS INVOLVING THE
REGION VIII EMS RESOURCE HOSPITALS**

**CENTRAL DUPAGE
EMS SYSTEM**

**EDWARD HOSPITAL
EMS SYSTEM**

**GOOD SAMARITAN
EMS SYSTEM**

**LOYOLA UNIVERSITY MEDICAL
CENTER
EMS SYSTEM**

THESE SMO'S SHALL BE UTILIZED:

- ★ as written orders of a physician for treatment to be administered by authorized members of the Region 8 EMS Systems, as circumstances allow, for the treatment of the ill or injured patient.
- ★ as the prehospital standing medical orders to be initiated by System EMTs or Pre-Hospital RNs until such time that online Medical Direction is established. If online Medical Direction communications cannot be established, EMS providers shall continue to provide treatment to the degree authorized by the EMS Medical
- ★ in disaster situations as the standing medical orders for patient treatment, given that usual and customary forms of communication are not possible, in accordance with area-wide disaster plans.
- ★ as the standard operating procedures to be used by ECRNs when directing prehospital care.

System members are authorized to carry out these procedures to the extent necessitated by patient condition. Medical Direction contact should be established as soon as practicable, without endangering the patient. In some circumstances, early contact with Medical Direction can be beneficial to minimizing the time to definitive care, and these SMO's are designated as Time Sensitive by the clock graphic .

It is recognized that hospice patients, patients with valid DNR/POLST orders, patients who have not responded to ALS procedures, or patients involved in a mass casualty incident (MCI) present unique circumstances that may, in the medical opinion of the Medical Direction Physician, justify deviation from these procedures, including bypassing the closest destination.

Standing Orders that are not labeled either ADULT or PEDIATRIC have elements applying to all age groups. Unless otherwise noted, PEDIATRIC patients are ≤ 15 years.



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THESE STANDING MEDICAL ORDERS ASSUME THAT CERTAIN TASKS WILL BE DONE SIMULTANEOUSLY BY EMS PROVIDERS. THE ORDER IN WHICH THE TASKS APPEAR IS NOT NECESSARILY IN THE ORDER OF NEED OR IMPORTANCE.

GENERAL	<u>OUTLINE FOR RADIO REPORT</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: 04/01/2023

1. **TRANSMIT THE FOLLOWING, BEING AS CONCISE AS POSSIBLE:**
2. Agency Name, Unit Number/Call Sign, desired destination (if different than hospital being contacted), level of care being provided
3. Patient age, sex, and approximate weight
4. Level of consciousness and orientation **ADULT GLASGOW COMA SCALE** score or **PEDIATRIC GLASGOW COMA SCALE** score
5. Chief complaint/Primary impression, including:
 - Symptoms
 - Mechanism of trauma/pertinent scene information
 - Pertinent negatives/associated complaints
6. Vital Signs
 - Blood Pressure
 - Heart Rate
 - ECG Interpretation, including 12 lead findings (if applicable)
 - Respiratory Rate
 - SpO₂ (if applicable)
 - EtCO₂ (if applicable)
 - Temperature
 - Pain Score (0-10, Wong Baker)
7. Cincinnati Stroke Scale/NIH Stroke Scale findings
8. Last Known Well (if applicable)
9. Blood Glucose Levels
10. Pupils
11. Lung Sounds
12. Skin Parameters
13. History
14. Medications
15. Allergies
16. Interventions
17. Medications Given
18. Disposition
19. Destination
20. ETA

NOTE: When using System-specific standing orders or procedures, contact the responsible Resource Hospital

GENERAL

GENERAL PATIENT ASSESSMENT

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

BLS / ALS

1. Assess and secure scene safety
2. Use situationally-appropriate personal protective equipment (PPE) and procedures on all patients
 - Consider [EMERGING INFECTIOUS DISEASE GUIDANCE](#) for all patients with complaint and symptom profiles that are similar to those diseases

ADULT

3. Adult Initial Assessment

- Airway – establish and maintain an airway. Consider [SPINE MOTION RESTRICTION](#) as indicated.
- Breathing – assess; assist or provide ventilations as indicated; assess lung sounds
- Circulation – check pulse and control hemorrhage
- Disability – neurologic
 - A – Alert
 - V – responds to Verbal stimuli
 - P – responds to Painful stimuli
 - U – Unresponsive
- Expose and examine as indicated
- Identify priority transports

4. Focused History and Physical Exam

- SAMPLE history
 - Signs & Symptoms, Systematic head-to-toe assessment including [ADULT GLASGOW COMA SCALE](#) score or [PEDIATRIC GLASGOW COMA SCALE](#) score
 - Allergies
 - Medications
 - Pertinent Medical History
 - Last oral intake, Last Menstrual Period
 - Events leading to present condition
- Initial set of vital signs
- Rate pain 0-10 scale

5. Detailed Physical Exam (patient and injury specific when appropriate)

6. Ongoing Assessment

- Reassess ABCDs

GENERAL

CONSIDERATIONS FOR PATIENTS WITH SPECIAL HEALTHCARE NEEDS

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

- Track Adults and Children with Special Healthcare Needs in your service area and become familiar with both the patient as well as their anticipated emergency care needs
- Refer to patient's emergency care plan formulated by their medical providers, if available. Understanding the patient's baseline will assist in determining the significance of altered physical findings. Parents or caregivers are the best source of information on:
 - medications
 - baseline vitals
 - functional level/normal mentation
 - likely medical complication
 - equipment operation and troubleshooting
 - emergency procedures
- Regardless of underlying conditions, assess in a systematic and thorough manner. Use parents/caregivers/home health nurses as medical resources
- Be prepared for differences in airway anatomy, physical development, cognitive development, and possible existing surgical alterations or mechanical adjuncts. Common home therapies include:
 - respiratory support (oxygen, apnea monitors, pulse oximeters, tracheostomies, and mechanical ventilators)
 - cardiac devices (LVADs, continuous infusions), nutrition therapy (nasogastric or gastrostomy feeding tubes)
 - intravenous therapy (central venous catheters)
 - urinary catheterization or dialysis (continuous ambulatory peritoneal dialysis)
 - biotelemetry
 - ostomy care
 - orthotic devices
 - communication or mobility devices
 - hospice care
- Communicate with the patient in an age-appropriate manner. Maintain communication with and remain sensitive to the parents/caregivers and the patient
- The most common emergency encountered with pediatric patients is respiratory related, so familiarity with respiratory emergency interventions, adjuncts, and treatment is important and appropriate

GENERAL**STREAMLINED COMMUNICATION**
(FOR BLS CALLS ONLY)**APPROVED FOR USE BY:****ALL SYSTEMS****EFFECTIVE: 04/02/2019****REVIEWED: 04/01/2023****REVISED: N/A**

1. Name and vehicle number of provider
2. Patient age and gender
3. Chief complaint/mechanism of injury
4. SMO being followed
5. Any deviation from SMO or unusual circumstances
6. ETA

GENERAL

INITIATION OF ALS CARE

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: 04/01/2023

ALS Care should be initiated according to the following guidelines:

1. Patient with abnormal vital signs, regardless of complaints. The following are guidelines for adults:
 - Pulse <60 or >130 BPM; or irregularity
 - Respiratory rate <10 or >30; or irregularity
 - Systolic blood pressure <90 or >200 mmHg
2. Any patient with a potential life-threatening condition which exists or might develop during transport. Examples of situations in which ALS care is usually indicated include, but are not limited to:
 - Altered Mental Status and/or Unconsciousness
 - Chest Pain
 - Palpitations
 - Seizures
 - Neurologic Deficit/Stroke
 - Syncope or Near Syncope
 - Abdominal Pain
 - Shortness of Breath/Difficulty Breathing
 - Vaginal Bleeding
 - Complication of Pregnancy or Emergency Childbirth
 - GI Bleeding
 - Trauma
 - Overdose/Poisoning
3. In an uncooperative patient, the requirements to initiate assessment and full ALS service may be waived in favor of assuring that the patient is transported to an appropriate medical facility. Document clearly the reasons ALS care was aborted.
4. Discontinuing / downgrading levels of care shall only be performed with online Medical Direction.
5. **WHEN IN DOUBT, CONSULT WITH MEDICAL DIRECTION.**
6. Normal Saline should be given at a rate and volume necessary to maintain adequate SBP (>90 mmHg for adults, ((age in years x 2) + 70) for pediatrics). If age <12 or >60 and/or known cardiac history, check lung sounds every 200 mL.
7. **Drug Administration Guidelines for Pediatric Patients:**
 - When calculating drug dosages for pediatric patients, the maximum individual and total doses should not exceed the respective adult doses. This does not apply to IV fluid boluses (where the pediatric dose of 20 mL/kg may exceed the 200 mL adult dose).
8. **Drug Administration Guidelines for all age ranges:**
 - Any SMO reference to slow medication administration means the medication is to be given over 2 minutes.

GENERAL

LOAD-AND-GO SITUATIONS

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

- This SMO applies if circumstances demand hospital care for patient stability.
- In certain circumstances, a patient's condition may require EMS providers to omit or abbreviate certain procedures described in these SMOs.
- The decision to deviate from Standing Medical Orders must be documented thoroughly.
- This Standing Medical Order does not imply that the rate of speed of transport is accelerated, but rather, there is emphasis on rapid patient packaging and limited on-scene time (barring prolonged extrication).
 - **Any deviation from Standing Medical Orders must be based on the medical judgment of the EMS provider treating the patient.**

GENERAL

WITHHOLDING OR WITHDRAWING OF RESUSCITATIVE EFFORTS

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

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REVISED: N/A

BLS / ALS

1. If at any time you are not certain which of these policies apply, begin treatment and contact Medical Direction for orders.
2. Emotional support should be provided to significant others.
3. Disposition of the patient will be handled according to local and county requirements.
4. Use of SMO must be guided by a physician. Contact should be established via telemetry radio or cellular phone. Note: MERCI radio or private phone may be used in extenuating circumstances.
5. Patients may be pronounced dead by an ED physician. The time of pronouncement should be documented on the patient care report (PCR).

ALS

6. Thoroughly document all circumstances surrounding the use of this procedure.
7. Attach a copy of the ECG rhythm strip to the provider copy of the PCR. If someone represents themselves as having Power of Attorney to direct medical care of a patient and/or a document referred to as a Living Will is present, follow these guidelines:

POWER OF ATTORNEY FOR HEALTHCARE

8. POLST/DNR requests can only be honored by EMS providers if a **written POLST/DNR order**, signed by the patient's Attending Practitioner, is presented.
9. Healthcare decisions other than POLST/DNR may be made by the Power of Attorney for Healthcare, if the document provides for this. If in doubt, begin treatment and contact Medical Direction.
10. Bring any documents presented to the hospital.

LIVING WILL / SURROGATES

8. POLST/DNR requests can only be honored by EMS providers if a **written POLST/DNR order**, signed by the patient's Attending Practitioner, is presented.
9. Living Wills **may not** be honored by EMS providers. Begin or continue treatment. Contact Medical Direction, explain the situation, and follow any orders received.
10. There are **no situations** in which a surrogate can directly give instructions to EMS providers. Begin or continue treatment. Contact Medical Direction, explain the situation and follow any orders received.

BLS / ALS

POLST / DNR ORDERS / WITHHOLDING TREATMENT

8. Confirm the validity of the POLST/DNR order according to System-specific policy. Call Medical Direction if any item is missing. Components of a valid POLST/DNR Order:
 - Must be a written document that has not been revoked
 - It must contain all of the following:
 - **Name of patient**
 - **Resuscitation Orders** (section A of the POLST form) or the equivalent language in a previous DNR form (the words "Do Not Resuscitate", "Withhold Treatment")
 - **Two signatures required**

- **Evidence of consent** – any one of the following:
 - Signature of the patient, or
 - Signature of Legal Guardian, or
 - Signature of Durable Power of Attorney for Health Care Agent, or
 - Signature of surrogate decision maker under the Illinois Health Care Surrogate Act
 - Signature of Attending Practitioner - physician, licensed resident (second year or higher), advanced practice nurse or physician assistant
 - Effective date (date the practitioner signed the order)
9. If the POLST/DNR order is valid, resuscitative efforts will be withheld. Follow any and all specific orders found on the POLST/DNR order
 10. In the event the patient has a valid POLST/DNR order but IS NOT in cardiac or respiratory arrest with a decompensating condition, begin [ADULT INITIAL MEDICAL CARE](#), if you are considering intubation contact Medical Direction. If unable to contact Medical Direction, follow appropriate SMO
 11. If resuscitative efforts were begun prior to the POLST/DNR form being present, efforts may be withdrawn once the validity of the order is confirmed. Contact Medical Direction and follow any orders received
 12. The Illinois POLST form is preferred, but POLST / DNR forms from other states or entities are acceptable provided they meet the minimum criteria defined above.

BLS / ALS

OBVIOUSLY DEAD PATIENTS / “TRIPLE ZERO”

8. Obviously dead patients are those found to be non-breathing, pulseless, asystolic, and have one or more of the following long-term indications of death. No resuscitative efforts are to be initiated for the patients listed below:
 - Decapitation
 - Rigor Mortis without hypothermia
 - Profound dependent lividity
 - Decomposition
 - Mummification/putrefaction
 - Incineration
 - Frozen state
9. For patients appearing to be obviously dead but not listed above, contact Medical Direction and explain the situation. Indicate that you have a “Triple Zero”. Follow any orders received.
10. Document pronouncement time and physician name.

BLS / ALS

HOSPICE PATIENTS NOT IN ARREST

8. If patients are registered in a hospice program, initiate BLS care and immediately contact Medical Direction for orders on treatment and disposition. Inform Medical Direction of the presence of written treatment orders and/or valid POLST/DNR orders.

ALS

PATIENTS IN PERSISTENT ASYSTOLE / PEA

Note: An order from a physician is required before stopping treatment under this SMO.

8. Provide patient care, per [ADULT ASYSTOLE / PEA SMO](#), based on the patient’s condition
9. Contact Medical Direction and explain the events of the call. Report treatments administered and any patient responses
 - Confirm all of the following:
 - The patient is an adult, is normothermic, and experienced an arrest unwitnessed by EMS
 - The patient remains in asystole or PEA
 - Confirm **ADEQUATE AIRWAY** and **VASCULAR ACCESS**

- Drug therapy, defibrillation, and CPR attempts have been carried out according to SMO
 - Waveform capnography under 10 mmHg for more than 20 minutes and/or duration of pulselessness (if available)
 - If the physician determines it is appropriate, he or she may give the order to discontinue medical treatment. It is not necessary that all four above criteria be met.
 - **Only an ED physician may make the determination to withdraw resuscitative efforts.**
 - Consult with Medical Direction for disposition of patient. Record time of pronouncement and physician name
10. If the physician gives the order to continue resuscitative efforts until you reach the hospital, treat per appropriate SMO
 11. If unable to establish communications with Medical Direction, resuscitative efforts should continue until the patient reaches the hospital

BLS / ALS

BLUNT TRAUMATIC ARREST

8. Blunt trauma patient without vital signs upon arrival, may be considered for withholding resuscitative efforts with approval of Medical Direction

GENERAL**DEFIBRILLATION AND CARIOVERSION**
ENERGY DOSING GUIDE

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

Manufacturer	Medtronic ADAPTIV®	Philips SMART®	Zoll®
Energy Waveform	Biphasic Truncated Exponential (BTE)	Biphasic Truncated Exponential (BTE)	Rectilinear Biphasic (RB)
Adult Defibrillation Initial Shock (AD1)	200 J	All shocks at 150 J	120 J
Adult Second Shock (AD2)	300 J		150 J
Adult Third and Subsequent Shocks (AD3)	360 J		200 J
Adult Synchronized Cardioversion Initial Dose	100 J	100 J	100 J
Adult Synchronized Cardioversion Dose Progression	150 J, 200 J, 300 J, 360 J	150 J, 200 J	120 J, 150 J, 200 J
Pediatric Defibrillation Initial Shock Dose	2 J/kg	2 J/kg	2 J/kg
Pediatric Defibrillation Subsequent Shocks Dose	4 J/kg	4 J/kg	4 J/kg
Pediatric Synchronized Cardioversion Initial Dose	1 J/kg	1 J/kg	1 J/kg
Pediatric Synchronized Cardioversion Dose Progression	2 J/kg, 4 J/kg	2 J/kg, 2 J/kg	2 J/kg, 4 J/kg

GENERAL**EMERGING INFECTIOUS DISEASE**
GUIDANCE

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

	Influenza-Like Illness (ILI)	Ebola (EVD)	Middle East Respiratory Syndrome (MERS-CoV)	Severe Acute Respiratory Syndrome (SARS-CoV)
Onset	Sudden	Symptoms appear 2-21 days after exposure (average 9 days)	Symptoms appear following close contact with infected host, 2-13 days after contact (average 5 days)	The incubation period is typically 2-7 days, although as long as 14 days has been reported.
Signs & Symptoms	Fever, chills, cough, sore throat, runny or stuffy nose, muscle or body aches, headache, fatigue, vomiting and diarrhea	Fever, severe headache, muscle pain, vomiting, diarrhea, stomach pain, unexplained bleeding and bruising	Fever, chills / rigors, headache, nonproductive cough, dyspnea, muscle pain. Can be asymptomatic.	Initially fever. Headache, overall feeling of discomfort, body and muscle aches, respiratory symptoms, diarrhea. After 2-7 days, may develop dry cough. Most develop pneumonia.

Transmission	Mainly droplet contact from sneezing, coughing or talking. Less common is droplet on a surface.	Direct contact with body or body fluids (including but not limited to feces, saliva, urine, emesis, semen). Infected persons are not contagious until symptomatic.	Travel within 14 days to or contact with someone who has traveled to affected area, or with infected person. Close contact while not applying strict hygiene standards.	Direct contact with respiratory secretions or body fluids of infected person, including droplet contact through close proximity.
PPE	Surgical or N95 mask and gloves. Place surgical mask on pt.	Ebola-level PPE includes isolation suit, PAPR / N-95 mask with surgical hood / CBRN mask, double-gloving, rubber boots or surgical shoe covers, CDC guidelines for donning / doffing.	Gown, goggles, PAPR / N-95 / CBRN mask, surgical mask with visor (over N-95 if used), double gloving, standard + contact + airborne isolation precautions. Place surgical mask on pt.	Gown, goggles, PAPR / N-95 / CBRN mask, surgical mask with visor (over N-95 if used), double gloving, standard + contact + airborne isolation precautions. Place surgical mask on pt.
BLS	IMC, appropriate PPE	IMC, isolation, early Medical Direction notification.	IMC, isolation, early MC notification.	IMC, isolation, early MC notification.
ALS	IMC, appropriate PPE, consider treating for dehydration.	IMC, isolation, early MC notification. Treat per SMOs, but no procedures in a moving ambulance.	IMC, isolation, early MC notification. Treat per SMOs,	IMC, isolation, early MC notification. Treat per SMOs,
PIPS Required	No	Yes	No	No
Cleaning	All surfaces cleaned and disinfected.	Vehicle decon per CDC guidelines.	Vehicle decon per CDC guidelines.	Vehicle decon per CDC guidelines.

PIPS = Patient Isolation Packaging System

ADULT**ADULT GLASGOW COMA SCALE (GCS)**

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

EYE OPENING	Spontaneous	4
	To voice	3
	To pain	2
	None	1
VERBAL RESPONSE	Oriented	5
	Confused speech	4
	Inappropriate words	3
	Incomprehensible sounds	2
	None	1
MOTOR RESPONSE	Obeys commands	6
	Localizes pain	5
	Withdraws to pain	4
	Abnormal flexion to pain	3
	Abnormal extension	2
	None	1
TOTAL GLASGOW COME SCALE SCORE:		3 – 15

PEDIATRIC**PEDIATRIC GLASGOW COMA SCALE**
(PGCS)

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

	Age >1 Year	Age ≤ 1 Year		Score
Eye Opening	Spontaneously	Spontaneously		4
	To Verbal Command	To Shout		3
	To Pain	To Pain		2
	No Response	No Response		1
Motor Response	Obeys Commands	Spontaneous		6
	Localizes Pain	Localizes Pain		5
	Flexion – Withdraws	Flexion – Withdraws		4
	Decorticate Posturing	Decorticate Posturing		3
	Decerebrate Posturing	Decerebrate Posturing		2
	No Response	No Response		1
Verbal Response	Age >5 Years	Age 2 – 5 Years	Age 0 – 23 Months	
	Oriented	Appropriate Words / Phrases	Smiles / Coos Appropriately	5
	Disoriented / Confused	Inappropriate Words	Cries but is Consolable	4
	Inappropriate Words	Persistent Cries and Screams	Persistent Inappropriate Crying and/or Screaming	3
	Incomprehensible Sounds	Grunts	Grunts, Agitated, or Restless	2
	No Response	No Response	No Response	1
TOTAL PEDIATRIC GLASGOW COME SCALE SCORE:				3 – 15

ADULT	<u>AIRWAY OBSTRUCTION</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

BLS / ALS

1. **ADULT INITIAL MEDICAL CARE**
2. Determine responsiveness and ability to speak
3. Position patient to open airway:
 - If unconscious: use head tilt/chin lift
 - If suspected cervical spine injury: use modified jaw thrust
4. Assess breathlessness/degree of airway impairment
5. Monitor for:
 - Cardiac dysrhythmias and/or arrest
 - EtCO₂ waveform changes (if available)

<u>CONSCIOUS</u>		<u>UNCONSCIOUS</u>
<u>Able to Speak</u>	<u>Unable to Speak</u>	
Do not interfere with patient's own attempts to clear airway	<ul style="list-style-type: none"> • 5 abdominal thrusts with patient standing or sitting <li style="text-align: center;"><u>OR</u> • 5 chest thrusts if patient in 2nd – 3rd trimester of pregnancy or morbidly obese • Repeat if no response • If successful: complete <u>ADULT INITIAL MEDICAL CARE</u>, and transport 	<p>Any time the efforts to clear the airway are successful, complete <u>ADULT INITIAL MEDICAL CARE</u>, and transport. Attempt to ventilate. If obstructed:</p> <ul style="list-style-type: none"> • Attempt to clear away in the presence of visible airway obstruction unless contraindicated • Consider suction • If still obstructed and unconscious, repeat above steps until airway is clear <p><u>ALS</u></p> <ul style="list-style-type: none"> • Visualize airway with laryngoscope and attempt to clear using Magill forceps and/or suction • Still obstructed: Attempt forced ventilation • Still obstructed: Attempt INTUBATION. If able to place ET tube but unable to achieve chest rise, consider advancing the ET tube to push foreign body into right main stem bronchus, then pull tube back and attempt ventilation • Still obstructed: Perform CRICOTHYROIDOTOMY with HIGH FiO₂ VENTILATION and transport
	<u>Still Obstructed</u>	
	<ul style="list-style-type: none"> • While transporting, continue any of the above steps you are reasonably able to perform 	

ADULT

ASTHMA or COPD WITH WHEEZING / REACTIVE LOWER AIRWAY

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: 04/01/2023

BLS / ALS

1. ADULT INITIAL MEDICAL CARE

- Consider possibility of congestive heart failure/pulmonary edema in the wheezing patient. Refer to ADULT PULMONARY EDEMA SMO as indicated.

BLS

- If patient has prescribed inhaler, determine time of last usage. If appropriate, assist patient with prescribed inhaler. At discretion of Medical Direction, additional doses of inhaler may be given
- Reassess patient's respiratory status and begin transport
- ALBUTEROL (VENTOLIN®) 2.5 mg (3 mL) via nebulizer per System-specific procedure

ALS

2. PICK ONLY ONE OF THE FOLLOWING MEDICATIONS:

<u>ALBUTEROL / IPRATROPIUM (DUONEB®)</u>		<u>ALBUTEROL (VENTOLIN®)</u>		<u>LEVALBUTEROL (XOPENEX®)</u>		<u>TERBUTALINE (BRETHINE®)</u>
2.5 – 3.0 mg / 0.5 mg via nebulizer (dose of albuterol contained may vary)	O R	For use when Albuterol / Ipratropium (DuoNeb®) not available	O R	For use when Albuterol (Ventolin®) not available	O R	For use when Levalbuterol (Xopenex®) not available and EMS System approval
		2.5 mg (3 mL) via nebulizer		0.63 mg via nebulizer		0.25 mg SQ x 1, NO REPEAT DOSE

3. PARTIAL RESPONSE

MAY REPEAT SAME NEBULIZED MEDICATION CHOSEN ABOVE ONCE

<u>ALBUTEROL / IPRATROPIUM (DUONEB®)</u> 2.5 – 3.0 mg / 0.5 mg via nebulizer	O R	<u>ALBUTEROL (VENTOLIN®)</u> 2.5 mg (3 mL) via nebulizer	O R	<u>LEVALBUTEROL (XOPENEX®)</u> 0.63 mg via nebulizer
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4. NO RESPONSE OR SEVERE DISTRESS

CPAP per System-specific procedure with SAME beta agonist treatment used prior unless contraindicated. Terbutaline NOT authorized for nebulizer use.

<u>ALBUTEROL / IPRATROPIUM (DUONEB®)</u> 2.5 – 3.0 mg / 0.5 mg via IN-LINE nebulizer	O R	<u>ALBUTEROL (VENTOLIN®)</u> 2.5 mg (3 mL) via IN-LINE nebulizer	O R	<u>LEVALBUTEROL (XOPENEX®)</u> 0.63 mg via IN-LINE nebulizer
5. <u>PATIENT REMAINS IN SEVERE DISTRESS</u>				
<u>EPINEPHRINE (ADRENALIN®)</u> 1:1000 0.3 mg IM If patient age >50 years and/or cardiac disease history, contact Medical Direction prior to administration of epinephrine. IF SEVERE DISTRESS PERSISTS FOLLOWING EPINEPHRINE (Adrenaline®): <u>MAGNESIUM SULFATE</u> 2g infusion (Mix in 50 – 100 mL of D ₅ W or NS) over 10 minutes				
6. <u>IF IMMINENT RESPIRATORY ARREST</u>				
INTUBATE and administer SAME beta agonist treatment used prior, via IN-LINE nebulizer (Terbutaline NOT authorized for nebulizer use) Refer to <u>ADULT DRUG ASSISTED INTUBATION SMO</u> as needed. If not already given, administer <u>MAGNESIUM SULFATE</u> 2g INFUSION (Mix in 50 – 100 mL of D ₅ W or NS) over 10 minutes				
<u>ALBUTEROL / IPRATROPIUM (DUONEB®)</u> 2.5 – 3.0 mg / 0.5 mg via IN-LINE nebulizer	O R	<u>ALBUTEROL (VENTOLIN®)</u> 2.5 mg (3 mL) via IN-LINE nebulizer	O R	<u>LEVALBUTEROL (XOPENEX®)</u> 0.63 mg via IN-LINE nebulizer

Note:

- If intubated, respiratory rate may need to be **decreased** to achieve a target EtCO₂ value of 35-45 mmHg
- **CPAP per System-specific procedure with SAME in-line beta agonist treatment used prior unless contraindicated. Terbutaline NOT authorized for nebulizer use.**
 - **Max PEEP of 10 cmH₂O.**
 - If patient becomes unstable (SBP <100 mmHg) lower PEEP.
 - If patient continues to worsen, remove CPAP.
 - If **GCS ≤ 10** or deteriorating GCS, remove CPAP

ADULT

PARTIAL UPPER AIRWAY OBSTRUCTION / EPIGLOTTITIS

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

BLS / ALS

1. ADULT INITIAL MEDICAL CARE
2. Prepare intubation/cricothyroidotomy/suction equipment

ALS

<u>STABLE</u>	<u>UNSTABLE</u>	
No cyanosis, effective air exchange	Cyanosis, marked stridor or respiratory distress, severely diminished or absent breath sounds, evidence of inadequate air exchange, bradycardic, altered mental status, retractions, ineffective air exchange, actual or impending respiratory arrest	
<u>NORMAL SALINE</u> 6 mL via nebulizer may repeat x 1	<u>BREATHING</u>	<u>APNEIC</u>
If wheezing, refer to <u>ADULT ASTHMA/COPD WITH WHEEZING /REACTIVE LOWER AIRWAY DISEASE.</u> Do not delay transport waiting for a response	<u>EPINEPHRINE (ADRENALIN®)</u> <u>1:1000</u> 3 mg (3 mL) via nebulizer	<ul style="list-style-type: none">• HIGH FiO₂ VENTILATION• Attempt ENDOTRACHEAL INTUBATION x 1 if unable to ventilate• If intubation unsuccessful, perform CRICOTHYROID-OTOMY per System-specific procedure

ADULT	DRUG ASSISTED INTUBATION	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: 04/01/2023

ALS

This SMO is to be used for patients >15 years of age.

IF <15 YEARS OF AGE, SEE PEDIATRIC DRUG ASSISTED INTUBATION SMO

The following are situations which may require the use of this SMO to facilitate intubation:

- Glasgow Coma Scale score of ≤8
- Imminent respiratory arrest or imminent tracheal/laryngeal closure due to severe edema secondary to trauma or anaphylaxis
- Flail chest and/or open chest wounds with cyanosis and a respiratory rate <10 or >30

1. **ADULT INITIAL MEDICAL CARE**

2. Prepare patient and equipment for procedure:

- Position patient in sniffing position unless cervical spine injury suspected
- **HIGH FiO₂ VENTILATION prior to and in-between steps of this procedure as able**

3. Give sedation. **Choose only 1** medication to use for sedation based on patient condition:

<u>KETAMINE (KETALAR®)</u>		<u>ETOMIDATE (AMIDATE®)</u>		<u>MIDAZOLAM (VERSED®)</u>
Use with caution in STEMI patients due to potential increase in heart rate		Do NOT use in septic patients		For use when Etomidate is not available and/or Ketamine contraindicated or not available
<u>INITIAL DOSE:</u>	O R	<u>INITIAL DOSE:</u>	O R	<u>INITIAL DOSE:</u>
2 mg/kg Slow IV/IO, Max dose 500 mg		0.6 mg/kg Slow IV/IO, Max dose 40 mg		5 mg Slow IV/IO
<u>REPEAT DOSE:</u>		<u>REPEAT DOSE:</u>		<u>REPEAT DOSE:</u>
1 mg/kg Slow IV/IO, Max dose 250 mg		None		After 5 minutes, if SBP ≥90 mmHg: 2 mg slow IV/IO x 1

4. Attempt oral or oral in-line intubation via System-specific procedure

5. After passing of tube, verify placement:

- Adequate chest expansion bilaterally and symmetrically
- Positive bilateral breath sounds
- Negative epigastric sounds
- Waveform capnography, end tidal CO₂ detector and/or esophageal detection device per System-specific procedure

6. Secure endotracheal tube and reassess placement

7. Continuous waveform EtCO₂ monitoring (if available)

If unsuccessful intubation, continue High FiO₂ ventilation, contact Medical Direction, and be prepared for alternative/rescue airway device use or CRICHOthyroidotomy per System-specific procedure.

ADULT	POST-INTUBATION SEDATION	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 07/01/2023	REVIEWED: N/A	REVISED: N/A

ALS

This SMO is to be used for patients >15 years of age.

IF <15 YEARS OF AGE, SEE PEDIATRIC DRUG ASSISTED INTUBATION SMO

1. Following successful endotracheal intubation, give sedation to facilitate continued mechanical or manual ventilation. Choose one medication to use; do **NOT** switch between sedatives.

<u>KETAMINE (KETALAR®)</u>		<u>MIDAZOLAM (VERSED®)</u>
Do not use if SBP >180 mmHg		Do not use if SBP <90 mmHg
<u>INITIAL DOSE:</u>		<u>INITIAL DOSE:</u>
50 mg SLOW IV/IO over 60 seconds	O R	2 mg SLOW IV/IO over 60 seconds
<u>REPEAT DOSE:</u>		<u>REPEAT DOSE:</u>
50 mg SLOW IV/IO over 60 seconds every 5 minutes up to 200 mg post-intubation total		2 mg SLOW IV/IO over 60 seconds every 2 minutes up to 10 mg total

ADULT**ASYSTOLE / PULSELESS ELECTRICAL ACTIVITY (PEA)**

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

ALS

1. **High Quality Continuous CPR** until defibrillator available for rhythm check
 - While patient is pulseless, **CPR should be continuous except for pausing for ventilation (unless intubated), or rhythm check.**
 - Rhythm checks should be less than 10 seconds and pulse checks only if an organized rhythm is observed
 - Search for potentially reversible causes:

Possible Cause	Field Treatment
Cardiogenic Shock	<u>CARDIOGENIC SHOCK SMO</u>
Heart Failure	<u>PULMONARY EDEMA SMO</u>
Hypovolemia	IV fluid bolus(es)
Hypoxemia	Ventilations with high FiO ₂ , verify ET tube placement
Hypoglycemia	<u>DIABETIC / GLUCOSE EMERGENCIES SMO</u>
Hyperthermia	<u>HEAT EMERGENCIES SMO</u>
Hypothermia	<u>COLD EMERGENCIES SMO</u>
Hyperkalemia	<u>HYPERKALEMIA SMO</u>
Side effects of medications / overdose	<u>ADULT TOXICOLOGICAL SMOS</u>
Tamponade (cardiac)	IV fluid bolus(es) to optimize preload
Tension Pneumothorax	Pleural decompression of affected side

2. Give [EPINEPHRINE \(ADRENALIN®\) 1:10,000](#) 1 mg IV/IO
3. **REPEAT** [EPINEPHRINE \(ADRENALIN®\)](#) every 3-5 minutes while pulseless
4. After 4th [EPINEPHRINE \(ADRENALIN®\)](#) give [SODIUM BICARBONATE 8.4%](#) 50 mEq, IV/IO unless contraindicated.
5. If return of spontaneous circulation (ROSC) occurs, refer to [ADULT RETURN OF SPONTANEOUS CIRCULATION SMO](#)
6. If patient remains in persistent asystole, consider withdrawal of resuscitation per [WITHDRAWING OF RESUSCITATIVE EFFORTS SMO](#)
7. Notes:
 - Flush all IV/IO push meds with 20 mL IV fluid
 - If EtCO₂ has a sudden rise and reading is above 30 mmHg, PEA is ***unlikely*** and ROSC may have occurred.

ADULT	<u>BRADYDYSRHYTHMIAS</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

ALS

STABLE: alert, oriented, normotensive

1. **ADULT INITIAL MEDICAL CARE**

- Anticipate the need for transcutaneous pacing (TCP)

UNSTABLE: altered mental status with hypoperfusion (SBP <90 mmHg)

2. **ATROPINE 0.5 mg rapid IV/IO**

- May **REPEAT ATROPINE** every 3-5 minutes up to 3 mg until pacing available.

3. If patient remains hypotensive and pulse <60 BPM: initiate **TRANSCUTANEOUS PACING (TCP)** at an initial rate of 70 BPM per System-specific procedure.

4. If patient remains symptomatic (whether or not HR >60), give **DOPAMINE (INTROPIN®) 5 – 10 mcg/kg/min IVPB.**

Notes:

- If patient is symptomatic, **do not delay pacing** while awaiting IV access or **atropine** to take effect
- Use **ATROPINE** with **EXTREME CAUTION** in cardiac ischemia or STEMI / infarction, to avoid worsening ischemia or infarction (especially in advanced heart blocks)
- **Do not give lidocaine** to patients in AV blocks or IVR

ADULT**CARDIOGENIC SHOCK**

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: 04/01/2023

ALS

1. **ADULT INITIAL MEDICAL CARE**, with HIGH FiO₂ or VENTILATION
2. If hypovolemic and/or dehydrated and lungs are clear, **NORMAL SALINE** IV fluid bolus 200 mL x 2
3. Treat underlying dysrhythmias per appropriate SMO
4. If pulse >60 BPM, begin **DOPAMINE (INTROPIN®)** at 5 mcg/kg/min and increase every 3 min to achieve systolic BP ≥90 mmHg to a maximum of 20 mcg/kg/min.

Body Weight		DOPAMINE DOSING CHART Must use Microdrip (60 gtts/mL) IV tubing			
		5 mcg/kg/min	10 mcg/kg/min	15 mcg/kg/min	20 mcg/kg/min
Lbs	Kg	gtts/min	gtts/min	gtts/min	gtts/min
80	36	7	14	20	27
100	45	9	17	26	34
120	55	10	20	31	41
140	64	12	24	36	48
160	73	14	27	41	55
180	82	15	31	46	61
200	91	17	34	51	68
220	100	19	38	56	75
240	109	20	41	61	82
260	118	22	44	66	89
280	127	24	48	72	95
300	136	26	51	77	102

Individual dosage requirements may vary widely. The above drip rates cover a dosage range of 5 – 20 mcg/kg/min. This chart applies **ONLY** to a concentration of 1600 mcg/mL (typically 800 mg/500 mL or 400 mg/250 mL and with **60 gtt** tubing)

Note:

- If pulse rate <60, treat per **ADULT BRADYDYSRHYTHMIAS SMO**

IV INFUSION BY WEIGHT CALCULATION

Volume on Hand (mL) x Desired Dose x Patient Weight x GTTS Set (60, 20, 10, etc.)
Drug on Hand (mg or mcg) x Time in Minutes

ADULT

LEFT VENTRICULAR ASSIST DEVICE (LVAD)

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

BLS / ALS

1. ADULT INITIAL MEDICAL CARE

2. Assess patient condition

- Check for pulses, if pulses absent, the NIBP may be ***inaccurate***
- Check the percutaneous lead for damage or signs of infection at insertion site, ensure site is covered with sterile materials
- Check for any and all audible and visual alarms on control module
 - Patient should have a device reference guide available, if none can be found contact Medical Direction
- If patient unable to communicate with crew, attempt to utilize family member or care giver for history and device assistance

3. If patient is stable **contact the patients LVAD coordinator if not already done**

4. Assess LVAD equipment:

- Wires and connectors are undamaged
- No warning lights or audible alarm from control module
- Check battery levels
- Check the patients "VAD" bag for extra equipment
- If the patient has the display screen attached, record the findings and convey them to Medical Direction and patients LVAD coordinator
 - Normal flows: 4-8 L/min (RPM x Power)
 - Normal RPM: 8,000-10,000 (average)
 - Normal power: <10 watts

5. If alarm sounds, check control unit and treat cause per reference guide if available

ALS

6. If pump fails, a red "broken heart" symbol (HeartMate LVAS) will illuminate and audible alarm will sound

- Replace all batteries (**1 at a time**)
- If still no change after replacing batteries, switch to back up control unit if available
- If no unit display is attached, attach pump to display monitor
- If cardiac arrest occurs after these steps, initiate CPR and follow appropriate SMO

7. If the patient experiences **arrhythmias** follow the appropriate SMO (**defib pads should be placed anterior/posterior**)

8. If cardiac arrest occurs attempt to treat underlying **arrhythmias** per appropriate SMO with electrical and drug therapy **PRIOR** to CPR (CPR may be immediately started if cardiac arrest occurs if patient is unresponsive with fatal arrhythmia in the presence of a total LVAD failure or cut/severed drive line).

Note:

- Bring any and all additional LVAD equipment with the patient to the ED. Do NOT restart device if off for more than 5 minutes

ADULT

NON-TRAUMATIC CARDIAC ARREST (EDWARD EMS ONLY)

APPROVED FOR USE BY:

EDWARD EMSS ONLY

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

ALS

1. Verify pulselessness
2. If arrest is **witnessed** by EMS providers, **DEFIBRILLATE** as soon as available.
3. Perform High Quality Continuous Manual CPR until a mechanical compression device is applied to patient. **While patient is pulseless, CPR should be continuous except for pausing for CPR Pad placement, anterior/posterior defib pad placement, placing patient on a mechanical compression device and for rhythm checks. Rhythm checks should be less than 10 seconds if not utilizing the “SEE THRU CPR” on the ZOLL X Series Monitor.**
4. Place patient on a mechanical compression device set for continuous compressions, if available
5. **ALL CLOTHING WILL BE REMOVED FROM THE WAIST UP prior to placing patient on a mechanical compression device.**
 - **Resume Manual compressions if the mechanical compression device stops working**
6. Insert properly sized I-Gel as the front-line airway
7. **Passive Oxygenation at 8 LPM for up to 2 minutes if manpower is limited**
8. **Assist ventilations with BVM when manpower is available.**
9. Attach an impedance threshold device (ITD) to I-Gel, followed by Capnography sensor, the viral filter and then BVM.
10. **ITD should be removed if at any time CPR has stopped for more than 10 seconds or if ROSC has been achieved and the patient has a pulse**
11. “Heads-up” CPR at 30°
12. Establish IV/IO access
13. Defibrillate at recommended energy if rhythm is shockable (VF or Pulseless VT) and Capnography is 20 or above.
14. Resume CPR for 2 minutes
15. **EPINEPHRINE (ADRENALIN®) 1:10,000 1 mg IV/IO** if capnography is 20 or above. After 2 minutes of CPR, **DEFIBRILLATE** at maximum energy if capnography is 20 or above.
16. **AMIODARONE (CORDARONE®) 300 mg IV/IO.** After 2 minutes of CPR, **DEFIBRILLATE** at maximum energy if capnography is 20 or above.
17. **EPINEPHRINE (ADRENALIN®) 1:10,000 1 mg IV/IO.** If capnography is 20 or above. After 2 minutes of CPR, **DEFIBRILLATE** at maximum energy if capnography is 20 or above.
18. **AMIODARONE (CORDARONE®) 150 MG IV/IO** as repeat dose. After 2 minutes of CPR, **DEFIBRILLATE** at maximum energy if capnography is 20 or above.
19. Repeat **EPINEPHRINE/CPR/DEFIBRILLATION** sequence every 2-3 minutes as long as pulseless rhythm persists and patient’s capnography is 20 or above. After 4th **EPINEPHRINE** give **SODIUM BICARBONATE 8.4% 50 mEq IV/IO.**
20. If VF converts to a supraventricular rhythm with a pulse and has not received >300 mg of AMIODARONE, begin an **AMIODARONE (CORDARONE®) infusion of 150 mg/100 mL over 10 minutes.**

Note:

- Flush all IV/IO push meds with 20 mL IV fluid
- For AMIODARONE shortages, [LIDOCAINE \(XYLOCAINE®\)](#) is the alternate. 1 mg/kg IV/IO (100 mg max single dose), re-bolus at 0.5 mg/kg IV/IO (50 mg max single dose), up to 3 mg/kg (300 mg) max total dose.
- If using LIDOCAINE and patient experiences ROSC, bolus LIDOCAINE 1 mg/kg IV/IO (100 mg max single dose); after ten minutes re-bolus 0.5 mg/kg (50 mg max single dose). May repeat bolus every 10 min as needed.

For defibrillation and cardioversion energy settings, refer to
[DEFIBRILLATION & CARIOVERSION ENERGIES](#)

**EDWARD
EMSS ONLY**

ADULT

POLYMORPHIC VENTRICULAR TACHYCARDIA WITH A PULSE (TORSADES DE POINTES)

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

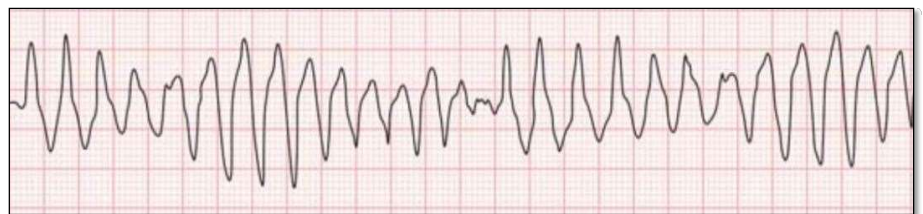
ALS

1. ADULT INITIAL MEDICAL CARE, with HIGH FiO₂
2. Treatment based on patient condition:

<u>STABLE</u>		<u>UNSTABLE</u>	
Alert, oriented, normotensive		Altered mental status and/or signs of hypoperfusion (SBP <90 mmHg), heart rate >150 BPM	
<u>MAGNESIUM SULFATE</u> 2 g IV/IO over 2 minutes		Sustained polymorphic VT: <u>DEFIBRILLATE</u> at recommended initial energy <u>MAGNESIUM SULFATE</u> 2 g IV/IO over 2 minutes	
<u>Improvement</u>	<u>No Improvement</u>	<u>Improvement</u>	<u>No Improvement</u>
Monitor and reassess patient while following appropriate SMO Improvement	Contact Medical Direction	Monitor and reassess patient while following appropriate SMO	<u>MAGNESIUM SULFATE</u> 2 g IV/IO over 2 minutes x 1 after 5 minutes <u>No Improvement</u> Repeat <u>DEFIBRILLATE</u> at recommended energy. Check rhythm and pulse between shocks

Note:

- Polymorphic VT/Torsades de Pointes typically presents in a recurring pattern of self-terminating, hemodynamically unstable wide complex tachycardia in context of a known or suspected long QT abnormality, often with an underlying associated bradycardia.



- Polymorphic VT cannot be synchronized reliably because of the differing characteristics of each QRS complex and requires high-energy unsynchronized defibrillation.
- If polymorphic VT becomes pulseless or deteriorates to ventricular fibrillation (VF), defibrillate immediately per VENTRICULAR FIBRILLATION / PULSELESS VENTRICULAR TACHYCARDIA SMO.

ADULT

RETURN OF SPONTANEOUS CIRCULATION (ROSC)

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 07/01/2023

REVIEWED: N/A

REVISED: 03/25/2024

ALS

1. ADULT INITIAL MEDICAL CARE

- Elevate Head-of-bed to 15-30°, unless SBP <90 mmHg
- Ensure adequate airway and ventilation. If patient remains unresponsive, consider placing advanced airway if not already done so.
 - Maintain ventilation to target normal EtCO₂ range of 35 – 45 mmHg. Do **NOT** hyperventilate.
 - If patient begins to regain consciousness and advanced airway is in place, consider ADULT POST-INTUBATION SEDATION SMO if SBP >90 mmHg.
- If patient presented in shockable rhythm (VF or Pulseless VT), and has not already received maximum doses of Amiodarone or Lidocaine, initiate antiarrhythmic infusion using same medication utilized during resuscitation:

AMIODARONE (CORDARONE®)

If 450 mg total dose has **NOT** been given already:

150 mg / 100 mL over 10 minutes

O
R

LIDOCAINE (XYLOCAINE®)

If AMIODARONE not available:

**1 mg/kg IV/IO (100 mg max single dose);
after ten minutes re-bolus 0.5 mg/kg (50 mg
max single dose)**

May repeat bolus every 10 min as needed.

- If not already obtained, check blood glucose. If <60 mg/dL, refer to ADULT DIABETIC/GLUCOSE EMERGENCIES.
- NORMAL SALINE IV FLUID BOLUS to maintain SBP >90 mmHg or MAP >65 mmHg; repeat as necessary.
 - Titrate infusion rate based on clinical presentation and SPB ≥90 mmHg.
 - Reassess vital signs every 5 minutes and closely monitor for respiratory changes.
 - Unless patient is hypothermic, the use of warm fluids is not recommended for post-arrest care

CDHEMS / EDWARD EMS PROVIDERS

- For persistent hypotension despite fluid administration (≥500 mL total fluid given), EPINEPHRINE (ADRENALIN®) 100 mcg (1 mL of a 1:10,000 pre-fill syringe) SLOW IV/IO with normal saline running at wide open rate. May repeat every 3 – 5 minutes x 2.
- If SBP remains <90 mmHg despite Epinephrine, refer to ADULT CARDIOGENIC SHOCK SMO for DOPAMINE (INTROPIN®) dosing.

GOOD SAMARITAN EMS / LOYOLA EMS PROVIDERS

- If SBP remains <90 mmHg despite Epinephrine, refer to ADULT CARDIOGENIC SHOCK SMO for DOPAMINE (INTROPIN®) dosing.

