

Cedar, Hickory, Polk, & St Clair EMS Protocols

Part 0 - Front Matter

Section 0-010 - Master Signature Page

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The most recent version of this document can be found here:

<http://ozarksems.com/cmh-ems-protocols.pdf>



These protocols are designed to provide standing written orders to provide patient care. Refer to the next page (**Section 0-020 - Standing Orders for Agency Type** - Page 3) for specific standing order definitions based on the type of agency represented. Unless specified Adult or Pediatric, protocols apply to both adult and pediatric patients. Pediatric is defined as a patient under the age of 16 years unless otherwise specified.



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Section 0-020 - Standing Orders for Agency Type

EMS Transport Agencies (Citizens Memorial Hospital and Ellett Memorial Hospital):

Emergency Medical Technician (EMT), Advanced Emergency Medical Technician (AEMT), Registered Nurse (RN), and Paramedic providers will utilize the following protocols while on scene and during transport to coordinate care, stabilize the patient, and improve their condition where possible. The transporting RN or Paramedic is ultimately responsible to ensure complete patient care, including BLS-level procedures.

First Response Agencies (Bolivar City Fire Department, Humansville Fire Resuce, Morrisville Fire Protection District, and Pleasant Hope Fire Protection District):

Emergency Medical Responders (EMR) and EMT providers will utilize the following protocols while on scene of an illness or injury to coordinate care and stabilize the patient. AEMT, RN, and Paramedic providers responding with a first responder agencies will operate as EMTs using the following protocols.

Community Responders:

Persons in the communities served by Citizens Memorial Hospital using or maintaining **Automated External Defibrillators (AED)** will utilize the following protocols to enhance survivability from cardiac arrest:

- **Protocol 2-030 - Automated External Defibrillation (AED)** (page 19).
- **Section 8-010 - Automated External Defibrillator (AED)** (page 177).

Dispatch Centers (Cedar County Sheriff Department and Polk County Central Dispatch):

Emergency Medical Dispatchers (EMD) providers will utilize Medical Priority Dispatch System (MPDS) version 13 approved by the International Academy of Emergency Medical Dispatch (IAEMD) to provide emergency medical instructions to 9-1-1 callers. This includes protocols 1 through 33 and associated determinate codes, pre-arrival instructions, and diagnostic tools. Specific EMD medical direction can be found in the following locations:

MPDS Card	Dispatcher Actions	Page
All 9-1-1 calls	Refer to Protocol 1-010 - General Assessment and Treatment - Medical	13
	Refer to Protocol 1-020 - General Assessment and Treatment - Trauma	14
	Refer to Section 6-020 - Air Ambulance	76
	Refer to Protocol 6-085 - High-Threat Response	86
	Refer to Protocol 6-090 - Hazardous Atmosphere Standby	87
	Refer to Section 6-095 - Mutual Aid Maps	88
Aircraft Emergency 2 (full emergency)	Dispatch closest ALS ambulance for standby.	
Aircraft Emergency 3 (accident)	Dispatch closest two (2) ALS ambulances and EMS Supervisor (or additional ALS ambulance).	
Aspirin Diagnostic	Refer to Protocol 2-050 - Chest Discomfort	21
Hazardous Materials Release	If no patients, dispatch closest ALS ambulance for standby and notify EMS Supervisor (or additional ALS ambulance). If patient or patients, refer to Protocol 8 below.	
All Protocols	Echo-level (not breathing), dispatch EMS Supervisor (or additional ALS ambulance).	
Protocol 3 (Animal Attack)	3-D-1 (arrest), dispatch EMS Supervisor (or additional ALS ambulance).	
Protocol 4 (Assault)	4-D-1 (arrest), dispatch EMS Supervisor (or additional ALS ambulance).	
	4-D-1 (multiple victims), dispatch EMS Supervisor and Rescue Task Force (or additional ALS ambulance).	
Protocol 7 (Burns)	Refer to Protocol 5-030 - Burns	66
	7-D-1 (multiple victims), dispatch EMS Supervisor and Rescue Task Force (or additional ALS ambulance).	
	7-D-2 (arrest), dispatch EMS Supervisor (or additional ALS ambulance).	
	7-C-4 (significant facial burns), dispatch EMS Supervisor (or additional ALS ambulance).	
Protocol 8 (Hazmat)	Refer to Protocol 4-140 - Poisoning or Overdose	58
	8-D-1 (arrest), dispatch EMS Supervisor (or additional ALS ambulance).	
	8-D-5 (multiple victims), dispatch EMS Supervisor and Rescue Task Force (or additional ALS ambulance).	
Protocol 9 (Cardiac Arrest)	Cardiac arrest pathway, refer to Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)	78
	Obvious or expected death, refer to Section 6-140 - Termination of Resuscitation	99
Protocol 14 (Drowning)	Obvious death, refer to Protocol 3-010 - Drowning	35
Protocol 15 (Electrocution)	14-D-2 (underwater), dispatch EMS Supervisor (or additional ALS ambulance).	
	15-D-1 (multiple victims), dispatch EMS Supervisor and Rescue Task Force (or additional ALS ambulance).	
Protocol 17 (Fall)	17-D-2 (arrest), dispatch EMS Supervisor (or additional ALS ambulance).	
Protocol 18 (Headache)	Stroke time window, refer to Protocol 4-050 - Cerebrovascular Accident (CVA) or Stroke	43
Protocol 20 (Heat/Cold Exposure)	20-D-2 (multiple victims), dispatch EMS Supervisor and Rescue Task Force (or additional ALS ambulance).	
Protocol 21 (Hemorrhage)	21-D-1 (arrest), dispatch EMS Supervisor (or additional ALS ambulance).	
Protocol 22 (Inaccessible)	22-D-1 (mechanical), 22-D-2 (trench), 22-D-3 (structure), 22-D-4 (confined), 22-D-5 (terrain), 22-D-6 (mudslide), 22-B-2 (peripheral), dispatch EMS Supervisor (or additional ALS ambulance).	



MPDS Card	Dispatcher Actions	Page
Protocol 24 (Pregnancy)	High risk complications, refer to Protocol 4-090 - Childbirth	51
	24-D-1 (breech), 24-D-2 (head visible), 24-D-3 (imminent), 24-D-6 (baby born, baby complications), 24-D-7 (baby born, mother complications), dispatch EMS Supervisor (or additional ALS ambulance).	
Protocol 27 (Penetrating)	27-D-1 (arrest), dispatch EMS Supervisor (or additional ALS ambulance).	
	27-D-6 (multiple victims), dispatch EMS Supervisor and Rescue Task Force (or additional ALS ambulance).	
Protocol 28 (Stroke)	Stroke time window, refer to Protocol 4-050 - Cerebrovascular Accident (CVA) or Stroke	43
Protocol 29 (Traffic)	29-D-1 (major incident), dispatch EMS Supervisor and Rescue Task Force (or additional ALS ambulance).	
	29-D-2 (high mechanism), 29-D-4 (hazmat), 29-D-5 (pinned), 29-D-6 (arrest), dispatch EMS Supervisor (or additional ALS ambulance).	
Protocol 30 (Trauma)	30-D-1 (arrest), dispatch EMS Supervisor (or additional ALS ambulance).	
Protocol 31 (Unconscious)	31-D-1 (agonal), dispatch EMS Supervisor (or additional ALS ambulance).	
Protocol 33 (Transfer)	Acuity levels, refer to Section 6-125 - Transfer Out of Hospital	97
	33-D-1 (arrest), dispatch EMS Supervisor (or additional ALS ambulance).	

Section 0-100 - Protocol Deviation

No protocol can account for every clinical scenario encountered, and it is recognized that in rare circumstances deviation from these protocols may be necessary and in a patient's best interest. Variance from protocol should always be done with the patient's best interest in mind and backed by documented clinical reasoning and judgement. Whenever possible. Prior approval by direct verbal order from a physician is preferred. Additionally, all variance from protocol should be documented and submitted for review by the agency's medical director in a timely fashion.

Protocols have certain limitations, and not every clinical scenario can be represented. Although these protocols imply a specific sequence of actions, it may often be necessary to provide care out of sequence from that described if dictated by clinical needs. These protocols provide decision-making support, but need not be rigidly adhered to and is no substitute for sound clinical judgement.

Refer to [Section 6-010 - Acquisition of Medical Control](#) (page 75) for further details.

Section 0-200 - Document Style Standards

- [MEDICAL CONTROL](#) order.
- [Hyperlinks to other parts of this document.](#)
- [Adult](#) or [Pediatric](#) orders.
- [Medication](#) or [Procedure](#) order.

Section 0-250 - EMS Research

When available, these protocols are based on evidenced-based research and peer-reviewed journal articles. On occasion, specific studies are done with historical data from CMH EMS. When specifically referenced, these articles and studies are referenced and can be found at the end of each protocol or section and in [Section 9-010 - References](#) (page 225).

Additional research articles and papers are stored on a shared OneDrive account.
These can be found here:

<http://ozarksems.com/research.php>



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Part 1 - Assessment Protocols

Protocol 1-010 - General Assessment and Treatment - Medical

<p>EMD</p> <ul style="list-style-type: none"> * Utilize appropriate MPDS protocol for all calls where a patient may be ill. 	<p>RN Medic</p>
<p>EMR</p> <ul style="list-style-type: none"> * Wear high-visibility and retro-reflective apparel when deemed appropriate. * Scene safety. * Coordinate with or establish incident command. * BSI. * Determine nature of illness. * Determine number of patients. * Determine need for additional resources. * ABCs. * LOC. * SAMPLE history. * Focused assessment. * Baseline vitals. <ul style="list-style-type: none"> * Two sets of vitals should be obtained that include time, blood pressure, pulse, respirations, SpO₂, and Pain level. <ul style="list-style-type: none"> ✦ If patient contact time is less than 15 minutes (i.e. very short transport time with a critical patient), one set of vitals may be appropriate. * When appropriate, additional vitals may include temperature, orthostatic blood pressure, and Glucose. Consider assisting ALS with ETCO₂. 	<ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * <u>ALS indicated when new onset of the following:</u> <ul style="list-style-type: none"> * Unresponsive. * Responsive meeting one of the following: <ul style="list-style-type: none"> ✦ Altered mental status. ✦ Respiratory distress. ✦ Signs of shock. ✦ Need for IV/IO or medications. ✦ Chest discomfort.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Responsive: Treatment and transport decision (BLS / ALS). * Interfacility transfer of patients meeting BLS criteria with the only exception of Heparin- or Saline-locked IV may be transported BLS. * Four-lead cardiac monitoring does not require the patient to be transported ALS, but an ALS patient does require cardiac monitoring. If BLS patient with four-lead, do not document EKG monitoring. 12-Lead EKG does require the patient to be ALS. Any EKG monitor for assessment must be transported ALS. * A BLS ambulance with an ALS patient shall request ALS intercept or transport to the nearest emergency room or CMH unless the destination is refused by the patient. 	<ul style="list-style-type: none"> * <u>Pediatric:</u> Utilize Broselow tape for equipment and drug dosages. * Rapid medical assessment. * Treat per appropriate protocol. * Transport. Routine use of lights and sirens is not warranted.
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. 	

Citations: (American Academy of Pediatrics, 2006), (Bledsoe & Benner, Critical care paramedic, 2006), (Bledsoe, Porter, & Cherry, Essentials of paramedic care, 2011), (Chapter 190 - Emergency services, 2012), (NASEMSO Medical Directors Council, 2017)

NEMSIS Protocol 9914075: General - Universal Patient Care / Initial Patient Contact



Protocol 1-020 - General Assessment and Treatment - Trauma

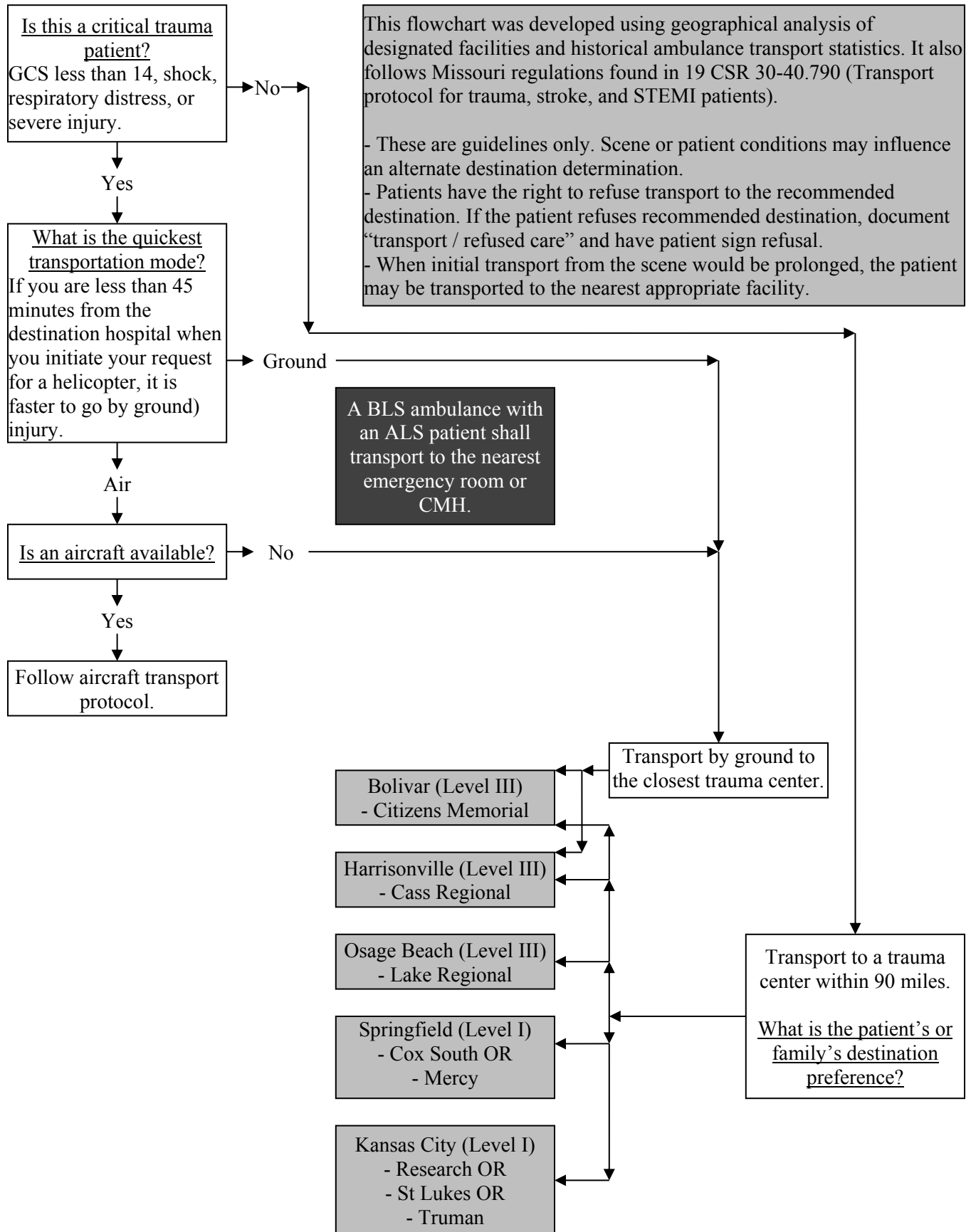
<p>EMD</p> <ul style="list-style-type: none"> * Utilize appropriate MPDS protocol for all calls where a patient may be injured. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * <u>ALS indicated when new onset of the following:</u> <ul style="list-style-type: none"> * Significant MOI. * Unresponsive. * Responsive meeting one of the following: <ul style="list-style-type: none"> + Altered mental status. + Respiratory distress. + Signs of shock. + Need for IV/IO or medications. + Chest discomfort. + Severe Pain.
<p>EMR</p> <ul style="list-style-type: none"> * Wear high-visibility and retro-reflective apparel when deemed appropriate. * Scene safety. * Coordinate with or establish incident command. * BSI. * Mechanism of Injury (MOI). * Number of patients. * Need for additional resources * ABCs. * LOC. * Consider SMR. * Control bleeding. If bleeding cannot be controlled by simple means: <ul style="list-style-type: none"> * Consider Tourniquet. * Consider Hemostatic Agent. * Maintain patient temperature between 91-99 degrees F. Consider active re-warming. * SAMPLE history. * Focused assessment. * Baseline vitals. <ul style="list-style-type: none"> * Two sets of vitals should be obtained that include time, blood pressure, pulse, respirations, SpO₂, and Pain level. <ul style="list-style-type: none"> + If patient contact time is less than 15 minutes (i.e. very short transport time with a critical patient), one set of vitals may be appropriate. * When appropriate, additional vitals may include tempurature, and Glucose. Consider assisting ALS with ETCO₂. 	<ul style="list-style-type: none"> * <u>Pediatric:</u> Utilize Broselow tape for equipment and drug dosages.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * <u>No significant MOI:</u> <ul style="list-style-type: none"> * Treatment and transport decision (BLS/ALS). * Transfer of patients meeting BLS criteria with the only exception of Heparin- or Saline-locked IV may be transported BLS. * A BLS ambulance with an ALS patient shall request ALS intercept or transport to the nearest emergency room or CMH unless the destination is refused by the patient. 	<ul style="list-style-type: none"> * Rapid trauma assessment. * Treat per appropriate protocol. * Transport according to Section 1-021 - Trauma Destination Determination Flowchart (page 15). Target scene time of 10 minutes.
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * Consider LR IV bolus to maintain SBP above 90. 	<ul style="list-style-type: none"> * <u>Possible fracture:</u> Consider Protocol 6-050 - Control of Pain (page 81).

Citations: (Carnahan, Rules of Department of Health and Senior Services, division 30 - Division of regulation and licensure, chapter 40 - Comprehensive emergency medical services systems regulations, 2010), (Chapter 190 - Emergency services, 2012), (Designated hospitals, n.d.), (NASEMSO Medical Directors Council, 2017)

NEMSIS Protocol 9914207: General Trauma Management



Section 1-021 - Trauma Destination Determination Flowchart



This flowchart was developed using geographical analysis of designated facilities and historical ambulance transport statistics. It also follows Missouri regulations found in 19 CSR 30-40.790 (Transport protocol for trauma, stroke, and STEMI patients).

- These are guidelines only. Scene or patient conditions may influence an alternate destination determination.
- Patients have the right to refuse transport to the recommended destination. If the patient refuses recommended destination, document "transport / refused care" and have patient sign refusal.
- When initial transport from the scene would be prolonged, the patient may be transported to the nearest appropriate facility.

A BLS ambulance with an ALS patient shall transport to the nearest emergency room or CMH.

Section 1-030 - Assessment Tools

Normal Vital Signs

Age	Pulse	Respiratory rate	Systolic blood pressure
Preterm less than 1 kg	120 - 160	30 - 60	36 - 58
Preterm 1 kg	120 - 160	30 - 60	42 - 66
Preterm 2 kg	120 - 160	30 - 60	50 - 72
Newborn	126 - 160	30 - 60	60 - 70
Up to 1 year	100 - 140	30 - 60	70 - 80
1 to 3 years	100 - 140	20 - 40	76 - 90
4 to 6 years	80 - 120	20 - 30	80 - 100
7 to 9 years	80 - 120	16 - 24	84 - 110
10 to 12 years	60 - 100	16 - 20	90 - 120
13 to 14 years	60 - 90	16 - 20	90 - 120
15 to 20 years	60 - 90	14 - 20	90 - 130
Adult	60 - 100	12 - 18	95 - 140

Glasgow Coma Scale

	Adult	Pediatric
	Eye Opening	
4	Spontaneous	Spontaneous
3	To speech	To speech
2	To pain	To pain
1	None	None
	Best Motor Response	
6	Obeys commands	Spontaneous movement
5	Localizes pain	Withdraws to touch
4	Withdraws from pain	Withdraws from pain
3	Abnormal flexion	Abnormal flexion
2	Abnormal extension	Abnormal extension
1	None	None
	Verbal Response	
5	Oriented	Coos and babbles
4	Confused	Irritable cry
3	Inappropriate	Cries to pain
2	Incomprehensible	Moans to pain
1	None	None

Citations: (National Association of State EMS Officials, 2014), (Pieretti, 2007), (Ralston, 2011)

Part 2 - Cardiac Protocols

Protocol 2-010 - Asystole

<p>EMR</p> <ul style="list-style-type: none"> * Refer to Protocol 6-025 - Cardiopulmonary Resuscitation (CPR) (page 78). 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Confirm in 2 leads. * Consider IO NS. * Consider Intubation.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. 	<p>* <i>Adult:</i></p> <ul style="list-style-type: none"> * Epinephrine 1:10,000 1 mg IV/IO every 3-5 min or drip over 5 min. * Consider Sodium Bicarbonate 1 mEq/kg IV/IO every 10 min (ensure adequate ventilations). * Consider Pacing. * Consider Atropine 1 mg IV/IO every 3-5 min (max 3 mg).
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * IV NS. 	<p>* <i>Pediatric:</i></p> <ul style="list-style-type: none"> * Epinephrine 1:10,000 0.01 mg/kg IV/IO every 3-5 min or drip over 5 min (max 1 mg/dose). * OR Epinephrine 1:1,000 0.1 mg/kg ETT (max 2.5 mg/dose). <p>* Consider and correct treatable causes: Hypovolemia, hypoxia, hypo/hyperkalemia, Hypothermia, Hypoglycemia, acidosis, tension pneumothorax, toxins, thrombosis, and cardiac tamponade.</p> <p>* <i>Adult:</i> Consider contacting MEDICAL CONTROL if ETCO₂ less than 10 for 10 min or no response after 20 min for termination of resuscitation.</p>

Citations: (NASEMSO Medical Directors Council, 2017), (Perkins, et al., 2018)

NEMSIS Protocol 9914011: Cardiac Arrest - Asystole

Protocol 2-020 - Atrial Fibrillation (A-Fib) or Atrial Flutter

<p>EMR</p> <ul style="list-style-type: none"> * Calm and reassure patient. Ensure patient does not exert themselves. * Oxygen to maintain SpO₂ between 94-99%. * Apply cardiac monitor limb leads. * <u>Adult: Rate greater than 150:</u> Apply Combo Pads anterior / posterior. * <u>Pediatric (child): Rate greater than 160:</u> Apply Combo Pads anterior / posterior. * <u>Pediatric (infant): Rate greater than 220:</u> Apply Combo Pads anterior / posterior. * Monitor pulseoximetry. * Obtain vital signs. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Obtain 12-Lead EKG. * Consider IO NS. * <u>Adult: Rate greater than 150:</u> <ul style="list-style-type: none"> * Determine and treat the cause of tachycardia before Amiodarone or Cardizem administration (i.e. infection, dehydration, pain, etc.). * <u>Pulmonary edema:</u> Amiodarone 150 mg over 10 min. May repeat at 150 mg over 10 min if Tachycardia returns. * <u>No pulmonary edema:</u> Cardizem 0.25 mg/kg (max 20 mg) IV/IO over 2 min. May repeat after 15 min at 0.35 mg/kg (max 25 mg) IV/IO over 2 min. <ul style="list-style-type: none"> ✦ If converted, Cardizem drip at 10 mg/hr. * <u>Pediatric: Rate greater than 160 (child), greater than 220 (infant):</u> <ul style="list-style-type: none"> * sContact MEDICAL CONTROL: <ul style="list-style-type: none"> ✦ Consider Cardizem. ✦ Consider Adenosine: 0.1 mg/kg RAPID IV/IO. If ineffective, second and/or third dose at 0.2 mg/kg. ✦ Consider Protocol 6-050 - Control of Pain (page 81). ✦ Consider synchronized Cardioversion 0.5-1 J/kg. * Consider and correct treatable causes: Hypovolemia, hypoxia, hypo/hyperkalemia, Hypothermia, Hypoglycemia, acidosis, tension pneumothorax, toxins, thrombosis, and cardiac tamponade.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Consider assisting ALS with Capnography. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * IV NS in AC (left is preferred) with pigtail extension with 18 ga or greater. 	

Citations: (NASEMSO Medical Directors Council, 2017)
 NEMSIS Protocol 9914147: Medical - Supraventricular Tachycardia (Including Atrial Fibrillation)



Protocol 2-030 - Automated External Defibrillation (AED)

Community Responders

- * Call or have someone call 9-1-1. Follow the instructions given by the dispatcher.
- * Ensure the scene is safe and protect yourself from body substances.
- * If the patient is unresponsive and not breathing (or only gasping):
 - * Get or have someone get the AED. Follow the instructions given by the AED once it arrives.
 - * Lay the patient flat on his/her back on the ground and remove any pillows.
 - * Place the heel of your hand on the breastbone and put your other hand on top of that hand.
 - * Pump the chest hard and fast at a rate of about 110 **compressions** per minute. **Compressions** should be about 2 inches deep on an adult or 1/3 the depth of the chest on a child.
 - * Rotate compressors (if possible) after 200 **compressions** (about 2 minutes).
 - * Continue **compressing** at a rate of at least 110 per minute until emergency responders relieve you.
- * As soon as the AED is available:
 - * Put the AED on the ground next to the patient’s head on the side closest to you.
 - * Undo or remove any clothing from his/her chest. If the chest is wet, dry it off.
 - * Open the AED (if necessary) and press the “ON” button (if there is one).
 - * Open the pads package and plug them into the machine.
 - * Peel off the pad backing and apply them to his/her bare chest as shown on the pads.
 - * Follow the AED’s instructions.
- * Refer to **Section 8-010 - Automated External Defibrillator (AED)** (page 177) for AED accessibility, supplies, maintenance, and instructions after use.

EMR	RN Medic
<ul style="list-style-type: none"> * Ensure completion of applicable Community Responder items above. * Request ALS support if not already en route. * Refer to Protocol 6-025 - Cardiopulmonary Resuscitation (CPR) (page 78). 	
EMT	
AEMT	<ul style="list-style-type: none"> * Ensure completion of applicable BLS items on the left. * If ALS and LifePak 12/15 available, manual Defibrillation is preferred.
<ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. 	

Citations: (Priority Dispatch, 2012)



Protocol 2-040 - Bradycardia

<p>EMR</p> <ul style="list-style-type: none"> * Calm and reassure patient. Ensure patient does not exert themselves. * Oxygen to maintain SpO₂ between 94-99%. * Apply cardiac monitor limb leads. * <u>Rate less than 60</u>: Apply Combo Pads anterior / posterior. * <u>Pediatric</u>: <u>HR less than 50</u>: Ventilate. Initiate Chest compressions if ventilation does not raise HR above 60. * Monitor pulseoximetry. * Obtain vital signs. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Obtain 12-Lead EKG. * Consider IO NS. Do not delay for IV/IO if symptomatic. * <u>Adult</u>: <u>Rate less than 50 and symptomatic</u>: <ul style="list-style-type: none"> * Contact Medical Control if Hypothermia patient. * <u>Unstable</u>: Consider Pacing. <ul style="list-style-type: none"> + Consider Protocol 6-050 - Control of Pain (page 81). * <u>Stable</u>: Atropine 0.5 mg IV/IO. May repeat 0.5 mg every 5 min (max 3 mg). * Consider Epinephrine 1:10,000 0.02-0.2 mcg/kg/min titrated to MAP greater than 65. * Consider Dopamine 5-20 mcg/kg/min IV/IO. * Consider contacting MEDICAL CONTROL for Epinephrine 1:10,000 2-10 mcg/min IV/IO. <ul style="list-style-type: none"> + Mix 1 mg in 250 ml NS. + 2 mcg/min = 30 ml/hr. + 10 mcg/min = 150 ml/hr. * <u>Pediatric</u>: <u>Rate less than 60 and symptomatic</u>: <ul style="list-style-type: none"> * Consider Epinephrine 1:10,000 0.01 mg/kg IV/IO repeat every 3-5 min. * Consider Atropine 0.02 mg/kg IV/IO may repeat once (min 0.1 mg) (max 0.5 mg). * Consider Pacing at age appropriate rate: <table border="1" style="margin-left: 20px; margin-top: 5px;"> <tr> <td>0-1yr:</td> <td>2-3yr:</td> <td>4-5yr:</td> <td>6-9yr:</td> <td>10-18yr:</td> </tr> <tr> <td style="text-align: center;">135</td> <td style="text-align: center;">130</td> <td style="text-align: center;">105</td> <td style="text-align: center;">90</td> <td style="text-align: center;">80</td> </tr> </table> * Consider Protocol 6-050 - Control of Pain (page 81). * Consider and correct treatable causes: Hypovolemia, hypoxia, hypo/hyperkalemia, Hypothermia, Hypoglycemia, acidosis, tension pneumothorax, toxins, thrombosis, and cardiac tamponade. 	0-1yr:	2-3yr:	4-5yr:	6-9yr:	10-18yr:	135	130	105	90	80
0-1yr:	2-3yr:	4-5yr:	6-9yr:	10-18yr:							
135	130	105	90	80							
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Consider assisting ALS with Capnography. 											
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * IV NS. 											

Citations: (De Backer, et al., 2010), (NASEMSO Medical Directors Council, 2017)

NEMSIS Protocol 9914115: Medical - Bradycardia



Protocol 2-050 - Chest Discomfort

<p>EMD</p> <ul style="list-style-type: none"> * MPDS Aspirin Diagnostic: EMDs are authorized to evaluate and administer Aspirin in patients presenting with chest pain according to MPDS guidelines. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Consider IO NS. * Interpret 12-Lead EKG within 10 minutes of patient contact. <ul style="list-style-type: none"> * 15-Lead EKG indicated when: normal EKG, inferior MI, ST depression in V-leads. * STEMI (ST elevation greater than 0.1 MV in at least 2 contiguous leads OR new LBBB): <ul style="list-style-type: none"> + Contact ER to activate STEMI as early as possible. <ul style="list-style-type: none"> ✗ (CMH ER Charge Nurse: Encrypted radio or 417-328-6923). ✗ Include name, DOB, time of onset, assessment, treatment, response to treatment, vitals, cardiac / bleeding history. Provide your contact phone number. + Transmit EKG to receiving facility (if possible). * Consider serial 12-Lead EKGs.
<p>EMR</p> <ul style="list-style-type: none"> * Calm and reassure patient. Ensure patient does not exert themselves. * Oxygen to maintain SpO₂ between 94-99%. * Apply cardiac monitor limb leads. * Monitor pulseoximetry. * Obtain vital signs. <hr/> <ul style="list-style-type: none"> * Adult: Aspirin 324 mg (4 chewable tablets - 81 mg each) within 5 minutes of patient contact. <hr/> <ul style="list-style-type: none"> * STEMI verified by ALS or physician: <ul style="list-style-type: none"> * Consider Combo Pads anterior / posterior. * Remove clothing and place patient in gown. 	<ul style="list-style-type: none"> * Adult: <ul style="list-style-type: none"> * Pulmonary edema: Refer to Protocol 4-070 - Congestive Heart Failure (CHF) (page 49). * Right-sided MI (ST elevation in V4R): NS 1-2 L followed by Nitroglycerin 5+ mcg/min IV/IO. * SBP less than 100: Consider Nitroglycerin 10+ mcg/min IV/IO titrated to blood pressure and Pain. * Nausea/Vomiting: See Protocol 6-040 - Control of Nausea (page 80). * Continued discomfort/pain: <ul style="list-style-type: none"> + Consider Morphine 2 mg IV/IO (max 10 mg). Maintain SBP greater than 100. + Consider Fentanyl 50-100 mcg every 5-20 min (max 300 mcg) IV/IO/IN. Over 65 yr old: 0.5-2 mcg/kg.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Obtain 12-Lead EKG within 10 minutes of patient contact. If ALS is unavailable, transmit to closest or CMH ER and contact ER by phone to obtain interpretation. * Consider assisting ALS with Capnography. 	<ul style="list-style-type: none"> * Consider contacting MEDICAL CONTROL for Heparin 4,000 u. * Transport according to Section 2-052 - STEMI Destination Determination Flowchart (page 23). Target scene time of 10 minutes. * Ensure accurate weight is obtained upon arrival at the ER, if able.
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * IV NS in AC (left is preferred) with pigtail extension with 18 ga or greater. Consider second 18 ga IV in right AC. * Adult: SBP greater than 100: Nitroglycerin 0.4 mg SL (1 spray or 1 tablet). Every 5 min until no Pain or SBP less than 90. Ensure IV access prior to Nitroglycerin administration, if possible. Contraindicated if phosphodiesterase inhibitor within 48 hours. 	

Citations: (Chapter 190 - Emergency services, 2012), (Citizens Memorial Hospital, 2014), (Clemency, Thompson, Tundo, & Lindstrom, 2013), (Cooper, 2015), (Designated hospitals, n.d.), (Missouri EMS Regional Committee - Southwest Region, 2013), (NASEMSO Medical Directors Council, 2017), (Proposed regulations, 2010)

NEMSIS Protocol 9914117: Medical - Cardiac Chest Pain



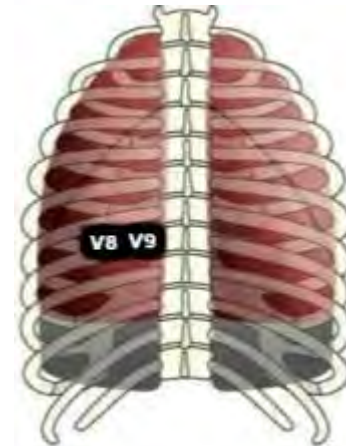
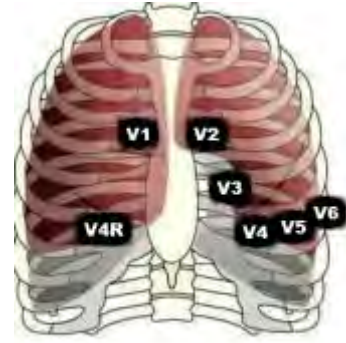
Section 2-051 - EKG Interpretation Guide

Check lead placement.

- * Lead I positive and aVR negative: Good placement

Rhythm:

- * Regular or irregular
- * **Bradycardia** or **Tachycardia**
- * P-Waves:
 - * **Heart block:**
 - + **PR greater than 200ms:** First degree heart block
 - + **PR widening:** Second degree type I
 - + **Dropping P-waves:** Second degree type II
 - + **P-waves not associated:** Third degree
 - * **Greater than 2.5mm high:** Right Atrial enlargement or PE
 - + **"M" shape:** Left Atrial enlargement
- * **QRS:**
 - * **Greater than 120 ms:** Bundle branch block (**LBBB** or Ventricular **Pacing**, go to Sgarbossa)
 - * **QTc between 390 and 450**
 - * **Peaked T-waves:** Hyperkalemia
 - * **Q greater than 40 ms:** Pathological Q (previous MI)
 - * **Q greater than 35 mm combined V5 & V1:** Left Ventricular hypertrophy
 - * **Q greater than 7 mm V1:** Right Ventricular hypertrophy
 - * **Delta wave (sloped R) with PR less than 120 ms:** Wolff-Parkinson-White



Axis:

- * -30 to -90 degrees (I+, aVF-): **Left axis deviation** (obesity, pregnancy, **LBBB**, left Ventricular hypertrophy, **LEFT ANTERIOR HEMIBLOCK**, **INFERIOR MI**)
- * 90 to 180 degrees (I-, aVF+): **Right axis deviation** (slender, pulmonary disease, **RBBB**, right Ventricular hypertrophy, **LEFT POSTERIOR HEMIBLOCK**)
- * -90 to -180 degrees (I-, aVF-): **Extreme right axis deviation** (**MYOCARDIAL INFARCTION**)

ST:

- * **ST elevation in all leads:** Pericarditis
- * **Cup or dome ST in V-leads:** Early repolarization
- * **ST elevation in contiguous leads:** **STEMI**

Sgarbossa Criteria (**LBBB** or **Pacing**):

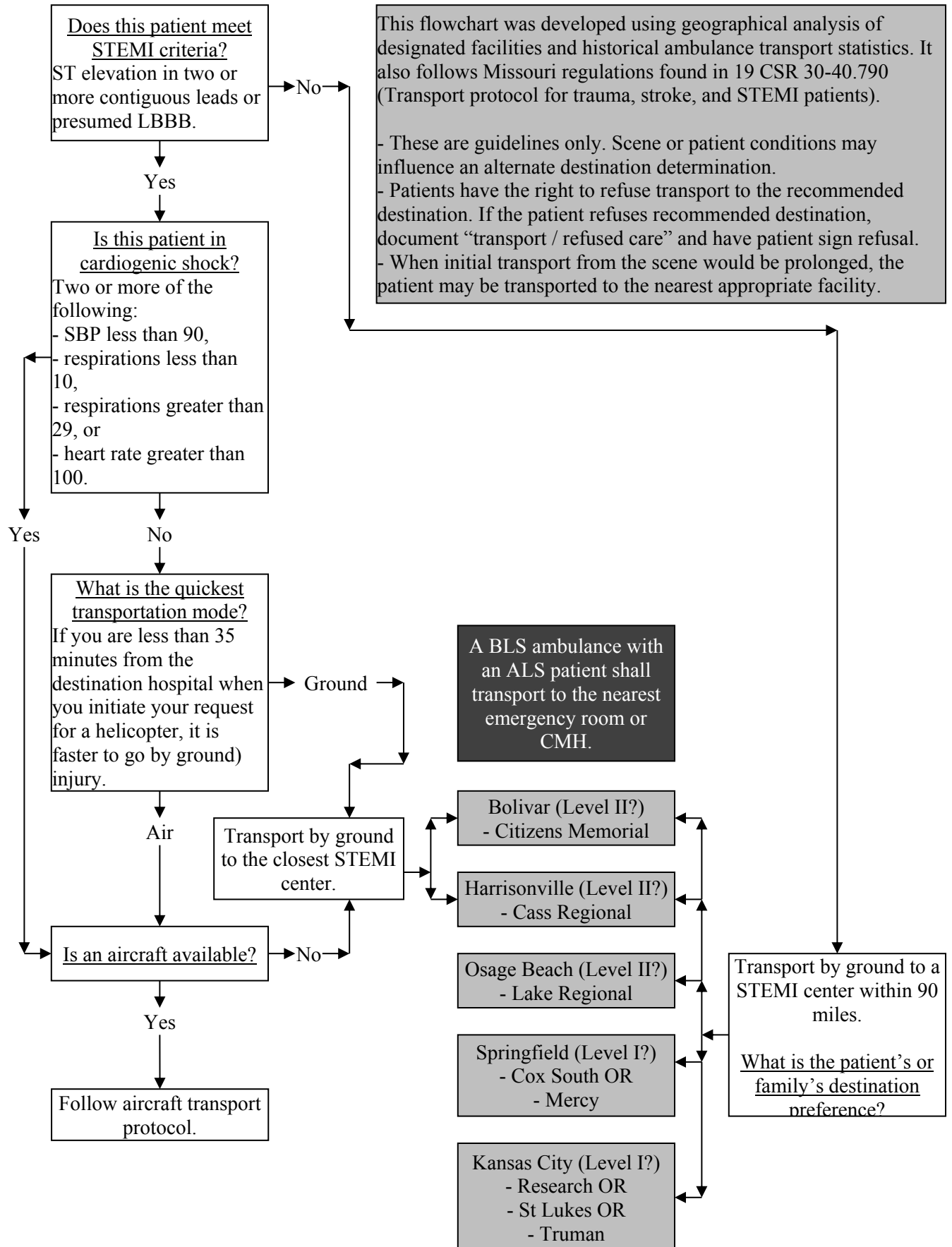
- * **A = ST elevation greater than 1mm concordant with QRS in any lead**
- * **B = ST depression greater than 1mm in V1, V2, or V3**
- * **C = ST elevation greater than 5mm discordant with QRS in any lead**

I Lateral • LAD & LCX Reciprocal: II, III, AVF	aVR	V1 Septal • LAD	V4 Anterior • LAD	V4R Right • RMA
II Inferior • RCA Reciprocal: I, aVL	aVL Lateral • LAD & LCX Reciprocal: II, III, AVF	V2 Septal • LAD	V5 Lateral • LAD & LCX Reciprocal: II, III, AVF	V8 Posterior • Post. branch of RCA Reciprocal: V1-V4
III Inferior • RCA Reciprocal: I, aVL	aVF Inferior • RCA Reciprocal: I, aVL	V3 Anterior • LAD	V6 Lateral • LAD & LCX Reciprocal: II, III, AVF	V9 Posterior • Post. branch of RCA Reciprocal: V1-V4

Sgarbossa Scoring – AMI in LBBB & Ventricular Pacing

Question	Yes	No	Answers						
ST Elev. ↑ 1mm in QRS with Pos. Deflection	+5	+0	✓	✓	✓	✓			
ST Depression ↑ 1mm in V1, V2, V3	+3	+0	✓	✓		✓	✓		
ST Elev. ↑ 5mm in WRS with Neg. Deflection	+2	+0	✓			✓	✓	✓	
Sgarbossa's Criteria (LBBB / Paced Rhythm)									
Score Total:	10	8	7	5	5	3	2	0	
% MI Probability	100	92	93	88	100	66	50	16	

Section 2-052 - STEMI Destination Determination Flowchart



Protocol 2-060 - Post Resuscitative Care

<p>EMR</p> <ul style="list-style-type: none"> * Establish and maintain Airway and Ventilate with Oxygen. * Avoid hyperventilation. * Conscious: Attempt to maintain SpO₂ between 92-96%. * Unconscious: Attempt to maintain SpO₂ between 88-92%. * Monitor pulseoximetry. * Apply cardiac monitor Combo Pads and limb leads. * Obtain vital signs. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Obtain 12-Lead EKG. * Treat rate and rhythm per protocol. * Secure Airway if necessary. * Consider IO NS.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Assist ALS with Capnography. 	<ul style="list-style-type: none"> * <u>Adult</u>: <ul style="list-style-type: none"> * <u>Hypotension with pulmonary edema</u>: Consider Dopamine 5-20 mcg/kg/min IV/IO. * <u>Continued sedation</u>: Refer to continued sedation section of Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) (page 93).
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * IV NS. * <u>Adult</u>: <u>Hypotension with clear lung sounds</u>: NS 250-500 ml IV. * <u>Pediatric</u>: <u>Hypotension with clear lung sounds</u>: Consider 20 ml/kg NS. 	<ul style="list-style-type: none"> * <u>Pediatric</u>: <ul style="list-style-type: none"> * <u>Hypotension with pulmonary edema</u>: Contact MEDICAL CONTROL for Dopamine 5-20 mcg/kg/min IV/IO. * <u>Continued sedation</u>: Refer to continued sedation section of Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) (page 93). * Consider remaining on scene for at least ten (10) minutes after ROSC to stabilize the patient before initiating transport. * Consider Air Ambulance to expedite transport. * Consider RSI and Cooling with cold packs and cold IV fluids if: <ul style="list-style-type: none"> * No trauma, * No purposeful movement, AND * SBP greater than 90.

Citations: (NASEMSO Medical Directors Council, 2017)
 NEMSIS Protocol 9914019: Cardiac Arrest - Post Resuscitation Care



Protocol 2-070 - Pulseless Electrical Activity (PEA)

<p>EMR</p> <ul style="list-style-type: none"> * Refer to Protocol 6-025 - Cardiopulmonary Resuscitation (CPR) (page 78). 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Consider Intubation. * Consider IO NS.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. 	<ul style="list-style-type: none"> * <i>Adult</i>: <ul style="list-style-type: none"> * Epinephrine 1:10,000 1 mg IV/IO every 3-5 min or drip over 5 min. * Slow PEA rate: <ul style="list-style-type: none"> + Consider Atropine 1 mg IV/IO every 3-5 min (max 3 mg). + Consider Pacing. * Suspected mechanical activity and profound shock is the cause of pulselessness: <ul style="list-style-type: none"> + Consider large fluid bolus. + Consider Dopamine 5-20 mcg/kg/min IV/IO. * Consider Sodium Bicarbonate 1 mEq/kg IV/IO.
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * IV NS. 	<ul style="list-style-type: none"> * <i>Pediatric</i>: Epinephrine 1:10,000 0.01 mg/kg IV/IO every 3-5 min or drip over 5 min (max 1 mg/dose). OR 1:1,000 0.1 mg/kg ET. * Consider and correct treatable causes: Hypovolemia, hypoxia, hypo/hyperkalemia, Hypothermia, Hypoglycemia, acidosis, tension pneumothorax, toxins, thrombosis, and cardiac tamponade. * <i>Adult</i>: Consider contacting MEDICAL CONTROL if ETCO₂ less than 10 for 10 min or no response after 20 min for termination of resuscitation.

Citations: (NASEMSO Medical Directors Council, 2017), (Perkins, et al., 2018)

NEMSIS Protocol 9914015: Cardiac Arrest - Pulseless Electrical Activity

Protocol 2-080 - Tachycardia Narrow Stable

<p>EMR</p> <ul style="list-style-type: none"> * Calm and reassure patient. Ensure patient does not exert themselves. * Oxygen to maintain SpO₂ between 94-99%. * Apply cardiac monitor limb leads. * <u>Adult: Rate greater than 150</u> OR <u>Pediatric: Rate greater than 160 (child), greater than 220 (infant):</u> <ul style="list-style-type: none"> * Consider: apply Combo Pads anterior / posterior. * Monitor pulseoximetry. * Obtain vital signs. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Obtain 12-Lead EKG. * Vagal maneuvers. <ul style="list-style-type: none"> * <u>Adult</u>: Have patient blow on 10 ml syringe to move the plunger for 15 seconds while sitting and immediately place supine and elevate feet afterward. * <u>Pediatric</u>: Place bag of ice on the patient's face for 15 seconds while sitting and immediately place supine and elevate feet afterward. * Consider IO NS. * <u>Adult: Rate greater than 150:</u> <ul style="list-style-type: none"> * Adenosine 6 mg RAPID IV/IO. If ineffective, second and/or third dose at 12 mg. If not converted: <ul style="list-style-type: none"> ✦ <u>Pulmonary edema</u>: Amiodarone 150 mg over 10 min. May repeat at 150 mg over 10 min if Tachycardia returns (max 300 mg). ✦ <u>No pulmonary edema</u>: Cardizem 0.25 mg/kg (max 20 mg) IV/IO over 2 min. May repeat after 15 min at 0.35 mg/kg (max 25 mg) IV/IO over 2 min. ✦ <u>If converted</u>: Cardizem drip at 10 mg/hr. * <u>Pediatric: Rate greater than 160 (child), greater than 220 (infant):</u> <ul style="list-style-type: none"> * Contact MEDICAL CONTROL: <ul style="list-style-type: none"> ✦ Consider Adenosine: 0.1 mg/kg RAPID IV/IO. If ineffective, second and/or third dose at 0.2 mg/kg. ✦ Consider Protocol 6-050 - Control of Pain (page 81). ✦ Consider synchronized Cardioversion 0.5-1 J/kg. * Consider and correct treatable causes: Hypovolemia, hypoxia, hypo/hyperkalemia, Hypothermia, Hypoglycemia, acidosis, tension pneumothorax, toxins, thrombosis, and cardiac tamponade.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Consider assisting ALS with Capnography. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * IV NS in AC (left is preferred) with pigtail extension with 18 ga or greater. 	

Citations: (Appelboam, et al., 2015), (NASEMSO Medical Directors Council, 2017)
 NEMSIS Protocol 9914199: Medical - Tachycardia



Protocol 2-090 - Tachycardia Narrow Unstable

<p>EMR</p> <ul style="list-style-type: none"> * Calm and reassure patient. Ensure patient does not exert themselves. * Oxygen to maintain SpO₂ between 94-99%. * Apply cardiac monitor limb leads. * <u>Adult: Rate greater than 150 OR Pediatric: Rate greater than 160 (child), greater than 220 (infant):</u> <ul style="list-style-type: none"> * Apply Combo Pads anterior / posterior. * Monitor pulseoximetry. * Obtain vital signs. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Obtain 12-Lead EKG as soon as able. * Consider IO NS. Do not delay for IV/IO if symptomatic. * <u>Adult: Rate greater than 150 and symptomatic:</u> <ul style="list-style-type: none"> * <u>Conscious:</u> Consider Protocol 6-050 - Control of Pain (page 81). * Synchronized Cardioversion 125 J (if unsuccessful, increase to 200 J). * <u>Pediatric: Rate greater than 180 (child), greater than 220 (infant) and symptomatic:</u> <ul style="list-style-type: none"> * Consider Vagal maneuvers. See Protocol 2-080 - Tachycardia Narrow Stable (page 26). * Adenosine 0.1 mg/kg RAPID IV/IO (max 6 mg). <ul style="list-style-type: none"> ✦ If ineffective, 2nd and/or 3rd dose at 0.2 mg/kg (max 12 mg). * <u>Conscious:</u> Consider Protocol 6-050 - Control of Pain (page 81). * Synchronized Cardioversion 0.5-1 J/kg. * Contact MEDICAL CONTROL. * Consider and correct treatable causes: Hypovolemia, hypoxia, hypo/hyperkalemia, Hypothermia, Hypoglycemia, acidosis, tension pneumothorax, toxins, thrombosis, and cardiac tamponade.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Consider assisting ALS with Capnography. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * IV NS in AC (left is preferred) with pigtail extension with 18 ga or greater. 	
<p>Citations: (NASEMSO Medical Directors Council, 2017) NEMSIS Protocol 9914199: Medical - Tachycardia</p>	



Protocol 2-100 - Tachycardia Wide Stable

<p>EMR</p> <ul style="list-style-type: none"> * Calm and reassure patient. Ensure patient does not exert themselves. * Oxygen to maintain SpO₂ between 94-99%. * Apply cardiac monitor limb leads. * Adult: Rate greater than 150: Apply Combo Pads anterior / posterior. * Pediatric (Child): Rate greater than 160: Consider: Apply Combo Pads anterior / posterior. * Pediatric (Infant): Rate greater than 220: Consider: Apply Combo Pads anterior / posterior. * Monitor pulseoximetry. * Obtain vital signs. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Obtain 12-Lead EKG. * Consider IO NS. * Adult: Rate greater than 150: <ul style="list-style-type: none"> * Amiodarone 150 mg IV/IO over 10 min. Repeat as needed (max 2.2 gm over 24 hr). <ul style="list-style-type: none"> + OR Lidocaine 1-1.5 mg/kg IV/IO (max 3 mg/kg). * QT/RR greater than 0.4: Magnesium Sulfate 1-2 g IV/IO over 15-20 min. * Pediatric: Rate greater than 160 (child), greater than 220 (infant): <ul style="list-style-type: none"> * Contact MEDICAL CONTROL: <ul style="list-style-type: none"> + Consider Amiodarone 5 mg/kg IV/IO over 20-60 min. + Consider Protocol 6-050 - Control of Pain (page 81). + Consider synchronized Cardioversion 0.5-1 J/kg. * Consider and correct treatable causes: Hypovolemia, hypoxia, hypo/hyperkalemia, Hypothermia, Hypoglycemia, acidosis, tension pneumothorax, toxins, thrombosis, and cardiac tamponade.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Consider assisting ALS with Capnography. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * IV NS in AC (left is preferred) with pigtail extension with 18 ga or greater. 	

Citations: (NASEMSO Medical Directors Council, 2017)

NEMSIS Protocol 9914151: Medical - Ventricular Tachycardia (With Pulse)

Protocol 2-110 - Tachycardia Wide Unstable

<p>EMR</p> <ul style="list-style-type: none"> * Calm and reassure patient. Ensure patient does not exert themselves. * Oxygen to maintain SpO₂ between 94-99%. * Apply cardiac monitor limb leads. * Adult: Rate greater than 150: Apply Combo Pads anterior / posterior. * Pediatric (Child): Rate greater than 160: Consider: Apply Combo Pads anterior / posterior. * Pediatric (Infant): Rate greater than 220: Consider: Apply Combo Pads anterior / posterior. * Monitor pulseoximetry. * Obtain vital signs. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Obtain 12-Lead EKG as soon as able. * Consider IO NS. Do not delay for IV/IO if symptomatic. * Adult: Rate greater than 150 and symptomatic: <ul style="list-style-type: none"> * Conscious: Consider Protocol 6-050 - Control of Pain (page 81). * Synchronized Cardioversion 125 J (if unsuccessful, increase to 200 J). * QT/RR greater than 0.4: Magnesium Sulfate 1-2 g IV/IO over 15-20 min. * Pediatric: Rate greater than 180 (child), greater than 220 (infant) and symptomatic: <ul style="list-style-type: none"> * Conscious: Consider Protocol 6-050 - Control of Pain (page 81). * Synchronized Cardioversion 0.5-1 J/kg. * Consider contacting MEDICAL CONTROL for Amiodarone 5 mg/kg IV/IO over 20-60 min. * Consider and correct treatable causes: Hypovolemia, hypoxia, hypo/hyperkalemia, Hypothermia, Hypoglycemia, acidosis, tension pneumothorax, toxins, thrombosis, and cardiac tamponade.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Consider assisting ALS with Capnography. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * IV NS in AC (left is preferred) with pigtail extension with 18 ga or greater. 	

Citations: (NASEMSO Medical Directors Council, 2017)
 NEMSIS Protocol 9914151: Medical - Ventricular Tachycardia (With Pulse)



Protocol 2-120 - Torsades de Pointes

<p>EMR</p> <ul style="list-style-type: none"> * Calm and reassure patient. Ensure patient does not exert themselves. * Oxygen to maintain SpO₂ between 94-99%. * Apply cardiac monitor limb leads. Apply Combo Pads anterior / posterior. * Monitor pulseoximetry. * Obtain vital signs. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Obtain 12-Lead EKG as soon as able. * Consider Intubation. * Consider IO NS.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Consider assisting ALS with Capnography. 	<ul style="list-style-type: none"> * <i>Adult:</i> <ul style="list-style-type: none"> * Magnesium Sulfate 1-2 g over 2 min. * Follow with Magnesium Sulfate 0.5-1 g/hr IV/IO titrated to control Torsades de Pointes. * <u>Conscious</u>: Consider Protocol 6-050 - Control of Pain (page 81). * Synchronized Cardioversion 200 J.
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * IV NS. 	<ul style="list-style-type: none"> * <i>Pediatric:</i> <ul style="list-style-type: none"> * Magnesium Sulfate 25-50 mg/kg over 2 min. * <u>Conscious</u>: Consider Protocol 6-050 - Control of Pain (page 81). * Synchronized Cardioversion 0.5-1 J/kg.
<p>Citations:</p>	

Protocol 2-130 - Ventricular Ectopy

<p>EMR</p> <ul style="list-style-type: none"> * Calm and reassure patient. Ensure patient does not exert themselves. * Oxygen to maintain SpO₂ between 94-99%. * Apply cardiac monitor limb leads. * Consider apply Combo Pads anterior / posterior. * Monitor pulseoximetry. * Obtain vital signs. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Obtain 12-Lead EKG. * Consider IO NS. * Treat causes of ectopy: Hypoxia, infarction, or ischemia. * Consider contacting MEDICAL CONTROL: <ul style="list-style-type: none"> * Consider Lidocaine. * Consider Amiodarone.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Consider assisting ALS with Capnography. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * IV NS. 	

Citations:

Protocol 2-140 - Ventricular Fibrillation (V-Fib or V-Tach)

EMR	RN Medic
<ul style="list-style-type: none"> * Refer to Protocol 6-025 - Cardiopulmonary Resuscitation (CPR) (page 78). 	<ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Witnessed Arrest: Defibrillation immediately. Unwitnessed: 2 min of compressions, then Defibrillation. Immediately do compressions for 2 min after each shock before rhythm or pulse check.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. 	<ul style="list-style-type: none"> * <i>Adult</i>: 360 J (OR consider biphasic dose of 200 J). * <i>Pediatric</i>: 4 J/kg. * Consider Intubation. * Consider IO NS.
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * IV NS. 	<ul style="list-style-type: none"> * <i>Adult</i>: <ul style="list-style-type: none"> * Epinephrine 1:10,000 1 mg IV/IO every 3-5 min or drip over 5 min. * Defibrillation 360 J (OR consider biphasic dose of 200 J) and immediately resume CPR. * Lidocaine 1-1.5 mg/kg IV/IO repeat 3-5 min at half dose (max 3 mg/kg). <ul style="list-style-type: none"> ✦ OR Amiodarone 300 mg IV/IO. Recurrent VF/VT: Additional 150 mg (total max 450 mg). * Torsades de points: Consider Magnesium Sulfate 1-2 g over 2 min IV/IO. Refer to Protocol 2-120 - Torsades de Pointes (page 30). * Persistent fibrillation after five (5) attempted defibrillations: Consider MEDICAL CONTROL for dual sequential defibrillation. * <i>Pediatric</i>: <ul style="list-style-type: none"> * Epinephrine 1:10,000 0.01 mg/kg IV/IO OR 1:1,000 0.1 mg/kg ET every 3-5 min or drip over 5 min. * Defibrillation 4 J/kg, add 2 J/kg each shock (max 10 J/kg) and immediately resume CPR. * Lidocaine 1-1.5 mg/kg IV/IO repeat 3-5 min at half dose (max 3 mg/kg). <ul style="list-style-type: none"> ✦ OR Amiodarone 5 mg/kg (max 3 doses) IV/IO. * Torsades de points: Consider Magnesium Sulfate 25-50 mg/kg over 2 min IV/IO. Refer to Protocol 2-120 - Torsades de Pointes (page 30). * Consider Sodium Bicarbonate 1 mEq/kg IV/IO every 10 min (ensure adequate ventilations) * Consider and correct treatable causes. * <i>Adult</i>: Consider contacting MEDICAL CONTROL If ETCO₂ less than 10 for 10 min or no response after 20 min for termination of resuscitation.

Citations: (NASEMSO Medical Directors Council, 2017), (Perkins, et al., 2018)

NEMSIS Protocol 9914017: Cardiac Arrest - Ventricular Fibrillation / Pulseless Ventricular Tachycardia

Protocol 2-150 - Wolff-Parkinson-White (WPW)

EMR <ul style="list-style-type: none">* Calm and reassure patient. Ensure patient does not exert themselves.* Oxygen to maintain SpO₂ between 94-99%.* Apply cardiac monitor limb leads.* Consider apply Combo Pads anterior / posterior.* Monitor pulseoximetry.* Obtain vital signs.	RN Medic <ul style="list-style-type: none">* <u>Heart rate greater than 150 and symptomatic:</u>* Ensure completion of all applicable BLS items on the left.* Obtain 12-Lead EKG.* Consider IO NS.* Amiodarone 150 mg over 10 min.
EMT <ul style="list-style-type: none">* Ensure completion of applicable EMR items above.* Consider assisting ALS with Capnography.	
AEMT <ul style="list-style-type: none">* Ensure completion of applicable EMT items above.* <u>Heart rate greater than 150 and symptomatic:</u> IV NS.	

Citations:



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Part 3 - Environmental Protocols

Protocol 3-010 - Drowning

<p>EMD</p> <ul style="list-style-type: none"> * MPDS Protocol 14 (Drowning) - Obvious death: Submersion time does not indicate obvious death. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Consider IO warm NS. * Pulseless: Adult: V-Fib: Defibrillation 360 J (OR consider biphasic dose of 200 J) once. <ul style="list-style-type: none"> * Core temp greater than 86 F: ACLS per protocol. * Remember, Hypothermia patients require longer intervals between drugs due to slower absorption and metabolism rates. * Core temp less than 86 F: Compressions only. * Consider Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) (page 93). * Treat cardiac dysrhythmias per specific protocol. * Consider Air Ambulance to expedite transport.
<p>EMR</p> <ul style="list-style-type: none"> * Remove from water. * Open and maintain Airway. <ul style="list-style-type: none"> * Be prepared to Suction Airway. * Pulseless: Refer to Protocol 6-025 - Cardiopulmonary Resuscitation (CPR) (page 78). * Dry and warm patient. * Obtain core body temperature, if able. * Monitor pulseoximetry. * Consider: Apply cardiac monitor limb leads. * Consider apply Combo Pads. * Obtain vital signs. * Attempt to determine down-time, and history. 	
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Adult: Consider assisting ALS with CPAP. * Assist ALS with Capnography. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * IV warm NS. 	

Citations: (NASEMSO Medical Directors Council, 2017)

NEMSIS Protocol 9914093: Injury - Drowning / Near Drowning



Protocol 3-020 - Hyperthermia

<p>EMR</p> <ul style="list-style-type: none"> * Remove from exposure. * Open and maintain Airway. * Attempt to determine down-time, and history. * Consider Oxygen if SpO₂ less than 88%. * Passively Cool patient. * Obtain core body temperature, if able. * Monitor pulseoximetry. * Consider: Apply cardiac monitor limb leads. * Obtain vital signs. * Normal mentation and temp less than 104° F: Heat exhaustion. Passive cooling. Treat specific complaints per protocol. * Altered mentation or temp greater than 104° F: Heat stroke. Active, rapid Cooling is indicated using ice, evaporation, and/or cold packs. Attempt to cool to 102 F. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Consider IO cool NS or LR. * Monitor closely for arrhythmias. Treat per protocol.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Consider assisting ALS with Capnography. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * Consider IV cool NS or LR. <ul style="list-style-type: none"> * <i>Adult</i>: 125 ml/hr. * <i>Pediatric</i>: 20 ml/kg may repeat once. 	

Citations: (NASEMSO Medical Directors Council, 2017)
 NEMSIS Protocol 9914027: Environmental - Heat Exposure / Heat Exhaustion

Heat Index Chart

Note: Heat exhaustion can occur in less than 30 min when heat index is above 103.

		Temperature (°F)															
		80	82	84	86	88	90	92	94	96	98	100	102	104	106	106	110
Relative Humidity (%)	40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
	45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
	50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
	55	81	84	86	89	93	97	101	106	112	117	124	130	137			
	60	82	84	88	91	95	100	105	110	116	123	129	137				
	65	82	85	89	93	98	103	108	114	121	128	136					
	70	83	86	90	95	100	105	112	119	126	134						
	75	84	88	92	97	103	109	116	124	132							
	80	84	89	94	100	106	113	121	129								
	85	85	90	96	102	110	117	126	135								
	90	86	91	98	105	113	122	131									
	95	86	93	100	108	117	127										
100	87	95	103	112	121	132											



Protocol 3-030 - Hypothermia

<p>EMR</p> <ul style="list-style-type: none"> * Remove from exposure. * Open and maintain Airway. * Be prepared to Suction Airway. * Pulseless: Refer to Protocol 6-025 - Cardiopulmonary Resuscitation (CPR) (page 78). * Dry and warm patient. * Remove constricting or wet clothing and jewelry. * Cover affected tissue with loose, dry, sterile dressing. * Obtain core body temperature, if able * Monitor pulseoximetry. * Consider: Apply cardiac monitor limb leads. * Consider: Apply Combo Pads. * Obtain vital signs. * Attempt to determine down-time, and history. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Consider IO warm NS. * Consider Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) (page 93). * Pulseless: V-Fib: <ul style="list-style-type: none"> * Defibrillation once. <ul style="list-style-type: none"> + Adult: 360 J (OR consider biphasic dose of 200 J). + Pediatric: 2 J/kg. * Core temp greater than 86 F: ACLS per protocol. Remember, Hypothermia patients require longer intervals between drugs due to slower absorption and metabolism rates. * Core temp less than 86 F: Compressions only. * Pain: Refer to Protocol 6-050 - Control of Pain (page 81). * Nausea: Refer to Protocol 6-040 - Control of Nausea (page 80).
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Consider assisting ALS with Capnography. * Pulseless: V-Fib: <ul style="list-style-type: none"> * Do not delay transport for rewarming. * Rapid transport to hospital. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * Consider IV warm NS. 	

Citations: (NASEMSO Medical Directors Council, 2017)

NEMSIS Protocol 9914031: Environmental - Hypothermia

Wind Chill Chart

Note: Frostbite can occur in less than 30 min when wind chill is below -17.

		Temperature (°F)										
		40	35	30	25	20	15	10	5	0	-5	-10
Wind Speed (MPH)	5	36	31	25	19	13	7	1	-5	-11	-16	-22
	10	34	27	21	15	9	3	-4	-10	-16	-22	-28
	15	32	25	19	13	6	0	-7	-13	-19	-26	-32
	20	30	24	17	11	4	-2	-9	-15	-22	-29	-35
	25	29	23	16	9	3	-4	-11	-17	-24	-31	-37
	30	28	22	15	8	1	-5	-12	-19	-26	-33	-39
	35	28	21	14	7	0	-7	-14	-21	-27	-34	-41
	40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43

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Part 4 - Medical Protocols

Protocol 4-010 - Abdominal Pain

<p>EMR</p> <ul style="list-style-type: none"> * Consider Oxygen if SpO₂ less than 88%. * Obtain vital signs. * Monitor pulseoximetry. * Apply cardiac monitor limb leads. * Identify possible causes. <ul style="list-style-type: none"> * <u>Emesis present</u>: Inspect for blood. * <u>Female</u>: Determine last menstrual cycle. * <u>Trauma cause</u>: Refer to Protocol 5-020 - Abdominal Trauma (page 65). 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Consider IO NS. * Refer to Protocol 6-050 - Control of Pain (page 81). <ul style="list-style-type: none"> * <u>Severe pain</u>: Consider Phenergan 12.5 mg IV/IO to potentiate narcotics. * <u>Nausea</u>: Refer to Protocol 6-040 - Control of Nausea (page 80). * <u>Bowel obstruction</u>: Consider stomach decompression. * <u>Esophageal obstruction</u>: Consider contacting MEDICAL CONTROL for Glucagon: <ul style="list-style-type: none"> * <u>Adult</u>: 1-2 mg IV/IO. * <u>Pediatric</u>: 0.02-0.03 mg/kg IV/IO.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Transport in position of comfort. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * Strongly assume abdominal discomfort may have cardiac causes. Consider 12-lead EKG. * Consider IV NS in AC (left is preferred) with pigtail extension with 18 ga or greater. * Monitor and treat for shock. 	
<p>Citations: (NASEMSO Medical Directors Council, 2017) NEMSIS Protocol 9914109: Medical - Abdominal Pain</p>	

Protocol 4-020 - Anaphylaxis

<p>EMR</p> <ul style="list-style-type: none"> * Remove allergen. * Obtain vital signs. * Oxygen to maintain SpO₂ at 100%. * Monitor pulseoximetry. * Consider: Apply cardiac monitor limb leads. * Identify possible causes. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Consider IO NS. <hr/> <ul style="list-style-type: none"> * <u>Adult</u>: <ul style="list-style-type: none"> * <u>Uncompensated shock</u>: Consider Epinephrine 1:10,000 0.1 mg IV/IO. Repeat every 15 min as needed. * Consider Benadryl 25-50 mg IV/IO/IM. * Consider Solu-Medrol 125 mg IV/IO. <hr/> <ul style="list-style-type: none"> * <u>Pediatric</u>: <ul style="list-style-type: none"> * Consider Benadryl 1 mg/kg IV/IO/IM (max 50 mg). * Consider Solu-Medrol 1-2 mg/kg IV/IO (max 125 mg).
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Assist ALS with Capnography. * If RN or Paramedic unavailable and difficulty breathing, trouble swallowing, or hypotensive: <ul style="list-style-type: none"> * Consider Epinephrine Auto-Injector. * ALS unit should be en route. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * Consider IV NS. <hr/> <ul style="list-style-type: none"> * <u>Adult</u>: <ul style="list-style-type: none"> * <u>Uncompensated shock</u>: Epinephrine 1:1,000 0.3-0.5 mg IM/SQ. * <u>Wheezing</u> or obstructed <u>ETCO₂</u> waveform: <ul style="list-style-type: none"> ✦ Consider Duoneb 3 ml Nebulized (max 1 dose). ✦ Consider Albuterol 2.5 mg Nebulized. ✦ Consider Xopenex 0.63-1.25 mg Nebulized. <hr/> <ul style="list-style-type: none"> * <u>Pediatric</u>: <ul style="list-style-type: none"> * Epinephrine 1:1,000 0.01 mg/kg IM/SQ (max 0.3 mg) repeat every 15 min as needed. * <u>Wheezing</u> or obstructed <u>ETCO₂</u> waveform: <ul style="list-style-type: none"> ✦ Consider Albuterol 2.5 mg Nebulized. ✦ <u>Greater than 6 yr old</u>: Consider Duoneb 1.5 ml Nebulized (max 1 dose). 	

Citations: (Citizens Memorial Hospital, 2014), (NASEMSO Medical Directors Council, 2017)
 NEMSIS Protocol 9914111: Medical - Allergic Reaction / Anaphylaxis



Protocol 4-030 - Asthma

<p>EMR</p> <ul style="list-style-type: none"> * Oxygen to maintain SpO₂ between 88-92%. * Monitor pulseoximetry. * Apply cardiac monitor limb leads. * Obtain vital signs. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Consider IO NS.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Assist ALS with Capnography. 	<p>* <i>Adult:</i></p> <ul style="list-style-type: none"> * Consider Decadron 16 mg Nebulized * Consider Solu-Medrol 125 mg IV/IO. * Consider contacting MEDICAL CONTROL for Magnesium Sulfate 1-2 g IV/IO over 15-20 min.
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * Consider IV NS in AC (left is preferred) with pigtail extension with 18 ga or greater. * <i>Adult:</i> <ul style="list-style-type: none"> * Consider Duoneb 3 ml Nebulized (max 1 dose). * Consider Albuterol 2.5 mg in NS 3 ml Nebulized. * <u>HR greater than 110</u>: Consider Xopenex 0.63-1.25 mg Nebulized. * Consider Epinephrine 1:1,000 0.3-0.5 mg IM/SQ. Caution when greater than 55 yr old with cardiac history. * Consider assisting ALS with a trial of CPAP. * <i>Pediatric:</i> <ul style="list-style-type: none"> * Consider Duoneb 1.5 ml Nebulized (max 1 dose). * Consider Albuterol 2.5mg in NS 3 ml Nebulized. * <u>Greater than 6 yr old</u>: Consider Xopenex 0.31-0.63 mg Nebulized. 	<p>* <i>Pediatric:</i></p> <ul style="list-style-type: none"> * Consider contacting MEDICAL CONTROL: <ul style="list-style-type: none"> + Consider Decadron 4-8 mg Nebulized + Consider Solu-Medrol 1-2 mg/kg IV/IO. + Consider Magnesium Sulfate 25-50 mg/kg IV/IO in D5W over 15-20 min. * Consider Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) (page 93) only as a last resort.

Citations: (NASEMSO Medical Directors Council, 2017)
 NEMSIS Protocol 9914139: Respiratory Distress / Asthma / COPD / Croup / Reactive Airway



Protocol 4-040 - Behavioral

<p>EMR</p> <ul style="list-style-type: none"> * Ensure scene safety and consider law enforcement for Physical Restraint if necessary. * Verbal de-escalation. Stay calm and calm the patient. * Identify possible causes. Obtain history of current event, crisis, toxic exposure, drugs, ETOH, suicidal, or homicidal. * ALOC: Treat per appropriate protocol. * Provide emotional support: <ul style="list-style-type: none"> * Help meet basic needs. * Provide simple, clear, and accurate information. * Listen with compassion. * Be friendly and calm. * Provide support and “presence.” 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * <u>Mild (responds to verbal de-escalation):</u> <ul style="list-style-type: none"> * Consider Versed 1 mg IV/IM. * <u>Adult</u>: Consider Haldol 2-5 mg IV/IM. * Transport in position of comfort. * <u>Moderate to severe (requires Restraint for crew/patient safety):</u> <ul style="list-style-type: none"> * Contact MEDICAL CONTROL after sedation if chemical or physical restraints are used. * <u>Adult</u>: <ul style="list-style-type: none"> + Physical Restraint <ul style="list-style-type: none"> ✗ Restraints include BOTH chemical and physical restraints; not one or the other. ✗ Least restrictive: Manual Restraint OR Four-Point soft Restraint. ✗ If handcuffed by law enforcement, they must be present throughout entire transport. + Consider Versed 5 mg IV/IM/IN. + Consider Haldol 2-5 mg IV/IO. + Consider Haldol 10 mg IM. + Consider Benadryl 50 mg IV/IM. + Consider Ketamine 1-2 mg/kg IV/IO. If greater than 65 yr old, half dose. + Consider Ketamine 4-5 mg/kg IM. If greater than 65 yr old, half dose. * <u>Pediatric</u>: <ul style="list-style-type: none"> + Consider Versed 0.05-0.1 mg/kg IV. + Consider Versed 0.1-0.15 mg/kg IM. + Consider Versed 0.3 mg/kg IN. + Consider Benadryl 1 mg/kg IV/IM. + Consider Ketamine 1 mg/kg IV. + Consider Ketamine 3 mg/kg IM. + <u>If over 6 years old</u>: Consider Haldol 1-3 mg IM. * Monitor waveform Capnography. * Transport in position of safety. * <u>If Haldol given</u>: Obtain 12-Lead EKG, if able. Assess QT.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Consider performing Glucose check. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. 	

Citations: (Citizens Memorial Hospital, 2012), (Missouri Department of Mental Health, 2013), (NASEMSO Medical Directors Council, 2017), (Taney County Ambulance District, 2014)

NEMSIS Protocol 9914053: General - Behavioral / Patient Restraint

Protocol 4-050 - Cerebrovascular Accident (CVA) or Stroke

<p>EMD</p> <ul style="list-style-type: none"> * MPDS Protocol 18 (Headache) and Protocol 28 (Stroke) - Stroke time window: Time window set by medical control is 12 hours. Greater than 12 hours since the patient was last seen normal is usually outside the therapeutic window. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Consider IO NS. * Obtain 12-Lead EKG. * Do not treat hypertension. * Ensure accurate patient weight is obtained upon arrival at the ER, if able.
<p>EMR</p> <ul style="list-style-type: none"> * Complete Section 4-051 - CMH EMS Stroke Assessment Tool (page 44). * Oxygen to maintain SpO₂ between 94-99%. * Monitor pulseoximetry. * Apply cardiac monitor limb leads. * Obtain vital signs, including temperature, if able. * Elevate Head of cot. 	
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Perform Glucose check. <ul style="list-style-type: none"> * Glucose less than 60 mg/dl: Refer to Protocol 4-120 - Hypoglycemia (page 56). * Obtain and record contact information for family and/or witness. <u>If transporting by aircraft</u>: Contact receiving facility with this information. * Assist patient to walk to the cot to assess gait. * Transport according to * Section 4-053 - Stroke Destination Determination Flowchart (page 47). Repeat neuro assessment and document every 15 min. * Target scene time of 10 minutes or less. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * IV NS (18 ga in left AC is preferred). Avoid multiple IV attempts. Two IVs are preferred. 	
<p>Citations: (Chapter 190 - Emergency services, 2012), (Designated hospitals, n.d.), (NASEMSO Medical Directors Council, 2017), (NIH stroke scale international, 2003), (Proposed regulations, 2010), (University of Kansas Hospital) NEMSIS Protocol 9914145: Medical - Stroke / TIA</p>	

Section 4-051 - CMH EMS Stroke Assessment Tool

Score only first attempt. Do not coach. Do not go back and re-score.

	Question	Answer	NIH	RACE Right	RACE Left
	Cincinnati Stroke Scale: Facial droop, arm drift, or speech problems?	No	Transport to any ER		
		Yes	Go to question 2.		
	When last seen normal (at arrival at stroke center)? Patient age ?	Greater than 12 hours OR Greater than 89 years old	Transport to any ER		
		8-12 hours and less than 90 years old	Complete all questions below		
		4-8 hours and less than 90 years old (class 2 stroke)			
		0-4 hours and less than 90 years old (class 1 stroke)			
1A	Level of consciousness?	Alert (A)	0		
		Drowsy (V)	1		
		Stuporous (P)	2		
		Coma (U)	3		
1B	Ask patient what month it is. Ask patient what their age is.	Both answers correct	0		
		Only one answer correct	1		
		Neither answer correct	2		
1C	Upon verbal command: • Patient open and close eyes ? • Patient grip and release hand ?	Both tasks complete	0	0	0
		Only one task complete	1	1	1
		Neither task complete	2	2	2
2	Patient follow your finger horizontally with their eyes?	Normal	0	0	0
		Only one direction	1	1	1
		Neither direction	2	2	2
3	Patient see all four quadrants peripherally (one eye at a time)?	No loss	0		
		One eye with loss	1		
		Both eyes with loss on same side	2		
		Both eyes with loss on both sides	3		
4	After demonstration: • Patient show teeth ? • Patient raise eyebrows ? • Patient close eyes tightly ?	Normal	0		
		Minor paralysis	1		
		Lower paralysis only	2		
		Complete paralysis	3		
5	Unaffected side arm drift: Palm down, 90 degrees for 10 seconds. If ataxic due to weakness, give zero (0) points.	No drift	0		
		Drift or jerky	1		
		Some effort but falls	2		
		No effort	3		
		No movement	4		
5	Affected side arm drift: Palm down, 90 degrees for 10 seconds. If ataxic due to weakness, give zero (0) points.	No drift	0	0	0
		Drift or jerky	1	0	0
		Some effort but falls	2	1	1
		No effort	3	2	2
		No movement	4	2	2



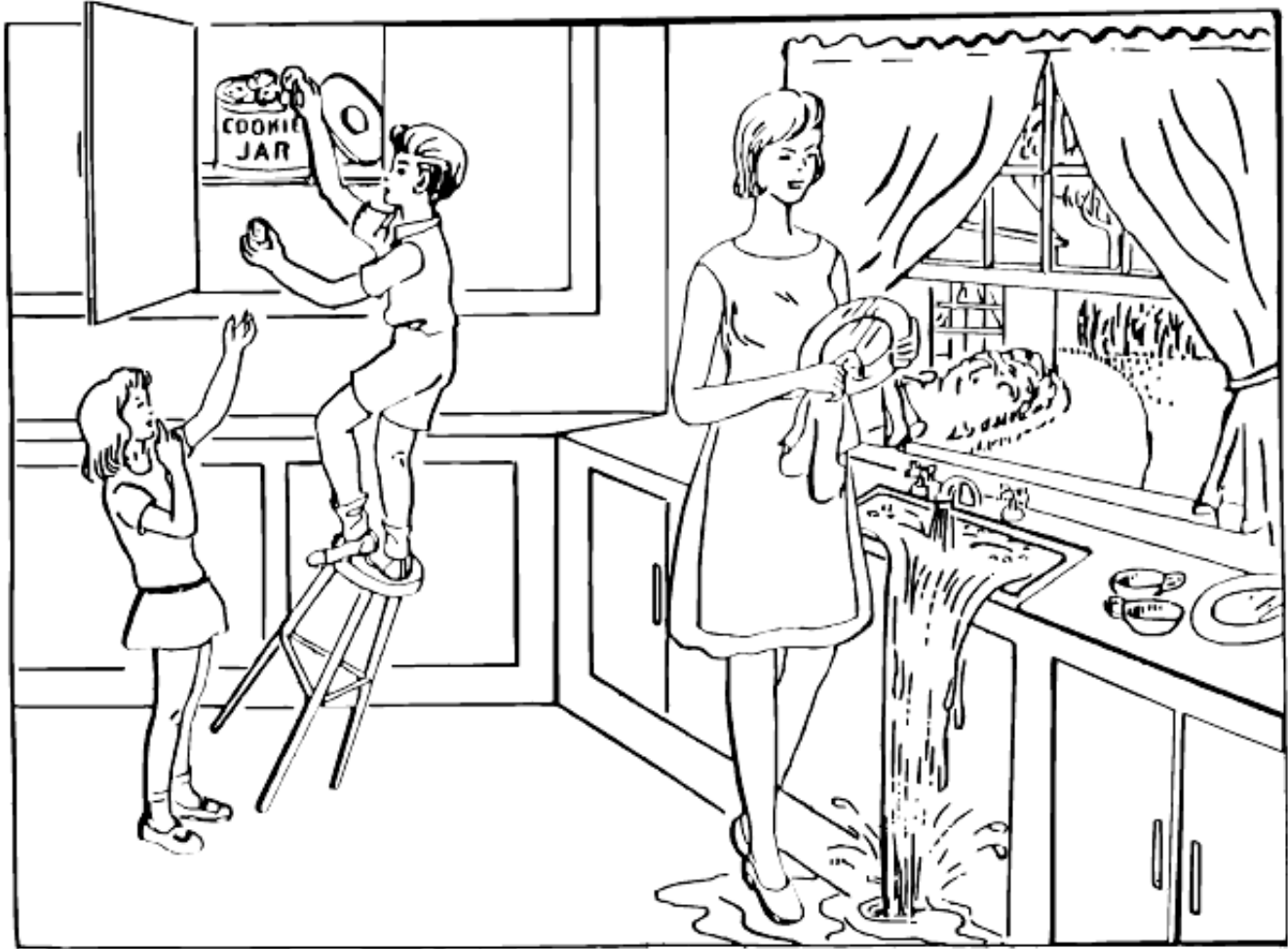
	Question	Answer	NIH	RACE Right	RACE Left
6	Unaffected side leg drift: 30 degrees for 10 seconds. If ataxic due to weakness, give zero (0) points.	No drift	0		
		Drift or jerky	1		
		Some effort but falls	2		
		No effort	3		
		No movement	4		
6	Affected side leg drift: 30 degrees for 10 seconds. If ataxic due to weakness, give zero (0) points.	No drift	0	0	0
		Drift or jerky	1	0	0
		Some effort but falls	2	1	1
		No effort	3	2	2
		No movement	4	2	2
7	Test unaffected side first: <ul style="list-style-type: none"> • Can patient touch nose with finger? • Can patient slide heel against other shin? 	Able to complete	0		
		Unable in one limb	1		
		Unable in multiple limbs	2		
8	Can patient feel pinprick to face, arms, trunk, and legs?	Normal	0		
		Mild to moderate loss	1		
		Severe loss	2		
9	Measure the best response: <ul style="list-style-type: none"> • “What is your name?” • “Describe what you see in the picture?” • “Read the sentences.” 	No aphasia	0	0	
		Mild to moderate aphasia	1	1	
		Severe aphasia	2	2	
		Mute or global aphasia	3	2	
10	Repeat the following words: <ul style="list-style-type: none"> • “Mama” • “Tip-Top” • “Fifty-Fifty” • “Thanks” • “Huckleberry” • “Baseball Player” 	Normal articulation	0		
		Mild to moderate dysarthria	1		
		Severe dysarthria	2		
11	“Whose arm is this (showing affected arm)?” “Can you move this arm?”	No neglect	0		0
		Not recognized OR unable to move	1		1
		Not recognized AND unable to move	2		2
Total each column on the right:					
	All three columns are zero?	Transport to any ER.	=0	=0	=0
	Either RACE column greater than four OR NIH greater than 21?	Transport to LEVEL 1 stroke center	>6	>4	>4
	All other values	Transport to closest stroke center	>0	1-4	1-4

Definitions:

- * **Aphasia:** Loss of ability to understand or express speech.
- * **Apraxia:** Inability to carry out familiar tasks.
- * **Ataxia:** Loss of full control of bodily movements.
- * **Dysarthria:** Difficult or unclear articulation of speech.
- * **Dysphagia:** Difficulty in swallowing.
- * **Dysphasia:** Difficulty in the generation of speech or its comprehension.
- * **Hemiparesis:** Weakness on one side of the body.
- * **Hemiplegia:** Paralysis on one side of the body.



Section 4-052 - NIH Stroke Scale Images



You know how.

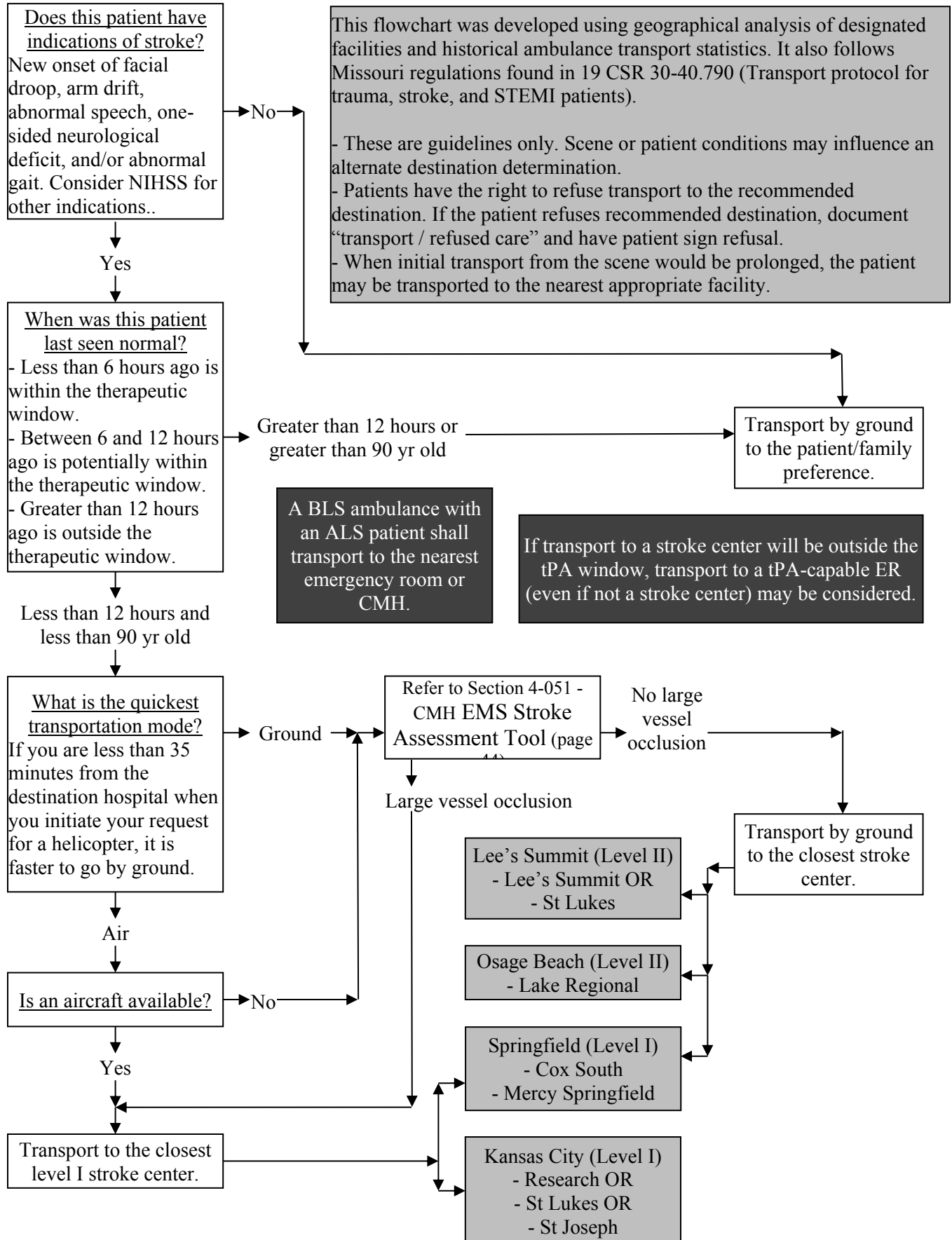
Down to earth.

I got home from work.

Near the table in the dining room.

They heard him speak on the radio last night.

Section 4-053 - Stroke Destination Determination Flowchart



This flowchart was developed using geographical analysis of designated facilities and historical ambulance transport statistics. It also follows Missouri regulations found in 19 CSR 30-40.790 (Transport protocol for trauma, stroke, and STEMI patients).

- These are guidelines only. Scene or patient conditions may influence an alternate destination determination.
- Patients have the right to refuse transport to the recommended destination. If the patient refuses recommended destination, document "transport / refused care" and have patient sign refusal.
- When initial transport from the scene would be prolonged, the patient may be transported to the nearest appropriate facility.

A BLS ambulance with an ALS patient shall transport to the nearest emergency room or CMH.

If transport to a stroke center will be outside the tPA window, transport to a tPA-capable ER (even if not a stroke center) may be considered.



Protocol 4-060 - Chronic Obstructive Pulmonary Disease (COPD)

<p>EMR</p> <ul style="list-style-type: none">* Oxygen to maintain SpO₂ between 88-92%.* Monitor pulseoximetry.* Apply cardiac monitor limb leads.* Obtain vital signs.	<p>RN Medic</p> <ul style="list-style-type: none">* Ensure completion of all applicable BLS items on the left.* Consider Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) (page 93).* Consider IO NS.* Consider 12-Lead EKG.* Adult:<ul style="list-style-type: none">* Consider Solu-Medrol 125 mg IV/IO.* Consider contacting MEDICAL CONTROL for Magnesium Sulfate 1-2 g IV/IO over 15-20 min.
<p>EMT</p> <ul style="list-style-type: none">* Ensure completion of applicable EMR items above.* Assist ALS with Capnography.	
<p>AEMT</p> <ul style="list-style-type: none">* Ensure completion of applicable EMT items above.* Consider IV NS in AC (left is preferred) with pigtail extension with 18 ga or greater.* Adult:<ul style="list-style-type: none">* Consider Duoneb 3 ml Nebulized (max 1 dose).* Consider Albuterol 2.5 mg in NS 3 ml Nebulized. Repeat continuously as needed.* Consider Xopenex 0.63-1.25 mg Nebulized.	

Citations:
NEMSIS Protocol 9914139: Medical - Respiratory Distress / Asthma / COPD / Reactive Airway



Protocol 4-070 - Congestive Heart Failure (CHF)

<p>EMR</p> <ul style="list-style-type: none">* Oxygen to maintain SpO₂ between 94-99%.* Monitor pulseoximetry.* Apply cardiac monitor limb leads.* Obtain vital signs.* Elevate Head of cot.	<p>RN Medic</p> <ul style="list-style-type: none">* Ensure completion of all applicable BLS items on the left.* Consider Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) (page 93).* Consider IO Saline LOCK.* Obtain 12-Lead EKG.<ul style="list-style-type: none">* Consider 15-Lead EKG.
<p>EMT</p> <ul style="list-style-type: none">* Ensure completion of applicable EMR items above.* Assist ALS with Capnography.* <u>Adult</u>: Consider assisting ALS with CPAP.	<ul style="list-style-type: none">* <u>Adult</u>:<ul style="list-style-type: none">* <u>SBP greater than 110</u>:<ul style="list-style-type: none">✚ Consider Captopril 25 mg SL.✚ Consider Nitroglycerin 0.4-0.8 mg SL every 3-5 min until no dyspnea or SBP less than 90. Contraindicated if phosphodiesterase inhibitor within 48 hours.* <u>SBP less than 110</u>:<ul style="list-style-type: none">✚ Consider Captopril 12.5 mg SL.✚ Consider Dopamine 5-15 mcg/kg/min.✚ Consider Nitroglycerin 60+ mcg/min titrate to SBP greater than 90 and dyspnea.
<p>AEMT</p> <ul style="list-style-type: none">* Ensure completion of applicable EMT items above.* Consider IV Saline LOCK in AC (left is preferred) with pigtail extension with 18 ga or greater.* <u>Adult</u>: Wheezing or obstructed ETCO₂ waveform:<ul style="list-style-type: none">* Consider Duoneb 3 ml Nebulized (max 1 dose).* Consider Albuterol 2.5 mg in NS 3 ml Nebulized.* Consider Xopenex 0.63-1.25 mg Nebulized.* <u>Pediatric</u>: Wheezing or obstructed ETCO₂ waveform:<ul style="list-style-type: none">* Consider Duoneb 1.5 ml Nebulized (max 1 dose).* Consider Albuterol 2.5 mg in NS 3 ml Nebulized.* <u>Greater than 6 yr old</u>: Consider Xopenex 0.31-0.63 mg Nebulized.	
<p>Citations: (Mercy EMS, 2013), (NASEMSO Medical Directors Council, 2017) NEMSIS Protocol 9914137: Pulmonary Edema / CHF</p>	

Protocol 4-080 - Croup

<p>EMR</p> <ul style="list-style-type: none"> * Oxygen to maintain SpO₂ between 88-92%. * Monitor pulseoximetry. * Consider moving patient to a cold air environment. * Consider applying cardiac monitor limb leads. * Obtain vital signs. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Consider Decadron Nebulized: <ul style="list-style-type: none"> * <i>Adult</i>: 16 mg * <i>Pediatric</i>: 8 mg * <i>Infant</i>: 4 mg * Consider Racemic Epinephrine 0.5 ml with 3 ml NS Nebulized. * In the absence of Racemic Epinephrine, Epinephrine 1:1,000 may be used 0.5 ml/kg (max 5 ml) Nebulized.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Assist ALS with Capnography, if able. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. 	

<p>Citations: (NASEMSO Medical Directors Council, 2017)</p>
<p>NEMSIS Protocol 9914223: Medical - Respiratory Distress - Croup</p>



Protocol 4-090 - Childbirth

<p>EMD</p> <ul style="list-style-type: none"> * MPDS Protocol 24 (Pregnancy) - High risk complications: The following conditions indicate a high-risk pregnancy or childbirth: <ul style="list-style-type: none"> * Premature birth, multiple birth, bleeding disorder, placenta abruption, placenta previa, breech, prolapsed cord, OR unknown/ignored pregnancy. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left.
<p>EMR</p> <ul style="list-style-type: none"> * Consider Oxygen if SpO₂ less than 88%. * Inspect for active bleeding / crowning. Determine amount of blood loss. * Monitor pulseoximetry. * Apply cardiac monitor limb leads. * Obtain vital signs. * Crowning: Stop transport and Deliver infant. Both crew members should be available during delivery. <ul style="list-style-type: none"> * Consider cleaning Vaginal area prior to birth. * Inspect for prolapsed cord. <ul style="list-style-type: none"> + Breech: Deliver as best you can (see below). + No complications: <ul style="list-style-type: none"> * Provide peritoneal pressure during delivery to prevent tearing. * Check for cord around neck as soon as head is delivered and slip it over the head if found. * Guide head down to facilitate delivery of anterior shoulder and then up to facilitate delivery of posterior shoulder. * Only Suction Airway if infant is in distress. * Dry, warm, and stimulate. Do not routinely suction. * Place infant skin-to-skin with mother while she breastfeeds, if possible. * Clamp and cut cord halfway between mother and infant after 1-3 min. Only clamp cord if full-term gestation baby. <u>If resuscitation is needed:</u> Clamp and cut cord as soon as possible and refer to Protocol 4-130 - Neonatal Resuscitation (page 57). * Assess Section 4-091 - Newborn Assessment (page 52) at 1 min. * Expect placenta within 5-15 min and transport it with patients. * Fundal massage. + Prolapsed cord: <ul style="list-style-type: none"> * Place mother on hands and knees. * Do not handle cord. Cover it with moist dressing. * Protect cord from compression with fingers. * Rapid transport to nearest hospital with OB department. * Refer to Section 4-091 - Newborn Assessment (page 52) at 5 min intervals. 	<ul style="list-style-type: none"> * Consider IO LR titrated to blood pressure. * Treat any problems per appropriate protocol.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * IV LR titrated to blood pressure. 	

Citations: (NASEMSO Medical Directors Council, 2017)
 NEMSIS Protocol 9914155: OB/GYN - Childbirth / Labor / Delivery



Section 4-091 - Newborn Assessment

APGAR Scoring System:

Activity (muscle tone)	Absent	0
	Arms and legs flexed	1
	Active movements	2
Pulse	Absent	0
	Below 100 bpm	1
	Over 100 bpm	2
Grimace (reflex irritability)	Flaccid	0
	Some flexion of extremities	1
	Active motion (sneeze, cough, pull away)	2
Appearance (skin color)	Blue, pale	0
	Body pink, extremities blue	1
	Completely pink	2
Respiration	Absent	0
	Slow, irregular	1
	Vigorous cry	2

Total 0-3: Severely depressed.

Total 4-6: Moderately depressed.

Total 7-10: Excellent condition.

Targeted pre-ductal SpO₂ after birth:

Time after birth	Target SpO ₂
1 min	60-65%
2 min	65-70%
3 min	70-75%
4 min	75-80%
5 min	80-85%
10 min	85-95%

Protocol 4-100 - Fever

<p>EMR</p> <ul style="list-style-type: none"> * Consider Oxygen if SpO₂ less than 88%. * Remove excess clothing / blankets. * Monitor pulseoximetry. * Consider: Apply cardiac monitor limb leads. * Obtain vital signs. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Consider IO NS. * <u>Fever greater than 102 F: Begin cooling.</u> * <u>Adult:</u> <ul style="list-style-type: none"> + Acetaminophen <u>NOT</u> given within 4 hrs: Consider Acetaminophen 325-650 mg PO. + Acetaminophen <u>given</u> within 4 hrs: Consider Ibuprofen 200-400 mg PO. * <u>Pediatric:</u> <ul style="list-style-type: none"> + Acetaminophen <u>NOT</u> given within 4 hrs: Consider Acetaminophen Elixir 15 mg/kg PO. + Acetaminophen <u>given</u> within 4 hrs: Consider Ibuprofen Elixir 10 mg/kg PO.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Consider assisting ALS with Capnography. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * Consider IV NS. 	

<p><u>Citations:</u></p>
<p>NEMSIS Protocol 9914061: General - Fever</p>



Protocol 4-110 - Hypertension

<p>EMR</p> <ul style="list-style-type: none"> * Calm and reassure the patient. * Identify possible causes. * Consider Oxygen if SpO₂ less than 88%. * Monitor pulseoximetry. * Apply cardiac monitor limb leads. * Obtain vital signs. * Obtain and compare blood pressures in both arms. * Dim lights. Avoid loud noises and rough transport. * Transport with Head slightly elevated. * Pregnant: <ul style="list-style-type: none"> * Inspect for active bleeding / crowning. Determine amount of blood loss. * Consider transport in left lateral recumbent position to reduce risk of Vena Cava compression. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Consider IO NS. * Diastolic greater than 115 with Nausea, ALOC, blurred vision, Headache, or Chest Pain: Contact MEDICAL CONTROL for: <ul style="list-style-type: none"> * Adult: <ul style="list-style-type: none"> + Consider Labetalol 20 mg over 2 min IV/IO. + Consider Hydralazine 10-20 mg IV/IO/IM. + Consider Nitroglycerin sublingual. + Consider Nitroglycerin drip IV/IO. * Pediatric: <ul style="list-style-type: none"> + Consider Labetalol 0.4-1 mg/kg/hr IV/IO. + Consider Hydralazine 0.1-0.2 mg/kg (max 20 mg) IV/IO/IM. * Pregnant (20-week gestation through 4-weeks post-partum): <ul style="list-style-type: none"> * Actively seizing: Magnesium Sulfate 4 g IM/IV/IO (IV/IO over 5 min) and refer to Protocol 4-170 - Seizures (page 62). * Consider contacting MEDICAL CONTROL for: <ul style="list-style-type: none"> + Magnesium Sulfate 4-6 g IV/IO over 20 min or 2 g/hr. + OR Labetalol 20 mg IV/IO over 2 min. + OR Hydralazine 5-20 mg IV/IO/IM. * Do not reduce Mean Arterial Pressure (MAP) lower than 20% of the original. <ul style="list-style-type: none"> * $(MAP) = (Diastolic) + \frac{(Systolic) - (Diastolic)}{3}$
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * IV NS. 	

Citations: (Cox Paramedics, 2014), (NASEMSO Medical Directors Council, 2017)

NEMSIS Protocol 9914123: Medical - Hypertension

Protocol 4-115 - Hyperglycemia

<p>EMR</p> <ul style="list-style-type: none"> * Identify possible causes. * Consider Oxygen if SpO₂ less than 88%. * Monitor pulseoximetry. * Consider: Consider cardiac monitor limb leads. * Obtain vital signs. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Perform Glucose check. <ul style="list-style-type: none"> * Refer to Section 8-120 - Glucometer (page 189) for blood sugar critical levels. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * Consider IV NS. * Glucose greater than 250 mg/dl and symptomatic: <ul style="list-style-type: none"> * <i>Adult:</i> <ul style="list-style-type: none"> + NS 1 L IV/IO. * <i>Pediatric:</i> <ul style="list-style-type: none"> + NS 10 ml/kg IV/IO. May repeat up to 40 ml/kg after reassessment. 	

Citations: (National Association of State EMS Officials, 2014), (NASEMSO Medical Directors Council, 2017)
 NEMSIS Protocol 9914121: Medical - Hyperglycemia



Protocol 4-120 - Hypoglycemia

<p>EMR</p> <ul style="list-style-type: none"> * Identify possible causes. * Consider Oxygen if SpO₂ less than 88%. * Monitor pulseoximetry. * Consider: Consider cardiac monitor limb leads. * Obtain vital signs. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Consider IO NS.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Perform Glucose check. <ul style="list-style-type: none"> * Refer to Section 8-120 - Glucometer (page 189) for blood sugar critical levels. * Glucose less than 60 mg/dl: Conscious and able to swallow: ORAL Glucose 15 g PO. * Have patient eat after treatment, if no transport. 	<ul style="list-style-type: none"> * Adult: Glucose less than 60 mg/dl: <ul style="list-style-type: none"> * Consider Thiamine 100 mg IM. If given IV, infuse in NS over 30 min. * Contact MEDICAL CONTROL prior to PRC if: <ul style="list-style-type: none"> * IO inserted (should not be PRC'd).
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * Consider IV NS. * Adult: Glucose less than 60 mg/dl and symptomatic: <ul style="list-style-type: none"> * Dextrose 25 g IV. * If unable to obtain IV: Consider Glucagon 1 mg IM/SQ/IN. * Pediatric: Glucose less than 30 mg/dl and symptomatic: <ul style="list-style-type: none"> * Dextrose 0.5-1 g/kg IV/IO (repeat as needed). * If unable to obtain IV: <ul style="list-style-type: none"> + Greater than 20 kg or greater than 5 yr old: Consider Glucagon 1 mg IM/SQ/IN. + Less than 20 kg or less than 5 yr old: Consider Glucagon 0.5 mg IM/SQ/IN. * Neonate: Glucose less than 30 mg/dl: Dextrose 0.5-1 g/kg IV/IO (repeat as needed). * Contact MEDICAL CONTROL prior to PRC if: <ul style="list-style-type: none"> * IV access has been performed. * Oral hypoglycemic in patient med list. * Long acting insulin in patient med list. * Treated with Glucagon. * Unknown cause of hypoglycemia. 	

Citations: (NASEMSO Medical Directors Council, 2017)
 NEMSIS Protocol 9914125: Medical - Hypoglycemia / Diabetic Emergency



Protocol 4-130 - Neonatal Resuscitation

EMR

- * Confirm ABCs.
- * Clamp and cut umbilical cord immediately. If no resuscitation is required: Wait 60 sec to clamp and cut cord and refer to **Protocol 4-090 - Childbirth** (page 51).
- * Establish and maintain Airway.
- * **Suction** thoroughly.
- * HR less than 100: BVM with room air at 40-60 breaths per minute. If no improvement after 90 sec: BVM with 100% **Oxygen**.
- * HR less than 60: Chest **compressions** at 120/min. Ratio is 3:1.
- * Use **BVM** on room air unless you suspect hypoxic event. Maintain SpO₂ according to chart below.
 - * Targeted Pre-Ductal SpO₂ After **Birth**:
 - + 1 min = 60-65%
 - + 2 min = 65-70%
 - + 3 min = 70-75%
 - + 4 min = 75-80%
 - + 5 min = 80-85%
 - + 10 min = 85-95%
- * Apply **cardiac monitor** limb leads.
- * Monitor pulseoximetry.
- * Maintain warmth of infant.

EMT

- * Ensure completion of applicable EMR items above.
- * Consider assisting ALS with **Capnography**.
- * Perform **Glucose check**.
 - * Glucose less than 30 mg/dl: Refer to **Protocol 4-120 - Hypoglycemia** (page 56).

AEMT

- * Ensure completion of applicable EMT items above.
- * Consider **IV NS** 20 ml/kg.
- * Consider **Narcan** 0.1 mg/kg **IV/IN/IM/SQ/ET**.

RN Medic

- * Ensure completion of all applicable BLS items on the left.
- * Consider **IO Saline lock**.
- * Meconium present AND infant in distress: **Laryngoscopy** and **Suction** trachea with **ET tube**.
- * No Meconium present AND infant in distress: **Suction** mouth then nose with **Meconium Aspirator** or bulb syringe.
- * Position on back.
- * Open Airway.
- * **Stimulate**. Dry with clean towel.
- * No vigorous response: **Intubate**.

Gestational age (weeks)	ET Size	Depth
less than 28	2.5	6-7
28-34	3.0	7-8
34-38	3.5	8-9
greater than 38	4.0	9-10

- * **Meconium**: Prolonged positive pressure **ventilation** at 40-60/min.
- * HR remains less than 80 despite BVM and Chest compressions:
 - * **Epinephrine 1:10,000** 0.01-0.03 mg/kg **IV/IO**.
 - + OR **Epinephrine 1:10,000** 0.05-0.1 mg/kg **ET**.
 - * No response:
 - + **Epinephrine 1:1,000** 0.05-0.1 mg/kg **ET**.

Citations: (Bloom, 2006), (NASEMSO Medical Directors Council, 2017)
 NEMSIS Protocol 9914133: Medical - Newborn / Neonatal Resuscitation

Protocol 4-140 - Poisoning or Overdose

EMD

- * Dispatch a non-dedicated standby ambulance to all hazmat releases where emergency response is required by other agencies.

EMR

- * Consider hazmat and **DECON**. Refer to [Protocol 6-055 - Decontamination](#) (page 82).
- * Identify possible causes.
- * Identify substance.
- * Consider **Oxygen** 100%.
 - * **Paraquat Poisoning**: Only administer **Oxygen** if SpO₂ less than 88%.
- * Monitor pulseoximetry.
- * Apply **cardiac monitor** limb leads.
- * Obtain vital signs.

EMT

- * Consider hazmat and **DECON**. Refer to [Protocol 6-055 - Decontamination](#) (page 82).
- * Ensure completion of applicable EMR items above.
- * Consider assisting ALS with **Capnography**.
- * Perform **Glucose check**.
 - * **Glucose** less than 60 mg/dl: Refer to [Protocol 4-120 - Hypoglycemia](#) (page 56).
- * **Narcotic Overdose with respiratory depression and unable to ventilate**:
 - * **Adult**: **Narcan** 0.2-0.4 mg (repeat as needed) to maintain Airway, SpO₂, and **ETCO₂ IN**.
 - * **Pediatric**: **Narcan** 0.1 mg/kg **IN** (repeat as needed).

AEMT

- * Consider hazmat and **DECON**. Refer to [Protocol 6-055 - Decontamination](#) (page 82).
- * Ensure completion of applicable EMT items above.
- * Consider **IV NS**.
- * **Narcotic Overdose with respiratory depression and unable to ventilate**: **Narcan IV/IN/IM/SQ** same doses as EMT.

Poisoning / Overdose Continued:

RN Medic

- * Consider hazmat and **DECON**. Refer to **Protocol 6-055 - Decontamination** (page 82).
- * Ensure completion of all applicable BLS items on the left.
- * Contact **POISON CONTROL: 888-268-4195**.
- * If patient can protect their Airway: Consider contacting **MEDICAL CONTROL** for **Activated Charcoal** 0.5-1 g/kg PO.
- * Consider **IO NS**. If suspected intentional Poisoning or Overdose: Mandatory **ALS patient** and pre-hospital **IV or IO access** is required.
- * Consider **Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)** (page 93).
- * Acetylcholinesterase Inhibitor Exposure (i.e. Organophosphate):
 - * **Atropine** repeated until dry secretions. Likely to exceed 20 mg and may be as much as 2,000 mg.
 - + **Adult**: 1-2+ mg **IV/IO**. If **Intubation** needed: 6 mg **IV/IO**.
 - + **Pediatric**: 0.02-0.05 mg/kg **IV/IO**.
 - * Seizing: Refer to **Protocol 4-170 - Seizures** (page 62).
- * Beta-Blocker Overdose:
 - * Consider contacting **MEDICAL CONTROL** for:
 - + **Adult**: **Glucagon** 2-5 mg **IV/IO**. Repeat at 10 mg if **Bradycardia** and hypotension recur.
 - + **Pediatric (25-40 kg)**: **Glucagon** 1 mg **IV/IO** (max 20 mg/kg or 1 g).
 - + **Pediatric (less than 25 kg)**: **Glucagon** 0.5 mg **IV/IO** (max 20 mg/kg or 1 g).
 - * Refer to **Protocol 2-040 - Bradycardia** (page 20).
- * Calcium channel blocker Overdose: **Adult**: Consider contacting **MEDICAL CONTROL** for **Calcium Chloride** 50 mg/min (max 1 g).
- * Caustic Substance Ingestion:
 - * Consider contacting **MEDICAL CONTROL** for **Water** or **Milk** ingestion within a few minutes immediately after ingestion.
 - + **Adult**: Max 8 oz.
 - + **Pediatric**: Max 4 oz.
- * Fluorine or Hydrofluoric Acid Contact: **Calcium Chloride** and **KY Jelly Mixture** applied to exposed contact area.
- * Illegal drug Overdose with excited delirium (i.e. Bath Salts): Refer to **Protocol 4-040 - Behavioral** (page 42).
- * Monoamine Oxidase Inhibitor (MAOI) Overdose:
 - * **Hyperthermia**: Contact **MEDICAL CONTROL** for **Versed** 0.1 mg/kg in 2 mg increments slow **IV** (max 5 mg). Half dose if over 69 yr old.
- * Narcotic Overdose: **Narcan IV/IO/IN/IM/SQ** same doses as EMT.
- * Selective Serotonin Reuptake Inhibitor (SSRI) Overdose:
 - * Aggressively control **hyperthermia** with cooling measures.
 - * **Hypotension**: **NS IV/IO** 20 ml/kg.
 - * Contact **MEDICAL CONTROL**.
- * Tricyclic Antidepressant Overdose:
 - * **Hypotension**: **NS IV/IO** 20 ml/kg.
 - * **QRS greater than 100**: Contact **MEDICAL CONTROL** for **Sodium Bicarbonate** 1-2 mEq/kg **IV**. Repeat as necessary to narrow QRS and improve BP.

Citations: (Citizens Memorial Hospital, 2014), (Clarke, Dargan, & Jones, 2005), (Cyanokit, 2012), (NASEMSO Medical Directors Council, 2017)

NEMSIS Protocol 9914135: General - Overdose / Poisoning / Toxic Ingestion

Protocol 4-160 - Pre-Term Labor

<p>EMR</p> <ul style="list-style-type: none">* Consider Oxygen if SpO₂ less than 88%.* Inspect for active bleeding / crowning.* Determine amount of blood loss.* Monitor pulseoximetry.* Consider applying cardiac monitor limb leads.* Obtain vital signs.* Consider orthostatic vital signs.* Consider transport in left lateral recumbent position to reduce risk of Vena Cava compression.	<p>RN Medic</p> <ul style="list-style-type: none">* Ensure completion of all applicable BLS items on the left.* Consider IO NS.
<p>EMT</p> <ul style="list-style-type: none">* Ensure completion of applicable EMR items above.	
<p>AEMT</p> <ul style="list-style-type: none">* Ensure completion of applicable EMT items above.* IV NS.* NS 500-1000 ml bolus.	

Citations: (NASEMSO Medical Directors Council, 2017)

NEMSIS Protocol 9914161: OB/GYN - Pregnancy-Related Disorders



Protocol 4-165 - Respiratory Distress

<p>EMR</p> <ul style="list-style-type: none"> * Consider Oxygen to maintain SpO₂ between 88-92%. * Monitor pulseoximetry. * Consider applying cardiac monitor limb leads. * Obtain vital signs. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Consider Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) (page 93).
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Assist ALS with Capnography. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * Consider IV NS in AC (left is preferred) with pigtail extension with 18 ga or greater. * Consider Protocol 2-050 - Chest Discomfort (page 21). * Consider Protocol 4-020 - Anaphylaxis (page 40). * Consider Protocol 4-030 - Asthma (page 41). * Consider Protocol 4-060 - Chronic Obstructive Pulmonary Disease (COPD) (page 48). * Consider Protocol 4-070 - Congestive Heart Failure (CHF) (page 49). * Consider Protocol 4-080 - Croup (page 50). 	
<p>Citations: (NASEMSO Medical Directors Council, 2017) NEMSIS Protocol 9914139: Respiratory Distress / Asthma / COPD / Croup / Reactive Airway</p>	

Protocol 4-170 - Seizures

<p>EMR</p> <ul style="list-style-type: none"> * Ensure open Airway. * Identify possible causes. * Clear area to decrease chance of injury. * Consider Oxygen if SpO₂ less than 88%. * Monitor pulseoximetry. * Apply cardiac monitor limb leads. * Obtain vital signs. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Consider IO NS. * <u>Actively seizing:</u> <hr/> <ul style="list-style-type: none"> * <u>Adult:</u> <ul style="list-style-type: none"> + Consider Versed 10 mg IM. <ul style="list-style-type: none"> ✖ OR Versed 2.5-5 mg IV/IO/IN. + Pregnant hypertension (20-week gestation through 4-week post-partum): Magnesium Sulfate 4 g IM/IV/IO (IV/IO over 5 min) and refer to Protocol 4-110 - Hypertension (page 54). <hr/> <ul style="list-style-type: none"> * <u>Pediatric:</u> <ul style="list-style-type: none"> + <u>12-18 yr old:</u> Consider Versed same as adult. + <u>2 mo - 12 yr old:</u> Consider Versed 0.15 mg/kg IV/IO/IM. May repeat every 5 min. + <u>1 mo - 12 yr old:</u> Consider Versed 0.2 mg/kg IN/IM (max 10 mg/dose). May repeat every 5 min. <hr/> <ul style="list-style-type: none"> * Continue Versed until seizures stopped. Max single dose of 5 mg IV/IO/IN or 10 mg IM. <hr/> <ul style="list-style-type: none"> * Use RSI with caution in Seizure patients. Paralysis only masks the manifestation of Seizure. * <u>Continued sedation for intubated patient:</u> Versed 2.5-5 mg IV/IO.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Consider assisting ALS with Capnography. * Perform Glucose check. <ul style="list-style-type: none"> * Glucose less than 60 mg/dl: Refer to Protocol 4-120 - Hypoglycemia (page 56). 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * IV NS. 	

Citations: (Bhattacharyya, Kalra, & Gulati, 2006), (Holsti, et al., 2007), (NASEMSO Medical Directors Council, 2017), (Silbergleit, et al., 2012)

NEMSIS Protocol 9914141: Medical - Seizure



Protocol 4-175 - Sepsis

<p>EMR</p> <ul style="list-style-type: none"> * Obtain vital signs. * Consider applying cardiac monitor limb leads. * Consider treating for shock. * Notify incoming ambulance of possible SEPSIS (include accurate blood pressure). Definition of SEPSIS (qSOFA): <ul style="list-style-type: none"> * Suspected infection AND two or more of the following: <ul style="list-style-type: none"> + Altered mental status, + Hypotension (SBP < 100), + Tachypnea (respiratory rate > 22) 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Consider IO LR. * Consider Glucose or Dextrose administration according to Protocol 4-120 - Hypoglycemia (page 56) to meet target blood glucose level of 180. <hr/> <ul style="list-style-type: none"> * <u>If SBP less than 90 or MAP less than 70 after fluid bolus:</u> <ul style="list-style-type: none"> * Notify Emergency Room of incoming SEPTIC SHOCK patient. * Initiate two large-bore IVs. * Consider contacting MEDICAL CONTROL for possible vasopressor. <hr/> <ul style="list-style-type: none"> * Target scene time of 10 minutes. * Notify Emergency Room of incoming SEPSIS patient. * Ensure accurate patient weight is obtained upon arrival at the ER.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Assist ALS with Capnography. * Perform Glucose check. <ul style="list-style-type: none"> * Glucose less than 60 mg/dl: Refer to Protocol 4-120 - Hypoglycemia (page 56). 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * IV LR in AC (left is preferred) with pigtail extension with 18 ga or greater. * Repeated LR boluses of 30 ml/kg until either 2 L max or pulmonary edema. 	
<p><u>Citations:</u> (Alderfer, 2016), (Cox, 2017), (De Backer, Aldecoa, Nijmi, & Vincent, 2012), (Harkness, 2017), (Hunter, Silvestri, Dean, Falk, & Papa, 2012), (Intermedix, 2017), (NASEMSO Medical Directors Council, 2017), (Society of Critical Care Medicine, 2016), (University of Pittsburgh, n.d.)</p>	

Protocol 4-180 - Vaginal Bleeding

<p>EMR</p> <ul style="list-style-type: none">* Consider Oxygen 100%.* Inspect for active bleeding / crowning.* Determine amount of blood loss.* Monitor pulseoximetry.* Consider: Apply cardiac monitor limb leads.* Obtain vital signs.* Consider treating for shock.* Post partum:<ul style="list-style-type: none">* Massage the fundus.* Have mother breastfeed.* Consider orthostatic vital signs.* Consider transport in left lateral recumbent position to reduce risk of Vena Cava compression.	<p>RN Medic</p> <ul style="list-style-type: none">* Ensure completion of all applicable BLS items on the left.* Consider IO LR.* Post partum:<ul style="list-style-type: none">* Consider contacting MEDICAL CONTROL for Oxytocin 10-20 u in 1,000 ml LR. Run wide open.* Consider TXA 1 g in 100 ml NS over 10 min (can be piggybacked into LR) if all of the following:<ul style="list-style-type: none">* Major hemorrhage AND* Signs of shock (SBP less than 90 OR HR greater than 115 that is persistent after at least 500 ml fluid bolus [consider TXA before fluid bolus for obvious life-threatening hemorrhage]).
<p>EMT</p> <ul style="list-style-type: none">* Ensure completion of applicable EMR items above.	
<p>AEMT</p> <ul style="list-style-type: none">* Ensure completion of applicable EMT items above.* Consider IV LR titrated to blood pressure.* Post partum: Rapidly infuse IV fluids.	

Citations: (NASEMSO Medical Directors Council, 2017)
NEMSIS Protocol 9914163: OB/GYN - Post-Partum Hemorrhage

Part 5 - Trauma Protocols

Protocol 5-020 - Abdominal Trauma

<p>EMR</p> <ul style="list-style-type: none"> * Consider SMR. * Assist ventilations as needed. * Consider Oxygen 100%. * Control bleeding / bandage / splint / stabilize impaled objects as required. * Monitor pulseoximetry. * Consider: Apply cardiac monitor limb leads. * Obtain vital signs. * Maintain body temperature. * Moist, sterile dressings for eviscerations. * Abdominal crush injury: Immediate release and rapid transport. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Consider IO LR titrated to SBP greater than 80. * Consider Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) (page 93). * Pain: Refer to Protocol 6-050 - Control of Pain (page 81). * Nausea: Refer to Protocol 6-040 - Control of Nausea (page 80).
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. 	<ul style="list-style-type: none"> * Adult: <ul style="list-style-type: none"> * Consider TXA 1 g in 100 ml NS over 10 min (can be piggybacked into LR) if all of the following: <ul style="list-style-type: none"> + Major injury AND + Signs of shock (SBP less than 90 OR HR greater than 115 that is persistent after at least 500 ml fluid bolus [consider TXA before fluid bolus for obvious life-threatening hemorrhage]) AND + Recent injury (less than 3 hrs ago).
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * Consider IV LR titrated to SBP greater than 80. 	<ul style="list-style-type: none"> * Pediatric: <ul style="list-style-type: none"> * Consider MEDICAL CONTROL.

<p>Citations: NEMSIS Protocol 9914193: Injury - Thoracic</p>

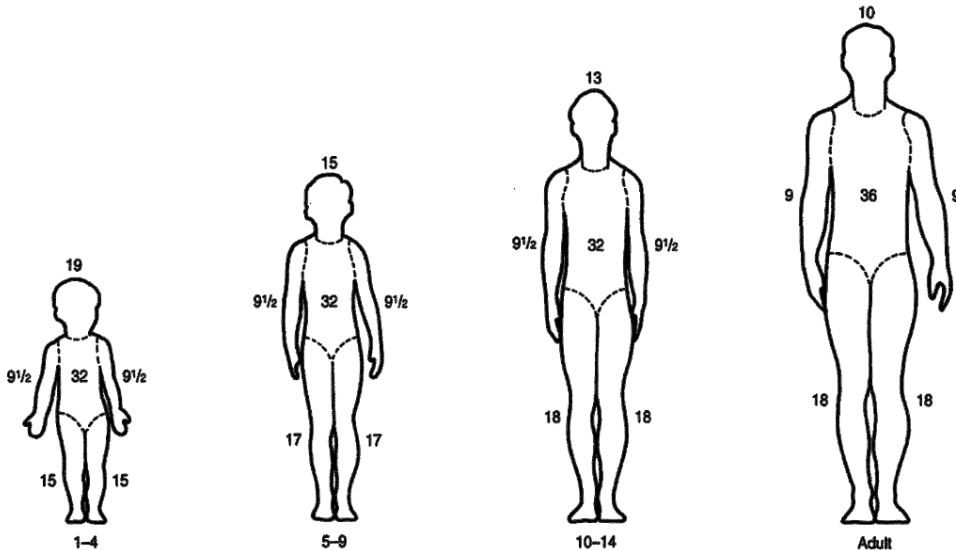


Protocol 5-030 - Burns

<p>EMD</p> <ul style="list-style-type: none"> * Dispatch a non-dedicated standby ambulance to the following incident types: <ul style="list-style-type: none"> * 1st alarm commercial structure fire. * 2nd alarm residential structure fire. * 2nd alarm natural cover fire. * 2nd alarm vehicle fire. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Consider IO LR. * Consider Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) (page 93) if any of the following: <ul style="list-style-type: none"> * Carbonaceous sputum, * Deep facial burns, * Hoarse voice, * Brassy cough, OR * Rhonchi / rales / crackles. * If RSI: ET 7.5 or larger desired. * Pain: Refer to Protocol 6-050 - Control of Pain (page 81). * Nausea: Refer to Protocol 6-040 - Control of Nausea (page 80). * Smoke inhalation with altered mental status: Refer to Protocol 4-140 - Poisoning or Overdose (page 58).
<p>EMR</p> <ul style="list-style-type: none"> * Stop the burning process. * Chemical burn: Refer to Protocol 6-055 - Decontamination (page 82) and Protocol 4-140 - Poisoning or Overdose (page 58). * Assist ventilations as needed. * Consider Oxygen 100%. * Control bleeding / bandage. Consider saran wrap. * Consider: Apply cardiac monitor limb leads. * Obtain vital signs. * Remove all jewelry. * Keep patient warm. * Consider direct transport to Burn Unit. 	
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Assist ALS with Capnography. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * Consider IV LR. <ul style="list-style-type: none"> * Adult (greater than 13 yr): 500 ml/hr. * Pediatric (6-13 yr): 250 ml/hr. * Pediatric (less than 6 yr): 125 ml/hr. 	

Citations: (Boland, Satterlee, & Jansen, 2014), (Cox Paramedics, 2014), (Finn, et al., 2004), (Mercy Burn Center, 2014), (NASEMSO Medical Directors Council, 2017)

NEMSIS Protocol 9914085: Injury - Burns - Thermal



Protocol 5-040 - Chest Trauma

<p>EMR</p> <ul style="list-style-type: none"> * Consider SMR. * Assist ventilations as needed. * Consider Oxygen 100%. * Control bleeding / bandage / splint / stabilize impaled objects as required. * Monitor pulseoximetry. * Consider: Apply cardiac monitor limb leads. * Obtain vital signs. * Consider: Occlusive dressing to open wounds. * <u>Chest crush injury</u>: Immediate release and rapid transport. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Consider IO LR titrated to SBP greater than 80. * Consider Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) (page 93). * Consider Chest Decompression (at 2nd intercostal space, mid-clavicular line) if respiratory compromise and suspect tension pneumothorax. * <u>Pain</u>: Refer to Protocol 6-050 - Control of Pain (page 81). * <u>Nausea</u>: Refer to Protocol 6-040 - Control of Nausea (page 80).
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Consider assisting ALS with Capnography. * <u>Flail Chest</u>: Stabilize. <ul style="list-style-type: none"> * <u>Adult</u>: Consider assisting respirations with positive pressure via BVM or assisting ALS with CPAP. * <u>Absent or decreased pulses</u>: Consider Pelvic Binder. 	<ul style="list-style-type: none"> * <u>Adult</u>: <ul style="list-style-type: none"> * Consider TXA 1 g in 100 ml NS over 10 min (can be piggybacked into LR) if all of the following: <ul style="list-style-type: none"> + Major injury AND + Signs of shock (SBP less than 90 OR HR greater than 115 that is persistent after at least 500 ml fluid bolus [consider TXA before fluid bolus for obvious life-threatening hemorrhage]) AND + Recent injury (less than 3 hrs ago).
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * Consider IV LR titrated to SBP greater than 80. 	<ul style="list-style-type: none"> * <u>Pediatric</u>: <ul style="list-style-type: none"> * Consider MEDICAL CONTROL.