- Obtain 12-Lead EKG
 - Notify Medical Direction immediately if indications of ST-segment elevation / STEMI present
- Ensure normothermia. Do not initiate external cooling.
- If patient becomes pulseless, refer to appropriate cardiac arrest SMO:
 - ADULT ASYSTOLE / PEA
 - ADULT VENTRICULAR FIBRILLATION / PULSELESS VENTRICULAR TACHYCARDIA

ADULT

PULMONARY EDEMA (SECONDARY TO HEART FAILURE)

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

BLS / ALS

STABLE: alert, oriented, normotensive or hypertensive

1. ADULT INITIAL MEDICAL CARE

- Place patient in High Fowler's position, if systolic BP >100 mmHg
- Consider need and method of delivery of supplemental oxygen

ALS

<u>STABLE</u>	<u>UNSTABLE</u>
Alert, oriented, normotensive, or hypertensive	Altered mental status and/or signs of hypoperfusion
<ul style="list-style-type: none">• If systolic BP >140 mmHg, give <u>NITROGLYCERIN (NITROSTAT®) 0.4 mg SL</u>• CPAP per System-specific procedure unless contraindicated. Max PEEP of 10 cmH2O. If patient becomes unstable (SBP <100 mmHg) lower PEEP. If patient continues to worsen, remove CPAP. If <u>GCS ≤ 10</u> or deteriorating GCS remove CPAP.• If systolic BP ≥140 mmHg, repeat <u>NITROGLYCERIN (NITROSTAT®) 0.4 mg SL</u>; may repeat q five minutes if systolic BP ≥140 mmHg	<ul style="list-style-type: none">• HIGH FiO₂ or VENTILATION• Determine pulse rate<ul style="list-style-type: none">○ If Pulse <60 BPM: treat per <u>ADULT BRADYDYSRHYTHMIAS SMO</u>○ If Pulse ≥60 BPM: treat per <u>ADULT CARDIOGENIC SHOCK SMO</u>

CPAP Inclusion Criteria:

Respiratory Distress AND 2 or more of the following:

- Retractions/accessory muscle use
- Respiratory rate >25
- SpO₂ <90%
- Exam consistent with pulmonary edema
- Bilateral or diffuse rales/crackles

Note:

- Oral medications for erectile dysfunction (Viagra®, Levitra®, Cialis®, Adcirca®, Staxyn®, sildenafil, tadalafil, vardenafil) or pulmonary hypertension (Revatio®, Adempas®, sildenafil, riociguat) may potentiate the effect of nitrates. **Consult Medical Direction** prior to administering nitroglycerin in these situations.

ADULT

PULSELESS POLYMORPHIC VENTRICULAR TACHYCARDIA (TORSADES DE POINTES)

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: 03/25/2024

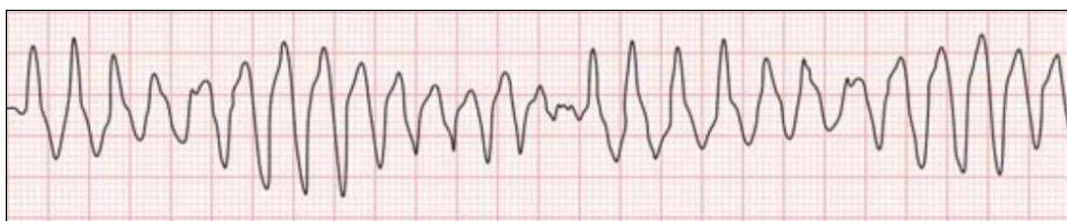
ALS

1. Verify pulselessness
2. If arrest is witnessed by EMS providers, **DEFIBRILLATE** as soon as available. If defibrillator is not immediately available, perform precordial thump
3. **High Quality Continuous CPR** until defibrillator available
 - While patient is pulseless, CPR should be continuous except for pausing for ventilation (unless intubated or supraglottic airway in place), rhythm check or shock delivery.
 - Rhythm checks should be less than 10 seconds and pulse checks only if an organized rhythm is observed
4. **DEFIBRILLATE** at recommended initial energy
5. **Resume CPR immediately following defibrillation.** After 2 minutes, pause CPR and check rhythm and pulse
 - If pulseless, resume CPR and **DEFIBRILLATE** at second recommended energy as soon as defibrillator charged
 - If rhythm converted after defibrillation, treat per appropriate SMO
6. If pulseless, resume CPR. Maintain adequate ventilation, if needed place advanced airway. Establish IV/IO ACCESS.
7. **MAGNESIUM SULFATE 2 g IV/IO diluted in 10mL normal saline over 2 minutes.** After 2 minutes of CPR, **DEFIBRILLATE** if indicated at maximum energy.
8. **EPINEPHRINE (ADRENALIN®) 1:10,000 1 mg IV/IO.** After 2 minutes of CPR, **DEFIBRILLATE** at maximum energy. Repeat every 3-5 minutes as indicated.
9. **DEFIBRILLATE** if indicated at maximum energy.
10. Repeat **EPINEPHRINE/CPR/DEFIBRILLATION** sequence every 2-3 minutes as long as pulseless rhythm persists.
11. After 4th **EPINEPHRINE** administer **SODIUM BICARBONATE 50 mEq IV/IO** unless contraindicated.

Note:

- Flush all IV/IO push meds with 20 mL IV fluid
- Defibrillation sequence is CPR → Rhythm Check → CPR (defibrillator charging or medication administration) → Shock
- If Polymorphic VT persists, may repeat **MAGNESIUM SULFATE 2g IV/IO** x 1 after 5 minutes to a total of 4 g IV/IO.

For defibrillation and cardioversion energy settings, please refer to **DEFIBRILLATION & CARディオVERSION ENERGIES**



ADULT

SUPRAVENTRICULAR TACHYCARDIA (NARROW COMPLEX, RATE >150 BPM)

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

ALS

1. ADULT INITIAL MEDICAL CARE

- Start IV in proximal vein
- 2. Valsalva maneuver while preparing medication
- 3. Search for potentially reversible causes:
 - Pain
 - Anemia
 - Heart failure
 - Amphetamines
 - Fever
 - Anxiety
 - Myocardial ischemia
 - Cardiorespiratory compromise
 - Dehydration
 - Cocaine uses
 - Hypoperfusion
 - Body temperature extremes
 - Sepsis
 - Medications (Caffeine, diet pills, thyroid meds, decongestants)
 - History of dysrhythmia

Rate Problem	Tachycardia causing decreased cardiac output, treat per this SMO
Pump Problem	HR >100 with signs of left ventricular failure, refer to <u>CARDIOGENIC SHOCK</u> or <u>PULMONARY EDEMA</u>
Volume or Vessel Problem	Refer to <u>ALLERGIC REACTION – NON-ANAPHYLAXIS</u> / <u>ALLERGIC REACTION – ANAPHYLAXIS</u> or <u>SEPSIS</u>
Metabolic Problem	Refer to <u>DIABETIC / GLUCOSE EMERGENCIES TOXICOLOGIC EMERGENCIES</u> , or <u>SEPSIS</u>
Temperature Problem	Treat per <u>HEAT EMERGENCIES SMO</u> / <u>COLD EMERGENCIES</u> or <u>SEPSIS</u>

<u>STABLE</u>	<u>UNSTABLE</u>
Alert, oriented, normotensive	Altered mental status and signs of hypoperfusion (SBP <90 mmHg)
<u>ADENOSINE (ADENOCARD®)</u> 6 mg RAPID IV with 10 mL NS flush	<u>SYNCHRONIZED CARディオVERSION AT 100 J</u>
<u>IF NO CHANGE IN RHYTHM:</u>	<u>IF RHYTHM DOES NOT CONVERT:</u>
<u>ADENOSINE (ADENOCARD®)</u> 12 mg RAPID IV with 10 mL NS flush	<u>SYNCHRONIZED CARディオVERSION</u> at recommended energy. Check rhythm and pulse between shocks
<u>IF NO CHANGE IN RHYTHM AFTER 2ND DOSE:</u>	<u>IF RHYTHM DOES NOT CONVERT AFTER 2ND SHOCK:</u>
<u>ADENOSINE (ADENOCARD®)</u> 12 mg RAPID IV with 10 mL NS flush	Consider <u>ADULT CARディオGENIC SHOCK SMO</u> , or contact Medical Direction

Notes:

- **ADENOSINE (Adenocard®)** should not be given to irregular rapid rhythms

For defibrillation and cardioversion energy settings, please refer to DEFIBRILLATION & CARディオVERSION ENERGIES

ADULT

SUSPECTED ACUTE CORONARY SYNDROME (ACS)



APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

BLS / ALS

STABLE: alert, oriented, normotensive

1. ADULT INITIAL MEDICAL CARE

- Inquire about the patient's medication use. If any of the following have been taken in the past 48 hours withhold **NITROGLYCERIN (NTG)**:

- Sildenafil (Viagra®)
- vardenafil (Levitra®, Staxyn®)
- tadalafil (Cialis®)
- sildenafil citrate (Revatio®)
- riociguat (Adempas®)

- Hyperoxia should be avoided

2. Give **ASPIRIN 324 mg (4 x 81 mg tablets)** chewed and swallowed

- unless contraindicated
- may omit if patient has taken ≥ 324 mg aspirin within 8 hours
- give aspirin to achieve a total dose of 324 mg within the last 8 hours

BLS

3. If patient has physician-prescribed Nitroglycerin and has not taken the maximum dose, and if **SBP >140 mmHg**, patient may self-administer **NITROGLYCERIN (NITROSTAT®) 0.4 mg SL X 1, unless contraindicated.**

ALS

4. **12-Lead ECG.** Obtain and review early, preferably with initial vital signs and **before** NTG administration.

- If ST-segment elevation indicative of acute myocardial infarction (STEMI) seen, condition is considered **TIME-SENSITIVE**. **Contact Medical Direction at the initial point of contact, as soon as a clinical impression has been formed from assessment findings.** Communicate ECG to Medical Direction ASAP; transmit ECG (if System mandated) and/or relay ST-segment findings and machine interpretation

5. Maintain continuous ECG monitoring

6. If systolic BP >140 mmHg and symptomatic: **NITROGLYCERIN (NITROSTAT®) 0.4 mg SL X 1**; may repeat **NITROGLYCERIN (NITROSTAT®) 0.4 mg SL X 1** in 5 minutes if systolic BP >140 mmHg and IV established (NOTE: Initial NTG may be given prior to IV start)

7. If patient has pain and systolic BP >100 mmHg, treat per **ADULT PAIN CONTROL SMO**

UNSTABLE: altered mental status and/or signs of hypoperfusion

BLS

1. ADULT INITIAL MEDICAL CARE

2. Initiate **Expeditious Transport**. Notify Medical Direction.

ALS

3. If pulse <60 BPM, treat per **ADULT BRADYDYSRHYTHMIA SMO**,

4. If pulse ≥ 60 BPM, treat per **ADULT CARDIOGENIC SHOCK SMO**,

5. Treat dysrhythmias per appropriate SMO

Special considerations:

- If ST-segment elevation in leads II, III, aVF (possible inferior wall MI), avoid lidocaine.
- Acute coronary syndrome (ACS) in patients <30 years old is uncommon and judgment should be used in implementing this protocol unless 12-lead ECG findings consistent with ACS are seen

ADULT

VENTRICULAR FIBRILLATION / PULSELESS VENTRICULAR TACHYCARDIA

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: 04/01/2023

ALS

1. Verify pulselessness and that patient is in shockable rhythm

- **NOTE: LIDOCAINE (Xylocaine®) is only to be utilized when Amiodarone (Cordarone®) is not available.**

<u>ARREST WITNESSED BY EMS</u>		<u>UNWITNESSED ARREST</u>	
<u>DEFIBRILLATE</u> as soon as available. If defibrillator is not immediately available, perform PRECORDIAL THUMP		2 minutes of CPR while defibrillator is being prepared.	
		<u>DEFIBRILLATE</u> at recommended initial energy	
Immediately begin/resume CPR for 2 minutes Only pause for ventilation (unless intubated), rhythm check or defib Rhythm / pulse checks should be less than 10 seconds			
2. RHYTHM CHECK AFTER 2 MINUTES OF CPR			
<u>VF / PULSELESS VT</u>	<u>ASYSTOLE / PEA</u>	<u>ROSC</u>	
<ul style="list-style-type: none">• <u>DEFIBRILLATE</u> at recommended repeat energy• Immediately resume CPR for 2 minutes, maintain adequate ventilation• Place advanced airway, established IV/IO access.<ul style="list-style-type: none">• <u>EPINEPHRINE (ADRENALIN®) 1:10,000</u> 1 mg IV/IO	Refer to <u>ADULT ASYSTOLE / PEA SMO</u>	Refer to <u>ADULT RETURN OF SPONTANEOUS CIRCULATION (ROSC) SMO</u>	
3. RHYTHM CHECK AFTER 2 MINUTES OF CPR			
<u>VF / PULSELESS VT</u>	<u>ASYSTOLE / PEA</u>	<u>ROSC</u>	
<u>DEFIBRILLATE</u> at maximum energy Immediately resume CPR for 2 minutes, maintain adequate ventilation. <u>AMIODARONE (CORDARONE®)</u> 300 mg IV/IO	<u>DEFIBRILLATE</u> at maximum energy Immediately resume CPR for 2 minutes, maintain adequate ventilation. <u>LIDOCAINE (XYLOCAINE®)</u> 1 mg/kg IV/IO (100 mg max single dose)	Refer to <u>ADULT ASYSTOLE / PEA SMO</u>	Refer to <u>ADULT RETURN OF SPONTANEOUS CIRCULATION (ROSC) SMO</u>

4. RHYTHM CHECK AFTER 2 MINUTES OF CPR

<u>VF / PULSELESS VT</u>	<u>ASYSTOLE / PEA</u>	<u>ROSC</u>
<p><u>DEFIBRILLATE</u> at maximum energy Immediately resume CPR for 2 Minutes, maintain adequate ventilation</p> <p><u>EPINEPHRINE</u> <u>(ADRENALIN®) 1:10,000</u> 1 mg IV/IO</p>	<p>Refer to <u>ADULT ASYSTOLE / PEA</u> <u>SMO</u></p>	<p>Refer to <u>ADULT RETURN OF SPONTANEOUS CIRCULATION (ROSC)</u> <u>SMO</u></p>

5. RHYTHM CHECK AFTER 2 MINUTES OF CPR

<u>VF / PULSELESS VT</u>		<u>ASYSTOLE / PEA</u>	<u>ROSC</u>
<p><u>DEFIBRILLATE</u> at maximum energy Immediately resume CPR for 2 minutes, maintain adequate ventilation.</p> <p><u>AMIODARONE</u> <u>(CORDARONE®)</u> 150 mg IV/IO</p>	<p>OR</p> <p><u>DEFIBRILLATE</u> at maximum energy Immediately resume CPR for 2 minutes, maintain adequate ventilation.</p> <p><u>LIDOCAINE</u> <u>(XYLOCAINE®)</u> 0.5 mg/kg IV/IO (50 mg max single dose)</p>	<p>Refer to <u>ADULT ASYSTOLE / PEA</u> <u>SMO</u></p>	<p>Refer to <u>ADULT RETURN OF SPONTANEOUS CIRCULATION (ROSC)</u> <u>SMO</u></p>

6. RHYTHM CHECK AFTER 2 MINUTES OF CPR

<u>VF / PULSELESS VT</u>	<u>ASYSTOLE / PEA</u>	<u>ROSC</u>
<p><u>DEFIBRILLATE</u> at maximum energy Immediately resume CPR for 2 Minutes, maintain adequate ventilation</p> <p><u>EPINEPHRINE</u> <u>(ADRENALIN®) 1:10,000</u> 1 mg IV/IO</p>	<p>Refer to <u>ADULT ASYSTOLE / PEA</u> <u>SMO</u></p>	<p>Refer to <u>ADULT RETURN OF SPONTANEOUS CIRCULATION (ROSC)</u> <u>SMO</u></p>

7. RHYTHM CHECK AFTER 2 MINUTES OF CPR

<u>VF / PULSELESS VT</u>	<u>ASYSTOLE / PEA</u>	<u>ROSC</u>

DEFIBRILLATE at maximum energy

Immediately resume CPR for 2 Minutes, maintain adequate ventilation

EPINEPHRINE
(ADRENALIN®) 1:10,000
1 mg IV/IO

After 4th **EPINEPHRINE**, administer **SODIUM BICARBONATE 8.4%** 50 mEq IV/IO

NOTE: If using LIDOCAINE (Xylocaine®) and patient has not received max total dose, may repeat x 1 at 0.5 mg/kg, 50 mg max.

Refer to
ADULT ASYSTOLE / PEA
SMO

Refer to
ADULT RETURN OF SPONTANEOUS CIRCULATION (ROSC)
SMO

8. RHYTHM CHECK AFTER 2 MINUTES OF CPR

VF / PULSELESS VT

ASYSTOLE / PEA

ROSC

DEFIBRILLATE at maximum energy

Repeat cycle of 2 minutes of CPR, **EPINEPHRINE** (Adrenaline®) 1:10,000 1 mg IV/IO and defibrillation until arrival at destination or termination of resuscitation.

No further Amiodarone, Lidocaine, or Sodium Bicarbonate doses are authorized.

Refer to
ADULT ASYSTOLE / PEA
SMO

Refer to
ADULT RETURN OF SPONTANEOUS CIRCULATION (ROSC)
SMO

For defibrillation and cardioversion energy settings, please refer to **DEFIBRILLATION & CARDIOVERSION ENERGIES**

ADULT**WIDE COMPLEX TACHYCARDIA**

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: 04/01/2023

BLS / ALS

1. [ADULT INITIAL MEDICAL CARE](#), with HIGH FiO₂

ALS

2. Treatment based on patient presentation:

<u>STABLE</u>	<u>UNSTABLE</u>
Alert, oriented, normotensive	Altered mental status and signs of hypoperfusion (SBP <90 mmHg), heart rate >150 BPM
Obtain 12-Lead ECG	<u>SYNCHRONIZED CARADIOVERSION</u> AT 100 J Do not delay cardioversion attempts for IV start.
<u>AMIODARONE (CORDARONE®)</u> 150 mg IV/IO over 10 min	<u>AMIODARONE (CORDARONE®)</u> 150 mg IV/IO over 10 min
<u>NO CHANGE IN RHYTHM:</u>	<u>NO CHANGE IN RHYTHM:</u>
Contact Medical Direction to consider <u>ADENOSINE (ADENOCARD®)</u> .	Repeat <u>SYNCHRONIZED CARADIOVERSION</u> at recommended energy. Check rhythm and pulse between shocks

Note:

- If VT becomes pulseless or deteriorates to ventricular fibrillation (VF), defibrillate immediately per [VENTRICULAR FIBRILLATION / PULSELESS VENTRICULAR TACHYCARDIA SMO](#)
- For defibrillation and cardioversion energy settings, please refer to [DEFIBRILLATION & CARADIOVERSION ENERGIES](#)

ADULT	INITIAL MEDICAL CARE	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

BLS / ALS

1. Loosen tight clothing and reassure patient
2. Place patient in Semi-Fowler's position or position of comfort unless contraindicated
3. Enhance airway adequacy by suctioning and/or insertion of an oropharyngeal or nasopharyngeal airway as needed
4. Evaluate oxygen saturation and consider need for supplemental oxygen, especially for patients with dyspnea, suspected hypoxemia or altered mental status
5. Titrate oxygen administration based on respiratory assessment:

Respiratory Assessment / Findings	Oxygen Administration
Adequate rate/depth, minimal distress, mild hypoxia, baseline SpO ₂ 92-94% (88-91% COPD)	Low FiO ₂
Adequate rate/depth, moderate/severe distress, SpO ₂ <92% (<88% COPD)	High FiO ₂
Inadequate rate/depth with moderate/severe distress, unstable	High FiO ₂ by BVM ventilation

Target SpO₂ 94 – 98%. If patient has a history of COPD, target SpO₂ of 92 – 98%

6. Hyperoxia contraindicated in uncomplicated myocardial infarction/STEMI, post-cardiac arrest, acute exacerbations of COPD, stroke, newly born/neonatal resuscitation.
7. If supplemental oxygen is used in these patients, the goal is to relieve hypoxemia without causing hyperoxia (target SpO₂ 94%, not 100%)
8. Waveform capnography (if available) for, but not limited to, spontaneously breathing patients with respiratory distress, metabolic disorders, altered mental status

ALS

1. Ensure patent airway; secure airway if patient condition warrants
 - If unable to intubate, consider use of alternate airway / rescue device
 - If intubated, waveform capnography should be utilized at all times
2. If altered mental status:
 - Place patient on side (vomiting precautions), unless contraindicated
 - Check glucose level. If glucose <60, treat per [ADULT DIABETIC / GLUCOSE EMERGENCIES](#)
3. Evaluate cardiac rhythm if indicated.
 - All ALS patients do not necessarily require continuous ECG monitoring or transmission of a strip to the telemetry base station; refer to system-specific policies
 - **Obtain 12-lead ECG on all patients with cardiac-related complaints (pain, dysrhythmias) syncope and stroke**
4. Establish venous access via IV of [NORMAL SALINE](#) at 10 mL/hr with regular drip tubing or consider **SALINE LOCK** as indicated by patient condition. Attempt x 2 unless requested to continue or situation indicates. Use warmed IV fluid if available and not contraindicated (hyperthermic)
 - Per system-specific policy, **INTRAOSSEOUS ACCESS** may be utilized for patients who require emergent vascular access

- *Continuing use of central venous access devices is acceptable for transport if initiated by RN or physician. Document the name of the on-scene healthcare provider or trained caregiver, i.e., parent. Contact Medical Direction prior to administration of any medications*
- *If patient encountered with continuous infusion devices or home medication devices, transport unaltered and contact Medical Direction*

9. **PAIN CONTROL** should be considered in the care of all patients. Ask patient to rate pain on a scale of 0-10
10. If patient is experiencing nausea or vomiting, consider giving **ONDANSETRON (ZOFRAN®) ODT 4 mg tab or 4 mg slow IV x 1 dose only (if available)**
11. Attempt to contact Medical Direction as soon as possible prior to transport. Relay assessment and treatment information, including patient response to treatment

Some patients with time-sensitive illness or injury will benefit from limiting scene time AND early notification of Medical Direction to mobilize hospital response teams. Contact Medical Direction at the initial point of contact, as soon as a clinical impression has been formed from assessment findings.

These patients include, but are not limited to, STEMI FINDINGS IN SUSPECTED ACUTE CORONARY SYNDROMES, ABNORMAL STROKE SCALE IN STROKE, CARDIAC ARREST IN PREGNANCY, and those meeting TRAUMA CENTER BYPASS CRITERIA IN ADULT AND PEDIATRIC TRAUMA.

12. Interpretation of ECG and vital signs a minimum of every 15 minutes and after each ALS intervention; a minimum of every 5 minutes if unstable
13. Transport to the closest appropriate hospital.
 - **By law, a physician must certify that the benefits outweigh the risks of transport to a facility other than the closest appropriate hospital, unless patient meets CATEGORY I TRAUMA CRITERIA**
14. Pursuant to Illinois Vehicle Code Section 625 ILCS 5/11-1421, the use of visual and audible warning devices from the scene to the hospital is authorized by the EMS Medical Director when deemed necessary by the healthcare provider(s) caring for the patient (refer to System-specific policy)
15. **Certain situations may require that treatment, which would normally be administered on the scene, be attempted while transporting to the hospital. The patient's condition or behavior, which necessitated abbreviated scene time, should be thoroughly documented.**

ADULT	<u>ACUTE ABDOMINAL PAIN</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: 04/01/2023

BLS / ALS

1. **ADULT INITIAL MEDICAL CARE**

ALS

2. Consider pain management if SBP >100 mmHg per **ADULT PAIN CONTROL SMO**
3. If patient is experiencing nausea or vomiting, administer **ONDANSETRON (ZOFRAN®)**:

IV / IO	No IV / IO
4 mg SLOW push x 1	4 mg ODT x 1

UNSTABLE: altered mental status and/or signs of hypoperfusion

4. Establish large bore IV while transporting. Administer **NORMAL SALINE IV fluid boluses**, repeat as necessary. Titrate infusion rate based on clinical presentation and SBP ≥90 mmHg. Reassess vital signs every 5 minutes and closely monitor for respiratory changes.
5. If suspected ruptured abdominal aortic aneurysm (mottling distal to mass / pain) or ectopic pregnancy, early aggressive fluid resuscitation should be considered to maintain a SBP of 90 mmHg.
6. If signs and symptoms of shock present, establish second IV.

ADULT

ALLERGIC REACTION: NON-ANAPHYLAXIS

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: 04/01/2023

**WHEEZING, DIFFUSE HIVES, OR PRIOR HISTORY OF SYSTEMIC REACTION,
WITHOUT SIGNS OF HYPOPERFUSION**

BLS / ALS

1. [ADULT INITIAL MEDICAL CARE](#)
2. Apply ice/cold pack to site as needed

ALS

3. [DIPHENHYDRAMINE \(BENADRYL®\)](#)
50 mg slow IV/IO/IM x one dose.

**IF CONDITION MAINTAINS OR
IMPROVES**

IF PATIENT CONDITION WORSENS

(Increased wheezing, hives, retching,
vomiting or decreasing blood pressure)

4. Monitor vital signs and patient condition
and transport

5. Refer to [ALLERGIC REACTION:
ANAPHYLAXIS SMO](#)

If wheezing, refer to
[ASTHMA OR COPD WITH WHEEZING / REACTIVE LOWER AIRWAY DISEASE SMO](#)

ADULT**ALLERGIC REACTION: ANAPHYLAXIS**

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: 04/01/2023

Multisystem reaction with signs of hypoperfusion (SBP <90 mmHg, mottling, pallor, etc.), vomiting, altered mental status or severe respiratory distress/wheezing/hypoxia

BLS / ALS1. **ADULT INITIAL MEDICAL CARE****BLS**

- At the direction of Medical Control, give **ONE DOSE EPINEPHRINE (ADRENALIN®) 1:1,000 0.3 mg (0.3 mL) 1:1000 IM via auto-injector device** per system specific protocol.
- If wheezing, refer to **ADULT ASTHMA OR COPD WITH WHEEZING / REACTIVE LOWER AIRWAY DISEASE SMO**

ALS**NORMAL SALINE IV/IO, titrated to SBP ≥90 mmHg**

Reassess vital signs every 5 minutes and closely monitor for respiratory changes

EPINEPHRINE (ADRENALIN®)

If age >50 years and/or cardiac disease history, contact Medical Direction **PRIOR** to administration of Epinephrine

IV/IO**IM****1:10,000 CONCENTRATION****1:1,000 CONCENTRATION**

0.1 mg slow IV/IO every 3 minutes up to
MAX TOTAL DOSE of 0.5 mg

O
R

0.3 mg IM,
May repeat x 1 in 3 minutes if needed

DIPHENHYDRAMINE (BENADRYL®)**IV/IO****IM**

50 mg SLOW push
No repeat dose

O
R

50 mg
No repeat dose

If wheezing, refer to

ADULT ASTHMA OR COPD WITH WHEEZING / REACTIVE LOWER AIRWAY DISEASE SMO

ADULT	<u>BEHAVIORAL EMERGENCIES</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: 01/22/2024

BLS / ALS

1. Assess **SCENE AND PERSONAL SAFETY**. If concern for safety exists, immediately contact Law Enforcement. Above all, **DO NOTHING TO JEOPARDIZE YOUR OWN SAFETY**.
2. **ADULT INITIAL MEDICAL CARE**, as situation warrants.
 - Determine and document if patient is a threat to self or others, or if patient is unable to care or provide for self. Do not leave patient alone.
 - Protect patients from harm to self or others.
 - ALS may be waived in favor of basic transport if patient is uncooperative or dangerous.
3. Attempt to de-escalate, calm, and re-orient the patient as safely able. Do not participate in patient delusions or hallucinations.
4. If patient is combative, use restraints as necessary per System-specific policy.
5. Consider medical etiologies of behavior disorder and treat according to appropriate SMO:
 - Hypotension
 - Hypoxia
 - Substance Abuse / Overdose
 - Seizure / Postictal
 - Neurologic Disease (stroke, intracerebral hemorrhage, head injury, etc.)
 - Metabolic imbalance (hypoglycemia, thyroid disease, etc.)
6. Consult Medical Direction from the scene in **ALL** instances where refusal of transport is being considered, or in situations in which EMS is unable to access patient or provide care due to unsafe circumstances.

ALS

<u>SEVERE ANXIETY OR AGITATION IN WHICH PHYSICAL RESTRAINT IS NOT FEASIBLE OR SUCCESSFUL, AND AFTER DE-ESCALATION ATTEMPTS</u>		
<u>IV/IO</u>	<u>NO IV/IO</u>	
	<u>< 70 KG BODY WEIGHT</u>	<u>≥ 70 KG BODY WEIGHT</u>
<u>MIDAZOLAM (VERSED®)</u> 2 mg increments IV/IO every 2 minutes up to 10 mg total as necessary.	<u>MIDAZOLAM (VERSED®)</u> 2.5 mg IM	<u>MIDAZOLAM (VERSED®)</u> 5 mg IM

ADULT

CHRONIC RENAL FAILURE / DIALYSIS

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: 04/01/2023

BLS / ALS

1. ADULT INITIAL MEDICAL CARE

- Do not take BP in same arm as shunt or fistula
- Control obvious hemorrhage from shunt or fistula (arterial bleeding) with tourniquet

ALS

2. **IVs should not** be attempted on the extremity with the shunt or fistula
3. When emergencies occur during dialysis, the staff may leave the access needles in place, and clamp the tubing. If this is the only accessible site, request their assistance to connect your IV tubing.

ALTERED MENTAL STATUS OR SIGNS OF HYPOPERFUSION

- NORMAL SALINE IV FLUID BOLUSES, repeat as necessary. Titrate infusion rate based on clinical presentation and SPB ≥ 90 mmHg. Reassess vital signs every 5 minutes and closely monitor for respiratory changes.
- If widened QRS complex, suspect hyperkalemia and follow ADULT SUSPECTED HYPERKALEMIA SMO
- If unresponsive to IV fluid bolus(es) or pulmonary edema present, treat per ADULT CARDIOGENIC SHOCK SMO

CARDIAC ARREST

- Treat per appropriate cardiac arrest SMO:
- ADULT VENTRICULAR FIBRILLATION / PULSELESS VENTRICULAR TACHYCARDIA
- ADULT ASYSTOLE / PEA
- ADULT PULSELESS POLYMORPHIC VENTRICULAR TACHYCARDIA

ADULT**DIABETIC / GLUCOSE EMERGENCIES**

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: 04/01/2023

BLS / ALS1. **ADULT INITIAL MEDICAL CARE**

- Check medication history and last oral intake
 - Vomiting and seizure precautions
2. Check and record blood glucose level, if available
 3. If blood sugar < 60 mg/dL and patient is alert with intact gag reflex, consider the administration of **ORAL GLUCOSE (GLUCOSE 15®)**

ALS**HYPOGLYCEMIA**

Blood Glucose < 60 mg/dL

If patient has an existing insulin pump, PAUSE infusion.**Be cautious to not remove infusion line from patient.**

If patient is able to, have them assist in disabling pump. Family may also be able to assist.

Note: For other pumps not listed, look for a “pause” or “suspend” function.

Medtronic® MiniMed**OmniPod DASH®****Tandem T:SLIM®**

1. From the main menu, select “SUSPEND” and press “ACT.”
2. SUSPEND will flash on the screen; press ACT again to stop the pump.

1. Tap the menu icon on the home screen.
2. Tap “Suspend Insulin.”
3. Scroll to the desired duration of suspension (at least 1 hour).
4. Tap “Suspend Insulin”
5. Tap “Yes” to confirm.

1. From the home screen, select “OPTIONS.”
2. Tap “STOP INSULIN”
3. Tap “STOP” to confirm.

Notify receiving facility that patient’s insulin pump has been stopped, and duration of suspension if applicable.**IV / IO****NO IV / IO****DEXTROSE 10%****DEXTROSE 50%
(25G/50ML)****GLUCAGON
(GLUCAGEN®)**

25g / 250mL

**Titrated to desired effect
(improvement in mental
status or blood glucose
level)**

O
R**For use when Dextrose
10% not available**

**25g SLOW push,
titrated to desired effect
(improvement in mental
status or blood glucose
level)**

1 mg IM x 1

Reassess blood glucose level at least every 10 minutes while dextrose is being administered.**If altered mental status persists despite improvement in blood glucose level, refer to appropriate SMO.**

HYPERGLYCEMIA

Blood Glucose > 180 mg/dL **WITH** signs of hyperglycemia / ketoacidosis

IV / IO

NORMAL SALINE IV/IO FLUID BOLUSES. Titrate infusion rate based on clinical presentation. Reassess vital signs every 5 minutes and closely monitor for respiratory changes.

ADULT	<u>HYPOVOLEMIC SHOCK</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 07/01/2023	REVIEWED: N/A	REVISED: N/A

Consider in patients with non-traumatic hemorrhage including GI bleeding, ruptured ectopic pregnancy, ruptured aortic aneurysm, etc. If known or suspected traumatic injury with hypotension, refer to [ADULT HEMORRHAGIC SHOCK SMO](#).

BLS / ALS

1. [ADULT INITIAL MEDICAL CARE](#)

- Be alert for significant bleeding and/or amputations. For complete or partial extremity trauma, apply tourniquet(s). If needed, refer to [ADULT TRAUMA SMOs](#).

ALS

2. **Attempt VASCULAR ACCESS IV/IO while transporting.**
3. Treat according to SBP:

SBP ≥90 mmHg	SBP <90 mmHg
TKO fluid infusion rate. If SBP decreases to <90 mmHg, initiate fluid bolus.	Titrate IV fluid for a SBP of 90 mmHG (Unless signs and symptoms of herniation are present, then SBP target of 110 mmHg should be attempted).

ADULT	<u>PAIN CONTROL</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
	EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023

BLS / ALS

1. **ADULT INITIAL MEDICAL CARE**
2. If minor pain
 - consider ice packs as needed or appropriate

ALS

3. If pain is moderate to severe, and SBP ≥ 100 mmHg, consider one of the below. Once a medication is chosen, continue with that medication unless approved by Medical Direction:

<u>15 – 65 YEARS OF AGE</u>			
<u>FENTANYL</u> <u>(SUBLIMAZE®)</u>	<u>KETAMINE</u> <u>(KETALAR®)</u>	<u>MORPHINE</u>	<u>KETOROLAC</u> <u>(TORADOL®)</u>
		For use when Fentanyl and Ketamine NOT available	For use when Fentanyl, Ketamine, and Morphine NOT available
<u>INITIAL DOSE</u>			
1 mcg/kg IV/IO/IN up to 100 mcg*	0.1 mg/kg IV/IO up to 30 mg	2 mg IV/IO	15 mg IM or SLOW IV/IO
<u>REPEAT DOSE</u>			
0.5 mcg/kg IV/IO/IN up to 50 mcg*	0.05 mg/kg IV/IO up to 15 mg	2 mg every 5 min up to 10 mg	NONE
<u>>65 YEARS OF AGE</u>			
<u>FENTANYL</u> <u>(SUBLIMAZE®)</u>	<u>KETAMINE</u> <u>(KETALAR®)</u>	<u>MORPHINE</u>	<u>KETOROLAC</u> <u>(TORADOL®)</u>
		For use when Fentanyl and Ketamine NOT available	For use when Fentanyl, Ketamine, and Morphine NOT available
<u>INITIAL DOSE</u>			
0.5 mcg/kg IV/IO/IN up to 50 mcg*	NONE	2 mg IV/IO	NONE
<u>REPEAT DOSE</u>			
0.25 mcg/kg IV/IO/IN up to 25 mcg*	NONE	2 mg every 5 min up to 10 mg	NONE

***For patient weights >20kg, ROUND FENTANYL (SUBLIMAZE®) dose to nearest 10 microgram number. Doses ending in 5 or higher round up, and doses ending in 4 or less round down. Any dose ≥ 20 mcg should be whole numbers ending in a '0'.**

ADULT	<u>SEIZURE / STATUS EPILEPTICUS</u> <u>(NON-TRAUMATIC)</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
	EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023

BLS / ALS

1. **ADULT INITIAL MEDICAL CARE**

- **Special Considerations:**

- Clear and protect airway. Vomiting/aspiration precautions.
- Protect the patient from injury. Do not place anything in mouth if seizing.
- Position patient on side unless contraindicated
- Patients who are not actively seizing, but at risk for seizures due to underlying conditions, may not require benzodiazepine administration, but may benefit from antiepileptic medications (Levetiracetam (Keppra®) or Fosphenytoin (Cerebyx®)).

2. Check and record blood glucose level, if available.

- If <60 mg/dL treat per **ADULT DIABETIC / GLUCOSE EMERGENCIES**

ALS

3. If actively seizing, administer **MIDAZOLAM (VERSED®)**:

IV / IO	IN / IM	
2 mg increments IV every 2 minutes as needed to a maximum of 10 mg total	< 70 kg Body Weight	≥ 70 kg Body Weight
	2.5 mg	5 mg
	If additional doses of IN/IM MIDAZOLAM (Versed®) are needed, contact Medical Direction.	

ADULT**SEPSIS**

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

BLS / ALS

1. **ADULT INITIAL MEDICAL CARE**
2. Remove excess clothing if hyperthermia present
3. Consider sepsis if the patient has a known or suspected infection and meets two or more of the following criteria:
 - Temperature of $\geq 100.4^{\circ}\text{F}$ or $\leq 96.8^{\circ}\text{F}$
 - $\text{EtCO}_2 \leq 25$ mmHg with square waveform
 - Shock index of ≥ 1 ($\text{HR} \div \text{SBP}$)
 - $\text{HR} > 90$ bpm
4. Check and record blood glucose level, if available.
 - If < 60 mg/dL, treat per **ADULT DIABETIC / GLUCOSE EMERGENCIES**

ALS

5. Establish **LARGE BORE VASCULAR ACCESS IV/IO x 2**
6. If $\text{SBP} < 120$ mmHg, administer **NORMAL SALINE IV/IO** via pressure bag
 - Attempt to administer at least **1000 mL normal saline** prior to ED arrival (attempt total recommended dose of 30 mL/kg to be continued in the ED if not completed in the field)
 - Reassess vital signs every 5 minutes and closely monitor for respiratory changes
 - If pulmonary edema occurs, reduce IV to TKO and treat per **ADULT PULMONARY EDEMA SMO** with the exception of **NITROGLYCERIN** if organ dysfunction is present
7. Inform Medical Direction of **SEPSIS ALERT** prior to arrival

NOTE:

- **ETOMIDATE (AMIDATE®)** should be avoided in sepsis patients due to adrenal insufficiency
- Organ dysfunction is characterized by an $\text{SBP} < 100$ mmHg or a MAP of < 65 mmHg
- If hyperthermia is present warm fluids should be avoided
- Document amount of fluid given during care and transport
- When giving IV fluid bolus, only one infusion needs to be via pressure bag



APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

BLS / ALS**1. ADULT INITIAL MEDICAL CARE**

- Limit scene time
 - Contact Medical Direction at the initial point of contact, as soon as a clinical impression has been formed from assessment findings.
 - **ADULT SPINE MOTION RESTRICTION** for unconscious patient with suspected trauma
 - Ascertain and record time when **last at baseline/Last Known Well (LKW)**
 - Check and record blood glucose level. If <60 mg/dL, treat per **ADULT DIABETIC / GLUCOSE EMERGENCIES SMO**
2. Protect airway, suction as necessary.
 3. Maintain head and neck in neutral alignment. **DO NOT** flex neck. If systolic BP >90 mmHg, elevate head of bed 15-30°.
 4. Assess and record neurological status using **GLASGOW COMA SCORE** and note any changes.
 5. Assess patient using the **Cincinnati Prehospital Stroke Scale (CPSS)**, **F.A.S.T.**, or **NIH** per system specific procedures and document new findings:
 - New Facial Droop (have patient show teeth or smile)
 - New Arm Drift (patient closes eyes and hold both arms out)
 - New Speech Deficit (have patient say "You can't teach an old dog new tricks.")
 6. Transport patients with an unobtainable or normal **Cincinnati Prehospital Stroke Scale** with any of the following symptoms to the closest Stroke Center (Comprehensive or Primary):
 - New onset of sudden or persistent language deficiency
 - New onset of sudden unilateral numbness or weakness
 - New onset of severe sudden headache with vomiting with or without severe hypertension (systolic BP >200 mmHg)
 - New onset of sudden and persistent alteration of mental status
 - New onset of severe and sudden loss of balance/new onset ataxia
 - New onset of sudden visual field loss in one or both eyes

ALS

7. If **GCS ≤ 8**, secure airway; refer to **ADULT DRUG ASSISTED INTUBATION SMO**
8. Establish IV, limit IV attempts to 2
9. If seizure activity, refer to **ADULT SEIZURES / STATUS EPILEPTICUS SMO**
10. Contact Medical Direction early and communicate time when patient was last at baseline/Last Known Well (if known)
11. Obtain 12-lead ECG

ADULT	<u>SUSPECTED HYPERKALEMIA</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

BLS / ALS

1. **ADULT INITIAL MEDICAL CARE**

- Common complaints may include:
 - Generalized fatigue
 - Weakness
 - Palpitations
 - Paresthesia / paralysis

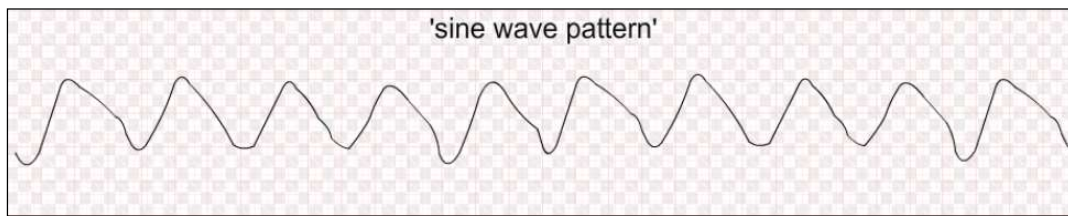
- Predisposing conditions may include:
 - Acute / Chronic renal failure
 - Potassium supplements, potassium-sparing diuretics, NSAIDs, beta-blockers, digoxin, digitalis glycosides
 - Rhabdomyolysis, burns, crush injuries
 - Metabolic acidosis, DKA, catabolic states

ALS

2. Treatment based on patient condition:

<u>STABLE</u>		<u>UNSTABLE</u>
<u>Normal 12 lead ECG</u>	<u>12-lead with Peaked T Wave</u>	Altered mental status and/or hypoperfusion with a widened QRS, complete loss of P wave or sine wave
Monitor patient	<u>SODIUM BICARBONATE 8.4%</u> 1 mEq/kg IV/IO, up to 50 mEq	<u>ALBUTEROL</u> 5.0 mg (6 mL) via nebulizer, may repeat x 1
		<u>SODIUM BICARBONATE 8.4%</u> 50 mEq IV/IO

3. If cardiac arrest occurs treat per appropriate SMO



ADULT

SYNCOPE / NEAR SYNCOPE NON-TRAUMATIC LOSS OF CONSCIOUSNESS

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: 04/01/2023

BLS / ALS

1. [ADULT INITIAL MEDICAL CARE](#)
2. Check and record blood glucose level. If <60 mg/dL, treat per [ADULT DIABETIC / GLUCOSE EMERGENCIES](#)

ALS

3. Anticipate underlying etiologies and treat according to appropriate SMO:
 - Metabolic - [ADULT DIABETIC / GLUCOSE EMERGENCIES](#), or [TOXICOLOGIC EMERGENCIES SMO](#)
 - Cardiac - Appropriate Cardiac SMO
 - Hypovolemia - Fluid resuscitation
 - CNS Disorder - Appropriate Medical or Trauma SMO
 - Vasovagal - [ADULT INITIAL MEDICAL CARE](#)

<u>STABLE</u>	<u>UNSTABLE</u>
Alert, oriented, normotensive	Persistent altered mental status or signs of hypoperfusion
Continuous monitoring, including 12-Lead, and waveform capnography (if available)	Continuous monitoring, including 12-Lead, and waveform capnography (if available)
	<u>NORMAL SALINE</u> IV/IO fluid boluses to maintain SBP ≥90 mmHg Reassess vital signs every 5 minutes and closely monitor for respiratory changes

ADULT	BETA BLOCKER OVERDOSE	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

Examples:

“-lol” medications; Atenolol (Tenormin®), Carvedilol, Metoprolol (Lopresor®, Toprol XL®), Propranolol (Inderal®); Nebivolol (Bystolic®)

BLS / ALS

1. **ADULT INITIAL MEDICAL CARE**

ALS

<u>STABLE</u>	<u>UNSTABLE</u>
Alert, oriented, normotensive	Hypoperfusion associated with bradycardia
Continuous monitoring	<u>GLUCAGON (GLUCAGEN®)</u> 1 mg slow IV. May repeat x 1
	If no response, consider TRANSCUTANEOUS PACING (TCP)



ADULT**CALCIUM CHANNEL BLOCKER OVERDOSE**

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

Examples:Amlodipine (Norvasc®), Diltiazem (Cardizem®), Nifedipine (Adalat®), Verapamil (Isoptin®), Nicardipine (Cardene®)**BLS / ALS**1. **ADULT INITIAL MEDICAL CARE****ALS**

<u>STABLE</u>	<u>UNSTABLE</u>
Alert, oriented, normotensive	Hypoperfusion associated with bradycardia
Continuous monitoring	<u>GLUCAGON (GLUCAGEN®)</u> 1 mg slow IV. May repeat x 1
	If no response, consider TRANSCUTANEOUS PACING (TCP)



ADULT	CARBON MONOXIDE EXPOSURE	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

BLS / ALS

1. **ADULT INITIAL MEDICAL CARE**
2. HAZMAT precautions as indicated
3. **HIGH FiO₂ or VENTILATION**
 - Consider cyanide poisoning
 - Do not rely on pulse oximetry
 - Keep patient as quiet as possible to minimize tissue oxygen demand

ALS (with SpCO monitoring capabilities)

0-3%	3-12%		>12%	
	<u>WITHOUT Symptoms</u>	<u>WITH Symptoms</u>	<u>GCS >8</u>	<u>GCS ≤ 8</u>
Normal Range	Observe and reassess vital signs and CO readings every 5-10 minutes	100% O2 via NRB mask and transport to the closest appropriate facility	100% O2 via NRB	<u>ADULT DRUG ASSISTED INTUBATION SMO</u>
		Reassess vital signs and CO readings every 5-10 minutes	Reassess vital signs and CO readings every 5-10 minutes	Contact Medical Direction for consideration of bypass to facility with a hyperbaric chamber

4. Patients with the following CO readings should be transported with or without symptoms of CO poisoning:
 - Adults with CO of ≥25%
 - Pediatric patients with CO of ≥15%
 - Pregnant patients with a CO of ≥15%
 - Any patient with advanced airway or acute mental status change and a CO of ≥15%

ADULT	<u>CLUB DRUGS</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

EXAMPLES:

GHB (Liquid G, Liquid Ecstasy), Ketamine (Special K, Vitamin K, Super K), MDMA (Ecstasy, XTC, ADAM, E), Foxy Methoxy, AMT, Coricidin (Triple-C)

BLS / ALS

1. [ADULT INITIAL MEDICAL CARE](#)
2. Contact Medical Direction for suspected use of club drugs



ADULT

CYANIDE EXPOSURE

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: 04/01/2023

BLS / ALS

1. [ADULT INITIAL MEDICAL CARE](#)
2. HAZMAT precautions as indicated

Signs of Cyanide Poisoning

- Altered Mental Status
- Confusion, Disoriented
- Tachypnea/Hyperpnea (early)
- Bradypnea/Apnea (late)
- Seizures or Coma
- Mydriasis (dilated pupils)
- Hypertension (early) / Hypotension (late)
- Cardiovascular collapse
- Vomiting

Symptoms of Cyanide Poisoning

- Headache
- Confusion
- Dyspnea
- Chest Tightness
- Nausea

ALS

3. Consider **NIPPV / CPAP**, per System-specific procedure
4. Consider **ADVANCED AIRWAY** if the patient has [GCS ≤ 8](#), inhalation burns, bradypnea or tachypnea, hoarse voice and/or impending airway closure
5. Consider 12-Lead ECG
6. If signs and symptoms consistent with cyanide poisoning and **if available, administer [HYDROXOCOBALAMIN \(CYANOKIT®\)](#) packaged as 2.5 g in 100 mL, concentration of 25 mg/mL 5 g over 15 min (15 mL/min)**
 - Medication requires its own dedicated IV line
 - Do not use existing IV for administration
 - Do not piggyback infusion
7. If hypotensive or pulseless, [NORMAL SALINE](#) 1,000 mL IV bolus.
 - If pulseless, refer to appropriate cardiac arrest SMO:
 - [ADULT VENTRICULAR FIBRILLATION / PULSELESS VENTRICULAR TACHYCARDIA](#)
 - [ADULT ASYSTOLE / PEA](#)
 - [ADULT POLYMORPHIC VENTRICULAR TACHYCARDIA - PULSELESS](#)

ADULT**CYCLIC ANTIDEPRESSANTS OVERDOSE**

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

Examples:

Amitriptyline (Elavil®), Desipramine (Norpramin®), Imipramine (Tofranil®), Nortriptyline (Pamelor®), Doxepine (Sinequan®), Clomipramine (Anafranil®), Amoxapine (Asendin®)

BLS / ALS1. **ADULT INITIAL MEDICAL CARE****ALS**

<u>STABLE</u>	<u>UNSTABLE</u>
Alert, oriented, normotensive, normal QRS complex	Hypoperfusion with wide QRS complex
Continuous monitoring	<u>NORMAL SALINE</u> 1,000 mL IV bolus
	<u>SODIUM BICARBONATE 8.4%</u> 1 mEq/kg IV/IO, max single dose of 50 mEq



Purpose:

To provide Illinois EMS agencies with guidelines on the appropriate use of nerve agent kits (**Mark 1 / DuoDote**). Kits contains antidotes to be used in instances of exposure to nerve agents (Sarin, Soman, Tabun, VX) or to muscarinic agents (Ipratropium, Cygon, Delnav malathion, Supracide parathion, Carbopenthion).

Key Provisions:

Only those licensed EMS providers that are governed by the State of Illinois EMS Act (210 ICLS 50) are authorized by any EMS Medical Director to utilize the special equipment and medications needed in WMD incidents, including **Mark 1/DuoDote** auto-injectors. When appropriate conditions warrant, contact Medical Direction. Other organized response teams not governed by the EMS Act may use the **Mark 1/DuoDote** auto-injectors on themselves or other team members when acting under the Illinois Emergency Management Agency Act (20 ILCS 3305).

Guidelines:

1. To utilize these kits, you must be an EMS agency or provider within an Illinois EMS System and participate within an EMS disaster preparedness plan
2. The decision to utilize the **Mark 1/DuoDote** antidote is authorized by this State protocol
3. At a minimum, an EMS provider must be an Illinois EMT at any level, including First Responder with additional training in the use of the auto-injector
4. **THE MARK 1 KIT IS NOT TO BE USED FOR PROPHYLAXIS.** The injectors are antidotes, not a preventative device. The **Mark 1/DuoDote** kit may be self-administered if you become exposed and are symptomatic. Exit immediately to the Safe Zone for further medical attention
5. Use of the Mark 1 kit is to be based on signs and symptoms of the patient. The suspicion or identified presence of a nerve agent is not sufficient reason to give these medications
6. Atropine may be given IV or IM in situations where **Mark 1/DuoDote** kits are not available
7. If available, diazepam (Valium) or midazolam (Versed) may be cautiously given under Medical Direction or by Standing Medical Orders, if convulsions are not controlled
8. When the nerve agents have been ingested, exposure may continue for some time due to slow absorption from the lower bowel. Fatal relapses have been reported after initial improvement. Continual medical monitoring and transport is mandatory.
9. If dermal exposure has occurred, decontamination is critical and should be done with standard decontamination procedures. Patient monitoring should be directed to the signs and symptoms, as with all nerve or muscarinic exposures. Continual medical monitoring and transport is mandatory.

Mnemonic for Nerve Agent exposure:

Salivation (excessive production of saliva)
Lacrimation (excessive tearing)
Urination (uncontrolled urine production)
Defecation (uncontrolled bowel movement)
Gastrointestinal distress (cramps)
Emesis (excessive vomiting)
Breathing difficulty
Arrhythmias
Miosis (pinpoint pupils)

EXPOSURE	CLINICAL	TREATMENT
No signs or symptoms	None	Remove to Safe Zone, decontaminate, observe and transport
Mild Exposure	SOB, wheezing, runny nose	One kit or atropine 2 mg IV/IM and 2-PAM 600 mg IM (1g IV)
Moderate Exposure	Vomiting, diarrhea, pinpoint pupils, drooling	1-2 kits or atropine 2-4 mg IV/IM and 2-PAM 600-1200 mg IM (1g IV)
Severe Exposure	Unconsciousness, paralysis, cyanosis, seizures	Three kits or atropine 6 mg IV/IM and 2-PAM 1800 mg IM or 2-PAM 1g IV repeated twice at hourly intervals. Diazepam or Midazolam per Medical Direction.

2-PAM solution needs to be prepared from the ampule containing 1g of desiccated 2-PAM: inject 3 mL of saline, 5% dextrose, or distilled or sterile water into ampule and shake well. The resulting solution is 3.3 mL of 300 mg/mL.

ADULT	OPIOID OVERDOSE	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

Examples:

Meperidine (Demerol®), Fentanyl (Duragesic®, Sublimaze®), Hydrocodone/APAP (Vicodin®, Lortab®, Norco®), Hydromorphone (Dilaudid®), Oxycodone/APAP (Percocet®), Oxycodone (OxyContin®), Heroin, Methadone, Codeine, Morphine

BLS / ALS

- ADULT INITIAL MEDICAL CARE**
- If breathing is adequate, place on side and monitor vital signs.

BLS

- Protect airway, **HIGH FiO₂ or VENTILATION**
- If breathing is **NOT** adequate, or patient is apneic **NALOXONE (NARCAN®) 2 mg IN every 2 minutes up to 12 mg IN until adequate respirations return.** If needed contact Medical Direction for additional doses.

ALS

- Protect airway, **HIGH FiO₂ or VENTILATION**
- If breathing is **NOT** adequate, or patient is apneic:

<u>INADEQUATE RESPIRATIONS</u>	<u>APNEIC</u>
<p><u>NALOXONE (NARCAN®)</u> 1 mg IV/IO (2 mg IN) every 1-2 minutes up to 6 mg IV/IO (12 mg IN) until adequate respirations return.</p> <p>If needed contact Medical Direction for additional doses.</p>	<p><u>NALOXONE (NARCAN®)</u> 2 mg IV/IO/IN every 1-2 minutes up to 12 mg IV/IO/IN until adequate respirations return.</p> <p>If patient remains apneic after 12 mg consider placement of advanced airway per <u>ADULT DRUG ASSISTED INTUBATION SMO</u> if needed.</p> <p>If needed, contact Medical Direction for additional doses.</p>

NOTE:

- Inadequate respirations defined as **EtCO₂ <30 mmHg or >50 mmHg or rate <10**
- Additional PPE should be considered on suspected overdose calls when white powder is noted, or the presence of FENTANYL or CARFENTANIL is suspected.



ADULT	MUSCARINIC AGENT EXPOSURE	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

EXAMPLES:

Pesticides, Nerve agents, Carbamates, Acetylcholinesterase inhibitors

BLS / ALS

1. [ADULT INITIAL MEDICAL CARE](#)
2. HAZMAT precautions as indicated

ALS

<u>STABLE</u>	<u>UNSTABLE</u>
Alert, oriented, normotensive	Signs and Symptoms of Toxicity (DUMBELS or SLUDGE/BAM)
<ul style="list-style-type: none"> •Continuous monitoring •Notify Medical Direction or receiving facility 	<p><u>ATROPINE</u></p> <p>2 mg rapid IV/IO</p> <p>Repeat ATROPINE 2 mg rapid IV/IO every 3 minutes until condition improves (no dose limit)</p>
	<ul style="list-style-type: none"> •Continuous monitoring •Notify Medical Direction or receiving facility

Signs and Symptoms of Organophosphate / Muscarinic Toxicity

- | | | |
|---------------------------------------|-----------|--|
| D - Diarrhea | OR | S - Salivation (excessive production of saliva) |
| U - Urination | | L - Lacrimation (excessive tearing) |
| M - Miosis | | U - Urination (uncontrolled urine production) |
| B - Bronchorrea / Bronchospasm | | D - Defecation (uncontrolled bowel movements) |
| B - Bradycardia | | G - Gastrointestinal distress (cramps) |
| E - Emesis | | E - Emesis |
| L - Lacrimation | | B - Breathing Difficulty |
| S - Salivation | | A - Arrhythmias |
| | | M - Miosis (pinpoint pupils) |



ADULT

SODIUM CHANNEL BLOCKER OVERDOSE

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

Examples:

Diphenhydramine (Benadryl®), Phenytoin (Dilantin®), Lidocaine (Xylocaine®)

BLS / ALS

1. **ADULT INITIAL MEDICAL CARE**

ALS

<u>STABLE</u>	<u>UNSTABLE</u>
Alert, oriented, normotensive, normal QRS complex	Hypoperfusion with wide QRS complex
<ul style="list-style-type: none">• Continuous monitoring	<ul style="list-style-type: none">• <u>NORMAL SALINE</u> 1,000 mL IV bolus• <u>SODIUM BICARBONATE 8.4%</u> 1 mEq/kg IV/IO, max single dose of 50 mEq



ADULT	<u>COLD EMERGENCIES</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

BLS / ALS

1. **ADULT INITIAL MEDICAL CARE OR ADULT INITIAL TRAUMA CARE**

<u>MILD / MODERATE HYPOTHERMIA</u>	<u>SEVERE HYPOTHERMIA</u>
Conscious or altered sensorium, shivering	Poor muscle control or rigidity, simulating rigor mortis. There will be no shivering . Sensorium - confused, withdrawn, disoriented or comatose.
<ul style="list-style-type: none"> •Check blood glucose level if available. If <60 mg/dL, treat per <u>DIABETIC / GLUCOSE EMERGENCIES</u> •Rewarm patient: <ul style="list-style-type: none"> ○ Place patient in a warm environment. Remove wet clothing. ○ Apply hot packs, wrapped in towels to axilla, groin, neck, thorax. Wrap patient in blankets 	<ul style="list-style-type: none"> •Check blood glucose level if available. If <60 mg/dL, treat per <u>DIABETIC / GLUCOSE EMERGENCIES</u> •Rewarm patient: <ul style="list-style-type: none"> ○ Place patient in a warm environment. Remove wet clothing. ○ Apply hot packs, wrapped in towels to axilla, groin, neck, thorax. Wrap patient in blankets
	<p><u>TRIPLE ZERO CANNOT BE CONFIRMED IN THE FIELD ON THESE PATIENTS</u></p> <ul style="list-style-type: none"> •Check pulse for 30-60 seconds. <ul style="list-style-type: none"> ○ Anticipate bradycardia. •Begin CPR if pulseless. <ul style="list-style-type: none"> ○ If defibrillation indicated by rhythm / AED, <u>DEFIBRILLATE</u> at 360 J (or initial biphasic shock at recommended energy) x 1 only and resume CPR. ○ <i>Subsequent defibrillation attempts, and all medications, should be delayed until core temperature has been raised to ≥86° F by active rewarming</i>
	<ul style="list-style-type: none"> •Follow appropriate Cardiac SMO •Transport patient in supine position, handle gently to avoid precipitating VF or PVT

NOTE:

- EtCO₂ readings may be low due to decreased metabolic activity.
- Warm fluid should be used if available

ADULT

DIVING / SCUBA EMERGENCIES

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 07/01/2023

REVIEWED: N/A

REVISED: N/A

Consider decompression illness if any of the following are present, regardless of a reported safe dive, within 24-hours of a SCUBA event, or air travel after diving. Attempt to rule out other underlying conditions (infection, significant trauma, etc.).

Neurological Dysfunction:	Bladder, bowel, gait or coordination, reflexes, mental status, vision, hearing, consciousness, strength, vertigo, paresthesia, numbness, tingling, altered sensation
Cardiopulmonary:	Cough, hemoptysis, dyspnea, voice change
Pain:	Aches, cramps, discomfort, joint pain, pressure, spasm, stiffness
Skin:	Edema, itching, rash, burning sensations, marbling
Others:	Dizziness, fatigue, headache, nausea/vomiting, chills, diaphoresis, malaise, restlessness

BLS / ALS

1. [ADULT INITIAL MEDICAL CARE](#) or [ADULT INITIAL TRAUMA CARE](#)
 - Assess dive history
 - Time of dive
 - Length of dive
 - Depth
 - Any problems encountered during dive
2. Ensure adequate ventilation, HIGH FLOW O2 if indicated
3. Contact Medical Direction regarding transport to a hyperbaric chamber
4. Initiate transport
 - Keep patient supine or in lateral recovery position

ALS

5. Establish **VASCULAR ACCESS IV/IO**
6. If needed, refer to [ADULT DRUG ASSISTED INTUBATION SMO](#)
7. Consider analgesia, if appropriate. Refer to [ADULT PAIN CONTROL SMO](#)

If assistance is needed, contact the
Divers Alert Network (DAN) at (919) 684-8111

ADULT	<u>FROSTBITE</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

BLS / ALS

1. [ADULT INITIAL TRAUMA CARE](#) or [ADULT INITIAL MEDICAL CARE](#)
2. Rapidly rewarm frozen areas with tepid water
 - Hot packs wrapped in a towel may be used
 - **DO NOT RUB or massage frozen tissue**
 - **DO NOT** thaw if there is a chance of refreezing
3. **HANDLE SKIN LIKE A BURN.** Protect with light, dry sterile dressings. Do not let affected skin surfaces rub together.
4. If in pain and systolic BP >100 mmHg, pain control per [ADULT PAIN CONTROL SMO.](#)

ADULT	<u>HEAT EMERGENCIES</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: 04/01/2023

BLS / ALS

1. [ADULT INITIAL MEDICAL CARE](#) or [ADULT INITIAL TRAUMA CARE](#)
2. Move patient to a cool environment. **DO NOT** massage cramped muscles

<u>HEAT CRAMPS / TETANY</u>	<u>HEAT EXHAUSTION / HEAT STROKE</u>
<p>If patient awake, alert, and has intact gag reflex, may give oral fluids.</p>	<p>Remove as much clothing as possible to facilitate cooling</p>
	<p>Initiate rapid cooling:</p> <ul style="list-style-type: none"> ○ Cold packs to lateral chest wall, groin, axilla, carotid arteries, temples, behind knees ○ Sponge or mist with cool water and fan, or cover body with wet sheet and fan body ○ Discontinue cooling if shivering occurs
	<p>Check blood glucose level if available. If <60 mg/dL, treat per ADULT DIABETIC / GLUCOSE EMERGENCIES</p>
	<p style="text-align: center;"><u>ALS</u></p> <p><u>NORMAL SALINE IV fluid boluses</u>, repeat as necessary. Titrate infusion rate based on clinical presentation and SPB ≥90 mmHg. Reassess vital signs every 5 minutes and closely monitor for respiratory changes</p>

ADULT	HIGH ALTITUDE EMERGENCIES	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 07/01/2023	REVIEWED: N/A	REVISED: N/A

Consider altitude illness in any patient with recent travel to altitudes >8000 feet above sea level, or those with recent travel in unpressurized aircraft at altitudes >5000 feet. Descent from altitude is the primary preventative measure for lessening the severity of illness.

<u>ACUTE MOUNTAIN SICKNESS</u>	<u>HIGH ALTITUDE CEREBRAL EDEMA (HACE)</u>	<u>HIGH ALTITUDE PULMONARY EDEMA (HAPE)</u>
Headache, Nausea/Vomiting, Lethargy, Dizziness	Headache, Nausea/Vomiting, Lethargy, Dizziness, Unstable Gait, Drowsiness, Confusion, Coma	Cough, Dyspnea, Cyanosis, Hyperthermia, Pink/Frothy Sputum
<u>BLS / ALS</u>		
<ul style="list-style-type: none"> • <u>ADULT INITIAL MEDICAL CARE</u> or <u>ADULT INITIAL TRAUMA CARE</u> • HIGH FLOW O2 <ul style="list-style-type: none"> • Assess history of travel to altitude • Altitude reached • Time spent • Symptom onset time • Be alert for possible significant trauma; patients experiencing HACE and the associated altered mental status may make poor decisions in their attempt to descend • Refer to appropriate trauma SMO as needed • Consider analgesia if SBP >100 mmHg. Refer to <u>ADULT PAIN CONTROL SMO</u> • Refer to appropriate trauma SMO as needed • If significant pulmonary edema is present, refer to <u>ADULT PULMONARY EDEMA SMO.</u> 		
	<u>ALS</u>	<u>ALS</u>
	Ensure adequate ventilation. Secure airway as needed. Refer to <u>ADULT DRUG ASSISTED INTUBATION SMO</u> Consider analgesia if SBP >100 mmHg. Refer to <u>ADULT PAIN CONTROL SMO</u>	Ensure adequate ventilation Secure airway as needed Refer to <u>ADULT DRUG ASSISTED INTUBATION SMO</u>

NOTE:

- Altitude-related illnesses are a rare occurrence in locations <5000 feet above sea level. In these areas, aircraft depressurization, sky-diving incidents, and patients returning from travel to altitude are the most common types of precipitating factors.

**BLS / ALS****1. Scene Size-Up**

- Assess scene and personal safety
- Use standard precautions on all patients

2. ADULT INITIAL MEDICAL CARE

- Confirm adequate airway
- High FiO₂
- Check pulse and control hemorrhage as indicated
- Assess AVPU and monitor neurological status
- Apply sterile gauze dressing over wound
- Remove all jewelry and/or constrictive clothing

3. Special Considerations:

- Allow patient to lie flat and avoid as much movement as possible. Keep patient calm. Allow the bitten limb to rest at level of the patient's heart.
- Medical Direction should be contacted immediately whenever snakebite is suspected.
- Notify Medical Direction if antivenin is available at the scene.
- Request that Medical Direction contact toxicologist / Poison Control Center ASAP at 1-800-222-1222
- Notify Medical Direction of type of snake. If safe to do so, obtain photo of snake for identification.
- If compression wrap has been applied by special services staff (e.g., animal control or zoological park), do not remove.
- DO NOT apply ice, heat, tourniquet or incise wound. If any have already been applied prior to EMS arrival, remove from the patient.

ALS

- Observe for respiratory compromise. Provide intervention, if necessary, per appropriate SMO.
- Evaluate cardiac rhythm. Treat dysrhythmias per appropriate SMO.
- Establish **two large bore IVs of NORMAL SALINE** in unaffected extremity.
- Use direct pressure to control hemorrhage if present. Avoid elevation of extremities.
- Reassess frequently for mental status changes.

Note:

- **If transport time >15 minutes, consider contacting specialty transport. If antivenin is available, bring to ED with patient.**

ADULT	INITIAL TRAUMA CARE	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: 04/01/2023

BLS / ALS

- SCENE SIZE UP**
- Assess and secure scene safety.**
 - Use standard precautions on all patients
 - If indicated, follow department HazMat protocols
 - If a potential crime scene, make efforts to preserve integrity of possible evidence
 - Anticipate potential injuries based on the mechanism of energy transfer
- PRIMARY ASSESSMENT:**

<u>BLS</u>	<u>ALS</u>
AIRWAY / C-SPINE	
Position airway / suction as needed	Position airway / suction as needed
<u>SPINE MOTION RESTRICTION SMO</u> as indicated	<u>SPINE MOTION RESTRICTION SMO</u> as indicated
	Refer to <u>ADULT DRUG ASSISTED INTUBATION SMO</u> as indicated
BREATHING / VENTILATION	
Assist ventilations as indicated (if rate <10 or >30 breaths / minute)	Assist ventilations as indicated (if rate <10 or >30 breaths / minute)
	Asses for signs of Tension Pneumothorax, decompress as indicated
CIRCULATION	
If no pulse, begin CPR and follow <u>ADULT TRAUMATIC ARREST SMO</u>	If no pulse, begin CPR and follow <u>ADULT TRAUMATIC ARREST SMO</u>
Control all external hemorrhage, for severe extremity hemorrhage, apply tourniquet	Control all external hemorrhage, for severe extremity hemorrhage, apply tourniquet
DISABILITY / EXPOSE	
Calculate <u>GCS</u> , expose patient, and, if altered mental status, check blood glucose level.	

TRANSPORT DECISION: Once the initial assessment and resuscitative interventions are initiated, a decision must be made whether to continue with the rapid trauma survey and the need for additional interventions on scene, or to perform interventions while transporting. Document the patient condition(s) or behavior(s) that necessitated this decision.

Transport to closest appropriate facility per **REGION 8 TRAUMA CENTER SYSTEM FIELD TRIAGE GUIDELINES**

SECONDARY ASSESSMENT:

<u>BLS</u>	<u>ALS</u>
<p>RAPID TRAUMA SURVEY (as allowed by time and patient condition)</p> <ul style="list-style-type: none"> • Systematic head-to-toe assessment • SAMPLE history 	<ul style="list-style-type: none"> • Recheck and record vital signs and patient condition at least every 15 minutes as able, and after each intervention. For unstable patients, more frequent reassessment may be needed. Note the time obtained. • Altered Mental Status: Seizure and vomiting precautions. Check glucose level. If glucose <60 mg/dL, treat per ADULT DIABETIC EMERGENCIES SMO. • Consider need for supplemental oxygen, especially for patients with dyspnea, suspected hypoxemia or altered mental status

Respiratory Assessment / Findings	Oxygen Administration
Adequate rate/depth, minimal distress, mild hypoxia, baseline SpO ₂ 92-94% (88-91% COPD)	Low FiO ₂
Adequate rate/depth, moderate/severe distress, SpO ₂ <92% (<88% COPD)	High FiO ₂
Inadequate rate/depth with moderate/severe distress, unstable	High FiO ₂ by BVM ventilation

	<p style="text-align: center;"><u>Attempt Vascular Access</u> <u>NORMAL SALINE IV fluid boluses</u>, repeat as necessary. Titrate infusion rate based on clinical presentation and SPB ≥90 mmHg. Reassess vital signs every 5 minutes and closely monitor for respiratory changes. Use warm fluids unless hyperthermic</p>
--	---

Assess pain score on a scale from 0-10. Refer to [ADULT PAIN CONTROL SMO](#) as indicated.



APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

General Guidelines

It is **MANDATORY** for Medical Direction to notify the Trauma Surgeon immediately upon receiving the field report, if one of the following conditions exist:

- Sustained hypotension on two consecutive measurements five minutes apart
 - Adult systolic BP \leq 90 mmHg or lack of a radial pulse
- Cavity penetration of torso or neck

Refer to [SPECIALTY TRANSPORT / AEROMEDICAL EVACUATION](#) for guidance as needed.

The following patients or those who in the opinion of the American College of Surgeons Committee on Trauma are known to have an increased mortality/morbidity, if not treated at a Trauma Center. They should, therefore, be classified as trauma patients. These patients require transport to the nearest Trauma Center

Conditions that are **marked with a star (★) and in bold letters** in the following criteria should be **considered** for direct bypass to a Level I Trauma Center. If the transport time to a Level I is greater than 25 minutes, the patient should go to a Level II Trauma Center.

Any patient meeting the criteria for consideration of direct bypass to a Level I Trauma Center should be considered **TIME-SENSITIVE**. **Contact Medical Direction at the initial point of contact, as soon as a clinical impression has been formed from assessment findings.**

Patients being bypassed to a Trauma Center need to have an adequate airway (i.e., respirations 12-35 per minute, advanced airway, cricothyroidotomy). If an airway cannot be established, the patient should be taken to the closest comprehensive Emergency Department.

EMS providers should notify Medical Direction ASAP if the need for specialty services exists.

I. Physiologic Factors

- A. Adult Trauma Score (RTS) of 9 or less
- B. Airway difficulties requiring intubation or other interventions at the scene
- C. Trauma with altered respiratory rate (<12 or >35 per minute)

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. **★ PENETRATING INJURY TO THE NECK**
3. Head injury with loss of consciousness or Glasgow Coma Scale (GCS) score of \leq 10
4. Traumatic and chemical eye injuries
5. Maxillofacial trauma

B. Chest

1. **★GUNSHOT WOUND OR OTHER PENETRATING INJURY TO THE CHEST**

2. Blunt chest trauma (significant pain and/or obvious external signs)

3. Flail chest and unstable chest wall

C. Abdomen

1. **★GUNSHOT WOUND TO THE ABDOMEN**

2. **★OTHER PENETRATING INJURY TO THE ABDOMEN, GROIN OR BUTTOCKS**

3. Blunt abdominal trauma (significant pain and/or obvious external signs)

D. Spinal Cord

1. **★SPINAL CORD INJURY WITH PARALYSIS, PARESTHESIA OF EXTREMITIES AND/OR SENSORY LOSS**

2. Any suspected spinal cord injury in the absence of neurological deficit

E. Extremities

1. **★EXTREMITY TRAUMA: MANGLED, CRUSHED, OR DEGLOVED WITH NEUROVASCULAR COMPROMISE**

2. **★TRAUMATIC AMPUTATION PROXIMAL TO THE WRIST OR ANKLE**

3. Limb paralysis and/or sensory deficit proximal to the wrist

4. Multiple orthopedic injuries (>1 long bone fracture)

III. Deceleration Injury

A. High energy dissipation / rapid deceleration with blunt chest or abdominal injury

B. Falls ≥ 20 feet with the adult patient

C. Falls ≥ 3 times the height of a pediatric patient

IV. Motor Vehicle Crashes

A. Extrication time ≥ 20 minutes

B. Vehicle passenger space invaded by ≥ 12 inches

C. Ejection

D. Fatality at the scene within the same motor vehicle

E. Rollover $\geq 180^\circ$ spin

F. Child ≤ 15 years struck by car

G. Child ≤ 8 years old involved in any MVC without age-appropriate restraint (under age 4 or <40 pounds requires a car seat)

H. Motorcycle crash >20 MPH with separation of rider from bike

V. Major Burns

A. 10% total body surface area 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**

B. **★OBVIOUS CHEST OR ABDOMINAL TRAUMA, EITHER PENETRATING OR BLUNT**

C. Pediatric Trauma Score of ≤ 8

D. Child ≤ 15 years old, struck by motor vehicle

E. Child involved in an MVC not appropriately restrained

1. Rear-facing seat from birth to 2 years old or up to 20 lbs.

2. Forward-facing toddler seat from 2 - 4 years or up to 65 lbs.

3. Booster seat from 4 - 8 years or up to 4' 9" tall
4. Safety belts from 8 - 15 years or at least 4'9" tall

VII. Pregnant Trauma Patients

- A. The pregnant patient \geq 20 weeks gestation
- B. Pregnant patient who meets any other trauma criteria

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

- A. **May consider** withholding resuscitative efforts. Refer to [WITHHOLDING OR WITHDRAWING RESUSCITATIVE EFFORTS SMO](#)

ADULT

TRAUMATIC CARDIAC ARREST

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: 04/01/2023

BLS / ALS

1. If obviously dead, consider referring to [WITHHOLDING OR WITHDRAWAL OF RESUSCITATIVE EFFORTS SMO](#)
2. If injury is incompatible with life (e.g., massive brain matter visible), contact Medical Direction for possible scene pronouncement

ALS

3. If patient experiences loss of pulses under direct paramedic observation during transport:
 - [ADULT INITIAL TRAUMA CARE](#)
 - **BILATERAL PLEURAL DECOMPRESSION** if clinically indicated (i.e., thoracic trauma, blast injuries, blunt traumatic arrest)
 - Consider appropriate cardiac arrest SMO
 - Verify tube placement if intubated

Note

- After [SPINE MOTION RESTRICTION SMO](#) and airway control is established, procedures are to be performed while transporting.

ADULT

MATERNAL TRAUMATIC CARDIAC ARREST



APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

BLS / ALS

1. [ADULT INITIAL TRAUMA CARE](#)
2. Reference [REGION 8 TRAUMA CENTER SYSTEM FIELD TRIAGE GUIDELINES](#)
3. **Visualize** externally for vaginal bleeding, leaking amniotic fluid or crowning. Assess for fetal movements and uterine contractions
4. Raise right side of backboard with 4-6 inches of padding to tilt / tip patient to the left side
5. **If CPR indicated, manually displace uterus to left side.** Follow appropriate Cardiac Arrest SMO
 - [ADULT VENTRICULAR FIBRILLATION / PULSELESS VENTRICULAR TACHYCARDIA](#)
 - [ADULT ASYSTOLE / PEA](#)
 - [ADULT PULSELESS POLYMORPHIC VENTRICULAR TACHYCARDIA](#)
6. Notify Medical Direction ASAP in order to mobilize appropriate hospital personnel

ADULT**REVISED TRAUMA SCORE (RTS)**

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

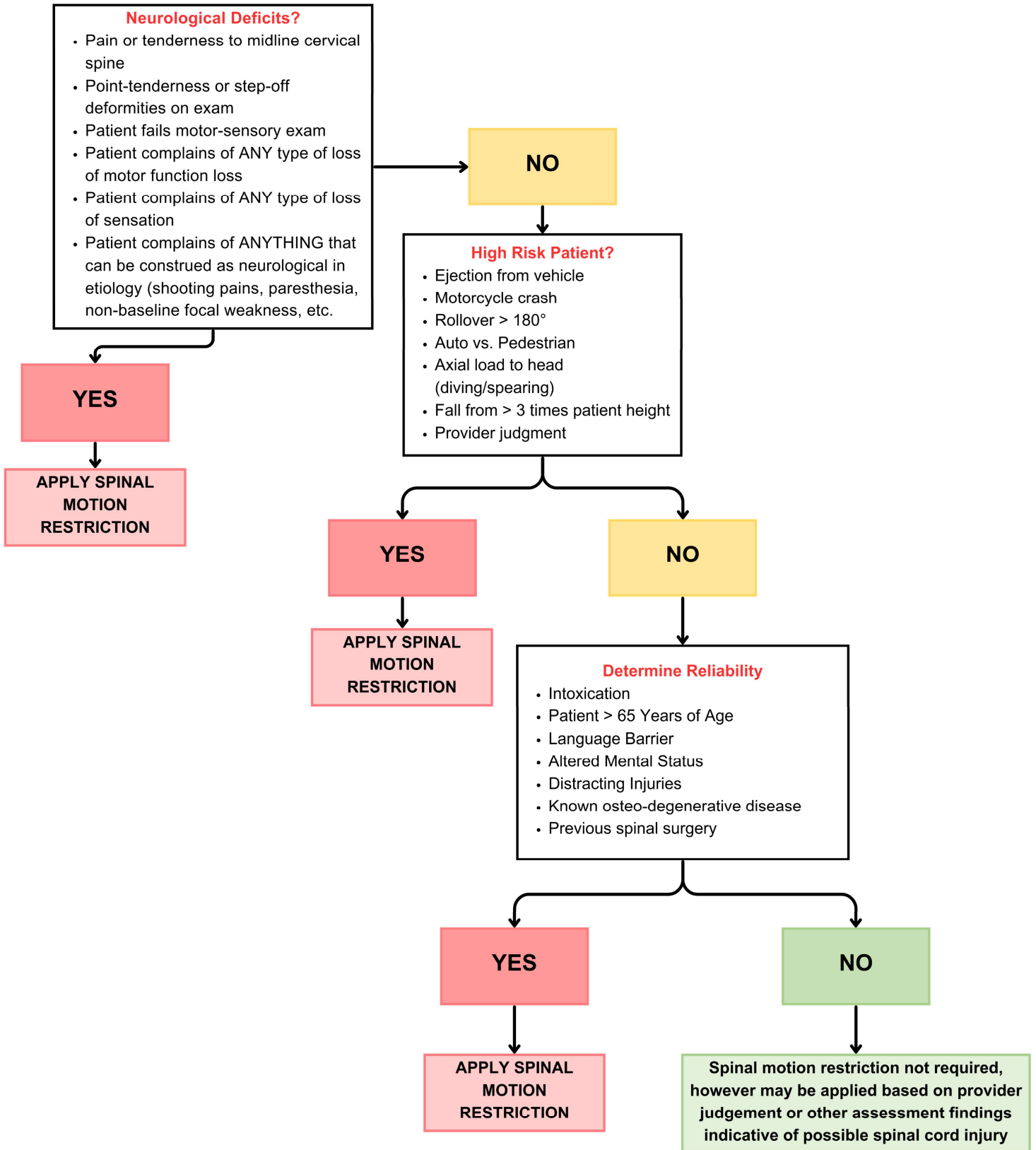
REVIEWED: 04/01/2023

REVISED: N/A

Glasgow Coma Score Conversion Points	GCS 13-15	4
	GCS 9-12	3
	GCS 6-8	2
	GCS 4-5	1
	GCS 3	0
Respiratory Rate		
Respiratory Rate	10-29	4
	>29	3
	6-9	2
	1-5	1
	0	0
Systolic Blood Pressure		
Systolic Blood Pressure	>89	4
	76-89	3
	50-75	2
	1-49	1
	0	0
TOTAL REVISED TRAUMA SCORE		0 – 12

ADULT	SPINE MOTION RESTRICTION (SMR)	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 07/01/2023	REVIEWED: N/A	REVISED: N/A

BLS / ALS



NOTE: If following this SMO would jeopardize crew or patient safety, follow to the best of the crews ability and document reasons why steps could not be completed.

ADULT	<u>HEMORRHAGIC SHOCK</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 07/01/2023	REVIEWED: N/A	REVISED: N/A

BLS / ALS

1. **ADULT INITIAL TRAUMA CARE**

- Be alert for significant bleeding and/or amputations. For complete or partial extremity trauma, apply tourniquet(s)

2. Notify Medical Direction

ALS

3. **Attempt VASCULAR ACCESS IV/IO while transporting.** Treat according to SBP

<u>SBP ≥90 mmHg</u>	<u>SBP <90 mmHg</u>
<p style="text-align: center;">TKO infusion rate. If SBP decreases to <90 mmHg, initiate fluid bolus and Tranexamic Acid if other criteria met.</p>	<p style="text-align: center;">Titrate IV fluid for a SBP of 90mmHG (unless signs and symptoms of herniation are present, then SBP target of 110mmHg should be attempted)</p>
	<p style="text-align: center;"><u>CDH EMS ONLY:</u></p> <p>If SBP <90 mmHg despite fluid bolus, AND transport time to Level 1 Trauma Center >30 minutes from onset of injury (due to extrication and/or bypass), administer <u>TRANEXAMIC ACID (TXA)</u> 1g diluted in 100 mL over 10 minutes x 1 IV/IO</p> <p>If worsening hypotension occurs during administration, decrease RATE of infusion by half, but do NOT stop infusion</p>

ADULT	HEAD INJURIES	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: 04/01/2023

BLS / ALS

1. [ADULT INITIAL TRAUMA CARE](#)
2. Begin expeditious transport and contact Medical Direction

ALS

3. Treat based on patient presentation:

<u>GCS <8</u>		
Maintain adequate ventilation, if needed place advanced airway using in-line procedure		
<u>ADULT DRUG ASSISTED INTUBATION SMO.</u> If unable to INTUBATE, consider use of ALTERNATE AIRWAY DEVICE		
If signs or symptoms of herniation are present (HTN, bradycardia, posturing) ventilate with a target EtCO ₂ of 30 mmHg. Elevate head of backboard 20-30 degrees unless unsafe to do so		
If Cushing Triad Present (<i>Hypertension, Bradycardia, and Irregular Respirations</i>) Titrate IV fluid for a SBP of 110 mmHG. Use warm fluids unless hyperthermic.		
<u>COMBATIVE</u>		
<u>IV / IO</u>	<u>NO IV / IO</u>	
	<70KG BODY WEIGHT	≥70 KG BODY WEIGHT
Consider <u>MIDAZOLAM (VERSED®)</u> 2 mg increments IV every 2 minutes up to 10 mg total as necessary.	<u>MIDAZOLAM (VERSED®)</u> 2.5 mg IM	<u>MIDAZOLAM (VERSED®)</u> 5 mg IM
<u>SEIZURES</u>		
Refer to <u>ADULT SEIZURES / STATUS EPILEPTICUS SMO</u>		

ADULT	EYE INJURIES	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

BLS / ALS

1. **ADULT INITIAL TRAUMA CARE**

- Assess pain on a 0-10 scale
- Quickly assess gross visual acuity in each eye: light perception, motion, acuity
- Discourage patient from sneezing, coughing, straining or bending at the waist
- Elevate head of cot or backboard Semi-Fowler’s position unless contraindicated
- Vomiting precautions

<u>CHEMICAL SPLASH / BURN</u>	<u>SUSPECTED CORNEAL ABRASION</u>	<u>PENETRATING INJURY / RUPTURED GLOBE</u>
<u>BLS / ALS</u>		
Immediately irrigate affected eye(s) using copious amounts of NORMAL SALINE . Continue irrigation while transporting. Do not contaminate uninjured eye with contaminated irrigation solution.	Patch affected eye(s).	<ul style="list-style-type: none"> • <u>Do not</u> remove impaled objects • <u>Do not</u> irrigate or administer tetracaine • Avoid any pressure on the injured eye(s) • Cover with cup, or metal or plastic protective shield • Patch unaffected eye
<u>ALS</u>		
<u>TETRACAINE 0.5% (ALTACAINE®)</u> 1 DROP in each affected eye. May repeat until pain relief achieved. Irrigate per appropriate System-specific procedure.	<u>TETRACAINE 0.5% (ALTACAINE®)</u> 1 DROP in each affected eye. May repeat until pain relief achieved.	
If patient is in pain and systolic BP >100 mmHg, treat per <u>ADULT PAIN CONTROL SMO</u>		

ADULT

**MORGAN LENS FOR CHEMICAL SPLASH /
EYE BURNS (LOYOLA EMS ONLY)**

APPROVED FOR USE BY:

LOYOLA EMS ONLY

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

1. Instill **TETRACAINE 0.5% (ALTACAINE®)** 1 DROP to each affected eye. May repeat until pain is relieved
2. Insert **MORGAN LENS** into eye using 1,000 ML **NORMAL SALINE** IV solution as irrigation fluid
3. Open IV tubing roller clamp and adjust flow to a level that is well tolerated by the patient.
4. Continue irrigation while transporting
5. Patch unaffected eye

Note

- If the patient has exposed eye to adhesive/glue, do not force eyelids open. Gently irrigate using manual flushing until eye can be opened without difficulty. Contact Medical Direction for further instructions.

**LOYOLA
EMS ONLY**

ADULT**NECK / SPINE INJURIES**

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: 04/01/2023

BLS / ALS

1. **ADULT INITIAL TRAUMA CARE**
2. Mark on patient where sensation is lost and note time.

ALS

<u>HYPOPERFUSION (SBP <90 MMHG)</u>	<u>HYPOPERFUSION WITH BRADYCARDIA</u>	<u>ALTERED MENTAL STATUS</u>
<p><u>NORMAL SALINE IV/IO fluid boluses</u>, repeat as necessary</p> <p>Titrate infusion rate based on clinical presentation and SPB \geq90 mmHg. Reassess vital signs every 5 minutes and closely monitor for respiratory changes</p>	<p><u>NORMAL SALINE IV/IO fluid boluses</u>, repeat as necessary</p> <p>Titrate infusion rate based on clinical presentation and SPB \geq90 mmHg. Reassess vital signs every 5 minutes and closely monitor for respiratory changes</p> <p>Continue <u>NORMAL SALINE IV/IO fluid boluses</u> and administer <u>DOPAMINE (INTROPIN®) IV/IO piggyback 5-20 mcg/kg/min</u> titrated for patient condition</p>	<p>Maintain adequate ventilation, if needed place advanced airway using in-line procedure</p> <p><u>ADULT DRUG ASSISTED INTUBATION SMO</u></p> <p>If unable to INTUBATE, consider use of ALTERNATE AIRWAY DEVICE</p> <p>If seizure activity, treat per <u>SEIZURE / STATUS EPILEPTICUS SMO</u></p>

ADULT

CHEST / THORACIC INJURIES

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: 04/01/2023

BLS / ALS

1. ADULT INITIAL TRAUMA CARE

- **HIGH FiO₂ or VENTILATION**

2. Begin expeditious transport to appropriate facility and contact Medical Direction
3. Treat based on injury type:

<u>SUCKING CHEST WOUND / OPEN PNEUMOTHORAX</u>	<u>FLAIL CHEST</u>	<u>PNEUMOTHORAX / TENSION PNEUMOTHORAX</u>	<u>PERICARDIAL TAMPONADE</u>
<u>BLS / ALS</u>			<u>ALS</u>
Apply occlusive dressing / chest seal per System-specific procedure If patient deteriorates, temporarily remove dressing to let air escape.	If respiratory distress, appropriately VENTILATE WITH HIGH FiO₂ VIA BVM	Suspect when patient presents with severe respiratory distress or difficulty ventilating, with any of the following: hypotension, distended neck veins, absent breath sounds on the involved side, and/or tracheal deviation	<u>NORMAL SALINE IV/IO fluid boluses</u> , repeat as necessary. Titrate infusion rate based on clinical presentation and SPB ≥90 mmHg. Reassess vital signs every 5 minutes and closely monitor for respiratory changes
<u>ALS</u>			
Anticipate the need for decompression to affected side Consider intubation; do NOT place patient on CPAP	Consider intubation, do NOT place patient on CPAP	PLEURAL DECOMPRESSION of affected side , per System-specific procedure Assess for PEA. Refer to <u>ADULT ASYSTOLE/PEA</u> if present.	

ADULT

ABDOMINAL / PELVIC INJURIES

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 07/01/2023

REVIEWED: N/A

REVISED: N/A

BLS / ALS

1. [ADULT INITIAL TRAUMA CARE](#)
2. Initiate rapid transport; contact Medical Direction
3. Do not remove impaled objects.
4. If evisceration noted, cover exposed organs with saline-soaked sterile dressing, and cover with occlusive dressing. Do **NOT** attempt to put organs back inside the abdominal cavity.
5. Consider analgesia if appropriate, per [ADULT PAIN CONTROL SMO](#)
6. Place a pelvic stabilizing device for suspected pelvic instability.

ADULT	MUSCULOSKELETAL INJURIES	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

BLS / ALS

1. **ADULT INITIAL TRAUMA CARE**

ALS

2. Consider analgesia, if patient SBP >100 mmHg
 - **NITROUS OXIDE (NITRONOX®)** per System-specific policy for MILD pain
 - **For SEVERE pain treat per ADULT PAIN CONTROL SMO.**
3. Splint or immobilize injuries as indicated
 - If pulses are lost after applying a traction splint, leave splint in place. Do not release traction. Notify Medical Direction of change in status.
4. Elevate extremity and or apply cold pack after splinting when appropriate
5. Assess for injury and consider **SPINE MOTION RESTRICTION SMO** as indicated
6. Check for distal vascular, motor, and sensory function
7. If patient is experiencing nausea or vomiting, consider **ONDANSETRON (ZOFRAN®) ODT 4 mg tab or 4 mg slow IV x 1 dose only**
8. If long bone fracture with displacement/muscle spasm, and hemodynamically stable, consider **MIDAZOLAM (VERSED®) 2 mg increments IV/IM/IN** every 2 minutes up to 10 mg total as necessary

<u>INCAPACITATING BACK PAIN</u>	<u>AMPUTATION / DEGLOVING INJURIES</u>
<u>BLS / ALS</u>	
<ul style="list-style-type: none"> • Assess patient to differentiate musculoskeletal back pain from aortic aneurysm pain. <ul style="list-style-type: none"> ○ history of onset and character of pain ○ hypotension or syncope ○ pain described as “tearing” or “ripping” ○ presence or absence of femoral pulses and mottling of lower extremities ○ any negative neurological finding 	<ul style="list-style-type: none"> • If amputation is incomplete, stabilize with bulky dressing • If serious bleeding is present, apply tourniquet above amputation as close as possible to the injury. Note time tourniquet applied. DO NOT release tourniquet once it has been applied • Care of amputated parts: <ul style="list-style-type: none"> ○ Wrap in normal saline moistened gauze or towel. Place in plastic bag and seal. DO NOT immerse tissue directly in water or normal saline. ○ Place plastic bag in second container filled with ice or cold water or place on cold packs and bring with patient to the hospital.

ADULT

EMD (TASER®) WEAPON INJURIES

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

BLS / ALS

This SMO is to be used for patients who have been subdued by the use of any electro-muscular disruption (EMD) weapon (i.e., TASER®)

1. **Assess scene and ensure personal safety.** Obtain baseline behavior from PD / LEO prior to EMD event
2. **ADULT INITIAL TRAUMA CARE**
 - Assess for injury and/or altered mental status and treat per appropriate SMO
 - Check and record baseline vital signs
 - If ALS, include ECG monitoring for cardiac abnormalities
 - If ALS and patient >35 years of age, consider 12-lead ECG
 - Identify location of probes on the patient's body. Evaluate depth of skin penetration

BARBS MAY NOT BE REMOVED BY EMS IF EMBEDDED IN ANY OF THE FOLLOWING AREAS

SUPERFICIALLY EMBEDDED BARBS IN OTHER ANATOMIC LOCATIONS MAY BE REMOVED BY EMS

- Eyelid / Globe of the eye
- Face or Neck
- Genitalia
- Any Bony Prominence
- Spinal Column

Stabilize / splint barbs in place and initiate transport.

Removal procedure:

1. Place one hand on the patient where the barb is embedded to stabilize the skin surrounding the puncture site.
2. Firmly grasp the barb with your other hand.
3. Remove by gently pulling the barb straight out along the same plane it entered the body.
4. Assure that the barb is intact
5. Repeat procedure with second barb, if embedded.
6. Return the barbs to law enforcement officials, utilizing standard precautions.

Control minor hemorrhage and cleanse the wound area with normal saline. If indicated, cover wound area with a dry dressing.

Transport decision:

- Transport decisions regarding patients subdued by EMD weapons should be based on patient condition.
- If not transported to the hospital and if the patient has not had a tetanus immunization in the last five years, they should be advised to get one.

ADULT**CRUSH INJURIES / ENTRAPMENT**

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

BLS / ALS

1. [ADULT INITIAL TRAUMA CARE](#)
2. Start treatment as soon as safely possible to do so (if safe, initiate treatment while patient is still entrapped or encased)
3. Identify any severe hemorrhage. If found on limb, place tourniquet as close to injury as possible (never on a joint). If unable to assess limb and there is a probable mechanism for crush / amputation, place tourniquet.
4. Give high flow O₂ via NRB unless unsafe to do so.