Citations: (Care Flight Collective, 2014), (Zacher, 2017)
 NEMSIS Protocol 9914193: Injury - Thoracic



Protocol 5-050 - Extremity Trauma

<p>EMR</p> <ul style="list-style-type: none"> * Consider SMR. * Assist ventilations as needed. * Consider Oxygen 100%. * Extremity crush injury: Do not release until ALS direction. * Control bleeding / bandage / splint / stabilize impaled objects as required. <ul style="list-style-type: none"> * Splint in position of comfort. * Open fracture: Cover with sterile Saline dressings. * Consider Tourniquet on upper arm until occlusion of distal pulse. * Consider two Tourniquets side-by-side on upper leg until occlusion of distal pulse. * Elevate. * Assess distal neurovascular status. * Consider cold pack. * Monitor pulseoximetry. * Consider: Apply cardiac monitor limb leads. * Obtain vital signs. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * No crush injury: Consider IO LR titrated to SBP greater than 80. * Consider for all possible fractures: Refer to Protocol 6-050 - Control of Pain (page 81). * Nausea: Refer to Protocol 6-040 - Control of Nausea (page 80). <hr/> <p>* Adult:</p> <ul style="list-style-type: none"> * Consider TXA 1 g in 100 ml NS over 10 min (can be piggybacked into LR) if all of the following: <ul style="list-style-type: none"> + Major injury AND + Signs of shock (SBP less than 90 OR HR greater than 115 that is persistent after at least 500 ml fluid bolus) AND + Recent injury (less than 3 hrs ago). <hr/> <p>* Pediatric:</p> <ul style="list-style-type: none"> * Consider MEDICAL CONTROL. <hr/> <p>* Extremity crush injury (suspected compartment and/or crush syndrome if Extremity pinned for 15 minutes to 6 hours depending on weight and other factors):</p> <ul style="list-style-type: none"> * Consider IO NS. Two large bore IVs wide open. * Contact MEDICAL CONTROL: <ul style="list-style-type: none"> + Consider Tourniquet. <ul style="list-style-type: none"> ✘ (To limit acid and Potassium release). + Consider NS 2 L prior to release, then 500 ml/hr after. + Consider Sodium Bicarbonate 1 mEq/kg (max 100 mEq) IV/IO prior to release, then add 100 mEq to 1 L NS and drip at 100 ml/hr. <ul style="list-style-type: none"> ✘ (To alkalyze blood and urine). + Consider Calcium Chloride 1g IV/IO over 10-15 min. Do not mix with Sodium Bicarbonate. <ul style="list-style-type: none"> ✘ (To decrease cell membrane permeability). + Consider Albuterol Nebulized high dose (10-20 mg). <ul style="list-style-type: none"> ✘ (To lower Potassium). + Consider Dextrose IV/IO. <ul style="list-style-type: none"> ✘ (To facilitate insulin administration in ER).
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Consider Pelvic Binder. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * No crush injury: Consider IV LR titrated to SBP greater than 80 after all active bleeding has been addressed. <hr/> <p>* Extremity crush injury (suspected compartment and/or crush syndrome if Extremity pinned for 15 minutes to 6 hours depending on weight and other factors):</p> <ul style="list-style-type: none"> * IV NS. Two large bore IVs wide open. 	

Citations: (Cain, 2008), (Care Flight Collective, 2014), (Citizens Memorial Hospital, 2014), (Composite Resources, Inc), (Doyle & Taillac, 2008), (Flores, 2012), (Kragh, et al., 2008), (NASEMSO Medical Directors Council, 2017), (Niven & Castle, 2010), (Richey, 2007), (Zacher, 2017)

NEMSIS Protocol 9914097: Injury - Extremity

Protocol 5-060 - Eye Injury

<p>EMR</p> <ul style="list-style-type: none"> * Consider Oxygen if SpO₂ less than 88%. * Control bleeding / bandage / stabilize impaled objects as required. * Monitor pulseoximetry. * Obtain vital signs. * Trauma: <ul style="list-style-type: none"> * Cover injured eye with domed or cupped cover. * Do not apply pressure to eye. * Foreign substance: <ul style="list-style-type: none"> * Non-penetrating injuries: Flush Eye with at least 1 L LR over 20 min. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Foreign substance: <ul style="list-style-type: none"> * Consider Tetracaine 1-2 drops in affected Eye. * Non-penetrating injuries: Flush Eye with at least 1 L LR over 20 min. <ul style="list-style-type: none"> ✦ Consider Morgan Lens. * Pain: Refer to Protocol 6-050 - Control of Pain (page 81). * Nausea: Refer to Protocol 6-040 - Control of Nausea (page 80). * Pediatric: <ul style="list-style-type: none"> * Consider MEDICAL CONTROL.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * Consider IV. 	

Citations: (MorTan Inc, 2018), (NASEMSO Medical Directors Council, 2017)
 NEMSIS Protocol 9914099: Injury - Eye

Morgan Lens Instructional Chart

Instructions for using the Morgan Lens for continuous medication or lavage to the cornea and conjunctiva.



STEP 1:

INSERTION
 Instill topical ocular anesthetic, if available.



STEP 2:

Attach a Morgan Lens Delivery Set (or a syringe or an I.V. set-up) using solution and rate of choice*; **START FLOW.**



STEP 3:

Have patient look down, insert Morgan Lens under upper lid. Have patient look up, retract lower lid, drop lens in place.



STEP 4:

Release the lower lid over Morgan Lens; adjust flow. Tape tubing to patient's forehead to prevent accidental lens removal. Absorb outflow with the Medi-Duct (for best results, tape to head as shown). **DO NOT RUN DRY.**



STEP 5:

REMOVAL
CONTINUE FLOW.
 Have patient look up, retract lower lid—hold position.



STEP 6:

Slide Morgan Lens out. **TERMINATE FLOW.**

Protocol 5-070 - Head Trauma

<p>EMR</p> <ul style="list-style-type: none"> * Consider SMR. C-collar contraindicated with penetrating neck trauma. * Assist ventilations as needed. * Consider Oxygen 100%. * Control bleeding / bandage / splint / stabilize impaled objects as required. * Monitor pulseoximetry. * Consider: Apply cardiac monitor limb leads. * Obtain vital signs. * Elevate Head of cot. * <u>Head crush injury</u>: Immediate release and rapid transport. * Maintain body temperature between 91 and 99 degrees F. * <u>Avulsed tooth</u>: Do not touch root. Place in saline. * <u>Epistaxis</u>: Squeeze nose for 10-15 min continuously. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Consider IO NS. * <u>GCS less than 8 OR Cushing's Triad (abnormal breathing AND bradycardia AND hypertension)</u>: Consider RSI. <hr/> <p>* <u>Adult</u>:</p> <ul style="list-style-type: none"> * Consider Fentanyl 50-100 mcg every 5-20 min (max 300 mcg) IV/IO/IN. Over 65 yr old: 0.5-2 mcg/kg. * <u>Nausea</u>: Consider Zofran 4mg IV/IM/IN (max 8 mg). <hr/> <p>* <u>Pediatric</u>:</p> <ul style="list-style-type: none"> * <u>Age less than 3 yrs</u>: Atropine 0.02 mg/kg (min 0.1 mg) IV. * Consider Fentanyl 1-2 mcg/kg may repeat (max 150 mcg) IV/IO/IN. (Morphine is contraindicated for Head injury.) <p>* Consider contacting MEDICAL CONTROL.</p>
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Consider assisting ALS with Capnography. * <u>Severe head injury with signs of herniation</u>: Moderate hyperventilation to target EtCO₂ 30-35. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * Consider IV NS 20 ml/kg (max 40 ml/kg or 2 L) titrated to maintain SBP according to age: <ul style="list-style-type: none"> * <u>Greater than 10 yr</u>: SBP 110-120. * <u>1-10 yr</u>: Greater than 70 + (2 x age) SBP. * <u>1-12 mo</u>: Greater than 70 SBP. * <u>0-28 days</u>: Greater than 60 SBP. 	

Citations: (Feng, Chan, Liu, Or, & Lee, 1996), (Flower & Hellings, 2012), (Helfman, Gold, DeLisser, & Herrington, 1991), (Lin, et al., 2012), (NASEMSO Medical Directors Council, 2017), (Robinson & Clancy, 2001), (Singh, Vichitvejpaisal, Gaines, & White, 1995), (Ugur, Ogurlu, Gezer, Nuri Aydin, & Gursoy, 2007)

NEMSIS Protocol 9914101: Injury - Head

Protocol 5-080 - Spinal Trauma

EMR	<ul style="list-style-type: none"> * Consider SMR. C-collar contraindicated with penetrating neck trauma. * Assist ventilations as needed. * Consider Oxygen 100%. * Control bleeding / bandage / splint / stabilize impaled objects as required. * Monitor pulseoximetry. * Consider: Apply cardiac monitor limb leads. * Obtain vital signs. 	RN	Medic
EMT	<ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. 	<ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Consider IO LR. * Consider Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) (page 93). * Pain: Refer to Protocol 6-050 - Control of Pain (page 81). * Nausea: Refer to Protocol 6-040 - Control of Nausea (page 80). 	
AEMT	<ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * Consider IV LR titrated to SBP greater than 80. 		
<ul style="list-style-type: none"> * <i>Pediatric</i>: <ul style="list-style-type: none"> * Consider MEDICAL CONTROL. 			

Citations: (NASEMSO Medical Directors Council, 2017)
NEMSIS Protocol 9914107: Injury - Spinal Cord



Protocol 5-085 - Superficial Penetration

<p>EMR</p> <ul style="list-style-type: none"> * If the injury meets any of the following, the patient should be transported and removed by ER staff: <ul style="list-style-type: none"> * Involvement of the nipple-line or above, * Genital area involvement, * Severe pain, * Uncooperative patient, * Bone, tendon, or cartilage involvement, * Spinal or nerve involvement, * Vascular involvement, * Deeper penetration than subcutaneous, * Grossly contaminated wound, OR * Only one end of fish-hook through the skin. * Small, penetrating objects such as Taser probes and fish hooks may be removed on the scene if all the following apply: <ul style="list-style-type: none"> * The object is embedded superficially or subcutaneously, * Isolated injury, AND * The object is embedded in non-sensitive area. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Taser: Perform cardiac monitoring. Consider 12-lead EKG. * Treat other injuries or illnesses according to applicable protocol.
<ul style="list-style-type: none"> * <u>To remove Taser probe</u>: <ul style="list-style-type: none"> * Disconnect wires from weapon. * Stabilize skin around object using non-dominant hand. * Grasp probe by metal body using dominant hand. * Remove probe in a single, quick motion. * Wipe wound with antiseptic wipe and apply a dressing. * Instruct patient to follow up with their primary physician or public health agency for tetanus vaccination and infection monitoring, if needed. 	
<ul style="list-style-type: none"> * <u>To remove Fish hook</u>: <ul style="list-style-type: none"> * Disconnect fishing line. * If multiple hooks (i.e. treble hook or fishing lure), consider wrapping other sharp points in gauze and tape before manipulation. * If both ends of the fish hook are projecting from the skin: Cut either or both ends of the object to facilitate pulling it out without causing further injury. * After removing, wipe wound with antiseptic wipe and apply a dressing. * Instruct patient to follow up with their primary physician or public health agency for tetanus vaccination and infection monitoring, if needed. 	
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. 	

Citations: (Cox Paramedics, 2014), (NASEMSO Medical Directors Council, 2017), (US Department of Homeland Security, Unknown)

NEMSIS Protocol 9914203: Injury - Conducted Electrical Weapon



Protocol 5-090 - Trauma Arrest

<p>EMR</p> <ul style="list-style-type: none"> * Confirm pulselessness and apnea. * Attempt to determine down-time, and history. * Consider SMR. * Begin CPR. <ul style="list-style-type: none"> * Push hard and fast at 100/min. * Minimize compression interruptions. * Rotate compressors every 2 minutes at rhythm check or as soon as practical. * Establish and maintain Airway and Ventilate 100% Oxygen. <ul style="list-style-type: none"> * Establish BLS Airway. * Compressions : Ventilations ratio = 30:2 unless intubated, then 8-10 breaths per min. * Avoid hyperventilation. * Control bleeding, bandage, splint as required. * Monitor pulseoximetry. * Apply cardiac monitor Combo Pads and limb leads. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Consider IO LR. * Consider Intubation. * Treat rhythm per protocol. * Bilateral Chest Decompression if Chest trauma etiology. <p>* <i>Adult:</i> Field termination may be requested from MEDICAL CONTROL regardless of how long ACLS efforts have been underway.</p> <p>* <i>Pediatric:</i> Contact MEDICAL CONTROL.</p> <ul style="list-style-type: none"> * Immediate transport.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Assist ALS with Capnography. * Consider Pelvic Binder. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * IV LR wide open (x2 large bore). 	

Citations: (Care Flight Collective, 2014), (NASEMSO Medical Directors Council, 2017), (Zacher, 2017)

NEMSIS Protocol 9914087: Injury - Cardiac Arrest



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Part 6 - General Protocols

Section 6-010 - Acquisition of Medical Control

EMR	<ul style="list-style-type: none"> * Medical control is the responsibility of the CMH/EMH RN or Paramedic. The only exception is in the absence of ALS (as in a BLS-only ambulance crew). 	RN Medic	<ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Medical control shall only be provided by a Physician. Medical control shall not be accepted from nurses, nurse practitioners, Physician assistants, midwives, or any Physician extenders. * Medical control is preferred to be provided by receiving hospital. If contact cannot be made, CMH Emergency Room will be the default medical control for CMH ambulances and EMH Emergency Room will be the default medical control for EMH ambulances. Sending physician (if transfer) may also be consulted. * When transporting from another facility and treatment that deviates from protocol is suggested by transferring Physician, RN/Paramedic should contact receiving MEDICAL CONTROL in the ambulance to verify orders. * If medical control cannot be contacted, protocols should be utilized as standing orders including those designated as requiring medical control. Medical control should be contacted as soon as possible and attempts at contact shall be documented. * If an on-scene Physician gives orders, RN/Paramedic shall require credential evidence and the requesting Physician must accompany the patient in transport to the receiving facility. This process should not be considered if the Physician does not have the appropriate medical sub-specialties as determined by the RN/Paramedic.
EMT	<ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. 		
AEMT	<ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. 		

Appleton City	Ellett Memorial Hospital	660-476-2111
Bolivar	Citizens Memorial Healthcare	417-328-6301
Butler	Bates County Memorial Hospital	660-200-7000
Carthage	McCune Brooks Regional Hospital	417-358-8121
Clinton	Golden Valley Memorial Hospital	660-885-6690
Columbia	Boone County Hospital	573-815-8000
Columbia	University Hospital	573-882-8091
Columbia	Veterans Hospital	573-814-6000
El Dorado Springs	Cedar County Memorial Hospital	417-876-2511
Ft Leonard Wood	Ft Leonard Wood Hospital	573-596-0803
Joplin	Freeman West	417-347-1111
Kansas City	Veterans Hospital	800-525-1483
Lamar	Barton County Memorial Hospital	417-681-5100
Lebanon	Mercy	417-533-6350
Monett	Cox Monett Hospital	417-235-3144
Neosho	Freeman Neosho Hospital	417-451-1234
Nevada	Nevada Regional Medical Center	417-667-3355
Osage Beach	Lake Regional Health System	573-348-8000
Springfield	Cox North	417-269-3393
Springfield	Cox South	417-269-4983
Springfield	Mercy	417-820-2115
St Louis	Barnes Jewish Hospital	314-294-1403

Citations: (Citizens Memorial Hospital, 2013)



Section 6-020 - Air Ambulance

<p>EMD</p> <ul style="list-style-type: none"> * <u>Request for air ambulance</u>: Contact Cox Air Care and advise location, destination, and patient demographics (if known). 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * <u>Consider Air Ambulance if ONE or more of the following are true</u>: <ul style="list-style-type: none"> * Uncontrollable cardiac dysrhythmias; * Airway control intervention; * <u>Consider Air Ambulance if TWO or more of the following are true (also includes BLS list at left)</u>: <ul style="list-style-type: none"> * External Pacing in progress; * Medication administration requiring an infusion pump;
<p>EMR</p> <ul style="list-style-type: none"> * <u>Consider Air Ambulance if ONE or more of the following are true</u>: <ul style="list-style-type: none"> * Ground resources are exhausted. * Prolonged extrication time (greater than 20 min) is anticipated. * Road or bridge conditions which prevent ground transport. * Second or third degree burn greater than 20% BSA; * Acute MI or Chest Pain suggestive of MI; * Head or spinal trauma with neurological deficits. * <u>Consider Air Ambulance if TWO or more of the following are true (also includes ALS list at right)</u>: <ul style="list-style-type: none"> * MVA with associated fatality(s); SBP less than 90 or greater than 200; Respirations less than 10 or greater than 30; Heart rate less than 60 or greater than 120; Hypo or Hyperthermia; Shortness of breath; Nausea; Diaphoresis; Overdose; Pulsating Abdominal mass; Seizure activity; less than 8 yrs or greater than 55 yrs old; CVA or GI bleed; Gross bleeding; Trauma during pregnancy; Positive loss of consciousness; Penetrating injury; Injuries to Head, neck, Chest, abdomen or extremities. * Request for Air Ambulance should be made as early as possible. Can be made while en route. * Request for Air Ambulance should be made through the dispatch in the county of the LZ location. * Once en route, the request can only be canceled by EMS or rescue personnel on scene. * Prepare a safe landing zone. Utilize local law enforcement and fire department. * Final decision to accept a mission is the responsibility of the pilot. * Patient requests for specific aircraft and destinations should be discussed with air crew. 	
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. 	

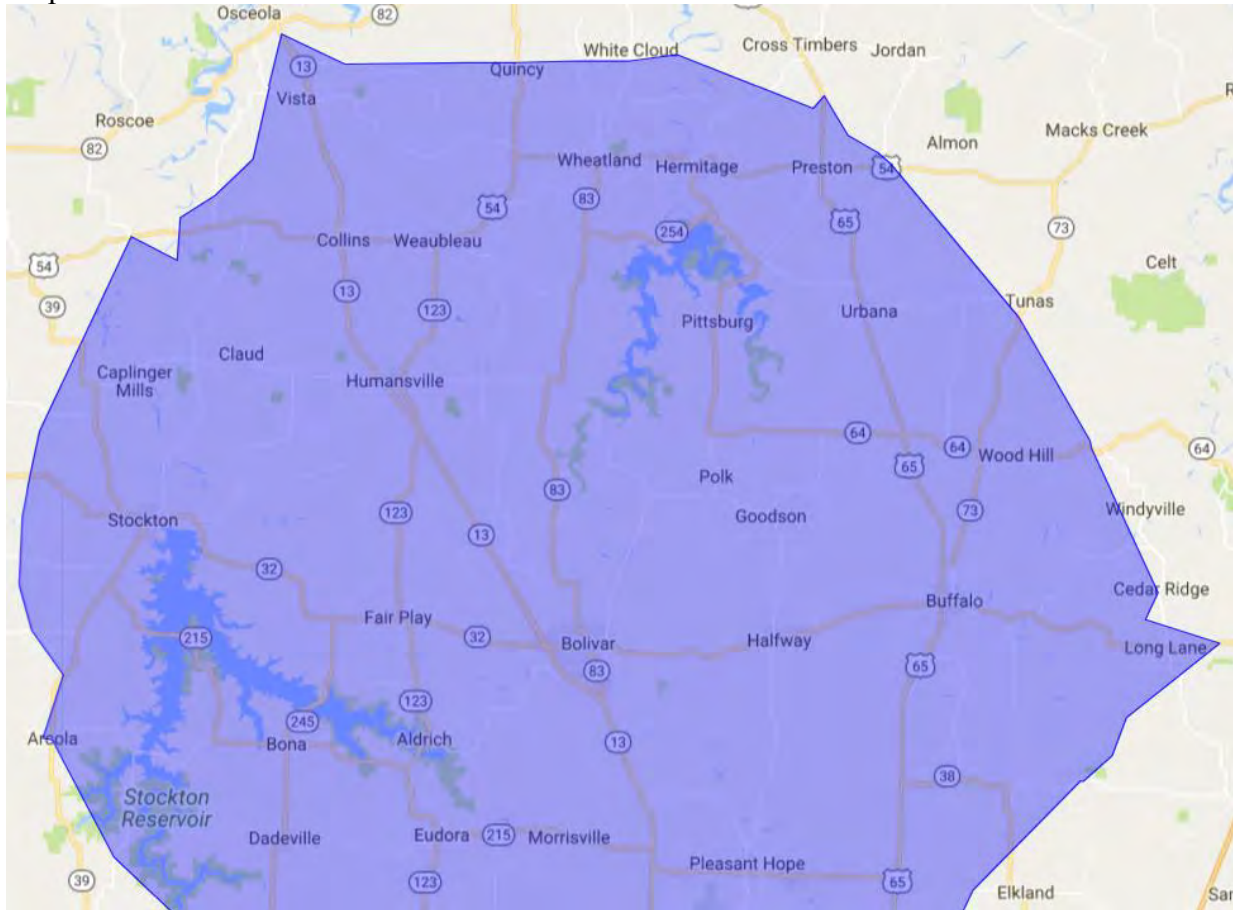
Citations: (Citizens Memorial Hospital, 2013)



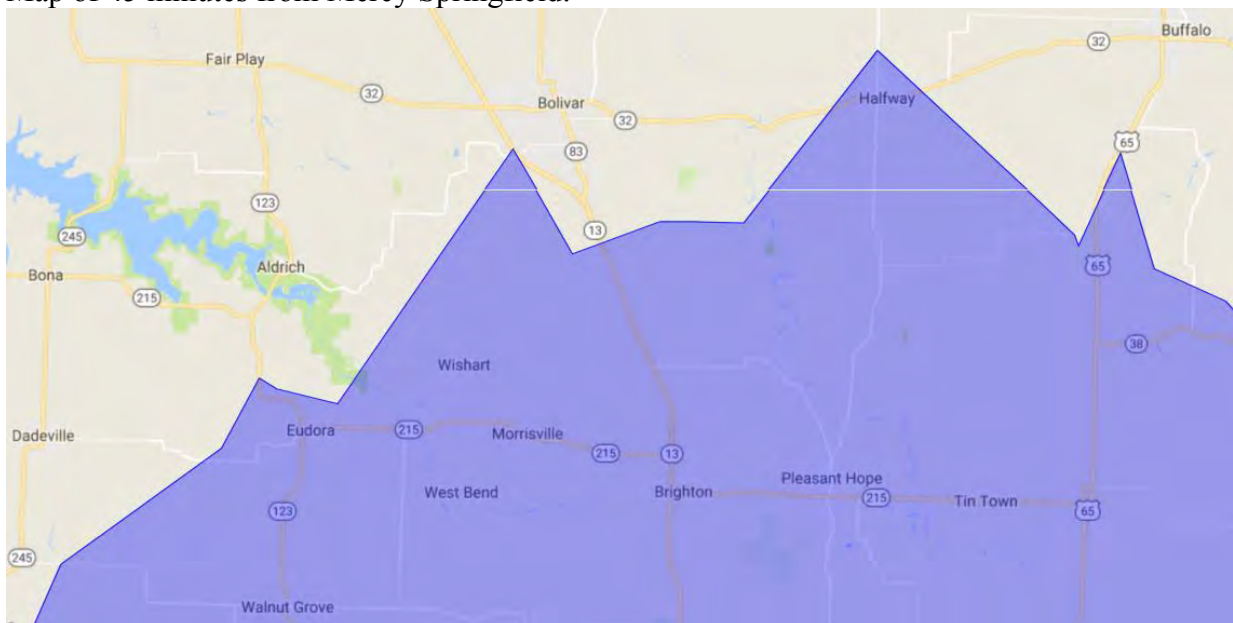
Section 6-021 - No Fly Zone

If you are within 45 minutes drive time from the destination, it is faster to drive by ground than request an aircraft.

Map of 45 minutes from CMH:



Map of 45 minutes from Mercy Springfield:



Citations: (NASEMSO Medical Directors Council, 2017)



Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)

EMD	RN	Medic
<ul style="list-style-type: none"> * <u>MPDS Protocol 9 (Cardiac Arrest) - Cardiac arrest pathway</u>: Continuous compressions instructions provided to callers until responder arrival is the treatment preference for adult arrest with suspected cardiac origin. 	<ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Every 2 minutes, Charge monitor in anticipation of shock able rhythm. <ul style="list-style-type: none"> * <i>Adult</i>: 360 J (OR consider biphasic dose of 200 J). * <i>PEDIATRIC</i>: 4 J/kg * During pause in compressions, Defibrillate or Dump Charge. * Consider immediate Intubation without interruption of compressions to facilitate continuous compressions. * Consider IO. * Epinephrine 1:10,000 IV/IO every 3-5 min or drip over 5 min. <ul style="list-style-type: none"> * <i>Adult</i>: 1 mg. * <i>Pediatric</i>: 0.01 mg/kg. * Consider Atropine 1 mg for Bradycardia every 3-5 min. * Consider Sodium Bicarbonate 1 mEq/kg for acidosis. * Consider Lidocaine 1 mg/kg for Ventricular Ectopy. <ul style="list-style-type: none"> * OR Amiodarone 300 mg. * Consider Pacing. * Consider Dextrose for Hypoglycemia. 	<ul style="list-style-type: none"> * Dialysis Patient or Known Hyperkalemia: Consider contacting MEDICAL CONTROL for Calcium Chloride 1 g IV/IO. * Perform Physical Exam. * Begin termination/transportation conversation. <ul style="list-style-type: none"> * Consider full ACLS efforts for adult, non-trauma, non-poisoning arrest patients for 20 minutes prior to movement. * Refer to Section 6-140 - Termination of Resuscitation (page 99).
<h3 style="background-color: #e6f2ff; display: inline-block; padding: 2px;">EMR</h3> <ul style="list-style-type: none"> * Confirm pulselessness and apnea. * Consider AED or LifePak in AED mode. Refer to Protocol 2-030 - Automated External Defibrillation (AED) (page 19). * Perform Compressions. <ul style="list-style-type: none"> * Consider Chest Compressor. * Minimize interruptions. * Use CPR metronome set at 110/min, if available or count out loud. * <u>No advanced airway in place</u>: <ul style="list-style-type: none"> + Compressions at 30:2 ratio at 110/min. <ul style="list-style-type: none"> * <u>Witness arrest with shock able rhythm</u>: Perform continuous compressions at 110/min with passive Oxygen and basic airway adjunct for 3 cycles. + Rotate compressors every 2 minutes. * <u>Advanced airway in place</u>: <ul style="list-style-type: none"> + Continuous Compressions at 110/min. + Rotate compressors every 200 compressions. * Attach cardiac monitor Combo Pads and limb leads. * Attach pulseox. * Attempt to determine down-time, history, and DNR status. * Insert OPA or NPA. 		
<h3 style="background-color: #e6f2ff; display: inline-block; padding: 2px;">EMT</h3> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Prepare IV/IO and any requested medications from ALS. * Consider KING or LMA AIRWAY. * Attach Capnography. * Check Glucose. * Prepare for termination or transport. 		
<h3 style="background-color: #e6f2ff; display: inline-block; padding: 2px;">AEMT</h3> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * Start IV with Fluid Bolus. * Consider Narcan for Overdose. 		

Citations: (Guglin & Postler, 2009), (NASEMSO Medical Directors Council, 2017), (Perkins, et al., 2018), (Taney County Ambulance District, 2014), (Wake County EMS System, 2010)

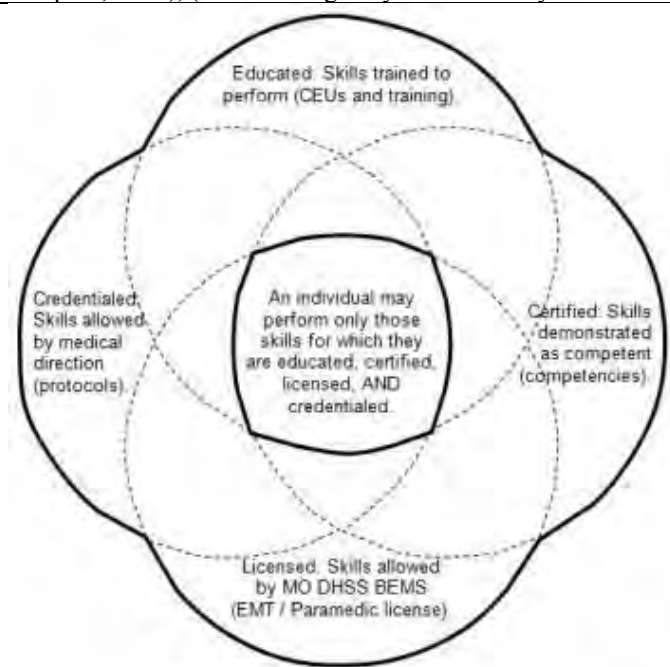
NEMSIS Protocol 9914055: General - Cardiac Arrest



Section 6-030 - Competencies and Education

<p>EMR</p> <ul style="list-style-type: none"> * Each year, a list of competency requirements will be compiled from input from Quality program, medical control, staff, and first responder agencies. * Competencies will routinely be comprised of different topics offered throughout the year. Additional classroom and/or skill Competencies may be required based on community and professional development needs. * Competency schedule will be posted and announced at least 30 days ahead. <ul style="list-style-type: none"> * First responder agencies may deliver the competency locally with the approval of CMH EMS. * Annually, each <u>EMR shall successfully complete at least one BLS competency with at least a 90% pass rate.</u> 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Annually, each <u>RN and Paramedic shall:</u> <ul style="list-style-type: none"> * <u>Successfully complete all BLS and ALS Competencies with at least a 90% pass rate.</u> * <u>Successfully complete at least one RSI Simulation Scenario.</u> * A volunteer RN or Paramedic working in BLS-only capacity for a first response agency, shall meet the requirements for volunteer EMT.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Annually, each <u>volunteer EMT shall successfully complete at least two BLS Competencies with at least a 90% pass rate.</u> * Annually, each <u>paid (career response agency, CMH, or EMH) employee shall:</u> <ul style="list-style-type: none"> * <u>Successfully complete all BLS Competencies with at least 90% pass rate.</u> * <u>Successfully complete at least one RSI Simulation Scenario with a high-fidelity manikin.</u> 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. 	

Citations: (Citizens Memorial Hospital, 2013), (National Highway Traffic Safety Administration, 2007)



Protocol 6-040 - Control of Nausea

<p>EMR</p> <ul style="list-style-type: none"> * Identify possible causes. * Consider Oxygen if SpO₂ less than 88%. * Monitor pulseoximetry. * Consider: Apply cardiac monitor limb leads. * Obtain vital signs. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Consider IO NS or LR. <hr/> <ul style="list-style-type: none"> * <i>Adult (greater than 27 kg):</i> <ul style="list-style-type: none"> * Consider Zofran 4 mg IV/IO/IM/IN/PO/SL (max 8 mg). * Consider Phenergan 6.25-25 mg IM or IV/IO infused in NS over 15-30 min. * Consider Phenergan 6.25-12.5 mg IV/IO diluted in NS flush very slow push. * Consider Benadryl 12.5-25 mg IV/IO/IM. <hr/> <ul style="list-style-type: none"> * <i>Pediatric (greater than 2 yr & less than 27 kg):</i> <ul style="list-style-type: none"> * Consider Zofran 0.1-0.2 mg/kg IV/IO/IM/IN/PO/SL (max 8 mg). * Consider Phenergan 0.25-0.5 mg/kg IM or IV/IO infused in NS over 15-30 min. * Consider Phenergan 0.25 mg/kg IV/IO diluted in NS flush very slow push. * Consider Benadryl 0.1 mg/kg IV/IO (max 25 mg). <hr/> <ul style="list-style-type: none"> * <i>Pediatric (less than 2 yr):</i> Zofran and Phenergan contraindicated.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * Consider IV NS or LR. 	

Citations: (NASEMSO Medical Directors Council, 2017), (Taney County Ambulance District, 2014)
 NEMSIS Protocol 9914131: Medical - Nausea / Vomiting

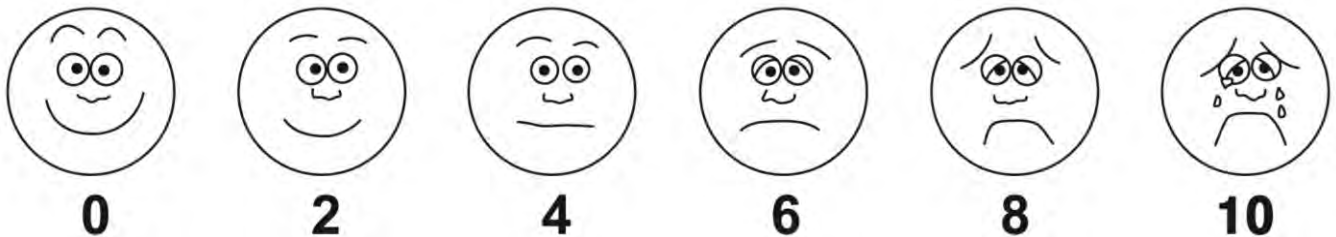


Protocol 6-050 - Control of Pain

<p>EMR</p> <ul style="list-style-type: none"> * Identify possible causes. * Consider Oxygen if SpO₂ less than 88%. * Monitor pulseoximetry. * Consider: Apply cardiac monitor limb leads. * Obtain vital signs. * <u>Consider pain relief actions:</u> <ul style="list-style-type: none"> * Splinting or immobilizing * Elevating * Cold pack * Verbal sedation 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Consider IO NS or LR. * <u>Acute (non traumatic) or chronic (acute exacerbation) with autonomic signs and symptoms:</u> <hr/> <ul style="list-style-type: none"> * <u>Adult:</u> <ul style="list-style-type: none"> + Consider Fentanyl 12.5-100 mcg may repeat every 5 min IV/IO/IM/IN. <u>Over 65 yr old: 25-50 mcg (max 150 mcg).</u> * OR Morphine 2-5 mg (max 10 mg) IV/IO/IM. Maintain SBP greater than 100. <ul style="list-style-type: none"> * Consider Benadryl 25-50 mg IV/IO to potentiate Morphine and reduce hypotension. * OR Toradol 30 mg IV/IO or 60 mg IM. Over 65 yr: 15 mg IV/IO or 30 mg IM. (Contraindicated in pregnancy). <hr/> * <u>Pediatric:</u> <ul style="list-style-type: none"> + Consider Fentanyl 1-2 mcg/kg may repeat every 5 min IV/IO/IN. * OR Morphine 0.1-0.2 mg/kg IV/IO/IM. <ul style="list-style-type: none"> * Consider Benadryl 1 mg/kg (max 50 mg) to potentiate Morphine and reduce hypotension. <hr/> + Anxiety: Consider contacting MEDICAL CONTROL for Versed: <ul style="list-style-type: none"> * <u>12-18 yr old:</u> Same as adult. * <u>2 mo - 12 yr old:</u> Consider 0.15 mg/kg IV/IO. * <u>1 mo - 12 yr old:</u> Consider 0.2 mg/kg IN. <hr/> * <u>Severe pain:</u> Consider Ketamine (analgesic dose) 0.1-0.5 mg/kg IV/IO or 0.8-1 mg/kg IM. Half dose if age greater than 65 yr. * <u>Painful procedure of short duration (i.e. cardioversion or extrication):</u> <ul style="list-style-type: none"> + <u>Cardioversion:</u> Consider Etomidate 0.1 mg/kg IV/IO. + Consider contacting MEDICAL CONTROL for Ketamine (dissociative dose) 1-2 mg/kg IV/IO OR 4-5 mg/kg IM. Half dose if age greater than 65 yr. <hr/> * <u>Chronic without autonomic signs and symptoms:</u> Transport in position of comfort. * Any patient receiving Narcotics must be transported.
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * <u>If narcotic given:</u> consider assisting ALS with Capnography. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. * Consider IV NS or LR. 	

Citations: (Boland, Satterlee, & Jansen, 2014), (Cox Paramedics, 2014), (Finn, et al., 2004), (NASEMSO Medical Directors Council, 2017), (Taney County Ambulance District, 2014)

NEMSIS Protocol 9914071: General - Pain Control



Protocol 6-055 - Decontamination

<p>EMR</p> <ul style="list-style-type: none">* Coordinate with fire department, hazmat, and emergency management to establish hot, warm, and cold zones.* Identify the substance with two sources, if possible.* Notify receiving facilities as soon as possible with number of patients and possible contamination agent.* Ensure proper PPE.* Research proper Decontamination procedure according to the substance.* <u>All persons leaving the hot zone must be gross decontaminated:</u><ul style="list-style-type: none">* Remove outer clothing and jewelry.* If contaminated with liquids, high volume water rinsing.* Irrigate eyes and face.* Triage according to Protocol 6-130 - Triage (page 98).* Create transport plan.* <u>All persons leaving the warm zone must be technically decontaminated:</u><ul style="list-style-type: none">* Remove ALL clothing and jewelry.* Gentle washing with soap and water.	<p>RN Medic</p> <ul style="list-style-type: none">* Ensure completion of all applicable BLS items on the left.* Identifying and researching the contamination is critical in effective Decontamination, responder safety, and patient treatment.* Do not perform most ALS procedures until technical Decontamination has been performed due to causing additional breaks in the skin.
<p>EMT</p> <ul style="list-style-type: none">* Ensure completion of applicable EMR items above.* Do not contaminate ambulances with patients or responders that have not been decontaminated.	
<p>AEMT</p> <ul style="list-style-type: none">* Ensure completion of applicable EMT items above.	

Citations: (Wake County EMS System, 2010)



Protocol 6-060 - Do Not Resuscitate (DNR)

<p>EMR</p> <ul style="list-style-type: none">* The documented wishes of patients not wanting to be resuscitated shall be honored.* Original Documentation must be with patient or presented to EMS crew at time of arrival on the scene.* DNR Documentation must contain:<ul style="list-style-type: none">* Patient signature.* Patient's Physician signature.* If any doubt exists regarding the validity of the Documentation, immediate resuscitation should be initiated.	<p>RN Medic</p> <ul style="list-style-type: none">* Ensure completion of all applicable BLS items on the left.* All therapeutic care and vigorous support (IVs, medications, etc.) shall be given until the point of cardiac respiratory Arrest.* If a valid DNR form is present, it may be honored without contacting medical control. If a valid DNR is presented after resuscitation has been initiated, it can also be honored without contacting medical control and resuscitation may be terminated.* DNR form shall remain with the patient.* Document DNR form number and signing Physician's name on ePCR.* <u>Peri-arrest TPOPP/MOLST/POLST patient requiring comfort measures:</u> Use these guidelines for comfort interventions during transport or when providing interim comfort care on site. Medications contained within the patient's comfort kit may be used as indicated below. Lights and sirens are not necessary for comfort transport. Do not give Narcan to comfort measures patients. If pt dies during transport, continue on to destination.<ul style="list-style-type: none">* If additional comfort measure orders are specified on the form, contact MEDICAL CONTROL.* <u>Agitated delirium / hallucinations:</u><ul style="list-style-type: none">+ Consider Haldol 2-5 mg PO.+ Consider Ativan 0.5-2 mg PO.+ Consider trial of Versed is increasing doses (max 3 mg). Watch for worsening of agitation.* <u>Anxiety:</u><ul style="list-style-type: none">+ Consider Ativan 0.5-2 mg PO.+ Consider Haldol 5 mg IV.+ Consider Versed 1-3 mg IV/IN every 10 minutes PRN.* <u>Dehydration:</u><ul style="list-style-type: none">+ Consider NS 10-20 ml/kg IV.* <u>Fever:</u><ul style="list-style-type: none">+ Consider Acetaminophen PO/suppository.+ Cool cloth to forehead, neck, and/or underarms.* <u>Nausea:</u><ul style="list-style-type: none">+ Consider Zofran 4-8 mg PO/IV.+ Consider Ativan 0.5-2 mg PO.* <u>Pain management:</u><ul style="list-style-type: none">+ Consider Morphine 1-5 mg IV every 10 minutes PRN.+ Consider Fentanyl 25-50 mcg IV/IN every 10 minutes PRN.* <u>Work of breathing:</u> Tachypnea, accessory muscle use, or hypoxia with agitation (Low SpO₂ alone does not indicate work of breathing).<ul style="list-style-type: none">+ Consider Oxygen NC max 10 LPM.+ Alert patient with history of CPAP use: Consider CPAP. Do not BVM.+ Consider Fentanyl 25 mcg with 2 ml NS Nebulized.+ Consider Versed 2-5 mg IV.
<p>EMT</p> <ul style="list-style-type: none">* Ensure completion of applicable EMR items above.	
<p>AEMT</p> <ul style="list-style-type: none">* Ensure completion of applicable EMT items above.	

Citations: (NASEMSO Medical Directors Council, 2017)

NEMSIS Protocol 9914169: Cardiac Arrest - Do Not Resuscitate

Section 6-070 - Documentation

EMR	RN Medic
<ul style="list-style-type: none">* A Patient Care Report (PCR) must be completed for every EMS response. An Electronic Patient Care Report (ePCR) is required for EMS transport agencies.<ul style="list-style-type: none">* Every effort should be made to have the PCR shall be completed within 24 hours if volunteer responder (by end of shift if career employee) and be available to the Medical Director (or designee) within 24 hours of completion, if requested.* Always act in the best interest of the patient. Treating and transporting is preferable to PRC. PRC is preferable to NCN.* No Care Needed (NCN): After scene assessment, there may be no patients (i.e. false alarms). A PCR shall be completed including: situation description, number of individuals, and medical screening, if done.<ul style="list-style-type: none">* <u>If an individual exhibits any significant mechanism of injury, Pain behaviors, indications of altered mental status, or the individual at any time requested medical treatment or ambulance transport</u>: Treatment and transport or PRC must be completed.* Patient Refusal of Care (PRC): If the patient refuses care and/or transport, patient should be informed of potential risks, and need for transport and comprehensive Physician evaluation.<ul style="list-style-type: none">* <u>If no ambulance is dispatched</u>: EMR or EMT may obtain a PRC.* In the absence of an ALS assessment, BLS-only ambulance crew must contact MEDICAL CONTROL or on-duty EMS supervisor prior to obtaining PRC.<ul style="list-style-type: none">+ Patients electing to go to walk-in clinic or ER via personal vehicle (and witnessed leaving with family or bystander) may be PRC'd by EMR or EMT without the need for ALS or to contact medical control or supervisor.+ EMR or EMT may PRC a patient without ALS if the following are met:<ul style="list-style-type: none">* Minor mechanisms of injury (i.e. falls from standing or vehicle accidents with no passenger compartment damage) AND* All requirements for NCN have been met (i.e. no pain, no altered mental status, and patient did not request an ambulance).* If any ALS intervention has been performed, MEDICAL CONTROL must be contacted prior to PRC.* Obtain signature of patient. If patient refuses to sign, document this fact.* Obtain signature of witness. Preferably law enforcement official or family member.	<ul style="list-style-type: none">* Ensure completion of all applicable BLS items on the left.* If patient care would have met ALS criteria, PRC must be completed by the RN or Paramedic.* MEDICAL CONTROL and ALS is required before PRC for all of the following:<ul style="list-style-type: none">* Drug or alcohol intoxication.* Acute mental impairment.* Attempted suicide, verbalized suicidal intent, or EMS providers suspect suicidal intent.
<h3>EMT</h3> <ul style="list-style-type: none">* Ensure completion of applicable EMR items above.* CMH or EMH ambulance crew:<ul style="list-style-type: none">* An ePCR must be completed for every EMS response (regardless of patient contact or transport status).* All PCRs shall be completed, faxed, and exported prior to end of shift unless approved by supervisor.	
<h3>AEMT</h3> <ul style="list-style-type: none">* Ensure completion of applicable EMT items above.	

Citations: (Citizens Memorial Hospital, 2013), (NASEMSO Medical Directors Council, 2017)
NEMSIS Protocol 9914189: General - Refusal of Care



Protocol 6-080 - Event Standby

<p>EMR</p> <ul style="list-style-type: none"> * Treat illnesses and injuries per appropriate protocol. 	<p>RN Medic</p>
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. * Park the emergency vehicle in a manner to allow view of the scene from a distance but always have the ability to leave the scene in an expedient manner. * <u>Dedicated standby</u>: <ul style="list-style-type: none"> * Make contact with athletic trainers upon arrival (if they are present). * Prepare equipment for rapid deployment. * If medical care is needed for a player, event staff should wave EMS onto the field/track if you are needed. * <u>Football player or other event with significant padding and helmet</u>: <ul style="list-style-type: none"> + Assist athletic trainers in removing athletic equipment prior to transport. <ul style="list-style-type: none"> ✘ If unable or not recommended by athletic trainer, secure player to backboard with helmet and pads remaining in place. ✘ Apply c-collar and backboard if spinal injury is suspected. ✘ Use 8-person lift or scoop stretcher to move patient from the ground to the backboard. Avoid use of log-roll procedure unless posterior inspection is required. + Utilize athletic trainer staff and equipment for Extremity splinting. * Preferred to request second unit to transport and standby unit remain at event. <ul style="list-style-type: none"> + Consider requesting a second unit to cover standby if critical patient. + Athletic training staff may ride with patient in back if requested. + Air ambulance landing zone should not be on the playing field. * A standby PCR report shall be completed for all dedicated standbys. Be specific about which standby it is and which location. 	<ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * When requested and approved by supervisor, CMH/EMH may provide an ALS ambulance for dedicated or non-dedicated event standby. * Treat illnesses and injuries per appropriate protocol.
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. 	

Citations: (Citizens Memorial Hospital, 2012), (National Athletic Trainers Association, 2015), (NASEMSO Medical Directors Council, 2017)



Protocol 6-085 - High-Threat Response

<p>EMD</p> <ul style="list-style-type: none">* <u>Tier One incident (threat of MCI)</u>: Dispatch primary agency and notify secondary agency supervisors.* <u>Tier Two incident (Incident with less than six casualties)</u>: Dispatch all in-county on-duty agency resources and notify all supervisors.* <u>Tier Three incident (MCI with six or more casualties)</u>: Dispatch on-duty agency resources, notify supervisors, and follow mutual aid protocols.	<p>RN Medic</p> <ul style="list-style-type: none">* Ensure completion of all applicable BLS items on the left.* MARCH:<ul style="list-style-type: none">* Major hemorrhage control.* Airway management: Consider Intubation.* Respirations: Consider Needle Decompression.* <u>Circulation</u>:<ul style="list-style-type: none">+ Consider IO LR.+ Consider TXA 1 g in 100 ml NS over 10 min (can be piggybacked into LR) if major injury AND signs of shock.* <u>If it will not delay extraction</u>: Refer to Protocol 6-050 - Control of Pain (page 81).
<p>EMR</p> <ul style="list-style-type: none">* EMS does not have an obligation to put themselves in danger. It is the discretion of the crew to enter an unsafe scene in coordination with unified command. Available information, resources, situational awareness, and a risk-vs-benefit analysis should determine actions.* Wear high-visibility and retro-reflective apparel when appropriate.* <u>PREPARATION</u>:<ul style="list-style-type: none">* Assemble Rescue Task Force (RTF). Minimum of one (1) Threat Elimination Specialists (TES) assigned to EMS, but four is preferable.* Gather the bare minimum equipment to perform lifesaving medical interventions and personal protective equipment.* RTF shall conduct radio communications on VTAC12.* <u>DIRECT THREAT CARE</u> (Hot zone - Immediate threat may exist):<ul style="list-style-type: none">* Instruct responsive TES to continue advancing toward eliminating the active threat and to provide self-aid.* Instruct ambulatory casualties to move to cover and provide self-aid.* Control massive hemorrhage with Tourniquet.* Consider moving unresponsive to cover and position to maintain airway.* <u>INDIRECT THREAT CARE</u> (Warm zone - Secondary threats may exist):<ul style="list-style-type: none">* All weapons on the casualty should be rendered safe and secure.* Establish casualty collection point(s) and perform hasty triage.* Conduct abbreviated patient assessment and perform interventions to stabilize patient for extrication. Do not delay extraction for non-life-threatening interventions. MARCH:<ul style="list-style-type: none">+ <u>Major hemorrhage control</u>: Consider Tourniquet and/or Hemostatic Agent.+ <u>Airway management</u>: Positioning, NPA.+ <u>Respirations</u>: Consider vented Occlusive Dressing.+ <u>Head / Hypothermia</u>: Treat life-threatening head injuries and maintain warmth.* <u>EVACUATION</u>:<ul style="list-style-type: none">* Reassess all patients and refer to Protocol 6-130 - Triage (page 98).	
<p>EMT</p> <ul style="list-style-type: none">* Ensure completion of applicable EMR items above.	
<p>AEMT</p> <ul style="list-style-type: none">* Ensure completion of applicable EMT items above.* Consider IV LR fluid bolus after addressing active bleeding.	

Citations: (Committee for Tactical Emergency Casualty Care, 2014), (Eller, 2017), (InterAgency Board, 2015), (Joint Committee to Create a National Policy to Enhance Survivability from Mass-Casualty Shooting Events, 2013), (Liccardi & Becker, 2016), (NASEMSO Medical Directors Council, 2017), (US Department of Homeland Security, 2009)

NEMSIS Protocol 9914185: General - Law Enforcement - Assist Law Enforcement Activity

Protocol 6-090 - Hazardous Atmosphere Standby

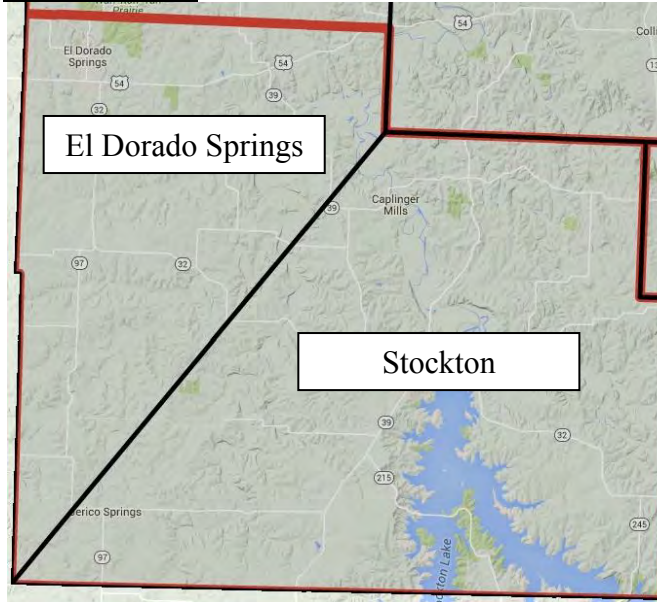
<p>EMD</p> <ul style="list-style-type: none">* Dispatch a non-dedicated standby ambulance to the following:<ul style="list-style-type: none">* All hazardous materials releases where emergency response is required by other agencies.* All structure fires where firefighters may be entering a hazardous atmosphere.	<p>RN Medic</p> <ul style="list-style-type: none">* Ensure completion of all applicable BLS items on the left.* Treat illnesses and injuries according to appropriate protocol.
<p>EMR</p> <ul style="list-style-type: none">* Treat illnesses and injuries per appropriate protocol.* Refer to Protocol 6-055 - Decontamination (page 82) as appropriate prior to contaminating personnel, equipment, and ambulance.	
<p>EMT</p> <ul style="list-style-type: none">* Ensure completion of applicable EMR items above.* Non-dedicated ambulance may be requested by any public safety agency engaged in operations deemed Immediately Dangerous to Life and Health (IDLH). Examples include, but are not limited to: Structure fires, hazardous materials, clandestine drug labs, etc.<ul style="list-style-type: none">* If Incident Commander requests ambulance to be dedicated and remain on the scene, contact the duty officer or supervisor on call.* Once on scene, check in with the Staging Officer or Incident Commander.<ul style="list-style-type: none">* Park the ambulance in a manner to allow view of the scene from a distance but always have the ability to leave the scene in an expedient manner.* Rehab of responders, baseline vitals, hydration, etc. shall preferably be conducted by fire department and/or emergency management personnel.<ul style="list-style-type: none">* Ambulance crew duties are to care for civilians, bystanders, and/or responders that require treatment and/or transport for an injury or illness.* Due to possible contamination, firefighters shall not be placed in an ambulance for cooling/warming unless they require treatment and/or transport for injuries or illnesses.* Assist with rehab duties as assigned within fire department policies which may include:<ul style="list-style-type: none">+ Encourage removal of PPE, rest, passive cooling, and oral hydration.+ Prior to returning to activity, obtain and record vitals. If vitals are outside the limits below, suggest further rest:<ul style="list-style-type: none">* SBP greater than 200.* Pulse greater than 110.* Respirations greater than 40.* Temperature greater than 101.* PulseOx less than 90%.	
<p>AEMT</p> <ul style="list-style-type: none">* Ensure completion of applicable EMT items above.	

Citations: (Wake County EMS System, 2010)

Section 6-095 - Mutual Aid Maps

When requesting resources, utilize the following maps to determine the closest, most appropriate ambulance. These are simplified boundaries based on response time calculations by Theron Becker in February 2016. KML files are available upon request for integration into GIS and CAD.

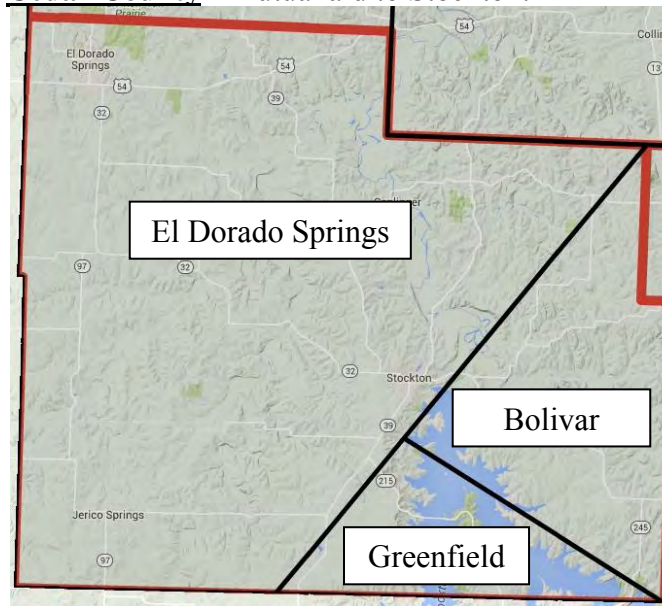
Cedar County - All ambulances available:

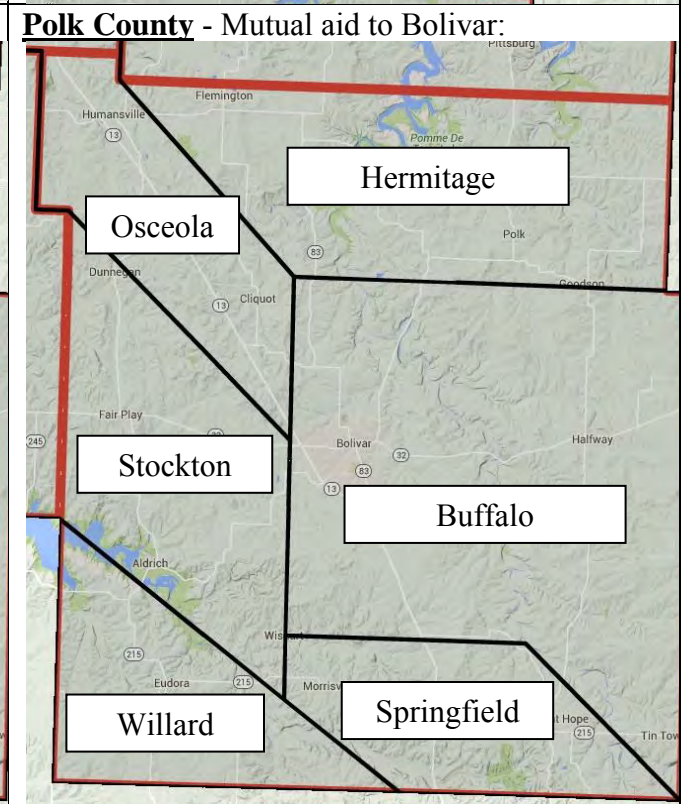
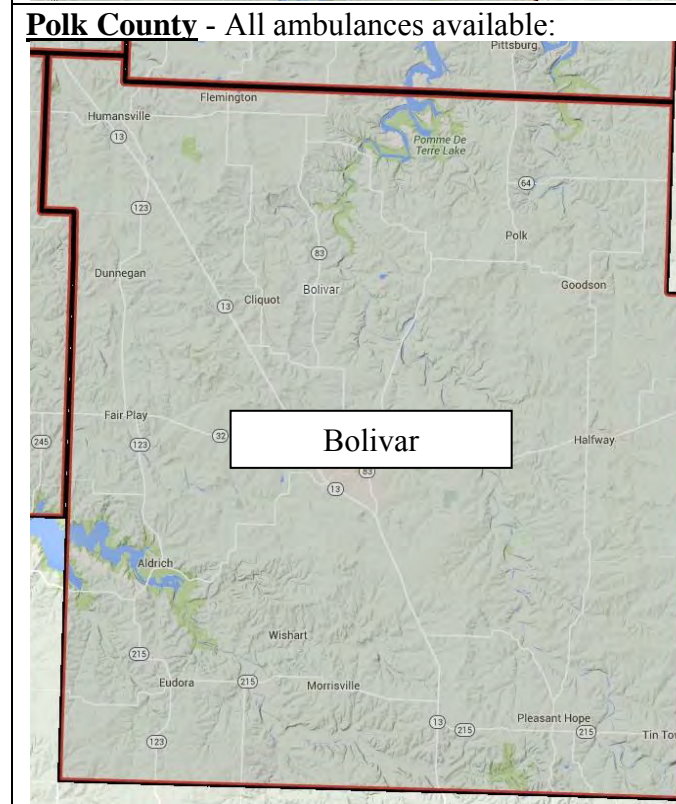
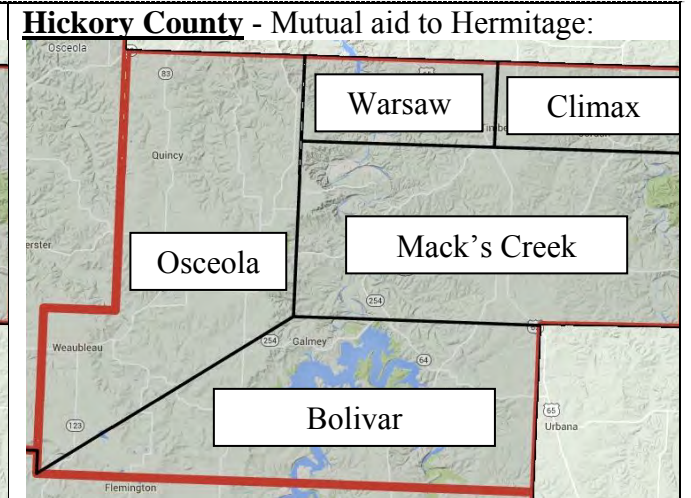
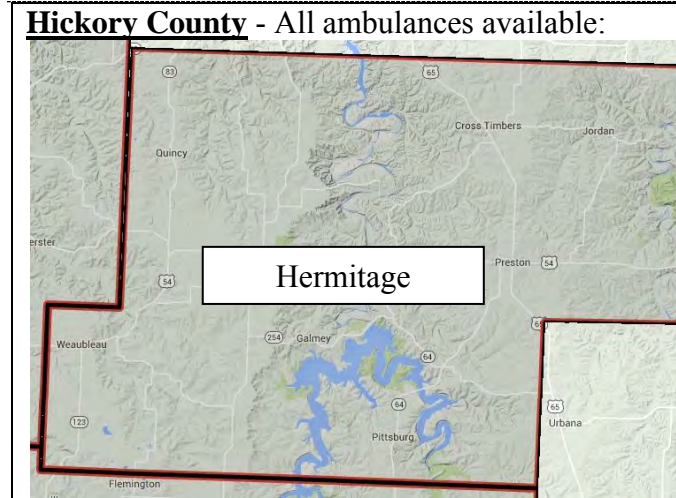


Cedar County - Mutual aid to El Dorado Springs:

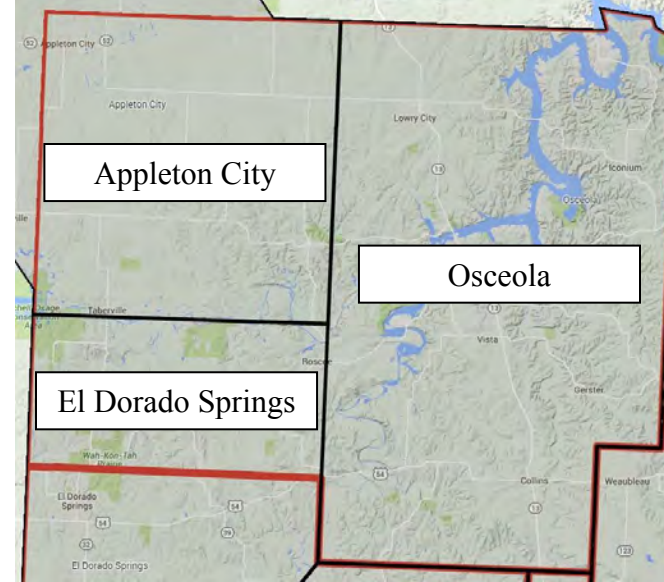


Cedar County - Mutual aid to Stockton:

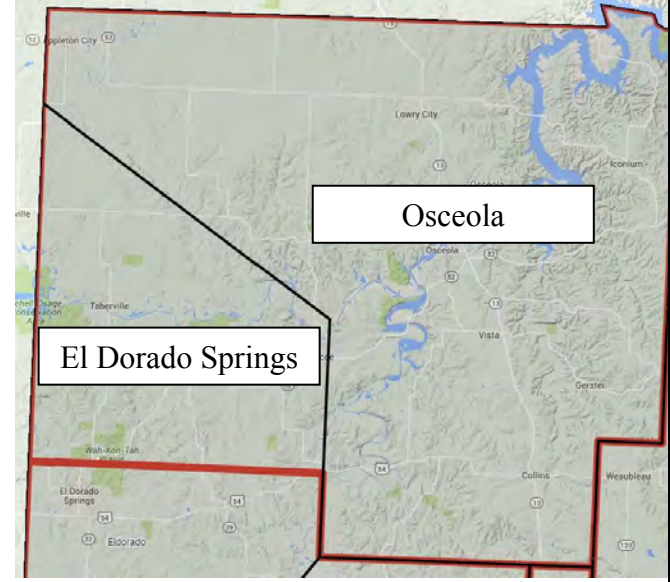




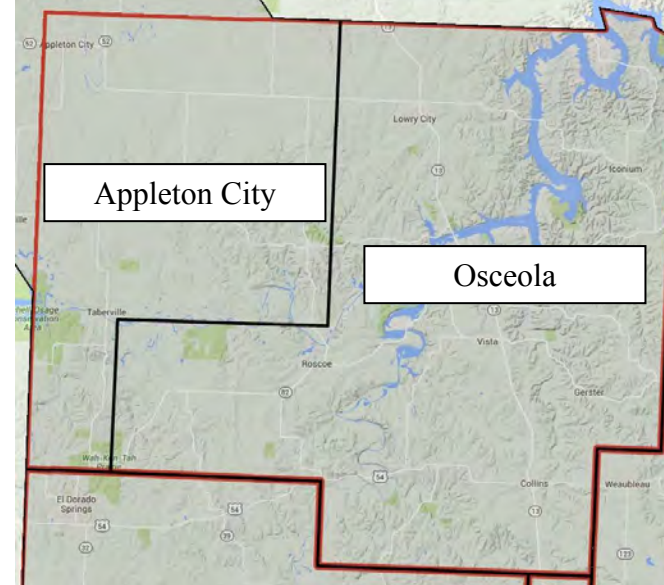
St Clair County - All ambulances available:



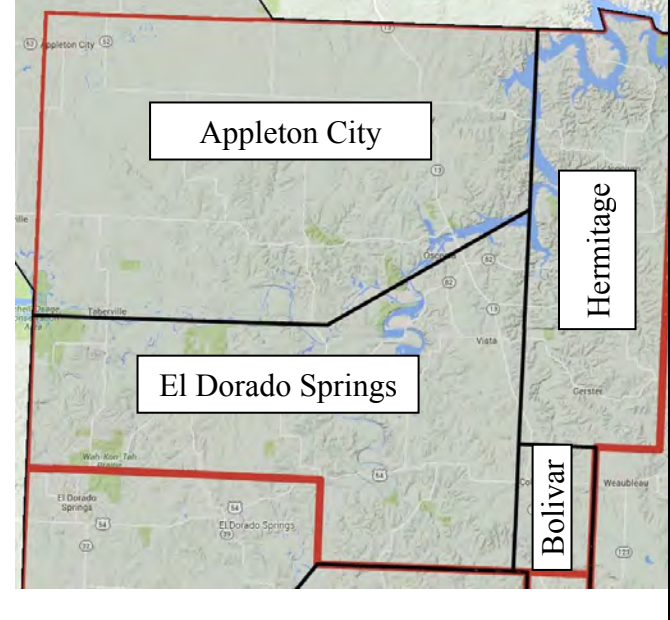
St Clair County - Mutual aid to Appleton City:



St Clair County - Mutual Aid to El Dorado Springs:



St Clair County - Mutual aid to Osceola:



Section 6-100 - Off-Duty Protocols

<p>EMR</p> <ul style="list-style-type: none">* These protocols do not apply to EMR personnel while off-duty.	<p>RN Medic</p> <ul style="list-style-type: none">* Ensure completion of all applicable BLS items on the left.* While Off-Duty, current CMH or EMH Pre-Hospital or Emergency Department RNs and Paramedics may assist in providing Advanced Life Support according to these protocols if the following conditions are met:<ul style="list-style-type: none">* A CMH or EMH ambulance must be the transporting unit and an on-duty CMH or EMH RN or Paramedic must provide primary patient care.
<p>EMT</p> <ul style="list-style-type: none">* While off duty: EMTs, RNs, and Paramedics currently employed with an agency that has adopted these protocols may provide Basic Life Support according to these protocols.* Ensure 9-1-1 is contacted and an ambulance is responding as appropriate.* Coordinate with responding emergency services.	
<p>AEMT</p> <ul style="list-style-type: none">* Ensure completion of applicable EMT items above.	
<p>Citations:</p>	

Section 6-105 - Quality Improvement

<p>EMD</p> <ul style="list-style-type: none">* Each month, a Quality meeting will be scheduled and held at CMH. Dispatchers, first responders, and ambulance crew involved in the call will be invited to attend.* Demographic and statistical data from the previous months will be presented by all represented agencies.* Additionally, any response agency or dispatch agency may request a detailed review of one or more specific calls.* Ongoing in-house Quality improvement must include at least a 15% review rate of Documentation by management staff to ensure protocol compliance and appropriate patient care.* Annually, each <u>dispatch agency must participate in quality meetings quarterly</u> with at least one representative (i.e., 100% attendance by the agency).	<p>RN Medic</p> <ul style="list-style-type: none">* Ensure completion of all applicable BLS items on the left.* Annually, <u>each ALS agency must participate in all applicable quality meetings</u> with at least one representative.* Each arrest, RSI, intubation, supraglottic airway insertion, or administration of RSI drugs (Etomidate or Rocuronium) will be brought to quality meeting for review.
<p>EMR</p> <ul style="list-style-type: none">* Ensure completion of applicable EMD items above.* Annually, each <u>volunteer BLS agency must participate in quality meetings bi-annually</u> with at least one representative (i.e., 50% attendance by the agency).	
<p>EMT</p> <ul style="list-style-type: none">* Ensure completion of applicable EMR items above.* Annually, each <u>career BLS agency must participate in quality meetings quarterly</u> with at least one representative (i.e., 75% attendance by the agency).	
<p>AEMT</p> <ul style="list-style-type: none">* Ensure completion of applicable EMT items above.	