ALS

5. Establish large bore IV/IO x 2, give [NORMAL SALINE](#) initial bolus of 10 mL/kg (prior to extrication if possible). If pulmonary edema occurs, STOP bolus and treat per [ADULT PULMONARY EDEMA SMO](#)
6. For significant crush injuries or prolonged entrapped extremity, consider [SODIUM BICARBONATE 8.4% 50 mEq IV/IO over 5 minutes](#)
7. ECG monitoring during entrapment, if possible. If signs/symptoms of hyperkalemia are noted, treat per [ADULT SUSPECTED HYPERKALEMIA SMO](#). Once removed, 12 lead ECG should be obtained and repeated as indicated.
8. Consider analgesia, if patient SBP >100 mmHg per [ADULT PAIN CONTROL SMO](#)
9. After initial normal saline fluid bolus, give an **ADDITIONAL** [NORMAL SALINE 1 L/hr](#). If pulmonary edema occurs, STOP infusion and treat per [ADULT PULMONARY EDEMA SMO](#)
10. If cardiac arrest occurs, treat per appropriate **SMO**
 - [ADULT VENTRICULAR FIBRILLATION / PULSELESS VENTRICULAR TACHYCARDIA](#)
 - [ADULT ASYSTOLE / PEA](#)
 - [ADULT PULSELESS POLYMORPHIC VENTRICULAR TACHYCARDIA](#)

ADULT	SUSPENSION INJURIES	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

BLS / ALS

1. [ADULT INITIAL TRAUMA CARE](#)
2. Coach patient to keep knees elevated until, during and post rescue **DO NOT ALLOW PATIENT TO STAND**
3. Place patient in high Fowler's position, with knees to chest during transport
 - If patient is unresponsive place in lateral position with knees to chest
 - If patient needs to be placed supine, knees should be placed or held to chest
4. Give **High FiO₂ Oxygen** unless contraindicated

ALS

5. Establish IV, give [NORMAL SALINE](#) 1,000 mL IV after rescue, if pulmonary edema occurs, **STOP bolus and treat per [ADULT PULMONARY EDEMA SMO](#)**
6. Assess ECG, if signs and symptoms of hyperkalemia treat per [ADULT SUSPECTED HYPERKALEMIA SMO](#)
7. Consider analgesia, if patient SBP >100 mmHg per [ADULT PAIN CONTROL SMO](#)
8. If cardiac arrest occurs, treat per appropriate SMO
 - [ADULT VENTRICULAR FIBRILLATION / PULSELESS VENTRICULAR TACHYCARDIA](#)
 - [ADULT ASYSTOLE / PEA](#)
 - [ADULT PULSELESS POLYMORPHIC VENTRICULAR TACHYCARDIA](#)

ADULT	<u>NEAR DROWNING</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

BLS / ALS

1. [ADULT INITIAL TRAUMA CARE](#)
2. Remove wet clothing
3. Assess patient's temperature
 - If **NORMOTHERMIC**, treat cardiac dysrhythmias per appropriate SMO
 - If **HYPOTHERMIC**, treat per [ADULT COLD EMERGENCIES SMO](#)
4. Treat any respiratory symptoms per appropriate SMO

<u>ADEQUATE VENTILATION AND RESPIRATORY EFFORT</u>	<u>INADEQUATE VENTILATION AND RESPIRATORY EFFORT</u>
<ul style="list-style-type: none"> • Complete initial assessment • Remove wet clothing • Prevent further heat loss • Provide supplemental oxygen as indicated • Refer to <u>ADULT COLD EMERGENCIES SMO</u>, as needed • Contact Medical Direction • Transport • Support ABCs • Observe • Keep warm 	<ul style="list-style-type: none"> • <u>In water</u>, start rescue breathing / ventilations • <u>When out of water</u>, begin CPR • Apply AED / defibrillator and check rhythm
	<p style="text-align: center;">← If breathing resumes</p>
	<p style="text-align: center;"><u>IF BREATHING DOES NOT RESUME</u></p>
	<p style="text-align: center;">↓</p>
	<p style="text-align: center;">Refer to appropriate adult <u>CARDIAC</u> and/or <u>RESPIRATORY</u> SMO</p>

ADULT

SUSPECTED ABUSE OR NEGLECT (DOMESTIC, SEXUAL, ELDER)

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

BLS / ALS

1. [ADULT INITIAL MEDICAL CARE](#) or [ADULT INITIAL TRAUMA CARE](#)
2. Treat obvious injuries per appropriate SMO
3. History, physical exam, scene survey. Document findings on patient care report.

SUSPECTED DOMESTIC OR SEXUAL ABUSE

- Provide information on services available to victims of suspected abuse
See Domestic Crime victim information forms
- Encourage victim to seek medical attention
- If patient is a victim of suspected abuse and age <18 years of age, **DCFS must be contacted by EMS providers**
 - **1-800-25-ABUSE** (24-hour phone line)
- Contact receiving facility to ensure availability of Sexual Assault Nurse Examiner (SANE).
 - If SANE not available, consider bypassing to facility with SANE Nurse/Staff present, with Medical Direction approval

SUSPECTED ELDER ABUSE

- Reporting is mandatory in a case of suspected elder abuse. EMS providers must notify one of the following:
 - Illinois Department on Aging, Elder Abuse Hotline:
 - **1-866-800-1409**
 - Illinois Nursing Home Abuse Hotline
 - **1-800-252-4343**

ADULT

RADIATION INJURIES

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

BLS / ALS

1. **FOLLOW DIRECTIONS OF THE HAZMAT COMMAND ON SCENE.**
2. **[ADULT INITIAL MEDICAL CARE](#) or [ADULT INITIAL TRAUMA CARE](#)**
3. Patient management per appropriate SMO
4. Contact Medical Direction, as soon as practical, and indicate the following:
 - number of victims
 - medical status of victims
 - source of radiation
 - amount and kinds of radioactivity present

For assistance, 24-hour hotline number is available:

1-800-782-7860



ADULT	<u>BLAST INJURIES</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 07/01/2023	REVIEWED: N/A	REVISED: N/A

BLS / ALS

1. HAZMAT precautions as indicated
 - Treat all explosions as a crime scene unless directed otherwise by law enforcement
 - Consider risk of secondary devices
2. **ADULT INITIAL TRAUMA CARE**
 - Be alert for significant bleeding and/or amputations
3. Secure airway as needed; persistent hypoxia despite high-flow oxygen administration is an indication for early intubation due to blast lung injuries
4. **SPINAL MOTION RESTRICTION SMO** as indicated
5. Treat injuries per appropriate SMO; explosions have high likelihood of multi-system involvement.
 - **ADULT HEAD INJURIES**
 - **ADULT EYE INJURIES**
 - **ADULT NECK / SPINE INJURIES**
 - **ADULT CHEST / THORACIC INJURIES**
 - **ADULT ABDOMINAL INJURIES**
 - **ADULT MUSCULOSKELETAL INJURIES**
 - **ADULT CRUSH INJURIES / ENTRAPMENT**
 - **ADULT BURNS**

Note:

- Tympanic membrane rupture is the most common type of blast injury and may be associated with other more serious blast injuries. When tympanic membrane rupture is not present, other blast pressure injuries are less likely, **but cannot be ruled out.**

BLS / ALS

1. Ensure scene safety, move patient to safe area
2. Ensure burning process has stopped
3. **ADULT INITIAL TRAUMA CARE**
 - Complete primary assessment, assess for:
 - Stridor
 - Wheezing
 - Decreased respirations or apnea
 - Retractions
 - Tachypnea
 - Decreasing consciousness
4. Consider need for **SPINAL MOTION RESTRICTION (SMR)**
5. Remove constricting clothing / jewelry
6. **Unresponsive patients found at the scene of a fire, consider cyanide poisoning. Refer to ADULT CYANIDE EXPOSURE SMO**
7. Evaluate depth of burn and estimate extent using **ADULT RULE OF NINES OR PALM METHOD** (patient's palm equals 1% BSA). Use caution to ensure that only true burns are calculated and not soot. **Do not include 1st degree (superficial) burns in calculation.**
8. Assess need for transport to Burn Center.
9. Keep patient warm and protect from hypothermia; be cautious with cooled / wet dressings

NOTE:

- **Intramuscular and/or subcutaneous medications should NOT be administered through burned tissue.**

ALS

10. If patient is in pain and systolic BP >90mmHg, treat per **ADULT PAIN CONTROL SMO.**
11. **For burns > 20% total body surface area burned (TBSA), initiate fluid resuscitation with NORMAL SALINE at a rate of 500 mL/hr.**

ADULT

RULE OF NINES

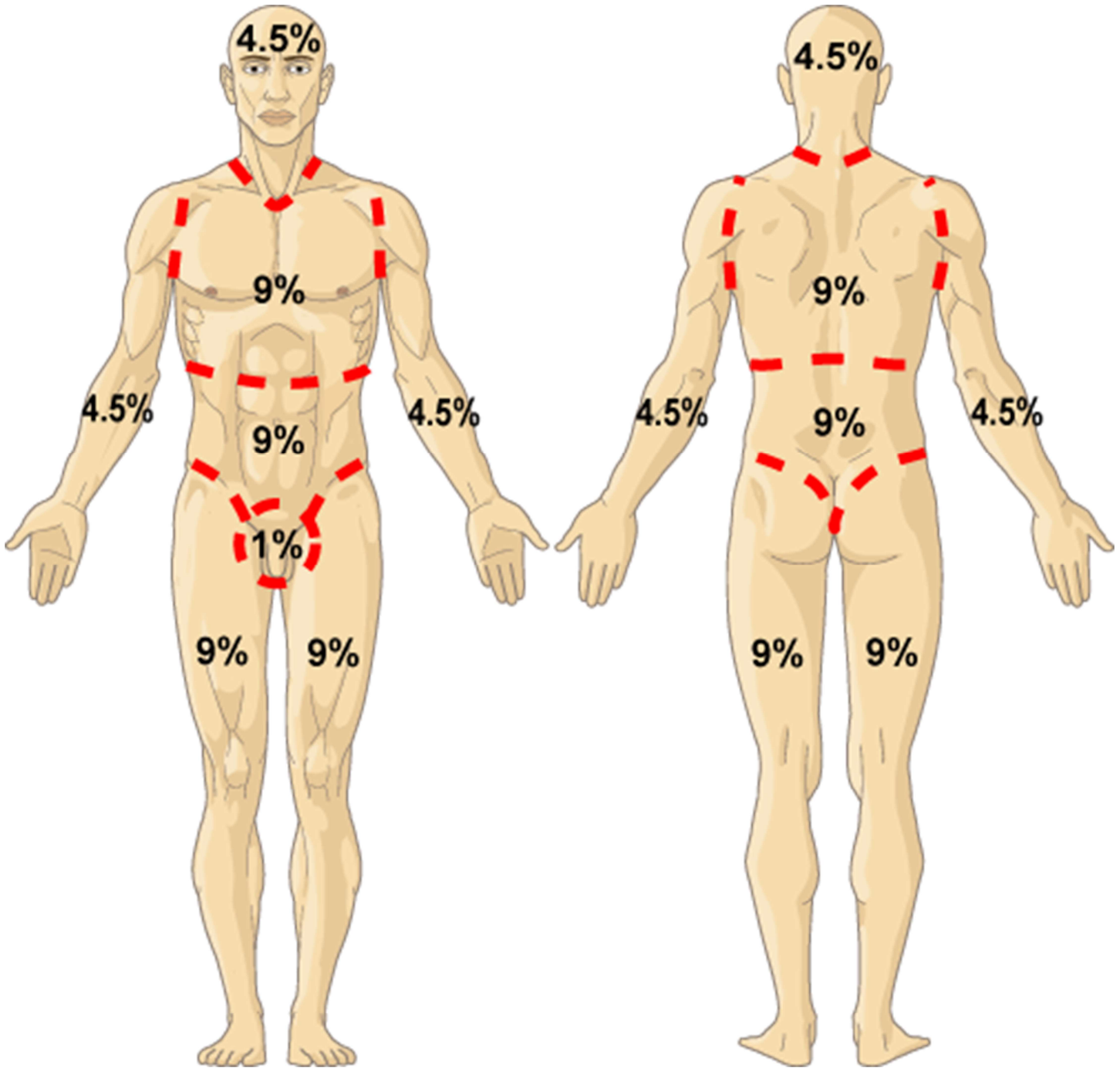
APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: 04/01/2023



ADULT**CHEMICAL BURNS**

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

BLS / ALS

1. [ADULT INITIAL TRAUMA CARE](#)
2. [ADULT BURNS – GENERAL GUIDELINES](#)
3. HazMat precautions as indicated
4. Attempt to obtain name of chemical involved and MSDS/SDS information, if possible.
5. If powdered chemical, brush away excess. Remove clothing, if possible.
6. Irrigate with copious amounts of sterile water or Normal Saline, unless contraindicated, as soon as possible, and continue while transporting. Goal is *at least* 30 minutes of continuous irrigation.
7. Transport and notify Medical Direction or receiving hospital

ALS

2. If **EYE INVOLVEMENT**:
 - Assess visual acuity
 - Remove contact lens and **IRRIGATE EYE WITH [NORMAL SALINE](#)**
 - Do not contaminate the uninjured eye with contaminated irrigation solution
 - Administer [TETRACAINE 0.5% \(ALTACAINE®\)](#) 1 drop in each affected eye. May repeat until pain relief achieved.
3. Contact Medical Direction
4. Transport
 - Support ABCs
 - Observe
 - Keep warm

ADULT**ELECTRICAL BURNS**

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

BLS / ALS

1. **ADULT BURNS – GENERAL GUIDELINES**
2. **SPINE MOTION RESTRICTION** as indicated
3. Identify, document, and describe and wounds, particularly those related to the electrical injury
4. Assess neurovascular status of affected part
5. Cover wounds with dry, sterile dressings (cooling not necessary)
6. Contact Medical Direction
7. Transport
 - . Support ABCs
 - . Observe
 - . Keep warm

ALS

8. Assess ECG for dysrhythmias, including 12-lead ECG, and treat according to appropriate SMO

ADULT	INHALATION BURNS	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

BLS / ALS

1. **ADULT BURNS – GENERAL GUIDELINES**

- Note presence of wheezing, hoarseness, stridor, carbonaceous (black) sputum / cough, singed nasal hair / eyebrows / eyelashes.
2. If wheezing, refer to **ASTHMA OR COPD WITH WHEEZING / REACTIVE LOWER AIRWAY DISEASE SMO**
 3. Monitor EtCO₂ waveform (if available)
 4. **HIGH FiO₂ or VENTILATION**
 5. Contact Medical Direction
 6. Transport
 - Support ABCs
 - Observe
 - Keep warm

ALS

7. Thoroughly assess airway for presence of burns or soot.
 - The presence of soot or burns in/around the airway is **not** a sole indicator for intubation
 - Support airway and ventilation with least invasive methods first
 - If severe respiratory distress, stridor, or imminent respiratory arrest, consider **INTUBATION**. Refer to **ADULT DRUG ASSISTED INTUBATION** as needed.
8. Notify Medical Direction or receiving facility as soon as possible

NOTE:

- **Airway edema can take several hours to appear and become significant enough to risk airway loss. Burned airways can be significantly difficult to intubate, therefore in the absence of severe respiratory distress, stridor, imminent respiratory failure, or GCS ≤ 8, consider withholding intubation until arrival at receiving facility.**

ADULT

THERMAL BURNS

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

BLS / ALS

1. [ADULT INITIAL TRAUMA CARE](#)
2. [ADULT BURNS – GENERAL GUIDELINES](#)
3. **If burned area \leq 10% TBSA:**
 - Cool burned area for no longer than five minutes with water or saline, if burn occurred within 15 minutes. **Wet dressing may be applied for local pain relief**
4. Wear gloves and mask until burn wounds are covered.
5. **DO NOT** break blisters. **If >10% TBSA affected**, cover burn with DRY, sterile dressings
6. Open dry sheet on stretcher before placing patient for transport. Cover patient with dry sheets and blanket to maintain body temperature

1. A multiple patient incident exists when:

- responding EMS providers can mitigate life-threats using standard operating procedures, **and**
- the responding EMS agency is able to acquire adequate numbers of responders and ambulances to provide normal levels of care and transportation, **and**
- hospitals that can be reached within the normally accepted transport time can provide adequate patient stabilization until definitive care can be provided. This may require receiving hospitals to activate their internal disaster plans, even though it is not necessary to implement the mass casualty response in the field.

2. Practical application:

- No triage tags necessary (but may be used)
- Ambulance transport as usual
- Medical Direction radio contact by each transporting ambulance as usual
- Patient Care Reports to be completed as usual

3. First EMS Unit on scene:

- One responder begins scene size-up and calls for additional resources
- Other responder(s) begin(s) primary triage using the **START**® or **JUMPSTART**® triage process
- Initial contact with Medical Direction at the closest hospital and report the nature of the incident and potential number of victims per System-specific policy

4. Scene command decision:

- Begin transport of 2 of the most critical (red) patients to each of the nearest appropriate hospitals (adhering to trauma triage criteria for Level I and II transports) to help clear the scene
- Transporting EMS providers shall contact the receiving hospital for on-line Medical Direction

5. Remaining patient disposition:

- **Joint decision with Medical Direction:** When the number of ill or injured persons exceeds the transport of 2 (of the most critical) patients to each of the nearest appropriate hospitals (adhering to trauma triage criteria for Level I and II transports), contact the closest Resource Hospital to coordinate remaining patient distribution. Inform them about the nature of the incident, the number of patients and their acuity levels.
 - The hospital will assess receiving hospital status and relay receiving availability to scene
 - Make all attempts to evenly distribute remaining patients to local hospitals; do not overburden one facility
 - While it is preferable to keep families together, it is not always in the best interest of patient care to do so
 - The hospitals will consider time of day, hospital resources available, patient acuity and trauma triage criteria in determining patient destinations
 - Follow System-specific policy regarding contact of EMS Medical Director and/or EMS System Coordinator

6. Complete a patient care report on each patient transported

ADULT & PEDS

MASS CASUALTY INCIDENT (MCI) / DISASTERS

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

Mass Casualty Incidents in Region VIII are governed by MABAS Divisions and County or System Mass Casualty Plans. Roles will vary. It is recommended that at least the following are designated for EMS purposes: Triage, Treatment and Transportation Groups.

1. **A mass casualty incident exists when the:**

- number of patients and the nature of their injuries make the normal prehospital level of stabilization and care unachievable; **and/or**
- resources that can be brought to the field within primary and secondary response times are insufficient to manage the scene under normal operating procedures; **and/or**
- stabilization capabilities of area hospitals are insufficient to handle all the patients

2. **Practical application:**

- Triage tags are to be used on all patients
- May transport more than one BLS patient in each ambulance
- No radio reports to hospitals; treat per SMOs
- No individual run reports necessary

3. **First EMS unit on scene establishes temporary scene command:**

- One responder begins scene size up and calls for additional resources
- Other responder(s) begin(s) primary triage using [START®](#) or [JUMPSTART®](#) and SMART Tag™ systems

4. **Scene command / Joint decisions with Medical Direction:**

- Call Resource Hospital from scene
 - Relay nature of incident; number of victims; general acuity; age groups, special needs and estimated time of arrival
 - Communicate with Resource hospital as needed
- Resource Hospital shall assess receiving hospital status and relay receiving availability to scene
- Transportation officer should determine hospital destinations based on time of day, hospital resources available, and patient acuity
 - Make all attempts to evenly distribute remaining patients to area hospitals; do not overburden one facility
 - This may mean transports of longer than 25 minutes depending on patient volume.
 - Preferable, but not necessary, to keep families together
 - Trauma triage criteria to Level I and Level II trauma centers may no longer apply depending on number of patients

5. Depending on the nature and magnitude of an incident, the EMS Medical Director or State Medical Director may suspend all EMS operations as usual and direct that all care be conducted by SMO and/or using personnel and resources as available

ADULT & PEDS

START® TRIAGE ALGORITHM

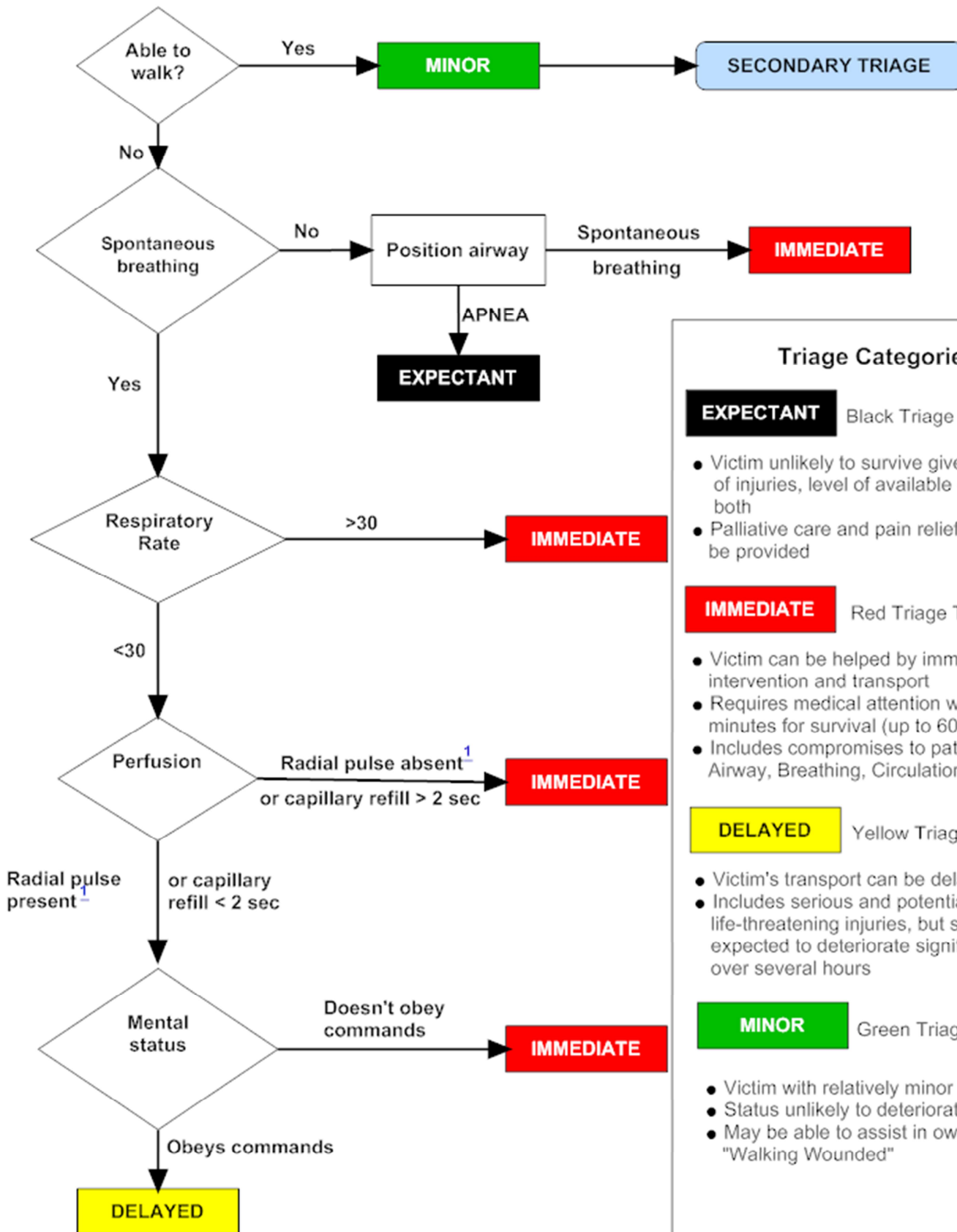
APPROVED FOR USE BY:

ALL SYSTEMS

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REVISED: N/A



Triage Categories

EXPECTANT

Black Triage Tag Color

- Victim unlikely to survive given severity of injuries, level of available care, or both
- Palliative care and pain relief should be provided

IMMEDIATE

Red Triage Tag Color

- Victim can be helped by immediate intervention and transport
- Requires medical attention within minutes for survival (up to 60)
- Includes compromises to patient's Airway, Breathing, Circulation

DELAYED

Yellow Triage Tag Color

- Victim's transport can be delayed
- Includes serious and potentially life-threatening injuries, but status not expected to deteriorate significantly over several hours

MINOR

Green Triage Tag Color

- Victim with relatively minor injuries
- Status unlikely to deteriorate over days
- May be able to assist in own care: "Walking Wounded"

ADULT & PEDS

JUMPSTART® TRIAGE ALGORITHM

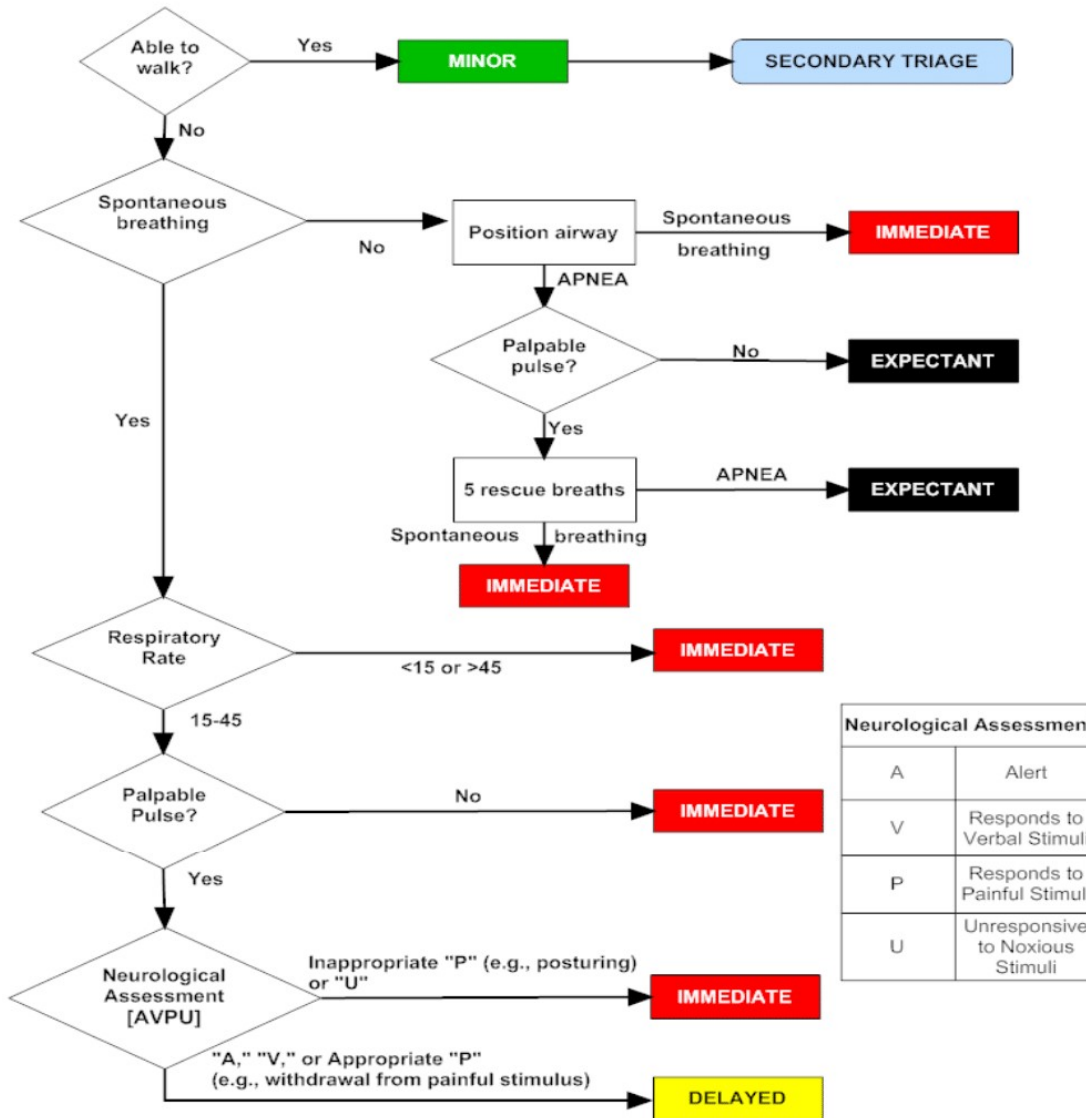
APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A



Use JumpSTART if the Patient appears to be a child.

Use an adult system, such as START, if the patient appears to be a young adult.

Triage Categories

<p>EXPECTANT Black Triage Tag Color</p> <ul style="list-style-type: none"> Victim unlikely to survive given severity of injuries, level of available care, or both Palliative care and pain relief should be provided 	<p>DELAYED Yellow Triage Tag Color</p> <ul style="list-style-type: none"> Victim's transport can be delayed Includes serious and potentially life-threatening injuries, but status not expected to deteriorate significantly over several hours
<p>IMMEDIATE Red Triage Tag Color</p> <ul style="list-style-type: none"> Victim can be helped by immediate intervention and transport Requires medical attention within minutes for survival (up to 60) Includes compromises to patient's Airway, Breathing, Circulation 	<p>MINOR Green Triage Tag Color</p> <ul style="list-style-type: none"> Victim with relatively minor injuries Status unlikely to deteriorate over days May be able to assist in own care: "Walking Wounded"

ADULT & PEDS	<u>SPECIALTY TRANSPORT</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: 04/01/2023

GENERAL CONSIDERATIONS

- In appropriate situations, EMS providers may request from Medical Direction the dispatch of specialty transportation services (helicopter or hospital-based ground units) to the scene of a prehospital emergency in accordance with the following criteria:
 - The patient meets trauma center criteria and transport time by the specialized unit to the desired center is less than an EMS providers transport time **OR**
 - Benefits to the patient due to the increased level of expertise of the specialized unit staff outweigh increased transport times
- If EMS providers conclude that specialty transport services are necessary:

<u>Central DuPage Hospital EMS</u>	<u>Edward Hospital EMS</u>
	<u>Good Samaritan Hospital EMS</u>
Patient meets the above criteria and/or the “Star” criteria in “ <u>FIELD TRIAGE</u> ” SMO with an arrival time >25 minutes to Level 1 Trauma Center Utilize Specialty Transport with OR without Medical Direction approval	<u>Loyola University Medical Center EMS</u>
	Consider Placing Specialty Service on Standby
	Assess the need for specialty transport services based upon: <ul style="list-style-type: none"> • Patient history • The course of events (mechanism of injury, extrication times, etc.) • The patient's condition as assessed at the scene • Current local traffic patterns • Weather conditions
	Obtain Medical Direction Approval. At no time shall a patient be transported from the scene via specialty service without authorization from Medical Direction
Follow SMOs in providing care until the arrival of the specialty transport unit	

REGION VIII CRITICAL CARE SERVICE PROVIDERS

<u>Aeromedical</u>	<u>Ground Critical Care</u>	<u>Bariatric</u>
Air Methods LifeStar – Joliet 1-866-480-6030	Advanced Critical Transport (ACT) 1-708-387-0817	Advanced Critical Transport (ACT) BLS ONLY 1-708-387-0817
	Edward Ambulance 1-630-646-3000	Loyola Medicine Transport 1-844-381-2620

NOTE: Medical Direction may establish a prioritized listing of specialty transport services available in their geographic area

Transport Guidelines for OB Emergencies:

Pregnant patients in cardiac arrest should be transported to the closest facility, regardless of the receiving facility's OB / Labor & Delivery capabilities.

Any pregnant patient who is NOT in cardiac arrest, and has a potential symptom or injury that could result in the need for OB involvement and/or monitoring should be transported to a facility with appropriate OB / Labor & Delivery services. In these cases, the benefits of additional transport time and distance outweigh any risks of transporting these patients to a non-OB / Labor & Delivery capable hospital.

If the need for transport to an OB / Labor & Delivery capable facility is questionable, contact Medical Direction at the non-OB capable hospital for further guidance regarding transport to those facilities.

PHASE I: UNCOMPLICATED LABOR**BLS / ALS**

1. Assess history and determine if there is adequate time to transport
 - Gravida (number of pregnancies) and Para (number of live births)
 - Number of miscarriages, stillbirths, and multiple births
 - Due date (expected date of confinement, "EDC") or date of LMP (last menstrual period)
 - Onset, duration, and frequency of contractions (time from beginning of one contraction to beginning of the next)
 - Length of previous labors in hours
 - Status of membranes, intact or ruptured. If ruptured, inspect for prolapsed cord or evidence of meconium
 - HIGH RISK CONCERNS
 - maternal drug abuse
 - teenage pregnancy
 - preterm labor (<37 weeks)
 - previous breech or C-section
 - history of diabetes/hypertension/cardiovascular disease/other pre-existing diseases that may compromise mother and/or fetus
2. Inspect for bulging perineum, crowning, or whether patient is involuntarily pushing with contractions. If contractions are two minutes apart with crowning or any of the above are present, prepare for delivery. If delivery is not imminent, transport on left side. **DO NOT ATTEMPT TO RESTRAIN OR DELAY DELIVERY UNLESS PROLAPSED CORD IS NOTED.**

IMMINENT DELIVERY

1. **ADULT INITIAL MEDICAL CARE**
2. If patient is hyperventilating, coach her to take slow deep breaths
 - **ALS:** If patient becomes hypotensive or lightheaded at any time, **NORMAL SALINE IV FLUID BOLUSES**
 - Reassess vital signs every 5 minutes and closely monitor for respiratory changes
 - **Request additional ALS unit for second patient**
3. Position patient supine on a flat surface, if possible. Use standard precautions.
4. Open OB pack. Place drapes over the patient's abdomen and beneath perineum. Prepare bulb syringe, cord clamps and Chux to receive newly born. Have newly born/neonatal-sized BVM with oxygen supply ready.

PHASE II: DELIVERY

1. Control rate of delivery by placing palm of one hand over occiput. Protect perineum with pressure from other hand
2. If amniotic sac is still intact, gently twist or tear the membrane. Note presence or absence of meconium
3. Once the head is delivered, allow it to passively turn to one side
4. Feel around the neck for the umbilical cord (nuchal cord). If present, attempt to gently lift it over the head. If unsuccessful, double clamp and cut the cord between the clamps.
5. To facilitate delivery of the upper shoulder, gently guide to head downward. Once the upper shoulder is delivered, support and lift the head and neck slightly to deliver the lower shoulder. Allow head to deliver passively
6. The rest of the newly born should deliver quickly with one contraction. Firmly grasp the newly born as it emerges. Newly born will be wet and slippery
7. Keep newly born level with vagina until cord stops pulsating and is double clamped

PHASE III: CARE OF THE NEWLY BORN

The majority of newborns require no resuscitation beyond maintenance of temperature, mild stimulation, and suctioning of the airway. Transport is indicated as soon as the airway is secured and resuscitative interventions, if needed, are initiated. If the **APGAR** score is <6 at 1 minute or meconium is present, begin resuscitation.

BLS / ALS

PEDIATRIC INITIAL MEDICAL CARE

1. **PEDIATRIC INITIAL MEDICAL CARE**
2. Deliver head and body
3. Clamp and cut cord
4. Assess newly born risk factors:
 - Term gestation?
 - Breathing or crying?
 - Good muscle tone?
5. Provide basic care:
 - Warm and maintain normal temperature
 - Position; clear airway as needed with bulb syringe or suction, mouth before nose
 - Dry the newly born and stimulate
6. Assess condition and respirations:

<u>Apnea or gasping</u>	<u>Labored breathing or persistent cyanosis</u>	<u>Adequate breathing and good color</u>
<ul style="list-style-type: none">• Positive pressure ventilations• SpO₂ monitor• ECG monitor	<ul style="list-style-type: none">• Position and clear airway• SpO₂ monitor• ECG monitor• Consider need for increased FiO₂	<ul style="list-style-type: none">• SpO₂ monitor• Consider ECG monitor
<u>NEWBORN TARGETED SpO₂</u>		
1 MIN		60 – 65%
2 MIN		65 – 70%
3 MIN		70 – 75%
4 MIN		75 – 80%
5 MIN		80 – 85%
10 MIN		85 – 95%

7. Assess heart rate

<p><u>HEART RATE >100</u></p>	<p><u>HEART RATE 60 – 100</u></p>	<p><u>HEART RATE <60</u></p>
<ul style="list-style-type: none"> • Contact Medical Direction • Support ABCs • Provide basic care • If at any time heart rate decreases, follow appropriate steps 	<ul style="list-style-type: none"> • Continue ventilations for 1-2 minutes 	<ul style="list-style-type: none"> • CPR for 30 seconds at a ratio of 3:1 with ventilations (FiO₂ of 21–30%)
<p>REASSESS HEART RATE</p>		
<p><u>HEART RATE <60</u></p>	<p><u>HEART RATE 60 - 100</u></p>	
<ul style="list-style-type: none"> • Attempt ENDOTRACHEAL INTUBATION and VASCULAR ACCESS • <u>EPINEPHRINE 1:10,000</u> 0.1 mL/kg IV/IO or 0.3 mL/kg ET • Repeat <u>EPINEPHRINE</u> every 3 min with continuous CPR as long as HR remains <60 	<ul style="list-style-type: none"> • Continue ventilations • Contact Medical Direction • Support ABCs • Provide basic care 	<ul style="list-style-type: none"> • Consider ENDOTRACHEAL INTUBATION • Consider VASCULAR ACCESS

PHASE IV: POSTPARTUM CARE

1. Placenta should deliver in 20-30 minutes. If delivered, collect in plastic bag from OB kit and transport to hospital for inspection. Do **NOT** pull on umbilical cord to facilitate delivery of the placenta. **DO NOT DELAY TRANSPORT AWAITING DELIVERY OF PLACENTA.**
2. If perineum is torn and/or bleeding, apply direct pressure with sanitary pads, and have patient bring her legs together. Apply cold pack or ice bag to perineum (over pad) for comfort and to reduce swelling.

ALS:

3. If estimated blood loss >500 mL:
 - **NORMAL SALINE** IV/IO fluid boluses, titrated to SBP \geq 90 mmHg
 - Reassess vital signs every 5 minutes and closely monitor for respiratory changes
 - Massage top of uterus (fundus) until firm
 - Breast-feeding may increase uterine tone. Allow newly born to nurse
4. If signs of hypoperfusion despite above treatment, start second IV while transporting and administer fluid boluses
5. **Special Considerations:**
 - Focus should be on newborns appearance, not the presence of meconium
 - Consider **APGAR** at 1 and 5 minutes, but do not interrupt resuscitation to obtain
 - Per Medical Direction, consider:
 - **DEXTROSE 10%** 5 mL/kg IV/IO
 - **NORMAL SALINE** IV fluid bolus of 10 mL/kg
 - **NALOXONE (NARCAN®)** 0.1 mg/kg IV/IN/IO

OB / GYN**APGAR SCORING**

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 10/01/2021

REVIEWED: 04/01/2023

REVISED: 10/01/2021

APGAR SCORING

	0	1	2	1 min	5 min
Appearance (Skin color)	Blue or Pale	Blue Hands or Feet	Entirely Pink		
Pulse (Heart rate)	Absent	<100 /min	>100 /min		
Grimace (Reflex irritability)	Limp	Grimace	Cough/Sneeze or Appropriate to Stimuli		
Activity (Muscle tone)	Limp	Some Flexion of Extremities	Active Movement		
Respirations	Absent	Weak Cry/Hypo-ventilation	Strong		
TOTALS					



APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 10/01/2021

REVIEWED: 04/01/2023

REVISED: 10/01/2021

BLS / ALS1. **ADULT INITIAL MEDICAL CARE**

- HIGH FiO₂ or VENTILATION
- LOAD AND GO SITUATION with treatment while transporting
- Contact Medical Direction as soon as possible

NEVER ATTEMPT TO PULL THE NEWLY BORN FROM THE VAGINA BY THE LEGS OR TRUNK

2. As soon as the legs are delivered, support the body wrapped in a towel.
3. After the shoulders are delivered, if face down, gently elevate the legs and trunk to facilitate delivery of the head
4. Head should deliver in 30 seconds with the next contraction. If NOT, reach two gloved fingers into the vagina to locate the mouth, and push vaginal wall away from mouth to form an airway. Keep fingers in place and transport immediately. Alert receiving hospital ASAP
5. Apply gentle pressure to the fundus. If head does NOT deliver in two minutes, keep your fingers in place to maintain the airway. Keep exposed part of the fetus warm and dry
6. If the head delivers, anticipate newly born distress. Refer to **EMERGENCY CHILDBIRTH - PHASE III: CARE OF THE NEWLY BORN**



APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 10/01/2021

REVIEWED: 04/01/2023

REVISED: 10/01/2021

BLS / ALS1. **ADULT INITIAL MEDICAL CARE**

- **HIGH FiO₂ or VENTILATION**
 - **LOAD AND GO SITUATION** with treatment while transporting
 - **Contact Medical Direction as soon as possible**
2. Place mother supine with knees to shoulders and reattempt delivery
 3. If unsuccessful, return to supine position without knees to shoulders. Provide supplemental oxygen to newly born and protect head



APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 10/01/2021

REVIEWED: 04/01/2023

REVISED: 10/01/2021

BLS / ALS1. **ADULT INITIAL MEDICAL CARE**

- **HIGH FiO₂ or VENTILATION**
 - **LOAD AND GO SITUATION** with treatment while transporting
 - **Contact Medical Direction as soon as possible**
2. Place mother in Trendelenburg position with knees-to-chest
 3. **DO NOT** push cord back into vagina
 4. Place gloved fingers into vagina between pubic bone and presenting part, with the cord in between two fingers to monitor cord pulsations and exert counter pressure on the presenting part
 5. Cover exposed cord with moist dressing and keep warm
 6. Maintain hand placement until relieved at Emergency Department

ADULT**PREECLAMPSIA**

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 10/01/2021

REVIEWED: 04/01/2023

REVISED: 04/01/2023

SBP >160 mmHg and/or DBP >110 mmHg with **any** of the following:

- Headache
- Visual changes
- Altered mental status
- Abdominal pain
- Pulmonary Edema

BLS / ALS

1. **ADULT INITIAL MEDICAL CARE**
2. **HIGH FiO₂ or VENTILATION**

ALS

3. If altered mental status or signs of hypoperfusion, **NORMAL SALINE IV fluid boluses, titrated to effect**
 - Reassess vital signs every 5 minutes and closely monitor for respiratory changes
 - Palpate abdomen to determine uterine tone and presence of contractions
 - Place mother on left side or raise right side of backboard 20-30°. Insert second IV line if no response to initial fluids
4. **HANDLE PATIENT GENTLY.** Minimize CNS stimulation (avoid lights and siren). DO NOT check pupil response. Seizure precautions. If seizure occurs, refer to **ADULT SEIZURE / STATUS EPILEPTICUS SMO.**
5. **MAGNESIUM SULFATE** 2 g infusion (mix in 50-100 mL of D5W or NS) IV/IO over **10 minutes**

ADULT

ECLAMPSIA

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 10/01/2021

REVIEWED: 04/01/2023

REVISED: 04/01/2023

ANTEPARTUM OR POST-PARTUM SEIZURE ACTIVITY

BLS / ALS

1. **ADULT INITIAL MEDICAL CARE**
2. **HIGH FiO₂ or VENTILATION**

ALS

3. If altered mental status or signs of hypoperfusion, **NORMAL SALINE IV fluid boluses, titrated to effect**
 - Reassess vital signs every 5 minutes and closely monitor for respiratory changes
4. Palpate abdomen to determine uterine tone and presence of contractions
5. Place mother on left side or raise right side of backboard 20-30°. Insert second IV line if no response to initial fluids
6. **HANDLE PATIENT GENTLY.** Minimize CNS stimulation (avoid lights and siren). DO NOT check pupil response. Seizure precautions
7. **MAGNESIUM SULFATE 2 g IV/IO over 2 minutes (1 g/min).**
 - May repeat **MAGNESIUM SULFATE 2 g IV/IO over 2 minutes x 1 to a total dose of 4**
8. If seizure persists after infusion of **MAGNESIUM**, give **MIDAZOLAM (VERSED®) 2 mg IV/IO (4 mg IN)** every 2 minutes up to 10 mg as necessary, titrated to control seizures

BLS / ALS

1. **PEDIATRIC INITIAL MEDICAL CARE**
2. Complete primary and secondary assessment
 - Assess for signs of:
 - Suspected foreign body
 - Obstruction or epiglottitis
 - Anaphylaxis
3. Refer to **PEDIATRIC RESPIRATORY DISTRESS WITH A TRACHEOSTOMY** or **PEDIATRIC RESPIRATORY DISTRESS – HOME VENTILATOR SMO**, as indicated
4. If foreign body suspected, open mouth and remove foreign body if visible
5. Reposition airway
6. Consider back slaps, chest/abdominal thrusts (age dependent)

ALS

7. Direct laryngoscopy, foreign body removal with Magill forceps if indicated
8. Secure airway as appropriate
9. Consider **AGE-APPROPRIATE CRICOTHYROIDOTOMY**

PEDS	<u>DRUG ASSISTED INTUBATION</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: 04/01/2023

ALS

This SMO is to be used for patients <15 years of age.

If ≥15 years of age, see [ADULT DRUG ASSISTED INTUBATION SMO](#)

- The following are situations which may require the use of this SMO to facilitate intubation:
 - Pediatric Glasgow Coma Scale (PCGS) score ≤ 8
 - Imminent respiratory arrest or imminent tracheal / laryngeal closure from any cause
- Prepare patient and equipment for procedure:
 - Position patient in sniffing position unless cervical spine injury suspected
 - HIGH FiO₂ VENTILATION prior to and in-between steps of this procedure as able**
- Give sedation. Choose only 1 medication to use for sedation based on patient condition:

<u>KETAMINE (KETALAR®)</u>	O R	<u>MIDAZOLAM (VERSED®)</u> For use if Ketamine unavailable
<u>INITIAL DOSE:</u>		<u>INITIAL DOSE:</u>
2 mg/kg SLOW IV/IO, max TOTAL dose 500 mg		0.1 mg/kg SLOW IV/IO, max dose 10 mg
<u>REPEAT DOSE:</u>		<u>REPEAT DOSE:</u>
1 mg/kg SLOW IV/IO, max dose 250 mg		Contact Medical Direction

- If gag reflex present, give [BENZOCAINE \(HURRICAIN®\) SPRAY](#) 0.5 - 1 second spray, 30 second interval x 2.
- Attempt oral or oral in-line intubation via System-specific procedure
- After passing of tube, verify placement:
 - Adequate chest expansion bilaterally and symmetrically
 - Positive bilateral breath sounds
 - Negative epigastric sounds
 - Waveform capnography, end tidal CO₂ detector and/or esophageal detection device per System-specific procedure
- Secure ET tube and reassess placement
- Continuous waveform EtCO₂ monitoring

If unsuccessful intubation, continue High FiO₂ ventilation, contact Medical Direction, and be prepared for alternative/rescue airway device use or CRICHOYROIDOTOMY per System-specific procedure.

PEDS	POST-INTUBATION SEDATION	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: 04/01/2023

ALS

This SMO is to be used for patients <15 years of age
IF >15 YEARS OF AGE, SEE ADULT POST-INTUBATION SEDATION SMO

1. Following successful endotracheal intubation, give sedation to facilitate continued mechanical or manual ventilation.

<u>IV / IO</u>	<u>IN</u>
<p><u>MIDAZOLAM (VERSED®)</u> 0.1 mg/kg SLOW push every 2 minutes Max single dose 2 mg</p> <p>MAX total dose: 6 mg if <5 years of age 10 mg if ≥5 years of age</p> <p><u>MAX TOTAL DOSE INCLUDES INITIAL SEDATION DOSE</u></p>	<p><u>MIDAZOLAM (VERSED®)</u> 0.2 mg/kg every 2 minutes Max single dose 4 mg</p> <p>MAX total dose: 6 mg if <5 years of age 10 mg if ≥5 years of age</p> <p><u>MAX TOTAL DOSE INCLUDES INITIAL SEDATION DOSE</u></p>

BLS / ALS

1. **PEDIATRIC INITIAL MEDICAL CARE**

- Refer to **PEDIATRIC RESPIRATORY DISTRESS WITH A TRACHEOSTOMY** or **PEDIATRIC RESPIRATORY DISTRESS – HOME VENTILATOR SMO**, as indicated
- If wheezing, refer to **PEDIATRIC ASTHMA/COPD WITH WHEEZING /REACTIVE LOWER AIRWAY DISEASE**.

2. **Do not delay transport waiting for a response. Attempt to avoid agitation or excessive stimulation.**

<u>STABLE</u>		<u>UNSTABLE</u>	
Effective air exchange with no cyanosis		Cyanosis, marked stridor or respiratory distress, drooling, retractions, tripod positioning, evidence of inadequate air exchange, bradycardic, altered mental status, retractions, actual or impending respiratory arrest	
<u>SUSPECTED CROUP</u>	<u>SUSPECTED EPIGLOTTITIS</u>	<u>SUSPECTED CROUP</u>	<u>SUSPECTED EPIGLOTTITIS</u>
		<u>BREATHING:</u>	
		<u>EPINEPHRINE (ADRENALIN®)</u> <u>1:1000</u> 3 mg (3 mL) via nebulizer	
		<u>APNEIC</u>	
<u>NORMAL SALINE</u> 6 mL via nebulizer, may repeat x 1	<u>EPINEPHRINE (ADRENALIN®)</u> <u>1:1000</u> 3 mg (3 mL) via nebulizer	<u>EPINEPHRINE (ADRENALIN®)</u> <u>1:1000</u> 3 mg (3 mL) via nebulizer	<ul style="list-style-type: none"> • HIGH FiO₂ VENTILATION • Attempt ENDOTRACHEAL INTUBATION x 1 if unable to ventilate • If intubation unsuccessful, perform CRICOTHYROID-OTOMY

PEDS**REACTIVE LOWER AIRWAY DISEASE /
ASTHMA**

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

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BLS / ALS1. **PEDIATRIC INITIAL MEDICAL CARE**

2. Complete primary and secondary assessment.

• Assess for signs of:

- Wheezing ○ Diminished respirations ○ Retractions ○ Tachycardia / bradycardia
- Grunting ○ Decreased breath sounds ○ Tachypnea ○ Decreasing consciousness

3. Position of comfort

BLS

4. Assist patient with prescribed beta-agonist MDI if available

ALS4. **PICK ONLY ONE OF THE FOLLOWING MEDICATIONS:**

<u>ALBUTEROL / IPRATROPIUM (DUONEB®)</u>		<u>ALBUTEROL (VENTOLIN®)</u>		<u>LEVALBUTEROL (XOPENEX®)</u>		<u>TERBUTALINE (BRETHINE®)</u>
2.5 – 3.0 mg / 0.5 mg via nebulizer (dose of albuterol contained may vary)	O R	For use when Albuterol / Ipratropium (DuoNeb®) not available	O R	For use when Albuterol (Ventolin®) not available	O R	For use when Levalbuterol (Xopenex®) not available and EMS System approval
		2.5 mg (3 mL) via nebulizer		0.63 mg via nebulizer		0.01 mg/kg SQ x1 Max dose 0.25 mg NO REPEAT DOSE

**IF NO RESPONSE TO BETA-AGONIST, OR PATIENT IN SEVERE RESPIRATORY
DISTRESS:****EPINEPHRINE (ADRENALIN®) 1:1,000 IM****<30 KG BODY WEIGHT**

0.15 mg (0.15 mL)

≥30 KG BODY WEIGHT

0.3 mg (0.3 mL)

**IF SEVERE RESPIRATORY DISTRESS PERSISTS DESPITE BETA-AGONIST AND
EPINEPHRINE ADMINISTRATION:****MAGNESIUM SULFATE**25 mg/kg (maximum 2 g) infusion (mix in 50-100 mL of D₅W or NS) IV/IO over 10 minutes
per System-Specific Policy**Special Considerations:**

- If stable croup is suspected, consider **NORMAL SALINE 6 ML NEBULIZER** by mask or aim mist (blow by) at child's face
- If assisting patient with a beta-agonist MDI, it should be administered through a holding chamber or spacer device, if available. Beta-agonist MDI inhalers include, among others, albuterol (Proventil®, Ventolin®) and levalbuterol (Xopenex®).

BLS / ALS

1. [PEDIATRIC INITIAL MEDICAL CARE](#)
2. Perform appropriate airway maneuver
 - Modified jaw thrust or chin lift/head tilt
 - Suction
 - Oropharyngeal airway
3. Consider [SPINE MOTION RESTRICTION](#) as indicated
4. If foreign body suspected:
 - Open mouth and remove foreign body if visible
 - Reposition airway
 - Consider back slaps / abdominal thrusts (age-dependent)
5. If not breathing **ASSIST WITH HIGH FiO₂ BVM**
 - Consider airway insertion
6. Inadequate chest rise
 - Reposition airway
 - Consider airway insertion

BLS

7. Cardiopulmonary compromise
 - Refer to [PEDIATRIC AED SMO](#), [PEDIATRIC ASYSTOLE / PEA](#), or [PEDIATRIC VENTRICULAR FIBRILLATION / PULSELESS VENTRICULAR TACHYCARDIA](#), as appropriate
 - If heart rate <60 BPM, go to [PEDIATRIC BRADYDYSRHYTHMIAS SMO](#)

ALS

8. Cardiopulmonary compromise
 - Establish **VASCULAR ACCESS IV/IO** at rate of 20 mL/hr
 - Refer to [PEDIATRIC AED SMO](#), [PEDIATRIC ASYSTOLE / PEA](#), or [PEDIATRIC VENTRICULAR FIBRILLATION / PULSELESS VENTRICULAR TACHYCARDIA](#)
 - If heart rate <60 BPM, go to [PEDIATRIC BRADYDYSRHYTHMIAS SMO](#)
9. **Maintain adequate ventilation, if needed place advanced airway.** If intubation needed see [PEDIATRIC DRUG ASSISTED INTUBATION SMO](#)
10. Consider **AGE-APPROPRIATE CRICOTHYROIDOTOMY**

Special Considerations:

- Respiratory arrest may be a presenting sign of a toxic ingestion, metabolic disorder or anaphylaxis
- Consider [NALOXONE \(NARCAN®\)](#) or [DEXTROSE](#) as indicated

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

BLS / ALS

1. **PEDIATRIC INITIAL MEDICAL CARE**
2. Open airway
3. Remove patient from ventilator and **VENTILATE** with **HIGH FiO₂** using bag valve to tracheostomy tube

Able to Ventilate

4. Contact Medical Direction (if BLS, consider ALS backup)
5. Transport
 - Support ABCs
 - Observe
 - Keep warm

Unable to Ventilate

6. Refer to **PEDIATRIC RESPIRATORY DISTRESS WITH A TRACHEOSTOMY TUBE SMO**, for obstructed airway guidelines

Special Considerations:

- Consider using parent/caregivers/home health nurses as medical resources at home and while transporting
- Consider alerting Medical Direction of parent/caregiver participation in care
- Consider allowing caregiver to remain with child regardless of child's level of responsiveness
- Bring ventilator to the hospital or have parents/caregivers bring the ventilator to the hospital

BLS / ALS

1. **PEDIATRIC INITIAL MEDICAL CARE**

- **GIVE HIGH FiO₂** per tracheostomy collar
- Suction and reassess airway adequacy
- If still obstructed, repeat suction, after removing inner cannula if present
- Still obstructed, have caregiver change trach tube, or insert appropriately sized ET tube into stoma
- Reassess airway adequacy

2. **If adequate airway: HIGH FiO₂ BY MASK or ASSIST WITH HIGH FiO₂ BVM**

- Perform frequent reassessment for obstruction:
 - Retractions
 - Grunting
 - Wheezing / stridor
 - Tachypnea
 - Decreasing consciousness
 - Apnea
 - Cyanosis

4. **Continued Obstruction:**

- **VENTILATE** with **HIGH FiO₂** using bag valve to trach tube
- If unable to ventilate to trach tube, ventilate with BVM to mouth (cover stoma)
- If no chest rise, ventilate with BVM (infant mask) to stoma
 - Chest must rise and fall with each ventilation

BLS

5. Refer to appropriate Pediatric **RESPIRATORY** or **CARDIAC** SMO as indicated
6. Contact Medical Direction and consider ALS backup if available

ALS

7. If wheezing, refer to **PEDIATRIC REACTIVE LOWER AIRWAY DISEASE / ASTHMA SMO**
8. Refer to appropriate Pediatric **RESPIRATORY** or **CARDIAC** SMO as indicated

For Transport

BLS / ALS

9. Support ABCs
 - Observe
 - Keep warm
 - Transport in position of comfort
 - Consider allowing caregiver to remain with child regardless of child’s level of responsiveness

Special Considerations:

- If chest rise inadequate:
- Reposition the airway
- If using mask to stoma, consider inadequate volume delivered. Compress bag further and/or depress pop-off valve.

BLS

1. **PEDIATRIC INITIAL MEDICAL CARE**

2. Establish unresponsiveness.
3. If unresponsive, check pulse for a maximum of 10 seconds. If pulseless, start chest compressions (rate of 100 - 120 per minute) at the appropriate ratio
 - Single rescuer – 30 compressions: 2 ventilations
 - Two rescuers – 15 compressions: 2 ventilations
 - Give 2 ventilations (over 1 second each) that cause the chest to rise (if chest does not rise, reposition, reattempt). Allow for adequate exhalation time.
 - **CPR emphasis is to provide continuous high-quality CPR with no delays and minimal interruptions**
4. Attach AED and analyze rhythm as soon as available.
 - Attach pads to bare dry skin in proper position. (NOTE: It is always desirable to utilize an AED with pediatric capabilities and pads. If unavailable, use of any AED and pad is appropriate.)
 - **If PEDIATRIC pads available**: Apply to anterior chest with proper contact without overlap of pads. If overlap of pads (or within one inch of each other), use anterior / posterior pad placement with **SPINE MOTION RESTRICTION** if neck/back injury suspected.
 - **If only ADULT pads available**: Consider whether the size of the pediatric patient would allow anterior / anterior pad placement as above. Otherwise apply anterior / posterior with **SPINE MOTION RESTRICTION** if neck/back injury suspected.
5. Press analyze button (if present) and stand clear of patient.
 - If shock advised:
 - Continue CPR until ready for **SHOCK**
 - Ensure that all are “clear” of patient and press **SHOCK** button
 - Resume CPR immediately beginning with compressions
 - Every 2 minutes, analyze / shock as indicated / resume CPR
 - If no shock advised:
 - Check airway, breathing and other signs of circulation; resume CPR if indicated.
6. Contact Medical Direction
7. Transport
8. Support ABCs
9. Observe
10. Keep warm

Special Considerations:

- If injury or neck/back trauma suspected, consider **SPINE MOTION RESTRICTION**
- Remove patient from hazardous environment or standing water prior to use of AED
- If AED in place, EMS personnel should let AED complete rhythm analysis prior to switching from AED to manual defibrillator (switch during CPR interval)

PEDS**ASYSTOLE / PULSELESS ELECTRICAL ACTIVITY (PEA)**

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: 04/01/2023

BLS PROVIDERS – REFER TO [PEDIATRIC AED SMO](#)**ALS****1. [PEDIATRIC INITIAL MEDICAL CARE](#)****Search for and treat potentially reversible causes:**

- Hypovolemia
- Hypoxia or Ventilation Issues
- Hypoglycemia
- Hypothermia
- Hyperkalemia
- Toxins (overdose)
- Tamponade (pericardial)
- Tension Pneumothorax
- Trauma

INITIATE CPR AT A RATE OF 100 – 120 COMPRESSIONS PER MINUTES**ADVANCED AIRWAY PLACED**

Continuous chest compressions with 1 breath every 6 seconds (10 breaths/min) for two minutes

NO ADVANCED AIRWAY

15:2 compression-ventilation ratio for two minutes

ASSESS CARDIAC RHYTHM**NON-SHOCKABLE (PEA, ASYSTOLE)**

Immediately resume CPR for 2 min

SHOCKABLE (VT/VF)**DEFIBRILLATE X 1 AT 2 J/KG** and immediately resume CPR for 2 min**BRIEFLY RECHECK RHYTHM AND PULSE EVERY 2 MIN WHILE PATIENT REMAINS UNRESPONSIVE****NON-SHOCKABLE (PEA, ASYSTOLE)**

Immediately resume CPR for 2 min

SHOCKABLE (VT/VF)**DEFIBRILLATE X 1 AT 4 J/KG** and immediately resume CPR for 2 min**Establish VASCULAR ACCESS IV/IO, Continue CPR
Maintain adequate ventilations, consider need for advanced airway****EPINEPHRINE (ADRENALIN®) 1:10,000 0.1 mL/kg (0.01 mg/kg) IV/IO while continuing CPR
Repeat every 3 – 5 minutes while pulseless****AT NEXT RHYTHM CHECK:****NON-SHOCKABLE (PEA, ASYSTOLE)****SHOCKABLE (VT/VF)**

Immediately resume CPR for 2 min

**AMIODARONE (CORDARONE®) 5 mg/kg
IV/IO**

Repeat every 3 to 5 min while in shockable pulseless arrest, up to 3 doses total.

If Amiodarone available, give **LIDOCAINE (XYLOCAINE®) 1 mg/kg.**

Repeat **LIDOCAINE (XYLOCAINE®) 0.5 mg/kg every 3-5 min** up to 3 mg/kg while in shockable pulseless arrest.

Repeat cycle of 2-minute CPR and rhythm recheck.
DEFIBRILLATE AT 4 J/KG when indicated by shockable rhythm.
Initiate transport, notify Medical Direction

NOTE:

- Defibrillation energy should not exceed adult energy
- If no vascular access, may consider **EPINEPHRINE (ADRENALIN®) 1:1000 0.1 mL/kg (0.1 mg/kg) ETT.** Maximum dose 2.5 mg ET. Flush with 5 mL of **NORMAL SALINE** and follow with 5 ventilations

BLS / ALS

1. **PEDIATRIC INITIAL MEDICAL CARE**

Symptoms:

- Weak, thready or absent peripheral pulses
- Decreasing consciousness
- Tachypnea/Respiratory difficulty
- Central cyanosis and coolness
- Hypotension (late sign)

Search for and treat potentially reversible causes:

- Hypovolemia
- Hypoxia or Ventilation Issues
- Hypoglycemia
- Hypothermia
- Hyperkalemia
- Toxins (overdose)
- Tamponade (pericardial) Tension
- Pneumothorax
- Trauma

2. **IF CARDIOPULMONARY COMPROMISE PRESENT:**

- Give **HIGH FiO₂ BY MASK** or **SUPPORT WITH BVM VENTILATIONS**
- If heart rate remains <60 with hypoperfusion despite adequate ventilation, **perform CPR**

3. Contact Medical Direction

4. Transport

- Support ABCs
- Keep warm
- Observe

ALS

5. Establish **VASCULAR ACCESS IV/IO**

6. Treatment (More than one may be required):

<u>PERSISTENT HYPOTENSION / HYPERPERFUSION</u>	<u>INCREASED VAGAL TONE, OR PRIMARY AV BLOCK</u>	<u>CONTINUED CARDIOPULMONARY COMPROMISE</u>
<p><u>NORMAL SALINE</u> IV fluid bolus of 20 mL/kg x 1 May repeat x 2 as needed to a total of 60 mL/kg</p>	<p><u>ATROPINE</u> 0.02 mg/kg IV/IO Minimum dose 0.1 mg Max single dose 0.5 mg Repeat in 3-5 minutes if needed</p>	<p><u>EPINEPHRINE (ADRENALIN®) 1:10,000</u> 0.1 mL/kg (0.01 mg/kg) IV/IO Repeat every 3-5 minutes if no response</p>

Special Considerations

- Hypoglycemia has been known to cause bradycardia in infants and children
- Hypothermia can cause bradycardia in infants and children. Refer to **PEDIATRIC COLD EMERGENCIES SMO**
- Monitor IO fluid volumes carefully when using a pressure infuser

CONGENITAL HEART DISEASE / CARDIAC SURGERY / POST-CARDIAC ARREST**BLS / ALS**

1. **PEDIATRIC INITIAL MEDICAL CARE**
2. Supine position

ALS

3. Establish **VASCULAR ACCESS IV/IO**
4. Treat any cardiac rhythm disturbance per appropriate SMO
5. Consider **NORMAL SALINE IV fluid bolus of 20 mL/kg**
 - Caution: fluids may need to be restricted in cardiogenic shock

**HEART RATE >180 BPM FOR AGE 1 YEAR – 15 YEARS
HEART RATE >220 BPM FOR AGE <1 YEAR**

BLS / ALS

1. PEDIATRIC INITIAL MEDICAL CARE

Initial Assessment Key findings:

- Weak, thready or absent peripheral pulses
- Decreasing consciousness
- Tachypnea/Respiratory difficulty
- Central cyanosis and coolness
- Hypotension (late sign)

Search for and treat potentially reversible causes:

- Hypovolemia
- Hypoxia or Ventilation Issues
- Hypoglycemia
- Hypothermia
- Hyperkalemia
- Toxins (overdose)
- Tamponade
- Tension Pneumothorax
- Trauma

<u>STABLE</u>	<u>UNSTABLE</u>
<u>BLS / ALS</u>	<u>BLS / ALS</u>
<ul style="list-style-type: none"> • Place cardiac monitor and/or pads • Contact Medical Direction • Transport • Support ABCs • Keep warm 	<ul style="list-style-type: none"> • Place cardiac monitor and/or pads • Contact Medical Direction • Transport • Support ABCs • Keep warm
	<u>ALS</u>
	<ul style="list-style-type: none"> • Establish VASCULAR ACCESS IV/IO • Attempt vagal maneuver • If probable SVT, give <u>ADENOSINE (ADENOCARD®)</u> 0.1 mg/kg rapid IV/IO push (max dose 6 mg) with ≥ 5 mL NS flush
	<u>IF RHYTHM DOES NOT CONVERT:</u>
	<ul style="list-style-type: none"> • Repeat <u>ADENOSINE (ADENOCARD)</u> 0.2 mg/kg rapid IV/IO push (max dose 12 mg) with ≥ 5 mL NS flush
<u>IF RHYTHM DOES NOT CONVERT:</u>	
<ul style="list-style-type: none"> • Repeat <u>ADENOSINE (ADENOCARD)</u> 0.2 mg/kg rapid IV/IO push (max dose 12 mg) with ≥ 5 mL NS flush 	
<u>IF RHYTHM DOES NOT CONVERT AND PATIENT REMAINS UNSTABLE:</u>	

- Initiate transport, contact Medical Direction
- Perform **SYNCHRONIZED CARDIOVERSION 1 J/KG**
- If no response, may repeat **SYNCHRONIZED CARDIOVERSION 2 J/KG**

**Differential Diagnosis of
Supraventricular Tachycardia vs. Sinus Tachycardia in Pediatrics:**

<u>Probable Supraventricular Tachycardia</u>	<u>Probable Sinus Tachycardia</u>
<ul style="list-style-type: none"> • Vague, nonspecific history • P waves absent/abnormal • HR not variable • History of abrupt rate changes • <1 year: rate usually >220 BPM • 1-15 years: rate usually >180 BPM 	<ul style="list-style-type: none"> • History consistent with known cause • P waves present/normal • Variable R-R; constant P-R • <1 year: rate usually <220 BPM • 1-15 years: rate usually <180 BPM • History consistent with known cause

BLS PROVIDERS – REFER TO [PEDIATRIC AED SMO](#)

ALS

1. [PEDIATRIC INITIAL MEDICAL CARE](#)

Search for and treat potentially reversible causes:

- Hypovolemia
- Hypoxia or Ventilation Issues
- Hypoglycemia
- Hypothermia
- Hyperkalemia
- Toxins (overdose)
- Tamponade (pericardial)
- Tension Pneumothorax
- Trauma

INITIATE CPR AT A RATE OF 100 – 120 COMPRESSIONS PER MINUTES

NO ADVANCED AIRWAY

ADVANCED AIRWAY PLACED

15:2 compression-ventilation ratio for two minutes

Continuous chest compressions with 1 breath every 6 seconds (10 breaths/min) for two minutes

ASSESS CARDIAC RHYTHM

SHOCKABLE (VT/VF)

NON-SHOCKABLE (PEA, ASYSTOLE)

DEFIBRILLATE X 1 AT 2 J/KG
and immediately resume CPR for 2 min

Immediately resume CPR for 2 min

BRIFLY RECHECK RHYTHM AND PULSE EVERY 2 MIN WHILE PATIENT REMAINS UNRESPONSIVE

SHOCKABLE (VT/VF)

NON-SHOCKABLE (PEA, ASYSTOLE)

DEFIBRILLATE X 1 AT 4 J/KG
and immediately resume CPR for 2 min

Immediately resume CPR for 2 min

**Establish VASCULAR ACCESS IV/IO, Continue CPR
Maintain adequate ventilations, consider need for advanced airway**

EPINEPHRINE (ADRENALIN®) 1:10,000
mL/kg (0.01 mg/kg) IV/IO while continuing CPR
Repeat every 3 – 5 minutes while pulseless

AT NEXT RHYTHM CHECK:

SHOCKABLE (VT/VF)

NON-SHOCKABLE (PEA, ASYSTOLE)

AMIODARONE (CORDARONE®)
5 mg/kg IV/IO
Repeat every 3 to 5 min while in shockable pulseless arrest, up to 3 doses total.

Immediately resume CPR for 2 min

If Amiodarone not available, give
LIDOCAINE (XYLOCAINE®)
0.5 mg/kg every 3-5 min up to 3 mg/kg
while in shockable pulseless arrest

Repeat cycle of 2-minute CPR and rhythm recheck.
DEFIBRILLATE AT 4 J/KG when indicated by shockable rhythm.
Initiate transport, notify Medical Direction

NOTE:

- Defibrillation energy should not exceed adult energy.
- If no vascular access:
 - May consider **EPINEPHRINE (ADRENALIN®) 1:1000** 0.1 mL/kg (0.1 mg/kg) ETT. Maximum dose 2.5 mg ET. Flush with 5 mL of **NORMAL SALINE** and follow with 5 ventilations.

BLS / ALS

1. **PEDIATRIC INITIAL MEDICAL CARE**

Initial Assessment Key findings:

- Weak, thready or absent peripheral pulses
- Decreasing consciousness
- Tachypnea/Respiratory difficulty
- Central cyanosis and coolness
- Hypotension (late sign)

Search for and treat potentially reversible causes:

- Hypovolemia
- Hypoxia or Ventilation Issues
- Hypoglycemia
- Hypothermia
- Hyperkalemia
- Toxins (overdose)
- Tamponade (pericardial)
- Tension Pneumothorax
- Trauma

<u>STABLE</u>	<u>UNSTABLE</u>
<u>BLS / ALS</u>	<u>BLS / ALS</u>
<ul style="list-style-type: none"> • Place cardiac monitor and/or pads • Contact Medical Direction • Transport • Support ABCs • Keep warm 	<ul style="list-style-type: none"> • Place cardiac monitor and/or pads • Contact Medical Direction • Transport • Support ABCs • Keep warm
	<u>ALS</u>
	<ul style="list-style-type: none"> • Establish VASCULAR ACCESS IV/IO • <u>SYNCHRONIZED CARDIOVERSION AT 1 J/KG</u>
	<u>IF RHYTHM DOES NOT CONVERT:</u>
	<ul style="list-style-type: none"> • Consider <u>ADENOSINE (ADENOCARD®)</u> 0.1 mg/kg rapid IV/IO push with ≥ 5 mL NS flush • Initiate transport, contact Medical Direction

PEDS	INITIAL MEDICAL CARE	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

In this document, pediatric patients are defined as age 15 years and younger, consistent with the Emergency Medical Services and Trauma Center Code adopted by the Illinois Department of Public Health. Other terms commonly applied to the pediatric population include: "newly born" (less than 24 hours), "neonate" (1-28 days) and "infant" (1-12 months).

BLS / ALS

1. Assess scene safety
2. Use standard precautions
3. Assess Airway, Breathing and Circulation and intervene as indicated
4. Assess Level of Consciousness
5. Consider need for supplemental oxygen
 - If no distress, consider supplemental **OXYGEN AT LOW FiO₂** (blow-by method or nasal cannula)
 - If unstable or in distress, give **HIGH FiO₂ BY MASK** or **ASSIST WITH HIGH FiO₂ BVM**
 - Consider nasal cannula waveform capnography for spontaneously breathing patients with respiratory distress and/or metabolic disorders
6. Check blood glucose if indicated
 - Treat hypoglycemia per **PEDIATRIC DIABETIC / GLUCOSE EMERGENCIES SMO**
7. Assess ECG rhythm (if indicated and if available)
8. Assess pulse oximetry
9. Assess EtCO₂ value and waveform (if available)
10. If age >1 year and patient is experiencing nausea or vomiting, consider giving **ONDANSETRON (ZOFRAN®)**:

<40 kg Body Weight	≥40 kg Body Weight	
2 mg slow IV x 1, no repeat dose. No ODT dose for <40 kg	4 mg slow IV x 1 no repeat dose	O R 4 mg ODT tab x 1, no repeat dose

PEDS	<u>ALLERGIC REACTION – NON-ANAPHYLAXIS</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: 04/01/2023

BLS / ALS

1. [PEDIATRIC INITIAL MEDICAL CARE](#)
2. Apply ice/cold pack to bite or injection site

ALS

LOCALIZED ALLERGIC REACTION

Without systemic symptoms – urticarial, hives or edema NOT involving mouth, lips or airway

3. Give [DIPHENHYDRAMINE \(BENADRYL®\)](#) 1 mg/kg IM or slow IV. Max dose 50 mg.

ALS

ALLERGIC REACTION WITH SYSTEMIC SIGNS

Wheezing, diffuse hives, or prior history of systemic reaction, without signs of hypoperfusion

3. Give [EPINEPHRINE \(ADRENALIN®\) 1:1000](#) IM

<30 kg body weight	≥30 kg Body Weight
0.15 mg (0.15 mL)	0.3 mg (0.3 mL)

4. If wheezing, refer to [PEDIATRIC REACTIVE LOWER AIRWAY DISEASE / ASTHMA](#)
5. Give [DIPHENHYDRAMINE \(BENADRYL®\)](#) 1 mg/kg IM or slow IV. Max dose 50 mg
6. May REPEAT [EPINEPHRINE \(ADRENALIN®\)](#) every 15 min as symptoms persist

If at any time patient worsens, or patient shows signs of hypoperfusion, refer to [PEDIATRIC ALLERGIC REACTION – ANAPHYLAXIS SMO](#)

MULTI-SYSTEM REACTION WITH SIGNS OF HYPOPERFUSION, VOMITING, ALTERED MENTAL STATUS, SEVERE RESPIRATORY DISTRESS, WHEEZING, HYPOXIA

BLS / ALS

1. **PEDIATRIC INITIAL MEDICAL CARE**
2. Apply ice/cold pack to bite or injection site

BLS

3. Consider the administration of one dose **EPINEPHRINE AUTO-INJECTOR (EPIPEN®)** or EpiSafe Kit®

<30 kg body weight	≥30 kg Body Weight
0.15 mg (0.15 mL)	0.3 mg (0.3 mL)

4. Consider assisting with patient prescribed Beta-agonist inhaler (albuterol, Proventil, etc.) if available

ALS

3. **VASCULAR ACCESS** IV/IO. If unsuccessful, follow IM pathway.

<u>IV / IO</u>	<u>IM</u>
<p><u>NORMAL SALINE</u> IV FLUID BOLUS of 20 mL/kg May REPEAT <u>NORMAL SALINE</u> IV FLUID BOLUS x 2 to a total of 60 mL/kg if patient condition indicates</p>	<p><u>EPINEPHRINE (ADRENALIN®) 1:1000</u> 0.01 mg/kg IM. Maximum dose 0.3 mg</p>
<p><u>EPINEPHRINE (ADRENALIN®) 1:10,000</u> 0.01 mg/kg IV/IO May repeat every 5 minutes as needed MAX TOTAL DOSE 0.3 mg</p>	<p><u>DIPHENHYDRAMINE (BENADRYL®)</u> 1 mg/kg IM Max dose 50 mg</p>
<p><u>DIPHENHYDRAMINE (BENADRYL®)</u> 1 mg/kg slow IV. Max dose 50 mg</p>	

If wheezing, refer to

PEDS REACTIVE LOWER AIRWAY DISEASE / ASTHMA SMO

1. History of any of the following:

- Apnea
- Loss of consciousness
- Color change
- Loss of muscle control
- Episode of choking or gagging
- Acute mental status change

2. Important information to relay to Medical Direction and document:

- Parental / caregiver actions at the time of the event
- What resuscitative measures were taken
- Prior history of similar events

The typical age for such events is 2 years or less, and is most commonly seen in infants under 12 months. A BRUE is an event that is frightening to the observer and usually involves some combination of the above symptoms. It may present as a symptom of a variety of pediatric conditions including seizures, upper airway compromise, gastroesophageal reflux, metabolic problems, anemia and cardiac disease.

BLS / ALS

3. **PEDIATRIC INITIAL MEDICAL CARE**

- Support ABC's
- Perform a complete secondary assessment including:
 - General appearance
 - Work of breathing
 - Circulation to skin
 - Evidence of trauma
 - Extent of interaction with the environment
 - NOTE: **Exam may be normal by the time of patient contact with EMS**
- Treat any reversible causes identified, including blood glucose abnormalities, per appropriate SMO
- **All BRUE patients should be transported for medical evaluation, even the well appearing child**

4. Transport

- Support ABCs
- Observe
- Keep warm

BLS / ALS

1. **PEDIATRIC INITIAL MEDICAL CARE**

- **SPINE MOTION RESTRICTION** as indicated
- Consider other causes of altered mental status and treat per appropriate SMO
- Assess respiratory effort

2. Check and record blood glucose level

ALS

3. Establish **VASCULAR ACCESS IV/IO**. If unsuccessful, follow IM pathway.

4. If blood glucose \leq 60 mg/dL:

If no response to **NALOXONE (Narcan®)**, secure the airway as appropriate.

If patient has an existing insulin pump, PAUSE infusion.

Be cautious to not remove infusion line from patient.

If patient is able to, have them assist in disabling pump. Family may also be able to assist.

Note: For other pumps not listed, look for a “pause” or “suspend” function.

<u>Medtronic® MiniMed</u>	<u>OmniPod DASH®</u>	<u>Tandem T:SLIM®</u>
3. From the main menu, select “SUSPEND” and press “ACT.” 4. SUSPEND will flash on the screen; press ACT again to stop the pump.	6. Tap the menu icon on the home screen. 7. Tap “Suspend Insulin.” 8. Set desired duration of suspension to one hour. 9. Tap “Suspend Insulin” 10. Tap “Yes” to confirm.	4. From the home screen, select “OPTIONS.” 5. Tap “STOP INSULIN” 6. Tap “STOP” to confirm.

Notify receiving facility that patient’s insulin pump has been stopped, and duration of suspension if applicable.

IV / IO		IM
<u>DEXTROSE 10%</u> <u>(25g / 250mL)</u>	If Dextrose 10% not available:	<u>GLUCAGON</u> <u>(GLUCAGEN®)</u>
5 mL/kg (0.5 g/kg), up to 25g May repeat x 1 after five minutes if patient remains hypoglycemic and/or symptomatic	>8 Years of Age	> 8 Years of Age
	<u>DEXTROSE 50%</u> 25g / 50mL SLOW push	1 mg IM
	1 – 8 Years of Age	≤ 8 Years of Age
	<u>DEXTROSE 25%</u> 2 mL/kg	0.5 mg IM
< 1 Year of Age		
<u>DEXTROSE 12.5%</u> 2 mL/kg		
Reassess blood glucose level every 10 minutes while dextrose is being administered.		

If altered mental status persists despite improvement in blood glucose level, refer to appropriate SMO.

Reassess respiratory effort. If concerns for overdose, refer to appropriate [PEDIATRIC TOXICOLOGICAL SMO](#)

SUSPECTED DEHYDRATION, VOLUME LOSS, HEMORRHAGIC SHOCK**BLS / ALS**

1. **PEDIATRIC INITIAL MEDICAL CARE**
2. Supine position
3. Control bleeding as appropriate

ALS

4. Secure airway as appropriate
5. Establish **VASCULAR ACCESS IV/IO**
6. Give **NORMAL SALINE IV FLUID BOLUS** of 20 mL/kg
7. If no response to initial fluid bolus, **repeat NORMAL SALINE IV fluid boluses of 20 mL/kg**. May repeat x 2 to a maximum of 60 mL/kg

**TENSION PNEUMOTHORAX, PERICARDIAL TAMPONADE, PULMONARY
HYPERTENSION, CONGENITAL/ACQUIRED CARDIAC OUTFLOW
OBSTRUCTIONS**

BLS / ALS

1. **PEDIATRIC INITIAL MEDICAL CARE** or **PEDIATRIC INITIAL TRAUMA CARE** as indicated
2. Supine position
3. Control bleeding as appropriate

ALS

4. Secure airway as appropriate
5. **If tension pneumothorax suspected, perform PLEURAL DECOMPRESSION**

PEDS	<u>PAIN CONTROL</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

IF ≥15 YEARS OF AGE SEE ADULT PAIN CONTROL SMO

BLS / ALS

1. **PEDIATRIC INITIAL MEDICAL CARE**
2. If minor pain:
 - Consider ice packs as needed / appropriate
 - Consider **NITROUS OXIDE (NITRONOX®)** per System-specific procedure

ALS

3. If pain is severe, and SBP $\geq (70 + (\text{age in years} \times 2))$, consider one of the below. Once a medication is chosen, continue with that medication unless approved by Medical Direction:

<u>FENTANYL (SUBLIMAZE®)</u>	O R	<u>MORPHINE</u>
<u>INITIAL DOSE:</u>		<u>INITIAL DOSE:</u>
1 mcg/kg IV/IO/IN up to 100 mcg ★		0.1 mg/kg slow IV/IO, max dose of 10 mg
<u>REPEAT DOSE:</u>		<u>REPEAT DOSE:</u>
Contact Medical Direction		Contact Medical Direction

4. Follow appropriate SMOs as necessary.

***For patient weights >20kg, ROUND FENTANYL (SUBLIMAZE®) dose to nearest 10 microgram number. Doses ending in 5 or higher round up, and doses ending in 4 or less round down. Any dose ≥ 20 mcg should be whole numbers ending in a '0'.**

PEDS	<u>SEIZURES / STATUS EPILEPTICUS</u> (NON-TRAUMATIC)	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 10/25/2022	REVISED: 04/01/2023

BLS / ALS

- PEDIATRIC INITIAL MEDICAL CARE**
- Clear and protect airway. Vomiting/aspiration precautions
- Protect the patient from injury. Do not place anything in mouth if seizing
- Position patient on side unless contraindicated
- Check and record blood glucose level, if available. If <60 mg/dL, treat per **PEDIATRIC DIABETIC / GLUCOSE EMERGENCIES**

ALS

ACTIVELY SEIZING

- GIVE MIDAZOLAM (VERSED®):**

<u>IV / IO</u>	<u>IN / IM</u>
0.1 mg/kg slow IV/IO MAX single dose 2 mg	0.2 mg/kg MAX single dose 4 mg
<u>IF SEIZURE CONTINUES FOR >5 MINUTES:</u>	
0.1 mg/kg slow IV/IO MAX single dose 2 mg	0.2 mg/kg MAX single dose 4 mg
May repeat every 2 minutes as needed to halt seizures up to TOTAL maximum dose listed below:	
<5 years of age	≥5 years of age
6 mg total	10 mg total

- Monitor airway for need for airway management. Refer to **PEDIATRIC DRUG ASSISTED INTUBATION** as needed.

FEBRILE SEIZURES


- Cool patient by removing clothing. Place towel or sheet moistened with tepid (room temperature) water over patient and fan the child. DO NOT induce shivering. DO NOT rub with alcohol or place in cold/ice water
- Give nothing by mouth

ALS

PATIENT PRESCRIBED RECTAL VALIUM (DIASTAT®)

- Trained paramedics may give **DIAZEPAM RECTAL GEL (DIASTAT®)** to patients:
 - The patient should be actively seizing for >3 minutes, or having repeated seizures without regaining consciousness, i.e., status epilepticus
 - The identity of the patient and the name on the prescription must match
 - The paramedic may assist and or give **DIASTAT®** at the dose prescribed
 - If any of these criteria are not met, follow regular **PEDIATRIC SEIZURES / STATUS EPILEPTICUS SMO**
- Transport all patients who received this medication; if consent for transport is refused by parent/guardian/power of attorney for health care, contact Medical Direction
- Call Medical Direction for assistance with any refusals

Note: If suspected that seizure is secondary to opioid overdose, see **PEDIATRIC OPIOID SMO**

PEDS	<u>SEPSIS</u>		
	APPROVED FOR USE BY:	ALL SYSTEMS	
EFFECTIVE: 07/01/2023	REVIEWED: N/A	REVISED: N/A	

BLS / ALS

1. **PEDIATRIC INITIAL MEDICAL CARE**

2. Remove excess clothing if hyperthermia present
3. Consider sepsis if the patient has a known or suspected infection and meets **two or more of the following criteria, one of which must be an elevated or decreased body temperature:**

- Temperature of $\geq 100.4^{\circ}\text{F}$ or $\leq 96.8^{\circ}\text{F}$
- $\text{EtCO}_2 \leq 25$ mmHg with square waveform
- Shock index of ≥ 1 ($\text{HR} \div \text{SBP}$)
- Age-dependent tachycardia/bradycardia, or tachypnea/bradypnea:

Age Range	Tachycardia	Bradycardia	Tachypnea	SBP
0 Days to 1 Week	>180	<100	>50	<59 mmHg
1 Week to 1 Month	>180	<100	>40	<79 mmHg
1 Month to 1 Year	>180	<90	>34	<75 mmHg
>1 Year to 5 Years	>140	N/A	>22	<74 mmHg
>5 Years to 12 Years	>130	N/A	>18	<83 mmHg
>12 Years to <18 years	>110	N/A	>14	<90 mmHg

4. Check and record blood glucose level, if available, if <60 mg/dL, treat per **PEDIATRIC DIABETIC / GLUCOSE EMERGENCIES**

ALS

5. Establish **VASCULAR ACCESS**

6. If SBP less than age-appropriate lower limit ($\leq 70 + (\text{age in years} \times 2)$), initiate **NORMAL SALINE IV/IO 20 ML/KG BOLUS**
 - Reassess vital signs every 5 minutes and closely monitor for respiratory changes
7. Inform Medical Direction of **PEDIATRIC SEPSIS ALERT** prior to arrival
8. If no response to initial fluid bolus, repeat **NORMAL SALINE IV/IO 20 ML/KG BOLUS.**
May repeat to a maximum of 60 mL/kg.

NOTE:

- **ETOMIDATE (AMIDATE®)** should be avoided in sepsis patients due to adrenal insufficiency
- If hyperthermia is present warm fluids should be avoided
- Document amount of fluid given during care and transport

PEDS	<u>SYNCOPE / NEAR-SYNCOPE</u> <u>NON-TRAUMATIC LOSS OF CONSCIOUSNESS</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

BLS / ALS

- PEDIATRIC INITIAL MEDICAL CARE**
- Check and record blood glucose level. If <60 mg/dL, treat per **PEDIATRIC DIABETIC / GLUCOSE EMERGENCIES**
- Anticipate underlying etiologies and treat according to appropriate SMO:
 - Metabolic – **TOXICOLOGICAL** and/or **ENVIRONMENTAL**
 - Cardiac - **APPROPRIATE CARDIAC SMO**
 - Hypovolemia - **FLUID RESUSCITATION**
 - CNS Disorder - Appropriate **MEDICAL** or **TRAUMA** SMO
 - Vasovagal - **PEDIATRIC INITIAL MEDICAL CARE**

BLS

- Expeditious transport. Contact Medical Direction

ALS

<u>STABLE</u>	<u>UNSTABLE</u>
Alert, oriented, normotensive	Persistent altered mental status or signs of hypoperfusion
Continuous monitoring, including age-appropriate 12-Lead EKG, and waveform capnography (if available)	Continuous monitoring, including 12-Lead, and waveform capnography (if available)
	<u>NORMAL SALINE IV/IO</u> 20 mL/kg bolus If no response, may repeat x 2 to max of 60 mL/kg, to maintain SBP ≥90 mmHg Reassess vital signs every 5 minutes and closely monitor for respiratory changes

- If no response to **NALOXONE (Narcan®)**, secure the airway as appropriate

CONSIDER CAUSES OF ALTERED MENTAL STATUS:

- | | |
|---|--|
| A Alcohol, Abuse | T Trauma, Temperature |
| E Epilepsy, Electrolytes, Encephalopathy | I Infection, Inborn errors |
| I Insulin | P Psychogenic |
| O Opiates, Overdose | P Poison |
| U Uremia | S Shock, Seizures, Stroke, Space-occupying lesion, Subarachnoid hemorrhage, Shunt |

EXAMPLES:

“-OLOL” MEDICATIONS; ATENOLOL (TENORMIN®), CARVEDILOL, METOPROLOL (LOPRESOR®, TOPROL XL®), PROPRANOLOL (INDERAL®); NEBIVOLOL (BYSTOLIC®)

BLS / ALS

STABLE: alert, normotensive

1. [PEDIATRIC INITIAL MEDICAL CARE](#) or [PEDIATRIC INITIAL TRAUMA CARE](#) as indicated
 - HazMat precautions
 - Do not induce vomiting

BLS

2. Contact Medical Direction
3. Initial interventions per Medical Direction as indicated for identified exposure
4. For altered level of consciousness or seizures, refer to appropriate SMO
5. Bring container(s) of drug or substance to the ED
6. Transport
 - Support ABCs
 - Observe
 - Keep warm

ALS

Hypoperfusion associated with bradycardia

7. Give [GLUCAGON \(GLUCAGEN®\)](#) 0.5 mg IV/IO. May repeat x1



EXAMPLES:

**AMLODIPINE (NORVASC®), DILTIAZEM (CARDIZEM®), NIFEDIPINE (ADALAT®),
VERAPAMIL (ISOPTIN®), NICARDIPINE (CARDENE®)**

BLS / ALS

STABLE: alert, normotensive

1. **PEDIATRIC INITIAL MEDICAL CARE** or **PEDIATRIC INITIAL TRAUMA CARE** as indicated
 - HazMat precautions
 - Do not induce vomiting

BLS

2. Contact Medical Direction
3. Initial interventions per Medical Direction as indicated for identified exposure
4. For altered level of consciousness or seizures, refer to appropriate SMO
5. Bring container(s) of drug or substance to the ED
6. Transport
 - Support ABCs
 - Observe
 - Keep warm

ALS

Hypoperfusion associated with bradycardia

7. Give **GLUCAGON (GLUCAGEN®)** 0.5 mg IV/IO. May repeat x1



PEDS	CARBON MONOXIDE EXPOSURE	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

BLS / ALS

STABLE: Alert, oriented, normotensive

- PEDIATRIC INITIAL MEDICAL CARE** or **PEDIATRIC INITIAL TRAUMA CARE** as indicated
- HAZMAT precautions as indicated
- HIGH FiO₂ or VENTILATION**
 - Consider cyanide poisoning
 - Do not rely on pulse oximetry
 - Keep patient as quiet as possible to minimize tissue oxygen demand

ALS (with SpCO monitoring capabilities):

0-3%	3-12%		>12%	
	<u>WITHOUT Symptoms</u>	<u>WITH Symptoms</u>	<u>GCS >8</u>	<u>GCS ≤ 8</u>
Normal Range	Observe and reassess vital signs and CO readings every 5-10 minutes	100% O ₂ via NRB mask and transport to the closest appropriate facility	100% O ₂ via NRB	<u>PEDIATRIC DRUG ASSISTED INTUBATION SMO</u>
		Reassess vital signs and CO readings every 5-10 minutes	Reassess vital signs and CO readings every 5-10 minutes	Contact Medical Direction for consideration of bypass to facility with a hyperbaric chamber

- Patients with the following CO readings should be transported with or without symptoms of CO poisoning:
 - Adults with CO of ≥25%
 - Pediatric patients with CO of ≥15%
 - Pregnant patients with a CO of ≥15%
 - Any patient with advanced airway or acute mental status change and a CO of ≥15%

PEDS**CLUB DRUGS**

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: N/A

EXAMPLES:

GHB (Liquid G, Liquid Ecstasy), Ketamine (Special K, Vitamin K, Super K), MDMA (Ecstasy, XTC, ADAM, E), Foxy Methoxy, AMT, Coricidin (Triple-C)

BLS / ALS

1. [PEDIATRIC INITIAL MEDICAL CARE](#) or [PEDIATRIC INITIAL TRAUMA CARE](#) as indicated
2. Contact Medical Direction for suspected use of club drugs



BLS / ALS

STABLE: Alert, oriented, normotensive

1. **PEDIATRIC INITIAL MEDICAL CARE** or **PEDIATRIC INITIAL TRAUMA CARE** as indicated
2. HAZMAT precautions as indicated, ensure scene safety.

Signs of Cyanide Poisoning	
• Altered Mental Status	• Headache
• Confusion, Disoriented	• Confusion
• Tachypnea/Hyperpnea (early)	• Dyspnea
• Bradypnea/Apnea (late)	• Chest Tightness
• Seizures or Coma	• Nausea
• Mydriasis (dilated pupils)	• Vomiting
• Hypertension (early) / Hypotension (late)	• Cardiovascular collapse

ALS

3. Consider **NIPPV / CPAP**, per System-specific procedure
4. Consider **ADVANCED AIRWAY** if the patient has **PGCS ≤ 8**, inhalation burns, bradypnea or tachypnea, hoarse voice and/or impending airway closure.
5. Consider 12-Lead ECG
 - If signs and symptoms consistent with cyanide poisoning and **if available**, administer **HYDROXOCOBALAMIN (CYANOKIT®)** 70 mg/kg, concentration of 25 mg/mL, MAX dose 5g
 - Medication requires its own dedicated IV line. Do not use existing IV for administration. Do not piggyback infusion.
6. If hypotensive or pulseless, **NORMAL SALINE** 20 mL/kg IV bolus. If no response to initial fluid bolus, repeat **NORMAL SALINE** 20 mL/kg IV bolus. May repeat again for total infusion of 60 mL/kg.
7. If pulseless, refer to appropriate cardiac arrest SMO.

PEDIATRIC CYANOKIT® DOSING

Wt (kg)	Dose	Units	Volume	Units
2	140	mg	5.6	mL
3	210	mg	8.4	mL
4	280	mg	11.2	mL
5	350	mg	14	mL
10	700	mg	28	mL
15	1.1	g	42	mL
20	1.4	g	56	mL
25	1.8	g	70	mL
30	2.1	g	84	mL
35	2.5	g	98	mL
40	2.8	g	112	mL
45	3.2	g	126	mL
50	3.5	g	140	mL

EXAMPLES:

AMITRIPTYLINE (ELAVIL®), DESIPRAMINE (NORPRAMIN®), IMIPRAMINE (TOFRANIL®), NORTRIPTYLINE (PAMELOR®), DOXEPINE (SINEQUAN®), CLOMIPRAMINE (ANAFRANIL®), AMOXAPINE (ASENDIN®)

BLS / ALS

STABLE: alert, normotensive

1. **PEDIATRIC INITIAL MEDICAL CARE** or **PEDIATRIC INITIAL TRAUMA CARE** as indicated
 - HazMat precautions
 - Do not induce vomiting

BLS

2. Contact Medical Direction
3. Initial interventions per Medical Direction as indicated for identified exposure
4. For altered level of consciousness or seizures, refer to appropriate SMO
5. Bring container(s) of drug or substance to the ED
6. Transport
 - Support ABCs
 - Observe
 - Keep warm

ALS

Hypoperfusion associate with wide QRS complex

7. **NORMAL SALINE** IV FLUID BOLUS of 20 mL/kg, may repeat as needed to total of 60 mL/kg.
8. **SODIUM BICARBONATE 8.4%** 1 mEq/kg IV



	PATIENT AGE	ANTIDOTES (IV/IM)	
		MILD/MODERATE	SEVERE
INFANT	0-6 months (< 7 kg)	0.25mg Atropine 2 PAM [†] 15 mg/kg	0.5mg Atropine* 2 PAM [†] 25 mg/kg
INFANT	7 months-2 years (7-13 kg)	0.5mg Atropine* 2 PAM [†] 15 mg/kg	1mg Atropine* 300 mg 2 PAM [†]
CHILD	3-7yrs (14-25kg)	1mg Atropine* 300mg 2 PAM [†]	2mg Atropine 600 mg 2 PAM [†]
CHILD	8-14 yrs (26-50kg)	2mg Atropine 600 mg 2 PAM [†]	4mg Atropine 1200 mg 2 PAM [†]
ADOLESCENT	> 14 yrs (> 51 kg)	2mg Atropine 600 mg 2 PAM [†]	4mg Atropine 1200 mg 2 PAM [†]

* Appropriate dose Atropen auto injector can be used if available

[†] 2 PAM=Pralidoxime

DENOTES ONE MARK I KIT

DENOTES TWO MARK I KITS

2mg Atropine
600mg 2 PAM[†]

4mg Atropine
1200 mg 2 PAM[†]

NOTES:

For nerve agents the doses are:

- Atropine dose 0.05 mg/kg
- 2 PAM[†] dose 25 mg/kg

For children > 3 yrs with severe symptoms:

- 1 Mark I Kit will give 0.08 — 0.13 mg/kg Atropine
- 24-46 mg/kg 2 PAM[†]

2 PAM[†] solution can be prepared from the vial containing 1 gram of dessicated 2 PAM[†]. Inject 3 ml of NS or sterile water into the vial and shake well. This results in 3.3ml of 300 mg/ml.