Citations: (NASEMSO Medical Directors Council, 2017)

Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)**EMR**

- * Maintain Airway and **Ventilate** with 100% **Oxygen** for 5 min, if possible.
 - * Attempt to maintain SpO₂ above 90% at all times.
 - * Consider nasal cannula at 15 LPM after sedation.
 - * Avoid BVM prior to **intubation** if SpO₂ above 90%.
- * Monitor pulseoximetry.
- * Attach **cardiac monitor**.

EMT

- * Ensure completion of applicable EMR items above.
- * Request **second ALS unit** or **supervisor**, if possible.
- * Assist ALS with **Capnography**.
- * **RSI contraindications:**
 - * Unable to **Ventilate** with BVM.
 - * Facial or neck trauma.
 - * Possibility of failure of backup Airways.
 - * **Cricothyrotomy** would be difficult or impossible.
 - * Acute epiglottitis.
- * Press "**PRINT**" on the **monitor** after **Intubation** and at **transfer** to ER/LZ to record **Capnography** waveform.
- * Maintain warmth for paralyzed patient.

AEMT

- * Ensure completion of applicable EMT items above.
- * **IV NS** or **LR**. Consider 250 ml bolus.

RSI Continued:

RN Medic

- * Ensure completion of all applicable BLS items on the left.
- * RSI is indicated for all patients with a pulse needing **intubation**.
- * Consult EMT to ensure absence of contraindications.
- * Call **MEDICAL CONTROL** for permission to **RSI**.
- * Consider **IO NS** or **LR** 250 ml bolus.
- * Assign duties.

- * **Premedicate:**
 - * **Adult:**
 - + **Bradycardic:** **Atropine** 0.5 mg **IV/IO**.
 - + **Seizing:** Refer to **Protocol 4-170 - Seizures** (page 62).
 - + **Pain or tachycardia:** Consider **Fentanyl** 3 mcg/kg **IV/IO/IN** (max 300 mcg).
 - * **Pediatric:**
 - + Consider **Atropine** 0.02 mg/kg **IV/IO** (min 0.1 mg) (max 0.5 mg).
 - + **Seizing:** Refer to **Protocol 4-170 - Seizures** (page 62).
 - + Consider **Fentanyl** 1-2 mcg/kg **IV/IO/IN** (max 150 mcg).

- * **Sedate:**
 - * **Ketamine** 1-2 mg/kg **IV/IO** (60 sec onset, 10 min duration).
 - + OR **Etomidate** 0.3 mg/kg **IV/IO** (contraindicated in **sepsis**).

- * **Paralyze:** Consider delayed paralysis to allow preoxygenation.
 - * **Delayed:** **Rocuronium** 0.1 mg/kg **IV/IO** (2 min onset, 10 min duration).
 - * **Rapid:** **Rocuronium** 1.2 mg/kg **IV/IO** (1 min onset, 30 min duration).

- * **INTUBATE.** Elevate head of **cot**. Confirm with **Capnography**. Maximum of three attempts, then BLS failed airway should be used.
 - * Consider **Suction, Bougie, Gastric Tube, King,** and/or **LMA** .

- * **Continued sedation:**
 - * **Adult:**
 - + **Ketamine** 1 mg/kg **IV/IO**.
 - * OR **Versed** 2.5-5 mg **IV/IO** every 5 min as needed maintaining SBP greater than 100.
 - + Consider **Fentanyl** 50-100 mcg **IV/IO/IN** (max 300 mcg).
 - * **Pediatric:**
 - + Consider **Ketamine** 1 mg/kg **IV/IO**.
 - + **12-18 12 yr old:** Consider **Versed** same as adult.
 - + **2 mo - 12 yr old:** Consider **Versed** 0.15 mg/kg **IV/IO**. May repeat every 5 min.
 - + Consider **Fentanyl** 1-2 mcg/kg **IV/IO/IN** (max 150 mcg).

- * **Continued paralysis** (consider if signs of patient movement after sedation): **Rocuronium** 0.1 mg/kg **IV/IO**.

Citations: (Bernard, et al., 2015), (Feng, Chan, Liu, Or, & Lee, 1996), (Helfman, Gold, DeLisser, & Herrington, 1991), (Hollabaugh, 2017), (Howard, 2015), (Lin, et al., 2012), (Robinson & Clancy, 2001), (Singh, Vichitvejpaisal, Gaines, & White, 1995), (Ugur, Ogurlu, Gezer, Nuri Aydin, & Gursoy, 2007), (Weingart & Levitan, Preoxygenation and prevention of desaturation during emergency airway management, 2012), (Weingart, et al., 2014)

NEMSIS Protocol 9914007: Airway - Rapid Sequence Induction (RSI-Paralytic)



Section 6-111 - RSI Dosing Sheet

Use ideal body weight for weight-based doses.

CMH/EMH EMS RSI Quick Reference Dosing/Sizing Sheet												
Patient Age	New	3 mo	6 mo	1 yr	2 yr	4 yr	6 yr	8 yr	10 yr	12 yr	14 yr	adult
Broslow Color	Grey	Pink	Red	Purple	Yellow	White	Blue	Orange	Green			
Patient Weight (lbs)	10 lbs	15 lbs	20 lbs	25 lbs	30 lbs	40 lbs	50 lbs	60 lbs	80 lbs	90 lbs	110 lbs	150 lbs
Patient Weight (kg)	5 kg	7 kg	9 kg	11 kg	14 kg	18 kg	23 kg	27 kg	36 kg	41 kg	50 kg	68 kg
RSI - Prepare Equipment												
Laryngoscope	1 mil	1 mil	1 mil	1.5 mil	2 mil	2 mil	2	2	3	3	4	4
ET Size	3.5	3.5	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8
ET Depth (cm)	10.0 cm	10.5 cm	11.0 cm	12.0 cm	13.5 cm	15.0 cm	16.5 cm	18.0 cm	19.5 cm			
King Size (LTS-D)					2 (gm)	2 (gm)	2.5 (org)	2.5 (org)	3 (yel)	3 (yel)	4 (red)	4 (red)
LMA Size (supreme)	1	1.5	1.5	2	2	2	2.5	2.5	3	3	3	4
RSI - Medicate Before Intubation (ml)												
Fentanyl (2 mcg/kg)	0.2 ml	0.3 ml	0.4 ml	0.5 ml	0.6 ml	0.8 ml	1.0 ml	1.1 ml	1.5 ml	1.7 ml	2.0 ml	2.0 ml
Atropine (0.5 mg)	1.0 ml	1.4 ml	1.8 ml	2.2 ml	2.8 ml	3.6 ml	4.6 ml	5.4 ml	7.2 ml	8.2 ml	10.0 ml	5.0 ml
Ketamine (1 mg/kg)	0.1 ml	0.2 ml	0.2 ml	0.3 ml	0.3 ml	0.4 ml	0.5 ml	0.6 ml	0.8 ml	0.9 ml	1.0 ml	1.9 ml
Ketamine (2 mg/kg)	0.2 ml	0.3 ml	0.4 ml	0.5 ml	0.6 ml	0.8 ml	1.0 ml	1.1 ml	1.5 ml	1.7 ml	2.0 ml	3.7 ml
Etomidate (0.3 mg/kg)	0.8 ml	1.1 ml	1.4 ml	1.7 ml	2.1 ml	2.7 ml	3.5 ml	4.1 ml	5.4 ml	6.2 ml	7.5 ml	10.2 ml
Rocuronium (1.2 mg/kg)	0.6 ml	0.9 ml	1.1 ml	1.4 ml	1.7 ml	2.2 ml	2.8 ml	3.3 ml	4.4 ml	5.0 ml	6.0 ml	8.2 ml
RSI - Medicate After Intubation (ml)												
Ketamine (1 mg/kg)	0.1 ml	0.2 ml	0.2 ml	0.3 ml	0.3 ml	0.4 ml	0.5 ml	0.6 ml	0.8 ml	0.9 ml	1.0 ml	1.4 ml
Versed	0.5 ml	0.7 ml	0.9 ml	1.1 ml	1.4 ml	1.8 ml	1.2 ml	1.4 ml	1.8 ml	2.1 ml	5.0 ml	5.0 ml
Fentanyl	0.2 ml	0.3 ml	0.4 ml	0.5 ml	0.6 ml	0.8 ml	1.0 ml	1.1 ml	1.5 ml	1.7 ml	2.0 ml	2.0 ml
Rocuronium (0.1 mg/kg)	0.1 ml	0.1 ml	0.1 ml	0.2 ml	0.2 ml	0.2 ml	0.3 ml	0.3 ml	0.4 ml	0.5 ml	0.5 ml	0.7 ml



Section 6-120 - Transfer of Care

<p>EMR</p> <ul style="list-style-type: none">* First responder personnel will assume patient care from initial patient contact until face-to-face verbal report given to transporting ambulance crew.* Verbal report shall include, but not limited to: patient history, current status, treatments provided.* Available Documentation should also be transferred (i.e. EKGs, patient information, etc.).	<p>RN Medic</p> <ul style="list-style-type: none">* Ensure completion of all applicable BLS items on the left.* In the event of mechanical difficulty or other situation requiring transferring ALS patient to another ambulance, CMH or EMH RN or Paramedic may maintain patient care in the new ambulance (even if the new ambulance is not a CMH or EMH ambulance).* In a multi-patient incident, CMH or EMH RN or Paramedic will continue patient care until care can be transferred to appropriate in-coming ambulance with face-to-face verbal report.
<p>EMT</p> <ul style="list-style-type: none">* Ensure completion of applicable EMR items above.* CMH/EMH EMS personnel will assume patient care from initial patient contact or face-to-face verbal report from on-scene medical personnel until face-to-face verbal report given to flight crew or receiving facility.* In the event of mechanical difficulty or other situation requiring transferring BLS patient to another ambulance, CMH or EMH EMT may maintain patient care in the new ambulance (even if the new ambulance is not a CMH or EMH ambulance).	
<p>AEMT</p> <ul style="list-style-type: none">* Ensure completion of applicable EMT items above.	

Citations:

Section 6-125 - Transfer Out of Hospital

EMD	RN Medic
<ul style="list-style-type: none"> * MPDS Protocol 33 (Transfer) - Acuity levels: The following acuity levels are defined for using Protocol 33 (Transfer) where the transfer is originating within a hospital. All other locations such as long-term care or clinics shall use Protocol 33 (Transfer) Delta and Charlie levels. <ul style="list-style-type: none"> * Transfers will be dispatched in the following order of importance: <ul style="list-style-type: none"> + Located in the Emergency Department (ED). + Located in the Cath Lab. + Located in the Obstetrics Department (OB). + Located in the Intensive Care Unit (ICU). + Located in the Medical Surgical Unit (MS). * Priority 1 (Lights and siren response by the closest ambulance): <ul style="list-style-type: none"> + Time critical diagnosis such as STEMI, Stroke, or Trauma. + Life threat that has to be transported as soon as possible. + Immediate surgery or treatment for a medical condition. + Urgent obstetrics (OB) patient. * Priority 2 (These will only be dispatched if the county ambulance coverage is at least status 2): <ul style="list-style-type: none"> + Direct admit to an Intensive Care Unit (ICU). + Stable patient going to higher level of care. * Priority 3 (These will only be dispatched if the county ambulance coverage is at least status 3): <ul style="list-style-type: none"> + Specialized care. + Ongoing care of non-acute condition. + Surgery scheduled for the next day or later. + Patient has been in the emergency room for more than 24 hours. * Priority 4 (These will not be dispatched until an ambulance is available within the county to maintain 9-1-1 coverage. No lights and siren response by ambulance. These transfers will be dispatched in the same order as Priority 3 based on location.): <ul style="list-style-type: none"> + Very stable and a lengthy delay in transfer will not jeopardize the patient. + Transferred to a long term care facility or home. + Veterans Administration (VA) hospital or Select Specialty (similar rehab facility). 	<ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * Priority 1 transfers: <ul style="list-style-type: none"> * Shall be responded to in the same fashion and promptness as any other priority 1 dispatches. * Patient care shall be provided by the RN or paramedic. * If transferring physician requests ALS transfer: A paramedic will attend the patient in the back and complete documentation as an ALS patient. * If patient on ventilator and sedated with Propofol: <ul style="list-style-type: none"> * Consider replacing Propofol at hospital bedside with Ketamine from ambulance stock. * Adult: <ul style="list-style-type: none"> + Ketamine 1 mg/kg IV/IO. + Consider Fentanyl 50-100 mcg IV/IO/IN (max 300 mcg). * Pediatric: <ul style="list-style-type: none"> + Ketamine 1 mg/kg IV/IO. + Consider Fentanyl 1-2 mcg/kg IV/IO/IN (max 150 mcg).
<p style="text-align: center;">EMR</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMD items above. 	
<p style="text-align: center;">EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. 	
<p style="text-align: center;">AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. 	

Citations:

NEMSIS Protocol 9914181: General - Interfacility Transfer



Protocol 6-130 - Triage

Triage tags should be used on mass casualty incidents, all patients transferred by **Air Ambulance**, and all patients transported to an ER on Tuesdays.

HEAR Report:

- * Every patient radio report on shall be Triage according to the following:
 - * **MEDICAL RED** or **TRAUMA RED**: Requires immediate life-saving intervention (i.e. **STEMI**, **Stroke**, Unconscious, Unstable).
 - * **MEDICAL YELLOW** or **TRAUMA YELLOW**: High risk or multiple resources needed in ER (i.e. ALOC, Labs, ECG, X-ray, CT, Ultrasound, Respiratory therapy).
 - * **MEDICAL GREEN** or **TRAUMA GREEN**: Minor complaints and manageable with limited resources.

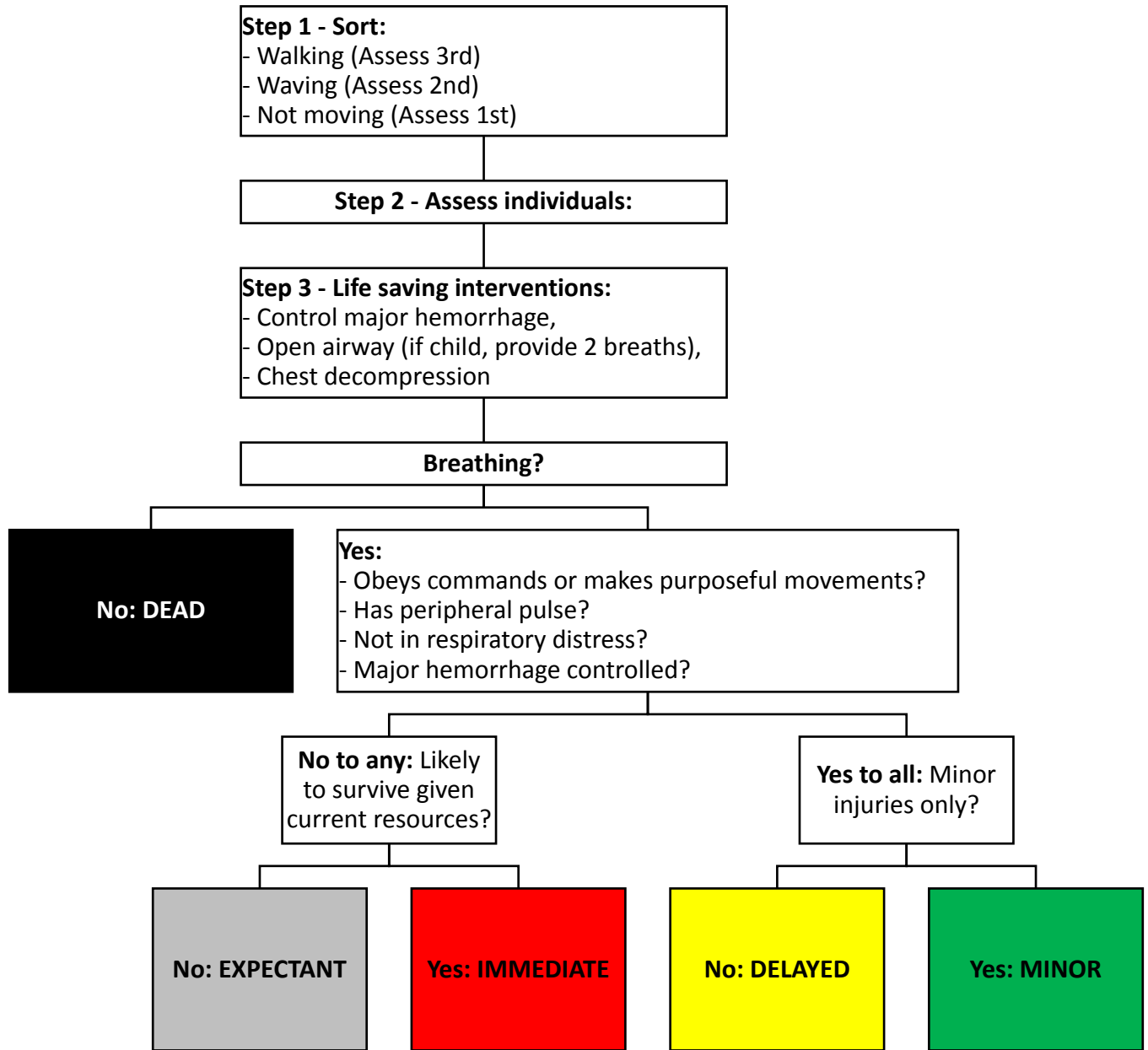
Mass Casualty Incident (MCI):

- * Defined as greater than **five patients**.
- * EMS scene communications should be conducted on **VTAC12**.
- * **Notify ER** as soon as possible (include number of patients, if known).
- * First arriving ambulance assignments:
 - * RN/Paramedic: Designated **TRIAGE OFFICER**.
 - + **Determine** number of patients.
 - + **Establish** Triage area(s).
 - + **Triage** and tag patients according to **Section 6-135 - SALT Triage** (page 99).
 - * EMT: Designated **TRANSPORTATION OFFICER**.
 - + **Communicate** number of patients.
 - + **Establish** staging area(s).
 - + **Coordinate** patient transport.
- * Second arriving ambulance assignment:
 - * **Establish** treatment area(s).

Citations: (Citizens Memorial Hospital, 2012), (Institute of Medicine of the National Academies, 2012), (US Department of Homeland Security, Unknown)

NEMSIS Protocol 9914191: Injury - Mass/Multiple Casualties

Section 6-135 - SALT Triage



Section 6-140 - Termination of Resuscitation

<p>EMD</p> <ul style="list-style-type: none"> * MPDS Protocol 9 (Cardiac Arrest) - Obvious death: The following conditions indicate obvious death: <ul style="list-style-type: none"> * Decapitation, * OR Decomposition, * OR Putrefaction, * OR Incineration. * MPDS Protocol 9 (Cardiac Arrest) - Expected death: The following conditions indicate expected death: <ul style="list-style-type: none"> * DNR order, OR * Hospice care. 	<p>RN Medic</p> <ul style="list-style-type: none"> * Ensure completion of all applicable BLS items on the left. * <u>The following scenarios should always be transported to the closest appropriate facility as soon as possible and field termination is not an option:</u> <ul style="list-style-type: none"> * Pediatrics, Drownings, Poisonings, Hypothermia, or pregnant with fetus greater than 24 weeks gestation. * If Airway cannot be maintained and/or IV/IO cannot be accessed. * <u>If none of the above apply:</u> Patients should receive at least 20 minutes of ACLS resuscitative efforts on the scene prior to considering movement. * <u>If witnessed, non-trauma Arrest:</u> full ACLS resuscitation efforts should continue for at least 20 minutes prior to consideration of field termination. * When considering termination, RN/Paramedic should consult with the family. If family believes the patient would wish continued resuscitative efforts, resuscitation will continue and the patient shall be transported to closest appropriate facility. * In the event there is no clear evidence to withhold CPR, however patient has a terminal condition and the patient's wishes have been conveyed by the family, contact MEDICAL CONTROL to withhold resuscitation. * Field termination may be requested from MEDICAL CONTROL for victims of trauma with no signs of life regardless of how long ACLS efforts have been underway. * After resuscitation has been terminated, contact local law enforcement and remain on scene until at least law enforcement or coroner arrival on the scene. If at healthcare facility, scene may be cleared prior to body retrieval. * Fax the ePCR to the facility providing medical control. Faxing is not necessary if: <ul style="list-style-type: none"> * CMH providing medical control to CMH ambulance OR * EMH providing medical control to EMH ambulance.
<p>EMR</p> <ul style="list-style-type: none"> * Initiate CPR immediately in the event of acute cardiac or respiratory Arrest if: <ul style="list-style-type: none"> * There is a possibility that the brain is viable. * AND There are no legal or medical reasons to withhold resuscitation (DNR, declaration of intent, terminal illness, and verifiable absence of ABCs longer than 10min). * Resuscitation should not be started if: <ul style="list-style-type: none"> * Decapitation. * OR Rigor mortis. * OR Tissue decomposition. * OR Extreme dependent lividity. * OR Obvious mortal injury. * OR Properly documented DNR order. * OR Properly documented advance directive. * When any doubt exists of the validity of DNR orders or advance directive, resuscitation should be initiated immediately. 	
<p>EMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMR items above. 	
<p>AEMT</p> <ul style="list-style-type: none"> * Ensure completion of applicable EMT items above. 	

Citations: (Citizens Memorial Hospital, 2013), (Millin, Galvagno, Khandker, Malki, & Bulger, 2013), (NASEMSO Medical Directors Council, 2017)

NEMSIS Protocol 9914201: Cardiac Arrest - Determination of Death / Withholding Resuscitative Efforts



Part 7 - Medication Protocols

Section 7-001 - Medications Currently on Response Vehicles

19 CSR 30-40.303(2)(C) states “the medical director, in cooperation with the ambulance service administrator, shall develop, implement, and annually review medications and medical equipment to be utilized.” This section fulfills that requirement for equipment.

Refer to [Section 8-001 - Equipment Currently on Response Vehicles](#) (page 167) for equipment.

EMS SUPERVISOR VEHICLE

Bag, Big

Dextrose (1 bag - 250 ml D10W)

Bag, Medication

Adenosine (3 vials)
Amiodarone (1 bag 150 mg in 100 ml)
Amiodarone (2 vials - 150 mg ea)

Atropine (3 vials)
Benadryl (1 vial)
Epinephrine 1:1,000 (2 vials)
Epinephrine 1:10,000 (4 vials)

Glucagon (1 kit)
Lidocaine (2 vials)
Magnesium Sulfate (4 vials - 1 g ea)

Narcan (2 vials)
Normal Saline (1 bag 100 ml)
Sodium Bicarbonate (2 vials)
Thiamine (1 vial)

Bag, Oxygen

Albuterol (1 vial)

Oxygen (1 tank)

Xopenex (1 vial)

Box, Medication

Acetaminophen (2 cups)
Activated Charcoal (1 tube)
Aspirin (16 tabs)
Atropine (1 vial multidose)
Calcium Chloride (2 vials)
Captopril (2 tabs)

Cardizem [CMH Only] (2 kits)
Glucose (2 tubes)
Haldol [CMH Only] (2 vials)
Heparin [CMH Only] (2 vials)
Hydralazine [CMH Only] (2 vials)
Ibuprofen (2 cups)

Labetalol (2 vials)
Neo-Synephrine [CMH Only] (1 bottle)
Nitroglycerin (1 bottle)
Oxytocin (2 vials)
Phenergan (2 vials)

Solu-Medrol (2 vials)
Tetracaine (2 bottles)
Toradol (2 vials)
TXA (2 vials)
Zofran (6 vials)

Box, Narcotics

Fentanyl (4-8 vials)

Ketamine [CMH Only] (2 vials)

Morphine (2-6 vials - 4 mg ea)
Morphine (2-6 vials - 10 mg ea)

Versed (3-6 vials)

Monitor

Aspirin (4 tabs)

Nitroglycerin (1 bottle)

RSI Kit [CMH Only]

Atropine (1 vial)

Etomidate (1 vial)

Rocuronium (4 vials)

ALS AMBULANCE

Bag, Big

Dextrose (1 bag - 250 ml D10W)

Bag, Medication

Adenosine (3 vials)	Atropine (3 vials)	Glucagon (1 kit)	Narcan (2 vials)
Amiodarone (1 bag 150 mg in 100 ml)	Benadryl (1 vial)	Lidocaine (2 vials)	Normal Saline (1 bag 100 ml)
Amiodarone (2 vials - 150 mg ea)	Epinephrine 1:1,000 (2 vials)	Magnesium Sulfate (4 vials - 1 g ea)	Sodium Bicarbonate (2 vials)
	Epinephrine 1:10,000 (4 vials)		Thiamine (1 vial)

Box, Medication

Acetaminophen (2 cups)	Cardizem [CMH Only] (2 kits)	Labetalol (2 vials)	Solu-Medrol (2 vials)
Activated Charcoal (1 tube)	Glucose (2 tubes)	Neo-Synephrine [CMH Only] (1 bottle)	Tetracaine (2 bottles)
Aspirin (16 tabs)	Haldol [CMH Only] (2 vials)	Nitroglycerin (1 bottle)	Toradol (2 vials)
Atropine (1 vial multidose)	Heparin [CMH Only] (2 vials)	Oxytocin (2 vials)	TXA (2 vials)
Calcium Chloride (2 vials)	Hydralazine [CMH Only] (2 vials)	Phenergan (2 vials)	Zofran (6 vials)
Captopril (2 tabs)	Ibuprofen (2 cups)		

Box, Narcotics

Fentanyl (4-8 vials)	Ketamine [CMH Only] (2 vials)	Morphine (2-6 vials - 4 mg ea)	Versed (3-6 vials)
		Morphine (2-6 vials - 10 mg ea)	

Cabinets

Albuterol (6 vials)	Epinephrine Racemic (1 vial)	Magnesium Sulfate (1 bag - 2 g in 500 ml ea)	Normal Saline (6 bags - 1 L ea)
Dextrose (1 bag 250 ml D10W)	Lactated Ringers (2 bags - 1 L ea)	Nitroglycerin (1 kit)	Oxygen (2 tanks)
Dopamine (1 kit)	Lidocaine (1 kit)		Xopenex (6 vials)
Duoneb (4 vials)			

Cot

Albuterol (1 vial)	Oxygen (1 tank)	Xopenex (1 vial)
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IV Tray

Normal Saline (10 flushes)

Monitor

Aspirin (4 tabs)	Nitroglycerin (1 bottle)
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RSI Kit [CMH Only]

Atropine (1 vial)	Etomidate (1 vial)	Rocuronium (4 vials)
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BLS AMBULANCE

Bag, Medication

Adenosine (3 vials)	Atropine (3 vials)	Glucagon (1 kit)	Narcan (2 vials)
Amiodarone (1 bag 150 mg in 100 ml)	Benadryl (1 vial)	Lidocaine (2 vials)	Normal Saline (1 bag 100 ml)
Amiodarone (2 vials - 150 mg ea)	Epinephrine 1:1,000 (2 vials)	Magnesium Sulfate (4 vials - 1 g ea)	Sodium Bicarbonate (2 vials)
	Epinephrine 1:10,000 (4 vials)		Thiamine (1 vial)

Cabinets

Lactated Ringers (1 bag - 1 L)	Normal Saline (1 bag - 1 L ea)	Oxygen (2 tanks)
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Cot

Albuterol (1 vial)	Oxygen (1 tank)	Xopenex (1 vial)
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Monitor

Aspirin (4 tabs)	Nitroglycerin (1 bottle)
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BOLIVAR FIRE MEDICAL RESPONSE VEHICLE

Bag, Medical

Glucose (2 tubes)

Oxygen (1 bottle)

PLEASANT HOPE FIRE HEAVY RESCUE VEHICLE

Compartments


Oxygen

PLEASANT HOPE FIRE LIGHT RESCUE VEHICLE


Compartments

Oxygen

Section 7-010 - Acetaminophen (Tylenol)

<p><u>Scope of Practice:</u></p> <p>* </p> <p><u>Route:</u></p> <p>* PO.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Analgesic. Antipyretic. * Analgesic mechanism unknown. Antipyretic is through direct action on hypothalamus. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> 1-4 hours. * <u>Onset time:</u> 30-45 minutes. * <u>Peak action time:</u> 30-60 minutes. * <u>Duration of action:</u> 4-6 hours.
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<p><u>Indications:</u></p> <p>Protocol 4-100 - Fever (Fever greater than 102 degrees F)..... page 53</p> <p>Section 7-300 - Ibuprofen (Advil, Pediaprofen)(has been ineffective or administered within 6 hours) page 133</p>
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<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Hypersensitivity. <p><u>Pregnancy risk factor:</u></p> <p>*  Category B (No risks have been found in humans).</p> <p><u>Potential incompatibilities:</u></p> <p>*</p>	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Avoid in patients with severe liver disease. * Use caution with Chronic alcohol use. Impaired renal function. PKU. * May cause Rash, uticaria, Nausea. <p><u>Antidote:</u></p> <ul style="list-style-type: none"> * Acetylcysteine or mucomyst.
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Citations: (Comerford & Labus, 2010), (Cox Paramedics, 2014)



Section 7-020 - Activated Charcoal (Actidose)

<p><u>Scope of Practice:</u></p> <p>RN Medic</p> <p><u>Route:</u></p> <ul style="list-style-type: none"> * Oral. 	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Adsorbent. * Adsorbs toxins by chemical binding and prevents gastrointestinal absorption. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> Unknown * <u>Onset time:</u> Immediate * <u>Peak action time:</u> Unknown * <u>Duration of action:</u> Unknown
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Indications:
Protocol 4-140 - Poisoning or Overdose
 (Poisoning following emesis or when emesis is contraindicated) page 58

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * No gag reflex. * Any altered mental state. * Ingestion of acids, alkalis, ethanol, methanol, Cyanide, iron salts, lithium, pesticides, petroleum products. * Acetaminophen Overdose unless the receiving hospital has IV antidote. * GI Obstruction. <p><u>Pregnancy risk factor:</u></p> <p>C</p> <ul style="list-style-type: none"> * Category C (Not enough research has been done to determine if this drug is safe). <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none"> * 	<p><u>Precautions and side effects:</u></p> <ul style="list-style-type: none"> * Aspiration may cause pneumonitis. * May cause Nausea, vomiting, constipation, diarrhea. <p><u>Antidote:</u></p> <ul style="list-style-type: none"> *
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Citations: (Comerford & Labus, 2010)



Section 7-030 - Adenosine (Adenocard)


<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> *  <p><u>Route:</u></p> <ul style="list-style-type: none"> * IV/IO slam followed by rapid flush. 	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Antiarrhythmic. * Slows AV conduction. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life</u>: less than 10 seconds. * <u>Onset time</u>: Immediate * <u>Peak action time</u>: Immediate * <u>Duration of action</u>: Unknown
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Indications:

Protocol 2-020 - Atrial Fibrillation (A-Fib) or Atrial Flutter (Symptomatic PSVT) page 18

Protocol 2-080 - Tachycardia Narrow Stable (Symptomatic PSVT) page 26


Protocol 2-090 - Tachycardia Narrow Unstable (Symptomatic PSVT)..... page 27

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * 2nd or 3rd degree heart block. * Sick Sinus Syndrome. * Drug-induced Tachycardia. <p><u>Pregnancy risk factor:</u></p> <ul style="list-style-type: none"> *  Category C (Not enough research has been done to determine if this drug is safe). <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none"> * 	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Arrhythmias, including blocks, are common at the time of Cardioversion. Use caution in patients with Asthma. * May cause Flushing, Headache, shortness of breath, dizziness, Nausea, sense of impending doom, Chest pressure, numbness. May be a brief episode of Asystole after administration. <p><u>Antidote:</u></p> <ul style="list-style-type: none"> *
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Citations: (Comerford & Labus, 2010)



Section 7-040 - Albuterol (Proventil, Ventolin)

<p><u>Scope of Practice:</u></p> <p>* </p> <p><u>Route:</u></p> <p>* Nebulized.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Beta-2 selective sympathomimetic. * Binds and stimulates beta-2 receptors, resulting in relaxation of bronchial smooth muscle. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> 1.6 hours. * <u>Onset time:</u> 5-15 minutes. * <u>Peak action time:</u> 30-120 minutes. * <u>Duration of action:</u> 2-6 hours.
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Indications:

Protocol 4-020 - Anaphylaxis page 40


Protocol 4-030 - Asthma page 41

Protocol 4-060 - Chronic Obstructive Pulmonary Disease (COPD)
 (Reversible bronchospasm associated with COPD)..... page 48

Protocol 4-070 - Congestive Heart Failure (CHF) page 49

Protocol 5-050 - Extremity Trauma page 68

Section 7-180 - Duoneb (Ipratropium and Albuterol, Combivent) page 122

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Angioedema. <p><u>Pregnancy risk factor:</u></p> <p>*  Category C (Not enough research has been done to determine if this drug is safe).</p> <p><u>Potential incompatibilities:</u></p> <p>*</p>	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Blood pressure, pulse, and EKG should be monitored. * Use caution in patients with known heart disease. * May cause Palpitations, anxiety, Headache, dizziness, sweating, hyperglycemia, hypokalemia, insomnia, Tachycardia, Nausea, vomiting, throat irritation, dry mouth, epistaxis, Hypertension, dyspepsia, and paradoxical bronchospasm. <p><u>Antidote:</u></p> <p>*</p>
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Citations: (Comerford & Labus, 2010)



Section 7-050 - Amiodarone (Cordarone)

<p><u>Scope of Practice:</u></p> <p>RN Medic</p> <p><u>Route:</u></p> <p>* IV/IO.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Class III antiarrhythmic. * Sodium, Calcium, and Potassium channel blocker. Prolongs intranodal conduction. Prolongs refractoriness of the AV node. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> 40-50 days. * <u>Onset time:</u> Unknown. * <u>Peak action time:</u> Unknown. * <u>Duration of action:</u> Variable.
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Indications:







Protocol 2-020 - Atrial Fibrillation (A-Fib) or Atrial Flutter (Second-line agent for Atrial arrhythmias)	page 18
Protocol 2-080 - Tachycardia Narrow Stable	page 26
Protocol 2-100 - Tachycardia Wide Stable	page 28
Protocol 2-110 - Tachycardia Wide Unstable	page 29
Protocol 2-130 - Ventricular Ectopy	page 31
Protocol 2-140 - Ventricular Fibrillation (V-Fib or V-Tach)	page 32
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)	page 78

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Cardiogenic shock. * Sinus Bradycardia. * 2nd or 3rd degree AV block. * Sick Sinus Syndrome. * Sensitivity to benzyl alcohol and iodine. <p><u>Pregnancy risk factor:</u></p> <p>D Category D (Adverse reactions have been found in humans).</p> <p><u>Potential incompatibilities:</u></p> <p>*</p>	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Use caution with Proarrhythmic with concurrent antiarrhythmic meds. * Consider slower administration on patients with hepatic or renal dysfunction. * May prolong QT interval. 12-lead is indicated after administration. * May cause Hypotension, Bradycardia (slow down the rate of infusion). <p><u>Antidote:</u></p> <ul style="list-style-type: none"> * Section 7-100 - Calcium Chloride (Calciject) (page 113). * Section 7-240 - Glucagon (page 128).
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Citations: (Comerford & Labus, 2010)



Section 7-060 - Aspirin (Bayer)

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> *  EMD *  EMR *  EMT *  AEMT *  RN *  Medic <p><u>Route:</u></p> <ul style="list-style-type: none"> * PO. 	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Platelet inhibitor. Anti-inflammatory. Analgesic. * Prevents formation of thromboxane A2. Blocks platelet aggregation. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> 15-20 minutes. * <u>Onset time:</u> 5-30 minutes. * <u>Peak action time:</u> 25-40 minutes. * <u>Duration of action:</u> 1-4 hours.
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Indications:
Protocol 2-050 - Chest Discomfort (New Chest Pain suggestive of AMI) page 21

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * GI bleeding. * Active ulcer disease. * Hemorrhagic stroke. * Bleeding disorders. * Children with chickenpox or flu-like symptoms. <p><u>Pregnancy risk factor:</u></p> <p> D Category D (Adverse reactions have been found in humans).</p> <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none"> * 	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Aspirin may trigger Asthma attacks in certain individuals with sensitivity. * Use caution with GI bleeding and upset stomach, trauma, decreased LOC of unknown origin. <p><u>Antidote:</u></p> <ul style="list-style-type: none"> * Sodium Bicarbonate
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Citations: (Carnahan, Title 19 - Rules of Department of Health and Senior Services Division 30 - Division of regulation and licensure Chapter 40 - Comprehensive emergency medical systems regulations, 2012), (Comerford & Labus, 2010)



Section 7-070 - Ativan (Lorazepam)

<p><u>Scope of Practice:</u></p> <p>RN Medic</p> <p><u>Route:</u></p> <p>* IV/IM/PR/SL.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Benzodiazepine. * Anticonvulsant. Skeletal muscle relaxant. Sedative. Binds to benzodiazepine receptor and enhances effects of GABA. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> 9-16 hours. * <u>Onset time:</u> <ul style="list-style-type: none"> * 1 hour (PO), * 5 minutes (IV), * 15-30 minutes (IM). * <u>Peak action time:</u> <ul style="list-style-type: none"> * 2 hours (PO), * 60-90 minutes (IV/IM). * <u>Duration of action:</u> <ul style="list-style-type: none"> * 12-24 hours (PO), * 6-8 hours (IV/IM).
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Indications:
Protocol 6-060 - Do Not Resuscitate (DNR)..... page 83


<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Pregnancy and nursing. * Sensitivity to benzodiazepines, polyethylene glycol, benzyl alcohol. * COPD. * Shock. * Coma. * Closed angle glaucoma. <p><u>Pregnancy risk factor:</u></p> <p>* D Category D (Adverse reactions have been found in humans).</p> <p><u>Potential incompatibilities:</u></p> <p>*</p>	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Use caution with Depressive disorders. Psychosis. Acute alcohol intoxication. Renal or hepatic impairment. Organic brain syndrome. Myasthenia gravis. Suicidal tendencies. GI disorders. Elderly or debilitated. Limited pulmonary reserve. * May cause Apnea, Nausea, vomiting, drowsiness, restlessness, delirium, anterior grade amnesia, weakness, unsteadiness, depression, sleep disturbances, confusion, hallucinations, Hypertension, hypotension, blurred vision, Abdominal discomfort. <p><u>Antidote:</u></p> <ul style="list-style-type: none"> * Flumazenil.
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<p><u>DEA NUMBER:</u> 2885</p> <p><u>Schedule:</u> IV IV - Low potential for abuse.</p> <p><u>Narcotic:</u> No</p>	<p><u>Street names:</u></p> <ul style="list-style-type: none"> * Control, Silence
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Citations: (About Drugs, n.d.), (Comerford & Labus, 2010), (Silbergleit, et al., 2012), (Sober Recovery, n.d.), (Street Rx, n.d.), (US Department of Justice, Drug Enforcement Administration, Office of Diversion Control, n.d.)




Section 7-080 - Atropine (Sal-Tropine)

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> *  <p><u>Route:</u></p> <ul style="list-style-type: none"> * IV/IO. ET at twice the dose. 	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Parasympatholytic (anticholinergic). * Competes with acetylcholine at the site of muscarinic receptor. Increases heart rate. Decreases gastrointestinal secretions. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> 2 hours. * <u>Onset time:</u> Immediate. * <u>Peak action time:</u> 2-4 minutes. * <u>Duration of action:</u> 4 hours.
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Indications:


Protocol 2-010 - Asystole	page 17
Protocol 2-040 - Bradycardia	page 20
Protocol 2-070 - Pulseless Electrical Activity (PEA)	page 25
Protocol 4-140 - Poisoning or Overdose (Organophosphate Poisoning) (Nerve agent exposure)	page 58
Protocol 5-070 - Head Trauma	page 70
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)	page 78
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) (RSI of pediatrics under 10 or any bradycardic patients)	page 93

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * None when used in emergency situations. <p><u>Pregnancy risk factor:</u></p> <ul style="list-style-type: none"> *  Category C (Not enough research has been done to determine if this drug is safe). <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none"> * Section 7-270 - Heparin 	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * May prolong QT interval. 12-lead is indicated after administration. * May cause Tachycardia. Hypertension, Bradycardia if dose is too low or administered too slowly. * May cause Palpitations and Tachycardia. Headache, dizziness, and anxiety. Dry mouth, pupillary dilation, and blurred vision. Urinary retention (especially older males). Hot skin temperature. Intense facial flushing. Restlessness. <p><u>Antidote:</u></p> <ul style="list-style-type: none"> * Physostigmine (Antilirium)
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Citations: (Comerford & Labus, 2010), (Cox Paramedics, 2014)




Section 7-090 - Benadryl (Diphenhydramine)

<p><u>Scope of Practice:</u></p> <p>* </p> <p><u>Route:</u></p> <p>* IV/IO/IM.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <p>* Antihistamine. * Blocks H1 histamine receptors. Has some sedative effects.</p> <p><u>Pharmacokinetics:</u></p> <p>* <u>Half-Life:</u> 2.4-9.3 hours. * <u>Onset time:</u> Immediate. * <u>Peak action time:</u> 1-4 hours. * <u>Duration of action:</u> 6-8 hours.</p>
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Indications:


Protocol 4-020 - Anaphylaxis	page 40
Protocol 4-040 - Behavioral	page 42
Protocol 6-040 - Control of Nausea	page 80
Protocol 7-260 - Haldol (Haloperidol) (Extra Pyramidal Symptoms (EPS))	page 105
Protocol 7-480 - Phenergan (Promethazine) (Extra Pyramidal Symptoms (EPS))	page 123

<p><u>Contraindications:</u></p> <p>* Asthma. * Nursing mothers.</p> <p><u>Pregnancy risk factor:</u></p> <p>*  Category B (No risks have been found in humans).</p> <p><u>Potential incompatibilities:</u></p> <p>* Section 7-530 - Sodium Bicarbonate (Soda)</p>	<p><u>Precautions and adverse effects:</u></p> <p>* May prolong QT interval. 12-lead is indicated after administration. * May cause Sedation. Dries bronchial secretions. Blurred vision. Headache. Palpitations. Dizziness, excitability, wheezing, thickening of bronchial secretions, Chest tightness, hypotension, dry mouth, Nausea, vomiting, diarrhea.</p> <p><u>Antidote:</u></p> <p>* Physostigmine (Antilirium)</p>
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Citations: (Comerford & Labus, 2010)



Section 7-100 - Calcium Chloride (Calciject)

<p><u>Scope of Practice:</u></p> <p>* </p> <p><u>Route:</u></p> <p>* IV/IO.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <p>* Electrolyte.</p> <p>* Increases cardiac contractility.</p> <p><u>Pharmacokinetics:</u></p> <p>* <u>Half-Life:</u> Unknown.</p> <p>* <u>Onset time:</u> Immediate.</p> <p>* <u>Peak action time:</u> Immediate.</p> <p>* <u>Duration of action:</u> 0.5-2 hours.</p>
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Indications:

Protocol 4-140 - Poisoning or Overdose (Calcium channel blocker Overdose (Verapamil, Nifedipine))..... page 58


Protocol 5-050 - Extremity Trauma page 68

Protocol 6-025 - Cardiopulmonary Resuscitation (CPR) page 78

Section 7-050 - Amiodarone (Cordarone)..... page 108

Section 7-120 - Cardizem (Diltiazem)..... page 115


Section 7-380 - Magnesium Sulfate (antidote for Overdose)..... page 141

<p><u>Contraindications:</u></p> <p>* Patients on digitalis.</p> <p><u>Pregnancy risk factor:</u></p> <p>*  Category C (Not enough research has been done to determine if this drug is safe).</p> <p><u>Potential incompatibilities:</u></p> <p>*</p>	<p><u>Precautions and adverse effects:</u></p> <p>* IV line should be flushed between Calcium Chloride and Sodium Bicarbonate administration.</p> <p>* May cause Arrhythmias (Bradycardia and Asystole), and hypotension.</p> <p><u>Antidote:</u></p> <p>*</p>
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Citations: (Comerford & Labus, 2010)



Section 7-110 - Captopril (Capoten)

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none">*  <p><u>Route:</u></p> <ul style="list-style-type: none">* SL.	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none">* ACE inhibitor.* Competitive inhibitor of Angiotension Converting Enzyme (ACE). <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none">* <u>Half-Life:</u> 1.9 hours.* <u>Onset time:</u> 15-60 minutes.* <u>Peak action time:</u> 60-90 minutes.* <u>Duration of action:</u> 6-12 hours.
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Indications:
[Protocol 4-070 - Congestive Heart Failure \(CHF\)](#)Page 49

<p><u>Contraindications:</u></p> <ul style="list-style-type: none">* Hypersensitivity to any ACE inhibitor. <p><u>Pregnancy risk factor:</u></p> <ul style="list-style-type: none">*  Category D (Adverse reactions have been found in humans). <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none">*	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none">* Use caution with Aortic stenosis, bilateral renal artery stenosis, hypertrophic obstructive cardiomyopathy, pericardial tamponade, elevated serum Potassium levels, acute kidney failure.* May cause hyperkalemia, especially in patients with renal deficiency.* May cause Hypotension, angioedema, Headache, dizziness, fatigue, depression, Chest Pain, palpitations, cough, dyspnea, Nausea, vomiting, rash, pruritus, renal failure. <p><u>Antidote:</u></p> <ul style="list-style-type: none">*
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Citations: (Comerford & Labus, 2010)



Section 7-120 - Cardizem (Diltiazem)

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> *  <p><u>Route:</u></p> <ul style="list-style-type: none"> * IV/IO. 	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Calcium channel blocker. * Slows conduction through the AV node. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> 3-9 hours. * <u>Onset time:</u> 2 minutes. * <u>Peak action time:</u> 2-7 minutes. * <u>Duration of action:</u> 1-10 hours.
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<p><u>Indications:</u></p> <p>Protocol 2-020 - Atrial Fibrillation (A-Fib) or Atrial Flutter (A-Fib with rapid Ventricular response)..... page 18</p> <p>Protocol 2-080 - Tachycardia Narrow Stable..... page 26</p>
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<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Heart blocks. * Conduction disturbances. * WPW. * Congestive heart failure (pulmonary edema). * Hypotension. <p><u>Pregnancy risk factor:</u></p> <p>*  Category C (Not enough research has been done to determine if this drug is safe).</p> <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none"> * 	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Should not be used in patients receiving IV Beta-Blockers. * May cause hypotension, Nausea, vomiting, dizziness, Bradycardia, flushing, Headache, heart block, cardiac Arrest. <p><u>Antidote:</u></p> <ul style="list-style-type: none"> * Section 7-100 - Calcium Chloride (Calciject) (page 113). * Section 7-240 - Glucagon (page 128).
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<p><u>Citations:</u> (Comerford & Labus, 2010)</p>
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CMH/EMH EMS Cardizem Quick Reference Dosing/Sizing Sheet


Patient Age	New	3 mo	6 mo	1 yr	2 yr	4 yr	6 yr	8 yr	10 yr	12 yr	14 yr	adult	adult	adult	
Broslov Color	Grey	Pink	Red	Purple	Yellow	White	Blue	Orange	Green						
Patient Weight (lbs)	10 lbs	15 lbs	20 lbs	25 lbs	30 lbs	40 lbs	50 lbs	60 lbs	80 lbs	90 lbs	110 lbs	150 lbs	200 lbs	300 lbs	
Patient Weight (kg)	5 kg	7 kg	9 kg	11 kg	14 kg	18 kg	23 kg	27 kg	36 kg	41 kg	50 kg	68 kg	91 kg	136 kg	
Cardizem Bolus															
First Dose	0.25 mg/kg	1.3 ml	1.8 ml	2.3 ml	2.8 ml	3.5 ml	4.5 ml	5.8 ml	6.8 ml	9.0 ml	10.3 ml	12.5 ml	17.0 ml	22.8 ml	34.0 ml
Repeat Dose	0.35 mg/kg	1.8 ml	2.5 ml	3.2 ml	3.9 ml	4.9 ml	6.3 ml	8.1 ml	9.5 ml	12.6 ml	14.4 ml	17.5 ml	23.8 ml	31.9 ml	47.6 ml
Cardizem Maintenance Infusion															
Drip	5 mg/hr														
Drip	10 mg/hr														
Drip	15 mg/hr														



Section 7-140 - Decadron (Dexamethasone)


<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> *  <p><u>Route:</u></p> <ul style="list-style-type: none"> * IV/IO/IM/PO. * Inhalation as last resort. 	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Steroid. * Anti-inflammatory. Reduces inflammation and immune response. * Increases pulmonary microcirculation. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> 1-2 days. * <u>Onset time:</u> 1-2 hours. * <u>Peak action time:</u> 1-2 hours. * <u>Duration of action:</u> 2-6 days.
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<p><u>Indications:</u></p> <p>Not in current standing order protocols.</p>
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<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * None in emergency setting. <p><u>Pregnancy risk factor:</u></p> <ul style="list-style-type: none"> *  Category C (Not enough research has been done to determine if this drug is safe). <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none"> * 	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Use with caution in the following conditions: Cushings, fungal infections, measles, varicella. * May cause nausea, vomiting, headache, vertigo, anxiety, hypokalemia, hyperglycemia, tremors, hypertension, immunosuppression. <p><u>Antidote:</u></p> <ul style="list-style-type: none"> *
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<p><u>Citations:</u> (Comerford & Labus, 2010)</p>
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Section 7-150 - Dextrose

<p><u>Scope of Practice:</u></p> <p>* </p> <p><u>Route:</u></p> <p>* IV/IO.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <p>* Carbohydrate. * Elevates blood Glucose level rapidly.</p> <p><u>Pharmacokinetics:</u></p> <p>* <u>Half-Life:</u> Unknown. * <u>Onset time:</u> Immediate. * <u>Peak action time:</u> Immediate. * <u>Duration of action:</u> Unknown.</p>
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Indications:

Protocol 2-100 - Tachycardia Wide Stable	page 28
Protocol 2-110 - Tachycardia Wide Unstable	page 29
Protocol 2-120 - Torsades de Pointes	page 30
Protocol 4-120 - Hypoglycemia	page 56
Protocol 5-050 - Extremity Trauma	page 68
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)	page 78
Section 7-050 - Amiodarone (Cordarone)	page 108

<p><u>Contraindications:</u></p> <p>* Intracranial hemorrhage.</p> <p><u>Pregnancy risk factor:</u></p> <p>*  Category C (Not enough research has been done to determine if this drug is safe).</p> <p><u>Potential incompatibilities:</u></p> <p>*</p>	<p><u>Precautions and adverse effects:</u></p> <p>* If alcohol abuse or malnourishment is suspected, then 100mg of Thiamine should be administered to facilitate Dextrose use by cells.</p> <p>* May cause local venous irritation. Hyperglycemia, warmth, thrombosis.</p> <p><u>Antidote:</u></p> <p>*</p>
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Citations: (Comerford & Labus, 2010)



Section 7-160 - Dilaudid (Hydromorphone)

<p><u>Scope of Practice:</u></p> <p>RN Medic</p> <p><u>Route:</u></p> <p>* IV/IO/IM.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <p>* Narcotic analgesic.</p> <p>* Analgesia and sedation. CNS depressant. Decreased sensitivity to pain.</p> <p><u>Pharmacokinetics:</u></p> <p>* <u>Half-Life:</u> 2-4 hours</p> <p>* <u>Onset time:</u> 10-15 minutes.</p> <p>* <u>Peak action time:</u></p> <p>* 15-30 minutes (IV),</p> <p>* 30-60 minutes (IM).</p> <p>* <u>Duration of action:</u></p> <p>* 2-3 hours (IV),</p> <p>* 4-5 hours (IM).</p>
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<p><u>Indications:</u></p> <p>Not in current standing order protocols.</p>
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<p><u>Contraindications:</u></p> <p>* Hypersensitivity.</p> <p><u>Pregnancy risk factor:</u></p> <p>C</p> <p>* Category C (Not enough research has been done to determine if this drug is safe).</p> <p><u>Potential incompatibilities:</u></p> <p>* Section 7-270 - Heparin</p>	<p><u>Precautions and adverse effects:</u></p> <p>* Respiratory depression may last longer than analgesia.</p> <p>* May cause Bradycardia, respiratory depression, euphoria.</p> <p><u>Antidote:</u></p> <p>* Section 7-400 - Narcan (Naloxone) (page 143).</p>
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<p><u>DEA Number:</u> 9150</p> <p><u>Schedule:</u> II II - High potential for abuse with severe dependence.</p> <p><u>Narcotic:</u> Yes.</p>	<p><u>Street names:</u></p> <p>* Big D, Crazy 8, D, Dill, Dillies, Dilly, Drug Store Heroin, Dust, Footballs, Hillbilly Heroin, Hospital Heroin, Hydros, Juice, M2, M80s, Moose, Peaches, Shake and Bake, Smack, Super 8, White Triangles.</p>
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<p><u>Citations:</u> (About Drugs, n.d.), (Comerford & Labus, 2010), (Sober Recovery, n.d.), (Street Rx, n.d.), (US Department of Justice, Drug Enforcement Administration, Office of Diversion Control, n.d.)</p>
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Section 7-170 - Dopamine (Intropin)

<p><u>Scope of Practice:</u></p> <p>* RN * Medic</p> <p><u>Route:</u></p> <p>* IV/IO.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Sympathomimetic. * Stimulates alpha and beta adrenergic receptors. Increases cardiac contractility. Causes peripheral vasoconstriction. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> 2 minutes. * <u>Onset time:</u> 5 minutes. * <u>Peak action time:</u> Unknown. * <u>Duration of action:</u> Less than 10 minutes.
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Indications:

Protocol 2-040 - Bradycardia (Bradycardia unresponsive to **Atropine**) page 20

Protocol 2-070 - Pulseless Electrical Activity (PEA) (profound shock) page 25

Protocol 2-060 - Post Resuscitative Care
 (Hypovolemic shock - only after complete fluid resuscitation)..... page 24

Protocol 4-070 - Congestive Heart Failure (CHF) (Cardiogenic shock)..... page 49

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Hypovolemic shock where complete fluid resuscitation has not occurred. * Severe tachyarrhythmias. <ul style="list-style-type: none"> * Ventricular Fibrillation or Ventricular arrhythmias. <p><u>Pregnancy risk factor:</u></p> <p>C Category C (Not enough research has been done to determine if this drug is safe).</p> <p><u>Potential incompatibilities:</u></p> <p>*</p>	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * May cause Ventricular irritability, Ventricular tachyarrhythmias. Hypertension. Angina, dyspnea, Headache, Nausea, vomiting. <p><u>Antidote:</u></p> <ul style="list-style-type: none"> * Rigitine.
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Citations: (Comerford & Labus, 2010)



CMH/EMH EMS Dopamine Quick Reference Dosing/Sizing Sheet

Patient Age	New	3 mo	6 mo	1 yr	2 yr	4 yr	6 yr	8 yr	10 yr	12 yr	14 yr	adult	adult	adult
Broslow Color	Grey	Pink	Red	Purple	Yellow	White	Blue	Orange	Green					
Patient Weight (lbs)	10 lbs	15 lbs	20 lbs	25 lbs	30 lbs	40 lbs	50 lbs	60 lbs	80 lbs	90 lbs	110 lbs	150 lbs	200 lbs	300 lbs
Patient Weight (kg)	5 kg	7 kg	9 kg	11 kg	14 kg	18 kg	23 kg	27 kg	36 kg	41 kg	50 kg	68 kg	91 kg	136
Dopamine Beta Effects (Chronotropy, Inotropy, Dromotropy) [ml/hr]														
Beta	0.4	0.6	0.7	0.9	1.1	1.4	1.8	2.1	2.7	3.1	3.8	5.1	6.9	10.2
Beta	0.8	1.1	1.4	1.7	2.1	2.7	3.5	4.1	5.4	6.2	7.5	10.2	13.7	20.4
Beta	1.2	1.6	2.1	2.5	3.2	4.1	5.2	6.1	8.1	9.3	11.3	15.3	20.5	30.6
Beta	1.5	2.1	2.7	3.3	4.2	5.4	6.9	8.1	10.8	12.3	15.0	20.4	27.3	40.8
Dopamine Alpha Effects (Vasoconstriction) [ml/hr]														
Alpha	1.9	2.7	3.4	4.2	5.3	6.8	8.7	10.2	13.5	15.4	18.8	25.5	34.2	51.0
Alpha	3.8	5.3	6.8	8.3	10.5	13.5	17.3	20.3	27.0	30.8	37.5	51.0	68.3	102.0
Alpha	5.7	7.9	10.2	12.4	15.8	20.3	25.9	30.4	40.5	46.2	56.3	76.5	102.4	153.0
Alpha	7.5	10.5	13.5	16.5	21.0	27.0	34.5	40.5	54.0	61.5	75.0	102.0	136.5	204.0
Alpha	9.4	13.2	16.9	20.7	26.3	33.8	43.2	50.7	67.5	76.9	93.8	127.5	170.7	255.0



Section 7-180 - Duoneb (Ipratropium and Albuterol, Combivent)

<p><u>Scope of Practice:</u></p> <div style="background-color: #FFD700; padding: 2px; text-align: center; font-weight: bold;">AEMT</div> <div style="background-color: #FF8C00; padding: 2px; text-align: center; font-weight: bold;">RN</div> <div style="background-color: #FF4500; padding: 2px; text-align: center; font-weight: bold;">Medic</div> <p><u>Route:</u></p> <ul style="list-style-type: none"> * Nebulized. 	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Beta adrenergic. Anticholinergic. * Binds and stimulates beta-2 receptors, resulting in relaxation of bronchial smooth muscle, and antagonizes the acetylcholine receptor, producing bronchodilation. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> 1.6-2 hours. * <u>Onset time:</u> 5-15 minutes. * <u>Peak action time:</u> 0.5-2 hours. * <u>Duration of action:</u> 2-6 hours.
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Indications:




Protocol 4-020 - Anaphylaxis	page 40
Protocol 4-030 - Asthma	page 41
Protocol 4-060 - Chronic Obstructive Pulmonary Disease (COPD)	page 48
Protocol 4-070 - Congestive Heart Failure (CHF)	page 49
Section 7-040 - Albuterol (Proventil, Ventolin)	
(Bronchoconstriction refractory to Albuterol)	page 107

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Hypersensitivity to Ipratropium, Albuterol, or Atropine. * Allergy to soybeans or peanuts. * Closed angle glaucoma. * Bladder neck obstruction. * Prostatic hypertrophy. <p><u>Pregnancy risk factor:</u></p> <div style="background-color: #FFD700; padding: 2px; text-align: center; font-weight: bold; font-size: 2em;">C</div> <ul style="list-style-type: none"> * Category C (Not enough research has been done to determine if this drug is safe). <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none"> * 	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Blood pressure, pulse, and EKG should be monitored. * Use caution in patients with known heart disease. * May cause paradoxical acute bronchospasm, Palpitations, anxiety, Headache, dizziness, sweating, Tachycardia, cough, Nausea, arrhythmias, paradoxical acute bronchospasm. <p><u>Antidote:</u></p> <ul style="list-style-type: none"> * Physostigmine.
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Citations: (Comerford & Labus, 2010)