Mild	Moderate	Severe
SOB, wheezing, runny nose	Vomiting, drooling, pinpoint pupils	Unconscious, cyanosis, seizures

PEDS	<u>OPIOID OVERDOSE</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

EXAMPLES:

MEPERIDINE (DEMEROL®), FENTANYL (DURAGESIC®, SUBLIMAZE®), HYDROCODONE/APAP (VICODIN®, LORTAB®, NORCO®), HYDROMORPHONE (DILAUDID®), OXYCODONE/APAP (PERCOCET®), OXYCODONE (OXYCONTIN®), HEROIN, METHADONE, CODEINE, MORPHINE

BLS / ALS

1. **PEDIATRIC INITIAL MEDICAL CARE** or **PEDIATRIC INITIAL TRAUMA CARE** as indicated
2. If breathing is adequate, place on side and monitor vital signs

BLS

3. Protect airway, **HIGH FiO₂** or **VENTILATION**
4. If breathing is **NOT** adequate, or patient is apneic **NALOXONE (NARCAN®) 2 mg IN.**
If needed, contact Medical Direction for additional doses.

ALS

5. Protect airway, **HIGH FiO₂** or **VENTILATION.**
6. If breathing is **NOT** adequate, or patient is apneic:

< 20 kg body weight	≥ 20 kg body weight
<u>NALOXONE (NARCAN®)</u> 0.1 mg/kg IV/IO/IN up to a max of 2 mg	<u>NALOXONE (NARCAN®)</u> 2 mg IV/IO/IN

NOTE:

- Inadequate respirations defined as **EtCO₂ <30mmHg or >50mmHg or rate <10**
- Additional PPE should be considered on suspected overdose calls when white powder is noted, or the presence of FENTANYL or CARFENTANIL is suspected.
- Consider delaying intubation if opioid overdose suspected, unless no improvement after NALOXONE

PEDS	MUSCARINIC AGENT EXPOSURE	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

**EXAMPLES:
PESTICIDES, NERVE AGENTS, CARBAMATES, ACETYLCHOLINESTERASE
INHIBITORS**

BLS / ALS

1. [PEDIATRIC INITIAL MEDICAL CARE](#) or [PEDIATRIC INITIAL TRAUMA CARE](#) as indicated
2. HAZMAT precautions as indicated

ALS

<u>STABLE</u>	<u>UNSTABLE</u>
Alert, oriented, normotensive	Signs and Symptoms of Toxicity (DUMBELS or SLUDGE/BAM)
<ul style="list-style-type: none"> • Continuous monitoring • Notify Medical Direction or receiving facility 	<p><u>ATROPINE</u></p> <p>0.02 mg/kg, Minimum 0.1 mg, rapid IV/IO</p> <p>Repeat <u>ATROPINE</u></p> <p>0.02 mg/kg, Minimum 0.1 mg, rapid IV/IO every 3 minutes until condition improves (no dose limit)</p>
	<ul style="list-style-type: none"> • Continuous monitoring • Notify Medical Direction or receiving facility

Signs and Symptoms of Organophosphate / Muscarinic Toxicity

- | | | |
|--|----------------|--|
| D - Diarrhea | O
R | S - Salivation (excessive production of saliva) |
| U - Urination | | L - Lacrimation (excessive tearing) |
| M - Miosis | | U - Urination (uncontrolled urine production) |
| B - Bronchorrea /
Bronchospasm | | D - Defecation (uncontrolled bowel movements) |
| B - Bradycardia | | G - Gastrointestinal distress (cramps) |
| E - Emesis | | E - Emesis |
| L - Lacrimation | | B - Breathing Difficulty |
| S - Salivation | | A - Arrhythmias |
| | | M - Miosis (pinpoint pupils) |



EXAMPLES:

DIPHENHYDRAMINE (BENADRYL®), PHENYTOIN (DILANTIN®), LIDOCAINE (XYLOCAINE®)

Hypoperfusion associated with wide QRS complex (possible cyclic ingestion)

BLS / ALS

STABLE: alert, normotensive

1. **PEDIATRIC INITIAL MEDICAL CARE** or **PEDIATRIC INITIAL TRAUMA CARE** as indicated
 - HazMat precautions
 - Do not induce vomiting

BLS

2. Contact Medical Direction
3. Initial interventions per Medical Direction as indicated for identified exposure
4. For altered level of consciousness or seizures, refer to appropriate SMO
5. Bring container(s) of drug or substance to the ED
6. Transport
 - Support ABCs
 - Observe
 - Keep warm

ALS

7. **NORMAL SALINE** IV fluid bolus of 20 mL/kg. May repeat as needed to total of 60 mL/kg.
8. **SODIUM BICARBONATE 8.4%** 1 mEq/kg IV



PEDS	<u>COLD EMERGENCIES</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

BLS / ALS

1. **PEDIATRIC INITIAL MEDICAL CARE** or **PEDIATRIC INITIAL TRAUMA CARE** as indicated
- Complete Secondary Assessment

HYPOTHERMIA SIGNS & SYMPTOMS	SIGNS OF CARDIOPULMONARY COMPROMISE
Pt complains of cold Shivering Decreased respiratory rate Dysrhythmias Dilated, sluggish pupils Decreased reflexes May mimic death	Weak, thready or absent peripheral pulse Decreasing consciousness Tachypnea/respiratory difficulty Central cyanosis and coolness Hypotension (late sign) Weak, thready or absent peripheral pulse

2. Place patient in warm environment. Remove wet clothing. Prevent further heat loss.

<u>NO CARDIOPULMONARY COMPROMISE</u>	<u>CARDIOPULMONARY COMPROMISE PRESENT</u>	
<ul style="list-style-type: none"> • Warm trunk • Place heat packs to axilla and groin, taking care to avoid direct skin contact 	<ul style="list-style-type: none"> • Support with BVM ventilations as indicated; secure airway as appropriate • Avoid unnecessary manipulation and rough handling • If pulseless, begin CPR 	
	<u>BLS</u>	<u>ALS</u>
	<ul style="list-style-type: none"> • Consider <u>AED</u> if available • If advised, give ONE SHOCK ONLY • Resume CPR, do not re-analyze rhythm 	<ul style="list-style-type: none"> • For VF or pulseless VT consider <u>DEFIBRILLATION AT 2 J/KG</u> • Give ONE SHOCK ONLY, then resume CPR • Do not re-analyze rhythm or give any additional shocks • Establish VASCULAR ACCESS IV/IO
	Refer to appropriate SMO as indicated for underlying / other conditions	
Warm trunk. Place heat packs to axilla and groin, taking care to avoid direct skin contact		
Contact Medical Direction and initiate transport. Continuously support ABCs, observe, and keep warm.		

PEDS

DIVING / SCUBA EMERGENCIES

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 07/01/2023

REVIEWED: 04/01/2023

REVISED: N/A

Consider decompression illness if any of the following are present, regardless of a reported safe dive, within 24-hours of a SCUBA event, or air travel after diving. Attempt to rule out other underlying conditions (infection, significant trauma, etc.)

Neurological Dysfunction	Bladder, bowel, gait or coordination, reflexes, mental status, vision, hearing, consciousness, strength, vertigo, paresthesia, numbness, tingling, altered sensation
Cardiopulmonary:	Cough, hemoptysis, dyspnea, voice change
Pain:	Aches, cramps, discomfort, joint pain, pressure, spasm, stiffness
Skin:	Edema, itching, rash, burning sensations, marbling
Others:	Dizziness, fatigue, headache, nausea/vomiting, chills, diaphoresis, malaise, restlessness

BLS / ALS

1. [PEDIATRIC INITIAL MEDICAL CARE](#) or [PEDIATRIC INITIAL TRAUMA CARE](#)
 - Assess dive history
 - Time of dive
 - Length of dive
 - Depth
 - Any problems encountered during dive
2. Ensure adequate ventilation, HIGH FLOW O₂ if indicated.
3. Contact Medical Direction regarding transport to a hyperbaric chamber.
4. Initiate transport
 - Keep patient supine or in lateral recovery position

ALS

5. Establish **VASCULAR ACCESS IV/IO**
6. If needed, refer to [PEDIATRIC DRUG ASSISTED INTUBATION SMO](#)
7. Consider analgesia, if appropriate. Refer to [PEDIATRIC PAIN CONTROL SMO](#)

If assistance is needed, contact the
Divers Alert Network (DAN) at (919) 684-8111

PEDS	<u>FROSTBITE</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

BLS / ALS

1. [PEDIATRIC INITIAL MEDICAL CARE](#) or [PEDIATRIC INITIAL TRAUMA CARE](#) as indicated
2. Rapidly rewarm frozen areas with tepid water
 - Hot packs wrapped in a towel may be used
 - **DO NOT RUB or massage frozen tissue**
 - **DO NOT** thaw if there is a chance of refreezing
3. **HANDLE SKIN LIKE A BURN.** Protect with light, dry sterile dressings. Do not let affected skin surfaces rub together

ALS

4. If in pain and systolic $>(70+(\text{age in years} \times 2))$, pain control per [PEDIATRIC PAIN CONTROL SMO.](#)

PEDS	<u>HEAT EMERGENCIES</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

BLS / ALS

1. **PEDIATRIC INITIAL MEDICAL CARE** or **PEDIATRIC INITIAL TRAUMA CARE** as indicated
2. Complete Secondary Assessment:
 - Hot, dry, flushed or ashen skin
 - Tachycardia
 - Tachypnea
 - Diaphoresis
 - Decreasing consciousness
 - Headache
 - Weak, thready or absent peripheral pulse
 - Hypotension
 - Profound weakness / fatigue
 - Vomiting
 - Muscle cramps
3. Assess scene for environmental risks to patient and rescuers
4. Place patient in cool environment and remove clothing as appropriate
5. Apply cool packs to axilla and groin

<u>NORMAL MENTAL STATUS</u>	<u>ALTERED MENTAL STATUS</u>
<ul style="list-style-type: none"> • Support ABCs • Give cool liquids by mouth if no nausea / vomiting (age dependent) • Observe • Transport 	<ul style="list-style-type: none"> • Check blood glucose, treat per <u>PEDIATRIC DIABETIC / GLUCOSE EMERGENCIES</u> • Continue cooling • Apply cool pack to side of neck, axilla and groin • Tepid water per sponge / spray • Manually fan body to evaporate and cool • Stop active cooling if shivering occurs

PEDS	<u>HIGH ALTITUDE EMERGENCIES</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 07/01/2023	REVIEWED: N/A	REVISED: N/A

Consider altitude illness in any patient with recent travel to altitudes >8000 feet above sea level, or those with recent travel in unpressurized aircraft at altitudes >5000 feet. Descent from altitude is the primary preventative measure for lessening the severity of illness. Pediatric patients are susceptible to altitude-related emergencies similar to adults.

<u>ACUTE MOUNTAIN SICKNESS</u>	<u>HIGH ALTITUDE CEREBRAL EDEMA (HACE)</u>	<u>HIGH ALTITUDE PULMONARY EDEMA (HAPE)</u>
Headache, Nausea/Vomiting, Lethargy, Dizziness	Headache, Nausea/Vomiting, Lethargy, Dizziness, Unstable Gait, Drowsiness, Confusion, Coma	Cough, Dyspnea, Cyanosis, Hyperthermia, Pink/Frothy Sputum

BLS / ALS

- **PEDIATRIC INITIAL MEDICAL CARE** or **PEDIATRIC INITIAL TRAUMA CARE**
- **HIGH FLOW O2**
 - Assess history of travel to altitude
 - Altitude reached
 - Time spent
 - Symptom onset time
 - Be alert for possible significant trauma; patients experiencing HACE and the associated altered mental status may make poor decisions in their attempt to descend
- Refer to appropriate trauma SMO as needed
- Consider analgesia if SBP >100 mmHg. Refer to **PEDIATRIC PAIN CONTROL SMO**
- Refer to appropriate trauma SMO as needed

	<u>ALS</u>	<u>ALS</u>
	Ensure adequate ventilation. Secure airway as needed. Refer to <u>PEDIATRIC DRUG ASSISTED INTUBATION SMO</u> Consider analgesia if SBP > (70+(2 x Age In Years)). Refer to <u>PEDIATRIC PAIN CONTROL SMO</u>	Ensure adequate ventilation. Secure airway as needed. Refer to <u>PEDIATRIC DRUG ASSISTED INTUBATION SMO</u>



APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

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BLS / ALS

4. Scene Size-Up

- Assess scene and personal safety
- Use standard precautions on all patients

5. PEDIATRIC INITIAL MEDICAL CARE or PEDIATRIC INITIAL TRAUMA CARE

- Confirm adequate airway
- High FiO₂
- Check pulse and control hemorrhage as indicated
- Assess AVPU and monitor neurological status
- Apply sterile gauze dressing over wound
- Remove all jewelry and/or constrictive clothing

6. Special Considerations:

- Allow patient to lie flat and avoid as much movement as possible. Keep patient calm. Allow the bitten limb to rest at level of the patient's heart.
- Medical Direction should be contacted immediately whenever snakebite is suspected.
- Notify Medical Direction if antivenin is available at the scene.
- **Request that Medical Direction contact toxicologist / Poison Control Center ASAP at 1-800-222-1222**
- Notify Medical Direction of type of snake. If safe to do so, obtain photo of snake for identification.
- If compression wrap has been applied by special services staff (e.g., animal control or zoological park), do not remove.
- **DO NOT** apply ice, heat, tourniquet or incise wound.

ALS

- Observe for respiratory compromise. Provide intervention, if necessary, per appropriate SMO.
- Evaluate cardiac rhythm. Treat dysrhythmias per appropriate SMO.
- Establish **two large bore IVs of NORMAL SALINE** in unaffected extremity.
- Use direct pressure to control hemorrhage if present. Avoid elevation of extremities.
- Reassess frequently for mental status changes.

Note:

- **If transport time >15 minutes, consider contacting specialty transport. If antivenin is available, bring to ED with patient.**

BLS / ALS

1. **SCENE SIZE UP**
2. **Assess and secure scene safety.**
 - Use standard precautions on all patients.
 - If indicated, follow department HazMat protocols
 - If a potential crime scene, make efforts to preserve integrity of possible evidence
 - Anticipate potential injuries based on the mechanism of energy transfer
3. **PRIMARY ASSESSMENT:**

<u>BLS</u>	<u>ALS</u>
AIRWAY / C-SPINE	
Position airway / suction as needed	Position airway / suction as needed
<u>SPINE MOTION RESTRICTION SMO</u> as indicated	<u>SPINE MOTION RESTRICTION SMO</u> as indicated
	Refer to <u>PEDIATRIC DRUG ASSISTED INTUBATION SMO AS INDICATED</u>
BREATHING / VENTILATION	
Assist ventilations as indicated (if rate <10 or >30 breaths / minute)	Assist ventilations as indicated (if rate <10 or >30 breaths / minute)
	Asses for signs of Tension Pneumothorax, decompress as indicated
CIRCULATION	
If no pulse, begin CPR and follow <u>PEDIATRIC TRAUMATIC ARREST SMO</u>	If no pulse, begin CPR and follow <u>PEDIATRIC TRAUMATIC ARREST SMO</u>
Control all external hemorrhage, for severe extremity hemorrhage, apply tourniquet	Control all external hemorrhage, for severe extremity hemorrhage, apply tourniquet
DISABILITY / EXPOSE	
Calculate <u>PGCS</u> , expose patient, and if altered mental status, check blood glucose level.	

TRANSPORT DECISION: Once the initial assessment and resuscitative interventions are initiated, a decision must be made whether to continue with the rapid trauma survey and the need for additional interventions on scene, or to perform interventions while transporting. Document the patient condition(s) or behavior(s) that necessitated this decision.

SECONDARY ASSESSMENT:

<u>BLS</u>	<u>ALS</u>
<p>RAPID TRAUMA SURVEY (as allowed by time and patient condition)</p> <ul style="list-style-type: none"> • Systematic head-to-toe assessment • SAMPLE history 	<ul style="list-style-type: none"> • Recheck and record vital signs and patient condition at least every 15 minutes as able, and after each intervention. For unstable patients, more frequent reassessment may be needed. Note the time obtained. • Altered Mental Status: Seizure and vomiting precautions. Check glucose level. If glucose <60 mg/dL, treat per PEDIATRIC DIABETIC EMERGENCIES SMO. • Consider need for supplemental oxygen, especially for patients with dyspnea, suspected hypoxemia or altered mental status
Respiratory Assessment / Findings	Oxygen Administration
Adequate rate/depth, minimal distress, mild hypoxia, baseline SpO ₂ 92-94%	Low FiO ₂
Adequate rate/depth, moderate/severe distress, SpO ₂ <92%	High FiO ₂
Inadequate rate/depth with moderate/severe distress, unstable	High FiO ₂ by BVM ventilation
	<p style="text-align: center;"><u>Attempt Vascular Access</u></p> <p style="text-align: center;">If SBP <(70 x (2 x Age in Years)), NORMAL SALINE IV FLUID BOLUS of 20 mL/kg</p> <p>Reassess vital signs every 5 minutes and closely monitor for respiratory changes. Use warm fluids unless hyperthermic</p>
<p>Assess pain score on a scale from 0-10. Refer to PEDIATRIC PAIN CONTROL SMO as indicated.</p>	



APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

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General Guidelines

It is **MANDATORY** for Medical Direction to notify the Trauma Surgeon immediately upon receiving the field report, if one of the following conditions exist:

- Sustained hypotension on two consecutive measurements five minutes apart
 - Adult systolic BP \leq 90 mmHg or lack of a radial pulse
- Cavity penetration of torso or neck

Refer to [SPECIALTY TRANSPORT / AEROMEDICAL EVACUATION](#) for guidance as needed.

The following patients or those who in the opinion of the American College of Surgeons Committee on Trauma are known to have an increased mortality/morbidity, if not treated at a Trauma Center. They should, therefore, be classified as trauma patients. These patients require transport to the nearest Trauma Center

Conditions that are marked with a star (★) and in **bold letters** in the following criteria should be **considered** for direct bypass to a Level I Trauma Center. If the transport time to a Level I is greater than 25 minutes, the patient should go to a Level II Trauma Center.

Any patient meeting the criteria for consideration of direct bypass to a Level I Trauma Center should be considered **TIME-SENSITIVE**. **Contact Medical Direction at the initial point of contact, as soon as a clinical impression has been formed from assessment findings.**

Patients being bypassed to a Trauma Center need to have an adequate airway (i.e., respirations 12-35 per minute, advanced airway, cricothyroidotomy). If an airway cannot be established, the patient should be taken to the closest comprehensive Emergency Department.

EMS providers should notify Medical Direction ASAP if the need for specialty services exists.

I. Physiologic Factors

- A. Adult Trauma Score (RTS) of 9 or less
- B. Airway difficulties requiring intubation or other interventions at the scene
- C. Trauma with altered respiratory rate (<12 or >35 per minute)

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. ★**PENETRATING INJURY TO THE NECK**
3. Head injury with loss of consciousness or Glasgow Coma Scale (GCS) score of \leq 10
4. Traumatic and chemical eye injuries
5. Maxillofacial trauma

B. Chest

1. **★GUNSHOT WOUND OR OTHER PENETRATING INJURY TO THE CHEST**

2. Blunt chest trauma (significant pain and/or obvious external signs)

3. Flail chest and unstable chest wall

C. Abdomen

1. **★GUNSHOT WOUND TO THE ABDOMEN**

2. **★OTHER PENETRATING INJURY TO THE ABDOMEN, GROIN OR BUTTOCKS**

3. Blunt abdominal trauma (significant pain and/or obvious external signs)

D. Spinal Cord

1. **★SPINAL CORD INJURY WITH PARALYSIS, PARESTHESIA OF EXTREMITIES AND/OR SENSORY LOSS**

2. Any suspected spinal cord injury in the absence of neurological deficit

E. Extremities

1. **★EXTREMITY TRAUMA: MANGLED, CRUSHED, OR DEGLOVED WITH NEUROVASCULAR COMPROMISE**

2. **★TRAUMATIC AMPUTATION PROXIMAL TO THE WRIST OR ANKLE**

3. Limb paralysis and/or sensory deficit proximal to the wrist

4. Multiple orthopedic injuries (>1 long bone fracture)

III. Deceleration Injury

A. High energy dissipation / rapid deceleration with blunt chest or abdominal injury

B. Falls ≥ 20 feet with the adult patient

C. Falls ≥ 3 times the height of a pediatric patient

IV. Motor Vehicle Crashes

A. Extrication time ≥ 20 minutes

B. Vehicle passenger space invaded by ≥ 12 inches

C. Ejection

D. Fatality at the scene within the same motor vehicle

E. Rollover $\geq 180^\circ$ spin

F. Child ≤ 15 years struck by car

G. Child ≤ 8 years old involved in any MVC without age-appropriate restraint (under age 4 or <40 pounds requires a car seat)

H. Motorcycle crash >20 MPH with separation of rider from bike

V. Major Burns

A. 10% total body surface area 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**

B. **★OBVIOUS CHEST OR ABDOMINAL TRAUMA, EITHER PENETRATING OR BLUNT**

C. Pediatric Trauma Score of ≤ 8

D. Child ≤ 15 years old, struck by motor vehicle

E. Child involved in an MVC not appropriately restrained

1. Rear-facing seat from birth to 2 years old or up to 20 lbs.

2. Forward-facing toddler seat from 2 - 4 years or up to 65 lbs.

3. Booster seat from 4 - 8 years or up to 4' 9" tall
4. Safety belts from 8 - 15 years or at least 4'9" tall

VII. Pregnant Trauma Patients

- A. The pregnant patient \geq 20 weeks gestation
- B. Pregnant patient who meets any other trauma criteria

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

- A. **May consider** withholding resuscitative efforts. Refer to [WITHHOLDING OR WITHDRAWING RESUSCITATIVE EFFORTS SMO](#)

BLS / ALS

1. If obviously dead, consider referring to [WITHHOLDING OR WITHDRAWAL OF RESUSCITATIVE EFFORTS SMO](#)
2. If injury is incompatible with life (e.g., massive brain matter visible), contact Medical Direction for possible scene pronouncement

ALS

3. If patient experiences loss of pulses under direct paramedic observation during transport:
 - [PEDIATRIC INITIAL TRAUMA CARE](#)
 - **BILATERAL PLEURAL DECOMPRESSION** if clinically indicated (i.e., thoracic trauma, blast injuries, blunt traumatic arrest)
 - Consider appropriate cardiac arrest SMO
 - Verify tube placement if intubated

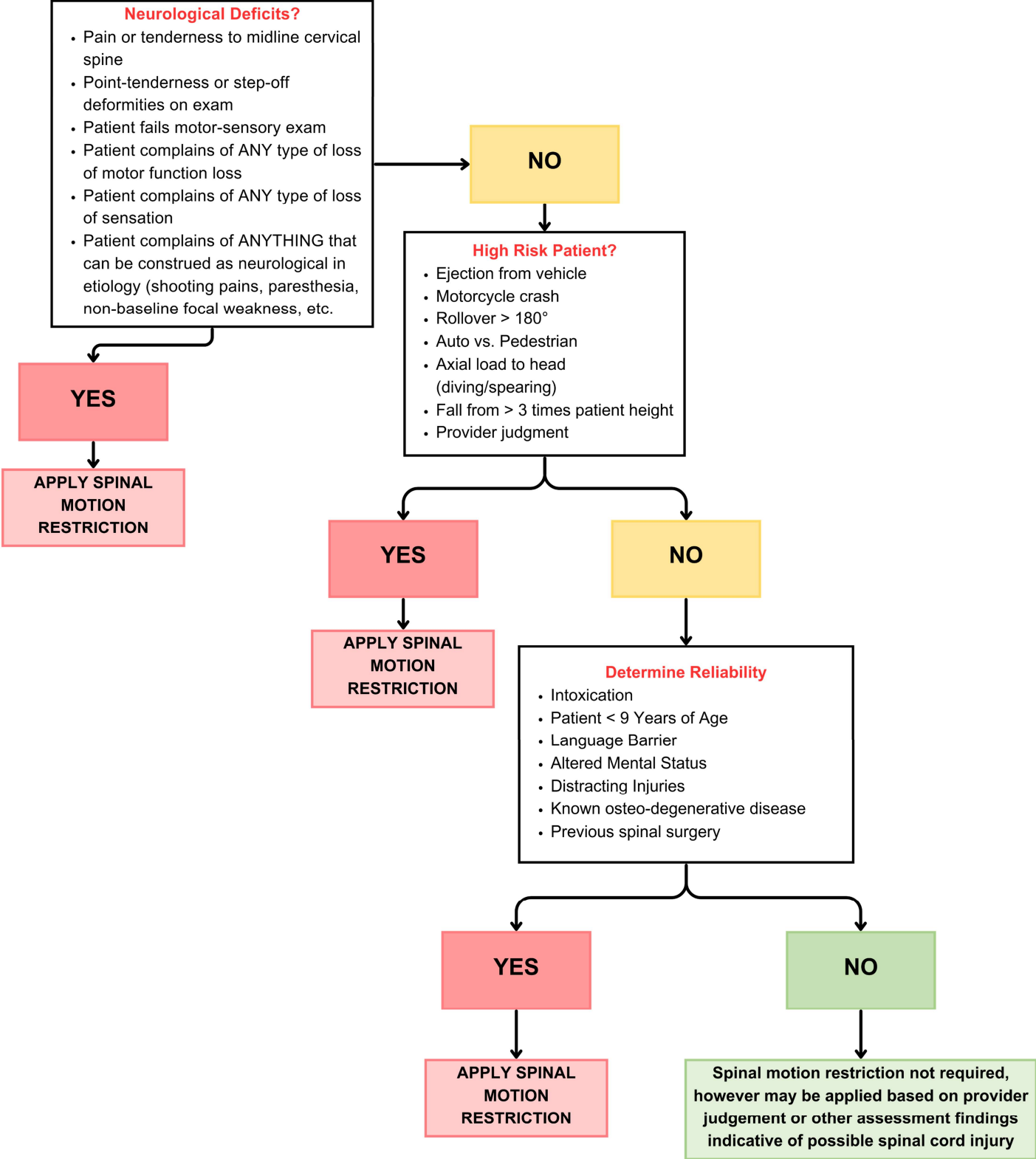
Note:

- After [SPINE MOTION RESTRICTION SMO](#) and airway control is established, procedures are to be performed while transporting.

PEDS	SPINAL MOTION RESTRICTION (SMR)	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

PATIENTS <9 YEARS OF AGE, IN THE PRESENCE OF SUSPECTED NECK/SPINAL CORD INJURY, MUST HAVE SPINAL MOTION RESTRICTION APPLIED.

BLS / ALS



NOTE: If following this SMO would jeopardize crew or patient safety, follow to the best of the crews ability and document reasons why steps could not be completed.

PEDS**HEMORRHAGIC SHOCK**

APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 07/01/2023

REVIEWED: N/A

REVISED: N/A

BLS / ALS

1. **PEDIATRIC INITIAL MEDICAL CARE**
2. Supine position
3. Control bleeding as appropriate

ALS

4. Secure airway as appropriate
5. Establish **VASCULAR ACCESS IV/IO**
6. Give **NORMAL SALINE** IV fluid bolus of 20 mL/kg
7. If no response to initial fluid bolus, repeat **NORMAL SALINE** IV fluid boluses of 20 mL/kg. May repeat x 2 to a maximum of 60 mL/kg.

PEDS	HEAD INJURIES	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: 04/01/2023

BLS / ALS

1. [PEDIATRIC INITIAL TRAUMA CARE](#)
2. Maintain supine position
3. Consider [SPINE MOTION RESTRICTION](#) as indicated
4. Assess [PEDIATRIC GLASGOW COMA SCALE \(PGCS\)](#)
5. Treat based on Pediatric GCS

<u>PGCS 13 – 15</u> <u>(MILD)</u>	<u>PGCS 9 – 12</u> <u>(MODERATE)</u>	<u>PGCS <8</u> <u>(SEVERE)</u>
<ul style="list-style-type: none"> • Give HIGH FiO₂ • Control hemorrhage • Reassess PGCS • Transport • Support ABCs • Observe • Keep warm 	<ul style="list-style-type: none"> • Give HIGH FiO₂ • Support ventilation with BVM as indicated • Control hemorrhage • Reassess PGCS • Transport • Support ABCs • Observe • Keep warm 	<ul style="list-style-type: none"> • Give HIGH FiO₂ • Support ventilation with BVM • ALS: INTUBATE orally as indicated • Control hemorrhage • Reassess PGCS • Refer to PEDIATRIC SEIZURE / STATUS EPILEPTICUS SMO as indicated • Transport • Support ABCs • Observe • Keep warm

COMBATIVE

<u>IV / IO</u>	<u>IN</u>
<p>Consider MIDAZOLAM (VERSED®) 0.1 mg/kg SLOW every 2 minutes Max single dose 2 mg <u>MAX total dose:</u> 6 mg if <5 years of age 10 mg if ≥5 years of age</p>	<p>Consider MIDAZOLAM (VERSED®) 0.2 mg/kg every 2 minutes Max single dose 4 mg <u>MAX total dose:</u> 6 mg if <5 years of age 10 mg if ≥5 years of age</p>

Note: Children with increased intracranial pressure present differently than adults:

<u>CUSHING'S TRIAD IN ADULTS</u>	<u>CUSHING'S TRIAD IN PEDIATRICS</u>
Irregular respirations	Irregular respirations
Hypertension	Hypertension
<u>Bradycardia</u>	<u>Tachycardia</u>

PEDS	<u>EYE INJURIES</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

BLS / ALS

1. **PEDIATRIC INITIAL TRAUMA CARE**

- Assess pain on a 0-10 scale
- Quickly assess gross visual acuity in each eye: light perception, motion, acuity
- Discourage patient from sneezing, coughing, straining or bending at the waist
- Elevate head of cot or backboard Semi-Fowler's position unless contraindicated
- Vomiting precautions

2. Treat based on injury type:

<u>CHEMICAL SPLASH / BURN</u>	<u>SUSPECTED CORNEAL ABRASION</u>	<u>PENETRATING INJURY / RUPTURED GLOBE</u>
<u>BLS / ALS</u>		
Immediately irrigate affected eye(s) using copious amounts of NORMAL SALINE . Continue irrigation while transporting	Patch affected eye(s).	<ul style="list-style-type: none"> • <u>Do not</u> remove impaled objects • <u>Do not</u> irrigate or administer tetracaine • Avoid any pressure on the injured eye(s) • Cover with cup, or metal or plastic protective shield • Patch unaffected eye
<u>ALS</u>		
<u>TETRACAINE 0.5% (ALTACAINE®)</u> 1 DROP in each affected eye. May repeat until pain relief achieved. Irrigate per appropriate System-specific procedure.	<u>TETRACAINE 0.5% (ALTACAINE®)</u> 1 DROP in each affected eye. May repeat until pain relief achieved.	
If patient is in pain and systolic BP >100 mmHg, treat per <u>PEDIATRIC PAIN CONTROL SMO</u>		

BLS / ALS

1. [PEDIATRIC INITIAL MEDICAL CARE](#)
2. [SPINAL MOTION RESTRICTION SMO](#)

ALS

3. If patient remains hypo-perfused and bradycardic, consider [ATROPINE](#) **0.02 mg/kg rapid IV/IO**. Minimum dose 0.1 mg. Maximum single dose 0.5 mg
 - May repeat [ATROPINE](#) **every 3 minutes x 2**. Maximum total dose 1.5 mg

BLS / ALS

1. **PEDIATRIC INITIAL TRAUMA CARE**

- **HIGH FiO₂ or VENTILATION**

2. Begin expeditious transport to appropriate facility and contact Medical Direction

3. Treat based on injury type(s):

<u>SUCKING CHEST WOUND / OPEN PNEUMOTHORAX</u>	<u>FLAIL CHEST</u>	<u>PNEUMOTHORAX / TENSION PNEUMOTHORAX</u>	<u>PERICARDIAL TAMPONADE</u>
<u>BLS / ALS</u>			<u>ALS</u>
<p>Apply occlusive dressing / chest seal per System-specific procedure</p> <p>If patient deteriorates, temporarily remove dressing to let air escape.</p>	<p>If respiratory distress, appropriately VENTILATE WITH HIGH FIO₂ VIA BVM</p>	<p>Suspect when patient presents with severe respiratory distress or difficulty ventilating, with any of the following: hypotension, distended neck veins, absent breath sounds on the involved side, and/or tracheal deviation</p>	<p><u>NORMAL SALINE</u> 20 mL/kg IV/IO fluid boluses, repeat as necessary.</p> <p>Titrate infusion rate based on clinical presentation and SPB ≥90 mmHg. Reassess vital signs every 5 minutes and closely monitor for respiratory changes</p>
<u>ALS</u>			
<p>Anticipate the need for decompression to affected side</p> <p>Consider intubation; do NOT place patient on CPAP</p>	<p>Consider intubation, do NOT place patient on CPAP</p>	<p>PLEURAL DECOMPRESSION of affected side, per System-specific procedure</p> <p>Assess for PEA. Refer to <u>PEDIATRIC ASYSTOLE/PEA</u> if present.</p>	

BLS / ALS

1. [PEDIATRIC INITIAL TRAUMA CARE](#)
2. Initiate rapid transport; contact Medical Direction
3. Do not remove impaled objects
 - If evisceration noted, cover exposed organs with saline-soaked sterile dressing, and cover with occlusive dressing
 - Do **NOT** attempt to put organs back inside the abdominal cavity
4. Consider analgesia if appropriate, per [PEDIATRIC PAIN CONTROL SMO](#)

BLS / ALS

1. **PEDIATRIC INITIAL TRAUMA CARE**

2. Amputation / Degloving Injuries:

- If amputation is incomplete, stabilize with bulky dressing
- If serious bleeding is present, apply tourniquet above amputation as close as possible to the injury. Note time tourniquet applied. **DO NOT** release tourniquet once it has been applied
- Care of amputated parts:
 - Wrap in normal saline moistened gauze or towel. Place in plastic bag and seal. DO NOT immerse tissue directly in water or normal saline
 - Place plastic bag in second container filled with ice or cold water or place on cold packs and bring with patient to the hospital

ALS

3. Consider analgesia; refer to **PEDIATRIC PAIN CONTROL SMO**

4. Splint or immobilize injuries as indicated.

- If pulses are lost after applying a traction splint, leave splint in place. Do not release traction. Notify Medical Direction of change in status

5. Elevate extremity and or apply cold pack after splinting when appropriate

6. Assess for injury and consider **SPINE MOTION RESTRICTION SMO** as indicated.

7. Check for distal vascular, motor, and sensory function

8. If age >1 year and patient is experiencing nausea or vomiting, consider

ONDANSETRON (ZOFRAN®):

<40 kg Body Weight	≥40 kg Body Weight			
<p>2 mg slow IV x 1, no repeat dose. No ODT dose for <40 kg</p>	<table border="1"> <tr> <td style="background-color: #add8e6;"> <p>4 mg slow IV x 1 no repeat dose</p> </td> <td style="background-color: #d3d3d3; text-align: center;"> <p>O R</p> </td> <td style="background-color: #add8e6;"> <p>4 mg ODT tab x 1, no repeat dose</p> </td> </tr> </table>	<p>4 mg slow IV x 1 no repeat dose</p>	<p>O R</p>	<p>4 mg ODT tab x 1, no repeat dose</p>
<p>4 mg slow IV x 1 no repeat dose</p>	<p>O R</p>	<p>4 mg ODT tab x 1, no repeat dose</p>		

9. If long bone fracture with displacement/muscle spasm, and hemodynamically stable, consider **MIDAZOLAM (VERSED®):**

<u>IV / IO</u>	<u>IN</u>
<p>0.1 mg/kg SLOW every 2 minutes Max single dose 2 mg</p> <p>MAX total dose: 6 mg if <5 years of age 10 mg if ≥5 years of age</p>	<p>0.2 mg/kg every 2 minutes Max single dose 4 mg</p> <p>MAX total dose: 6 mg if <5 years of age 10 mg if ≥5 years of age</p>

BLS / ALS

This SMO is to be used for patients who have been subdued by the use of any electro-muscular disruption (EMD) weapon (i.e., TASER®)

Assess scene and personal safety. Obtain baseline behavior from PD/LEO prior to EMD event

1. PEDIATRIC INITIAL TRAUMA CARE

- Assess for injury and/or altered mental status and treat per appropriate SMO
- Check and record baseline vital signs
 - If ALS, include ECG monitoring for cardiac abnormalities
- Identify location of probes on the patient's body. Evaluate depth of skin penetration

BARBS MAY NOT BE REMOVED BY EMS IF EMBEDDED IN ANY OF THE FOLLOWING AREAS

- Eyelid / Globe of the eye
- Face or Neck
- Genitalia
- Any Bony Prominence
- Spinal Column

Stabilize / splint barbs in place and initiate transport.

SUPERFICIALLY EMBEDDED BARBS IN OTHER ANATOMIC LOCATIONS MAY BE REMOVED BY EMS

Removal procedure:

- 1.Place one hand on the patient where the barb is embedded to stabilize the skin surrounding the puncture site.
- 2.Firmly grasp the barb with your other hand.
- 3.Remove by gently pulling the barb straight out along the same plane it entered the body.
- 4.Assure that the barb is intact
- 5.Repeat procedure with second barb, if embedded.
- 6.Return the barbs to law enforcement officials, utilizing standard precautions.

Control minor hemorrhage and cleanse the wound area with normal saline. If indicated, cover wound area with a dry dressing.

Transport decision:

- Transport decisions regarding patients subdued by EMD weapons should be based on patient condition.
- If not transported to the hospital and if the patient has not had a tetanus immunization in the last five years, they should be advised to get one.

BLS / ALS

1. **PEDIATRIC INITIAL TRAUMA CARE**
2. Start treatment as soon as safely possible to do so (if safe, initiate treatment while patient is still entrapped or encased)
3. Identify any severe hemorrhage. If found on limb, place tourniquet as close to injury as possible (never on a joint). If unable to assess limb and there is a probable mechanism for crush / amputation, place tourniquet
4. Give high flow O₂ via NRB unless unsafe to do so

ALS

5. **Establish large bore IV/IO, give NORMAL SALINE initial bolus of 10 mL/kg (prior to extrication if possible). If pulmonary edema occurs, STOP bolus and treat per appropriate respiratory SMO**
6. For significant crush injuries or prolonged entrapped extremity, contact Medical Direction for orders for **SODIUM BICARBONATE 8.4%**
7. ECG monitoring during entrapment, if possible
8. Consider analgesia per **PEDIATRIC PAIN CONTROL SMO**
9. After initial **Normal Saline** fluid bolus, give an additional **NORMAL SALINE 10 mL/kg bolus. If pulmonary edema occurs, STOP bolus and treat per appropriate respiratory SMO**
10. If cardiac arrest occurs, treat per appropriate **SMO**
 - **PEDIATRIC VENTRICULAR FIBRILLATION / PULSELESS VENTRICULAR TACHYCARDIA**
 - **PEDIATRIC ASYSTOLE / PEA**

BLS / ALS

1. [PEDIATRIC INITIAL TRAUMA CARE](#)
2. Coach patient to keep knees elevated until, during and post rescue **DO NOT ALLOW PATIENT TO STAND**
3. Place patient in high Fowler’s position, with knees to chest during transport
 - If patient is unresponsive place in lateral position with knees to chest
 - If patient needs to be placed supine, knees should be placed or held to chest
4. Give **High FiO₂ Oxygen** unless contraindicated

ALS

5. Establish IV, give [NORMAL SALINE](#) 20 mL/kg bolus after rescue. If pulmonary edema occurs, **STOP Normal Saline bolus and treat per** appropriate respiratory SMO
6. Assess ECG
7. Consider analgesia; refer to [PEDIATRIC PAIN CONTROL SMO](#)
8. If cardiac arrest occurs, treat per appropriate SMO
 - [PEDIATRIC VENTRICULAR FIBRILLATION / PULSELESS VENTRICULAR TACHYCARDIA](#)
 - [PEDIATRIC ASYSTOLE / PEA](#)

PEDS	<u>NEAR DROWNING</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: N/A

BLS / ALS

1. **PEDIATRIC INITIAL TRAUMA CARE**

2. Remove wet clothing

3. Assess patient's temperature

- If **NORMOTHERMIC**, treat **CARDIAC DYSRHYTHMIAS PER APPROPRIATE SMO**
- If **HYPOTHERMIC**, treat per **PEDIATRIC COLD EMERGENCIES SMO**

4. Treat any respiratory or other symptoms per appropriate SMO

<u>ADEQUATE VENTILATION AND RESPIRATORY EFFORT</u>	<u>INADEQUATE VENTILATION AND RESPIRATORY EFFORT</u>
<ul style="list-style-type: none"> • Complete initial assessment • Remove wet clothing • Prevent further heat loss • Provide supplemental oxygen as indicated • Refer to <u>PEDIATRIC COLD EMERGENCIES SMO</u>, as needed • Contact Medical Direction • Transport • Support ABCs • Observe • Keep warm 	<ul style="list-style-type: none"> • <u>In water</u>, start rescue breathing / ventilations • <u>When out of water</u>, begin CPR • Apply AED / defibrillator and check rhythm
	<p>← If breathing resumes</p>
	<p><u>IF BREATHING DOES NOT RESUME</u></p> <p>↓</p>
	<p>Refer to appropriate adult <u>CARDIAC</u> and/or <u>RESPIRATORY</u> SMO</p>

BLS / ALS

1. FOLLOW DIRECTIONS OF THE HAZMAT COMMAND ON SCENE.
2. [PEDIATRIC INITIAL MEDICAL CARE](#) or [PEDIATRIC INITIAL TRAUMA CARE](#)
3. Patient management per appropriate SMO
4. Contact Medical Direction, as soon as practical, and indicate the following:
 - number of victims
 - medical status of victims
 - source of radiation
 - amount and kinds of radioactivity present

For assistance, 24-hour hotline number is available:

1-800-782-7860



BLS / ALS

1. [ADULT INITIAL MEDICAL CARE](#), or [ADULT INITIAL TRAUMA CARE](#).
2. Treat obvious injuries per appropriate SMO
3. History, physical exam, scene survey as usual, and document findings on patient care report
4. **TRANSPORT.** Report your suspicions to ED staff upon arrival.
 - Transport is mandatory
 - Contact Medical Direction if parent/legal guardian is refusing

SUSPECTED DOMESTIC OR SEXUAL ABUSE

- Provide information on services available to victims of suspected abuse. See Domestic Crime victim information forms.
- Encourage victim to seek medical attention.
- **DCFS must be contacted by EMS providers**
 - **1-800-25-ABUSE** (24-hour phone line)
- Contact receiving facility to ensure availability of Sexual Assault Nurse Examiner (SANE).
 - If SANE not available, consider bypassing to facility with SANE Nurse/Staff present, with Medical Direction approval.

NON-SEXUAL ABUSE

- Reporting is mandatory in a case of suspected child abuse. EMS providers must notify one of the following:
- Notify Illinois Department of Children and Family Services (DCFS)
 - **1-800-25-ABUSE** (24-hour phone line)

1. HAZMAT precautions as indicated
2. Treat all explosions as a crime scene unless directed otherwise by law enforcement
3. Consider risk of secondary devices
4. **PEDIATRIC INITIAL TRAUMA CARE**
 - Be alert for significant bleeding and/or amputations
5. Secure airway as needed; persistent hypoxia despite high-flow oxygen administration is an indication for early intubation due to blast lung injuries
6. **SPINAL MOTION RESTRICTION SMO** as indicated
7. Treat injuries per appropriate SMO; explosions have high likelihood of multi-system involvement.
 - **PEDIATRIC HEAD INJURIES**
 - **PEDIATRIC EYE INJURIES**
 - **PEDIATRIC NECK / SPINE INJURIES**
 - **PEDIATRIC CHEST / THORACIC INJURIES**
 - **PEDIATRIC ABDOMINAL INJURIES**
 - **PEDIATRIC MUSCULOSKELETAL INJURIES**
 - **PEDIATRIC CRUSH INJURIES / ENTRAPMENT**
 - **PEDIATRIC BURNS**

Note:

- Tympanic membrane rupture is the most common type of blast injury and may be associated with other more serious blast injuries. When tympanic membrane rupture is not present, other blast pressure injuries are less likely, **but cannot be ruled out.**

BLS / ALS

1. Ensure scene safety, move patient to safe area
2. Ensure burning process has stopped
3. **PEDIATRIC INITIAL TRAUMA CARE**
 - Complete primary assessment, assess for:
 - Stridor
 - Wheezing
 - Decreased respirations or apnea
 - Retractions
 - Tachypnea
 - Decreasing consciousness
4. Consider need for **SPINAL MOTION RESTRICTION (SMR)**
5. Remove constricting clothing / jewelry
6. **Unresponsive patients found at the scene of a fire, consider cyanide poisoning. Refer to PEDIATRIC CYANIDE EXPOSURE SMO**
7. Evaluate depth of burn and estimate extent using **PEDIATRIC RULE OF NINES OR PALM METHOD** (patient's palm equals 1% BSA). Use caution to ensure that only true burns are calculated and not soot. **Do not include 1st degree (superficial) burns in calculation.**
8. Assess need for transport to Burn Center.
9. Keep patient warm and protect from hypothermia; be cautious with cooled / wet dressings
10. Assess for potential child abuse and follow appropriate reporting mechanism.