Section 7-190 - Epinephrine 1:1,000

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> *  - Only auto-injector pen for anaphylaxis. *  - Only IM or SQ for anaphylaxis. *  <p><u>Route:</u></p> <ul style="list-style-type: none"> * SQ/IM/ET. 	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Sympathomimetic. * Binds with both alpha and beta receptors. Bronchodilation. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> Unknown. * <u>Onset time:</u> <ul style="list-style-type: none"> * Variable (IM), * 1-5 minutes (Neb). * <u>Peak action time:</u> Unknown. * <u>Duration of action:</u> <ul style="list-style-type: none"> * 1-4 hours (IM), * 1-3 hours (Neb).
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Indications:


Protocol 2-010 - Asystole	page 17
Protocol 2-070 - Pulseless Electrical Activity (PEA)	page 25
Protocol 2-140 - Ventricular Fibrillation (V-Fib or V-Tach)	page 32
Protocol 4-020 - Anaphylaxis	page 40
Protocol 4-030 - Asthma	page 41
Protocol 4-080 - Croup	page 50
Protocol 4-130 - Neonatal Resuscitation	page 57
Section 7-200 - Epinephrine 1:10,000	page 124

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Cardiovascular disease. * Hypertension. * Pregnancy. * Patients with tachyarrhythmias. * CerebroVascular disease. * Diabetes. <p><u>Pregnancy risk factor:</u></p> <p>*  Category C (Not enough research has been done to determine if this drug is safe).</p> <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none"> * 	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Medication should be protected from light. * Blood pressure, pulse and EKG must be constantly monitored. * May cause Palpitations, Tachycardia, anxiousness, Headache, tremor, myocardial ischemia in older patients. Anxiety, Chest Pain, cardiac arrhythmias, Hypertension, Nausea, vomiting. <p><u>Antidote:</u></p> <ul style="list-style-type: none"> *
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Citations: (Carnahan, Title 19 - Rules of Department of Health and Senior Services Division 30 - Division of regulation and licensure Chapter 40 - Comprehensive emergency medical systems regulations, 2012), (Comerford & Labus, 2010)



Section 7-200 - Epinephrine 1:10,000

<p><u>Scope of Practice:</u></p> <p>* </p> <p><u>Route:</u></p> <p>* IV/IO.</p> <p>* ET: see Section 7-190 - Epinephrine 1:1,000 (page 123).</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <p>* Sympathomimetic.</p> <p>* Binds with both alpha and beta receptors. Increases heart rate. Increases cardiac contractility. Causes bronchodilation.</p> <p><u>Pharmacokinetics:</u></p> <p>* <u>Half-Life:</u> Unknown.</p> <p>* <u>Onset time:</u> Immediate.</p> <p>* <u>Peak action time:</u> 5 minutes.</p> <p>* <u>Duration of action:</u> Short.</p>
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<u>Indications:</u>	
Protocol 2-010 - Asystole	page 17
Protocol 2-040 - Bradycardia	page 20
Protocol 2-070 - Pulseless Electrical Activity (PEA)	page 25
Protocol 2-140 - Ventricular Fibrillation (V-Fib or V-Tach)	page 32
Protocol 4-020 - Anaphylaxis	page 40
Protocol 4-130 - Neonatal Resuscitation	page 57
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)	page 78
Section 7-340 - Labetalol (Nomadyne) (Overdose)	page 137

<p><u>Contraindications:</u></p> <p>* None when used in emergency setting.</p> <p><u>Pregnancy risk factor:</u></p> <p>*  Category C (Not enough research has been done to determine if this drug is safe).</p> <p><u>Potential incompatibilities:</u></p> <p>*</p>	<p><u>Precautions and adverse effects:</u></p> <p>* Medication should be protected from light.</p> <p>* Can be deactivated by alkaline solutions.</p> <p>* May cause Tachyarrhythmias. Palpitations. Anxiety, Chest Pain, Hypertension, Nausea, vomiting, Headache.</p> <p><u>Antidote:</u></p> <p>*</p>
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Citations: (Comerford & Labus, 2010)



Section 7-210 - Epinephrine Racemic (Micronefrin)

<p><u>Scope of Practice:</u></p> <p>* RN</p> <p>* Medic</p> <p><u>Route:</u></p> <p>* Nebulized.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Nonselective alpha and beta agonist. * Arteriole constriction. Positive inotrope. Positive chronotrope. Bronchial smooth muscle relaxant. Blocks histamine release. Inhibits insulin secretion. Relaxes GI smooth muscle. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> 2 minutes. * <u>Onset time:</u> Rapid * <u>Peak action time:</u> Unknown. * <u>Duration of action:</u> 3 minutes.
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Indications:
Protocol 4-080 - Croup (Croup with moderate to severe respiratory distress) page 50

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Glaucoma. * Elderly. * Cardiac disease. * Hypertension. * Thyroid disease. * Diabetes. * Sensitivity to sulfites. <p><u>Pregnancy risk factor:</u></p> <p>* C Category C (Not enough research has been done to determine if this drug is safe).</p> <p><u>Potential incompatibilities:</u></p> <p>*</p>	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Observe 2-4hrs after administration. * May cause Palpitations, anxiety, Headache, Hypertension, Nausea, vomiting, arrhythmias, rebound edema. Dizziness, tremor, Tachycardia. <p><u>Antidote:</u></p> <p>*</p>
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Citations:



Section 7-220 - Etomidate (Amidate)

<p><u>Scope of Practice:</u></p> <p>RN Medic</p> <p><u>Route:</u></p> <p>* IV/IO.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Sedative, non-barbiturate hypnotic. * Unknown GABA-like effects. No analgesic effects. Has few Cardiovascular or respiratory effects. Cerebro-protective decreases ICP, IOP. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> 75 minutes. * <u>Onset time:</u> 30-60 seconds. * <u>Peak action time:</u> 1 minute. * <u>Duration of action:</u> 3-5 minutes.
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<p><u>Indications:</u></p> <p>Protocol 6-050 - Control of Pain (cardioversion)..... page 81</p> <p>Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) (Sedation prior to Intubation)..... page 93</p>

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Hypersensitivity. * Sepsis. <p><u>Pregnancy risk factor:</u></p> <p>C Category C (Not enough research has been done to determine if this drug is safe).</p> <p><u>Potential incompatibilities:</u></p> <p>*</p>	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Single dose only. * May cause Marked hypotension, Severe Asthma, Myoclonic skeletal muscle movements. Apnea. Hypertension, hypotension, dysrhythmias. Nausea, vomiting, hiccups, snoring. Adrenal insufficiency, laryngospasm, cardiac arrhythmias. <p><u>Antidote:</u></p> <p>*</p>
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<p><u>Citations:</u></p>



Section 7-230 - Fentanyl (Sublimaze)

<p><u>Scope of Practice:</u></p> <p>RN Medic</p> <p><u>Route:</u></p> <p>* IV/IN/IM/IO.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Narcotic analgesic. * Binds to opiate receptors. Analgesia and sedation. Central nervous system depressant. Decreased sensitivity to Pain. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> 3.5 hours. * <u>Onset time:</u> <ul style="list-style-type: none"> * 1-2 minutes (IV), * 7-15 minutes (IM), * 5-15 minutes (IN). * <u>Peak action time:</u> <ul style="list-style-type: none"> * 3-5 minutes (IV), * 20-30 minutes (IM/IN). * <u>Duration of action:</u> <ul style="list-style-type: none"> * 30-60 minutes (IV), * 1-2 hours (IM), * Unknown (IN).
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Indications:

Protocol 2-050 - Chest Discomfort	page 21
Protocol 3-030 - Hypothermia	page 37
Protocol 4-010 - Abdominal Pain	page 39
Protocol 5-070 - Head Trauma	page 70
Protocol 6-050 - Control of Pain	page 81
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)	page 93
Section 8-080 - Endotracheal Tube (ET)	page 187
Section 8-160 - King LTSD Airway	page 196
Section 8-170 - Laryngeal Mask Airway (LMA) Supreme	page 197

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Hypersensitivity. <p><u>Pregnancy risk factor:</u></p> <p>C Category C (Not enough research has been done to determine if this drug is safe).</p> <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none"> * Section 7-270 - Heparin 	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Respiratory depression may last longer than the analgesic effects. * Narcan should be available. * Give slowly, rapid injection could cause rigid Chest syndrome (usually occurs when dose is greater than 200 mcg). * Use with caution in traumatic brain injury. * May cause Bradycardia, respiratory depression, euphoria. Hypotension, Nausea, vomiting, dizziness, sedation, Tachycardia, palpitations, Hypertension, diaphoresis, syncope. Possible beneficial effect in pulmonary edema. <p><u>Antidote:</u></p> <ul style="list-style-type: none"> * Section 7-400 - Narcan (Naloxone) (page 143).
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<p><u>DEA Number:</u> 9801</p> <p><u>Schedule:</u> II II - High potential for abuse with severe dependence.</p> <p><u>Narcotic:</u> Yes.</p>	<p><u>Street names:</u></p> <ul style="list-style-type: none"> * Apache, China Girls, China Town, China White, Dance Fever, Fent, Friend, Goodfellas, Great Bear, HeMan, Jackpot, King Ivory, Magic, Murder 8, Perc-A-Pop, Poison, Tango and Cash, TNT.
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Citations: (About Drugs, n.d.), (Borland, Bergesio, Pascoe, Turner, & Woodger, 2005), (Citizens Memorial Hospital, 2013), (Comerford & Labus, 2010), (Cox Paramedics, 2014), (Finn, et al., 2004), (O'Donnell, et al., 2013), (Sober Recovery, n.d.), (Street Rx, n.d.), (US Department of Justice, Drug Enforcement Administration, Office of Diversion Control, n.d.)



Section 7-240 - Glucagon

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> * AEMT - Only IM for hypoglycemia. * RN * Medic <p><u>Route:</u></p> <ul style="list-style-type: none"> * IM/SQ/IV/IO. 	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Other endocrine/metabolism. * Converts hepatic glycogen to Glucose. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life</u>: 8-18 minutes. * <u>Onset time</u>: <ul style="list-style-type: none"> * Immediate (IV), * 4-10 minutes (IM). * <u>Peak action time</u>: <ul style="list-style-type: none"> * 30 minutes (IV), * 13 minutes (IM). * <u>Duration of action</u>: <ul style="list-style-type: none"> * 60-90 minutes (IV), * 12-32 minutes (IM).
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<p><u>Indications:</u></p> <p>Protocol 4-010 - Abdominal Pain (esophageal obstruction) page 39</p> <p>Protocol 4-120 - Hypoglycemia (Severe Hypoglycemia when unable to establish vascular access)..... page 56</p> <p>Protocol 4-140 - Poisoning or Overdose (Beta-Blocker Overdose)..... page 58</p>

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Pheochromocytoma (adrenal tumor). * Insulinoma (pancreas tumor). <p><u>Pregnancy risk factor:</u></p> <ul style="list-style-type: none"> * B Category B (No risks have been found in humans). <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none"> * 	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * May cause severe rebound hyperglycemia, hypotension. Nausea/vomiting. Urticaria. Respiratory distress. Tachycardia. <p><u>Antidote:</u></p> <ul style="list-style-type: none"> *
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Citations: (Comerford & Labus, 2010)



Section 7-250 - Glucose

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> *  *  *  *  <p><u>Route:</u></p> <ul style="list-style-type: none"> * PO. 	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Carbohydrate. * Elevates blood sugar levels. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> NA. * <u>Onset time:</u> NA. * <u>Peak action time:</u> NA. * <u>Duration of action:</u> NA.
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Indications:
[Protocol 4-120 - Hypoglycemia](#) page 56

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Patients with altered level of consciousness that cannot protect Airway. <p><u>Pregnancy risk factor:</u></p> <ul style="list-style-type: none"> * NA. <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none"> * 	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * If alcohol abuse or malnourishment is suspected, then 100mg of Thiamine should be administered to facilitate Glucose use by cells. <p><u>Antidote:</u></p> <ul style="list-style-type: none"> *
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Citations: (Carnahan, Title 19 - Rules of Department of Health and Senior Services Division 30 - Division of regulation and licensure Chapter 40 - Comprehensive emergency medical systems regulations, 2012)



Section 7-260 - Haldol (Haloperidol)

<p><u>Scope of Practice:</u></p> <p>RN Medic</p> <p><u>Route:</u></p> <p>* IV/IM/IO.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Antipsychotic. * Competitive postsynaptic Dopamine receptor blocker. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> 21 hours. * <u>Onset time:</u> Unknown. * <u>Peak action time:</u> <ul style="list-style-type: none"> * Unknown (IV), * 10-20 minutes (IM) * <u>Duration of action:</u> Unknown.
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Indications:
Protocol 4-040 - Behavioral (Agitation) (Aggressive behavior) page 42

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Parkinson’s disease. * Severe CNS depression. * Comatose states. <p><u>Pregnancy risk factor:</u></p> <p>C Category C (Not enough research has been done to determine if this drug is safe).</p> <p><u>Potential incompatibilities:</u></p> <p>*</p>	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Use caution with severe Cardiovascular disorders due to possible hypotension. If vasopressor is needed, use norEpinephrine. * May prolong QT interval. 12-lead is indicated after administration. * May cause prolongation of QT, drowsiness, tardive dyskinesia, hypotension, Hypertension, Tachycardia, Torsades de Pointes. * Possible Extra-Pyramidal Symptoms (EPS) / dystonic reactions. <ul style="list-style-type: none"> * EPS is a movement disorder such as the inability to move or restlessness. * Treat with Section 7-090 - Benadryl (Diphenhydramine) (page 112). <p><u>Antidote:</u></p> <ul style="list-style-type: none"> * Section 7-090 - Benadryl (Diphenhydramine)
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Citations: (CredibleMeds, 2015), (Comerford & Labus, 2010)



Section 7-270 - Heparin

<p><u>Scope of Practice:</u></p> <p>* </p> <p><u>Route:</u></p> <p>* IV.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <p>* Anticoagulant. * Inhibition of Thrombin. Acts on antithrombin III to reduce ability to clot.</p> <p><u>Pharmacokinetics:</u></p> <p>* <u>Half-Life:</u> 1-2 hours. * <u>Onset time:</u> Immediate. * <u>Peak action time:</u> Unknown. * <u>Duration of action:</u> Variable.</p>
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Indications:
Protocol 2-050 - Chest Discomfort
 (New Chest Pain suggestive of an acute myocardial infarction) page 21

<p><u>Contraindications:</u></p> <p>* Previously given low molecular weight Heparin. * Dissecting thoracic aortic aneurysm. * Peptic ulceration.</p> <p><u>Pregnancy risk factor:</u></p> <p>*  Category C (Not enough research has been done to determine if this drug is safe).</p> <p><u>Potential incompatibilities:</u></p> <p>* Section 7-080 - Atropine (Sal-Tropine) * Section 7-160 - Dilaudid (Hydromorphone) * Section 7-230 - Fentanyl (Sublimaze)Section 7-230 - Fentanyl (Sublimaze) * Section 7-390 - Morphine * Section 7-480 - Phenergan (Promethazine) * Section 7-600 - Versed (Midazolam)</p>	<p><u>Precautions and adverse effects:</u></p> <p>* Use caution with oral anticoagulants and bleeding.</p> <p><u>Antidote:</u></p> <p>* Protamine sulfate.</p>
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Citations: (Comerford & Labus, 2010)



Section 7-280 - Hydralazine (Apresoline)

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none">*  <p><u>Route:</u></p> <ul style="list-style-type: none">* IV/IO/IM.	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none">* Vasodilator.* Directly dilates peripheral blood vessels. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none">* <u>Half-Life:</u> 3-7 hours.* <u>Onset time:</u><ul style="list-style-type: none">* 5-20 minutes (IV),* 10-30 minutes (IM).* <u>Peak action time:</u><ul style="list-style-type: none">* 10-80 minutes (IV),* 1 hour (IM).* <u>Duration of action:</u> 2-6 hours.
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Indications:
Protocol 4-110 - Hypertension
(Hypertensive crisis or associated with preeclampsia and eclampsia) page 54

<p><u>Contraindications:</u></p> <ul style="list-style-type: none">* Taking diazoxide or MAOIs.* Coronary artery disease.* Stroke.* Angina* Aortic aneurysm.* Heart disease. <p><u>Pregnancy risk factor:</u></p> <ul style="list-style-type: none">*  Category C (Not enough research has been done to determine if this drug is safe). <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none">*	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none">* May cause reflex Tachycardia, headache, angina, flushing, palpitations, Tachycardia, anorexia, Nausea, vomiting, diarrhea, hypotension, syncope, vasodilation, edema, paresthesias. <p><u>Antidote:</u></p> <ul style="list-style-type: none">*
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Citations: (Comerford & Labus, 2010)



Section 7-300 - Ibuprofen (Advil, Pediaprofen)

<p><u>Scope of Practice:</u></p> <p>* </p> <p><u>Route:</u></p> <p>* PO.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <p>* NSAID.</p> <p>* Inhibits cyclooxygenase and lipoxygenase and reduces prostaglandin synthesis.</p> <p><u>Pharmacokinetics:</u></p> <p>* <u>Half-Life:</u> 2-4 hours.</p> <p>* <u>Onset time:</u></p> <p> * 30-60 minutes (analgesia),</p> <p> * 7 days (anti-inflammatory)</p> <p>* <u>Peak action time:</u></p> <p> * 1-2 hours (analgesia),</p> <p> * 1-2 weeks (anti-inflammatory)</p> <p>* <u>Duration of action:</u> 4-6 hours (analgesia).</p>
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<p><u>Indications:</u></p> <p>Protocol 4-100 - Fever (Fever greater than 102 degrees F)..... page 53</p> <p>Section 7-010 - Acetaminophen (Tylenol) (Acetaminophen has been ineffective or given within last 4hrs)..... page 104</p>
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<p><u>Contraindications:</u></p> <p>* ASA/NSAID induced Asthma.</p> <p>* History of GI bleeds.</p> <p>* Renal insufficiency.</p> <p><u>Pregnancy risk factor:</u></p> <p>*  Category D (Adverse reactions have been found in humans).</p> <p><u>Potential incompatibilities:</u></p> <p>*</p>	<p><u>Precautions and adverse effects:</u></p> <p>* Caution in Hypertension, CHF.</p> <p>* Avoid in patients currently taking anticoagulants such as Coumadin.</p> <p>* May cause Anaphylaxis, Abdominal Pain, Nausea, Headache, dizziness, rash.</p> <p><u>Antidote:</u></p> <p>*</p>
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Citations: (Comerford & Labus, 2010), (Cox Paramedics, 2014)



Section 7-320 - Ipratropium (Atrovent)

<p><u>Scope of Practice:</u></p> <p>AEMT RN Medic</p> <p><u>Route:</u></p> <ul style="list-style-type: none">* Nebulized.	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none">* Beta adrenergic.* Binds and stimulates beta-2 receptors, resulting in relaxation of bronchial smooth muscle, producing bronchodilation. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none">* <u>Half-Life:</u> 2 hours.* <u>Onset time:</u> 5-15 minutes.* <u>Peak action time:</u> 1-2 hours.* <u>Duration of action:</u> 3-6 hours.
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Indications:
Not in current standing order protocols.

<p><u>Contraindications:</u></p> <ul style="list-style-type: none">* Hypersensitivity to Ipratropium, Albuterol, or Atropine.* Allergy to soybeans or peanuts.* Closed angle glaucoma.* Bladder neck obstruction.* Prostatic hypertrophy. <p><u>Pregnancy risk factor:</u></p> <p>B</p> <ul style="list-style-type: none">* Category B (No risks have been found in humans). <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none">*	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none">* Blood pressure, pulse, and EKG should be monitored.* Use caution in patients with known heart disease.* May cause paradoxical acute bronchospasm.* May cause palpitations, anxiety, headache, dizziness, sweating, tachycardia, cough, nausea, arrhythmias, paradoxical acute bronchospasm. <p><u>Antidote:</u></p> <ul style="list-style-type: none">* Physostigmine (Antilirium)
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Citations: (Comerford & Labus, 2010), (Cox Paramedics, 2014)

Section 7-330 - Ketamine (Ketalar)

<p><u>Scope of Practice:</u></p> <p>* RN * Medic</p> <p><u>Route:</u></p> <p>* IV/IO/IM.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Dissociative anesthetic. NMDA receptor antagonist. * Produces state of anesthesia while maintaining Airway reflexes, heart rate, and blood pressure. Acts on cortex and limbic receptors, producing dissociative analgesia and sedation. Higher doses act on the Mu opioid receptor. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> 2.5-3 hours. * <u>Onset time:</u> <ul style="list-style-type: none"> * Seconds (IV), * 1-5 minutes (IM). * <u>Peak action time:</u> Unknown. * <u>Duration of action:</u> <ul style="list-style-type: none"> * Unknown (IV), * 0.5-2 hours (IM)
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Indications:

Protocol 4-040 - Behavioral page 42

Protocol 6-050 - Control of Pain (Pain and anesthesia for procedures of short duration) page 81

Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) page 93

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Hypersensitivity. <p><u>Pregnancy risk factor:</u></p> <p>* C Category C (Not enough research has been done to determine if this drug is safe).</p> <p><u>Potential incompatibilities:</u></p> <p>*</p>	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Slow push to avoid apnea. * Use caution in patients where significant hypertension would be hazardous (i.e. stroke, head trauma, ICP, MI). * May cause Glaucoma, hypovolemia, dehydration, cardiac disease. Emergence phenomena, Hypertension, Tachycardia, hypotension, Bradycardia, arrhythmias, respiratory depression, apnea, laryngospasms, tonic/clonic movements, vomiting. <p><u>Antidote:</u></p> <p>*</p>
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<p><u>DEA Number:</u> 7285</p> <p><u>Schedule:</u> III III - Potential for abuse with moderate dependence.</p> <p><u>Narcotic:</u> No.</p>	<p><u>Street names:</u></p> <ul style="list-style-type: none"> * Black Hole, Bump, Cat Killer, Cat Valium, Coke, Green, Honey Oil, Jet, K Hole, K, Ket, Kit Kat, Kitty Flipping, Purple, Special K, Special LA, Super Acid, Super C, Vitamin K.
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Citations: (About Drugs, n.d.), (Filanovsky, Miller, & Kao, 2010), (Flower & Hellings, 2012), (Sober Recovery, n.d.), (Street Rx, n.d.), (US Department of Justice, Drug Enforcement Administration, Office of Diversion Control, n.d.)



CMH/EMH/EMS Ketamine Quick Reference Dosing/Sizing Sheet

Patient Age	New	3 mo	6 mo	1 yr	2 yr	4 yr	6 yr	8 yr	10 yr	12 yr	14 yr	adult	adult	adult
Broslow Color	Grey	Pink	Red	Purple	Yellow	White	Blue	Orange	Green					
Patient Weight (lbs)	10 lbs	15 lbs	20 lbs	25 lbs	30 lbs	40 lbs	50 lbs	60 lbs	80 lbs	90 lbs	110 lbs	150 lbs	200 lbs	300 lbs
Patient Weight (kg)	5 kg	7 kg	9 kg	11 kg	14 kg	18 kg	23 kg	27 kg	36 kg	41 kg	50 kg	68 kg	91 kg	136
1) Waste 1 ml from 10 ml NS flush. 2) Draw 1 ml from 500 mg / 10 ml vial of Ketamine. 3) Concentration is now 50 mg / 10 ml (5 mg/ml).														
Low Analgesic Dosage														
Dose (mg)														
0.1 mg/kg	0.5	0.7	0.9	1.1	1.4	1.8	2.3	2.7	3.6	4.1	5.0	6.8	9.1	13.6
Amount (ml)														
5 mg/ml	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.5	0.7	0.8	1.0	1.4	1.8	2.7
High Analgesic Dosage														
Dose (mg)														
0.5 mg/kg	2.5	3.5	4.5	5.5	7.0	9.0	11.5	13.5	18.0	20.5	25.0	34.0	45.5	68.0
Amount (ml)														
5 mg/ml	0.5	0.7	0.9	1.1	1.4	1.8	2.3	2.7	3.6	4.1	5.0	6.8	9.1	13.6



Section 7-340 - Labetalol (Nomadyne)

<p><u>Scope of Practice:</u></p> <p>RN Medic</p> <p><u>Route:</u></p> <p>* IV/IO.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Antihypertensive. * Alpha and beta blockade. Binds with alpha-1, beta-1, and beta-2 receptors in vascular smooth muscle. Inhibits strength of heart's contractions and rate. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> 5.5 hours. * <u>Onset time:</u> 2-5 minutes. * <u>Peak action time:</u> 5 minutes. * <u>Duration of action:</u> 2-4 hours.
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Indications:
Protocol 4-110 - Hypertension page 54

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Bronchial Asthma. * Heart block. * Cardiogenic shock. * Bradycardia. * Hypotension. * Pulmonary edema. * Heart failure. * Sick Sinus Syndrome. <p><u>Pregnancy risk factor:</u></p> <p>C</p> <ul style="list-style-type: none"> * C Category C (Not enough research has been done to determine if this drug is safe). <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none"> * 	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Blood pressure should be constantly monitored. * Cannot give at the same time with Lasix. * May cause Dizziness, flushing, Nausea, Headaches, weakness, postural hypotension. Hypotension, vomiting, bronchospasm, arrhythmia, Bradycardia, AV block. <p><u>Antidote:</u></p> <ul style="list-style-type: none"> * Section 7-200 - Epinephrine 1:10,000 (page 124). * Section 7-240 - Glucagon (page 128).
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Citations: (Comerford & Labus, 2010)



Section 7-350 - Lactated Ringers (LR)

<p><u>Scope of Practice:</u></p> <p>* AEMT * RN * Medic</p> <p><u>Route:</u></p> <p>* IV/IO.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <p>* Crystalloid solution.</p> <p><u>Pharmacokinetics:</u></p> <p>* <u>Half-Life:</u> NA. * <u>Onset time:</u> NA. * <u>Peak action time:</u> NA. * <u>Duration of action:</u> NA.</p>
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<u>Indications:</u>	
Protocol 3-020 - Hyperthermia	page 36
Protocol 5-020 - Abdominal Trauma	page 65
Protocol 5-030 - Burns	page 66
Protocol 5-040 - Chest Trauma	page 67
Protocol 5-050 - Extremity Trauma	page 68
Protocol 5-080 - Spinal Trauma	page 71
Protocol 5-090 - Trauma Arrest	page 73
Protocol 6-040 - Control of Nausea	page 80
Protocol 6-050 - Control of Pain	page 81
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)	page 93
Section 7-470 - Oxytocin (Pitocin)	page 149

<p><u>Contraindications:</u></p> <p>* None.</p> <p><u>Pregnancy risk factor:</u></p> <p>* NA.</p> <p><u>Potential incompatibilities:</u></p> <p>*</p>	<p><u>Precautions and adverse effects:</u></p> <p>* May cause Pulmonary Edema.</p> <p><u>Antidote:</u></p> <p>*</p>
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Citations: (Laszlo, et al., 2006), (Phillips, et al., 2009), (Schott, 2010), (Todd & Malinoski, 2007)



Section 7-360 - Lasix (Furosemide)

<p><u>Scope of Practice:</u></p> <p>RN Medic</p> <p><u>Route:</u></p> <p>* IV/IO/IM.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none">* Potent diuretic.* Inhibits reabsorption of sodium chloride. Promotes prompt diuresis. Vasodilation. Decreases absorption of water and increased production of urine. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none">* <u>Half-Life:</u> 30 minutes* <u>Onset time:</u> 5 minutes.* <u>Peak action time:</u> 30 minutes.* <u>Duration of action:</u> 2 hours.
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Indications:
Not in current standing order protocols.

<p><u>Contraindications:</u></p> <ul style="list-style-type: none">* Pregnancy.* Dehydration. <p><u>Pregnancy risk factor:</u></p> <p>C Category C (Not enough research has been done to determine if this drug is safe).</p> <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none">*	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none">* Some studies suggest prehospital diagnosis of heart failure is only correct 60% of the time. Routine administration of Lasix to patients in suspected CHF should be discontinued.* Should be protected from light.* Use caution with dehydration.* May prolong QT interval. 12-lead is indicated after administration.* May cause hypotension. <p><u>Antidote:</u></p> <ul style="list-style-type: none">*
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Citations: (Comerford & Labus, 2010), (Dobson, Jensen, Karim, & Travers, 2009), (Pan, Stiell, Dionne, & Maloney, 2015)

Section 7-370 - Lidocaine (Xylocaine)

<p><u>Scope of Practice:</u></p> <p>* RN</p> <p>* Medic</p> <p><u>Route:</u></p> <p>* IV/IO/ET/topical.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <p>* Antiarrhythmic.</p> <p>* Blocks sodium channels, increasing recovery period after repolarization. Suppresses automaticity in the His-Purkinje system and depolarization in the ventricles.</p> <p><u>Pharmacokinetics:</u></p> <p>* <u>Half-Life:</u> 1.5-2 hours.</p> <p>* <u>Onset time:</u> Immediate.</p> <p>* <u>Peak action time:</u> Immediate.</p> <p>* <u>Duration of action:</u> 10-20 minutes.</p>
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Indications:

Protocol 2-100 - Tachycardia Wide Stable page 28

Protocol 2-130 - Ventricular Ectopy
 (Ventricular arrhythmias when **Amiodarone** is not available) page 31

Protocol 2-140 - Ventricular Fibrillation (V-Fib or V-Tach)
 (Cardiac Arrest from VF/VT) page 32

Protocol 6-025 - Cardiopulmonary Resuscitation (CPR) page 78

Section 8-135 - Intraosseous (IO) Needle page 192

<p><u>Contraindications:</u></p> <p>* High degree heart blocks.</p> <p>* PVCs in conjunction with Bradycardia.</p> <p>* Bleeding.</p> <p><u>Pregnancy risk factor:</u></p> <p>* B Category B (No risks have been found in humans).</p> <p><u>Potential incompatibilities:</u></p> <p>*</p>	<p><u>Precautions and side effects:</u></p> <p>* Monitor for CNS toxicity.</p> <p>* Liver disease or greater than 70yrs old: reduce dosage by 50%.</p> <p>* Use with caution in Bradycardia, hypovolemia, shock, Adams-Stokes, Wolff-Parkinson-White.</p> <p>* May cause Anxiety, drowsiness, dizziness, confusion, Nausea, vomiting, convulsions, widening of QRS. Arrhythmias, hypotension.</p> <p><u>Antidote:</u></p> <p>*</p>
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Citations: (Comerford & Labus, 2010)

CMH/EMH EMS Quick Ref		
Lidocaine Infusion		
Drip	1 mg/min	15.0 ml/hr
Drip	2 mg/min	30.0 ml/hr
Drip	3 mg/min	45.0 ml/hr
Drip	4 mg/min	60.0 ml/hr



Section 7-380 - Magnesium Sulfate

<p><u>Scope of Practice:</u></p> <p>RN Medic</p> <p><u>Route:</u></p> <p>* IV/IO/IM.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Anticonvulsant. Smooth muscle relaxer. * CNS depressant. Cofactor in neurochemical transmission and muscular excitability. Controls Seizure by blocking peripheral neuromuscular transmission. Peripheral vasodilator and platelet inhibitor. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> Unknown. * <u>Onset time:</u> <ul style="list-style-type: none"> * 1-2 minutes (IV), * 1 hour (IM). * <u>Peak action time:</u> * <u>Duration of action:</u>
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Indications:

Protocol 2-100 - Tachycardia Wide Stable	page 28
Protocol 2-110 - Tachycardia Wide Unstable	page 29
Protocol 2-120 - Torsades de Pointes	page 30
Protocol 2-140 - Ventricular Fibrillation (V-Fib or V-Tach) (Refractory V-Fib/ V-Tach)	page 32
Protocol 4-030 - Asthma	page 41
Protocol 4-060 - Chronic Obstructive Pulmonary Disease (COPD)	page 48
Protocol 4-110 - Hypertension (Eclampsia)	page 54

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Heart block. * Recent MI. * Renal insufficiency or renal failure. * GI obstruction. <p><u>Pregnancy risk factor:</u></p> <p>A Category A (No known adverse reactions).</p> <p><u>Potential incompatibilities:</u></p> <p>*</p>	<p><u>Precautions and side effects:</u></p> <ul style="list-style-type: none"> * Use caution with Digitalis. Hypotension. Magnesium toxicity. * May cause Respiratory depression. Drowsiness. <p><u>Antidote:</u></p> <ul style="list-style-type: none"> * Section 7-100 - Calcium Chloride (Calciject) (page 113). * Section 7-240 - Glucagon (page 128).
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Citations: (Comerford & Labus, 2010), (Sanadi, 2017)



Section 7-390 - Morphine

<p><u>Scope of Practice:</u></p> <p>RN Medic</p> <p><u>Route:</u></p> <p>* IV/IO/IM/SQ.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Opiate. * CNS depressant. Causes peripheral vasodilation. Decreases sensitivity to Pain. Binds with opioid receptors. Depresses vasomotor centers of brain. Releases histamine. Reduces stimulation of sympathetic nervous system. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> 2-3 hours. * <u>Onset time:</u> <ul style="list-style-type: none"> * 5 minutes (IV), * 10-30 minutes (IM). * <u>Peak action time:</u> <ul style="list-style-type: none"> * 20 minutes (IV), * 30-60 minutes (IM). * <u>Duration of action:</u> 4-5 hours.
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<p><u>Indications:</u></p> <p>Protocol 2-050 - Chest Discomfort..... page 21</p> <p>Protocol 6-050 - Control of Pain..... page 81</p>

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Head injury. * Volume depletion. <p><u>Pregnancy risk factor:</u></p> <p>C Category C (Not enough research has been done to determine if this drug is safe).</p> <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none"> * Section 7-270 - Heparin * Section 7-480 - Phenergan (Promethazine) 	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * May worsen Bradycardia and heart block in patients with acute inferior wall MI. * Use caution with Acute Asthma. * May cause Dizziness. ALOC. Respiratory depression. Hypotension. Nausea. Vomiting, lightheadedness, sedation, diaphoresis, euphoria, dysphoria. Possible beneficial effect in pulmonary edema. <p><u>Antidote:</u></p> <ul style="list-style-type: none"> * Section 7-400 - Narcan (Naloxone) (page 143).
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<p><u>DEA Number:</u> 9300</p> <p><u>Schedule:</u> II II - High potential for abuse with severe dependence.</p> <p><u>Narcotic:</u> Yes.</p>	<p><u>Street names:</u></p> <ul style="list-style-type: none"> * C & M, Cotton Brothers, Dreamer, Emsel, First Line, God's Drug, Hows, M, Miss Emma, Mister Blue, Morf, Morpho, MS, New Jack Swing, Unkie.
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<p><u>Citations:</u> (About Drugs, n.d.), (Citizens Memorial Hospital, 2013), (Comerford & Labus, 2010), (Cox Paramedics, 2014), (Sober Recovery, n.d.), (Street Rx, n.d.), (US Department of Justice, Drug Enforcement Administration, Office of Diversion Control, n.d.)</p>
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Section 7-400 - Narcan (Naloxone)

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> * EMT - Only IN for narcotic overdose causing respiratory depression when unable to ventilate. * AEMT - Only IN/IM/IV for narcotic overdose causing respiratory depression when unable to ventilate. * RN * Medic <p><u>Route:</u></p> <ul style="list-style-type: none"> * IV/IO/IN/IM/SQ/ET. 	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Narcotic antagonist. * Binds to opioid receptor and blocks the effect of Narcotics. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> <ul style="list-style-type: none"> * 90-80 minutes (adults), * 3 hours (neonates). * <u>Onset time:</u> <ul style="list-style-type: none"> * 1-2 minutes (IV), * 2-5 minutes (IM). * <u>Peak action time:</u> 5-15 minutes. * <u>Duration of action:</u> Variable
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<u>Indications:</u>	
Protocol 4-130 - Neonatal Resuscitation	page 57
Protocol 4-140 - Poisoning or Overdose (Narcotic Overdoses).....	page 58
Can include: Darvon, Demerol, Dilaudid, Fentanyl , Heroin, Methadone, Morphine , Nubain, Paregoric, Percodan, Stadol, Talwin, Tylenol 3, Tylox.	
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)	page 78
Section 7-230 - Fentanyl (Sublimaze) (Overdose).....	page 127
Section 7-390 - Morphine (Overdose)	page 142

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Hypersensitivity. <p><u>Pregnancy risk factor:</u></p> <ul style="list-style-type: none"> * B Category B (No risks have been found in humans). <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none"> * 	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Short acting, should be augmented every 5min. * Monitor Airway and ventilatory status. * Patients who have gone from a state of somnolence from a Narcotic Overdose may become wide awake and combative. * May cause withdrawal effects. Nausea, vomiting, restlessness, diaphoresis, Tachycardia, Hypertension, tremulousness, Seizure, cardiac Arrest, withdrawal. <p><u>Antidote:</u></p> <ul style="list-style-type: none"> *
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Citations: (Clarke, Dargan, & Jones, 2005), (Comerford & Labus, 2010), (Missouri revised statutes, 2014)



Section 7-410 - Neo-Synephrine (Phenylephrine)

<p><u>Scope of Practice:</u></p> <p>* RN</p> <p>* Medic</p> <p><u>Route:</u></p> <p>* Topical.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <p>* Vasoconstrictor (alpha).</p> <p>* Topical vasoconstriction.</p> <p><u>Pharmacokinetics:</u></p> <p>* <u>Half-Life:</u> 2.1-3.4 hours.</p> <p>* <u>Onset time:</u> Rapid.</p> <p>* <u>Peak action time:</u> Unknown.</p> <p>* <u>Duration of action:</u> 0.5-4 hours.</p>
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Indications:
Section 8-080 - Endotracheal Tube (ET)
 (Premedication for nasal **Intubation** to prevent epistaxis)..... page 187

<p><u>Contraindications:</u></p> <p>* Hypertension.</p> <p>* Thyroid disease.</p> <p><u>Pregnancy risk factor:</u></p> <p>*  Category C (Not enough research has been done to determine if this drug is safe).</p> <p><u>Potential incompatibilities:</u></p> <p>*</p>	<p><u>Precautions and adverse effects:</u></p> <p>* Use caution with Enlarged prostate with dysuria.</p> <p>* May cause Nasal burning, stinging, sneezing, or increased nasal discharge.</p> <p><u>Antidote:</u></p> <p>*</p>
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Citations: (Comerford & Labus, 2010)



Section 7-420 - Nitroglycerin (Nitrostat, Nitrolingual, Tridil)

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> * AEMT - Only SL for chest discomfort after IV access. * RN * Medic <p><u>Route:</u></p> <ul style="list-style-type: none"> * SL. * IV. Delivery by infusion pump only. Must have glass bottle and non-PVC tubing. 	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Nitrate vasodilator. * Smooth muscle relaxant. Dilates coronary and systemic arteries. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life</u>: 1-4 minutes. * <u>Onset time</u>: <ul style="list-style-type: none"> * 20-45 minutes (PO), * Immediate (IV), * 30 minutes (topical), * 1-3 minutes (SL). * <u>Peak action time</u>: Unknown. * <u>Duration of action</u>: <ul style="list-style-type: none"> * 3-8 hours (PO), * 3-5 minutes (IV), * 2-24 hours (topical), * 30-60 minutes (SL).
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Indications:

Protocol 2-050 - Chest Discomfort (Unstable angina) page 21

Protocol 4-070 - Congestive Heart Failure (CHF) (Acute CHF secondary to AMI) page 49

Protocol 4-110 - Hypertension page 54

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Age less than 12yrs. * Hypotension. * Severe Bradycardia or Tachycardia. * ICP. * Patients taking erectile dysfunction medications. * Phosphodiesterase Inhibitor within 48 hours (i.e. Viagra, Levitra, Cialis) <p><u>Pregnancy risk factor:</u></p> <ul style="list-style-type: none"> * C Category C (Not enough research has been done to determine if this drug is safe). <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none"> * 	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Patients with inferior wall MI and right Ventricular involvement may have more pronounced hemodynamic response. Must have IV access prior to administration. Monitor blood pressure. * Drug must be protected from light. * Expires quickly once bottle is opened. * May cause Syncope. Headache, dizziness, hypotension. Bradycardia, lightheadedness, flushing. <p><u>Antidote:</u></p> <ul style="list-style-type: none"> *
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Citations: (Clemency, Thompson, Tundo, & Lindstrom, 2013), (Comerford & Labus, 2010), (NASEMSO Medical Directors Council, 2017)








CMH/EMH EMS Quick Ref		
Nitroglycerin Infusion		
Drip	10 mcg/min	3.0 ml/hr
Drip	20 mcg/min	6.0 ml/hr
Drip	30 mcg/min	9.0 ml/hr
Drip	40 mcg/min	12.0 ml/hr
Drip	50 mcg/min	15.0 ml/hr
Drip	60 mcg/min	18.0 ml/hr
Drip	70 mcg/min	21.0 ml/hr
Drip	80 mcg/min	24.0 ml/hr
Drip	90 mcg/min	27.0 ml/hr
Drip	100 mcg/min	30.0 ml/hr
Drip	110 mcg/min	33.0 ml/hr
Drip	120 mcg/min	36.0 ml/hr
Drip	130 mcg/min	39.0 ml/hr
Drip	140 mcg/min	42.0 ml/hr
Drip	150 mcg/min	45.0 ml/hr
Drip	160 mcg/min	48.0 ml/hr
Drip	170 mcg/min	51.0 ml/hr
Drip	180 mcg/min	54.0 ml/hr
Drip	190 mcg/min	57.0 ml/hr
Drip	200 mcg/min	60.0 ml/hr



Section 7-440 - Normal Saline (NS, Sodium Chloride)

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> * EMR - Only topical as wound irrigation. * EMT - Only topical as wound irrigation. * AEMT * RN * Medic <p><u>Route:</u></p> <ul style="list-style-type: none"> * IV/IO/topical. 	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Crystalloid solution. * NA. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> NA. * <u>Onset time:</u> NA. * <u>Peak action time:</u> NA. * <u>Duration of action:</u> NA.
<p><u>Indications:</u></p> <p>Virtually all medical protocols. IV access for medical emergencies. Irrigation of open wound and Burns.</p>	
<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * NA. <p><u>Pregnancy risk factor:</u></p> <ul style="list-style-type: none"> * NA. <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none"> * 	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * May cause Pulmonary edema. <p><u>Antidote:</u></p> <ul style="list-style-type: none"> * NA.
<p><u>Citations:</u> (Carnahan, Title 19 - Rules of Department of Health and Senior Services Division 30 - Division of regulation and licensure Chapter 40 - Comprehensive emergency medical systems regulations, 2012), (Laszlo, et al., 2006), (Phillips, et al., 2009), (Schott, 2010), (Todd & Malinoski, 2007)</p>	

Section 7-460 - Oxygen

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> *  *  *  *  *  <p><u>Route:</u></p> <ul style="list-style-type: none"> * Inhalation. 	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Gas. * Necessary for aerobic cellular metabolism. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> NA. * <u>Onset time:</u> NA. * <u>Peak action time:</u> NA. * <u>Duration of action:</u> NA.
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Indications:
Virtually all protocols. SpO₂ less than 88%. The overall goal of Oxygen therapy is to avoid tissue hypoxia.
Arterial hypoxemia or a failure of the Oxygen-hemoglobin transport system.
Arterial hypoxemia = Oxygen saturation of less than 88% and may result from impaired gas exchange in the lung, inadequate alveolar **ventilation** or a shunt that allows venous blood into the arterial circulation.
A failure of the Oxygen-hemoglobin transport system can result from a reduced Oxygen carrying capacity in blood (i.e. anemia, **Carbon Monoxide Poisoning**) or reduced tissue perfusion (i.e. shock).

<p>Titrate administration to SpO₂:</p> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th style="background-color: #cccccc;">SpO₂</th> <th></th> </tr> </thead> <tbody> <tr> <td style="background-color: #cccccc;">100%</td> <td>Anaphylaxis, anemia, CO, toxin, or trauma</td> </tr> <tr> <td style="background-color: #cccccc;">99%</td> <td rowspan="4" style="text-align: center; vertical-align: middle;">Cardiac or stroke</td> </tr> <tr> <td style="background-color: #cccccc;">98%</td> </tr> <tr> <td style="background-color: #cccccc;">97%</td> </tr> <tr> <td style="background-color: #cccccc;">96%</td> </tr> <tr> <td rowspan="4" style="text-align: center; vertical-align: middle;">Conscious ROSC</td> <td style="background-color: #cccccc;">95%</td> </tr> <tr> <td style="background-color: #cccccc;">94%</td> </tr> <tr> <td style="background-color: #cccccc;">93%</td> </tr> <tr> <td style="background-color: #cccccc;">92%</td> </tr> <tr> <td style="background-color: #cccccc;">91%</td> <td rowspan="4" style="text-align: center; vertical-align: middle;">Dyspnea or Unconscious ROSC</td> </tr> <tr> <td style="background-color: #cccccc;">90%</td> </tr> <tr> <td style="background-color: #cccccc;">89%</td> </tr> <tr> <td style="background-color: #cccccc;">88%</td> </tr> </tbody> </table> <p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Known Paraquat Poisoning unless SpO₂ is less than 88%. <p><u>Pregnancy risk factor:</u></p> <ul style="list-style-type: none"> * NA. <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none"> * 	SpO ₂		100%	Anaphylaxis , anemia, CO, toxin, or trauma	99%	Cardiac or stroke	98%	97%	96%	Conscious ROSC	95%	94%	93%	92%	91%	Dyspnea or Unconscious ROSC	90%	89%	88%	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Use cautiously in patients with COPD. * Humidify when providing high-flow rates over extended periods of time. * Hyperoxia resulting from high FiO₂ administration producing saturations higher than 94-96% can cause structural damage to the lungs and post reperfusion tissue damage. * Use caution with patients who are chronically hypoxic (i.e. COPD, ALS, MS) have shifted their Oxygen dissociation curve and require lower Oxygen saturations. Prolonged Oxygen therapy may depress Ventilator drive. * High blood Oxygen levels may disrupt the ventilation / perfusion balance and cause an increase in dead space to tidal volume ratio and increase PCO₂. * May cause drying of mucous membranes. <p><u>Antidote:</u></p> <ul style="list-style-type: none"> * NA.
SpO ₂																				
100%	Anaphylaxis , anemia, CO, toxin, or trauma																			
99%	Cardiac or stroke																			
98%																				
97%																				
96%																				
Conscious ROSC	95%																			
	94%																			
	93%																			
	92%																			
91%	Dyspnea or Unconscious ROSC																			
90%																				
89%																				
88%																				

Citations: (Carnahan, Title 19 - Rules of Department of Health and Senior Services Division 30 - Division of regulation and licensure Chapter 40 - Comprehensive emergency medical systems regulations, 2012), (Citizens Memorial Hospital, 2013), (Sheppard, 2013)



Section 7-470 - Oxytocin (Pitocin)

<p><u>Scope of Practice:</u></p> <p>RN Medic</p> <p><u>Route:</u></p> <p>* IV.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Hormone. * Causes uterine contraction. Causes lactation. Slows postpartum Vaginal bleeding. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> 3-5 minutes. * <u>Onset time:</u> Immediate. * <u>Peak action time:</u> Unknown. * <u>Duration of action:</u> 1 hour.
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Indications:
Protocol 4-180 - Vaginal Bleeding (Postpartum Vaginal bleeding)..... page 64

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Any condition other than postpartum bleeding. * Cesarean section. <p><u>Pregnancy risk factor:</u></p> <ul style="list-style-type: none"> * NR. <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none"> * 	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Essential to assure that the placenta has delivered and that there is not another fetus present before administering. * Overdosage can cause uterine rupture. * Use caution with Hypertension. * May prolong QT interval. 12-lead is indicated after administration. * May cause Anaphylaxis. Cardiac arrhythmias. <p><u>Antidote:</u></p> <ul style="list-style-type: none"> *
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Citations: (Comerford & Labus, 2010)



Section 7-480 - Phenergan (Promethazine)

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> *  <p><u>Route:</u></p> <ul style="list-style-type: none"> * IM or IV/IO if infused in NS over 15-30 min. 	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Anti-emetic. * Decreases Nausea and vomiting by antagonizing H1 receptors. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> 16-19 hours. * <u>Onset time:</u> <ul style="list-style-type: none"> * 3-5 minutes (IV), * 20 minutes (IM) * <u>Peak action time:</u> Unknown. * <u>Duration of action:</u> Less than 12 hours.
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<p><u>Indications:</u></p> <p>Protocol 4-010 - Abdominal Pain page 39</p> <p>Protocol 6-040 - Control of Nausea page 80</p>

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * ALOC. * Jaundice. <p><u>Pregnancy risk factor:</u></p> <ul style="list-style-type: none"> *  Category C (Not enough research has been done to determine if this drug is safe). <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none"> * Section 7-270 - Heparin * Section 7-390 - Morphine 	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Use caution with Seizure disorder. * May prolong QT interval. 12-lead is indicated after administration. * May cause Excitation. * Possible Extra-Pyramidal Symptoms (EPS) / dystonic reactions. <ul style="list-style-type: none"> * EPS is a movement disorder such as the inability to move or restlessness. * Treat with Section 7-090 - Benadryl (Diphenhydramine) (page 112). <p><u>Antidote:</u></p> <ul style="list-style-type: none"> *
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Citations: (Comerford & Labus, 2010)



Section 7-490 - Procainamide (Pronestyl)


<p><u>Scope of Practice:</u></p> <p>* </p> <p><u>Route:</u></p> <p>* IV/IO.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Antiarrhythmic. * Slows conduction through myocardium. Elevates ventricular fibrillation threshold. Suppresses ventricular ectopy. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> 2.5-4.5 hours. * <u>Onset time:</u> Immediate. * <u>Peak action time:</u> Immediate. * <u>Duration of action:</u> Unknown.
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<p><u>Indications:</u></p> <p>None in current standing order protocols.</p>


<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * High degree heart blocks. * PVCs in conjunction with bradycardia. <p><u>Pregnancy risk factor:</u></p> <p>*  Category C (Not enough research has been done to determine if this drug is safe).</p> <p><u>Potential incompatibilities:</u></p> <p>*</p>	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Dosage should not exceed 17 mg/kg. * Monitor for CNS toxicity. * May prolong QT interval. 12-lead is indicated after administration. * May cause anxiety, nausea, convulsions, and widening QRS. <p><u>Antidote:</u></p> <p>*</p>
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<p><u>Citations:</u> (Comerford & Labus, 2010)</p>
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Section 7-500 - Propofol (Diprivan)

<p><u>Scope of Practice:</u></p> <p>* </p> <p><u>Route:</u></p> <p>* IV/IO.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none">* Anesthetic.* Produces rapid and brief state of general anesthesia. <p><u>Pharmacokinetics:</u></p> <p>* <u>Half-Life:</u></p> <ul style="list-style-type: none">* <u>Initial phase (distribution):</u> 2-10 minutes,* <u>Second phase (redistribution):</u> 21-70 minutes,* <u>Terminal phase (elimination):</u> 1.5-31 hours. <p>* <u>Onset time:</u> Less than 40 seconds.</p> <p>* <u>Peak action time:</u> Unknown.</p> <p>* <u>Duration of action:</u> 10-15 minutes.</p>
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Indications:
None in current standing order protocols.

<p><u>Contraindications:</u></p> <ul style="list-style-type: none">* Hypovolemia.* Sensitivity to soybean oil or eggs. <p><u>Pregnancy risk factor:</u></p> <p>*  Category B (No risks have been found in humans).</p> <p><u>Potential incompatibilities:</u></p> <p>*</p>	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none">* May cause apnea, arrhythmias, asystole, hypotension, hypertension. <p><u>Antidote:</u></p> <p>*</p>
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Citations: (Comerford & Labus, 2010)



Section 7-505 - Reglan (Metoclopramide)

<p><u>Scope of Practice:</u></p> <p>RN Medic</p> <p><u>Route:</u></p> <p>* IV/IO.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none">* Gut motility stimulator.* Increases muscle contractions in the upper digestive tract. This speeds up the rate at which the stomach empties into the intestines. Also blocks dopamine receptors in the brain. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none">* <u>Half-Life:</u> 4-6 hours.* <u>Onset time:</u> 1-3 minutes.* <u>Peak action time:</u> Unknown.* <u>Duration of action:</u> 1-2 hours.
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Indications:
None in current standing order protocols.

<p><u>Contraindications:</u></p> <ul style="list-style-type: none">* Bleeding or blockage in stomach or intestines.* Epilepsy or other seizure disorder.* Adrenal gland tumor (pheochromocytoma). <p><u>Pregnancy risk factor:</u></p> <p>B Category B (No risks have been found in humans).</p> <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none">*	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none">* High doses or long-term use can cause serious movement disorders that may not be reversible.* Causes increased aldosterone and fluid retention.* Use with caution with renal impairment, hypertension, CHF, or cirrhosis.* May cause neuroleptic malignant syndrome, hyperthermia, muscle rigidity, extrapyramidal reactions, and akathisia. <p><u>Antidote:</u></p> <ul style="list-style-type: none">*
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Citations: (Comerford & Labus, 2010)



Section 7-520 - Rocuronium (Zemuron)

<p><u>Scope of Practice:</u></p> <p>* RN</p> <p>* Medic</p> <p><u>Route:</u></p> <p>* IV/IO.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Non-depolarizing neuromuscular blockade. * Binds to post-synaptic muscle receptor sites. Antagonizes acetylcholine at the motor end plate, producing skeletal muscle paralysis. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> 66-80 minutes. * <u>Onset time:</u> 1 minute. * <u>Peak action time:</u> <ul style="list-style-type: none"> * 0.5-1 minute (pediatrics), * 1-3.7 minutes (adults). * <u>Duration of action:</u> <ul style="list-style-type: none"> * 26-40 minutes (pediatrics), * 31 minutes (adults).
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Indications:
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)..... page 93

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Unable to Ventilate the patient. * Sensitivity to bromides. <p><u>Pregnancy risk factor:</u></p> <p>* C Category C (Not enough research has been done to determine if this drug is safe).</p> <p><u>Potential incompatibilities:</u></p> <p>*</p>	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Patient will be paralyzed for up to 30min. * Use caution with Heart disease. Liver disease. * May cause Muscle paralysis, apnea, dyspnea, respiratory depression, Tachycardia, urticaria. <p><u>Antidote:</u></p> <p>*</p>
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Citations: (Swaminathan, 2014)



Section 7-530 - Sodium Bicarbonate (Soda)

<p><u>Scope of Practice:</u></p> <p>* RN</p> <p>* Medic</p> <p><u>Route:</u></p> <p>* IV/IO.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <p>* Alkalinizing agent.</p> <p>* Combines with excessive acids to form a weak volatile acid. Increases pH.</p> <p><u>Pharmacokinetics:</u></p> <p>* <u>Half-Life:</u> Unknown.</p> <p>* <u>Onset time:</u> Immediate.</p> <p>* <u>Peak action time:</u> Immediate.</p> <p>* <u>Duration of action:</u> Unknown.</p>
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Indications:

Protocol 2-010 - Asystole (Late in management of cardiac Arrest) page 17


Protocol 2-070 - Pulseless Electrical Activity (PEA)
(Late in management of cardiac Arrest) page 25

Protocol 2-140 - Ventricular Fibrillation (V-Fib or V-Tach)
(Late in management of cardiac Arrest) page 32

Protocol 4-140 - Poisoning or Overdose page 58

Protocol 5-050 - Extremity Trauma page 68


Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)
(Late in management of cardiac Arrest) page 78

<p><u>Contraindications:</u></p> <p>* Alkalotic states.</p> <p><u>Pregnancy risk factor:</u></p> <p>*  Category C (Not enough research has been done to determine if this drug is safe).</p> <p><u>Potential incompatibilities:</u></p> <p>* Section 7-090 - Benadryl (Diphenhydramine)</p>	<p><u>Precautions and adverse effects:</u></p> <p>* Correct dosage is essential.</p> <p>* Can deactivate catecholamines.</p> <p>* Can precipitate with Calcium.</p> <p>* Delivers large sodium load.</p> <p>* Can worsen acidosis if not intubated and adequately Ventilated.</p> <p>* May cause Alkalosis. Hyponatremia, fluid retention, peripheral edema.</p> <p><u>Antidote:</u></p> <p>*</p>
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Citations: (Comerford & Labus, 2010)




Section 7-540 - Solu-Medrol (Methylprednisolone)

<p><u>Scope of Practice:</u></p> <p>*  RN Medic</p> <p><u>Route:</u></p> <p>* IV/IO.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <p>* Corticosteroid. * Anti-inflammatory. Immune suppressant.</p> <p><u>Pharmacokinetics:</u></p> <p>* <u>Half-Life:</u> 18-36 hours. * <u>Onset time:</u> Rapid. * <u>Peak action time:</u> Immediate. * <u>Duration of action:</u> 1 week.</p>
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Indications:

Protocol 4-020 - Anaphylaxis	page 40
Protocol 4-030 - Asthma	page 41
Protocol 4-060 - Chronic Obstructive Pulmonary Disease (COPD)	page 48
Protocol 4-080 - Croup	page 50

<p><u>Contraindications:</u></p> <p>* None in emergency setting.</p> <p><u>Pregnancy risk factor:</u></p> <p>*  Category C (Not enough research has been done to determine if this drug is safe).</p> <p><u>Potential incompatibilities:</u></p> <p>*</p>	<p><u>Precautions and adverse effects:</u></p> <p>* Be cautious in the following conditions: Cushing's syndrome, fungal infection, measles, varicella. * Must be reconstituted and used properly. Onset of action may be 2-5hrs. Active infections, renal disease, penetrating spinal cord injury, * Use caution with Hypertension, Seizure, CHF. * May cause GI bleeding. Prolonged wound healing. Suppression of natural steroids. Depression, euphoria, Headache, restlessness, Hypertension, Bradycardia, Nausea, vomiting, swelling, diarrhea, weakness.</p> <p><u>Antidote:</u></p> <p>*</p>
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Citations: (Comerford & Labus, 2010)



Section 7-550 - Succinylcholine (Anectine)


<p><u>Scope of Practice:</u></p> <p>RN Medic</p> <p><u>Route:</u></p> <p>* IV/IO.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none">* Depolarizing neuromuscular blocker. Ultra-short acting.* Competes with the acetylcholine receptor of the motor end plate on the muscle cell, resulting in muscle paralysis. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none">* <u>Half-Life:</u> 24-70 seconds.* <u>Onset time:</u> 30-60 seconds.* <u>Peak action time:</u> 1-2 minutes.* <u>Duration of action:</u> 4-10 minutes.
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Indications:
Not in current standing order protocols


<p><u>Contraindications:</u></p> <ul style="list-style-type: none">* Family history of malignant hyperthermia.* Penetrating eye injuries.* Narrow angle glaucoma.* Severe burns or crush injuries more than 48 hour old.* CVA more than three days old.* Rhabdomyolysis.* Pseudo cholinesterase deficiency.* Hyperkalemia.* Neuromuscular disorder (i.e. muscular dystrophy) <p><u>Pregnancy risk factor:</u></p> <p>C</p> <ul style="list-style-type: none">* Category C (Not enough research has been done to determine if this drug is safe). <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none">*	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none">* Use caution with electrolyte imbalances.* Use caution with renal, hepatic, pulmonary, metabolic, or cardiovascular disorders.* Use caution with fractures, spinal cord injuries, severe anemia, dehydration, collagen disorders, porphyria.* Causes initial transient contractions and fasciculations followed by sustained flaccid skeletal muscle paralysis.* May increase vagal tone, especially in children.* May cause apnea, hypertension, hypotension, dysrhythmias, nausea, vomiting, hiccups, snoring, malignant hyperthermia. <p><u>Antidote:</u></p> <ul style="list-style-type: none">* Dantroline
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Citations: (Comerford & Labus, 2010)

Section 7-560 - Tetracaine

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none">*  <p><u>Route:</u></p> <ul style="list-style-type: none">* Topical.	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none">* Anesthetic.* Local anesthesia. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none">* <u>Half-Life:</u> 1.8 hours.* <u>Onset time:</u> 15 seconds.* <u>Peak action time:</u> Unknown.* <u>Duration of action:</u> 10-20 minutes.
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<p><u>Indications:</u></p> <p>Protocol 5-060 - Eye Injury (Need for Eye irrigation) page 69</p> <p>Section 8-210 - Morgan Lens..... page 207</p>
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<p><u>Contraindications:</u></p> <ul style="list-style-type: none">* Hypersensitivity. <p><u>Pregnancy risk factor:</u></p> <ul style="list-style-type: none">*  Category C (Not enough research has been done to determine if this drug is safe). <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none">*	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none">* Patient will be unaware of objects touching their Eye. Be careful to protect the Eye from foreign debris and from the patient rubbing eyes.* May cause Burning, conjunctival redness, photophobia, lacrimation. <p><u>Antidote:</u></p> <ul style="list-style-type: none">*
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<p><u>Citations:</u></p>



Section 7-570 - Thiamine (Vitamin B1)

<p><u>Scope of Practice:</u></p> <p>RN</p> <p>Medic</p> <p><u>Route:</u></p> <p>* IV/IO/IM.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Vitamin. * Allows normal breakdown of Glucose. Thiamine combines with Adenosine triphosphate to produce Thiamine diphosphate, which acts as a coenzyme in carbohydrate metabolism. Used to prevent Wernicke’s encephalopathy in patients with a history of alcohol dependence and hypoglycemia. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> NA. * <u>Onset time:</u> NA. * <u>Peak action time:</u> NA. * <u>Duration of action:</u> NA.
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<p><u>Indications:</u></p> <p>Protocol 4-120 - Hypoglycemia (Coma of unknown origin) page 56</p> <p>Section 7-140 - (precedes Dextrose with suspected alcohol abuse or malnutrition) page 117</p>
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<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Known sensitivity. <p><u>Pregnancy risk factor:</u></p> <p>A</p> <ul style="list-style-type: none"> * Category A (No known adverse reactions). <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none"> * 	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * May cause Rare anaphylactic reactions. Itching, rash. <p><u>Antidote:</u></p> <ul style="list-style-type: none"> *
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<p><u>Citations:</u> (Comerford & Labus, 2010), (Cox Paramedics, 2014)</p>
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Section 7-575 - Toradol (Ketorolac)

<p><u>Scope of Practice:</u></p> <p>RN Medic</p> <p><u>Route:</u></p> <p>* IV, IO, IM.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Non-Steroidal Anti-Inflammatory (NSAID). * Inhibit prostaglandin synthesis by decreasing the activity of the enzyme, cyclooxygenase, which results in decreased formation of prostaglandin precursors. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life</u>: 4-6 hours. * <u>Onset time</u>: <ul style="list-style-type: none"> * Immediate (IV), * 10 minutes (IM). * <u>Peak action time</u>: <ul style="list-style-type: none"> * 1-3 minutes (IV), * 30-60 minutes (IM). * <u>Duration of action</u>: 6-8 hours.
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Indications:
Protocol 6-050 - Control of Pain (Acute exacerbation of chronic Pain) page 81

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Pregnant or nursing women. * Allergies to Aspirin, Motrin, or NSAIDs. * Advanced renal impairment. * Suspected CVA. * GI bleeds. * Peptic ulcers. * Surgical candidates. <p><u>Pregnancy risk factor:</u></p> <p>D Category D (Adverse reactions have been found in humans).</p> <p><u>Potential incompatibilities:</u></p> <p>*</p>	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Toradol inhibits platelet function. * Hypersensitivity reactions have occurred (bronchospasm and Anaphylaxis). * Avoid in patients currently taking anticoagulants such as Coumadin. * Can cause peptic ulcers, gastrointestinal bleeding and/or perforation. * May adversely affect fetal circulation and the uterus. <p><u>Antidote:</u></p> <p>*</p>
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Citations: (Comerford & Labus, 2010), (Cox Paramedics, 2014), (McAuley, 2014)



Section 7-578 - TXA (Tranexamic Acid)

<p><u>Scope of Practice:</u></p> <div style="background-color: #f4a460; padding: 2px; display: inline-block; margin-bottom: 2px;">RN</div> <div style="background-color: #e67e22; padding: 2px; display: inline-block; margin-bottom: 2px;">Medic</div> <p><u>Route:</u></p> <ul style="list-style-type: none"> * IV/IO. 	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Antifibrinolytic * Synthetic derivative of the amino acid lysine that inhibits fibrinolysis by blocking the lysine binding sites on plasminogen. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> 2 hours. * <u>Onset time:</u> 5-15 minutes. * <u>Peak action time:</u> Unknown. * <u>Duration of action:</u> 3 hours.
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Indications:

Protocol 4-180 - Vaginal Bleeding	page 64
Protocol 5-020 - Abdominal Trauma	page 65
Protocol 5-040 - Chest Trauma	page 67
Protocol 5-050 - Extremity Trauma	page 68
Protocol 6-085 - High-Threat Response	page 86

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Age less than 16. * Renal failure. * Hypersensitivity. * History of thromboembolism. * Known subarachnoid aneurysm. * Injury greater than three (3) hours old. * Isolated head injury. * Colorblindness. <p><u>Pregnancy risk factor:</u></p> <div style="background-color: #27ae60; color: white; padding: 5px; display: inline-block; font-size: 2em; margin-right: 5px;">B</div> <ul style="list-style-type: none"> * Category B (No risks have been found in humans). <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none"> * 	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Rapid infusion may cause hypotension. If hypotension occurs, slow down infusion rate. * If TXA is administered, transport destination must be a level I, level II, or level III trauma center. * Avoid concurrent use with coagulation factors. * Use caution in patients with DIC. * Use caution in patients with renal impairment. * May cause Visual defects. Seizures. Nausea, vomiting, diarrhea. <p><u>Antidote:</u></p> <ul style="list-style-type: none"> *
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Citations: (LeCong, 2012), (Maine EMS Trauma Advisory Committee, 2013), (Medical Control Board - EMS System for Metropolitan Oklahoma City and Tulsa, 2013), (Mercy Life Line, 2013), (Morrison, Dubose, Rasmussen, & Midwinter, 2011), (Roberts, Shakur, Ker, & Coats, 2012)



Section 7-580 - Valium (Diazepam)

<p><u>Scope of Practice:</u></p> <p>* RN * Medic</p> <p><u>Route:</u></p> <p>* IV/IN/IO/IM.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <p>* Tranquilizer. Anticonvulsant. Skeletal muscle relaxant. Sedative. * Binds to benzodiazepine receptor and enhances effects of GABA.</p> <p><u>Pharmacokinetics:</u></p> <p>* <u>Half-Life:</u> 1-12 days. * <u>Onset time:</u> * 1-5 minutes (IV), * Unknown (IN/IM). * <u>Peak action time:</u> * 1-5 minutes (IV), * 2 hours (IM), * Unknown (IN). * <u>Duration of action:</u> * 15-60 minutes (IV), * Unknown (IM/IN).</p>
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Indications:
 Not in current standing order protocols


<p><u>Contraindications:</u></p> <p>* Age less than six months. * Acute-angle glaucoma. * CNS depression. * Alcohol intoxication.</p> <p><u>Pregnancy risk factor:</u></p> <p>* D Category D (Adverse reactions have been found in humans).</p> <p><u>Potential incompatibilities:</u></p> <p>*</p>	<p><u>Precautions and adverse effects:</u></p> <p>* Short duration of effect. * May precipitate with other drugs. * May cause local venous irritation, drowsiness, hypotension, respiratory depression, fatigue, headache, confusion, nausea, and sedation.</p> <p><u>Antidote:</u></p> <p>* Romazicon</p>
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<p><u>DEA Number:</u> 2765</p> <p><u>Schedule:</u> IV IV - Low potential for abuse.</p> <p><u>Narcotic:</u> No.</p>	<p><u>Street names:</u></p> <p>* Benzos, Blue Vs, Dead Flower, Downers, Drunk Pills, FooFoo, Howards, Ludes, Old Joes, Powers, Sleep Away, Tranks, Vs, Yellow Vs..</p>
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Citations: (Comerford & Labus, 2010)



Section 7-590 - Vecuronium (Norcuron)


<p><u>Scope of Practice:</u></p> <p>* </p> <p><u>Route:</u></p> <p>* IV/IO</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Non-0depolarizing neuromuscular blocker. * Does not have any analgesic or sedative effects. Sedation must accompany paralysis. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life</u>: 51-80 minutes. * <u>Onset time</u>: 1 minute. * <u>Peak action time</u>: 3-5 minutes. * <u>Duration of action</u>: 15-25 minutes.
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<p><u>Indications:</u></p> <p>Not in current standing order protocols</p>

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Unable to ventilate. * Sensitivity to bromides. <p><u>Pregnancy risk factor:</u></p> <p>*  Category C (Not enough research has been done to determine if this drug is safe).</p> <p><u>Potential incompatibilities:</u></p> <p>*</p>	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Use caution with impaired liver function, severe obesity, impaired respiratory function. * May cause arrhythmias, bronchospasm, hypertension, hypotension, apnea, dyspnea, tachycardia, and uticaria. <p><u>Antidote:</u></p> <p>*</p>
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<p><u>Citations:</u></p>


Section 7-600 - Versed (Midazolam)

<p><u>Scope of Practice:</u></p> <p>* </p> <p><u>Route:</u></p> <p>* IV/IN/IO.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Benzodiazepine. * Sedative, anxiolytic, amnesic (2-3x more potent than Valium). Binds to benzodiazepine receptor and enhances effects of GABA. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> 1.8-6.4 hours. * <u>Onset time:</u> 1.5-5 minutes. * <u>Peak action time:</u> Rapid. * <u>Duration of action:</u> 2-6 hours.
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Indications:

Protocol 4-140 - Poisoning or Overdose	page 58
Protocol 4-170 - Seizures	page 62
Protocol 6-050 - Control of Pain	page 81
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)	page 93
Section 8-050 - Continuous Positive Airway Pressure (CPAP)	page 182
Section 8-080 - Endotracheal Tube (ET) (Endotracheal tube tolerance)	page 187
Section 8-160 - King LTSD Airway	page 196
Section 8-190 - LifePak	page 199


<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Pregnancy. * Hypotension. * Acute-angle glaucoma. <p><u>Pregnancy risk factor:</u></p> <p>*  Category D (Adverse reactions have been found in humans).</p> <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none"> * Section 7-270 - Heparin 	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Use caution with COPD, acute alcohol intoxication, Narcotics, barbiturates, elderly, neonates. * May cause Hypoventilation, respiratory depression, respiratory Arrest, hypotension, laryngospasm. Nausea, vomiting, Headache, hiccups, cardiac Arrest. <p><u>Antidote:</u></p> <ul style="list-style-type: none"> * Romazicon
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<p><u>DEA Number:</u> 2884</p> <p><u>Schedule:</u>  IV - Low potential for abuse.</p> <p><u>Narcotic:</u> No.</p>	<p><u>Street names:</u></p> <ul style="list-style-type: none"> * Dazzle.
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Citations: (Citizens Memorial Hospital, 2013), (Comerford & Labus, 2010), (Holsti, et al., 2007), (Silbergleit, et al., 2012)




Section 7-610 - Xopenex (Levalbuterol)

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> *  <p><u>Route:</u></p> <ul style="list-style-type: none"> * Nebulized. 	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <ul style="list-style-type: none"> * Beta-2 Agonist. * Beta-2 receptor agonist with some beta-1 activity. <p><u>Pharmacokinetics:</u></p> <ul style="list-style-type: none"> * <u>Half-Life:</u> 3.25-4 hours. * <u>Onset time:</u> 5-15 minutes. * <u>Peak action time:</u> 1 hour. * <u>Duration of action:</u> 3-4 hours.
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Indications:


Protocol 4-020 - Anaphylaxis	page 40
Protocol 4-030 - Asthma	page 41
Protocol 4-060 - Chronic Obstructive Pulmonary Disease (COPD)	page 48
Protocol 4-070 - Congestive Heart Failure (CHF)	page 49

<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Hypersensitivity to levalbuterol or racemic Albuterol. <p><u>Pregnancy risk factor:</u></p> <ul style="list-style-type: none"> *  Category C (Not enough research has been done to determine if this drug is safe). <p><u>Potential incompatibilities:</u></p> <ul style="list-style-type: none"> * 	<p><u>Precautions and adverse effects:</u></p> <ul style="list-style-type: none"> * Use caution with Arrhythmias, Hypertension, paradoxical bronchospasm. * May cause Rhinitis, Headache, tremor, sinusitis, Tachycardia, nervousness, edema, hyperglycemia, hypokalemia. <p><u>Antidote:</u></p> <ul style="list-style-type: none"> *
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Citations: (Comerford & Labus, 2010)



Section 7-620 - Zofran (Ondansetron)

<p><u>Scope of Practice:</u></p> <p>* </p> <p><u>Route:</u></p> <p>* PO/IV/IM/IN.</p>	<p><u>Pharmacodynamics (class and mechanism of action):</u></p> <p>* Antiemetic. * Selective 5-HT receptor antagonist.</p> <p><u>Pharmacokinetics:</u></p> <p>* <u>Half-Life:</u> 4 hours. * <u>Onset time:</u> * Unknown (PO/IM), * Immediate (IV). * <u>Peak action time:</u> * Unknown (PO), * 10 minutes (IV), * 41 minutes (IM). * <u>Duration of action:</u> Unknown.</p>
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<p><u>Indications:</u></p> <p>Protocol 2-050 - Chest Discomfort..... page 21 Protocol 5-070 - Head Trauma page 70 Protocol 6-040 - Control of Nausea page 80</p>

<p><u>Contraindications:</u></p> <p>* Hypersensitivity.</p> <p><u>Pregnancy risk factor:</u></p> <p>*  Category B (No risks have been found in humans).</p> <p><u>Potential incompatibilities:</u></p> <p>*</p>	<p><u>Precautions and adverse effects:</u></p> <p>* May prolong QT interval. 12-lead is indicated after administration.</p> <p><u>Antidote:</u></p> <p>*</p>
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<p><u>Citations:</u></p>



Part 8 - Equipment Protocols

Section 8-001 - Equipment Currently on Response Vehicles

19 CSR 30-40.303(2)(C) states “the medical director, in cooperation with the ambulance service administrator, shall develop, implement, and annually review medications and medical equipment to be utilized.” This section fulfills that requirement for equipment.

Refer to [Section 7-001 - Medications Currently on Response Vehicles](#) (page 101) for medications.

Non-medication supplies that are still within a sealed package and do not appear damaged or aged may still be used up to five (5) years after the package expiration date. Packaging must be unopened, intact, and no discoloration. Exceptions (must dispose after expiration) include the following items:

- All medications
- Electrode patches and combination pads
- **Hemostatic gauze**
- Irrigation fluid such as **saline** and sterile water
- KY Jelly

EMS SUPERVISOR VEHICLE

Accucheck Kit

Accu Check Monitor (1)	Alcohol pads (10+)	Control solutions (2)	Lancets (6+)
Accu Check Strips (6+ strips)	Band aids (6+)		

Bag, Big

BAMM (1)	ET 7.5 (1)	IV Primary Tubing (1)	NPA 8.0 (1)
Bandage Coban	ET 8.0 (1)	IV Start Kit (1)	NPA 8.5 (1)
Bandage Kerlex (2)	ET 8.0 Endotrol (1)	King Airway size 3 (1)	OPA 100mm (1)
Bandage Kling 4" (2)	ET 8.5 (1)	King Airway size 4 (1)	OPA 60mm (1)
Bandage Triangular (2)	ET Holder (2)	King Airway size 5 (1)	OPA 70mm (1)
Blood Pressure Cuff (1)	ETCO2 adapter (2)	Laryngoscope Handle (1)	OPA 80mm (1)
Bougie (1)	EZ IO Needle 45mm Yellow(1)	Laryngoscope Mac 2 (1)	OPA 90mm (1)
BVM Adult (1)	EZ IO Needle 15mm Red (1)	Laryngoscope Mac 3 (1)	Pressure Infuser Bag (1)
Decompression Needle (1)	EZ IO Needle 25mm Blue (1)	Laryngoscope Mac 4 (1)	Sam Splint (1)
Dressing 4X4 non sterile	EZ-IO Drill (1)	Laryngoscope Miller 2 (1)	Stylet 12fr (1)
Dressing ABD pad (2)	FaceShields (2)	Laryngoscope Miller 3 (1)	Stylet 14fr (1)
Dressing Celox (1)	Flush NS with IO Drill (1)	Laryngoscope Miller 4 (1)	Suction catheter 14fr (1)
Dressing Multi Trauma (1)	IV Cath 14g (2)	Magill Forceps Adult (1)	Surgi-lube (4)
Emesis Bag (1)	IV Cath 16g (2)	Normal Saline 1000ml (1)	Survival Blanket (1)
ET 6.0 (1)	IV Cath 18g (2)	NPA 6.0 (1)	Syringe 10ml (1)
ET 6.0 Endotrol (1)	IV Cath 20g (2)	NPA 6.5 (1)	Tape 1" (1 roll)
ET 6.5 (1)	IV Cath 22g (2)	NPA 7.0 (1)	Torpedo Sharp Container (1)
ET 7.0 (1)	IV Cath 24g (2)	NPA 7.5 (1)	Tourniquet (1)
ET 7.0 Endotrol (1)	IV Flush (1)		

Bag, Medication

3 way stop cock	Needle 18ga (2)	Needle Filter Straw (2)	Syringe 3ml (1)
Alcohol prep pads (10)	Needle 22g (1)	Needle Smart tip (2)	Syringe 5ml (1)
IV Saline Lock (2)	Needle 25g (1)	Syringe 1ml (1)	

Bag, Oxygen

Adult Nasal Cannula	Emesis bag	Nebulizer Mask	Pillow
Adult NRB	Nebulizer Handheld	Ped NRB	Sheet
CO2 Nasal Cannula			

Cab

CMH ER garage remote	Gloves box Medium (1)	Hand Sanitizer	Protocols
Emergency Response Guidebook	Gloves box Small (1)	High-Viz Vest Spares (2)	Triage Kit (2)
Flash light, Orange	Gloves box X Large (1)	Maps (Cedar, Hickory, Polk, St.Clair)	WEX Fuel Card
Garage door remote	GPS with Charger (1)		
Gloves box Large (1)			

IV Start Kit

4x4 Non-Sterile (1)	Extension Set (1)	SorbaView Shield (1)	Tourniquet (1)
Chlorascrub swab (2)			

Monitor

BP Cuff (SM/RG/Long/XL)	Combo Pads, Adult (2)	ECG Patches (1 bag)	Razor (1)
Cables 12 lead	Combo Pads, Ped	Modem	Sgarbossa Card (1)
Cables 4 lead	Download cable	Monitor Paper	SPO2 Cable

RSI Kit

Needle Draw (3)	Syringe 10 ml (1)	Syringe 20ml (1)	Syringe 5 ml (1)
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Triage Kit

Oral airways (6)	Stickers Red	Trauma Sheers	Triage tags (25)
Pen (3)			



ALS AMBULANCE**Accucheck Kit**

Accu Check Monitor (1)
Accu Check Strips (6+ strips)

Alcohol pads (10+)
Band aids (6+)

Control solutions (2)

Lancets (6+)

Bag, Big

BAMM (1)
Bandage Coban
Bandage Kerlex (2)
Bandage Kling 4" (2)
Bandage Triangular (2)
Blood Pressure Cuff (1)
Bougie (1)
BVM Adult (1)
Decompression Needle (1)
Dressing 4X4 non sterile
Dressing ABD pad (2)
Dressing Celox (1)
Dressing Multi Trauma (1)
Emesis Bag (1)
ET 6.0 (1)
ET 6.0 Endotrol (1)
ET 6.5 (1)
ET 7.0 (1)
ET 7.0 Endotrol (1)

ET 7.5 (1)
ET 8.0 (1)
ET 8.0 Endotrol (1)
ET 8.5 (1)
ET Holder (2)
ETCO2 adapter (2)
EZ IO Needle 45mm Yellow(1)
EZ IO Needle 15mm Red (1)
EZ IO Needle 25mm Blue (1)
EZ-IO Drill (1)
FaceShields (2)
Flush NS with IO Drill (1)
IV Cath 14g (2)
IV Cath 16g (2)
IV Cath 18g (2)
IV Cath 20g (2)
IV Cath 22g (2)
IV Cath 24g (2)
IV Flush (1)

IV Primary Tubing (1)
IV Start Kit (1)
King Airway size 3 (1)
King Airway size 4 (1)
King Airway size 5 (1)
Laryngoscope Handle (1)
Laryngoscope Mac 2 (1)
Laryngoscope Mac 3 (1)
Laryngoscope Mac 4 (1)
Laryngoscope Miller 2 (1)
Laryngoscope Miller 3 (1)
Laryngoscope Miller 4 (1)
Magill Forceps Adult (1)
Normal Saline 1000ml (1)
NPA 6.0 (1)
NPA 6.5 (1)
NPA 7.0 (1)
NPA 7.5 (1)

NPA 8.0 (1)
NPA 8.5 (1)
OPA 100mm (1)
OPA 60mm (1)
OPA 70mm (1)
OPA 80mm (1)
OPA 90mm (1)
Pressure Infuser Bag (1)
Sam Splint (1)
Stylet 12fr (1)
Stylet 14fr (1)
Suction catheter 14fr (1)
Surgi-lube (4)
Survival Blanket (1)
Syringe 10ml (1)
Tape 1" (1 roll)
Torpedo Sharp Container (1)
Tourniquet (1)

Bag, Medication

3 way stop cock
Alcohol prep pads (10)
IV Saline Lock (2)

Needle 18ga (2)
Needle 22g (1)
Needle 25g (1)

Needle Filter Straw (2)
Needle Smart tip (2)
Syringe 1ml (1)

Syringe 3ml (1)
Syringe 5ml (1)

Bag, Pediatric

Broslow Tape (1)
BVM Child (1)
BVM Infant (1)
Chlorascrub swab (6)
ET Holder Child (1)
ETCO2 Adapter Child (1)
G-Tubes 10 Fr (1)
G-Tubes 12 Fr (1)
G-Tubes 14 Fr (1)
G-Tubes 18Fr (1)
G-Tubes 8 Fr (1)
IV Cath 14g (2)
IV Cath 16g (2)
IV Cath 18g (2)
IV Cath 20g (2)
IV Cath 22g (2)
IV Cath 24g (2)
IV Flush (1)
IV Primary Tubing (1)
IV Start kit (1)

Laryngoscope handle (1)
Laryngoscope Mac Blade 0 (1)
Laryngoscope Mac Blade 1 (1)
Laryngoscope Mac Blade 2 (1)
Laryngoscope Miller Blade 0 (1)
Laryngoscope Miller Blade 00 (1)
Laryngoscope Miller Blade 1 (1)
Laryngoscope Miller Blade 2 (1)
LMA Size 1 & 5ml syringe (1)
LMA Size 2 & 10ml syringe (1)
Magill Forceps Child (1)
Normal Saline 1000ml (1)
OPA 40mm (1)
OPA 60mm (1)
OPA 70mm (1)
OPA 80mm (1)
Suction Bulb Syringe (1)
Suction Cath 10 Fr (1)
Suction Cath 12 Fr (1)
Suction Cath 6 Fr (1)
Suction Cath 8 Fr (1)

Red/Pink Pouch:
- 2.5 uncuffed ET (1)
- 3.0 uncuffed ET (1)
- 3.5 uncuffed ET (2)
- 4X4 Sterile single (1)
- Stylet 6 Fr (1)
- Surgi-lube (1)

Purple Pouch:
- 4.0 uncuffed ET (2)
- 4X4 Sterile single (1)
- Stylet 6 Fr (1)
- Surgi-lube (1)

Yellow Pouch:
- 4.5 uncuffed ET (2)
- 4X4 Sterile single (1)
- Stylet 10 Fr (1)
- Surgi-lube (1)

White Pouch:
- 4X4 Sterile single (1)
- 5.0 uncuffed ET (2)
- Stylet 10 Fr (1)
- Surgi-lube (1)

Blue Pouch:
- 4X4 Sterile single (1)
- 5.5 uncuffed ET (2)
- Stylet 10 Fr (1)
- Surgi-lube (1)

Orange Pouch:
- 10 ml syringe (1)
- 4X4 Sterile single (1)
- 6.0 cuffed ET (2)
- Stylet 10 Fr (1)
- Surgi-lube (1)

Green Pouch:
- 10 ml syringe (1)
- 4X4 Sterile single (1)
- 6.5 cuffed ET (2)
- Stylet 10 Fr (1)
- Surgi-lube (1)

Bag, Small

Accu Check (space for)
Bandage Kerlex (2)
Bandage Kling 4" (2)
Bandage Triangular (2)
Blood Pressure Cuff (1)
BVM Adult (1)
Dressing 4X4 non sterile

Dressing ABD pad (2)
Emesis Bag (1)
IV Cath 14g (2)
IV Cath 16g (2)
IV Cath 18g (2)
IV Cath 20g (2)
IV Cath 22g (2)

IV Cath 24g (2)
IV Flush (1)
IV Primary Tubing (1)
IV Start Kit (1)
Normal Saline 1000ml (1)
NPA 6.5 (1)
NPA 7.5 (1)

OPA 100mm (1)
OPA 90mm (1)
Splint Sam(1)
Surgi-lube (4)
Survival Blanket (1)
Tape 1" (1)
Torpedo Sharp Container (1)

Bag, SMR

C-Collar Infant (1)	C-Collar Ped	Stable Block (2)	Towels (2)
C-Collar Multi Size (4)	Spider Straps (1)	Tape 2"	

Cab

CMH ER garage remote	Gloves box Medium (1)	Hand Sanitizer	Protocols
Emergency Response Guidebook	Gloves box Small (1)	High-Viz Vest Spares (2)	Triage Kit (2)
Flash light, Orange	Gloves box X Large (1)	Maps (Cedar, Hickory, Polk, St.Clair)	WEX Fuel Card
Garage door remote	GPS with Charger (1)		
Gloves box Large (1)			

Cabinets

15mm x 22mm adapter (1)	Combo Pads, Ped (1)	IV Pump (1)	Razor (1)
Bag, Medication (1)	Cot Battery (1)	IV Pump Tubing (2)	Restraint (Blue) Wrist Set (1)
Bag, Pediatric (1)	Cot belt extensions (5)	IV tubing (6)	Restraint (Red) Ankle Set (1)
Bandage Ace Wrap 4" (2)	Cot Belts: Extra (1 set)	IV Tray	Sani Cloths Grey (1)
Bandage Coban (4)	CPAP 50 PSI adapter (1)	Lactated Ringers 1000ml (2)	Sani Cloths Yellow (1)
Bandage Kerlix (6)	CPAP Kit with Large mask (2)	Monitor Batteries (2)	Sharps Container (1)
Bandage Kling 4" (6)	CPAP mask medium(1)	Morgan Lens (1 set)	Sheets (6)
Bandage Triangular (2)	CPAP mask small (1)	Nasal Cannula CO2 Adult (4)	Splint Sam (2)
Battery 9V (1)	Cricothyrotomy kit (1)	Nasal Cannula CO2 Ped (2)	SPO2 finger wrap for Nelcor
Battery AA (4)	Decompression Needle (1)	Nasal Cannula, Adult (4)	Suction Cath 14 Fr (1)
Battery AAA (4)	Doppler (1)	Nebulizer Handhelds (4)	Suction Cath 16fr (1)
Battery C (2)	Doppler Gel (1)	Nebulizer Mask, Adult (2)	Suction NG 14fr (1)
Bed Pans (2)	Dressing ABD Pads (4)	Nebulizer Mask, Ped (2)	Suction NG 18fr (1)
Blankets (6)	Dressing Celox (1)	NPA set 6.0-8.5 (1)	Suction Tip (2)
Blankets Survival (2)	Dressing Non sterile 4X4	NRB Mask, Adult (4)	Suction Tubing & Canisters (2)
Blankets Thermal (2)	Dressing Sterile 4X4 (6)	NRB Mask, Ped (2)	Suction Unit (1)
Bougie (1)	Dressing Sterile 4X4 tubs (4)	OB Drape (1)	Suction unit battery (1)
BP Cuff Kit	Dressing Trauma (2)	OB Kit (1)	Surgilube (6)
Burn Sheets (2)	Dressing Vaseline Gauze (2)	OPA set 60-100mm (1)	Syringe Toomey 60ml (1)
Burn Towels (2)	EKG Monitor Paper (1)	PediMate Plus (1)	Tape 1" (4 rolls)
BVM Infant (1)	EKG Patches (1 bag)	Pillow (2)	Tape 2" (2 rolls)
BVM, Adult (1)	Emesis Bag (6)	Pillow Case (6)	Tape 3" (2 rolls)
BVM, Ped (1)	Fish Hook/Wire Cutter (1)	Plastic Wrap (1)	Thermometer (1)
Chux (4)	Glucometer with supplies	Port-A-Cath Kit (1)	Thermometer Covers Box (1)
CO2 intubation adapter (2)	Hand Sanitizer (1)	PPE Face Shields (4)	Tourniquet (1)
CO2/SpO2 monitor (1)	Hot Pack (4)	PPE Gowns (4)	Towels (6)
CO2/SpO2 monitor charger (1)	Irrigation Bottle NS (2)	PPE N95 Mask (4)	Trash Bag (6)
Cold Pack (4)	Irrigation Bottle Sterile Water (2)	Pt belonging bags (6)	Urinal (2)
Combo Pads, Adult (1)	IV Blood Tubing (1)	Pt Gowns (4)	Wash Cloth (6)

Compartments, Outside

Adult Traction Splint (1)	Lucas II (1) * Cedar County	Scoop Stretcher (1)	Stair Chair (1)
Backboard (2)	Ped Traction Splint (1)	SMR Bag (2)	Surgi-Lift (1)
KED (1)	PFD (2)		

Cot

Adult Nasal Cannula	CO2 Nasal Cannula	Nebulizer Mask	Pillow
Adult NRB	Emesis bag	Ped NRB	Sheet
Blanket	Nebulizer Handheld		

IV Start Kit

4x4 Non-Sterile (1)	Extension Set (1)	SorbaView Shield (1)	Tourniquet (1)
Chlorascrub swab (2)			

IV Tray

1 ml Syringe (2)	20 ml Syringe (2)	3-way Stop Cock (1)	MAD Device (2)
1" Tape Roll (1)	20g IV Cath (6)	5 ml Syringe (2)	Non Sterile 4x4s
10 ml Syringe (2)	22g IV Cath (6)	Alcohol prep pads (10)	Razor (1)
14g IV Cath (2)	22g needle (4)	Band aid (10)	Sharps Container
16g IV Cath (4)	24g IV Cath (6)	Chlorascrub swab (10)	Smart tip (10)
18g IV Cath (6)	25g needle (2)	Filter straw (2)	Start Kits (6)
18g needle (4)	3 ml Syringe (6)	IV Saline Lock (2)	



Monitor

BP Cuff (SM/RG/Long/XL)
Cables 12 lead
Cables 4 lead

Combo Pads, Adult (2)
Combo Pads, Ped
Download cable

ECG Patches (1 bag)
Modem
Monitor Paper

Razor (1)
Sgarbossa Card (1)
SPO2 Cable

OB Kit

4X4 Sterile Tubs (2)
Bulb Syringe 2oz (1)
Disposable ½ Drape (3)
Drape with fluid collection (1)
Infant Bunting Blanket (1)
Newborn Diaper (1)

O.B. Towelette (2)
Placenta Bucket with lid (1)
Plastic Placenta Bag (1)
Sterile Gloves Large Pair (2)
Sterile OB napkin (1)
Umbilical cord clamps (1 set)

Umbilical Cord Scissors (1)
Underpad 17"x24" (1)
Vinyl Twist Tie (2)
White Professional Towel (2)

Added supplies:
ET 3.0 uncuffed (2)
Meconium Aspirator 10 (1)
Umbilical cord clamps (1 set)

RSI Kit [CMH Only]

Needle Draw (3)

Syringe 10 ml (1)

Syringe 20ml (1)

Syringe 5 ml (1)

Triage Kit

Oral airways (6)
Pen (3)

Stickers Red

Trauma Sheers

Triage tags (25)

BLS AMBULANCE

Accucheck Kit

Accu Check Monitor (1)	Alcohol pads (10+)	Control solutions (2)	Lancets (6+)
Accu Check Strips (6+ strips)	Band aids (6+)		

Bag, Medication

3 way stop cock	Needle 18ga (2)	Needle Filter Straw (2)	Syringe 3ml (1)
Alcohol prep pads (10)	Needle 22g (1)	Needle Smart tip (2)	Syringe 5ml (1)
IV Saline Lock (2)	Needle 25g (1)	Syringe 1ml (1)	

Bag, Small

Accu Check (space for)	Dressing ABD pad (2)	IV Cath 24g (2)	OPA 100mm (1)
Bandage Kerlix (2)	Emesis Bag (1)	IV Flush (1)	OPA 90mm (1)
Bandage Kling 4" (2)	IV Cath 14g (2)	IV Primary Tubing (1)	Splint Sam(1)
Bandage Triangular (2)	IV Cath 16g (2)	IV Start Kit (1)	Surgi-lube (4)
Blood Pressure Cuff (1)	IV Cath 18g (2)	Normal Saline 1000ml (1)	Survival Blanket (1)
BVM Adult (1)	IV Cath 20g (2)	NPA 6.5 (1)	Tape 1" (1)
Dressing 4X4 non sterile	IV Cath 22g (2)	NPA 7.5 (1)	Torpedo Sharp Container (1)

Bag, SMR

C-Collar Infant (1)	C-Collar Ped	Stable Block (2)	Towels (2)
C-Collar Multi Size (4)	Spider Straps (1)	Tape 2"	

Cab

CMH ER garage remote	Gloves box Medium (1)	Hand Sanitizer	Protocols
Emergency Response Guidebook	Gloves box Small (1)	High-Viz Vest Spares (2)	Triage Kit (2)
Flash light, Orange	Gloves box X Large (1)	Maps (Cedar, Hickory, Polk, St.Clair)	WEX Fuel Card
Garage door remote	GPS with Charger (1)		
Gloves box Large (1)			

Cabinets

Bag, Airway (1)	BVM, Ped (1)	Glucometer with supplies	PPE N95 Mask (2)
Bag, IV (1)	Chux (4)	Hand Sanitizer (1)	Pt belonging bags (3)
Bag, Medication (1)	CO2 intubation adapter (1)	Hot Pack (2)	Restraint (Blue) Wrist Set (1)
Bandage Ace Wrap 4" (1)	Cold Pack (2)	Irrigation Bottle NS (1)	Restraint (Red) Ankle Set (1)
Bandage Coban (1)	Combo Pads, Adult (1)	Irrigation Bottle Sterile Water (1)	Sani Cloths Grey (1)
Bandage Kerlix (2)	Combo Pads, Ped (1)	Monitor Batteries (2)	Sani Cloths Yellow (1)
Bandage Triangular (2)	Cot Battery (1)	Nasal Cannula CO2 Adult (1)	Sheets (12)
Battery 9V (1)	Cot belt extensions (5)CPAP mask large (1)	Nasal Cannula CO2 Ped (1)	Splint Sam (1)
Battery AA (4)	CPAP mask medium(1)	Nasal Cannula, Adult (1)	Suction Tip (1)
Battery AAA (4)	CPAP mask small (1)	Nebulizer Mask, Adult (1)	Suction Tubing & Canisters (1)
Battery C (2)	Dressing ABD Pads (2)	Nebulizer Mask, Ped (1)	Suction Unit (1)
Bed Pans (1)	Dressing Celox (1)	NRB Mask, Adult (1)	1" (1 roll)
Blankets (6)	Dressing Non sterile 4X4	NRB Mask, Ped (1)	Tape 2" (1 roll)
Blankets Survival (2)	Dressing Sterile 4X4 (2)	OB Kit (1)	Tape 3" (1 roll)
Blankets Thermal (2)	EKG Monitor Paper (1)	Pillow (2)	Tourniquet (1)
BP Cuff Kit	EKG Patches (1 bag)	Pillow Case (6)	Towels (6)
BVM Infant (1)	Emesis Bag (4)	PPE Face Shields (2)	Urinal (1)
BVM, Adult (1)		PPE Gowns (2)	Wash Cloth (6)

Compartments, Outside

Adult Traction Splint (1)	Ped Traction Splint (1)	Scoop Stretcher (1)	Surgi-Lift (1)
Backboard (1)	PF2 (2)	SMR Bag (2)	

Cot

Adult Nasal Cannula	CO2 Nasal Cannula	Nebulizer Mask	Pillow
Adult NRB	Emesis bag	Ped NRB	Sheet
Blanket	Nebulizer Handheld		

IV Start Kit

4x4 Non-Sterile (1)	Extension Set (1)	SorbaView Shield (1)	Tourniquet (1)
Chlorascrub swab (2)			



Monitor

BP Cuff (SM/RG/Long/XL)
Cables 12 lead
Cables 4 lead

Combo Pads, Adult (2)
Combo Pads, Ped
Download cable

ECG Patches (1 bag)
Modem
Monitor Paper

Razor (1)
Sgarbossa Card (1)
SPO2 Cable

OB Kit

4X4 Sterile Tubs (2)
Bulb Syringe 2oz (1)
Disposable ½ Drape (3)
Drape with fluid collection (1)
Infant Bunting Blanket (1)
Newborn Diaper (1)

O.B. Towelette (2)
Placenta Bucket with lid (1)
Plastic Placenta Bag (1)
Sterile Gloves Large Pair (2)
Sterile OB napkin (1)
Umbilical cord clamps (1 set)

Umbilical Cord Scissors (1)
Underpad 17"x24" (1)
Vinyl Twist Tie (2)
White Professional Towel (2)

Added supplies:
ET 3.0 uncuffed (2)
Meconium Aspirator 10 (1)
Umbilical cord clamps (1 set)

Triage Kit

Oral airways (6)
Pen (3)

Stickers Red

Trauma Sheers

Triage tags (25)

BOLIVAR FIRE MEDICAL RESPONSE VEHICLE

AED

Combo Pad Adult Combo Pad Ped Razor

Bag, Medical

Bandage Coban	Cold Pack	King airway size 5	Ring Cutter
Bandage Kerlix (2)	Convenience bags (3)	King tube holder	Sharps Container
Bandage Triangle (2)	Dressing 4x4 (1 pkg)	Nasal Cannula Adult (2)	Splint Sam
Biohazard bag (2)	Dressing 4x4 Sterile (5)	Nasal Cannula Ped (1)	Sterile Drape
Blanket Emergency	Glucometer Kit	NPA kit (9 sizes)	Stethoscope
Blanket Trauma	Hand Sanitizer	NRB Adult (2)	Suction Handheld
BP cuff	Hemostats	NRB Ped (1)	Tape 1in
BP Cuff Ped	Hot Pack	OB Kit	Tape 2in
BP Cuff XL Adult	Irrigation Bottle Sterile Water	OPA kit (7 sizes)	Thermometer
BVM Adult	King airway size 2	PPE Face Mask (3)	Tourniquet
BVM Child	King airway size 3	PPE Face Shield (3)	Trauma Shears
BVM Infant	King airway size 4	Pulse Ox	

Bag, SMR Blue

C-Collar Adjustable (6)	Headbeds (2)	Splint Sam (2)	Tape Duct
C-Collar Baby	Sheet	Tape 1in (2)	Towels (3)
C-Collar Infant (2)	Spider Straps (4)	Tape 2in (2)	Trauma Shears (2)

Bag, SMR Red

Backboard Straps (2)	C-Collar Infant	Headbeds (2)	Tape 2in
C-Collar Adjustable (2)	C-Collar Ped		

Compartments

Bariatric Tarp	Burn Sheet	Sanitizer Wipes	SKED
Blanket Heat	KED	Sharps Container	Splint Traction
Blanket Wool	Pet Oxygen Mask	Sheets	

Suction Unit

Suction Tip Suction Tubing



PLEASANT HOPE FIRE HEAVY RESCUE VEHICLE**Bag, EMT**

BVM Adult
Gloves
King Airway 3

King Airway 4
King Airway 5
King Tube Holder

Lubrication
Nasal Cannula
NPA

NRB
OPA

Bag, First-In

Alcohol Swabs
Bandage Coban
Bandage Triangle
Band-aids

BP Cuff
Gate Belt
Nasal Cannula

NRB
Pen Light
Pulse Ox

Stethoscope
Tape
Trauma Shears

Bag, Pediatric

Blowby Bear
BVM Child

BVM Ped
NPA

NRB Ped
OPA

Stethoscope
Suction Syringe

Bag, SMR

C-Collar Adjustable
C-Collar Adult

C-Collar Infant
C-Collar Ped

Seatbelts
Spider Straps

Tape
Towel Rolls

Cabinets

Bandage Roll Gauze
Bandage Triangle
Band-aids
Burn Dressing

BVM Adult
BVM Ped
Cold Packs
Dressing 4x4

Dressing Trauma
Hot Pack
Nasal Cannula
PPE Gloves

PPE Gowns
Splint Sling
Tape

Compartments

AED
Air Mattress Ped
Backboards

Headbeds
OB Kit

Scoop Stretcher
Spider Straps

Suction
Traction Splint Adult

PLEASANT HOPE FIRE LIGHT RESCUE VEHICLE

Bag, EMT

BP Cuff Adult	King Airway 3	King Tube Holder	NRB Ped
BVM Adult	King Airway 4	Lubrication	OPA
Glucometer	King Airway 5	NRB Adult	Sharps Container

Bag, First-In

Bandage Coban	BVM Adult	Nasal Cannula	Splint SAM
Bandage Gauze Rolls	Cold Pack	NPA	Stethoscope
Bandage Triangle	Convenience Bags	NRB	Thermometer
BP Cuff Large	Dressing Hemostatic	OPA	Trauma Shears
BP Cuff XL	Gate Belt	Pulse Ox	Window Punch
Burn Sheets			

Bag, Pediatric

Blanket Warming	BVM	NPA	OPA
Blowby Bear	Nasal Cannula	NRB	Stethoscope
BP Cuff			

Bag, SMR

C-Collar Adult Adjustable	C-Collar Infant	C-Collar Ped	Spider Straps
C-Collar Baby	C-Collar No-Neck	Headbeds	Tape

Compartments

AED	Backboard Ped	Splint Sager Extreme	Splint Traction Sager
Air Mattress Ped	KED	Splint Traction Adult	Suction
Backboard Adult	OB Kit	Splint Traction Ped	



Section 8-010 - Automated External Defibrillator (AED)

<p>*NOTE: When using LifePak in AED mode, use Section 8-190 - LifePak (page 199).</p> <p><u>Precautions:</u></p> <ul style="list-style-type: none"> * Wet skin or patients in water. Do not apply directly over internal pacemaker or medication patch. * Manual Defibrillation is preferred to AED for children less than 8 yrs old. If manual Defibrillation is not available, pediatric dose attenuator is preferred. If neither is available, use AED as you would on an adult. Pads may be placed anterior/posterior if Chest is too small to allow pads to be at least 1 in separated. 	<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Pulse.
--	---

<u>Indications:</u>	
Protocol 2-030 - Automated External Defibrillation (AED)	page 19
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)	page 78

Procedure:

- * Refer to **Protocol 2-030 - Automated External Defibrillation (AED)** (page 19) for using the AED.

Accessibility:

- * AED must be available for use any time the building is occupied.
- * Location should be obvious and labeled to allow any person who is not familiar with its location to find it.
- * Train as many community or staff members as possible in **CPR** and **AED** use.
- * Contact CMH EMS (417-328-6358) for assistance with training and to report the location of your AED.

Supplies to be kept with AED:

- * Dry wash cloth.
- * Safety razor.
- * At least one set of compatible pads. Prefer to have two adult and two pediatric compatible pads.

Monthly maintenance:

- * Refer to manufacturer user manual.
- * Check AED battery function according to manufacturer.
- * Check supplies are usable and not expired.

After using the AED:

- * Contact CMH EMS (417-328-6358) to **download** data and request assistance (if needed) for Critical Incident Stress Debriefing (CISD).
- * Document event according to your agency policies.
- * Replace equipment used.

Citations:



Section 8-020 - Blood Draw Kit

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none">* RN* Medic <p><u>Precautions:</u></p> <ul style="list-style-type: none">* Avoid venipuncture in arms with dialysis shunts or injuries proximal to insertion site.	<p><u>Contraindications:</u></p> <ul style="list-style-type: none">* None.
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<p><u>Indications:</u></p> <p>Section 8-140 - Intravascular (IV) Needle page 193</p>
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<p><u>Procedure:</u></p> <ul style="list-style-type: none">* After IV access but prior to Saline administration.* Either directly draw blood from patient into blood tubes using Vacutainer Direct Draw Adapter or into syringe and transfer to tubes using Vacutainer Blood Transfer Device. To avoid needle sticks, do not use syringe and needle to fill blood tubes.* Fill tubes in the following order:<ul style="list-style-type: none">* Medical patient (5 tubes): BLUE, RED, GREEN (no gel), GREEN (gel), LAVENDER.* Trauma patient (4 tubes): BLUE, GREEN (no gel), GREEN (gel), LAVENDER.* Label each tube with blue arm bands.<ul style="list-style-type: none">* Place number sticker on each tube.* Write your initials and time blood was drawn in white area of wrist band.* Once at the destination, a patient identification sticker should be placed on the removable end of the wrist band. The patient sticker should contain your initials and time of Blood Draw.* Stickered blood tubes and the removable end with patient sticker will be sent to the lab.

<p><u>Blood draw for alcohol analysis Procedure:</u></p> <ul style="list-style-type: none">* RNs or Paramedics may draw blood in the field as requested by law enforcement officials on the scene where requested for medical assistance. We will not respond to jail, police dept, etc. for the sole purpose of drawing blood.* If patient is alert and oriented, his/her consent is necessary before the procedure is performed.* If patient is unable to give consent (unresponsive, dead, etc.), consent is implied.
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<p><u>Citations:</u> (Citizens Memorial Hospital, 2013)</p>



Section 8-030 - Bougie

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> *  <p><u>Precautions:</u></p> <ul style="list-style-type: none"> * None. 	<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Age less than 8 years. * Use of a 6.0 or smaller ETT.
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<p><u>Indications:</u></p> <p>Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) (Predicted difficult Intubation)..... page 93</p> <p>Section 8-070 - Cricothyrotomy Kit..... page 185</p>

<p><u>Procedure:</u></p> <ul style="list-style-type: none"> * Lubricate Bougie. * Using a laryngoscope and standard ETT Intubation techniques, attempt to visualize the vocal cords. If vocal cords are not fully visible, pass Bougie behind the epiglottis, guiding the tip of the Bougie anteriorly towards the trachea. Tracheal placement will yield the ability to feel cricoids rings and resistance at the carina. Esophageal placement will yield the ability to advance Bougie completely without resistance. * While maintaining the laryngoscope and Bougie in position, an assistant threads an ETT over the end of the Bougie. The assistant then holds the Bougie. * Rotate ETT 1/4 turn and advance through cords. Inflate cuff, remove Bougie and laryngoscope. * Confirm placement with auscultation and Capnography.

<p><u>Citations:</u></p>

Section 8-032 - Capnometer

Scope of Practice:

- *  RN
- *  Medic

Precautions:

- * None

Contraindications:

- * None.

Indications:

All ALS patients with cardiac or respiratory complaints.

Procedure:

- * Turn monitor on.
- * Attach capnograph probe (nasal cannula or **ET tube**) to patient and capnograph.
- * Observe readings. May need to instruct patient on nasal cannula to breathe out through their mouth.

Citations:

Section 8-040 - Chest Compressor

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none">* EMR* EMT* AEMT* RN* Medic <p><u>Precautions:</u></p> <ul style="list-style-type: none">*	<p><u>Contraindications:</u></p> <ul style="list-style-type: none">* Patient is too large for the device to be secured.
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<p><u>Indications:</u></p> <p>Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)..... page 78</p>

<p><u>Procedure:</u></p> <ul style="list-style-type: none">* Open bag.* Turn device on.* Place back plate under the patient below the armpits.* Remove device from bag and attach over the patient to the back plate.* Position suction cup to touch the patient's lower sternum.* Press "PAUSE" to lock the suction cup into place.* Press "ACTIVATE CONTINUOUS" OR "ACTIVATE 30:2" to begin compressions.* Attach stabilization strap under patient's neck.

<p><u>Citations:</u> (Physio-Control, 2012)</p>

Section 8-050 - Continuous Positive Airway Pressure (CPAP)

Scope of Practice:

- * **RN**
- * **Medic**

Precautions:

- * **CPAP** is not mechanical **ventilation**. Blood pressure may drop due to increased intrathoracic pressure. Patients may not improve (must reassess). Patients may not accept mask (claustrophobia). Risk of **pneumothorax**. Risk of corneal drying. Large **Oxygen** demand.

Contraindications:

- * Less than 18 yrs old.
- * Patient unable to protect Airway.
- * Need for immediate **Intubation**.
- * **Ventilatory** failure.
- * Gastric distention (GI bleeding).
- * **Trauma (pneumothorax)**.
- * **Tracheostomy**.
- * Altered LOC.
- * Do not secure straps if **Nausea/vomiting**.
- * Increasing **ETCO₂**.

Indications:

- Protocol 3-010 - Drowning** (Near Drowning - awake and alert) page 35
- Protocol 4-030 - Asthma** (Consider trial prior to **Intubation** of severe Asthma patient) page 41
- Protocol 4-060 - Chronic Obstructive Pulmonary Disease (COPD)** page 48
- Protocol 4-070 - Congestive Heart Failure (CHF)** (Pulmonary edema)..... page 49
- Protocol 5-040 - Chest Trauma** (Pulmonary contusion or Flail Chest) page 67

Procedure:

- * Inform and calm patient.
- * Connect and turn on **Oxygen** to “flush.” Set PEEP to 10 cm H₂O (may titrate to 15 as needed).
- * Flip Head-strap forward.
- * Hand to or place mask on patient. Hold mask firmly against face to eliminate air leaks.
- * Flip Head-strap over Head after patient is comfortable. Remove straps if **Nausea** develops.
- * Clip bottom straps.
- * Adjust fit.
- * Monitor patient. May raise intrathoracic pressures, reducing preload, therefore reducing blood pressure.
- * **Anxiety**:
 - * Consider **Versed** 2.5 mg **IV/IO/IM**.
- * An in-line bronchodilator **Nebulized** may be placed in circuit if needed.

Citations:

Section 8-060 - Cot

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none">* EMR* EMT* AEMT* RN* Medic <p><u>Precautions:</u></p> <ul style="list-style-type: none">* Always secure the patient using all Restraint straps and keep side rails up.* Utilize 4 or more lifting persons if possible over rough terrain or overweight patients. Utilize a minimum of 2 lifting persons when a patient is on the cot.* Do not allow the x-frame to drop unassisted.	<p><u>Contraindications:</u></p> <ul style="list-style-type: none">* None.
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<p><u>Indications:</u></p> <p>Need to move non-ambulatory patient.</p>
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<p><u>Generic Procedure:</u></p> <ul style="list-style-type: none">* Utilize all provided safety Restraint systems on every patient.* To raise or lower cot, both ends must be lifted prior to squeezing handle.* If patient 0-200 pounds, use two or more people to lift.* If patient 200-400 pounds, use four or more people to lift.* If patient 400-600 pounds, use eight or more people to lift.* If patient greater than 600 pounds, special lifting and transport should be considered.* Consider Stair Chair.
--

<p><u>X-Frame Procedure:</u></p> <ul style="list-style-type: none">* Loading with a patient:<ul style="list-style-type: none">* Place loading wheels in ambulance and safety bar past the safety hook.* Operator at foot lifts cot and squeezes and holds handle.* Assistant at side raises undercarriage.* Push cot into ambulance and secure it.* Unloading with a patient:<ul style="list-style-type: none">* Disengage cot from fastener. Pull cot out of ambulance.* Assistant grasps the undercarriage and lifts slightly.* Operator at foot squeezes handle.* Assistant lowers undercarriage to the ground.* Operator at foot releases handle to lock undercarriage down.* Assistant releases safety bar from safety hook.* Loading empty cot (one operator):<ul style="list-style-type: none">* Place loading wheels in ambulance and safety bar past the safety hook.* Lift bumper to raised position.* Operator at foot lifts cot and squeezes and holds handle.* Operator lowers foot end of cot to the floor to collapse undercarriage.* Release handle to lock in lowered position.* Raise, push into ambulance, and secure cot.* Unloading empty cot (one operator):<ul style="list-style-type: none">* Disengage cot from fastener.* Pull cot out of ambulance.* Lower cot to the ground, squeeze handle, raise cot, and release handle.* Release safety bar from safety hook.
--

H-Frame Procedure:

- * Loading with a patient:
 - * Place cot in loading position.
 - * Place both loading wheels are on the patient compartment floor.
 - * Assistant unlocks frame.
 - * Operator lifts foot end of cot and squeezes control handle.
 - * Assistant lifts undercarriage.
 - * Operator pushes cot into patient compartment, releases handle, and secures it.
- * Unloading with a patient:
 - * Disengage cot from fastener. Pull cot out of ambulance.
 - * Assistant lowers undercarriage to the ground and ensures it locks down.
 - * Place cot in rolling position.
- * Loading empty cot (one operator):
 - * Place cot in loading position.
 - * Place both loading wheels are on the patient compartment floor.
 - * Unlock frame.
 - * Operator lifts foot end of cot and squeezes control handle.
 - * Operator pushes cot into patient compartment, releases handle, and secures it.
- * Unloading empty cot (one operator):
 - * Disengage cot from fastener. Pull cot out of ambulance.
 - * Place cot in rolling position.

Pedi-mate Procedure:

- * Use for all patients smaller than 40 lbs.
- * Raise cot backrest to full upright position.
- * Wrap pedi-mate straps around mattress and frame.

Citations: (Citizens Memorial Hospital, 2014)



Section 8-070 - Cricothyrotomy KitScope of Practice:Precautions:

- * Complications include hemorrhage from great vessel lacerations and damage to surrounding structures. Constantly check **ventilation** by standard techniques.

Contraindications:

- * None in emergency setting.

Indications:

This procedure is a last resort when all attempts at **ventilating** the patient have failed.

Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) page 93

Quick Trach II Procedure:

- * Prepare the device: Remove valve opener and completely evacuate the cuff with the included 10 ml syringe. Remove and fill syringe for inflating the cuff with 10 ml of air.
- * Prepare the patient: Hyperextend the Head of the patient. Locate the cricothyroid membrane by palpation of the depression between the thyroid and cricoids cartilage. Stabilize this point with forefinger and thumb for puncture.
- * Puncture the cricothyroid membrane and insert QuickTrach II until red stopper touches skin. An incision is not necessary.
- * Aspirate syringe to determine position of cannula. Aspiration of air indicates proper placement in trachea. If no air is aspirated, remove red stopper and advance slowly until air can be aspirated.
- * Remove red stopper.
- * Push cannula forward into the trachea and remove metal needle.
- * Inflate cuff with 10 ml of air.
- * Secure with foam neck tape.
- * Attach BVM with connector and verify placement with auscultation and **Capnography**.

Surgical Procedure:

- * If possible, call for **MEDICAL CONTROL** prior to attempting surgical cric.
- * Have **Suction** equipment ready.
- * Clean neck with antiseptic solution.
- * Stabilize larynx with thumb and index finger of one hand.
- * Palpate cricothyroid membrane.
- * Pull skin taut.
- * Make 2 cm VERTICAL incision at the cricothyroid membrane.
- * Puncture through the cricothyroid membrane horizontally.
- * Place **Bougie** with coude tip into trachea with a back-and-forth motion to feel tracheal clicking or carina.
- * Place **ET tube** or Shiley over **Bougie** just enough for cuff to be inside trachea.
- * Inflate cuff and secure tube.
- * **Ventilate** at 100% **Oxygen**.
- * Observe and auscultate for correct placement.
- * Confirm with **Capnography**.
- * Cover incision site with Occlusive dressing.

Citations:

Section 8-075 - Decompression Needle

Scope of Practice:

- * 

Precautions:

- * Complications may include laceration of intercostals vessels, creation of **pneumothorax**, laceration of lung tissue, and risk of infection.

Contraindications:

- * None in presence of **tension pneumothorax**.

Indications:

- Protocol 5-040 - Chest Trauma** (Absent lung sounds on affected side with respiratory distress) page 67
- Protocol 6-085 - High-Threat Response** page 86

Turkel Procedure:

- * Identify second intercostal space, midclavicular line, on affected side.
- * Clean area with antiseptic.
- * Insert Turkel into skin over just over superior border of third rib.
- * Insert catheter through parietal pleura until air escapes.
- * During insertion, the color band will show RED until through parietal pleura, and then it turns GREEN.
- * Advance catheter off device.
- * Air should exit under pressure.
- * Close 3-way valve.
- * Reassess frequently for redevelopment of **pneumothorax**.
- * If **tension pneumothorax** returns, open 3-way valve to release pressure.


Gelco Procedure:

- * Identify second or third intercostal space, midclavicular line, on affected side.
- * Clean area with antiseptic.
- * Insert Jelco into skin over just over superior border of third rib.
- * Insert catheter through parietal pleura until air escapes.
- * Air should exit under pressure.
- * Remove needle and leave plastic catheter in place.
- * Reassess frequently for redevelopment of **pneumothorax**.
- * If **tension pneumothorax** returns, repeat procedure.

Citations:

[Link to Table of Contents](#)

Section 8-080 - Endotracheal Tube (ET)

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> *  <p><u>Precautions:</u></p> <ul style="list-style-type: none"> * Can induce Hypertension and increase ICP in Head injured patients. Can induce Vagal response and Bradycardia. Can induce hypoxia-related arrhythmias. 	<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> *
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<p><u>Indications:</u></p> <p>Protocol 6-085 - High-Threat Response page 86</p> <p>Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) (Need for definitive Airway)..... page 93</p>

<p><u>Procedure:</u></p> <ul style="list-style-type: none"> * Hyperventilate with BVM and basic adjunct. * Assemble, check, and prepare equipment. * Consider Neo-Syneprine for nasal Intubation. * Consider King or LMA for backup Airway. * Place Head in sniffing position (maintain c-spine in trauma). * Insert laryngoscope blade. * Sweep tongue to the left. * Lift forward to displace jaw. * Advance tube past vocal cords until the cuff disappears. * Inflate cuff with 7-10 ml of air. * Ventilate and confirm placement with auscultation and Capnography. * Secure tube, noting marking on tube. * Consider: Insert OPA as a bite block. * Ventilate with 100% Oxygen. * Reassess tube placement often. * Continued sedation: <ul style="list-style-type: none"> * Consider Versed 2.5-5 mg every 5 min. Repeat as needed maintaining SBP greater than 100. * Consider Fentanyl 50-100 mcg. Max 300 mcg. * Consider Gastric Tube.

<p><u>Citations:</u></p>



Section 8-110 - Gastric Tube

<p><u>Scope of Practice:</u></p> <p>RN Medic</p> <p><u>Precautions:</u></p> <p>*</p>	<p><u>Contraindications:</u></p> <ul style="list-style-type: none">* Epiglottitis or Croup.* Use orogastric route when: facial trauma or basilar skull fracture.
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Indications:





Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) (Evacuation of air or fluids in stomach).....	page 93
Section 8-080 - Endotracheal Tube (ET) (Evacuation of air or fluids in stomach).....	page 187
Section 8-160 - King LTSD Airway (Evacuation of air or fluids in stomach).....	page 196
Section 8-170 - Laryngeal Mask Airway (LMA) Supreme	page 197

- Procedure:
- * Assemble equipment.
 - * Explain procedure to patient.
 - * If possible, have patient sitting up.
 - * Use towel to protect patient's clothing.
 - * Measure tube from nose, around ear, and down to xiphoid process.
 - * Mark point at xiphoid process with tape.
 - * Lubricate distal end of tube 6-8 in with water-soluble lubricant.
 - * Insert tube in nostril and gently advance it towards posterior nasopharynx along nasal floor.
 - * When you feel tube at nasopharyngeal junction, rotate inward towards the other nostril.
 - * As tube enters oropharynx, instruct patient to swallow.
 - * Pass tube to pre-measured point.
 - * If resistance is met, back tube up and try again. Do not force tube.
 - * Check placement of tube by aspirating Gastric contents or auscultating air over epigastric region while injecting 20-30 ml of air.
 - * Tape tube in place and connect to low **Suction** if needed.

Citations:



Section 8-120 - Glucometer

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> *  *  *  *  <p><u>Precautions:</u></p> <ul style="list-style-type: none"> * Do not rely on readings of other entities or patient's own Glucometer. 	<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * None.
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Indications:

Protocol 4-050 - Cerebrovascular Accident (CVA) or Stroke (Any patient that presents with ALOC)	page 43
Protocol 4-115 - Hyperglycemia (Any patient that presents with ALOC).....	page 55
Protocol 4-120 - Hypoglycemia (Any patient that presents with ALOC).....	page 56
Protocol 4-140 - Poisoning or Overdose (Any patient that presents with ALOC)	page 58
Protocol 4-170 - Seizures (Any patient that presents with ALOC)	page 62
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)	page 78

Procedure:

- * Turn on and log into Glucometer.
- * Obtain blood sample from **IV** start or finger stick.
 - * Avoid “milking” finger.
 - * Ensure skin is dry of alcohol wipe.
- * Follow on-screen instructions.
- * Dispose of sharp(s).

Citations:

Glucose ranges:	Critical low	Low	Normal	High	Critical high
Adult female	0-40	41-64	65-105	106-349	350+
Adult male	0-40	41-74	75-110	111-349	350+
1 mo - 15 yr old	0-40	41-74	75-110	111-124	125+
7 day - 30 day old	0-40	41-59	60-105	106-124	125+
1 day - 6 day old	0-29	30-49	50-80	81-125	125+
Birth	0-29	30-39	40-60	61-125	125+



Section 8-125 - Hemostatic Agent

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none">* EMR* EMT* AEMT* RN* Medic <p><u>Precautions:</u></p> <ul style="list-style-type: none">* None.	<p><u>Contraindications:</u></p> <ul style="list-style-type: none">* None.
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<p><u>Indications:</u></p> <p>Protocol 1-020 - General Assessment and Treatment - Trauma page 14</p> <p>Protocol 6-085 - High-Threat Response page 86</p>

<p><u>Procedure:</u></p> <ul style="list-style-type: none">* Apply gauze to open wound. Fill and tightly pack whole wound.* Use direct pressure on gauze and wound for approximately three (3) minutes to help form clot.* If bleeding continues, hold pressure for an additional three (3) minutes.* Wrap over gauze for transport.

<p><u>Citations:</u> (Medtrade Products Ltd)</p>
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Section 8-130 - Intranasal (IN) Device

Scope of Practice:

- * **EMR** - Only **Narcan** for narcotic overdose causing respiratory depression and unable to **ventilate**.
- * **EMT** - Only **Narcan** for narcotic overdose causing respiratory depression and unable to **ventilate**.
- * **AEMT** - Only **Narcan** for narcotic overdose causing respiratory depression and unable to **ventilate**.
- * **RN**
- * **Medic**

Precautions:

- * Mucous, blood, and vasoconstrictors reduce absorption.
- * Minimize volume, maximum concentration.
 - * 1/3 ml per nostril is ideal, 1 ml is max.
 - * Use both nostrils to double surface area.

Contraindications:

- * If **IV** access can be obtained, **IV** is preferred medication route.

Indications:

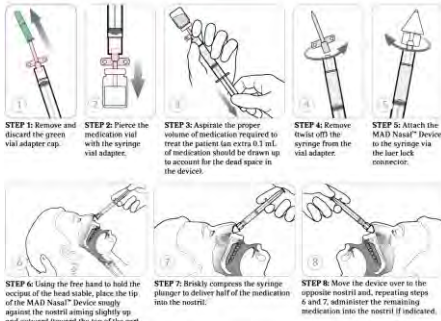
Medication administration without **IV** access.

Section 7-230 - Fentanyl (Sublimaze)	page 127
Section 7-400 - Narcan (Naloxone)	page 143
Section 7-600 - Versed (Midazolam)	page 164
Section 7-620 - Zofran (Ondansetron)	page 166

Procedure:

- * Select correct medication at a high of a concentration as possible. Divide the dose between the two nares.
- * Confirm orders, dosage, and expiration.
- * Check patient allergies.
- * Remove and discard the green vial adapter cap.
- * Pierce the medication vial with the syringe vial adapter.
- * Aspirate the proper volume of medication required to treat the patient (an extra 0.1ml of medication should be drawn up to account for the dead space in the device).
- * Remove (twist off) the syringe from the vial adapter.
- * Attach the MAD device to the syringe via the luer-lock connector.
- * Using the free hand to hold the crown of the Head stable, place the tip of the MAD snugly against the nostril aiming slightly up and outward (toward the top of the ear).
- * Briskly compress the syringe plunger to deliver half of the medication into the nostril.
- * Move the device over to the opposite nostril and administer the remaining medication into that nostril.
- * Observe patient for effects.

Citations: (Borland, Bergesio, Pascoe, Turner, & Woodger, 2005), (Finn, et al., 2004), (Holsti, et al., 2007), (O'Donnell, et al., 2013), (Teleflex Incorporated, 2013)



Section 8-135 - Intraosseous (IO) Needle

Scope of Practice:



Precautions:

- * Shelf life for the EZ-IO G3 Power Driver is 10 years.

Contraindications:

- * Fracture of target bone.
- * Previous orthopedic procedure.
- * Infection at insertion site.
- * Inability to locate landmark due to edema or obesity.

Indications:




Any patient who needs **IV** access where **IV** attempts have failed or suspected to be unsuccessful.