NOTE:

- **Intramuscular and/or subcutaneous medications should NOT be administered through burned tissue.**

ALS

11. If patient is in pain and systolic BP > (70+(2 x age in years)), treat per **PEDIATRIC PAIN CONTROL SMO.**
12. **For burns > 20% total body surface area burned (TBSA) establish VASCULAR ACCESS and initiate fluid resuscitation with NORMAL SALINE; rate based on patient age:**

<u>Age in years</u>	<u>IV Fluid Rate</u>
≤ 5 years of age	125 mL/hr
6 - 12 years of age	250 mL/hr
≥ 13 years of age	500 mL/hr

PEDS

RULE OF NINES

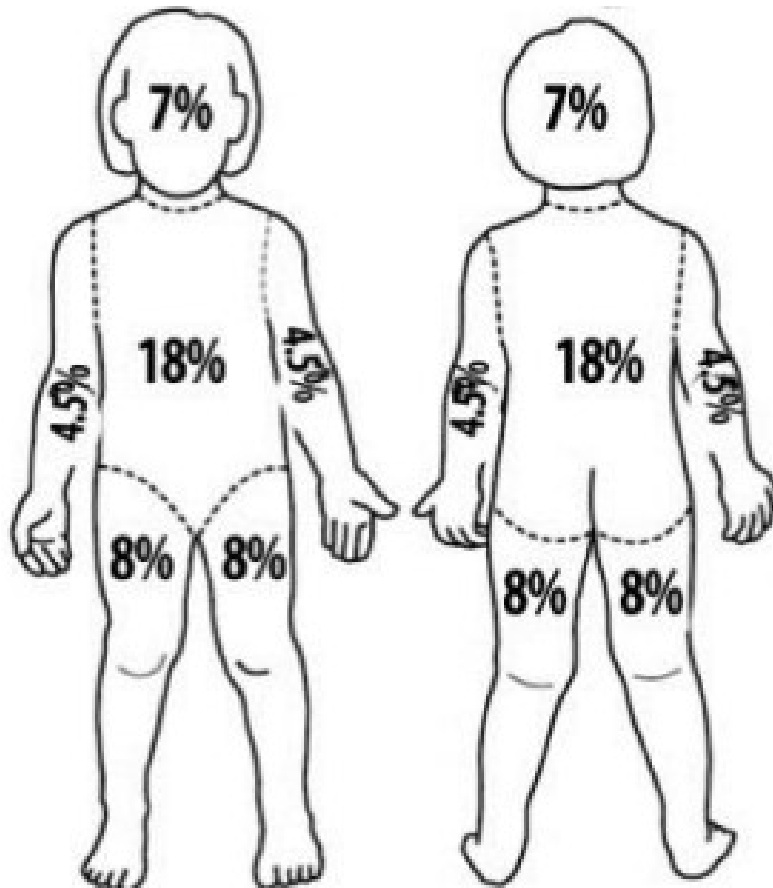
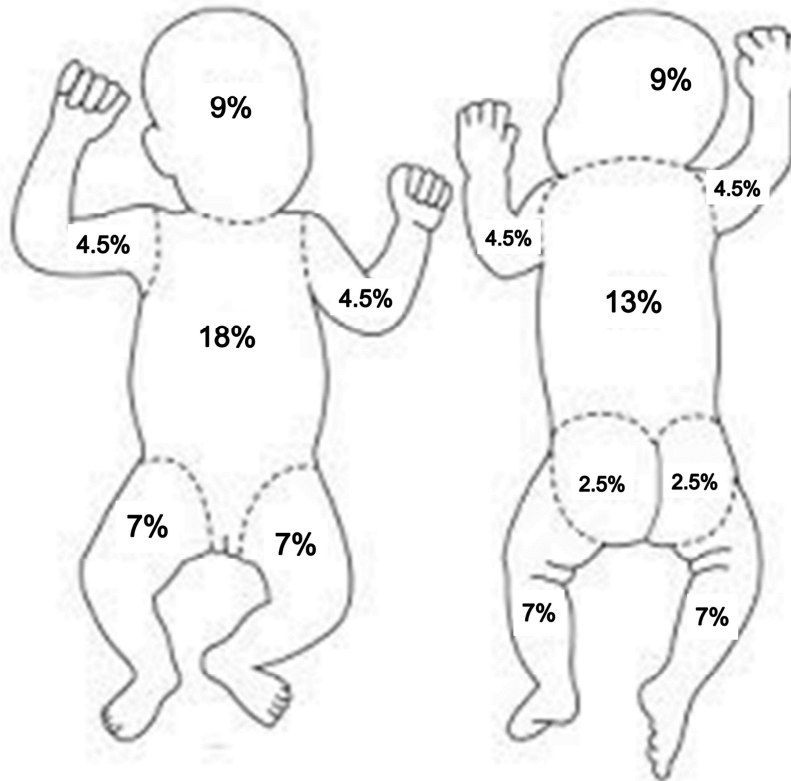
APPROVED FOR USE BY:

ALL SYSTEMS

EFFECTIVE: 04/02/2019

REVIEWED: 04/01/2023

REVISED: 04/01/2023



BLS / ALS

1. **PEDIATRIC BURNS – GENERAL GUIDELINES**
2. HazMat precautions as indicated
3. Attempt to obtain name of chemical involved and MSDS/SDS information, if possible.
4. If powdered chemical, brush away excess. Remove clothing, if possible.
5. Irrigate with copious amounts of sterile water or Normal Saline as soon as possible, and continue while transporting. Goal is *at least* 30 minutes of continuous irrigation.
 -
 - Be mindful of hypothermia related to environment, irrigation, and burn injury.
6. Transport and notify Medical Direction or receiving hospital

ALS

7. If **EYE INVOLVEMENT**:
 - Assess visual acuity
 - Remove contact lens and **IRRIGATE EYE WITH SALINE**
 - Do not contaminate the uninjured eye with contaminated irrigation solution
 - Administer **TETRACAINE 0.5% (ALTACAINE®)** 1 drop in each affected eye. May repeat until pain relief achieved.
8. Contact Medical Direction
9. Transport
 - Support ABCs
 - Observe
 - Keep warm

BLS / ALS

1. **ADULT BURNS – GENERAL GUIDELINES**
2. **SPINE MOTION RESTRICTION** as indicated
3. Identify, document, and describe any wounds, particularly those related to the electrical injury
4. Assess neurovascular status of affected part
5. Cover wounds with dry, sterile dressings (cooling not necessary)
6. Contact Medical Direction
7. Transport
 - . Support ABCs
 - . Observe
 - . Keep warm

ALS

8. Assess ECG for dysrhythmias, including 12-lead ECG, and treat according to appropriate SMO

BLS / ALS

1. **PEDIATRIC BURNS – GENERAL GUIDELINES**
2. Note presence of wheezing, hoarseness, stridor, carbonaceous (black) sputum / cough, singed nasal hair / eyebrows / eyelashes.
3. Monitor EtCO₂ waveform (if available)
4. **HIGH FiO₂ or VENTILATION**
5. Contact Medical Direction
6. Transport
 - Support ABCs
 - Observe
 - Keep warm

ALS

10. If wheezing, refer to **PEDIATRIC REACTIVE LOWER AIRWAY DISEASE / ASTHMA SMO**
11. Thoroughly assess airway for presence of burns or soot.
 - The presence of soot or burns in/around the airway is not a sole indicator for intubation
 - Support airway and ventilation with least invasive methods first
 - If severe respiratory distress, stridor, or imminent respiratory arrest, consider **INTUBATION**. Refer to **PEDIATRIC DRUG ASSISTED INTUBATION** as needed.
12. Monitor cardiac rhythm and treat according to appropriate SMO

NOTE:

- **Airway edema can take several hours to appear and become significant enough to risk airway loss. Burned airways can be significantly difficult to intubate, therefore in the absence of severe respiratory distress, stridor, imminent respiratory failure, or GCS ≤ 8, consider withholding intubation until arrival at receiving facility.**

BLS / ALS

1. Assess scene safety
 - Remove patient to safety
 - Use standard precautions
2. **PEDIATRIC BURNS – GENERAL GUIDELINES**
3. **PEDIATRIC INITIAL TRAUMA CARE**
 - Stop the burning process
 - Complete primary assessment, assess for:
 - Stridor
 - Wheezing
 - Decreased respirations or apnea
 - Retractions
 - Tachypnea
 - Decreasing consciousness
 - Assess percentage / depth of burn
 - Remove constricting jewelry and clothes
4. Cover burn wound with DRY dressings or clean sheets
5. Place patient on clean sheet on stretcher and cover patient with dry clean sheets and blanket to maintain body temperature
6. Refer to appropriate **SMO** as indicated for other conditions
7. Contact Medical Direction
8. Transport
 - Support ABCs
 - Observe
 - Keep warm

GENERAL	<u>ADDENDUM SECTION</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 04/02/2019	REVIEWED: 04/01/2023	REVISED: 04/01/2023

In order to move the science of Emergency Medical Services forward, the EMS Medical Directors have added this section to the SMOs.

Here, the Region will place protocols that are presently "System-specific." These SMOs may be used within a System in the Region, but at the present time are **not universally in effect** for all the Systems. Medical Direction for these SMOs must come from a hospital in the System that uses these SMOs.

These SMOs will be under continual review by the EMS Medical Directors, and Standing Orders will be revised or added as changing medical technology and research dictates.

Orders not agreed upon by all four Medical Directors, or protocols implemented for investigation will be added as System-specific to the Addendum section. Data from investigative protocols is shared with the EMS Medical Directors for consideration for inclusion to the regionwide Standing Orders.

Our intention is to utilize this section for the advancement of the Region as a whole, and to develop the finest EMS Region in the State.

Respectfully,

The Region 8 EMS Medical Directors

ADENOSINE (ADENOCARD®)

Classification: Antiarrhythmic

Adult Dose / Route	<p><u>SUPRAVENTRICULAR TACHYCARDIA:</u> Initial dose of 6 mg rapid IV (over 1-2 seconds) followed immediately by 10 mL rapid saline flush and extremity elevation.</p> <p>If first dose does not eliminate tachydysrhythmia in 1-2 minutes, give 12 mg rapid IV followed by 10 mL rapid saline flush and extremity elevation.</p> <p>May repeat second dose (12 mg) once (3 doses total).</p>
Pediatric Dose / Route	<p><u>SUPRAVENTRICULAR TACHYCARDIA:</u> Initial dose of 0.1 mg/kg rapid IV/IO over 1-2 seconds followed immediately by ≥5 mL rapid saline flush and extremity elevation. Max initial dose 6 mg.</p> <p>If first dose does not eliminate tachy-dysrhythmia in 1-2 minutes, give 0.2 mg/kg rapid IV/IO followed immediately by ≥5 mL rapid saline flush and extremity elevation. Max repeat dose 12 mg.</p> <p>May repeat second dose (0.2 mg/kg) once (3 doses total).</p>
Action(s)	<ul style="list-style-type: none"> • Slows conduction time through the AV node, can interrupt the reentry pathways through the AV node, and can restore normal sinus rhythm. In patients with PSVT, including WPW syndrome
Indications	<ul style="list-style-type: none"> • Stable re-entry SVT unresponsive to vagal maneuvers. • Does not convert atrial fibrillation, atrial flutter or ventricular tachycardia.
Contra-indications	<ul style="list-style-type: none"> • Sick sinus syndrome • 2nd or 3rd degree AV block or poison- or drug-induced tachycardia. • Atrial fibrillation/flutter with underlying WPW syndrome. • Symptomatic bradycardia except those with functioning pacemakers. • Asthma (may cause bronchospasm)
Side Effects	<ul style="list-style-type: none"> • Common reactions are generally mild and short-lived: <ul style="list-style-type: none"> ○ Sense of impending doom ○ Flushing ○ Chest pressure ○ Throat tightness ○ Numbness • Patients will have a brief episode of one or more transient dysrhythmias, which may include asystole, following admin. • Will not terminate known atrial flutter / fibrillation, but will slow AV conduction to identify waves. • Caution in patients with heart transplant – prolonged asystole has been reported

ALBUTEROL (PROVENTIL®, VENTOLIN®)

Classification: Bronchodilator, Beta-2 agonist

Adult Dose / Route	<u>ASTHMA / BRONCHOSPASM, COPD WITH WHEEZING, ALLERGIC REACTION / ANAPHYLAXIS WITH WHEEZING:</u> 2.5 mg of 0.083% (3 mL) via nebulizer (6 LPM oxygen) until mist stops, usually 5-15 minutes. In-line nebulizer treatment for intubated pts.	<u>HYPERKALEMIA:</u> 5 mg of 0.083% (6 mL) via continuous nebulizer (6 LPM oxygen) until mist stops, may repeat x 1.
Pediatric Dose / Route	<u>ASTHMA / BRONCHOSPASM, COPD WITH WHEEZING, ALLERGIC REACTION / ANAPHYLAXIS WITH WHEEZING:</u> 2.5 mg of 0.083% (3 mL) via nebulizer (6 LPM oxygen) until mist stops, usually 5-15 minutes. In-line nebulizer treatment for intubated pts.	NOT APPROVED FOR PEDIATRIC USE IN HYPERKALEMIA
Action(s)	<ul style="list-style-type: none"> • Binds and stimulates beta-2 receptors, resulting in bronchial smooth muscle relaxation and bronchodilation. • Helps return potassium into cells by activating the sodium potassium pump at the cell membrane 	
Indications	<ul style="list-style-type: none"> • Wheezing in <ul style="list-style-type: none"> ○ Asthma ○ Bronchitis with bronchospasm ○ COPD ○ Epiglottitis ○ Allergic reaction / anaphylaxis ○ Inhalation burns • Hyperkalemia (larger dose, adult only) 	
Contra-indications	<ul style="list-style-type: none"> • Angioedema • Laryngomalacia • Hypersensitivity to albuterol or levalbuterol. • Use with caution in lactating patients, or patients with cardiovascular disease history 	
Side Effects	<ul style="list-style-type: none"> • <u>CNS:</u> <ul style="list-style-type: none"> ○ Tremors ○ Nervousness ○ Anxiety ○ Dizziness ○ Headache • <u>Cardiovascular:</u> <ul style="list-style-type: none"> ○ Tachycardia ○ Hypertension / Hypotension ○ Palpitations ○ Dysrhythmias ○ Angina • <u>Gastrointestinal:</u> <ul style="list-style-type: none"> ○ Nausea / Vomiting • <u>Respiratory:</u> <ul style="list-style-type: none"> ○ Paradoxical bronchospasm ○ Hypoxia due to ventilation/perfusion mismatch • <u>Metabolic:</u> <ul style="list-style-type: none"> ○ Hypokalemia 	

Notes:

- Can be used in-line with CPAP mask in adult patients with severe respiratory distress or refractory to albuterol HHN treatment, unless CPAP is contraindicated. Maximum PEEP of 10 cmH₂O
 - If patient becomes unstable or worsens, reduce PEEP or remove CPAP

AMIODARONE (CORDARONE®)

Classification: Antiarrhythmic, Class III

Adult Dose / Route	<p><u>VENTRICULAR TACHYCARDIA WITH A PULSE:</u> 150 mg IV/IO over 10 minutes</p> <p><u>PULSELESS VENTRICULAR TACHYCARDIA / VENTRICULAR FIBRILLATION:</u> 300 mg IV/IO bolus. Repeat dose of 150 mg IV/IO bolus.</p> <p><u>RETURN OF SPONTANEOUS CIRCULATION:</u> If a patient in pVT/pVF converts to supraventricular rhythm and has not received >300 mg of AMIODARONE, begin an AMIODARONE infusion of 150 mg / 100 mL over 10 minutes</p>			
Pediatric Dose / Route	<p><u>PULSELESS VENTRICULAR TACHYCARDIA / VENTRICULAR FIBRILLATION:</u> 5 mg/kg IV/IO bolus. May repeat 5 mg/kg IV/IO up to 2 times while patient remains in pulseless shockable rhythm.</p>			
Action(s)	<ul style="list-style-type: none"> • Increases the cardiac refractory period without influencing the resting membrane potential slows AV conduction <ul style="list-style-type: none"> ○ Prolongs AV refractory period & QT interval ○ Slows ventricular conduction (widens QRS) ○ Blocks Na, K, Ca channels & α / β receptors • Negative chronotropic & dromotropic effects • Vasodilates, resulting in decreased cardiac workload and myocardial oxygen consumption 			
Indications	<ul style="list-style-type: none"> • Pre- and post-defibrillation in ventricular fibrillation and unstable ventricular tachycardia • Persistent stable ventricular tachycardia • Conversion of pVT/pVF into supraventricular rhythm by defibrillation. 			
Contra-indications	<ul style="list-style-type: none"> • Hypokalemia • Hypomagnesemia • Cardiogenic shock • Sinus bradycardia • 2nd or 3rd degree AV block • Should not be used in recognized Torsades de Pointes 			
Side Effects	<table style="width: 100%; border: none;"> <tr> <td style="vertical-align: top;"> <ul style="list-style-type: none"> • <u>Cardiovascular:</u> <ul style="list-style-type: none"> ○ Hypotension ○ Bradycardia ○ AV block ○ Dysrhythmias • <u>Respiratory:</u> <ul style="list-style-type: none"> ○ Acute respiratory distress syndrome (ARDS) </td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> • <u>CNS:</u> <ul style="list-style-type: none"> ○ Malaise ○ Ataxia ○ Dizziness ○ Paresthesia • <u>Gastrointestinal:</u> <ul style="list-style-type: none"> ○ Nausea / Vomiting </td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> • May prolong QT interval (there have been a small number of Amiodarone-induced Torsades de Pointes or ventricular fibrillation) </td> </tr> </table>	<ul style="list-style-type: none"> • <u>Cardiovascular:</u> <ul style="list-style-type: none"> ○ Hypotension ○ Bradycardia ○ AV block ○ Dysrhythmias • <u>Respiratory:</u> <ul style="list-style-type: none"> ○ Acute respiratory distress syndrome (ARDS) 	<ul style="list-style-type: none"> • <u>CNS:</u> <ul style="list-style-type: none"> ○ Malaise ○ Ataxia ○ Dizziness ○ Paresthesia • <u>Gastrointestinal:</u> <ul style="list-style-type: none"> ○ Nausea / Vomiting 	<ul style="list-style-type: none"> • May prolong QT interval (there have been a small number of Amiodarone-induced Torsades de Pointes or ventricular fibrillation)
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ASPIRIN

Classification: Salicylate, Platelet Aggregation Inhibitors

Adult Dose / Route	<p><u>ACUTE CORONARY SYNDROME:</u> 324 mg (4 x 81 mg chewable tablets), chewed and swallowed.</p> <p><u>Note:</u> Supplement dose to ensure patient has received 324 mg within the past 8 hours</p> <p><u>Note:</u> Sips of water help dissolve tabs and move drug out of mouth & esophagus where it can irritate lining.</p>
Pediatric Dose / Route	NOT APPROVED FOR PEDIATRIC USE
Action(s)	<ul style="list-style-type: none">• Given as an early potent anticoagulant.• Blocks formation of thromboxane alpha-2, which helps stop platelets aggregation and the formation of plugs that cause obstruction or constriction of small coronary arteries.• Reduces overall mortality of acute MI and reduces non-fatal re-infarction.
Indications	<ul style="list-style-type: none">• Suspected acute coronary syndrome (ACS) or chest pain suspicious of cardiac origin
Contra-indications	<ul style="list-style-type: none">• GI bleeding/active ulcers• Hemorrhagic stroke• History of bleeding or clotting disorders including recent trauma (esp. head)• Known hypersensitivity• Pregnancy: use with caution, except for third trimester, contraindicated unless ordered by Medical Direction• If patient currently taking ticagrelor (Brilinta®), contact Medical Direction for orders
Side Effects	<ul style="list-style-type: none">• Anaphylaxis• Angioedema• Bronchospasm• Bleeding• Stomach irritation• Nausea and vomiting• Tinnitus• Asthma patients may have aspirin sensitivity; can cause bronchospasm

ATROPINE

Classification: Anticholinergic (parasympathetic blocker)

Adult Dose / Route	<p><u>BRADYDYSRHYTHMIAS:</u> 0.5 mg rapid IV/IO every 3 min up to 3 mg total</p> <p><u>MUSCARINIC POISONING:</u> 2 mg rapid IV/IO every 3 min, no max total dose</p> <p><u>NERVE GAS / ORGANOPHOSPHATE EXPOSURE:</u> 2 – 6 mg IV/IM repeated twice at hourly intervals</p>		
Pediatric Dose / Route	<p><u>BRADYDYSRHYTHMIAS:</u> 0.02 mg/kg rapid IV/IO.</p> <ul style="list-style-type: none"> • Minimum dose 0.1 mg • Max single dose 0.5 mg • May repeat x 1 in 3-5 minutes in bradycardia • May repeat x 2 in spinal/neurogenic shock <p><u>MUSCARINIC POISONING:</u> 0.02 mg/kg rapid IV/IO every 3 minutes. Minimum dose 0.1 mg. No dose limit.</p>		
Action(s)	<ul style="list-style-type: none"> • Competes with acetylcholine at the site of the muscarinic receptor. Receptors affected include salivary, bronchial, sweat glands, eyes, heart and GI tract (most-to-least sensitive). Causes drying of secretions. • Increases SA and AV node conduction, causing increased heart rate • Bronchodilation 		
Indications	<ul style="list-style-type: none"> • Symptomatic bradycardia (most likely to work if QRS is narrow) • Cholinergic poisonings (organophosphates/ WMD gasses) • Neurogenic shock (pediatric) 		
Contra-indications	<ul style="list-style-type: none"> • Asymptomatic bradycardia <ul style="list-style-type: none"> ○ Unlikely to be effective in patients with: <ul style="list-style-type: none"> ◆ Heart transplant ◆ Infranodal AV blocks below His-Purkinje level (2° Mobitz Type II or 3° AV Block with wide QRS) • Use with EXTREME CAUTION in cardiac ischemia or STEMI / infarction <ul style="list-style-type: none"> ○ Heart rate is correlated to myocardial oxygen demand ○ Increasing heart rate can worsen ischemia/infarction • Avoid in hypothermic bradycardia • Relative contraindication = narrow-angle glaucoma 		
Side Effects	<ul style="list-style-type: none"> • <u>CNS:</u> <ul style="list-style-type: none"> ○ Sensorium changes ○ Drowsiness ○ Confusion ○ Headache 	<ul style="list-style-type: none"> • <u>Cardiovascular:</u> <ul style="list-style-type: none"> ○ Tachycardia ○ Increased myocardial oxygen demand • <u>Eyes:</u> <ul style="list-style-type: none"> ○ Dilated (not fixed) pupils ○ Blurred vision 	<ul style="list-style-type: none"> • <u>Skin:</u> <ul style="list-style-type: none"> ○ Warm, dry, flushed ○ Drying of secretions ○ (mouth, nose, eyes, bronchioles)

BENZOCAINE SPRAY (CETACAINE®, HURRICAINÉ®)

Classification: Ester-type local anesthetic (topical)

Adult Dose / Route	<u>LOCAL ANESTHESIA TO FACILITATE ENDOTRACHEAL INTUBATION:</u> 1 - 2 second spray in posterior pharynx. May repeat x 1 in 30 seconds.
Pediatric Dose / Route	<u>LOCAL ANESTHESIA TO FACILITATE ENDOTRACHEAL INTUBATION:</u> 0.5 - 1 second spray in posterior pharynx. May repeat x 1 in 30 seconds.
Action(s)	<ul style="list-style-type: none">• Causes a reversible blockade of nerve conduction by decreasing nerve membrane permeability to sodium. This decreases the rate of membrane depolarization, thereby increasing the threshold for electrical excitability. The blockade affects all nerve fibers in the following sequence: autonomic, sensory, and motor, with effects diminishing in reverse order.
Indications	<ul style="list-style-type: none">• Suppression of gag reflex to facilitate endotracheal intubation
Contra-indications	<ul style="list-style-type: none">• Hypersensitivity to "caines"• Use minimum dose in patients at risk of complications due to methemoglobinemia (asthma, COPD, heart disease, smokers)
Side Effects	<ul style="list-style-type: none">• Suppressed gag reflex• Unpleasant taste• Methemoglobinemia:<ul style="list-style-type: none">○ Pale, blue/grey skin○ Headache○ Lightheadedness○ Dyspnea○ Anxiety○ Fatigue○ Tachycardia

DEXTROSE (10%, 25%, 50%)

Classification: Carbohydrate IV solution, Anti-hypoglycemia

Adult Dose / Route	<p><u>HYPOGLYCEMIA:</u> Dextrose 10%: 25g / 250mL. Titrated to desired effect (improvement in mental status or blood glucose level)</p> <p>Dextrose 50%: 25g SLOW push, titrated to desired effect (improvement in mental status or blood glucose level)</p>
Pediatric Dose / Route	<p><u>HYPOGLYCEMIA:</u> Dextrose 10%: 5 mL/kg (0.5 g/kg, max 25 g) slow IV. May repeat x 1 following reassessment if partial or no improvement or blood glucose remains <60 mg/dL</p> <p>Dextrose 25%: 25g / 50mL SLOW push</p> <p>Dextrose 12.5%: 2 mL/kg</p>
Action(s)	<ul style="list-style-type: none"> • Increases blood glucose concentrations
Indications	<ul style="list-style-type: none"> • Hypoglycemia: blood glucose <60 mg/dL, or signs and symptoms of hypoglycemia and blood glucose reading unavailable • If heart failure (or history of) & lungs clear: dose as usual, slow infusion rate to 50 mL increments, followed by reassessment • If heart failure & crackles or wheezes: Contact Medical Direction for orders
Contra-indications	<ul style="list-style-type: none"> • Normal or “high” blood glucose • Do not give subcutaneous or IM • Giving too forcefully can result in loss of IV line and damage to surrounding tissues <ul style="list-style-type: none"> ○ Ensure IV patency prior to infusing ○ If IV infiltrates / extravasates, stop infusion & inform Medical Direction • If transport refused after dextrose, assure that patient eats & calls Primary Care Provider
Side Effects	<ul style="list-style-type: none"> • Hyperglycemia • Warmth/burning from IV injection • Diuresis • Thrombophlebitis • Tissue necrosis if IV/IO infiltrates • Pulmonary edema

DIAZEPAM RECTAL GEL (DIASTAT®)

Classification: Benzodiazepine, Anticonvulsant

Adult Dose / Route	<p><u>SEIZURE / STATUS EPILEPTICUS:</u> Dosing of the AcuDial™ dosing system is set according to the prescription. There are two delivery systems, capable of delivering up to 10 (5, 7.5 or 10) or 20 (12.5, 15, 17.5 or 20) mg. Compare the label dose to the dose window on the side of the device before administering.</p>
Pediatric Dose / Route	<p><u>SEIZURE / STATUS EPILEPTICUS:</u> Dosing of the AcuDial™ dosing system is set according to the prescription. There are two delivery systems, capable of delivering up to 10 (5, 7.5 or 10) or 20 (12.5, 15, 17.5 or 20) mg. Compare the label dose to the dose window on the side of the device before administering.</p>
Action(s)	<ul style="list-style-type: none">• Suppresses seizure activity through presumed GABA receptor activation, resulting in hyperpolarization of the cell membrane that prevents further excitation of the cell; precise mechanism unknown
Indications	<ul style="list-style-type: none">• If patient has Diastat® prescribed and is having active seizures for >3 min, Paramedics who have been trained may assist or administer at prescribed dose per System-specific procedure
Contra-indications	<ul style="list-style-type: none">• Known hypersensitivity to diazepam. Diazepam rectal gel may be used in patients with open angle glaucoma who are receiving appropriate therapy but is contraindicated in acute narrow angle glaucoma.
Side Effects	<ul style="list-style-type: none">• Concomitant use of benzodiazepines and opioids may result in profound sedation, respiratory depression, coma, and death• CNS depression• Use with caution in:<ul style="list-style-type: none">○ Renally or hepatically impaired patients○ Patients with compromised respiratory function (asthma, pneumonia) or neurologic damage○ Elderly patients (half-life of diazepam increases linearly with age, approximately 7x longer at age 95 than at 18)

DIPHENHYDRAMINE (BENADRYL®)

Classification: 1st Generation Antihistamine (H1 blocker)

Adult Dose / Route	<p><u>ALLERGIC REACTION:</u> 50 mg IM (liquid PO if injectable unavailable)</p> <p><u>ANAPHYLAXIS:</u> 50 mg slow IV. If no IV, give IM or PO</p>		
Pediatric Dose / Route	<p><u>ALLERGIC REACTION:</u> 1 mg/kg IM or PO, max 50 mg</p> <p><u>ANAPHYLAXIS:</u> 1 mg/kg slow IV/IO. If no IV, give IM or PO, max 50 mg</p>		
Action(s)	<ul style="list-style-type: none"> • Binds and blocks Histamine-1 (H1) receptors through competitive antagonization of H1 receptor sites in the GI tract, uterus, large blood vessels, and bronchial muscles • Does not reverse histamine; prevents more from being released • Will not act as fast as epinephrine 		
Indications	<ul style="list-style-type: none"> • Allergic reactions and anaphylaxis 		
Contra-indications	<ul style="list-style-type: none"> • Acute asthma attack (thickens bronchial secretions). OK to use with hx of asthma with no current bronchoconstriction. • Caution in presence of CNS depressants like alcohol and drugs, cardiac history, known sensitivity. 		
Side Effects	<table style="width: 100%; border: none;"> <tr> <td style="vertical-align: top;"> <ul style="list-style-type: none"> • <u>CNS:</u> <ul style="list-style-type: none"> ○ Drowsiness ○ Blurred vision ○ Dilated pupils ○ Hallucinations ○ Vertigo ○ Weakness ○ Ataxia </td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> • <u>Cardiovascular:</u> <ul style="list-style-type: none"> ○ Tachycardia ○ Hypotension • <u>Respiratory</u> <ul style="list-style-type: none"> ○ Thickened bronchial secretions • <u>Gastrointestinal:</u> <ul style="list-style-type: none"> ○ Dry mouth ○ Nausea / Vomiting </td> </tr> </table>	<ul style="list-style-type: none"> • <u>CNS:</u> <ul style="list-style-type: none"> ○ Drowsiness ○ Blurred vision ○ Dilated pupils ○ Hallucinations ○ Vertigo ○ Weakness ○ Ataxia 	<ul style="list-style-type: none"> • <u>Cardiovascular:</u> <ul style="list-style-type: none"> ○ Tachycardia ○ Hypotension • <u>Respiratory</u> <ul style="list-style-type: none"> ○ Thickened bronchial secretions • <u>Gastrointestinal:</u> <ul style="list-style-type: none"> ○ Dry mouth ○ Nausea / Vomiting
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<p><u>Note:</u> Pediatric patients are more likely to experience CNS stimulation and subsequent excitation as opposed to sedation</p>			

DOPAMINE (INTROPIN®)

Classification: Adrenergic Agonist, Cardiac Dopaminergic Agent, Inotrope, Chronotrope

Adult Dose / Route	<p><u>HYPOTENSION / CARADIOGENIC SHOCK / BRADYDYSRHYTHMIAS:</u> IV/IO piggyback infusion of 5-20 mcg/kg/min, titrated to effect</p> <p>1600 mcg/mL concentration premix infusion (400 mg/250 mL OR 800 mg/500 mL)</p> <p><u>DOSING CHART</u></p>
Pediatric Dose / Route	NOT APPROVED FOR PEDIATRIC USE
Action(s)	<ul style="list-style-type: none"> • Stimulates dopaminergic beta-1 and alpha receptors, producing positive chronotropic and inotropic effects on the myocardium, resulting in increased heart rate and cardiac contractility. • At higher rates of infusion (10–20 mcg/kg/min) there is some effect on alpha-adrenoceptors, with consequent vasoconstrictor effects and a rise in blood pressure. • The predominant effects of dopamine are dose-related, although it should be noted that actual response of an individual patient will largely depend on the clinical status of the patient at the time the drug is administered.
Indications	<ul style="list-style-type: none"> • Symptomatic hypotension in the absence of hypovolemia, secondary to cardiogenic / neurogenic / septic shock • Bradycardia refractory to atropine
Contra-indications	<ul style="list-style-type: none"> • Known sensitivity, including to sulfites • Pheochromocytoma • Hypotension due to hypovolemia or tachydysrhythmia
Side Effects	<ul style="list-style-type: none"> • <u>Cardiovascular:</u> <ul style="list-style-type: none"> ○ Tachydysrhythmia ○ Palpitations ○ Ventricular irritability ○ Hypertension ○ Angina • <u>Gastrointestinal:</u> <ul style="list-style-type: none"> ○ Nausea and vomiting • <u>Constitutional:</u> <ul style="list-style-type: none"> ○ Headache ○ Tissue necrosis if IV/IO infiltrates

EPINEPHRINE 1 MG / ML (1:1,000) (ADRENALIN®)

Classification: Catecholamine, Sympathetic Nervous System Agonist, Beta-2 Agonist, Vasopressor

Adult Dose / Route	<p><u>ALLERGIC REACTION / BRONCHOSPASM:</u> 0.3 mg (0.3 mL) of 1:1000 solution IM</p> <p><u>ANAPHYLAXIS:</u> If no IV: 0.3 mg (0.3 mL) 1:1000 IM. May repeat every 3 minutes.</p> <p><u>CROUP / EPIGLOTTITIS:</u> 3 mg (3 mL) of 1:1000 via nebulizer</p>	
Pediatric Dose / Route	<p><u>ALLERGIC REACTION / BRONCHOSPASM:</u> 1:1,000 (1 mg/1 mL) IM</p> <ul style="list-style-type: none"> ○ ≤30 kg = 0.15mg (0.15mL) ○ >30 kg = 0.3mg (0.3mL) <p><u>ANAPHYLAXIS:</u> If no IV: 0.01 mL/kg (0.01 mg/kg) 1:1,000 IM.</p> <p><u>CROUP / EPIGLOTTITIS:</u> 3 mg (3 mL) of 1:1,000 solution via nebulizer</p> <p><u>CARDIAC ARREST WITHOUT VASCULAR ACCESS:</u> May consider 0.1 mL/kg (0.1 mg/kg) ET. Maximum dose 2.5 mg ET. Flush with 5 mL of normal saline and follow with 5 ventilations.</p>	
Action(s)	<ul style="list-style-type: none"> ● Beta-2 effects dominate: <ul style="list-style-type: none"> ○ Relaxes bronchial smooth muscle (bronchodilator) ○ Constricts bronchial arterioles (α stimulation) to relieve congestion & edema ○ Inhibits histamine release & antagonizes effects on end organs 	<ul style="list-style-type: none"> ● Beta-1 effects <ul style="list-style-type: none"> ○ ↑ Automaticity; myocardial electrical activity ○ ↑ HR (positive chronotropy) ○ ↑ CO (positive inotropy) ○ ↑ Conduction velocity (positive dromotropy)
Indications	<ul style="list-style-type: none"> ● Allergic reaction (IM) ● Anaphylaxis (IM if no IV) ● Acute asthma with wheezing (IM) ● Croup / epiglottitis (HHN) ● <u>Note:</u> Epinephrine absorption is rapid and complete if administered IM in the anterolateral aspect of the thigh 	
Contra-indications	<ul style="list-style-type: none"> ● <u>None in cardiac arrest or anaphylaxis.</u> ● Use with caution if: <ul style="list-style-type: none"> ○ Hx of hypertension, angina, CAD ○ HR >100 ○ Current HTN or heart failure ○ Pt taking digitalis (causes heart to be sensitive to epi à dysrhythmias) ○ Pt taking MAO inhibitors, TCAs, levothyroxine sodium (potentiates effects resulting in severe HTN) 	
Side Effects	<ul style="list-style-type: none"> ● <u>Cardiovascular:</u> <ul style="list-style-type: none"> ○ Palpitations ○ Tachycardia ○ Hypertension 	<ul style="list-style-type: none"> ● <u>CNS:</u> <ul style="list-style-type: none"> ○ Anxiety ○ Tremors ○ Headache

EPINEPHRINE 0.1 MG / ML (1:10,000) (ADRENALIN®)

Classification: Catecholamine, sympathetic nervous system agonist

Adult Dose / Route	<p><u>CARDIAC ARREST:</u> 1 mg (10 mL) of 1:10,000 solution IV/IO Repeat every 3-5 min during pulselessness</p> <p><u>ANAPHYLAXIS:</u> 0.1 mg (1 mL) 1:10,000 IV/IO every 3 minutes up to 0.5 mg</p> <p><u>EDWARD EMS and CDH EMS Providers ONLY:</u> <u>POST-CARDIAC ARREST HYPOTENSION OR IMPENDING ARREST:</u> 100 mcg (1 mL) IV/IO, may repeat x 2</p>
Pediatric Dose / Route	<p><u>CARDIAC ARREST:</u> 0.1 mL/kg (0.01 mg/kg) 1:10,000 solution IV/IO If no IV/IO, consider 0.1 mL/kg (0.1 mg/kg) of 1:1000 ET (dilute with 2 mL of NS) Repeat every 3-5 min during pulselessness</p> <p><u>BRADYDYSRHYTHMIA:</u> 0.1 mL/kg (0.01 mg/kg) 1:10,000 solution IV/IO Repeat every 3-5 min if no response</p> <p><u>NEWLY BORN RESUSCITATION:</u> 0.1 mL/kg (0.01 mg/kg) 1:10,000 IV/IO OR 0.3 mL/kg (0.03 mg/kg) of 1:10,000 ET Repeat every 3 min during pulselessness</p> <p><u>ANAPHYLAXIS:</u> 0.1 mL/kg (0.01 mg/kg) 1:10,000 solution IV/IO up to 0.5 mg</p>
Action(s)	<ul style="list-style-type: none"> • Alpha and Beta receptor effects: • Peripheral vasoconstrictor; ↑ SVR & BP • Makes CPR more effective <ul style="list-style-type: none"> ○ ↑ Coronary perfusion pressure ○ ↑ Brain perfusion ○ ↑ Vigor & intensity of VF to ↑ success of success defibrillation • Shortens repolarization • May generate perfusing rhythm in asystole or bradycardias
Indications	<ul style="list-style-type: none"> • Cardiac arrest in adult, pediatric or newly born • Anaphylaxis
Contra-indications	<ul style="list-style-type: none"> • <u>None in cardiac arrest or anaphylaxis.</u> • Use with caution if: <ul style="list-style-type: none"> ○ Hx of hypertension, angina, CAD ○ HR >100 ○ Current HTN or heart failure ○ Pt taking digitalis (causes heart to be sensitive to epi → dysrhythmias) • Pt taking MAO inhibitors, TCAs, levothyroxine sodium (potentiates effects resulting in severe HTN)
Side Effects	<ul style="list-style-type: none"> • <u>Cardiovascular:</u> <ul style="list-style-type: none"> ○ Palpitations ○ Tachycardia ○ Hypertension • <u>CNS:</u> <ul style="list-style-type: none"> ○ Anxiety ○ Tremors ○ Headache

ETOMIDATE (AMIDATE®)

Classification: Sedative-Hypnotic General Anesthetic without analgesic effect

Adult Dose / Route	<u>DRUG ASSISTED INTUBATION (DAI):</u> 0.6 mg/kg slow (over 30-60 seconds) IV/IO. Max dose 40 mg. No repeat dose.	
Pediatric Dose / Route	NOT APPROVED FOR PEDIATRIC USE	
Action(s)	<ul style="list-style-type: none"> • Non-barbiturate hypnotic without analgesic properties, exerting minimal effects on cardiac or respiratory symptoms • Onset 10-20 seconds • May cause transient decrease in cerebral blood flow • Induces moderate decrease in intracranial pressure, lasting for several minutes 	
Indications	<ul style="list-style-type: none"> • Induction of sedation to facilitate endotracheal intubation in the adult patient 	
Contra-indications	<ul style="list-style-type: none"> • Hypersensitivity • Use in pregnancy only if potential benefits justify potential risk to fetus • Sepsis / Septic patients 	
Side Effects	<ul style="list-style-type: none"> • <u>Musculoskeletal:</u> <ul style="list-style-type: none"> ○ Myoclonus • <u>Respiratory:</u> <ul style="list-style-type: none"> ○ Hyper/hypo ventilation ○ Apnea ○ Laryngospasm • <u>Cardiovascular:</u> <ul style="list-style-type: none"> ○ Hypertension / Hypotension ○ Tachycardia / Bradycardia • <u>Gastrointestinal:</u> <ul style="list-style-type: none"> ○ Nausea / Vomiting 	<ul style="list-style-type: none"> • Adrenal suppression (decreased cortisol levels) • Side effects more likely with decreased renal function • Etomidate causes a mild increase in airway resistance but may be used in patients with bronchospasm.

FENTANYL (SUBLIMAZE®)

Classification: Synthetic Opioid Agonist. Analgesic

Adult Dose / Route	<p><u>PAIN CONTROL (≤ 65 YEARS OF AGE):</u> Initial: 1 mcg/kg ROUNDED TO NEAREST 10 (max 100 mcg) slow IV (over 1-2 minutes) or IO/IN. Repeat: 0.5 mcg/kg ROUNDED TO NEAREST 10 (max 50 mcg) slow IV or IO/IN.</p> <p><u>PAIN CONTROL (>65 YEARS OF AGE):</u> Initial: 0.5 mcg/kg ROUNDED TO NEAREST 10 (max 50 mcg) slow IV or IO/IN. Repeat: 0.25 mcg/kg ROUNDED TO NEAREST 10 (max 25 mcg) slow IV or IO/IN</p> <p style="text-align: center;">When rounding fentanyl doses, round to the nearest 10 mcg number, with 5 and greater being rounded up.</p> <p style="text-align: center;"><i>Dosage rounding refers to patients ≥20 kg. Patients <20 kg should receive the exact weight calculated dose.</i></p>												
Pediatric Dose / Route	<p><u>PAIN CONTROL <20 KG BODY WEIGHT:</u> 1 mcg/kg slow IV or IO/IN (max 100 mcg). No repeat dose standing order – contact Medical Direction.</p> <p><u>PAIN CONTROL ≥20 KG BODY WEIGHT:</u> 1 mcg/kg ROUNDED TO NEAREST 10 (max 100 mcg) slow IV (over 1-2 minutes) or IO/IN. No repeat dose standing order – contact Medical Direction.</p> <p style="text-align: center;">When rounding fentanyl doses, round to the nearest 10 mcg number, with 5 and greater being rounded up.</p> <p style="text-align: center;"><i>Dosage rounding refers to patients ≥20 kg. Patients <20 kg should receive the exact weight calculated dose.</i></p>												
Action(s)	<ul style="list-style-type: none"> • Binds to opiate receptors creating analgesia and sedation. • Potent opioid analgesic with rapid onset (almost immediate via IV) with peak onset in 3-5 min. Usual analgesic duration is 30 - 60 min. 												
Indications	<ul style="list-style-type: none"> • Moderate to severe pain (≥4/10) 												
Contra-indications	<ul style="list-style-type: none"> • Known hypersensitivity to fentanyl or other opioid analgesics. • Do not give to pediatrics less than 2 years of age. • Hypotension (Adult SPB <90mmHg, Pediatric SBP <(70 + 2x age in years) • Respiratory Depression • Myasthenia Gravis • Caution with COPD or respiratory depression 												
Side Effects	<table style="width: 100%; border: none;"> <tr> <td style="vertical-align: top;"><u>CNS:</u></td> <td style="vertical-align: top;"><u>Resp:</u></td> <td style="vertical-align: top;"><u>Gastrointestinal:</u></td> </tr> <tr> <td style="vertical-align: top;"> <ul style="list-style-type: none"> • Sedation • Confusion • Dizziness • Euphoria • Muscle rigidity • Myoclonic movements </td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> • Respiratory depression • Hypoventilation </td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> • Nausea / Vomiting </td> </tr> <tr> <td></td> <td></td> <td style="vertical-align: top;"><u>CV:</u></td> </tr> <tr> <td></td> <td></td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> • Hypotension • Bradycardia </td> </tr> </table>	<u>CNS:</u>	<u>Resp:</u>	<u>Gastrointestinal:</u>	<ul style="list-style-type: none"> • Sedation • Confusion • Dizziness • Euphoria • Muscle rigidity • Myoclonic movements 	<ul style="list-style-type: none"> • Respiratory depression • Hypoventilation 	<ul style="list-style-type: none"> • Nausea / Vomiting 			<u>CV:</u>			<ul style="list-style-type: none"> • Hypotension • Bradycardia
<u>CNS:</u>	<u>Resp:</u>	<u>Gastrointestinal:</u>											
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		<u>CV:</u>											
		<ul style="list-style-type: none"> • Hypotension • Bradycardia 											

GLUCAGON (GLUCAGEN®)

Classification: Hormone, Anti-hypoglycemic agent

Adult Dose / Route	<p><u>DIABETIC/GLUCOSE EMERGENCIES:</u> 1 mg IM</p> <p><u>BETA BLOCKER / CALCIUM CHANNEL BLOCKER OVERDOSE:</u> 1 mg slow IV/IO, may repeat x 1</p>
Pediatric Dose / Route	<p><u>DIABETIC/GLUCOSE EMERGENCIES:</u> >8 years: 1 mg IM ≤ 8 years: 0.5 mg IM</p> <p><u>BETA BLOCKER / CALCIUM CHANNEL BLOCKER OVERDOSE:</u> 0.5 mg IV/IO, may repeat x 1</p>
Action(s)	<ul style="list-style-type: none"> • Increases blood glucose by converting liver glycogen stores to glucose • Cardiac stimulant (positive inotrope) - causes release of catecholamines & stimulates c-AMP in cells to increase cardiac output • Relaxes GI smooth muscle
Indications	<ul style="list-style-type: none"> • Hypoglycemia without vascular access • Symptomatic bradycardia w/ pulse if on beta blockers & unresponsive to atropine & pacing
Contra-indications	<ul style="list-style-type: none"> • Hypersensitivity to glucagon or proteins • Adrenal insufficiency or tumor
Side Effects	<ul style="list-style-type: none"> • Nausea / vomiting are common. Ensure airway protected before giving glucagon. • Tachycardia • Dyspnea
<p>Note: Not as effective for hypoglycemia if no glycogen stores (pediatrics, malnourished, uremic or liver disease)</p>	

GLUCOSE, ORAL (INSTA-GLUCOSE ®, GLUTOSE 15®)

Classification: Oral Anti-Hypoglycemic, Carbohydrate

Adult Dose / Route	<u>HYPOGLYCEMIA:</u> One tube (15 g of glucose)
Pediatric Dose / Route	<u>HYPOGLYCEMIA:</u> One tube (15 g of glucose)
Action(s)	<ul style="list-style-type: none">• Carbohydrate, increases serum glucose level (onset of approximately 10 minutes).
Indications	<ul style="list-style-type: none">• Hypoglycemia in patients with normal mental status and intact gag reflex.
Contra-indications	<ul style="list-style-type: none">• Altered mental status with no gag reflex.
Side Effects	<ul style="list-style-type: none">• Nausea, potential for aspiration in patients with impaired airway reflexes.

HYDROXOCOBALAMIN (CYANOKIT®)

Classification: Systemic Cyanide Antidote

Adult Dose / Route	<u>KNOWN OR SUSPECTED CYANIDE POISONING:</u> 5 g over 15 min (15 mL/min)	Note: Hydroxocobalamin (Cyanokit®) requires its own dedicated IV line. Do not piggyback onto existing IV line.
Pediatric Dose / Route	<u>KNOWN OR SUSPECTED CYANIDE POISONING:</u> 70 mg/kg over 15 min, not to exceed 5 g	
Action(s)	<ul style="list-style-type: none"> • Each hydroxocobalamin molecule can bind one cyanide ion to form cyanocobalamin, which is then excreted in the urine. Based on the molecular weight ratio of 50:1, 5g hydroxocobalamin will bind 250mg of cyanide. 	
Indications	<ul style="list-style-type: none"> • Known or suspected cyanide poisoning • Patients receiving hydroxocobalamin therapy for known or suspected cyanide poisoning should also receive aggressive supportive care 	
Contra-indications	<ul style="list-style-type: none"> • None in the presence of known or suspected cyanide poisoning 	
Side Effects	<ul style="list-style-type: none"> • Use caution in the management of patients with known anaphylactic reactions to hydroxocobalamin or cyanocobalamin. • Allergic reactions may include: <ul style="list-style-type: none"> ○ Anaphylaxis ○ Chest tightness ○ Edema ○ Urticarial ○ Pruritus ○ Dyspnea ○ Rash • Allergic reactions including angioneurotic edema have also been reported. • Transient elevations in blood pressure were observed in 18% of healthy test subjects 	

IPRATROPIUM BROMIDE / ALBUTEROL (DUONEB®)

Classification: Combination therapy; Short-acting antimuscarinic agent / short-acting selective beta-2 adrenergic agonist

**Adult Dose /
Route**

ASTHMA OR COPD WITH WHEEZING / REACTIVE LOWER AIRWAY DISEASE:

0.5 mg / 2.5 mg in 3 mL **or** 0.5 mg / 3 mg in 3 mL

**Pediatric Dose /
Route**

REACTIVE LOWER AIRWAY DISEASE / ASTHMA:

0.5 mg / 2.5 mg in 3 mL **or** 0.5 mg / 3 mg in 3 mL

Action(s)

- Simultaneous administration of both an anticholinergic drug and a beta-2 agonist produces a greater bronchodilator effect
- Ipratropium antagonizes the action of acetylcholine by blocking muscarinic cholinergic receptors that are present in the airways and other body organs. The actions of ipratropium parallel those of atropine on the bronchial smooth muscle, salivary glands, GI tract, and heart when administered by the intravenous route. When administered by oral inhalation, however, ipratropium exhibits greater antimuscarinic activity on the bronchial smooth muscle; systemic effects are minimal.
- Albuterol is a moderately selective beta2-adrenergic agonist that stimulates receptors of the smooth muscle in the lungs, uterus, and vasculature supplying skeletal muscle. The net result of albuterol binding to beta2-receptors in the lungs is relaxation of bronchial smooth muscles, which in turn relieves bronchospasm, reduces airway resistance, facilitates mucous drainage, and increases vital capacity.