Procedure:

- * Prepare equipment.
- * Identify landmark.
 - * May use proximal tibia, distal tibia, or proximal humerus.
- * Cleanse site.
- * Stabilize site.
- * Insert needle at 90 degree angle.
 - * Insert needle without drilling until against bone.
 - * If at least one black mark is visible on needle above skin, drill to appropriate depth.
 - * If no black mark is visible on needle above skin, remove needle and re-attempt with longer needle. Re-attempts may be made at the same site only if bone was not drilled.
- * Conscious: 2% **Lidocaine** 20-50 mg slow over 1-2 min. May repeat half dose after 30 min if **Pain** returns.
- * Flush with **NS** 5-10 ml bolus.
- * Connect tubing and apply pressure bag.
- * Apply dressing.

Citations: (Vidacare Corporation, 2009)

Section 8-140 - Intravascular (IV) Needle

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> *  *  *  <p><u>Precautions:</u></p> <ul style="list-style-type: none"> * Avoid venipuncture in arms with dialysis shunts or distal to injuries. 	<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * None.
--	--

<p><u>Indications:</u></p> <p>Any patient requiring IV medications.</p>
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<p><u>Procedure:</u></p> <ul style="list-style-type: none"> * Inform patient of procedure. * Apply Tourniquet. * Select and clean site. Preferred needle size is 18 to 20. Preferred site is left AC or (secondary) right AC. The following patients should have at least an 18 ga at the AC level or more proximal: <ul style="list-style-type: none"> * Calf pain, tenderness, or swelling. * Chest pain, * Hypotension, * Shortness of breath, * Syncope, * Tachycardia, * Tachypnea, * Stabilize vein. * Pass needle into vein with bevel up, noting blood “flash.” * Advance needle 2 mm more. * Slide catheter over needle into vein. * Remove needle. * Hold pressure over distal tip of catheter to prevent blood loss. * Perform Blood Draw if indicated. * Remove Tourniquet. * Flush with Saline to ensure placement. Use pigtail extension. * Secure with dressing.

<p><u>Citations:</u> (Citizens Memorial Hospital, 2013), (Merk, 2016)</p>

Section 8-142 - IV Pump

Scope of Practice:

- * 
- * 

Precautions:

- *

Contraindications:

- *

Indications:






Patient requiring drip medications.

Procedure:

- * **Cassette priming and loading:**
 - * Make sure flow regulator is closed (white screw pushed in).
 - * Insert piercing pin with a twisting motion into medication.
 - * Fill drip chamber.
 - * Invert cassette.
 - * Turn flow regulator counterclockwise until a drop of fluid is seen in pumping chamber.
 - * Turn cassette upright and prime remainder of administration set.
 - * Push flow regulator closed.
 - * Make sure proximal clamp (above cassette) is open.
 - * Open cassette door and insert cassette.
 - * Close door.
- * **Infusion:**
 - * Turn knob to "SET RATE."
 - * Use up, down, and/or "QUICKSET" buttons to select infusion rate.
 - * Turn knob to "SET VTBI."
 - * Use up, down, and/or "QUICKSET" buttons to select volume to be infused.
 - * Turn knob to "RUN."

Citations:

Section 8-150 - Kendrick Extrication Device (KED)

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> *  EMR *  EMT *  AEMT *  RN *  Medic <p><u>Precautions:</u></p> <ul style="list-style-type: none"> * 	<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Patients with easy access requiring rapid extrication.
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<p><u>Indications:</u></p> <p>Section 8-350 - Spinal Motion Restriction (SMR) (Patients that are seated and meet criteria for SMR) page 215</p> <p>Section 8-360 - Splint..... page 216</p>

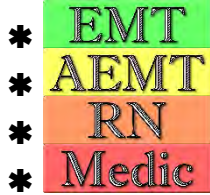
<p><u>Procedure:</u></p> <ul style="list-style-type: none"> * Maintain c-spine. * Assess distal pulses, motor function, and sensation. * Apply C-collar. * Position device behind patient. * Pull device up until it fits snugly in armpits. * Apply Chest straps and tighten. Avoid restricting breathing. * Apply leg straps and tighten. Avoid pinching or injuring genitals. * Apply padding behind Head. * Secure Head to device. * Remove patient from entrapment (if applicable) and lay down on backboard. * Release leg straps and secure patient and device to backboard. * KED Chest straps may be loosened for comfort. * Reassess distal pulses, motor function, and sensation.
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<p><u>Citations:</u></p>



Section 8-160 - King LTSD Airway

Scope of Practice:



Precautions:

*

Contraindications:

- * Airway **burns**.
- * Responsive patient with intact gag reflex.
- * Known esophageal disease.
- * Caustic substance ingestion.

Indications:

- [Protocol 6-025 - Cardiopulmonary Resuscitation \(CPR\)](#) page 78
- [Protocol 6-110 - Rapid/Delayed Sequence Intubation \(RSI\)](#) page 93
- [Section 8-080 - Endotracheal Tube \(ET\)](#) (Considered alternate Airway to endotracheal tube) page 187

Procedure:

- * Choose size:
 - * Size 3 [yellow]: 4-5 ft tall,
 - * Size 4 [red]: 5-6 ft tall,
 - * Size 5 [purple]: greater than 6 ft tall.
- * Test cuff inflation by injecting maximum recommended volume of air into cuffs. Remove all air from cuffs.
- * Apply lubricant to beveled distal tip and posterior aspect of tube.
- * **Pre-Oxygenate.**
- * Position Head in “sniffing position” or neutral position.
- * Hold King in dominant hand. Hold open mouth and lift chin with non-dominant hand.
- * Rotate King 45-90 degrees to touch the corner of the mouth with the blue orientation line.
- * Advance King behind base of tongue. Never force into position.
- * As tip passes under tongue, rotate back to midline (blue orientation line faces chin).
- * Advance King until base of connector aligns with teeth or gums.
- * Inflate cuffs with minimum volume necessary to seal the Airway at peak ventilatory pressure.
- * Attach resuscitation bag. While bagging, withdraw King until **ventilation** is easy and free flowing.
- * Confirm proper position by auscultation, Chest movement, and **ETCO₂**.
- * Secure King with tape or other device.

Advanced Life Support


- * Continued sedation: Consider **Versed** 2.5-5 mg every 5min or **Fentanyl** 50-100 mcg (max 300 mcg).
- * **MANDATORY AFTER INSERTION TO CONFIRM PLACEMENT:**
 - * Place up to 18 fr **Gastric Tube** into the drain tube of the King and advance into the stomach. The **gastric tube** should be well lubricated and passed slowly and carefully. **Suction** should not be performed until the **gastric tube** has reached the stomach.

Citations:

Size	2	2.5	3	4	5
Connector Color	Green	Orange	Yellow	Red	Purple
Patient Criteria	35-45 inches (90-115 cm) or 12-25 kg	41-51 inches (105-130 cm) or 25-35 kg	4-5 feet (122-155 cm)	5-6 feet (155-180 cm)	greater than 6 feet (>180 cm)
Cuff Pressure	60 cm H ₂ O	60 cm H ₂ O	60 cm H ₂ O	60 cm H ₂ O	60 cm H ₂ O
KLTD O.D./I.D.	11 mm/7.5 mm	11 mm/7.5 mm	14 mm/10 mm	14 mm/10 mm	14 mm/10 mm
KLTD O.D./I.D.*	n/a	n/a	18 mm/10 mm	18 mm/10 mm	18 mm/10 mm
KLTD Cuff Volume	25-35 ml	30-40 ml	45-60 ml	60-80 ml	70-90 ml
KLTD Cuff Volume	n/a	n/a	40-55 ml	50-70 ml	60-80 ml



Section 8-170 - Laryngeal Mask Airway (LMA) Supreme

<p><u>Scope of Practice:</u></p> <div style="text-align: center;">  </div> <p><u>Precautions:</u></p> <p>* </p>	<p><u>Contraindications:</u></p> <p>* Swallow or gag reflex.</p>
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Indications:

Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)	page 78
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)	page 93
Section 8-080 - Endotracheal Tube (ET) (Considered alternate Airway to endotracheal tube).....	page 187

Procedure:

- * Examine LMA for damage, leaks, and blockages.
- * Inflate cuff with 150% that listed. Fully deflate by compressing the distal tip of the mask with thumb and index finger. Apply slight tension to the inflation line while removing all air until a vacuum is felt. Disconnect the syringe.
- * Generously lubricate posterior surface of cuff and airway tube.
- * Place the patient’s head in a neutral or slight “sniffing” position. Hold the LMA at the proximal end with the connector pointing downward to the chest and the tip of the distal end pointing toward the palate.
- * Press the tip of the mask against the hard palate. Maintaining pressure against the palate, continue to rotate the mask inwards in a circular motion following the curvature of the hard and soft palate.
- * Continue until resistance is felt. The distal end of the mask should now be in contact with the upper esophageal sphincter. The device is now fully inserted.
- * Maintaining inward pressure, secure the mask into position by taping cheek to cheek across the fixation tab. This should be done prior to inflation. Inflate with the minimum amount of air needed to achieve an effective seal.

Advanced Life Support

- * Continued sedation:
 - * Consider **Versed** 2.5-5 mg every 5 min. Repeat as needed maintaining SBP greater than 100.
 - * Consider **Fentanyl** 50-100 mcg. Max 300 mcg.
- * **MANDATORY AFTER INSERTION TO CONFIRM PLACEMENT:**
 - * Place **Gastric Tube** tube into the drain tube of the LMA and advance into the stomach. The **gastric tube** should be well lubricated and passed slowly and carefully. **Suction** should not be performed until the **gastric tube** has reached the stomach.

Citations:

CATALOG	MASK SIZE	PATIENT SIZE	PRODUCT DESCRIPTION	MAX INFLATION CUFF VOLUME	LARGEST SIZE OG/NG TUBE
175010	Size 1	Neonates/infants up to 5 kg	LMA Supreme™ size 1	5 mL	6 French
175015	Size 1.5	Infants 5 - 10 kg	LMA Supreme™ size 1.5	8 mL	6 French
175020	Size 2	Infants 10 - 20 kg	LMA Supreme™ size 2	12 mL	10 French
175025	Size 2.5	Children 20 - 30 kg	LMA Supreme™ size 2.5	20 mL	10 French
175030	Size 3	Children 30 - 50 kg	LMA Supreme™ size 3	30 mL	14 French
175040	Size 4	Adults 50 - 70 kg	LMA Supreme™ size 4	45 mL	14 French
175050	Size 5	Adults 70 - 100 kg	LMA Supreme™ size 5	45 mL	14 French







Section 8-180 - Laryngoscope

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none">* RN* Medic <p><u>Precautions:</u></p> <ul style="list-style-type: none">*	<p><u>Contraindications:</u></p> <ul style="list-style-type: none">*
<p><u>Indications:</u></p> <p>Future location of video laryngoscope</p>	
<p><u>Procedure:</u></p> <ul style="list-style-type: none">*	
<p><u>Citations:</u></p>	



Section 8-190 - LifePak

<p><u>Automated External Defibrillation</u></p> <p><u>Scope of Practice:</u></p> <ul style="list-style-type: none">* * * *  <p><u>Precautions:</u></p> <ul style="list-style-type: none">* Exercise safety precautions.	<p><u>Contraindications:</u></p> <ul style="list-style-type: none">* If ALS is available, manual mode is preferred.* None in cardiac Arrest.
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Indications:

[Protocol 2-030 - Automated External Defibrillation \(AED\)](#) (Cardiac Arrest without ALS assistance)..... page 19

[Protocol 6-025 - Cardiopulmonary Resuscitation \(CPR\)](#) (Cardiac Arrest without ALS assistance) page 78

[Section 8-010 - Automated External Defibrillator \(AED\)](#) (Cardiac Arrest without ALS assistance) page 167

<p><u>Procedure:</u></p> <ul style="list-style-type: none">* Confirm patient is in cardiac Arrest.* Apply and connect combo-pads.* Press “ANALYZE.”* Follow on-screen messages and voice prompts.
--



<p><u>12/15-Lead acquisition</u></p> <p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> * <input type="checkbox"/> EMD * <input type="checkbox"/> EMR * <input checked="" type="checkbox"/> EMT * <input checked="" type="checkbox"/> AEMT * <input checked="" type="checkbox"/> RN/Paramedic <p><u>Precautions:</u></p> <ul style="list-style-type: none"> * 	<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> *
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Indications:

Protocol 2-020 - Atrial Fibrillation (A-Fib) or Atrial Flutter	page 18
Protocol 2-040 - Bradycardia	page 20
Protocol 2-050 - Chest Discomfort (Suspected myocardial infarction)	page 21
Protocol 2-060 - Post Resuscitative Care	page 24
Protocol 2-080 - Tachycardia Narrow Stable	page 26
Protocol 2-090 - Tachycardia Narrow Unstable	page 27
Protocol 2-100 - Tachycardia Wide Stable	page 28
Protocol 2-110 - Tachycardia Wide Unstable	page 29
Protocol 2-120 - Torsades de Pointes	page 30
Protocol 2-130 - Ventricular Ectopy	page 31
Protocol 2-150 - Wolff-Parkinson-White (WPW)	page 33
Protocol 4-040 - Behavioral (Non-specific complaints)	page 42
Protocol 4-050 - Cerebrovascular Accident (CVA) or Stroke (Non-specific complaints)	page 43
Protocol 4-060 - Chronic Obstructive Pulmonary Disease (COPD) (Unexplained dyspnea)	page 48
Protocol 4-070 - Congestive Heart Failure (CHF) (Unexplained dyspnea)	page 49

Procedure:

- * Attach limb leads.
 - * Preferred locations for 12-lead acquisition are wrists and ankles.
 - * Preferred locations for 4-lead monitoring are shoulders and abdomen.
- * Attach precordial leads.
- * Perform 12-lead.
- * Perform 15-Lead on the following patients:
 - * Non-diagnostic 12-lead OR
 - * Evidence of acute inferior wall injury.



<p><u>Vitals</u></p> <p><i>Scope of Practice:</i></p> <ul style="list-style-type: none"> * <input type="checkbox"/> EMD * <input type="checkbox"/> EMR * <input checked="" type="checkbox"/> EMT * <input checked="" type="checkbox"/> AEMT * <input checked="" type="checkbox"/> RN/Paramedic <p><i>Precautions:</i></p> <ul style="list-style-type: none"> * Accuracy is dependent upon adequate perfusion at probe site, bright ambient lighting, Carbon Monoxide Poisoning, Cyanide Poisoning, nail polish, and polycythemia. 	<p><i>Contraindications:</i></p> <ul style="list-style-type: none"> * Do not attempt blood pressures on injured extremities, side of previous mastectomies, or dialysis shunts.
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<p><i>Indications:</i></p> <p>All patient contacts. Minimum of 2 sets of vitals required for all transported patients. Before and after medication administration. Every 5-10min in critical patients.</p>
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<p><i>Procedure:</i></p> <ul style="list-style-type: none"> * Choose and apply appropriately sized cuff. Auscultated blood pressure is required as a baseline to verify LifePak before medication administration. * Attach pulse-ox probe. * If patient is being transported ALS: Connect 4-lead cardiac monitor.
--



<p><u>Manual Defibrillation</u></p> <p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> * <input type="checkbox"/> EMD * <input type="checkbox"/> EMR * <input type="checkbox"/> EMT * <input type="checkbox"/> AEMT * <input checked="" type="checkbox"/> RN/Paramedic <p><u>Precautions:</u></p> <ul style="list-style-type: none"> * Exercise safety precautions. 	<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * None in cardiac Arrest.
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Indications:

Protocol 2-030 - Automated External Defibrillation (AED)	page 19
Protocol 2-140 - Ventricular Fibrillation (V-Fib or V-Tach)	page 32
Protocol 3-010 - Drowning	page 35
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)	page 78
Section 8-010 - Automated External Defibrillator (AED)	page 167

- Procedure:
- * Verify patient is in cardio-pulmonary Arrest.
 - * Record baseline rhythm.
 - * Apply combo-pads (anterior-posterior is preferred)
 - * Select appropriate energy.
 - * Adult: 360 J (OR consider biphasic dose of 200 J).
 - * Pediatric: 2 J/kg (first shock), 4 J/kg (subsequent shocks).
 - * Charge and clear patient.
 - * Call “CLEAR” and ensure patient is clear.
 - * Press “SHOCK.”
 - * Reassess patient.



<p><u>Download to ePCR</u></p> <p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> * <input type="checkbox"/> EMD * <input type="checkbox"/> EMR * <input checked="" type="checkbox"/> EMT * <input checked="" type="checkbox"/> AEMT * <input checked="" type="checkbox"/> RN/Paramedic <p><u>Precautions:</u></p> <p>*</p>	<p><u>Contraindications:</u></p> <p>*</p>
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Indications:

Any time cardiac monitoring is required and/or documented in HealthEMS, the **EKG** and all 12-leads shall be downloaded and attached to the **ePCR**.

Procedure:

- * Click paperclip icon in the HealthEMS ePCR. Select "**EKG**." Click down-arrow. Click "Next." Select "LifePak 12/15." Click "Next."
- * Press "TRANSMIT" on LifePak.
- * Click "Finish." Select the correct file. Click plus icon. Click "OK." Click "Yes."

<p><u>Synchronized Cardioversion</u></p> <p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> * <input type="checkbox"/> EMD * <input type="checkbox"/> EMR * <input type="checkbox"/> EMT * <input type="checkbox"/> AEMT * <input checked="" type="checkbox"/> RN/Paramedic <p><u>Precautions:</u></p> <ul style="list-style-type: none"> * Exercise safety precautions. Cardiovert with extreme caution in patients on digitalis, Beta-Blockers, and Calcium channel blockers. 	<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> *
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<u>Indications:</u>	
Protocol 2-020 - Atrial Fibrillation (A-Fib) or Atrial Flutter page 18
Protocol 2-080 - Tachycardia Narrow Stable page 26
Protocol 2-090 - Tachycardia Narrow Unstable page 27
Protocol 2-100 - Tachycardia Wide Stable page 28
Protocol 2-110 - Tachycardia Wide Unstable page 29
Protocol 2-120 - Torsades de Pointes page 30

Procedure:

- * Explain procedure to patient.
- * If time permits, consider **Versed**.
- * Record baseline rhythm.
- * Select lead with tallest R-wave.
- * Apply combo-pads (anterior-posterior is preferred).
- * Select appropriate energy.
 - * *Adult*: 120 J.
 - * *Pediatric*: 0.5-1 J/kg.
- * Synchronize (“SYNC”) and observe markers on screen. If sense markers
- * Charge (“CHARGE”) and clear patient. To cancel charge, press speed dial. If “SHOCK” is not pressed within 60 sec, charge is cancelled.
- * Call “CLEAR” and ensure patient is clear.
- * Press “SHOCK.”
- * Reassess patient.



<p><u>Transcutaneous Pacing</u></p> <p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> * <input type="checkbox"/> EMD * <input type="checkbox"/> EMR * <input type="checkbox"/> EMT * <input type="checkbox"/> AEMT * <input checked="" type="checkbox"/> RN/Paramedic <p><u>Precautions:</u></p> <ul style="list-style-type: none"> * Exercise safety precautions. Do not place pacer electrodes directly over implanted pacemaker or AICD. 	<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * None in emergency setting.
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<u>Indications:</u>	
Protocol 2-010 - Asystole	page 17
Protocol 2-040 - Bradycardia	page 20
Protocol 2-070 - Pulseless Electrical Activity (PEA)	page 25
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)	page 78

Procedure:

- * Explain procedure to patient.
- * Connect 4-leads and record rhythm strip prior to Pacing.
- * Select lead with tallest R-wave.
- * Apply combo-pads (anterior-posterior is preferred).
- * Turn pacer on and set rate to 80 bpm.
- * Gradually increase energy until electrical capture is observed (usually wide, bizarre QRS).
- * Check pulse for mechanical capture. If no mechanical capture, continue to increase energy until mechanical capture. If **CPR** is being conducted and no mechanical capture is detected at maximum energy, continue Pacing.
- * Once mechanical capture is obtained, increase energy another 10%, assess blood pressure, and record rhythm strip.
- * If **CPR** is being conducted, continue for another 2 minutes before discontinuing.
- * Conscious: Consider **Versed** 2.5-5 mg for sedation if discomfort is intolerable.

Citations:



Section 8-200 - Meconium Aspirator

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none">* RN* Medic <p><u>Indications:</u></p> <ul style="list-style-type: none">*	<p><u>Contraindications:</u></p> <ul style="list-style-type: none">* <p><u>Precautions:</u></p> <ul style="list-style-type: none">*
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<p><u>Indications:</u></p> <p>Protocol 4-130 - Neonatal Resuscitation page 57</p>

<p><u>Procedure:</u></p> <ul style="list-style-type: none">*
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<p><u>Citations:</u></p>



Section 8-210 - Morgan Lens

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> *  <p><u>Precautions:</u></p> <ul style="list-style-type: none"> * 	<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Penetrating eye injury.
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<p><u>Indications:</u></p> <p>Protocol 5-060 - Eye Injury (need for Eye irrigation)..... page 69</p>

<p><u>Procedure:</u></p> <ul style="list-style-type: none"> * Pain: Consider topical anesthetic (Tetracaine 1-2 drops). * Attach LR to IV set. * Begin flow. * Have patient look down. Insert lens under upper lid. * Have patient look up, retract lower lid. Drop lens into place. * Deliver at least 1/2 liter per Eye. * If chemical is unknown or an alkali (base), flush for at least 20 min. * To remove, have patient look up, retract lower lid, and slide lens out.

<p><u>Citations:</u> (MorTan Inc, 2018)</p>



Section 8-230 - Naso-Pharyngeal Airway (NPA)

Scope of Practice:

- * EMT
- * AEMT
- * RN
- * Medic

Precautions:

- *

Contraindications:

- *

Indications:

Patients unable to control their Airway.
Clinched jaws.
Altered LOC with gag reflex.

Procedure:

- * **Pre-Oxygenate** if possible.
- * Measure tube from tip of nose to the earlobe.
- * Lube Airway with water-soluble jelly.
- * Insert tube (right nare first) with bevel towards the septum.
- * Reassess Airway.

Citations:

Section 8-240 - Nebulizer

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none">* AEMT - Only for beta agonists for dyspnea with wheezing.* RN* Medic <p><u>Precautions:</u></p> <ul style="list-style-type: none">*	<p><u>Contraindications:</u></p> <ul style="list-style-type: none">*
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Indications:

Protocol 4-020 - Anaphylaxis	page 40
Protocol 4-030 - Asthma	page 41
Protocol 4-060 - Chronic Obstructive Pulmonary Disease (COPD)	page 48
Protocol 4-070 - Congestive Heart Failure (CHF)	page 49
Protocol 4-080 - Croup	page 50
Section 7-040 - Albuterol (Proventil, Ventolin)	page 107
Section 7-180 - Duoneb (Ipratropium and Albuterol, Combivent)	page 122
Section 7-210 - Epinephrine Racemic (Micronefrin)	page 125
Section 7-610 - Xopenex (Levalbuterol)	page 165

- Procedure:
- * Select correct medication.
 - * Confirm orders, dosage, and expiration.
 - * Check patient allergies.
 - * Add medication to reservoir of Nebulized. Add **Saline** if necessary to equal 3 ml total volume.
 - * Connect **Oxygen** tubing and set flow rate to 6-8 lpm.
 - * Have patient take deep breaths, holding for a second, and exhale through tube.
 - * If patient is unable to hold Nebulized, attach to mask.
 - * Medication is delivered in 5-10 min.
 - * Observe patient for effects.

Citations:



Section 8-260 - Oro-Pharyngeal Airway (OPA)

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none">* EMR* EMT* AEMT* RN* Medic <p><u>Precautions:</u></p> <ul style="list-style-type: none">*	<p><u>Contraindications:</u></p> <ul style="list-style-type: none">* Gag reflex.
---	--

<p><u>Indications:</u></p> <p>Unconscious or unresponsive.</p>
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<p><u>Procedure:</u></p> <ul style="list-style-type: none">* Pre-Oxygenate if possible.* Measure Airway from corner of mouth to earlobe.* Grasp tongue and jaw, lifting anterior.* Insert Airway inverted and rotate 180 degrees into place.* Reassess Airway.

<p><u>Citations:</u></p>



Section 8-290 - Physical Restraint

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none">* RN* Medic <p><u>Precautions:</u></p> <ul style="list-style-type: none">* If restrained by law enforcement (i.e. hand-cuffs), an officer from the Arresting agency must be present throughout EMS transport.	<p><u>Contraindications:</u></p> <ul style="list-style-type: none">*
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Indications:
Protocol 4-040 - Behavioral (Medical or Behavioral emergency endangering patient and/or EMS personnel or prohibiting appropriate medical evaluation and transport) page 42

Procedure:

- * **MEDICAL CONTROL** must be contacted prior to or immediately following patient Restraint.
- * Maintain scene, crew, and personal safety.
- * Attempt verbal de-escalation.
- * Utilize family and friends to calm patient if they are helpful.
- * Utilize law enforcement presence to calm patient.
- * Managing the patient's **Pain** may assist in calming patient.
- * Utilize the least restrictive device that achieves desired result.
- * Monitor patient for physical response, Extremity circulation, respiratory compromise, and aspiration risk.
- * Proper body alignment and patient comfort will be addressed.

Citations:

Section 8-295 - PICC and Central Line Access Kit

Scope of Practice:

- * 
- * 

Precautions:

- * Sterile technique must be utilized.

Contraindications:

- * Inability to obtain/maintain sterile field.

Indications:

Any patient who needs **IV** access, 2 attempts at **IV** access have failed, **IO** contraindicated or conscious patient, and at least one of the following:


- * ALOC or GCS less than 8,
- * Hemodynamic instability,
- * Extreme respiratory compromise, OR
- * Full Arrest.

Procedure:

- * Cleanse the needless infusion cap. May use any catheter present.
- * Aseptically attach flush.
- * Open clamp on catheter lumen.
- * Aspirate fluid from catheter slowly until blood return. If unable to aspirate blood, catheter is clotted and will need to be declotted in a hospital setting.
- * Flush with **NS**. Use at least a 10 ml syringe using a push-pause method. Remove flush while maintain pressure on syringe plunger.
- * Attach appropriate **IV** fluids.

Citations: (Citizens Memorial Hospital, 2013)

Section 8-320 - Port Access Kit



<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none">*  <p><u>Precautions:</u></p> <ul style="list-style-type: none">* Sterile technique must be utilized.	<p><u>Contraindications:</u></p> <ul style="list-style-type: none">* Inability to obtain/maintain sterile field.
---	--

<p><u>Indications:</u></p> <p>Any patient who needs IV access, 2 attempts at IV access have failed, IO contraindicated or conscious patient, and at least one of the following:</p> <ul style="list-style-type: none">* ALOC or GCS less than 8,* Hemodynamic instability,* Extreme respiratory compromise, OR* Full Arrest.
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<p><u>Procedure:</u></p> <ul style="list-style-type: none">* Gather equipment and don mask.* Palpate subcutaneous tissue to determine borders of the access device. Palpate the implanted infusion port borders and locate the septum and center of the septum. Determine if the patient has a single or double lumen implanted infusion port. Choose the smallest gauge non-coring needle that accommodates the therapy. Select a length that allows the length of the needle to sit flush to the skin and securely within the port.* Assess the site for symptoms of infection.* Open the implanted infusion port access kit using the sterile inner surface to create sterile field.* Using sterile technique, remove wrapper from 10 ml syringe and place on sterile field. Remove packaging and place the needle with extension tubing, needleless injection cap, adhesive skin closures, and dressing on sterile field.* Using sterile technique, prime tubing with NS syringe. Attach needleless injection cap to extension to needle.* Cleanse insertion site with antiseptic for 30 seconds and allow to air dry.* Stabilize borders of implanted port and insert needle firmly into center of port septum using 90 degree angle perpendicular to the skin. Advance needle until reaching base of portal reservoir.* Aspirate blood and then flush with NS. Use at least a 10 ml syringe using a push-pause method.* Stabilize needle with dressing, Occlusive dressing, and/or tape. Document date, time, and your initials on external dressing.
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<p><u>Citations:</u> (Citizens Memorial Hospital, 2013)</p>

Section 8-330 - Portable Ventilator

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none">* *  <p><u>Precautions:</u></p> <ul style="list-style-type: none">* Demand setting requires constant patient monitoring. If patient condition deteriorates, consider extubation and BVM.	<p><u>Contraindications:</u></p> <ul style="list-style-type: none">* None.
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<p><u>Indications:</u></p> <p>Need for ventilation of intubated patient.</p>

<p><u>Procedure:</u></p> <ul style="list-style-type: none">* Adjust settings (may be based on existing Ventilator settings or anticipated patient needs):<ul style="list-style-type: none">* Relief pressure is maximum delivered pressure.* Air mix is set at either “No Air Mix (100% Oxygen)” or “Air Mix (45% Oxygen).”* Frequency is the breaths per minute.* Tidal volume is the volume of air per breath.* Connect supply hose to Oxygen, turn on Oxygen, and check visual alarm.* Connect patient hose and patient valve to ETT.* Confirm ventilation with auscultation and Capnography. Confirm Oxygenation with pulsoximeter.* Constant patient monitoring is made more critical if Ventilator is in demand mode.* Consider NG and/or OG Suction.
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<p><u>Citations:</u></p>

Section 8-350 - Spinal Motion Restriction (SMR)

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> * EMR * EMT * AEMT * RN * Medic <p><u>Precautions:</u></p> <ul style="list-style-type: none"> * Providers should not manually stabilize alert and spontaneously moving patients, since patients with pain will self-limit movement, and forcing immobilization in this scenario may unnecessarily increase discomfort and anxiety. * If used, C-collar must be properly sized. * Appropriate amount of padding is needed to provide correct stabilization. * Unless it is necessary to change a patient’s position to maintain an open Airway or there is some other compelling reason, it is best to splint the neck or back in the original position of the deformity. 	<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> * Penetrating neck injury regardless of neurologic symptoms. * Elderly fall from standing with isolated Extremity fracture (i.e. hip fracture) without mechanism for spinal injury do not need SMR. * Spinal precautions can be maintained by application of a rigid cervical collar and securing the patient firmly to the EMS stretcher (no backboard), and may be most appropriate for: <ul style="list-style-type: none"> * Patients found to be ambulatory at the scene, * Extended transport time, * Severe epistaxis or facial bleeding, * Respiratory distress when supine, * Airway compromise when supine, OR * Penetrating trauma with NO evidence of spinal injury.
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<p><u>Indications:</u></p> <ul style="list-style-type: none"> * High-energy mechanism of injury AND any of the following: <ul style="list-style-type: none"> * Drug or alcohol intoxication, Inability to communicate, Altered mental status, OR * Distracting injury. * Unconscious with unknown history of event. * Spinal Pain, tenderness, or deformity. * Neurologic complaint (i.e. numbness or motor weakness). * Patients “cleared” by transferring Physician being taken to trauma center meeting requirements for SMR must have SMR. <p>Protocol 1-020 - General Assessment and Treatment - Trauma page 14</p> <p>Protocol 5-020 - Abdominal Trauma page 65</p> <p>Protocol 5-040 - Chest Trauma page 67</p> <p>Protocol 5-050 - Extremity Trauma page 68</p> <p>Protocol 5-070 - Head Trauma page 70</p> <p>Protocol 5-080 - Spinal Trauma page 71</p> <p>Protocol 5-090 - Trauma Arrest page 73</p> <p>Protocol 6-080 - Event Standby page 85</p>
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<p><u>Procedure:</u></p> <ul style="list-style-type: none"> * Assess distal pulse, motor, and sensation. * Maintain manual stabilization, measure, size, and secure cervical collar. * Seated patient: Consider KED. * <u>If no posterior injuries suspected:</u> Eight-person lift a few inches and slide board underneath or use scoop stretcher. <ul style="list-style-type: none"> * OR Log-roll patient onto his/her side. Assess posterior and position backboard. * Secure thorax and legs to backboard. Pad. Ensure breathing is not restricted. * Secure Head and C-collar to backboard. Pad as needed. Tape should stick to all areas of forehead, eyebrows, collar, etc. * Reassess distal pulse, motor, and sensation.
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<p><u>Citations:</u> (Bledsoe B. E., 2013), (Boland, Satterlee, & Jansen, 2014), (Citizens Memorial Hospital, 2014), (Citizens Memorial Hospital, 2014), (Foerster, 2013), (Mercy EMS, 2013), (National Association of EMS Physicians and American College of Surgeons Committee on Trauma, 2013), (Niven & Castle, 2010), (National Athletic Trainers Association, 2015)</p>



Section 8-360 - Splint

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none">* EMR* EMT* AEMT* RN* Medic <p><u>Precautions:</u></p> <ul style="list-style-type: none">* May be time consuming, should not take priority over life threatening conditions. Bone fracture splints should immobilize joints above and below. Joint fractures should immobilize bones above and below.	<p><u>Contraindications:</u></p> <ul style="list-style-type: none">*
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Indications:
[Protocol 5-050 - Extremity Trauma](#) page 68

Procedure:

- * Following splints are recommended for the following situations. Every situation is different, so splints may have to be improvised to achieve the desired effect of immobilization:
 - * Clavicle: Sling and swath.
 - * Radius/ulna: Ladder, board, or SAM.
 - * Tibia/fibula: Ladder, board, or SAM.
 - * Ankle: Pillow.
 - * Joints: In position found.
 - * Pelvis: Scoop, pillow, inverted **KED**, LSB, MAST.
 - * Hand: In position of function.
- * Assess distal pulse, motor, and senses before and after splinting.

Evac-u-Splint Procedure:

- * Preparation:
 - * Lay mattress on flat surface near patient. Head and Shoulder logo indicates the Head end.
 - * Remove valve cap. Release vacuum by pushing red valve stem. Keep valve pushed in until mattress is pliable.
 - * Disconnect strap from patient side of mattress and position top strap at level of armpit.
 - * Smooth out beads to form level surface.
 - * Connect pump to mattress at either foot or Head end. Foot end is preferred. Pediatric mattress only has valve on foot end.
- * Application:
 - * Assess patient's respiratory and neurovascular status.
 - * Log roll patient onto mattress with manual c-spine control.
 - * Secure patient using straps. Remove excess strap slack working Head to feet.
 - * Repeat strap tightening if needed working Head to feet.
 - * Shape mattress and fill voids.
 - * Evacuate air from mattress. Pump may require up to 35 strokes to achieve rigid immobilization.
 - * Disconnect pump. Replace cap on valve.
 - * Secure Head using adhesive tape.
 - * Assess patient's respiratory and neurovascular status.

Citations:



Section 8-365 - Stair Chair

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none">* EMR* EMT* AEMT* RN* Medic <p><u>Precautions:</u></p> <ul style="list-style-type: none">*	<p><u>Contraindications:</u></p> <ul style="list-style-type: none">*
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Indications:
[Section 8-060 - Cot](#)..... page 183

Procedure:

- *

Citations:



Section 8-370 - Suction

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none">* EMR - Only upper airway.* EMT - Only upper airway.* AEMT - Only upper airway and tracheobronchial suctioning of already intubated patient.* RN* Medic <p><u>Precautions:</u></p> <ul style="list-style-type: none">* Be sure to switch off as soon as possible to avoid shorting batteries.	<p><u>Contraindications:</u></p> <ul style="list-style-type: none">*
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<p><u>Indications:</u></p> <p>Protocol 4-130 - Neonatal Resuscitation page 57</p> <p>Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) page 93</p>

<p><u>Procedure:</u></p> <ul style="list-style-type: none">* Place 2 fully charged batteries.* Attach patient connecting tube to patient port on the canister.* Turn switch on.* Occlude end of patient connecting tube and keep it occluded for 10sec. Release occlusion and check for negative pressure. If no negative pressure, check to ensure canister lid is tight and connections are secure.* Dispose of canister after use.

<p><u>Citations:</u></p>






Section 8-380 - Thermometer

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> * EMR * EMT * AEMT * RN * Medic <p><u>Precautions:</u></p> <ul style="list-style-type: none"> * Prehospital thermometers should only be used to measure a patient’s temperature in the oral, axillary, or rectal body sites unless specifically designed for other locations by the manufacturer. * Do not take a patient’s temperature without using a Welch Allyn disposable probe cover. Doing so can cause patient discomfort, patient cross contamination, and erroneous temperature readings. 	<p><u>Contraindications:</u></p> <ul style="list-style-type: none"> *
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Indications:

Protocol 1-010 - General Assessment and Treatment - Medical	page 13
Protocol 1-020 - General Assessment and Treatment - Trauma	page 14

Oral Temperature Procedure:

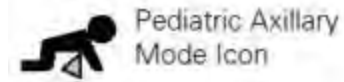
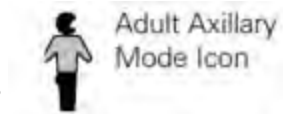
- * Using Probe with Blue Ejection Button and Blue Probe Well
- * When used correctly, the SureTemp Plus thermometer accurately measures an oral temperature in approximately 4–6 seconds. The ability of the SureTemp Plus thermometer to take an accurate oral temperature requires correct user technique.
- * Holding the probe handle with your thumb and two fingers on the indentations of the probe handle, withdraw the probe from the probe well.
- * Verify that the oral mode icon is selected by observing the flashing head icon on the instrument’s display. If this icon is not flashing, press the Mode Selection button until the head icon appears. 
- * Load a probe cover by inserting the probe into a probe cover and pressing the probe handle down firmly. The probe handle will move slightly to engage the probe cover. Use only Welch Allyn probe covers. The use of other manufacturer’s probe covers or no probe cover may produce temperature measurement errors and/or inaccuracy.
- * With the Oral Mode indicator flashing, quickly place the probe tip under the patient’s tongue on either side of the mouth to reach the rear sublingual pocket. Have the patient close his/her lips around the probe. Hold the probe in place, keeping the tip of the probe in contact with the oral tissue throughout the measurement process. Rotating “walking” segments appear on the display, indicating that measurement is in progress. 
- * The unit will beep three times when the final temperature is reached. The measurement site, temperature scale, and patient temperature will display on the LCD. Final temperature will remain on the display for 30 seconds.
- * If you cannot correctly measure the patient’s temperature in Normal Mode, the unit will automatically enter Monitor Mode. In this mode, measurement time is extended. Either repeat the temperature measurement in Normal Mode in the opposite sublingual pocket or keep the probe in place for three minutes in Monitor Mode. The thermometer will not beep to indicate a final temperature. Record the temperature before removing the probe from the site, as the temperature reading is not maintained in memory. 
- * Long-term continuous monitoring beyond three minutes is not recommended in the Oral Mode.
- * After the temperature measurement is complete, remove the probe from the patient’s mouth. Eject the probe cover by firmly pressing the ejection button on the top of the probe.
- * Return the probe to the probe well. The LCD display will go blank.





- * Patient actions may interfere with accurate oral temperature readings. Ingesting hot or cold liquids, eating food, chewing gum or mints, brushing teeth, smoking, or performing strenuous activity may affect temperature readings for up to 20 minutes after activity has ended.

Axillary Temperature Procedure:

- * Using Probe with Blue Ejection Button and Blue Probe Well
- * When used correctly, the SureTemp Plus thermometer accurately measures an axillary temperature for pediatric patients (ages 17 and younger) in approximately 10–13 seconds and for adult patients (ages 18 and older) in approximately 12–15 seconds.
- * Ensure that the axillary probe (blue ejection button) and the blue probe well are installed.
- * Holding the probe handle with your thumb and two fingers on the indentations of the probe handle, withdraw the probe from the probe well.
- * Verify that the axillary mode is selected by observing the correct flashing axillary icon on the instrument's display. If this icon is not flashing, press the Mode Selection button to select the Adult Axillary or Pediatric Axillary icon is displayed.
- * To ensure optimal accuracy, always confirm that the correct axillary mode is selected.
- * After a temperature is taken and the probe is returned to the probe well, the instrument reverts to the original measurement site mode.
- * Do not take an axillary temperature through patient's clothing. Direct contact between patient's skin and the probe is required.
- * Load a probe cover by inserting the probe into a probe cover and pressing the probe handle down firmly. The probe handle will move slightly to engage the probe cover.
- * Use only Welch Allyn probe covers. The use of other manufacturer's probe covers or no probe cover may produce temperature measurement errors and/or inaccuracy.
- * With the correct axillary mode indicator flashing, lift the patient's arm so that the entire axilla is easily seen. Place the probe as high as possible in the axilla. Do not allow the probe tip to come into contact with the patient until the probe is placed in the measurement site. Before this, any contact between the probe tip and the tissue or other material may cause inaccurate readings.
- * Verify that the probe tip is completely surrounded by axillary tissue and place the arm snugly at the patient's side. Hold the patient's arm in this position and do not allow movement of the arm or probe during the measurement cycle. Rotating "walking" segments appear on the display, indicating that measurement is in progress.
- * The unit will beep three times when the final temperature is reached. The measurement site, temperature scale, and patient temperature will display on the LCD. The final temperature will remain on the display for 30 seconds.
- * If you cannot correctly measure the patient's temperature in Normal Mode, the unit will automatically enter Monitor Mode. In this mode, measurement time is extended. Either repeat the temperature measurement in Normal Mode in the opposite axilla or keep the probe in place for five minutes in Monitor Mode. The thermometer will not beep to indicate a final temperature. Record the temperature before removing the probe from the site, as the temperature reading is not maintained in memory.
- * Long-term continuous monitoring beyond five minutes is not recommended in the Axillary Mode.
- * After the temperature measurement is complete, remove the probe from the patient's axilla. Eject the probe cover by firmly pressing the ejection button on the top of the probe.
- * Return the probe to the probe well. The LCD display will go blank.
- * Probe contact with electrodes, bandages, etc., poor tissue contact, taking a temperature over clothing, or prolonged exposure of axilla to ambient air can cause inaccurate temperature readings.



Rectal Temperature Procedure:

- * Using Probe with Red Ejection Button and Red Probe Well
- * When used correctly, the SureTemp Plus thermometer accurately measures rectal temperature in approximately 10–13 seconds.
- * Ensure that the rectal probe (red ejection button) and the red probe well are installed. The instrument will only operate in Rectal Mode when the red rectal probe and probe well are installed.
- * Holding the probe handle with your thumb and two fingers on the indentations of the probe handle, withdraw the probe from the probe well.
- * Observe the flashing lower-body icon on the unit's display. Load a probe cover by inserting the probe into a probe cover and pressing the probe handle down firmly. The probe handle will move slightly to engage the probe cover. 
- * With the Rectal Mode indicator flashing, separate the patient's buttocks with one hand. Using the other hand, gently insert the probe only 1.5 cm (5/8 in.) inside the rectum (less for infants and children). The use of a lubricant is optional.
- * Incorrect insertion of probe can cause bowel perforation.
- * Tilt the probe so that the tip of the probe is in contact with tissue. Keep the hand separating the buttocks in place, and hold the probe in place throughout the measurement process. Rotating "walking" segments appear on the display, indicating that measurement is in progress.
- * The unit will beep three times when the final temperature is reached. The measurement site, temperature scale, and patient temperature will display on the LCD. The final temperature will remain on the display for 30 seconds.
- * If you cannot correctly measure the patient's temperature in Normal Mode, the unit will automatically enter Monitor Mode. In this mode, measurement time is extended. Either repeat the temperature measurement in Normal Mode or keep the probe in place for three minutes in Monitor Mode. The thermometer will not beep to indicate a final temperature. Record the temperature before removing the probe from the site, as the temperature reading is not maintained in memory. 
- * Long-term continuous monitoring beyond three minutes is not recommended in Rectal Mode.
- * After the temperature measurement is complete, remove the probe from the patient's rectum. Eject the probe cover by firmly pressing the ejection button on the top of the probe.
- * Return the probe to the probe well. The LCD display will go blank.
- * Wash your hands. Washing hands greatly reduces the risk of cross-contamination and Nosocomial Infection.

Citations: (Welch Allyn, Inc.)

CMH/EMH EMS Quick Ref							
Normal Temperature Ranges							
	94°F	95°F	96°F	97°F	98°F	99°F	100°F
Oral							
0-2 yr							
3-10 yr			95.9 - 99.5				
11-65 yr				97.5 - 99.5			
Over 65 yr			96.4 - 98.6				
Rectal							
0-2 yr					97.9 - 100.4		
3-10 yr					97.9 - 100.4		
11-65 yr					98.6 - 100.6		
Over 65 yr			97.0 - 99.1				
Axillary							
0-2 yr		94.5 - 99.1					
3-10 yr			96.6 - 98.1				
11-65 yr		95.4 - 98.4					
Over 65 yr		95.9 - 97.3					
Ear							
0-2 yr					97.5 - 100.4		
3-10 yr				97.0 - 100.0			
11-65 yr			96.6 - 99.7				
Over 65 yr			96.4 - 99.5				
Core							
0-2 yr					97.5 - 100.0		
3-10 yr					97.5 - 100.0		
11-65 yr					98.2 - 100.2		
Over 65 yr			96.6 - 98.8				



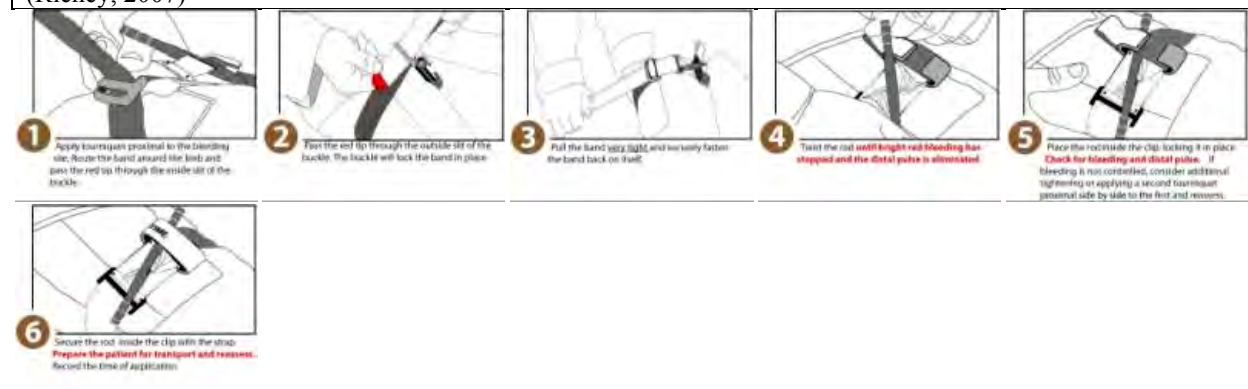
Section 8-390 - Tourniquet

<p><u>Scope of Practice:</u></p> <ul style="list-style-type: none"> * EMD * EMR * EMT * AEMT * RN * Medic <p><u>Precautions:</u></p> <ul style="list-style-type: none"> * Prolonged Tourniquet application may result in nerve damage, rhabdomyolysis, compartment syndrome, ischemia, and re-perfusion injury. Time of Tourniquet application MUST be reported to accepting ER. * Do not apply Tourniquet over a joint. 	<p><u>Contraindications:</u></p> <p>*</p>
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<p><u>Indications:</u></p> <p>Protocol 1-020 - General Assessment and Treatment - Trauma page 14</p> <p>Protocol 5-050 - Extremity Trauma (Life-threatening limb hemorrhage uncontrolled by simple methods) page 68</p> <p>Protocol 6-085 - High-Threat Response page 86</p>





<p><u>Procedure:</u></p> <ul style="list-style-type: none"> * May use cloth, blood pressure cuff, or commercial device. Constricting band should be at least 1 inch wide. * Apply Tourniquet proximal to bleeding site. * Tighten Tourniquet until bright red bleeding has stopped. * Secure Tourniquet from loosening. * Note the time of Tourniquet application. <p>Advanced Life Support</p> <ul style="list-style-type: none"> * Application of Tourniquets typically results in severe Pain. Consider referring to Protocol 6-050 - Control of Pain (page 81) after bleeding control and fluid administration. * If prolonged transport time, consider Tourniquet removal if all of the following are met: <ul style="list-style-type: none"> * Not in circulatory shock. * Stable vitals. * Enough personnel and resources. * Not an amputated Extremity. * Contact MEDICAL CONTROL. <ul style="list-style-type: none"> * Apply pressure dressing and loosen Tourniquet (leave in place). * Re-tighten Tourniquet if significant bleeding returns.
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Citations: (Cain, 2008), (Composite Resources, Inc), (Doyle & Taillac, 2008), (Flores, 2012), (Kragh, et al., 2008), (Richey, 2007)



Section 8-400 - Traction Splint

Scope of Practice:

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- * 

Precautions:

- * In the case of open fracture with obvious contamination, loose debris should be brushed away and flushed with **Saline** prior to reduction.

Contraindications:

- * Proximal femur fracture.
- * Pelvic fracture.
- * Tibia/fibula fracture.

Indications:

Protocol 5-050 - Extremity Trauma (Open or closed femur fracture)..... page 68

Procedure:

- * Assess distal pulse, motor, and sensation. If pulses are absent, apply manual, inline Traction. Pulseoximetry can help with distal pulse monitoring.
- * Consider **MEDICAL CONTROL** for angulated or pulseless fractures.
- * Stabilize limb manually.
- * **ALS**: Consider sedation or analgesia prior to moving Extremity.
- * In general, if distal pulses and sensation are present, field reduction should not be attempted.
- * Reassess distal pulse, motor, and sensation.
- * Patient destination should be a trauma center.
- * In the event of bilateral femur fractures, consider MAST pants.

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Part 9 - Appendix

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Section 9-020 - Change Log

Version 1 (Apgar)

Version One is named in dedication to Virginia Apgar who was an American obstetrical anesthesiologist who introduced obstetrical considerations to the field of neonatology.

Changes from version 1 to version 2 (Blalock)

Version Two is named in dedication to Alfred Blalock who was an American surgeon who conducted significant research on shock and blue baby syndrome.

Protocol	Date	Changes description
Entire document	06/01/12	6/1/12 version 1 approved by Roger Merk, MD.
	08/29/13	9/1/13 version 2 approved by Roger Merk, MD.

Changes from version 2 to version 3 (Cohn)

Version Three is named in dedication to Edwin Joseph Cohn who was an American scientist who developed the technique to separate blood plasma for transfusions.

Protocol	Date	Changes description
Entire document	10/09/13	Modification to most documents to include Oxygen titration based on Mercy Life Line protocols.
	12/13/13	Modification to most documents to remove Capnography as a BLS skill, now is "assist ALS."
	12/16/13	1/1/14 Version 3 approved by Roger Merk, MD.
	12/20/13	1/1/14 Version 3 re-approved by Roger Merk, MD (includes CVA and STEMI changes).
	2/10/14	Removed QR codes and re-released as version 3.
Protocol 1-010 - General Assessment and Treatment - Medical	10/04/13	Added orthostatic. Added 4-lead and 12-lead BLS vs ALS clarification.
	11/11/13	Added quote from MO Statutes on transporting TCD.
1/28/14	Changed ALS indicated pulseox to reflect Oxygen titration changes.	
Protocol 1-020 - General Assessment and Treatment - Trauma	11/11/13	Added quote from MO Statutes on transporting TCD trauma.
Protocol 2-020 - Atrial Fibrillation (A-Fib) or Atrial Flutter	10/04/13	Added rates to BLS Combo Pads.
Protocol 2-040 - Bradycardia	10/04/13	Added rates to BLS Combo Pads. Added "unstable" to Pacing. Added "stable" to Atropine.
Protocol 2-050 - Chest Discomfort	10/07/13	Clarified image for 12- and 15-Lead placement.
	11/11/13	Added quote from MO Statues on transporting TCD STEMI.
	12/20/13	Added CMH Cath Lab activation procedure.
	1/29/14	Added preferred IV locations, Combo Pads. Changed ER contact phone number. Changed EKG email address. Coordinated protocol with CMH policies.
	2/2/14	Changed EKG email address again.
Protocol 2-080 - Tachycardia Narrow Stable	10/04/13	Added rates and "consider" to Combo Pads.
Protocol 2-090 - Tachycardia Narrow Unstable	10/04/13	Added rates to Combo Pads.
Protocol 2-100 - Tachycardia Wide Stable	10/04/13	Added rates and "consider" to Combo Pads.
	11/11/13	Fixed Mag Sulfate dose over 5 min to over 15-20 min (assume it was a typo).
Protocol 2-110 - Tachycardia Wide Unstable	10/04/13	Added rates to Combo Pads. Added "symptomatic" to ALS treatments.
Protocol 2-130 - Ventricular Ectopy	10/04/13	Added "consider" to Combo Pads.
Protocol 2-140 - Ventricular Fibrillation (V-Fib or V-Tach)	10/04/13	Changed witnessed pediatric energy from 2 J/kg to 4 J/kg.
Protocol 2-150 - Wolff-Parkinson-White (WPW)	10/04/13	Added "consider" to Combo Pads.
Protocol 3-010 - Drowning	10/04/13	Added "consider Combo Pads."
	12/13/13	Removed CPAP as BLS skill, now is "assist ALS."
Protocol 3-030 - Hypothermia	10/04/13	Added "consider Combo Pads."
Protocol 4-020 - Anaphylaxis	1/29/14	Coordinated protocol with CMH policies.
Protocol 4-040 - Behavioral	11/11/13	Removed Versed and replaced with Valium.
	1/29/14	Added types of Restraint allowed by policy. Added handcuff comment from policy.
Protocol 4-050 - Cerebrovascular Accident (CVA) or Stroke	11/11/13	Added quote from MO Statutes on transporting TCD stroke.
	12/20/13	Added comment that TCD only applies when onset of symptoms less than 4 hours ago.
	1/29/14	Coordinated protocol with CMH policies.
Protocol 4-060 - Chronic Obstructive Pulmonary Disease (COPD)	12/13/13	Removed CPAP as BLS skill, now is "assist ALS."
Protocol 4-070 - Congestive Heart Failure (CHF)	12/13/13	Removed CPAP as BLS skill, now is "assist ALS."
Protocol 4-080 - Croup	10/04/13	Added "(max 1 dose)" to Racemic.
	11/11/13	Added IV/IM/PO for Decadron and added Solu-Medrol.
Protocol 4-090 - Childbirth	10/04/13	Added "consider" to orthostatic.
Protocol 4-100 - Fever	11/11/13	Added adult doses of Acetaminophen and Ibuprofen.
Protocol 4-115 - Hyperglycemia	10/04/13	Removed "(entire tube)" from oral Glucose.
Protocol 4-140 - Poisoning or Overdose	1/9/14	Corrected poison control number.
	1/29/14	Added consider hazmat decon. Added Hydrofluoric acid treatment. Coordinated with CMH policies.
Protocol 4-160 - Pre-Term Labor	10/04/13	Added "consider" to orthostatic.
Protocol 4-170 - Seizures	11/11/13	Added "ensure open Airway" to BLS. Moved IM Versed to bottom of options.
Protocol 4-175 - Sepsis	10/04/13	Added "consider" to orthostatic.
	11/11/13	Changed "put baby to nurse" to "have mother breastfeed."
Protocol 5-030 - Burns	1/29/14	Added consider saran wrap. Replaced Parkland formulas with new ABLS fluid guidelines. Added consider direct transport to burn center guidelines. Added contraindication for King Airway and 7.5 ET tube desired.
Protocol 5-040 - Chest Trauma	10/04/13	Indented BLS CPAP under Flail Chest.
	12/13/13	Removed CPAP as BLS skill, now is "assist ALS."
Protocol 5-050 - Extremity Trauma	11/29/13	Added "consider Tourniquet" to BLS.
	1/29/14	Added cold pack and dressings from orthopedic injury CMH policy.
Protocol 5-060 - Eye Injury	10/04/13	Moved Morgan Lens from ALS to BLS.

Protocol	Date	Changes description
Protocol 5-070 - Head Trauma	11/19/13	Changed SMR mandatory to SMR "as required."
Protocol 5-090 - Trauma Arrest	10/04/13	Removed need for 20 minutes of ACLS and added immediate trauma termination from 6-140.
Section 6-010 - Acquisition of Medical Control	1/29/14	Added comment if med control cannot be contacted from CMH policies.
Section 6-020 - Air Ambulance	1/29/14	Coordinated protocol with CMH policies.
Section 6-030 - Competencies and Education	12/13/13	Added National Scope of Practice graphic.
	1/29/14	Coordinated protocol with CMH policies.
Protocol 6-055 - Decontamination	1/29/14	Coordinated protocol with CMH policies.
Protocol 6-080 - Event Standby	10/04/13	Changed "ALS bag" to "first-in bag." Changed "will" to "may" provide ALS ambulance.
	1/29/14	Coordinated protocol with CMH policies.
Protocol 6-090 - Hazardous Atmosphere Standby	1/29/14	Removed "rehabilitation" from title.
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)	1/29/14	Added "request second unit if possible."
Section 6-120 - Transfer of Care	10/04/13	Added BLS section for EMT maintaining care in new ambulance after breakdown. Specified EMT/Medic maintains care even if new ambulance is not CMH.
	11/11/13	Changed "should maintain pt care" to "may maintain pt care."
Protocol 6-130 - Triage	1/29/14	Defined mass casualty from policy. Added first arriving crew's responsibilities from policies. Added when Triage tags used from policies.
Section 6-140 - Termination of Resuscitation	10/04/13	Specified faxing ePCR only to non-CMH facilities.
	1/29/14	Added if at healthcare facility, scene may be cleared. Coordinated with CMH policies.
Part 7 - Medication Protocols	10/07/13	Added images of typical medication (vials).
Section 7-010 - Acetaminophen (Tylenol)	11/11/13	Added adult dose.
Section 7-060 - Aspirin	12/20/13	Added EMT scope of practice statement.
Section 7-070 - Ativan (Lorazepam)	10/09/13	Added option for SL tablet.
Section 7-140 - Decadron (Dexamethasone)	11/11/13	Added IV/IO/IM/PO and moved Neb to last resort.
Section 7-190 - Epinephrine 1:1,000	10/06/13	Added "medication" should be protected from light.
	12/20/13	Added EMT scope of practice statement.
Section 7-200 - Epinephrine 1:10,000	10/06/13	Added "medication" should be protected from light.
Section 7-230 - Fentanyl (Sublimaze)	1/29/14	Coordinated with CMH policies.
Section 7-250 - Glucose	12/20/13	Added EMT scope of practice statement.
Section 7-280 - Hydralazine (Apresoline)	11/11/13	Added adult dose.
Section 7-390 - Morphine	1/29/14	Coordinated with CMH policies.
Section 7-440 - Normal Saline (NS, Sodium Chloride)	12/20/13	Added EMT scope of practice statement.
Section 7-460 - Oxygen	10/09/13	Major modification to include titration based on Mercy Life Line protocols.
	12/20/13	Added EMT scope of practice statement.
	1/29/14	Coordinated with CMH policies.
Section 7-580 - Valium (Diazepam)	1/29/14	Coordinated with CMH policies.
Section 7-600 - Versed (Midazolam)	1/29/14	Coordinated with CMH policies.
Section 8-010 - Automated External Defibrillator (AED)	12/15/13	Added EMT scope of practice statement.
Section 8-020 - Blood Draw Kit	1/29/14	Coordinated with CMH policies.
Section 8-032 - Capnometer	12/15/13	Changed to ALS skill.
Protocol 8-040 CombiTube	12/15/13	Added EMT scope of practice statement.
Section 8-050 - Continuous Positive Airway Pressure (CPAP)	12/15/13	Changed to ALS skill.
Section 8-060 - Cot	12/15/13	Added EMT scope of practice statement.
	1/29/14	Added number of lifters based on patient weight from CMH policies.
Section 8-120 - Glucometer	12/15/13	Added EMT scope of practice statement.
Section 8-130 - Intranasal (IN) Device	11/11/13	Added comment that IV route is preferred.
Section 8-150 - Kendrick Extrication Device (KED)	12/15/13	Added EMT scope of practice statement.
Section 8-160 - King LTSD Airway	12/15/13	Added EMT scope of practice statement.
Section 8-170 - Laryngeal Mask Airway (LMA) Supreme	12/15/13	Added EMT scope of practice statement.
Section 8-190 - LifePak	12/15/13	Added EMT scope of practice statements.
Section 8-210 - Morgan Lens	11/11/13	Changed to BLS and added ALS section for Tetracaine.
	12/15/13	Changed back to ALS skill.
Section 8-230 - Naso-Pharyngeal Airway (NPA)	12/15/13	Added EMT scope of practice statement.
Section 8-260 - Oro-Pharyngeal Airway (OPA)	12/15/13	Added EMT scope of practice statement.
Protocol - 8-310 MAST	12/15/13	Added EMT scope of practice statement.
Section 8-330 - Portable Ventilator	12/15/13	Changed to BLS skill
	1/29/14	Changed back to ALS skill.



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Protocol	Date	Changes description
Section 8-350 - Spinal Motion Restriction (SMR)	11/19/13	Added EMS Physicians position statement on backboards to only immobilize patients with spinal symptoms or altered consciousness.
	12/15/13	Added EMT scope of practice statement. Added facial bleeding and supine dyspnea to backboard contraindications. Added multi-person lift to procedure vs log-roll.
	1/29/14	Added c-collars should only be removed by ER MD from CMH policies.
Section 8-360 - Splint	12/15/13	Added EMT scope of practice statement.
Section 8-370 - Suction	12/15/13	Added EMT scope of practice statement.
Section 8-375 Tablet	12/10/13	Added Tablet protocol (for STEMI transmission).
Section 8-390 - Tourniquet	11/29/13	Added indications for use. Added precautionary statement about re-perfusion injury. Added ALS analgesics and Tourniquet removal instructions. Added Combat Application Tourniquet instructional graphic.
	12/15/13	Added EMT scope of practice statement.
Section 8-400 - Traction Splint	12/15/13	Added EMT scope of practice statement.

Changes from version 3 to version 4 (Drew)

Version Four is named in dedication to Charles Richard Drew who was an American physician who developed techniques for blood storage and protested the practice of segregating blood supplied based on race of the donor.