Indications

- Wheezing associated with
 - Asthma
 - Bronchitis with bronchospasm
 - COPD
 - Epiglottitis
 - Allergic reaction / anaphylaxis
 - Inhalation burns

**Contra-
indications**

- Angioedema
- Laryngomalacia
- Hypersensitivity to albuterol or levalbuterol.
- Use with extreme caution in patients taking MAOIs
- Use with caution in lactating patients, or patients with cardiovascular disease history

Side Effects

- Dizziness
- Tachycardia
- Blurred vision
- Dry mouth
- Hypertension
- Paradoxical bronchospasm
- Urinary retention
- Headache

KETAMINE (KETALAR®)

Classification: Nonbarbiturate General Anesthetic

Adult Dose / Route	<p><u>SEDATION TO FACILITATE ENDOTRACHEAL INTUBATION:</u> Initial: 2 mg/kg slow IV/IO (over 30-60 seconds, max dose of 500 mg) Repeat: 1 mg/kg after 60 seconds (max dose 250 mg) if insufficient sedation achieved.</p> <p><u>POST-INTUBATION SEDATION:</u> Initial: 50 mg slow IV/IO over 60 seconds Repeat: 50 mg slow IV/IO over 60 seconds every 5 minutes up to 200mg post-intubation total</p> <p><u>PAIN CONTROL:</u> ≥15 years of age and <65 years of age Initial: 0.1 mg/kg slow IV/IO (over 30-60 seconds, max dose 30 mg) Repeat: 0.05 mg/kg (max dose 15 mg) after 5 minutes if insufficient pain control achieved.</p>
Pediatric Dose / Route	<p><u>SEDATION TO FACILITATE ENDOTRACHEAL INTUBATION:</u></p> <ul style="list-style-type: none"> • Initial: 2 mg/kg slow IV/IO (over 30-60 seconds) max TOTAL dose of 500 mg • Repeat: 1 mg/kg after 60 seconds if insufficient sedation achieved with a max repeat dose of 250 mg
Action(s)	<ul style="list-style-type: none"> • Produces anesthetic state characterized by profound analgesia with minimal cardiovascular or respiratory effects. Rapid onset (<1 min) and short-duration (half-life ~ 10 min). • NMDA receptor antagonism induces analgesia
Indications	<ul style="list-style-type: none"> • Sedation for Drug Assisted Intubation in both adults and pediatrics • Non-narcotic analgesic in adults <65 years of age
Contra-indications	<ul style="list-style-type: none"> • Hypersensitivity • Caution in patients with schizophrenia, psychosis, or bipolar mania.
Side Effects	<ul style="list-style-type: none"> • Muscular tonicity with random purposeless movements • Hiccoughing • Transient laryngospasm • Transient apnea or respiratory depression • Nausea / Vomiting • Headache • Recovery agitation (Emergency Phenomena)

KETOROLAC (TORADOL®)

Classification: Nonsteroidal Anti-Inflammatory (NSAID)

**Adult
Dose / Route**

PAIN CONTROL:

Age 15-65 years
15 mg IM or slow IV/IO

>65 years
No Dose

**Pediatric
Dose / Route**

NOT APPROVED FOR PEDIATRIC USE

Action(s)

- Decreases prostaglandin synthesis resulting in anti-inflammatory activity through COX-1 and COX-2 isoenzymes
- Inhibits further production of prostaglandins which sensitize pain receptors, resulting in analgesic properties

Indications

- Moderate to severe pain
- Expect longer onset of action when compared to an opiate

**Contra-
indications**

- Hypersensitivity
- Impaired renal function
- Dialysis patient
- Multi system trauma
- Hypotension due to sepsis
- Allergy
- Aspirin sensitivity
- Pregnancy
- GI bleed

Side Effects

- Acute kidney injury
- Risk of bleeding
- Gastritis
- Use with caution in patients with liver disease

LEVALBUTEROL (XOPENEX®)

Classification: Combination therapy; Short-acting antimuscarinic agent / short-acting selective beta-2 adrenergic agonist

Adult Dose / Route	<u>ASTHMA OR COPD WITH WHEEZING / REACTIVE LOWER AIRWAY DISEASE:</u> 0.63 mg / 3 mL via nebulizer
Pediatric Dose / Route	<u>REACTIVE LOWER AIRWAY DISEASE / ASTHMA:</u> 0.63 mg / 3 mL via nebulizer
Action(s)	<ul style="list-style-type: none">• Levalbuterol is the R-isomer of albuterol. It is a moderately selective beta2-adrenergic agonist that stimulates receptors of the smooth muscle in the lungs, uterus, and vasculature supplying skeletal muscle.• Levalbuterol has approximately 2-fold greater binding affinity than racemic albuterol and approximately 100-fold greater binding affinity than (S)-albuterol
Indications	<ul style="list-style-type: none">• Wheezing associated with<ul style="list-style-type: none">○ Asthma○ Bronchitis with bronchospasm○ COPD○ Epiglottitis○ Allergic reaction / anaphylaxis○ Inhalation burns
Contra-indications	<ul style="list-style-type: none">• Angioedema• Laryngomalacia• Hypersensitivity to albuterol or levalbuterol.• Use with caution in lactating patients, or patients with cardiovascular disease history
Side Effects	<ul style="list-style-type: none">• Dizziness• Tachycardia• Blurred vision• Dry mouth• Hypertension• Paradoxical bronchospasm• Urinary retention• Headache

LIDOCAINE 2% (XYLOCAINE®)

NOTE: Amiodarone is the preferred antiarrhythmic agent in Region VIII; Lidocaine is to be used when Amiodarone is not available.

Classification: Antiarrhythmic, Class I-B

Adult Dose / Route	<p><u>PULSELESS VENTRICULAR TACHYCARDIA / VENTRICULAR FIBRILLATION:</u> Initial: 1 mg/kg IV/IO (100 mg max initial dose). Repeat: 0.5 mg/kg IV/IO (50 mg max individual doses) every 3-5 min as long as arrest VT/VF arrest persists, up to 3 mg/kg (300 mg) total.</p> <p><u>RETURN OF SPONTANEOUS CIRCULATION:</u> Bolus at 1 mg/kg IV/IO (100 mg max initial dose) After ten minutes repeat 0.5 mg/kg (50 mg max single dose) May repeat 0.5 mg/kg (50 mg max single dose) every 10 min as needed</p>
Pediatric Dose / Route	<p><u>PULSELESS VENTRICULAR TACHYCARDIA / VENTRICULAR FIBRILLATION:</u> Initial: 1 mg/kg IV/IO loading dose.</p> <p>Repeat: 0.5 mg/kg every 3-5 min up to 3 mg/kg total while in shockable pulseless arrest.</p>
Action(s)	<ul style="list-style-type: none"> • Inhibits influx of sodium through the “fast” channels of the myocardium, increasing the recovery period after repolarization • Suppresses spontaneous depolarizations in the ventricles by inhibiting re-entry mechanisms • Exerts antidysrhythmic action by suppressing automaticity in the His-Purkinje system and by elevating electrical stimulation threshold for ventricular dysrhythmias. Use to lower the threshold for electrical conversion.
Indications	<ul style="list-style-type: none"> • Post-defibrillation in ventricular fibrillation and unstable ventricular tachycardia, persistent stable ventricular tachycardia
Contra-indications	<ul style="list-style-type: none"> • AV blocks • ST-elevation in leads II, III and aVF (possible Inferior Wall MI) • Bleeding • Thrombocytopenia • Known sensitivity to lidocaine, sulfite or paraben • Use with caution if history of liver or renal disease, CHF, hypoxia or elderly.
Side Effects	<ul style="list-style-type: none"> • Toxicity • Anxiety • Apprehension • Euphoria • Nervousness • Disorientation • Dizziness • Blurred vision • Seizures without warning • Hypotension • Pain at injection site

MAGNESIUM SULFATE

Classification: Antidysrhythmic-Class V, Smooth Muscle Relaxant, Anticonvulsant, Electrolyte

Adult Dose / Route	<p><u>REFRACTORY ASTHMA:</u> 2 g infusion (mix in 50 – 100 mL of D₅W or NS) over 10 minutes (200 mg/min).</p> <p><u>PRE-ECLAMPSIA:</u> 2 g infusion (mix in 50 – 100 mL of D₅W or NS) over 10 minutes (200 mg/min).</p> <p><u>ECLAMPSIA (SEIZURES):</u> 2 g over 2 minutes (1 g/min). May repeat x 1 after 5 minutes if seizures persist, to a total of 4 g IV/IO.</p> <p><u>POLYMORPHIC VENTRICULAR TACHYCARDIA (TORSADES DE POINTES)</u> (<u>PULSELESS</u> or <u>WITH PULSE</u>) 2 g IV/IO over 2 minutes (1 g/min). May repeat x 1 after 5 minutes if rhythm persists, to a total of 4 g IV/IO.</p>
Pediatric Dose / Route	<p><u>REFRACTORY ASTHMA:</u> 25 mg/kg (maximum 2 g) infusion (mix in 50 – 100 mL of D₅W or NS) over 10 minutes.</p>
Action(s)	<ul style="list-style-type: none"> • Intracellular cation responsible for metabolic processes & enzymatic reactions. Critical in glycolysis (need for ATP production) • Membrane stabilizer • Blocks neuromuscular transmission and muscular excitability • Acts like a calcium channel blocker - causes smooth muscle relaxation (vasodilation- and bronchodilation)
Indications	<ul style="list-style-type: none"> • Severe asthma that responds poorly to nebulizers and epinephrine • Preeclampsia / eclampsia to prevent or treat seizures • Polymorphic Ventricular Tachycardia (Torsades de Pointes)
Contra-indications	<ul style="list-style-type: none"> • Hypocalcemia • Heart block • Renal dysfunction • Precautions: <ul style="list-style-type: none"> ○ Continuously monitor ECG, RR & BP during administration ○ Use with caution if patient taking digitalis
Side Effects	<ul style="list-style-type: none"> • If given rapidly, increased risk of: <ul style="list-style-type: none"> ○ <u>CNS</u>: Lightheadedness, drowsiness, sedation, confusion ○ <u>CV</u>: Bradycardia, dysrhythmia, vasodilation with hypotension ○ <u>Respiratory</u>: Depression or arrest ○ <u>MS</u>: Weakness, paralysis ○ <u>Skin</u>: Flushing, sweating, pain at injection site <ul style="list-style-type: none"> ◆ Put cold pack over IV site to relieve burning ○ <u>Metabolic</u>: Hypothermia • Put cold pack over infusion site to relieve burning

MIDAZOLAM (VERSED®)

Classification: Benzodiazepine, Anticonvulsant, Anxiolytic, Sedative/Hypnotic

Adult Dose / Route	<p><u>DRUG ASSISTED INTUBATION:</u> 5 mg IV/IO, may repeat 2 mg IV/IO in 5 minutes (if SBP ≥90mmHg), if needed</p> <p><u>POST-INTUBATION SEDATION</u> 2 mg increments IV/IO every 2 minutes, up to 10 mg total as needed</p> <p><u>ECLAMPSIA WITH SEIZURES:</u> 2 mg increments IV/IO every 2 minutes, up to 10 mg total as needed OR 4 mg IN</p> <p><u>ACTIVE SEIZURES, BEHAVIORAL EMERGENCIES or COMBATIVE HEAD INJURY:</u> 2 mg slow IV increments every 2 minutes up to 10 mg total as needed If unable to start IV, weight-based IM/IN dosing</p> <ul style="list-style-type: none"> ◆ <70 kg = 2.5 mg IM/IN ◆ ≥70 kg = 5 mg IM/IN <p><u>ADULT LONG BONE FRACTURE WITH DISPLACEMENT / MUSCLE SPASM:</u> 2 mg increments IV/IM/IN every 2 min up to 10 mg total as needed</p>
Pediatric Dose / Route	<p><u>DRUG ASSISTED INTUBATION:</u> 0.1 mg/kg IV/IO, max dose 10 mg</p> <p><u>SEIZURES, COMBATIVE HEAD INJURY, LONG BONE FRACTURE WITH DISPLACEMENT/SPASM:</u> 0.1 mg/kg slow IV/IO (max single dose 2 mg) OR 0.2 mg/kg IN/IM (max single dose 4 mg) (IN dosing not for use in combative patients) If seizures continue >5 minutes, may repeat 0.1 mg/kg slow IV/IO (max single dose 2mg) or 0.2 mg/kg IN/IM (max single dose 4mg) every 2 minutes</p> <p><u>POST-INTUBATION SEDATION</u> 0.1 mg/kg slow IV/IO (max single dose 2 mg) or 0.2 mg/kg IN (max single dose 4 mg)</p>
Action(s)	<ul style="list-style-type: none"> • Short acting benzodiazepine with CNS depressant, muscle relaxant, amnestic and anticonvulsant effects.
Indications	<ul style="list-style-type: none"> • To induce sedation and amnesia prior to procedures • Anticonvulsant for seizure patients • Skeletal muscle relaxant for long bone fractures with muscle spasm • Sedative for combative or agitated psychiatric or head injured patients.
Contra-indications	<ul style="list-style-type: none"> • Hypersensitivity • Narrow-angle glaucoma • Use Caution in <ul style="list-style-type: none"> ○ COPD, Renal failure CHF, Elderly, Pregnancy, or concomitant alcohol or CNS depressant medication use
Side Effects	<ul style="list-style-type: none"> • Amnesia • Respiratory depression • Agitation • Tremors • Dizziness • Hypotension

Notes:

- Dilute all intranasal Versed to a total of 1-2 mL, and admin half in each nare, max 1 mL each
- Can be give to Adult Nerve Gas exposure patients per Medical Direction

MORPHINE SULFATE

Classification: Opioid Analgesic Agonist

Adult Dose / Route	<u>PAIN CONTROL:</u> 2 mg slow IV/IO up to total of 10 mg.
Pediatric Dose / Route	<u>PAIN CONTROL:</u> 0.1 mg/kg slow IV/IO, max dose 10 mg. No repeat dose standing order – contact Medical Direction
Action(s)	<ul style="list-style-type: none">• Binds with opiate receptors to decrease the perception of pain, also altering the emotional response to pain.• Vasodilator
Indications	<ul style="list-style-type: none">• Moderate to severe pain• Pulmonary edema• Ischemic chest pain
Contra-indications	<ul style="list-style-type: none">• Hypersensitivity to opiates• Undiagnosed head injury or acute abdominal pain• Hypotension or volume depletion
Side Effects	<ul style="list-style-type: none">• Lightheadedness• Dizziness• Sedation• Nausea / Vomiting• Respiratory depression• Use with caution in patients with chronic respiratory compromise.

NALOXONE (NARCAN®)

Classification: Opioid Antagonist / Reversal Agent

Adult Dose / Route	<p><u>BLS</u></p> <p><u>KNOWN OR SUSPECTED OPIOID OVERDOSE:</u> 2 mg IN every 2 minutes until adequate respirations return</p>	<p><u>ALS</u></p> <p><u>KNOWN OR SUSPECTED OPIOID OVERDOSE</u> <i>Inadequate Resp.</i> 1 mg IV/IO (2 mg IN) every 2 minutes up to 6 mg IV/IO (12mg IN) until adequate respirations return</p> <p><i>Apneic</i> 2 mg IV/IO/IN every 2 minutes, up to 12 mg until adequate respirations return.</p>
	Pediatric Dose / Route	<p><u>BLS</u></p> <p><u>KNOWN OR SUSPECTED OPIOID OVERDOSE:</u> <u>BLS</u> 2 mg IN</p>
Action(s)		Pure opioid antagonist that competes for opiate receptor sites, this inhibiting the toxic and clinical effects of opiates
Indications	Opioid overdoses, reversal of administered opioids.	
Contra- indications	<ul style="list-style-type: none"> • None in suspected or confirmed opioid overdose. • Use with caution in patients with known opioid abuse, in whom sudden reversal of opioid effects may produce seizures or other untoward reactions. 	
Side Effects	<ul style="list-style-type: none"> • Withdrawal symptoms • Tachycardia • Hypertension • Seizures • Consider restraint use 	

NITROGLYCERIN (NITROSTAT®)

Classification: Organic Nitrate, Vasodilator

Adult Dose / Route	<u>ACUTE CORONARY SYNDROMES, OR CONGESTIVE HEART FAILURE WITH PULMONARY EDEMA:</u> SBP >140mmHg 0.4 mg sublingual tablet <u>OR</u> 0.4 mg SL spray
Pediatric Dose / Route	CONTACT MEDICAL DIRECTION FOR ORDERS
Action(s)	<ul style="list-style-type: none">• Converted to nitric acid, a reactive free radical, which indirectly stimulates release of calcium ions from smooth muscle fibers, causing muscle relaxation and vasodilation. System vasodilation increases venous capacitance and decreases arteriole resistance, reducing preload and afterload, subsequently lowering myocardial oxygen demand
Indications	<ul style="list-style-type: none">• Ischemic chest pain (angina, AMI), pulmonary edema.
Contra-indications	<ul style="list-style-type: none">• Elevated ICP• hypotension• hypovolemia• Caution of history of glaucoma• Certain oral medications may potentiate the effect of nitrates<ul style="list-style-type: none">○ Erectile dysfunction / BPH<ul style="list-style-type: none">◆ Viagra (sildenafil)◆ Levitra (vardenafil)◆ Cialis (tadalafil)◆ Adcirca (tadalafil)◆ Staxyn (vardenafil)○ Pulmonary hypertension<ul style="list-style-type: none">◆ Revatio (sildenafil)◆ Adempas (riociguat)
Side Effects	<ul style="list-style-type: none">• Headache, hypotension, nausea/vomiting, flushing, orthostatic hypotension/syncope.

NITROUS OXIDE (NITRONOX®)

Classification: Inhaled Analgesic Agent

Adult Dose / Route	<u>PAIN CONTROL:</u> Provides 50% oxygen and 50% nitrous oxide. Self-administered by demand valve mask.
Pediatric Dose / Route	<u>PAIN CONTROL:</u> Provides 50% oxygen and 50% nitrous oxide. Self-administered by demand valve mask.
Action(s)	<ul style="list-style-type: none">• Exact mechanism of action unknown. Induces an altered perception of pain similar to that of morphine without the same cardiovascular side effects. Does not induce unconsciousness except at doses exceeding 80%. Rapid onset and short duration of effect
Indications	<ul style="list-style-type: none">• Musculoskeletal injuries with mild-to-moderate pain ($\geq 4/10$)
Contra-indications	<ul style="list-style-type: none">• Altered mental status• History of pulmonary disease• Chest injury• Alcohol or drug intoxication• Face injuries
Side Effects	<ul style="list-style-type: none">• Numbness• Lightheadedness• Drowsiness/sedation• Numbness/tingling in face• Slurred speech• Nausea / Vomiting

NORMAL SALINE (0.9% SODIUM CHLORIDE)

Classification: Isotonic Crystalloid Solution

Adult Dose / Route	<p>Saline lock: 5 – 20 mL flush TKO: 15-30 gtts/min Fluid Bolus: Titrate infusion and volume based on clinical presentation, to maintain SBP >90 mmHg or MAP >65 mmHg; repeat as necessary. Reassess vital signs every 5 minutes and closely monitor for respiratory changes.</p> <p>SEPSIS: Attempt to administer at least 1000 mL normal saline prior to ED arrival (attempt total recommended dose of 30 mL/kg to be continued in the ED if not completed in the field). Administer via pressure bag.</p>
Pediatric Dose / Route	<p>Fluid Bolus: 20 mL/kg IVP; may repeat X 2 as needed to max of 60 mL/kg</p>
Action(s)	<p>Restores intravascular volume, improving perfusion to critical organs. Because of the isotonic nature, administered fluid remains in the extracellular compartment. Contains 154 mEq/L sodium ions and 154 mEq/L chloride ions, at a pH of 4.5 – 7.0</p>
Indications	<ul style="list-style-type: none"> • Need for IV medication route • Volume replacement • Diluent for medications that need reconstitution
Contra-indications	<ul style="list-style-type: none"> • Precautions: <ul style="list-style-type: none"> ○ Limit volume in patients with heart failure ○ Limit volume to target SBP in trauma patients
Side Effects	<ul style="list-style-type: none"> • Fluid overload if excess volume/infused too rapidly • Pulmonary edema • Acidosis resulting from high chloride load when given in large volumes
Notes:	
<ul style="list-style-type: none"> • When giving fluid boluses, reassess vital signs every 5 min. If patient has history of heart disease or failure, reassessment should include breath sound auscultation. • Max total of fluid boluses for medical patients (NOT including sepsis) is 1,000mL. 	

ONDANSETRON (ZOFRAN®)

Classification: Serotonin 5HT3 Antagonist Antiemetic / Antinauseant

Adult Dose / Route	<u>INITIAL MEDICAL CARE (NAUSEA, VOMITING):</u> 4 mg oral disintegrating tablet (ODT) x 1 dose only OR 4 mg slow IV x 1 dose only.
Pediatric Dose / Route	<u>INITIAL MEDICAL CARE (NAUSEA, VOMITING):</u> <u>≥40 kg:</u> 4 mg oral disintegrating tablet (ODT) x 1 dose only or 4 mg slow IV x 1 dose only. <u><40 kg:</u> 2 mg slow IV x 1 dose only. No oral dose for <40 kg.
Action(s)	<ul style="list-style-type: none">• Selective serotonin 5-HT₃ receptor antagonist. Although other neurotransmitters are involved in emetogenesis, serotonin is believed to play a major role. Blocks the 5-HT₃ receptor site, stopping the vomiting reflex
Indications	<ul style="list-style-type: none">• Nausea / Vomiting
Contra-indications	<ul style="list-style-type: none">• Hypersensitivity
Side Effects	<ul style="list-style-type: none">• Diarrhea• Headache• Lightheadedness• Prolonged QT interval

SODIUM BICARBONATE

Classification: Alkalinizing Agent, Electrolyte

Adult Dose / Route	<p><u>CARDIAC ARREST:</u> 50 mEq of 8.4% solution IV/IO after 4th epinephrine administration</p> <p><u>ADULT CRUSH / ENTRAPMENT, UNSTABLE SUSPECTED HYPERKALEMIA:</u> 50 mEq of 8.4% solution IV/IO</p> <p><u>STABLE SUSPECTED HYPERKALEMIA, SUSPENSION INJURIES, CYCLIC ANTIDEPRESSANT / SODIUM CHANNEL BLOCKER OVERDOSES:</u> 1 mEq/kg of 8.4% solution IV/IO up to 50 mEq.</p>
Pediatric Dose / Route	<p><u>CYCLIC ANTIDEPRESSANT / SODIUM CHANNEL BLOCKER OVERDOSES:</u> 1 mEq/kg of 8.4% solution IV</p>
Action(s)	<ul style="list-style-type: none"> • After IV administration, sodium bicarbonate dissociates to bicarbonate ions, which make up the base portion of the body's extracellular buffer system. Restores acid-base balance in patients with metabolic or respiratory acidosis, however resulting metabolic alkalosis can occur. Excess bicarbonate ions are excreted in urine, alkalinizing the urine. Alkalinization decreases renal absorption and increases the clearance of certain drugs, intoxicants, and weak acids. • Slows uptake of cyclic antidepressants.
Indications	<ul style="list-style-type: none"> • Cyclic antidepressant / sodium channel blocker overdose • Hyperkalemia • Persistent adult cardiac arrest • Crush injuries, suspension injuries, entrapment
Contra-indications	<ul style="list-style-type: none"> • None when used as indicated.
Side Effects	<ul style="list-style-type: none"> • Minimal when used as indicated. • Metabolic alkalosis • Extravasation can lead to tissue necrosis
<p>NOTE: It is important to ensure prolonged adequacy of ventilation in an attempt to mitigate respiratory acidosis before using sodium bicarbonate in cardiac arrest.</p>	

TERBUTALINE (BRETHINE®)

Classification: Parenteral Beta-2 Agonist

Adult Dose / Route	<u>MILD WHEEZING ASSOCIATED WITH ASTHMA, COPD OR LOCALIZED ALLERGIC REACTION:</u> 0.25 mg subcutaneously (SQ)
Pediatric Dose / Route	<u>12 YEARS OR OLDER, MILD WHEEZING ASSOCIATED WITH ASTHMA, COPD OR LOCALIZED ALLERGIC REACTION:</u> 0.01 mg/kg subcutaneously (SQ) up to a maximum single dose of 0.25 mg NO REPEAT DOSE
Action(s)	<ul style="list-style-type: none">• Selective beta₂-adrenergic bronchodilator• Smooth muscle relaxant.
Indications	<ul style="list-style-type: none">• Stable wheezing• Bronchospasm in patients with asthma, COPD, emphysema, allergic reaction
Contra-indications	<ul style="list-style-type: none">• <12 years of age• Heart Rate >150 (Adults)• Heart Rate >200 (pediatric)• Known hypersensitivity or allergy• Use with caution in patients being treated with MAO inhibitors or tricyclic antidepressants (or within two weeks of discontinuation of same) since terbutaline action on the vascular system may be potentiated• Terbutaline sulfate, like all sympathomimetic amines, should be used with caution in patients with cardiovascular disorders, especially coronary insufficiency, cardiac arrhythmias, and hypertension
Side Effects	<ul style="list-style-type: none">• Nervousness• Drowsiness• Tremor• Headache• Palpitations• Pain at injection site• Dizziness• Tachycardia• Nausea / Vomiting• Weakness

TETRACAINE 0.5% (PONTOCAINE®, TETRAVISC®)

Classification: Topical Ophthalmic Anesthetic

Adult Dose / Route	<u>OPHTHALMIC INJURIES (CHEMICAL SPLASH/BURN OR CORNEAL ABRASION):</u> 1 drop of 0.5% solution in affected eye(s) May repeat until pain relief achieved
Pediatric Dose / Route	<u>OPHTHALMIC INJURIES (CHEMICAL SPLASH/BURN OR CORNEAL ABRASION):</u> 1 drop of 0.5% solution in affected eye(s). May repeat until pain relief achieved.
Action(s)	<ul style="list-style-type: none">• Tetracaine blocks sodium ion channels required for the initiation and conduction of neuronal impulses, thereby inducing reversible neuromuscular blockage
Indications	<ul style="list-style-type: none">• Pain / spasm due to corneal abrasion or chemical injury to the eye• Anesthetic to facilitate eye irrigation
Contra-indications	<ul style="list-style-type: none">• Hypersensitivity to tetracaine or ester-type anesthetics• Inflamed or infected tissue• Ruptured globe or penetrating injury
Side Effects	<ul style="list-style-type: none">• Transient stinging for 30 seconds after instillation• Epithelial damage if excessive or prolonged use

TRANEXAMIC ACID (LYSTEDA®, CYKLOKAPRON®)

Classification: Synthetic Antifibrinolytic

Adult Dose / Route	<u>SUSPECTED TRAUMATIC HEMORRHAGE WITH HYPOTENSION:</u> 1g in 100mL over 10 minutes x 1 dose <u>Post-Partum Hemorrhage (CDHEMS Only):</u> 1g in 100mL over 10 minutes x 1 dose
Pediatric Dose / Route	NOT APPROVED FOR PEDIATRIC USE
Action(s)	<ul style="list-style-type: none">• Hemostatic agent that binds to fibrin on the plasminogen/plasmin molecule. Prevents the binding plasminogen to fibrin, preserving and stabilizing the matrix of fibrin, subsequently diminishing the ability of plasmin to lyse fibrin clots.
Indications	<ul style="list-style-type: none">• Suspected or known hemorrhage with hypotension (90mmHg) AND arrival time at a Level 1 Trauma Center >30 minutes from onset of injury.
Contra-indications	<ul style="list-style-type: none">• Hypersensitivity• Known subarachnoid or intracranial hemorrhage• Administration >3 HOURS from onset of injury
Side Effects	<ul style="list-style-type: none">• Cerebral infarct• Headache• Seizure• Hypotension• Arterial or Venous thrombosis

Note: Tranexamic acid must NOT be administered greater than 3 hours after onset of injury. Serious adverse effects can occur.

GENERAL**CHANGELOG****APPROVED FOR USE BY:****ALL SYSTEMS****EFFECTIVE: 04/02/2019****REVIEWED: 04/01/2023****REVISED: N/A**

Date	By	SMO	Change / Rationale
03/25/2024	All	Adult Pulseless Polymorphic Ventricular Tachycardia (Torsades de Pointes)	Updated administration time for Magnesium sulfate; now states to give 2 g IV/IO over 2 minutes (previously 5 minutes)
03/25/2024	All	Drug Appendix – Epinephrine 0.1mg/mL	Added system-specific verbiage to push-dose epi in post-cardiac arrest
03/25/2024	All	Adult Cardiac – Return of Spontaneous Circulation (ROSC)	Removed Good Samaritan EMS providers from push-dose epinephrine; moved to right column of SMO
2/28/2024	All	Drug Appendix – Midazolam	Updated Seizure/Status Epilepticus Dosing Reformatted Peds dosing section to move Seizure dose to its own heading
2/28/2024	All	Pediatric Seizure/Status Epilepticus	Added IN dosing; Modified IN/IM dosing to mirror adult dosing schedule. Added verbiage that additional doses must be approved by Medical Direction
1/26/2024	All	Drug Appendix – Ketamine	Removed excited delirium and associated dosing Removed all excited delirium verbiage
1/26/2024	All	Adult Behavioral Emergencies	Removed all verbiage associated with excited delirium Removed Ketamine completely Added de-escalation attempt verbiage Clarified Law Enforcement involvement verbiage
9/1/2023	All	OB/GYN – Emergency Childbirth	Added transport guideline verbiage
9/1/2023	All	Drug Appendix – Ipratropium/Albuterol	Updated dosing to reflect dosing of 2.5 – 3 mg / 0.5 mg
9/1/2023	All	Pediatric Reactive Lower Airway Disease / Asthma	Updated ipratropium/albuterol (DuoNeb®) to reflect dosing of 2.5 – 3 mg / 0.5 mg
9/1/2023	All	Adult Asthma or COPD with Wheezing / Reactive Airway Disease	Updated ipratropium/albuterol (DuoNeb®) to reflect dosing of 2.5 – 3 mg / 0.5 mg
7/24/2023	All	Adult Return of Spontaneous Circulation (ROSC)	Removed push-dose epinephrine for Loyola EMS; added decision table based on EMS system (Good Sam, CDH, Edward EMS keeping push-dose epi)
7/24/2023	All	OB/GYN – Emergency Childbirth	Added transport decision verbiage based on patient presentation to direct transport of patient to appropriate OB-capable facility when needed
7/1/2023	All	Various	Made all decision points all caps and underlined. Underlined all BLS/ALS and ALS identifiers
7/1/2023	All	Various	Replaced verbiage “en route” to “while transporting”
7/1/2023	All	Various	Replaced verbiage ‘q’ to ‘every’
7/1/2023	All	Pediatric Post-Intubation Sedation	New SMO
7/1/2023	All	Adult OB/GYN Delivery Complications	Separated into individual SMOs; Added “clock icon” to Shoulder Dystocia, Prolapsed Cord, and Breech Birth
7/1/2023	All	MCI / MVI / Specialty Transport / START® / JumpSTART®	Moved SMOs out of Trauma and into new “Disaster / MCI / MVI” Section
7/1/2023	All	Pediatric Abdominal/Pelvic Injuries	New SMO
7/1/2023	All	Adult Abdominal/Pelvic Injuries	New SMO
7/1/2023	All	Adult Return of Spontaneous Circulation (ROSC)	New SMO

7/1/2023	All	Addendum Section	SMOs removed; Morgan Lens SMO placed in Trauma section; Non-Traumatic Cardiac Arrest placed in Cardiac Section
7/1/2023	All	Pediatric Allergic Reaction: Anaphylaxis	Separated non-anaphylaxis and anaphylaxis into individual SMOs
7/1/2023	All	Pediatric Allergic Reaction: Non-Anaphylaxis	Separated non-anaphylaxis and anaphylaxis into individual SMOs
7/1/2023	All	Adult Allergic Reaction: Anaphylaxis	Separated non-anaphylaxis and anaphylaxis into individual SMOs
7/1/2023	All	Adult Allergic Reaction: Non-Anaphylaxis	Separated non-anaphylaxis and anaphylaxis into individual SMOs
7/1/2023	All	Adult Post-Intubation Sedation	New SMO
7/1/2023	All	Adult Asthma	Re-titled SMO to “Adult Asthma or COPD with Wheezing / Reactive Airway Disease”
7/1/2023	All	Pediatric Inhalation Burns	Altered verbiage regarding airway management, de-emphasized intubation
7/1/2023	All	Adult Inhalation Burns	Altered verbiage regarding airway management, de-emphasized intubation
7/1/2023	All	Pediatric Burns – General Guidelines	New SMO; Removed Parkland Formula, replaced with flat fluid rate infusion of 500 mL/hr; Added verbiage regarding avoiding IM/SQ medication administration through burned tissue
7/1/2023	All	Adult Burns – General Guidelines	New SMO; Updated fluid flow rate based on age; Added verbiage regarding avoiding IM/SQ medication administration through burned tissue
7/1/2023	All	Pediatric Burns	Created new SMO section; existing SMOs broken out into individual documents
7/1/2023	All	Adult Burns	Created new SMO section; existing SMOs broken out into individual documents
7/1/2023	All	Pediatric Glasgow Coma Scale	Moved to “General SMO” section
7/1/2023	All	Adult Glasgow Coma Scale	Moved to “General SMO” section
7/1/2023	All	Pediatric Toxicological Section	All Tox SMOs broken apart into individual SMOs
7/1/2023	All	Adult Toxicological Section	All Tox SMOs broken apart into individual SMOs
7/1/2023	All	Pediatric Trauma Section	All Trauma SMOs broken apart into individual SMOs
7/1/2023	All	Drug Appendix	Added Tranexamic Acid (Lysteda®, Cyklokapron®)
7/1/2023	All	Drug Appendix	Added Levalbuterol (Xopenex®)
7/1/2023	All	Drug Appendix	Added Ipratropium/Albuterol (DuoNeb®)
7/1/2023	All	Pediatric Sepsis	New SMO
7/1/2023	All	Pediatric Hemorrhagic Shock	New SMO
7/1/2023	All	Adult Hemorrhagic Shock	New SMO
7/1/2023	All	Pediatric Hypovolemic Shock	New SMO
7/1/2023	All	Adult Hypovolemic Shock	New SMO
7/1/2023	All	Pediatric Blast Injuries	New SMO
7/1/2023	All	Adult Blast Injuries	New SMO
7/1/2023	All	Pediatric High-Altitude Emergencies	New SMO
7/1/2023	All	Pediatric Diving / SCUBA Emergencies	New SMO
7/1/2023	All	Adult High-Altitude Emergencies	New SMO
7/1/2023	All	Adult Diving / SCUBA Emergencies	New SMO
4/01/2022	All	ALL	Documented fully reformatted; new section headers created; SMOs moved to new locations throughout document. New color scheme applied.
4/02/2022	All	Various	Replaced terminology “Medical Control” with “Medical Direction” in accordance with IDPH guidance
7/31/2022	All	Withdrawing or Withholding Resuscitation	Revised POLST to remove witness signature requirement

7/31/2022	All	Withdrawing or Withholding Resuscitation	Added POLST Notes that Illinois POLST form is preferred but other forms are acceptable as long as they meet criteria
10/1/2021	All	Adult Torsades de Pointes	SMO REINSERTED with MAGNESIUM SULFATE
10/1/2021	All	Adult Acute Asthma	Added MAGNESIUM SULFATE
10/1/2021	All	Adult OB Pre-Eclampsia + Eclampsia	RE-TITLED SMO . Added MAGNESIUM SULFATE .
10/1/2021	All	Peds Resp Distress – Reactive Lower Airway Disease	Added MAGNESIUM SULFATE
10/1/2021	CDH	Addendum – System - Specific SMOs	Added MAGNESIUM SULFATE to ADULT and PEDS Asthma
10/1/2021	All	Drug Appendix	Added MAGNESIUM SULFATE
10/1/2021	All	Adult Behavioral	Clarified verbiage of Excited Delirium use of KETAMINE
10/1/2021	All	Adult Supraventricular Bradycardia	Added clarifying language to SMO definition of Unstable
10/1/2021	All	Adult Narrow Complex Tachycardia	Added clarifying language to SMO definition of Unstable
10/1/2021	All	Opioid OD & Narcan Drug Appendix	Standardized the dose timing to 2 minutes
5/10/2021	CDH	Addendum	Added ADULT and PEDIATRIC Respiratory Distress SMOs (with Terbutaline, System-Specific)
5/10/2021	CDH	Drug Appendix	Added TERBUTALINE to Drug Appendix
5/10/2021	Edward	Addendum	Added ADULT NON-TRAUMATIC CARDIAC ARREST SMO (System-Specific)
2/12/2020	DS	Trauma Field Triage Guidelines	Changed “intubated” to “advanced airway” to accommodate non-ET advanced airways
2/12/2020	DS	Peds Respiratory Arrest	Dextrose hyperlink fixed (benzocaine)
2/12/2020	All	Peds Initial Trauma Care	Atropine hyperlink fixed (aspirin)
2/12/2020	All	Peds Anaphylaxis	Epinephrine 1:1000, took out “May repeat IV q 3 min” following IM dosing
2/12/2020	All	Drug Appendix Atropine	Added /kg to Muscarinic poisoning dosing
2/12/2020	All	Peds Tox Muscarinic	Atropine hyperlink fixed (aspirin)
2/12/2020	All	Drug Appendix Albuterol	Changed drug appendix to match SMO (Albuterol, may repeat x 1)
8/27/2019	PS	Drug Appendix Atropine	Classification was misspelled – anticholinergic
8/27/2019	PS	Drug Appendix Albuterol	Concentration under Hyperkalemia was corrected – 5 mg (6 mL)
8/27/2019	PS	Drug Appendix Amiodarone	Corrected spelling error in Torsades de Pointes
7/23/2019	DS	Communications	Added note about calling EMS Resource Hospital for System-specific standing orders or procedures
7/23/2019	DS	Ketamine, Peds DAI	Maximum total dose of Ketamine of 500 mg inserted in both Peds DAI SMO and drug appendix
7/23/2019	DS	Ketamine, Adult DAI	Removed Hypertensive crisis verbiage from SMO and drug appendix. Added STEMI to caution list in drug appendix.
7/23/2019	DS	Adult hypoglycemia / Dextrose 10%	Changed Adult Diabetic / Hypoglycemia SMO and Drug Appendix to standardize on fluid increments to align with markings on the infusion bag.
7/23/2019	DS	Edward System-Specific Dextrose 10% SMO	Removed as redundant
7/23/2019	DS	Specialty Transport Provider List	Removed Edward Ambulance from bariatric transport list. Added note to header about as-available.
7/23/2019	DS	Epinephrine Drug Appendix	Added maximum dose for epinephrine in peds anaphylaxis
7/23/2019	DS	Peds Allergic / Anaphylaxis	Added maximum dose for epinephrine
7/23/2019	DS	Adult Sepsis	Added note about only one pressure bag infusion needed
7/23/2019	DS	Peds Versed in Drug Appendix	Changed repeat dose to match SMO verbiage

7/23/2019	DS	Initiation of ALS Care	Added note to Initiation of ALS Care about “slow” medication administration being over 2 minutes
3/22/2019	PS	TOC	Added Adult Diabetic / Hypoglycemic – Edward SMO link
3/20/2019	PS		Fixed pagination and numbering errors on several SMOs
3/10/2019	PS	Addendum – Adult Diabetic / Hypoglycemic	Created a system-specific SMO for Edward incremental dosing of D-10%
3/8/2019	PS	Document	Found/fixed the last occurrence of “closets”
3/8/2019	PS	Adult Asystole / PEA	Added Hyperkalemia back to the table of possible causes
3/8/2019	PS	Adult Diabetic / Hypoglycemic	Revised the D-50% dosing to match tie D-10% dosing (12.5g initial dose followed by reassessment)
3/7/2019	PS	Drug Appendix Adenocard	Searched document and standardized display format “Adenocard (adenosine)”
3/7/2019	PS	Drug Appendix Epinephrine 1:1000	Fixed drug appendix dosing to match changes in SMO (matching epi pen / kit dosing), added Cardiac Arrest ET dosing for peds
3/7/2019	PS	Drug Appendix Fentanyl	Removed reference to IM, added missing IN dosing
3/7/2019	PS	Drug Appendix Versed	Re-wrote table of dosages to match SMOs, including adding some
3/7/2019	PS	Peds Pulseless Arrest	Added max dosing of amiodarone
3/ 7/2019	PS	Drug Appendix and SMO	Standardized terminology of aspirin, removing “baby” and adding “chewable”
3/7/2019	PS	Drug Appendix	Page-by-page review and standardization of most comma-separated lists into bullet lists
3/5/2019	PS	Drug Appendix Ketamine	Fixed drug appendix dosages for Ketamine to match new SMO dosing
2/23/2019	PS	Special Considerations	“Special Considerations” format bold & underlined in SMO footers
2/23/2019	PS	Childbirth SMO	Formatted all four phases of Childbirth into one large SMO with hyperlinks from TOC for simplicity and flow
2/23/2019	PS	Eclampsia & Pre-Eclampsia	Added bookmarks, and hyperlinks from TOC
2/23/2019	PS	Benadryl PO	Clarified language in drug appendix which implied PO was preferred route in some non-emergent patients
2/21/2019	PS	Adult Pain	Nitrous Oxide link fixed
2/21/2019	PS	Adult IMC	Level 1 Trauma link fixed
2/21/2019	PS	Adult VT/pulse	VF/pVT link fixed
2/21/2019	PS	Adult Allergic	Epi 10,000 link fixed
2/21/2019	PS	Adult Syncope	Opioid link fixed
2/21/2019	PS	Adult Seizures	Opioid link fixed
2/21/2019	PS	TOC-Acute Abd	Link fixed
2/21/2019	PS	Adult Tox	Cyanokit link fixed
2/21/2019	PS	Adult Chest Injury	SMR link fixed
2/21/2019	PS	Crush Injury	Excessive words in hyperlink fixed
2/21/2019	PS	Chest Injury Tamponade	Bookmark fixed
2/21/2019	PS	Burns / Rule of 9s	Bookmark fixed
2/21/2019	PS	Musculoskeletal	Nitrous Oxide link fixed
2/21/2019	PS	Epi 10,000	Bookmark fixed
2/21/2019	PS	Peds Tox Opioid	Bookmark fixed
2/21/2019	PS	Peds ITC	Bookmark fixed
2/20/2019	PS	Peds Pain Control	Added Nitrous Oxide
2/20/2019	PS	Peds Musculoskeletal	Changed Fentanyl and nitrous oxide to link to Peds Pain Control
2/20/2019	PS	Adult Suspected Opioid	Entered space between 2 and mg. Fixed misspelling of INTUBATION.
2/20/2019	PS	Multiple	Search/Replace ml with mL
2/20/2019	PS	Adult Pre-Eclampsia / Eclampsia	Fixed numbering and added Pre-eclampsia symptom bullet list back in
2/18/19	PS	Changelog	Added Changelog

2/18/19	PS	Newly Born Resuscitation	Hyperlink Epi Fixed
2/18/19	PS	Drug Appendix Epi 0.1 mg/mL	Fixed dosage display
2/18/19	PS	VF/pVT	Hyperlink from TOC fixed

**DOCUMENT
CONTROL**

**REFERENCE TABLE FOR EFFECTIVE /
REVIEWED / REVISED DATES**

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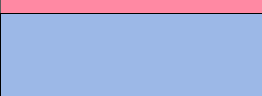
EFFECTIVE: 07/01/2023

REVIEWED: N/A

REVISED: N/A

DOCUMENT CONTROL	<u>DOCUMENT COLOR SCHEME</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 07/01/2023	REVIEWED: N/A	REVISED: N/A

Table of Contents and SMO Headers

Description	Color	Hex
General SMO Section and SMO Header		#D9D9D9
Adult & Pediatric Airway/Respiratory Section and SMO Header		#00CFFF
Adult & Pediatric Cardiac Section and SMO Header		#FFF200
Adult & Pediatric Medical Section and SMO Header		#B589D6
Adult & Pediatric Toxicological Section and SMO Header		#FF9933
Adult & Pediatric Environmental Section and SMO Header		#D2B48C
Adult & Pediatric Trauma Section and SMO Header		#57C84D
Adult & Pediatric Burns Section and SMO Header		#FF6666
Disaster / MCI / MVI Section and SMO Header		#000000
OB/GYN Section and SMO Header		#FF89A3
Drug Appendix Section and SMO Header		#9CB8E7

**DOCUMENT
CONTROL****SMO COLOR CODING AND USAGE CHART**

APPROVED FOR USE BY:



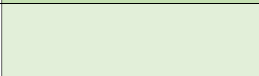


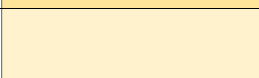







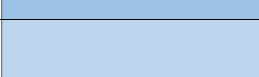






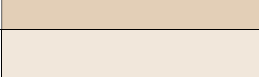
ALL SYSTEMS

EFFECTIVE: 07/01/2023

REVIEWED: N/A

REVISED: N/A

SMO Color Coding and Usage Chart

Level or Tier	Color	Hex
Assessment level, least sick – Tier 1		#A8D08D
Assessment level, least sick – Tier 2		#C5E0B3
Assessment level, least sick – Tier 3		#E2EFD9
Assessment level, sicker – Tier 1		#FFD966
Assessment level, sicker – Tier 2		#FFE599
Assessment level, sicker – Tier 3		#FFF2CC
Assessment level, sickest/critical – Tier 1		#FF7C80
Assessment level, sickest/critical – Tier 2		#FF9999
Assessment level, sickest/critical – Tier 3		#FFCCCC
Decision point / level of care differentiation / emphasis block – Tier 1		#F4B083
Decision point / level of care differentiation / emphasis block – Tier 2		#F7CAAC
Decision point / level of care differentiation / emphasis block – Tier 3		#FBE4D5
Decision point / level of care differentiation / emphasis block – Tier 1		#9CC2E5
Decision point / level of care differentiation / emphasis block – Tier 2		#BDD6EE
Decision point / level of care differentiation / emphasis block – Tier 3		#DEEAF6
Decision point / level of care differentiation / emphasis block – Tier 1		#D581FF
Decision point / level of care differentiation / emphasis block – Tier 2		#DBB7FF
Decision point / level of care differentiation / emphasis block – Tier 3		#F0E1FF
Decision point / level of care differentiation / emphasis block – Tier 1		#D2B48C
Decision point / level of care differentiation / emphasis block – Tier 2		#E3CFB7
Decision point / level of care differentiation / emphasis block – Tier 3		#F1E7DB

DOCUMENT CONTROL	<u>SMO HEADER SIZING REFERENCE</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 07/01/2023	REVIEWED: N/A	REVISED: N/A

CATEGORY	<u>SMO TITLE</u>	
	APPROVED FOR USE BY:	ALL SYSTEMS
EFFECTIVE: 07/01/2023	REVIEWED: N/A	REVISED: N/A

1. SMO CATEGORY

- Arial, all caps, size 36 font, bold
- Black background with white lettering
- Categories include: ADULT, PEDS, ADULT & PEDS, OB/GYN, GENERAL, and DOCUMENT CONTROL

2. SMO TITLE

- Arial, all caps, size 36 font, bold/underlined
- Format based on appropriate style gallery
 - Cell fill is mirrored based on style gallery color (refer to color scheme for Hex code)
- Values in this field are reflected in the Table of Contents

3. APPROVED FOR USE BY

- Arial, size 24, Small caps, Bold
- System-specific SMOs will have the EMS system name listed in the box to the right of this field
 - EMS system name will be formatted as follows:
 - (1) Arial, size 24, All caps, white, with dark red fill (Hex #C00000)

4. EFFECTIVE / REVIEWED / REVISED

- Arial, size 24, Small caps, Bold
- Formatted using Style “SMO Header Details”
- Values in these fields will populate into the reference table for effective/reviewed/revised dates