Protocol	Date	Changes description
Entire document	12/12/14	Changed Pre-Hospital Services to Emergency Medical Services
	3/30/15	Added sections for EMR and changed BLS/ALS to EMT/Paramedic.
	3/31/15	Added QR codes and links to research articles.
	4/7/15	Changed several headings from "Protocol" to "Section" to indicate they are informational and not to be used in documentation as the protocol used to treat the patient.
	4/14/15	Changed "<" to "less than", ">" to "greater than", and "MFR" to "EMR" throughout document to reduce confusion and align with national terminology.
Part 0 - Front Matter	4/14/15	4/1/15 version approved and signed by Dr. Merk and Neal Taylor.
	12/12/14	Added definition of pediatric. Added DELIBERATE ACTIONS.
	3/2/15	Removed DELIBERATE ACTIONS.
Section 0-300 - Table of Contents	3/30/15	Added statement about EMR, EMT, and medic and the adoption of these protocols by first responder agencies.
	12/12/14	Added column to identify Subject Matter Experts (SME).
Protocol 1-010 - General Assessment and Treatment - Medical	3/2/15	Removed SME column and created separate Excel document.
	12/12/14	Added if patient contact time less than 15 min, only one set of vitals needed. Added definition of DELIBERATE ACTIONS.
Protocol 1-020 - General Assessment and Treatment - Trauma	3/2/15	Removed DELIBERATE ACTIONS.
	12/12/14	Added comment to maintain patient temp. Added comment if patient contact time less than 15 min, only one set of vitals needed. Added definition of DELIBERATE ACTION. Removed list of trauma centers.
	3/2/15	Removed DELIBERATE ACTION. Moved location from 5-010 to 1-020 to keep general assessment protocols together.
	3/30/15	Added trauma destination determination flowchart.
Protocol 2-010 - Asystole	4/3/15	Added "consider SMR."
	12/12/14	Added consider Gastric Tube.
Protocol 2-020 - Atrial Fibrillation (A-Fib) or Atrial Flutter	4/3/15	Moved Gastric Tube to Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI).
	12/12/14	Added Procainamide if pulmonary edema based on Dr. Nix conversation about a specific patient.
Protocol 2-040 - Bradycardia	4/3/15	Removed Procainamide after conversation with Dr. Merk. Clarified when to apply Combo Pads according to age and rates.
	12/12/14	Added contact medical control for Pacing Hypothermia patient. Added weight-based Fentanyl dose for greater than 65 yr.
Protocol 2-050 - Chest Discomfort	12/15/14	Added "do not delay for IV."
	12/12/14	Removed Blood Draw. Added Fentanyl if nitro and Morphine contraindicated.
	12/15/14	Added "within 5 min" for ASA administration.
	3/30/15	Added STEMI destination determination flowchart.
Protocol 2-070 - Pulseless Electrical Activity (PEA)	4/3/15	Added "Use Tablet" for STEMI transmission.
	12/12/14	Added consider Gastric Tube.
Protocol 2-090 - Tachycardia Narrow Unstable	4/3/15	Moved Gastric Tube to Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI).
	12/12/14	Made Cardioversion a DELIBERATE ACTION.
	12/15/14	Added "do not delay for IV."
Protocol 2-100 - Tachycardia Wide Stable	3/2/15	Removed DELIBERATE ACTION.
	4/3/15	Clarified when to apply Combo Pads according to age and rates.
Protocol 2-110 - Tachycardia Wide Unstable	12/12/14	Made Cardioversion a DELIBERATE ACTION.
	12/15/14	Added "do not delay for IV."
	3/2/15	Removed DELIBERATE ACTION.
Protocol 2-120 - Torsades de Pointes	4/3/15	Clarified when to apply Combo Pads according to age and rates.
	12/12/14	Added consider Gastric Tube.
Protocol 2-140 - Ventricular Fibrillation (V-Fib or V-Tach)	4/3/15	Moved Gastric Tube to Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI).
	12/12/14	Added consider Gastric Tube.
Protocol 3-010 - Drowning	4/3/15	Moved Gastric Tube to Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI).
	4/14/15	Added "consider" to limb leads.
Protocol 3-020 - Hyperthermia	12/29/14	Changed name from "Heat exhaustion / heat stroke" to "Hyperthermia."
	4/14/15	Added "consider" to limb leads. Moved heat exhaustion and heat stroke sections from ALS to EMR.
Protocol 3-030 - Hypothermia	12/12/14	Changed Fentanyl over 65 yr to weight-based dose.
	1/29/14	Changed name from "Hypothermia / frostbite" to "Hypothermia."
	4/3/15	Moved Gastric Tube to Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI).
	4/14/15	Added "consider" to limb leads.
Protocol 3-040 - Hypothermia Arrest	4/3/15	Moved Gastric Tube to Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI).
Protocol 4-010 - Abdominal Pain	12/12/14	Changed Fentanyl over 65 yr to weight-based dose. Clarified pediatric Zofran and Phenergan dosages.
Protocol 4-020 - Anaphylaxis	2/22/14	Changed Oxygen dose to maintain 100%.



Protocol	Date	Changes description
	4/14/15	Added "consider" to limb leads.
Protocol 4-030 - Asthma	12/12/14	Made Intubation a DELIBERATE ACTION.
	3/2/15	Removed DELIBERATE ACTION.
Protocol 4-040 - Behavioral	1/20/15	Added emotional first aid steps.
Protocol 4-050 - Cerebrovascular Accident (CVA) or Stroke	12/12/14	Removed Blood Draw. Removed pending list of stroke centers.
	3/30/15	Added stroke destination determination flowchart.
	3/31/15	Added NIH Stroke Scale.
	4/14/15	Moved Cincinatti and NIH stroke scales to EMR section.
Protocol 4-060 - Chronic Obstructive Pulmonary Disease (COPD)	12/12/14	Made Intubation a DELIBERATE ACTION.
	3/2/15	Removed DELIBERATE ACTION.
Protocol 4-070 - Congestive Heart Failure (CHF)	12/12/14	Added Capnography. Made Intubation a DELIBERATE ACTION. Increased nitro dose.
	3/2/15	Removed DELIBERATE ACTION.
Protocol 4-080 - Croup	12/12/14	Removed IV/IM from Decadron. Added comment to be cautious administering any medication IV/IM/IO.
	4/14/15	Added "consider" to limb leads.
Protocol 4-090 - Childbirth	12/12/14	Added detailed delivery instructions for normal, breech, and prolapsed cord. Added comments to only Suction if infant is in distress.
	4/14/15	Added comment to only clamp the cord if full-term delivery.
Protocol 4-100 - Fever	12/12/14	Removed Blood Draw.
	4/14/15	Added "consider" to limb leads.
Protocol 4-110 - Hypertension	12/15/14	Added mean arterial pressure comment.
Protocol 4-115 - Hyperglycemia	12/12/14	Removed Blood Draw.
	4/14/15	Added "consider" to limb leads.
Protocol 4-130 - Neonatal Resuscitation	12/12/14	Added consider IV/IO/Umbilical access. Added only to Suction if infant is in distress. Added ET size and depth table.
	4/14/15	Added comment to BVM with room air unless hypoxia.
Protocol 4-140 - Poisoning or Overdose	12/12/14	Removed Blood Draw. Added Dr. Merk comment about mandatory IV access if intentional. Made Intubation a DELIBERATE ACTION. Added comment to see Behavioral protocol for excited delirium.
	3/2/15	Removed DELIBERATE ACTION.
	4/3/15	Moved Gastric Tube to Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI).
Protocol 4-170 - Seizures	12/12/14	Removed Blood Draw.
Protocol 4-175 - Sepsis	12/29/14	Added contents of Protocol 4-150 (Post Partum Hemorrhage) and removed 4-150.
	4/14/15	Added "consider" to limb leads.
Protocol 5-020 - Abdominal Trauma	12/12/14	Made Intubation a DELIBERATE ACTION. Added Fentanyl for greater than 65 yr to be weight-based.
	3/2/15	Removed DELIBERATE ACTION.
Protocol 5-030 - Burns	12/12/14	Added stop the burning process. Added remove all jewelry. Added keep patient warm. Detailed fluid bolus dose for pediatrics greater than 6 yr and less than 6 yr. Added weight-based dose for greater than 65yr for Fentanyl. Added reference to Poisoning for smoke inhalation.
	4/14/15	Added "consider" to limb leads.
Protocol 5-040 - Chest Trauma	12/12/14	Made Intubation a DELIBERATE ACTION. Made Chest Decompression a DELIBERATE ACTION. Added weight-based dose for greater than 65 yr for Fentanyl.
	3/2/15	Removed DELIBERATE ACTION.
	4/14/15	Added "consider" to occlusive dressing.
Protocol 5-050 - Extremity Trauma	12/12/14	Made Intubation a DELIBERATE ACTION. Added weight-based dose for greater than 65 yr for Fentanyl. Considered making crush injury a separate protocol, but then decided against it.
	4/14/15	Added "consider" to limb leads.
Protocol 5-060 - Eye Injury	12/12/14	Added consider IV/IO. Added weight-based dose for greater than 65 yr for Fentanyl.
	4/14/15	Added "consider" to limb leads.
Protocol 5-070 - Head Trauma	12/12/14	Changed target ET _{CO2} from 30-35 to 40-45. Added comment to maintain patient temperature. Changed LR to NS. Added desired SBP table. Defined Cushing's Triad. Made Intubation and RSI DELIBERATE ACTIONS. Added weight-based dose for greater than 65 yr for Fentanyl.
	3/2/15	Removed DELIBERATE ACTIONS.
Protocol 5-080 - Spinal Trauma	12/12/14	Made Intubation and RSI DELIBERATE ACTIONS. Added weight-based dose for greater than 65 yr for Fentanyl.
	4/14/15	Added "consider" to limb leads.
Section 6-010 - Acquisition of Medical Control	12/12/14	Changed phone number for Golden Valley. Changed name for Mercy Joplin Psych. Removed Sac-Osage.
Section 6-020 - Air Ambulance	12/12/14	Added comment to not put aircraft on standby. Moved MVA with fatality from single to the double criteria. Added clarification to Burns that it must be 2nd or 3rd degree. Added Head injury with neuro deficits.
	12/26/14	Added no fly zone map within 23 minutes ground travel time to CMH.
Section 6-030 - Competencies and Education	12/12/14	Removed "quarterly" since we usually have five Competencies annually instead of four.
	3/31/15	Added competency requirements for EMR (1 competency). Added volunteer EMT requirements (2 Competencies). Modified career EMT requirements (4 Competencies). Clarified Paramedic requirements (all Competencies).
Protocol 6-040 - Control of Nausea	12/12/14	Added clarification for pediatric dosages of Zofran and Phenergan.
	12/15/14	Added Regalin medication.
	4/14/15	Added comment that medication is not prophylactic.
Protocol 6-050 - Control of Pain	2/22/14	Added medical control for Ketamine.
	12/12/14	Added weight-based dosage for greater than 65 yr for Fentanyl. Added IM option for Morphine. Added option for Toradol.



Protocol	Date	Changes description
	12/15/14	Added Dilaudid medication.
Protocol 6-055 - Decontamination	12/12/14	Created Decontamination protocol.
Section 6-070 - Documentation	4/3/15	Modified this section to reflect requirements for volunteers vs. career users of this protocol.
	4/14/15	Added ePCR is required by CMH EMS.
Protocol 6-080 - Event Standby	4/3/15	Modified this section to reflect other vehicle standbys at events other than just an ambulance.
Protocol 6-090 - Hazardous Atmosphere Standby	12/15/14	Added rehab suggestions.
Section 6-100 - Off-Duty Protocols	4/3/15	Clarified the application of this protocol on non-CMH employees.
Section 6-105 - Quality Improvement	12/29/14	Added placeholder for this protocol.
	3/31/15	Created content for this protocol with similar requirements to Section 6-030 - Competencies and Education.
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)	2/22/14	Removed Ketamine contraindication to Head injury.
	12/15/14	Added O2 for 5 min if possible.
	12/29/14	Removed "call for orders" from title and moved it into the top of the ALS instructions for clarity.
	4/3/15	Added "Consider Bougie" and "Consider Suction." Moved all instances of Gastric Tube when identified with Intubation to this protocol.
Section 6-120 - Transfer of Care	12/12/14	Removed Blood Draw.
Protocol 6-130 - Triage	12/12/14	New, clearer image for SALT Triage algorithm.
Part 7 - Medication Protocols	2/24/14	Added half-life of most medications.
	12/29/14	Removed "call for orders" from all titles.
Section 7-050 - Amiodarone (Cordarone)	4/1/15	Added comment about prolonging QT interval and the need for 12-lead.
Section 7-060 - Aspirin (Bayer)	3/31/15	Moved Asthma from contraindication to precautions.
Section 7-070 - Ativan (Lorazepam)	12/29/14	Added DEA and street info.
Section 7-090 - Benadryl (Diphenhydramine)	4/1/15	Added comment about prolonging QT interval and the need for 12-lead.
Section 7-160 - Dilaudid (Hydromorphone)	12/29/14	Added DEA and street info. Clarified dosage.
Section 7-220 - Etomidate (Amidate)	2/22/14	Added contraindication of sepsis.
Section 7-230 - Fentanyl (Sublimaze)	12/29/14	Added DEA and street info. Added greater than 65 yr dose same as pediatric.
Section 7-260 - Haldol (Haloperidol)	4/1/15	Added comment about prolonging QT interval and the need for 12-lead.
Section 7-330 - Ketamine (Ketalar)	12/29/14	Added DEA and street info.
Section 7-360 - Lasix (Furosemide)	4/1/15	Added comment about prolonging QT interval and the need for 12-lead.
Section 7-390 - Morphine	12/29/14	Added DEA and street info.
Section 7-420 - Nitroglycerin (Nitrostat, Nitrolingual, Tridil)	12/29/14	Added differentiation for Chest Pain dose and CHF dose.
Section 7-460 - Oxygen	2/22/14	Added unresponsive ROSC dosage and cleaned graphic of SpO ₂ titration rates.
Section 7-470 - Oxytocin (Pitocin)	4/1/15	Added comment about prolonging QT interval and the need for 12-lead.
Section 7-480 - Phenergan (Promethazine)	12/29/14	Added clarification for pediatric dosage.
	4/1/15	Added comment about prolonging QT interval and the need for 12-lead.
Section 7-490 - Procainamide (Pronestyl)	12/29/14	Added NS as option for WPW dilution.
	4/1/15	Added comment about prolonging QT interval and the need for 12-lead.
Section 7-505 - Reglan	12/29/14	Added protocol.
Section 7-525 - Romazicon	12/29/14	Added protocol.
Section 7-560 - Tetracaine	4/14/15	Added halflife.
Section 7-575 - Toradol (Ketorolac)	12/29/14	Added protocol.
Section 7-580 - Valium (Diazepam)	12/29/14	Added DEA and street info.
Section 7-600 - Versed (Midazolam)	12/29/14	Added DEA and street info.
Section 7-620 - Zofran (Ondansetron)	12/29/14	Added pediatric dosage clarification.
	4/1/15	Added comment about prolonging QT interval and the need for 12-lead.
Part 8 - Equipment Protocols	12/29/14	Removed "call for orders" from all titles.
Section 8-020 - Blood Draw Kit	12/29/14	Added "consider" to indications.
Section 8-032 - Capnometer	12/29/14	Moved Protocol 8-250 (Nellcor Capnometer) to this location and removed 8-250.
Section 8-060 - Cot	4/3/15	Added "Consider Stair Chair."
Section 8-070 - Cricothyrotomy Kit	12/29/14	Added info from 8-330 (QuickTrach II) and removed 8-330.
Section 8-075 - Decompression Needle	12/29/14	Created this protocol from 8-380 (Thoracentesis) and 8-410 (Turler Needle). Removed 8-380 and 8-410.

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Protocol	Date	Changes description
Section 8-080 - Endotracheal Tube (ET)	4/3/15	Added "Consider Neo-Syneprine" and "Consider King"
Section 8-135 - Intraosseous (IO) Needle	1/8/15	Moved Protocol 8-100 (EZ-IO) to this location and removed 8-100.
Section 8-142 - IV Pump	12/29/14	Added this protocol from 8-300 (Plum Pump) and removed 8-300.
Section 8-230 - Naso-Pharyngeal Airway (NPA)	1/5/14	Removed "Unconscious or unresponsive" from indications.
Section 8-330 - Portable Ventilator	12/29/14	Added this protocol from 8-270 (ParaPac Ventilator) and removed 8-270.
Section 8-350 - Spinal Motion Restriction (SMR)	4/3/15	Clarified indications and added "Consider KED."
Section 8-370 - Suction	12/29/14	Removed "S-Scort" from the name of this protocol.
Section 8-400 - Traction Splint	12/29/14	Added info from 8-340 (Sager Splint) and removed 8-340.
Section 9-030 - Subject Matter Experts	4/3/15	Created this section to track SMEs.
Section 9-040 - Index	4/3/15	Created this section.
Section 9-050 - Glossary of Abbreviations	4/14/15	Created this section at the specific request of Dr. Merk.

Changes from version 4 to version 5 (Einthoven)

Version Five is named in dedication to Willem Einthoven who was a Dutch doctor who invented the first practical electrocardiogram (ECG).

Protocol	Date	Changes description
Entire document	11/17/15	Added EMH (Ellett Memorial Hospital) to each location where CMH (Citizens Memorial Hospital) is mentioned.
	11/18/15	Version 5 dated December 1st, 2015 approved and signed by Dr. Merk, Dr. Kramer, Neal Taylor, and Cathy Menninga. Created two cover pages (one for CMH and one for EMH) for signatures.
Part 0 - Front Matter	5/31/15	Added comments about medications and equipment currently available on ambulances can be found in Section 7-001 - Medications Currently on Response Vehicles and Section 8-001 - Equipment Currently on Response Vehicles. Also added space to fill in who the hard copy is issued to.
Section 0-100 - Hard-Copy Protocol Maintenance Agreement	5/8/15	Created this section to clarify expectations of those with hard-copies issued to them.
Protocol 1-020 - General Assessment and Treatment - Trauma	12/26/14	Added Celox and Tourniquet to BLS if bleeding cannot be controlled by simple means.
	5/31/15	Added comment to maintain patient warmth.
Section 1-021 - Trauma Destination Determination Flowchart	9/16/15	Added option to consider bypassing closest trauma center if stable patient or head trauma. Per Dr. Merk's specific request.
	11/17/15	Added northern destinations that might be closer to Ellett's response area. Modified quickest transportation mode definition to 35 minutes.
Protocol 2-010 - Asystole	12/12/14	Added 20 min of CPR before movement.
	12/15/14	Replaced CPR with CCR.
	3/31/15	Reverted to CPR per medical director.
	5/31/15	Replaced BLS sections with refer to Protocol 6-025 - Cardiopulmonary Resuscitation (CPR).
	11/17/15	Moved Atropine and Pacing to bottom of treatment list order.
Protocol 2-020 - Atrial Fibrillation (A-Fib) or Atrial Flutter	11/17/15	Increased adult heart rate treatment threshold from 130 to 150.
Protocol 2-030 - Automated External Defibrillation (AED)	12/14/14	Replace CPR with CCR.
	3/31/15	Reverted to CPR per medical director.
	5/31/15	Replaced BLS sections with refer to Protocol 6-025 - Cardiopulmonary Resuscitation (CPR).
Protocol 2-040 - Bradycardia	11/17/15	Reduced adult heart rate treatment threshold from 60 to 50.
Protocol 2-050 - Chest Discomfort	8/6/15	Moved Aspirin administration from EMT section to EMR section.
	10/21/15	Removed need to contact medical control for inferior MI. Added 1-2 L fluid bolus for right-sided MI. Clarified option for Fentanyl or Morphine for additional pain control.
Section 2-052 - STEMI Destination Determination Flowchart	11/17/15	Added northern destinations that might be closer to Ellett's response area. Modified quickest transportation mode definition to 35 minutes.
Protocol 2-060 - Post Resuscitative Care	12/12/14	Added consider RSI and cooling.
Protocol 2-070 - Pulseless Electrical Activity (PEA)	12/12/14	Added 20 min of CPR before movement.
	12/15/14	Replaced CPR with CCR.
	3/31/15	Reverted to CPR per medical director.
	5/31/15	Replaced BLS sections with refer to Protocol 6-025 - Cardiopulmonary Resuscitation (CPR).
Protocol 2-140 - Ventricular Fibrillation (V-Fib or V-Tach)	12/12/14	Added 20 min of CPR before movement.
	12/15/14	Replaced CPR with CCR.
	3/31/15	Reverted to CPR per medical director.
	5/31/15	Replaced BLS sections with refer to Protocol 6-025 - Cardiopulmonary Resuscitation (CPR).
Protocol 2-150 - Wolff-Parkinson-White (WPW)	11/17/15	Added treatment criteria of heart rate greater than 150 and symptomatic. Also added option for Amiodarone instead of Procainamide.
	12/14/14	Replaced CPR with CCR.
Protocol 3-010 - Drowning	3/31/15	Reverted to CPR per medical director.
	5/31/15	Replaced BLS (pulseless) sections with refer to Protocol 6-025 - Cardiopulmonary Resuscitation (CPR).
	11/17/15	Added comment to consider biphasic energy doses.
	12/15/14	Replaced CPR with CCR.
Protocol 3-030 - Hypothermia	3/31/15	Reverted to CPR per medical director.
	5/31/15	Replaced BLS (pulseless) sections with refer to Protocol 6-025 - Cardiopulmonary Resuscitation (CPR).
	11/17/15	Added comment to consider biphasic energy doses.
	12/15/14	Replaced CPR with CCR.
Protocol 3-040 - Hypothermia Arrest	3/31/15	Reverted to CPR per medical director.
	5/31/15	Combined this protocol into Protocol 3-030 - Hypothermia.
Protocol 4-020 - Anaphylaxis	11/17/15	Reduced Epi 1:10,000 adult dose from 0.3 mg to 0.1 mg IV. Reduced pediatric Benadryl dose from 1.25 mg/kg to 1 mg/kg. Altered pediatric bronchodilator treatments to Albuterol unless over 6 yr old, then Duoneb.
Protocol 4-030 - Asthma	11/17/15	Increased Xopenex indication from heart rate of 100 to 110.
Protocol 4-040 - Behavioral	2/22/14	Added Ketamine after medical control for severe.
	12/15/14	Added greater than 65 Ketamine dose.
	11/17/15	Modified severe adult Haldol dose from 5 mg to 2-5 mg.



Protocol	Date	Changes description
Section 4-052 - NIH Stroke Scale Images	5/5/15	Created this section for images to accompany NIHSS.
Section 4-053 - Stroke Destination Determination Flowchart	5/5/15	Changed this section from 4-052 to 4-053 to accommodate NIHSS images.
	11/17/15	Added northern destinations that might be closer to Ellett's response area. Modified quickest transportation mode definition to 35 minutes.
Protocol 4-090 - Childbirth	11/17/15	Added comment that patient should be transported to a hospital with an OB department.
Protocol 4-115 - Hyperglycemia	11/17/15	Added comment that medical control must be contacted if any ALS intervention has been performed prior to PRC.
Protocol 4-140 - Poisoning or Overdose	11/17/15	Modified adult Narcan administration to 0.2-0.4 mg with a max of 2 mg.
Protocol 4-170 - Seizures	8/6/15	Added reference to Protocol 4-110 - Hypertension protocol for the hypertensive, pregnant, seizing patient.
	12/26/14	Added TXA.
Protocol 5-020 - Abdominal Trauma	5/31/15	Re-worded indications for TXA for better clarity.
	9/16/15	Added by request of Dr. Merk to TXA indications that signs of shock must still be present after 1 L fluid bolus.
	12/12/14	Made Intubation and RSI DELIBERATE ACTIONS. Added indications for RSI.
Protocol 5-030 - Burns	3/2/15	Removed DELIBERATE ACTIONS.
	12/26/14	Added TXA.
Protocol 5-040 - Chest Trauma	5/31/15	Re-worded indications for TXA for better clarity.
	9/16/15	Added by request of Dr. Merk to TXA indications that signs of shock must still be present after 1 L fluid bolus.
	11/17/15	Added "tension" pneumothorax as indication for decompression.
Protocol 5-050 - Extremity Trauma	12/26/14	Added TXA.
	5/31/15	Re-worded indications for TXA for better clarity.
Protocol 5-070 - Head Trauma	9/16/15	Added by request of Dr. Merk to TXA indications that signs of shock must still be present after 1 L fluid bolus.
	12/12/14	Added RSI indications.
Section 6-010 - Acquisition of Medical Control	11/17/15	Removed comment that Morphine is contraindicated in head trauma.
	11/17/15	Added PRC exception to rule that only paramedics can obtain medical control. Added medical control clarification for EMH vs CMH ambulances.
Section 6-021 - No Fly Zone	11/17/15	Modified maps to indicate 35 minute drive time instead of 23 minute to account for landing and patient report. Added EMH district to maps.
	12/12/14	Created cardio cerebral resuscitation protocol.
	12/26/14	Added Atropine, sodium bicarb, Amiodarone, Pacing, pediatric dosages.
	3/31/15	Reverted to CPR per medical director.
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)	5/31/15	Added comment to refer to
	11/17/15	Added comment to perform continuous compressions with passive oxygen and basic airway for 3 cycles on witness arrest with a shockable rhythm based on 2015 AHA recommendations. Added comment to consider biphasic energy doses. Added option for NPA in addition to OPA.
Section 6-030 - Competencies and Education	9/16/15	Added requirements for annual RSI skill scenarios and anesthesia intubations.
Protocol 6-040 - Control of Nausea	11/17/15	Removed Regalin.
Protocol 6-050 - Control of Pain	5/5/15	Modified Ketamine for chemical extrication (4 mg/kg IM and removed medical control).
	8/6/15	Added IM route for Fentanyl. Added IM route for Morphine. Added analgesic and dissociative doses of Ketamine. Added comment to half the dose of Ketamine if age over 65 yr.
	11/17/15	Modified over 65 yr old Fentanyl dose to 25-50 mcg with a max of 150 mcg.
Section 6-070 - Documentation	11/17/15	Added medical control order for PRC if BLS-only crew. Added medical control order for PRC if any ALS intervention has been performed.
Protocol 6-080 - Event Standby	8/6/15	Changed instruction to keep football equipment in place to remove football equipment prior to transport based on new recommendations by the National Athletic Trainers Association.
Protocol 6-085 - High-Threat Response	12/29/14	Added placeholder for this protocol.
	4/14/15	Renamed this protocol from Tactical Response to High-Threat Response.
	5/31/15	Re-worded indications for TXA for better clarity.
	8/6/15	Changed law enforcement officer to threat elimination specialist to encompass other threats such as hazmat.
Section 6-105 - Quality Improvement	9/16/15	Removed requirements for quality meetings to be held in each county. Added indications for calls to be reviewed that meet RSI requirements. Also added that crew and responders will be invited.
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)	4/28/15	Added 15 lpm O2 via NC. Added avoid BVM if SpO2 above 90%. Added maintain warmth. Added indication for RSI. Added 250 ml fluid bolus. Added Fentanyl as premedication. Added Ketamine onset and duration. Added Etomidate contraindicated in sepsis. Increase Rocuronium dose from 1 to 1.5 mg/kg. Added elevate head of cot. Moved continued paralysis under continued sedation. Added option for Ketamine continued sedation.
	5/8/15	Replaced specific seizure control meds and dosages with reference to seizure protocol.
	8/6/15	Added comment to delay paralysis to allow preoxygenation if appropriate.
	9/16/15	Modified initial paralyzation doses per Dr. Merk request. Changes rapid dose from 1.5 mg/kg to 0.6 mg/kg. Changed continued paralyzation to only be indicated when patient is moving.
	11/17/15	Made prophylactic atropine administration to pediatric a consideration due to 2015 AHA recommendations removed atropine from routine administration prior to intubation.
Section 6-111 - RSI Dosing Sheet	4/28/15	Created this section for quick reference sheet.
	6/8/15	Updated shading and other factors for better readability.
	9/16/15	Updated chart to reflect new Rocuronium doses and concentrations from pharmacy.
	12/12/14	Added comment that adults should receive 20 min of CPR before movement.

Protocol	Date	Changes description
Section 6-140 - Termination of Resuscitation	12/15/14	Changed CPR to CCR.
	3/31/15	Reverted to CPR per medical director.
	11/17/15	Added clarification for EMH vs CMH faxing ePCR after termination.
Section 7-001 - Medications Currently on Response Vehicles	5/31/15	Added this section to meet state requirement for medical director approval of what medications are currently carried on ambulances.
	9/16/15	Added Ketamine to narcotic box. Added contents of RSI box.
Section 7-005 - Medications that prolong QT interval	11/17/15	Added this section.
Section 7-020 - Activated Charcoal (Actidose)	11/24/15	Added levomepromazine, Nosinan, Nozinan, Levoprome, delamanid, Deltyba, and papaverine to the list.
Section 7-080 - Atropine (Sal-Tropine)	11/17/15	Modified contraindication from unconsciousness to any altered mental state.
Section 7-090 - Benadryl (Diphenhydramine)	5/5/15	Added Physostigmine as antidote.
	6/1/15	Added indication for Protocol 6-025 - Cardiopulmonary Resuscitation (CPR).
Section 7-120 - Cardizem (Diltiazem)	5/5/15	Added Physostigmine as antidote.
Section 7-170 - Dopamine (Intropin)	6/8/15	Added quick reference dosage chart.
Section 7-230 - Fentanyl (Sublimaze)	6/8/15	Added quick reference dosage chart.
	10/21/15	Added comment that rigid chest syndrome precaution usually occurs with doses greater than 200 mcg.
Section 7-320 - Ipratropium (Atrovent)	11/17/15	Added comment for maximum single dose to be 50 mcg for adults. Clarified over 65 yr old dosage is 25-50 mcg with a max dose of 150 mcg.
	5/5/15	Added Physostigmine as antidote.
Section 7-330 - Ketamine (Ketalar)	5/5/15	Added Physostigmine as antidote.
Section 7-370 - Lidocaine (Xylocaine)	8/6/15	Removed pediatric dosages. Added analgesic vs. dissociative doses. Reduced dissociative dosages. Added comment to half the dose if age over 65 yr.
Section 7-390 - Morphine	6/1/15	Added indication for Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI).
	6/8/15	Added quick reference dosage chart.
Section 7-400 - Narcan (Naloxone)	10/21/15	Added 1-2 minute onset time.
Section 7-420 - Nitroglycerin (Nitrostat, Nitrolingual, Tridil)	6/1/15	Added indication for Protocol 6-025 - Cardiopulmonary Resuscitation (CPR).
Section 7-575 - Toradol (Ketorolac)	6/8/15	Added quick reference dosage chart.
Section 7-578 - TXA (Tranexamic Acid)	9/16/15	Corrected misspelling of Ketorolac.
	12/29/14	Added protocol.
	5/31/15	Added content.
Section 8-001 - Equipment Currently on Response Vehicles	8/6/15	Added colorblindness contraindication. Added precaution for rapid infusion. Added requirement to transport to LI, LII, or LIII trauma center.
	5/31/15	Added this section to meet state requirements for medical director approval of what equipment are currently carried on ambulances.
Section 8-070 - Cricothyrotomy Kit	9/16/15	Added comment that surgical cric must have physician orders.
Section 8-075 - Decompression Needle	6/1/15	Added indication for Protocol 6-085 - High-Threat Response.
Section 8-080 - Endotracheal Tube (ET)	6/1/15	Added indication for Protocol 6-085 - High-Threat Response.
Section 8-110 - Gastric Tube	6/1/15	Added indication for Section 8-170 - Laryngeal Mask Airway (LMA) Supreme.
Section 8-120 - Glucometer	6/1/15	Added indication for Protocol 6-025 - Cardiopulmonary Resuscitation (CPR).
Section 8-125 - Hemostatic Agent	12/29/14	Added this protocol.
	5/31/15	Added content.
Section 8-160 - King LTSD Airway	5/5/15	Added mandatory statement for inserting gastric tube for confirmation.
Section 8-170 - Laryngeal Mask Airway (LMA) Supreme	5/5/15	Updated this protocol from basic LMA to LMA supreme with specific procedure from manufacturer and included mandatory statement for gastric tube similar to King airway.
	6/1/15	Added indications in Protocol 6-025 - Cardiopulmonary Resuscitation (CPR), Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI), and Section 8-080 - Endotracheal Tube (ET).
Section 8-190 - LifePak	6/1/15	Added indications for Protocol 6-025 - Cardiopulmonary Resuscitation (CPR) in defibrillation and pacing.
	11/17/15	Added comment to consider biphasic energy doses.
Section 8-375 Tablet	11/17/15	Removed this section due to removing tablets from ambulances.
Section 8-380 - Thermometer	11/29/15	Added a lot of content based on manufacturer documentation.
Section 8-390 - Tourniquet	6/1/15	Added indication for Protocol 6-085 - High-Threat Response.
Section 9-020 - Change Log	5/8/15	Reduced the text size to shorten this section.
Section 9-030 - Subject Matter Experts	11/17/15	Removed this section.





Changes from version 5 to version 6 (Fleming)

Version Six is named in dedication to Sir Alexander Fleming who was a Scottish biologist and pharmacologist who discovered penicillin.

Protocol	Date	Changes description
Entire document	12/28/15	Added RN wherever Paramedic was listed to facilitate RNs working in the paramedic role on an ambulance.
Protocol 4-175 - Sepsis	12/4/15	Created this protocol.
Section 6-010 - Acquisition of Medical Control	12/4/15	Modified "Medical control SHALL be provided by receiving hospital" to "is preferred to."
Protocol 6-085 - High-Threat Response	12/2/15	Added comment that crews should enter high-threat situations in coordination with incident command.
Section 7-005 - Medications that prolong QT interval	12/22/15	Added Oxaliplatin, Eloxatin, Asenapine, Saphris, Sycrest, Hydrocodone, Hysingla, and Zohydro.



Changes from version 6 to version 7 (Gause)

Version Seven is named in dedication to Gregory Gause who was a Russian biologist who dedicated most of his later life to the research of antibiotics.

Protocol	Date	Changes description
Section 0-010 - Master Signature Page	1/27/16	Added MPDS medical direction details for sections requiring specific instructions in card set.
	2/3/16	Combined all signature pages into one page for ease of maintaining.
	2/6/16	Added community responder AED content.
Section 0-020 - Standing Orders for Agency Type	2/3/16	Added this section to handle specifics for each agency that were previously handled on separate signature pages.
	2/6/16	Added community responder AED content.
Protocol 2-030 - Automated External Defibrillation (AED)	2/6/16	Added section for community responders. The intent of this addition is to provide standing protocols for community agencies and organizations to utilize for the use of their AEDs.
Protocol 1-010 - General Assessment and Treatment - Medical	2/3/16	Added EMD section.
Protocol 1-020 - General Assessment and Treatment - Trauma	2/3/16	Added EMD section.
Protocol 2-050 - Chest Discomfort	2/3/16	Added EMD section for MPDS medical direction.
Protocol 3-010 - Drowning	2/3/16	Added EMD section for MPDS medical direction.
Protocol 4-010 - Abdominal Pain	2/3/16	Added comment that IV preferred location is in left AC and to use pigtail extension.
Protocol 4-050 - Cerebrovascular Accident (CVA) or Stroke	2/3/16	Added EMD section for MPDS medical direction.
Protocol 4-090 - Childbirth	2/3/16	Added EMD section for MPDS medical direction.
Protocol 5-030 - Burns	2/3/16	Added EMD section.
Protocol 5-085 - Superficial Penetration	1/28/16	Created this section.
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)	2/3/16	Added EMD section for MPDS medical direction.
	2/6/16	Added reference to AED protocol.
Section 6-030 - Competencies and Education	1/28/16	Added option for CRNA to verify intubations instead of just an anesthesiologist.
Protocol 6-060 - Do Not Resuscitate (DNR)	2/3/16	Added TPOPP comfort measures.
Section 6-105 - Quality Improvement	2/3/16	Added EMD section with dispatch center requirements.
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)	1/26/16	Added comment that EMH is not authorized for RSI.
Section 6-125 - Transfer Out of Hospital	2/3/16	Created this section.
Section 6-140 - Termination of Resuscitation	2/3/16	Added EMD section for MPDS medical direction.
Section 7-001 - Medications Currently on Response Vehicles	1/26/16	Added comments that the following are not authorized for EMH and not carried on their ambulances: - Cardizem - Decadron - Etomidate - Haldol - Heparin - Hydralazine - Ketamine - Neo-Synephrine - Rocuronium
	2/3/16	Changed section title from "currently on ambulances" to "currently on response vehicles"
Section 8-001 - Equipment Currently on Response Vehicles	1/26/16	Added comments that the following are not authorized for EMH and not carried on their ambulances: - King Airway - LMA
	2/3/16	Changed section title from "currently on ambulances" to "currently on response vehicles" Added comment that equipment can be used up to 5 years past expiration date if unopened and undamaged.
Section 8-010 - Automated External Defibrillator (AED)	2/6/16	Added content for AED accessibility, supplies, maintenance, and what to do if the AED is used. The intent of these additions is to provide standing protocols for community agencies and organizations to utilize for the use of their AEDs.
Section 8-140 - Intravascular (IV) Needle	2/3/16	Added comments for preferred size (18-20), preferred site (left or right AC), and to use a pigtail extension.
Section 8-190 - LifePak	1/20/16	Changed Downloading ePCR from ALS to BLS procedure.



Changes from version 7 to version 8 (Harvey)

Version eight is named in dedication to William Harvey who was an English physician who was the first to completely describe the circulatory system and details of the properties of blood.

Protocol	Date	Changes description
Entire document	7/22/16	Added levels for AEMT to all protocols. AEMT scope of practice includes: - IV access and fluid administration of NS and LR. - SL Nitroglycerin for chest discomfort. - IM Epi for anaphylaxis. - IM Glucagon for hypoglycemia. - IV Dextrose for hypoglycemia. - Nebulized bronchodilators for asthma. - IM and IN Narcan for narcotic overdose.
	7/24/16	Removed all QR codes on each section and links to research articles. Replaced with one link and QR code at the front of the document to reduce broken link issues we've had in the past.
Section 0-020 - Standing Orders for Agency Type	4/12/16	Added reference for EMD to Section 6-020 - Air Ambulance.
	7/28/16	Clarified first responder standing orders regarding AEMT, RN, and paramedics responding with first responder agencies may only perform at the EMT level.
Section 0-250 - EMS Research	7/24/16	Created this section to only have one link and QR code instead of one link on each protocol to reduce the broken links problems.
Protocol 1-010 - General Assessment and Treatment - Medical	7/22/16	Added comment than BLS truck with ALS patient shall transport to closest ER or CMH.
Protocol 1-020 - General Assessment and Treatment - Trauma	7/22/16	Added comment than BLS truck with ALS patient shall transport to closest ER or CMH.
Section 1-021 - Trauma Destination Determination Flowchart	7/22/16	Added comment than BLS truck with ALS patient shall transport to closest ER or CMH.
Section 1-030 - Assessment Tools	7/22/16	Added this section.
Protocol 2-020 - Atrial Fibrillation (A-Fib) or Atrial Flutter	6/27/16	Added note that IV access must be in an AC space (left is preferred).
Protocol 2-050 - Chest Discomfort	6/27/16	Added note that IV access must be in an AC space (left is preferred).
	7/5/16	Added comments to BLS side to put the patient in a gown with combo pads if STEMI.
	7/22/16	Moved Nitro SL to AEMT section.
	7/24/16	Moved 12-lead acquisition and transmission to BLS side with note about interpretation by ER physician if no ALS is available.
	7/25/16	At the request of Dr. Merk, added the comment to ensure IV access prior to nitro administration.
	7/28/16	At the request of Morrisville Fire, specified four 81 mg aspirin tablets.
	8/2/16	At request of Dr. Kramer, changed transmitting 12-lead for BLS to closest ER for interpretation instead of CMH.
Section 2-052 - STEMI Destination Determination Flowchart	7/22/16	Added comment than BLS truck with ALS patient shall transport to closest ER or CMH.
Protocol 2-060 - Post Resuscitative Care	7/22/16	Moved NS fluid bolus if hypotension and clear lung sounds to AEMT section.
Protocol 2-080 - Tachycardia Narrow Stable	6/8/16	Added modified valsalva maneuver description.
	6/27/16	Added note that IV access must be in an AC space (left is preferred).
	8/2/16	At the request of Dr. Kramer, remove contraindications for Vagal Maneuver since carotid massage is not listed.
Protocol 2-090 - Tachycardia Narrow Unstable	6/27/16	Added note that IV access must be in an AC space (left is preferred).
Protocol 2-100 - Tachycardia Wide Stable	6/27/16	Added note that IV access must be in an AC space (left is preferred).
Protocol 2-110 - Tachycardia Wide Unstable	6/27/16	Added note that IV access must be in an AC space (left is preferred).
Protocol 2-140 - Ventricular Fibrillation (V-Fib or V-Tach)	6/8/16	Added comment to contact medical control for dual sequential defibrillation after five unsuccessful defibrillations.
Protocol 3-020 - Hyperthermia	7/22/16	Moved fluid bolus to AEMT section.
Protocol 3-030 - Hypothermia	7/22/16	Moved rapid transport of pulseless patient under EMT section
Protocol 4-020 - Anaphylaxis	7/22/16	Moved Epi IM and bronchodilators Neb to AEMT section.
Protocol 4-030 - Asthma	6/27/16	Added note that IV access must be in an AC space (left is preferred).
	7/22/16	Moved Epi IM and bronchodilators Neb to AEMT section.
Protocol 4-050 - Cerebrovascular Accident (CVA) or Stroke	7/23/16	Moved obtaining family contact, transport info, and weighing pt to EMT section.
	8/2/16	Corrected typo in the title from Cardiovascular Accident to Cerebrovascular Accident.
Section 4-053 - Stroke Destination Determination Flowchart	4/6/16	Added age requirement of less than 90 yr old to be transported to level 1 center. Added consider CMH as a destination after contacting medical control.
	7/22/16	Added comment than BLS truck with ALS patient shall transport to closest ER or CMH.
Protocol 4-060 - Chronic Obstructive Pulmonary Disease (COPD)	6/27/16	Added note that IV access must be in an AC space (left is preferred).
	7/22/16	Moved bronchodilators to AEMT section.
Protocol 4-070 - Congestive Heart Failure (CHF)	6/27/16	Added note that IV access must be in an AC space (left is preferred).
	7/22/16	Moved bronchodilators to AEMT section.
Section 4-091 - Newborn Assessment	7/23/16	Renamed this section from APGAR to Newborn Assessment and included targeted pre-ductile SpO2.



Protocol	Date	Changes description
Protocol 4-115 - Hyperglycemia	7/22/16	Moved Dextrose and Glucagon to AEMT section.
Protocol 4-130 - Neonatal Resuscitation	7/22/16	Removed umbilical vascular access as an option. Moved Narcan to AEMT section.
Protocol 4-140 - Poisoning or Overdose	7/20/16	Added option for IN Narcan to EMT section if unable to ventilate with respiratory depression.
	7/22/16	Added option for IV/IM/SQ Narcan to AEMT section if unable to ventilate with respiratory depression.
Protocol 4-160 - Pre-Term Labor	7/22/16	Moved NS fluid bolus to AEMT section.
Protocol 4-175 - Sepsis	6/6/16	Added requirement for at least 18 ga IV in AC space.
Protocol 4-180 - Vaginal Bleeding	7/22/16	Moved fluid bolus to AEMT section.
Protocol 5-030 - Burns	7/22/16	Moved fluid bolus to AEMT section.
Protocol 5-040 - Chest Trauma	7/28/16	At the request of Polk EMS Manager, added BVM as an EMT option for stabilizing flail chest.
	7/22/16	Moved fluid bolus to AEMT section.
Protocol 5-050 - Extremity Trauma	7/29/16	Added comment under EMR to not release cursh injury until directed by ALS.
Protocol 5-070 - Head Trauma	7/22/16	Moved fluid bolus to AEMT section.
	7/25/16	At the request of Dr. Merk, added comment to recommend followup with physician for infection monitoring.
Protocol 5-085 - Superficial Penetration	8/2/16	At the request of Dr. Kramer, added "nipple line and above," grossly contaminated wound, and only one end of fish hook through the skin as contraindications for field removal.
Section 6-020 - Air Ambulance	4/12/16	Added EMD section to include contacting Mercy Lifeline and to clearly define there is no such thing as "standby."
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)	7/22/16	Moved Narcan to AEMT section.
Section 6-030 - Competencies and Education	1/18/16	Added comment about RN/paramedics working as volunteer BLS first responder agency.
	7/12/16	Removed requirement for intubations.
	7/29/16	Removed statement that each competency will be held in each county.
Protocol 6-050 - Control of Pain	4/6/16	Added the need for medical control to administer the dissociative dose of Ketamine. This was at specific request of CMH medical director.
	6/29/16	Added consider Benadryl with all Morphine administrations.
Protocol 6-085 - High-Threat Response	7/20/16	Added comment to operate on VTAC12. Added EMD section for dispatching according to tiers. Added comment to integrate with unified command. Reduced minimum TES assigned to RTF from two to one.
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)	7/24/16	Split into two pages due to text getting too small to read.
	7/25/16	Removed specific list of Succinylcholine contraindications and replaced with reference to the medication section.
Section 6-125 - Transfer Out of Hospital	7/22/16	Added OB patient to Priority One transfer criteria.
Protocol 6-130 - Triage	7/20/16	Added comment that scene comms should be done on VTAC12.
Part 7 - Medication Protocols	7/24/16	Clarified scope of practice in each medication protocol.
Section 7-001 - Medications Currently on Response Vehicles	7/25/16	At the request of Dr. Merk, we need to include Succinylcholine on ambulances and in RSI kits for an option to Rocuronium.
	8/2/16	Removed Ketamine, Succinylcholine, and Toradol from list of meds not currently carried by CMH.
Section 7-005 - Medications that prolong QT interval	2/21/16	Added new drugs according to updated list.
	5/16/16	Added new drugs according to updated list.
	6/14/16	Added new drugs according to updated list.
Section 7-330 - Ketamine (Ketalar)	6/10/16	Added dosing chart created by Brice Flynn.
Section 7-550 - Succinylcholine (Anectine)	7/26/16	At the request of Dr. Merk, added contraindication of neuromuscular disorders such as MS.
Part 8 - Equipment Protocols	7/24/16	Clarified scope of practice in each equipment protocol.
Section 8-001 - Equipment Currently on Response Vehicles	8/2/16	Made comment that automatic chest compressors are only on Cedar County Ambulances.
Section 8-140 - Intravascular (IV) Needle	6/23/16	Clarified which patients should have at least an 18 ga at or above the AC according to an email from Dr. Merk.

Changes from version 8 to version 9 (Inglis)

Version nine is named in dedication to Elsie Inglis who was an innovative Scottish doctor who founded the Scottish Women’s Hospitals.

Protocol	Date	Changes description
Entire Document	8/28/17	Removed all pictures that were decorative instead of informative to make file size smaller.
	9/20/17	Added references to applicable NEMSIS protocol numbers. Aligned this document to new NASEMSO National Clinical Guidance Document published 9/15/17.
Section 0-010 - Master Signature Page	7/5/17	Changed medical director and agency heads names to reflect current staff.
	8/24/17	Added link to download most recent version. Changed William Proctor to Kirk Jones. Moved list of licenses to Section 0-020. Removed paragraph indicating protocols may not reflect what is actually on ambulances.
	8/25/17	Added Humansville Fire Rescue under Dr. Carter. Added Dr. Presley and Pleasant Hope Fire Ptoection District.
	10/17/17	Obtained signatures from Megan Carter and Neal Taylor.
	10/18/17	Obtained signatures from Whitney Gibson and John Hopkins.
	10/20/17	Obtained signature from Dr. Presley.
	10/25/17	Obtained signature from Kirk Jones.
Section 0-100 - Hard-Copy Protocol Maintenance Agreement	8/24/17	Removed this section.
Section 0-250 - EMS Research	8/24/17	Updated link.
Protocol 1-010 - General Assessment and Treatment - Medical	7/1/17	Added comment to allow ALS patient refusal for BLS ambulance to transport to closest facility.
	9/20/17	Added comment to wear high-visibility apparel. Added comment that routine use of lights and siren is not warranted.
Protocol 1-020 - General Assessment and Treatment - Trauma	6/15/17	Per Dr. Carter: “Give pain meds to all possible fractures.” Clarified to “consider giving pain meds to all possible fractures.”
	7/1/17	Added comment to allow ALS patient refusal for BLS ambulance to transport to closest facility.
	9/20/17	Added comment to wear high-visibility apparel. Added AEMT to give LR bolus to maintain SBP at 90. Added target scene time of 10 minutes.
	10/16/17	Added comment to consider active re-warming.
Section 1-021 - Trauma Destination Determination Flowchart	8/24/17	Streamlined flowchart with a comment to follow aircraft protocol when flying patient.
Protocol 2-020 - Atrial Fibrillation (A-Fib) or Atrial Flutter	8/24/17	Removed Ativan.
	9/20/17	Modified pediatric Versed dosages.
Protocol 2-030 - Automated External Defibrillation (AED)	7/1/17	Modified compression rate from 100 to 110.
	9/20/17	Corrected typo where one location still indicated compression rate of 100 instead of 110.
Protocol 2-040 - Bradycardia	8/24/17	Removed Ativan.
	9/20/17	Added option for Epi drip before Dopamine. Modified pediatric Versed dosages.
Protocol 2-050 - Chest Discomfort	8/24/17	Added comment to consider 2 nd IV in R AC.
	9/20/17	Added comment that Nitro spray is contraindicated if phosphodiesterase inhibitor within 48 hours. Added comment to consider serial 12-lead EKGs. Added target scene time of 10 minutes.
Section 2-052 - STEMI Destination Determination Flowchart	8/24/17	Streamlined flowchart with a comment to follow aircraft protocol when flying patient.
Protocol 2-060 - Post Resuscitative Care	8/24/17	Removed Ativan.
	9/20/17	Modified pediatric Versed dosages.
Protocol 2-080 - Tachycardia Narrow Stable	8/24/17	Removed Ativan.
	9/20/17	Modified pediatric Versed dosages.
Protocol 2-090 - Tachycardia Narrow Unstable	8/24/17	Removed Ativan.
	9/20/17	Modified pediatric Versed dosages.
Protocol 2-100 - Tachycardia Wide Stable	8/24/17	Removed Ativan and Procainamide.
	9/20/17	Increased Lidocaine from 0.5 to 1 mg/kg. Modified pediatric Versed dosages.
Protocol 2-110 - Tachycardia Wide Unstable	8/24/17	Removed Ativan and Procainamide.
	9/20/17	Modified pediatric Versed dosages.
Protocol 2-120 - Torsades de Pointes	8/24/17	Removed Ativan.
	9/20/17	Modified pediatric Versed dosages.
Protocol 2-150 - Wolff-Parkinson-White (WPW)	8/24/17	Removed Procainamide.
Protocol 3-020 - Hyperthermia	8/24/17	Removed Ativan.
	9/20/17	Added temp less than 104 for normal mentation and passive cooling. Added temp greater than 104 for altered mentation and active cooling with ice, evaporation, and cold packs. Added “consider” to AEMS cool IV fluids.
Protocol 3-030 - Hypothermia	8/24/17	Added comment to follow AED instructions if no ALS available.
	9/20/17	Added “consider” to AEMS warm IV fluids.
Protocol 4-020 - Anaphylaxis	8/24/17	Removed Ipratropium and clarified doses of Duoneb.
Protocol 4-030 - Asthma	8/24/17	Removed Ipratropium and clarified doses of Duoneb. Removed Decadron.



Protocol	Date	Changes description
Protocol 4-040 - Behavioral	8/24/17	Removed need for medical control for mild anxiety and agitation medication. Removed Ativan. Added Versed. Added comment that restraints include BOTH physical and chemical.
	9/22/17	Moved medical control to top of list under severe behavioral. Modified versed dosages to align with NASEMSO. Added pediatric dosages of versed, haldol, ketamine, and benadryl. Added comment to require waveform capnography after sedation. Removed Valium.
Protocol 4-050 - Cerebrovascular Accident (CVA) or Stroke	7/1/17	Fixed typo from cardiovascular accident to cerebrovascular accident.
	8/24/17	Added comment to walk the patient to the cot. Added comment to contact receiving facility if flying. Added comment to get accurate weight.
	9/22/17	Lowerd glucose treatment threshold from 70 to 60. Added comment the target scene time is 10 minutes. Added comment to avoid multiple IV attempts. Added comment to not treat hypertension.
Section 4-051 - CMH EMS Stroke Assessment Tool	8/24/17	Developed combined tool utilizing NIH and RACE tools.
Section 4-052 - NIH Stroke Scale Images	8/24/17	Modified images to reflect changes to assessment tool.
Section 4-053 - Stroke Destination Determination Flowchart	8/24/17	Added Mercy Springfield as a destination. Streamlined flowchart with a comment to follow aircraft protocol when flying patient.
Protocol 4-060 - Chronic Obstructive Pulmonary Disease (COPD)	8/24/17	Removed Ipratropium and clarified doses of Duoneb.
Protocol 4-070 - Congestive Heart Failure (CHF)	8/24/17	Added Captopril. Removed Lasix. Removed Ipratropium and clarified doses of Duoneb.
	9/22/17	Added comment for Nitro contraindication if phosphodiesterase inhibitor within 48 hours.
Protocol 4-080 - Croup	8/24/17	Removed Decadron.
Protocol 4-090 - Childbirth	9/22/17	Added comment to avoid routine suctioning. Added comment to check and fix cord around neck. Added comment for posterior and anterior pressure to deliver shoulders. Added comment to clamp and cut cord after 1-3 minutes if no distress and immediately if resuscitation and referenced NRP protocol.
Protocol 4-110 - Hypertension	9/22/17	Added specification for pregnant seizing between 20 weeks gestation through 4 weeks post-partum.
Protocol 4-115 - Hyperglycemia	8/24/17	Added this protocol.
Protocol 4-120 - Hypoglycemia	8/24/17	Removed D50W and D25W.
	9/22/17	Reduced treatment threshold from 70 to 60. Removed ALS requirement if level below 40. Added requirement for medical control if no cause of hypoglycemia has been identified. Added more specific pediatric age/weight based dosages for Glucagon.
Protocol 4-130 - Neonatal Resuscitation	9/22/17	Moved chest compressions from ALS to EMR. Added clamping and cutting cord immediately. Added if HR less than 100, BVM with room air followed by 100% O2 if no improvement. Reduced glucose treatment threshold from 40 to 30.
Protocol 4-140 - Poisoning or Overdose	2/2/17	Removed max dose of Narcan.
	8/24/17	Removed Cyanokit.
	9/22/17	Lowered glucose treatment threshold from 70 to 60. Significant additions to ALS sections including dosages for several medical control medications, changed organophosphate poisoning to acetylcholinesterase inhibitor exposure, Atropine dose up to 2,000 mg for acetylcholinesterase, removed medical for calcium chloride jelly for HF exposure, added tricyclic antidepressant overdose, added caustic substance ingestion, added MAOI overdose, added SSRI overdose. .
Protocol 4-170 - Seizures	8/24/17	Removed Ativan. Added Mag Sulfate dosage from hypertension seizing protocol. Added Versed for continued sedation of RSI.
	9/22/17	Lowered glucose treatment threshold from 70 to 60. Removed Valium. Added pregnant hypertension range 20-weeks gestation through 4-weeks post-partum. Simplified pediatric dosages of Versed.
Protocol 4-175 - Sepsis	8/24/17	Added comment to weigh patient on arrival at ER. Added sepsis definition of EtCO2 less than 25. Added sepsis alert terminology to ER.
	9/22/17	Lowered glucose treatment threshold from 70 to 60. Added target scene time of 10 minutes.
Protocol 5-050 - Extremity Trauma	6/15/17	Added comment to consider giving pain meds to all possible fractures.
	9/22/17	Added locations for tourniquet placement.
	10/16/17	Added comment to stop all active bleeding before LR bolus.
Protocol 5-070 - Head Trauma	9/22/17	Added contraindication for c-collar for penetrating neck trauma. Added avulsed tooth and epistaxis treatments to EMR. Added moderate hyperventilation for herniation syndrome.
Protocol 5-080 - Spinal Trauma	9/22/17	Added contraindication for c-collar for penetrating neck trauma.
Protocol 5-085 - Superficial Penetration	7/1/17	Shortened title.
	9/22/17	Added cardiac monitoring and 12-lead for taser.
Section 6-020 - Air Ambulance	8/24/17	Changed contact aircraft from Mercy Lifelie to Cox Air Care. Removed comment that there is no such things as standby.
Section 6-021 - No Fly Zone	9/22/17	Increased no fly zone from 35 minutes to 45 minutes. This aligns with NSEMSO guidelines and is reflected with recent Cox Air Care response times.
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)	9/22/17	Added calcium chloride for dialysis patient.
Protocol 6-040 - Control of Nausea	8/24/17	Removed comment that antiemetics cannot be used prophylactically. Added comment to use Phenergan diluted in NS flush.
	9/22/17	Added PO/SL option for Zofran. Added Benadryl to adult and pediatric.



Protocol	Date	Changes description
	10/16/17	Removed requirement for motion sickness to administer Benadryl.
Protocol 6-050 - Control of Pain	8/24/17	Removed Ativan and Dilaudid. Added BLS pain control measures.
	9/22/17	Reduced all dosages for Toradol by 50% to align with NASEMSO. Increased Ketamine analgesic dose from 0.2 to 0.5. Removed hot pack under BLS pain control. Modified pediatric Versed dosages.
Protocol 6-060 - Do Not Resuscitate (DNR)	7/26/17	Changed title from section to protocol.
	9/22/17	Added dehydration fluid bolus for AEMT. Added POLST and MOLST. Added Versed and Fentanyl options to work of breathing. Added Haldol option to Anxiety.
Section 6-070 - Documentation	8/25/17	Added clarification that an EMR or EMT can perform a PRC if an ambulance has not been dispatched. Removed the requirement for ePCR for first responder agencies.
	8/28/17	Added comment that EMR and EMT can PRC if the patient is transported POV without contacting medical control or supervisor. This is intended to assist fire departments that would otherwise have to wait for an ambulance, attempt to prevent the patient from transporting themselves, or electing for not getting a PRC.
	9/5/17	Added comment about BLS PRC for low MOI and all other requirements of NCN are met.
	9/22/17	Added comment transport is preferred to PRC and PRC is preferred to NCN. Added requirements for ALS or medical control prior to PRC for intoxication, mental impairment, or suicidal intent.
Protocol 6-085 - High-Threat Response	9/22/17	Clarify tier two dispatching for notifying all supervisors.
	10/16/17	Added comment to wear reflective apparel. Removed "E" from MARCHE. Added comment to stop all active bleeding before LR bolus.
Section 6-105 - Quality Improvement	8/24/17	Removed quality review triggers for Ketamine, Vecuronium, and Succinylcholine.
	9/22/17	Added CPR as a quality review trigger.
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)	2/2/17	Changed name to Rapid/Delayed. Moved delayed Rocuronium to preferred.
	8/24/17	Added comment to consult EMT for contraindications. Increased sedation dose of Ketamine from 1 to 1-2 mg/kg. Increased paralyzation dose of Rocuronium from 0.6 to 1.2 mg/kg. Removed Ativan, Succinylcholine, and Vecuronium.
	9/22/17	Modified pediatric Versed dosages.
Section 6-111 - RSI Dosing Sheet	2/2/17	Added comment to use ideal body weight.
Section 6-125 - Transfer Out of Hospital	8/24/17	Added "priority 2" with comment that it is used as low acuity community requests. Added instructions to replace Propofol drips with Ketamine on transfers of intubated patients.
	9/25/17	Added comment that when physician requests ALS transfer, paramedic will attend the patient in the back.
Section 6-140 - Termination of Resuscitation	9/22/17	Added putrefaction as a sign of obvious death for EMD. Added pregnancy with fetus > 24 weeks as contraindication for field termination.
Section 7-001 - Medications Currently on Response Vehicles	8/24/17	Updated according to current ambulance inventory list. Removed Decadron, Lasix, and Procainamide.
	9/22/17	Added 1 bag D10W to cabinets. Added 2 tabs captopril to extra med box. Removed valium from narc box. Added 1 bad D10W to big bag.
	10/16/17	Updated placement of D10W bags.
Section 7-005 - Medications that prolong QT interval	8/24/17	Removed this section.
Section 7-070 - Ativan (Lorazepam)	8/24/17	Removed indications to all protocol references except Protocol 6-060 - Do Not Resuscitate (DNR).
Section 7-090 - Benadryl (Diphenhydramine)	8/24/17	Removed indication to Compazine.
	9/22/17	Added indication for nausea.
Section 7-100 - Calcium Chloride (Calciject)	9/22/17	Added indication for CPR.
Section 7-110 - Captopril (Capoten)	8/24/17	Added indication to Protocol 4-070 - Congestive Heart Failure (CHF).
Section 7-130 - Compazine	8/24/17	Removed this section.
Section 7-135 - Cyanokit	8/24/17	Removed this section.
Section 7-140 - Decadron	8/24/17	Removed this section.
Section 7-140 -	8/24/17	Removed indication for Procainamide. Removed references to D50W and D25W.
	9/22/17	Fixed typo link to hyperglycemia instead of hypoglycemia.
Section 7-160 - Dilaudid	8/24/17	Removed this section.
Section 7-240 - Glucagon	9/22/17	Fixed typo link to hyperglycemia instead of hypoglycemia.
Section 7-250 - Glucose	9/22/17	Fixed typo link to hyperglycemia instead of hypoglycemia.
Section 7-320 - Ipratropium	8/24/17	Removed this section.
Section 7-330 - Ketamine (Ketalar)	8/24/17	Fixed calculation errors in the quick reference sheet.
Section 7-340 - Labetalol (Nomadyne)	8/24/17	Removed reference to Lasix.
Section 7-360 - Lasix	8/24/17	Removed this section.
Section 7-380 - Magnesium Sulfate	9/22/17	Added mixing instructions.
Section 7-400 - Narcan (Naloxone)	8/24/17	Removed indication to Dilaudid.
Section 7-420 - Nitroglycerin (Nitrostat, Nitrolingual, Tridil)	9/22/17	Added contraindication to phosphodiesterase inhibitor within 48 hours.



Protocol	Date	Changes description
Section 7-490 - Procainamide	8/24/17	Removed this section.
Section 7-500 - Propofol	8/24/17	Removed this section
Section 7-505 - Reglan	8/24/17	Removed this section.
Section 7-520 - Rocuronium (Zemuron)	8/24/17	Adjusted doses from adult/pediatric to rapid/delayed.
Section 7-525 - Romazicon	8/24/17	Removed this section.
Section 7-530 - Sodium Bicarbonate (Soda)	9/22/17	Added indication to poisoning.
Section 7-550 - Succinylcholine	8/24/17	Removed this section.
Section 7-570 - Thiamine (Vitamin B1)	9/22/17	Fixed typo link to hyperglycemia instead of hypoglycemia.
Section 7-575 - Toradol (Ketorolac)	8/24/17	Moved contraindication for pregnant women to the top and bolded it.
Section 7-580 - Valium (Diazepam)	8/24/17	Removed link to Romazicon.
Section 7-590 - Vecuronium	9/22/17	Removed this section.
Section 7-600 - Versed (Midazolam)	8/24/17	Removed link to Romazicon.
	9/22/17	Added indication to poisoning. Modified pediatric dosages.
Section 8-001 - Equipment Currently on Response Vehicles	8/24/17	Updated according to current ambulance inventory list. Clarified comment to be able to continue using expired and unopened equipment.
	9/22/17	Added Yankauer containers, Yankauer tubing, AccuCheck control solutions.
	10/16/17	Added cot belt extenders. Updated quantity of face sheilds and N95 masks from 1 box to 4 each. Specified red and blue for restraints.
Section 8-040 - Chest Compressor	8/24/17	Added Lucas 2 manufacturer procedure.
Section 8-050 - Continuous Positive Airway Pressure (CPAP)	8/24/17	Removed Ativan.
Section 8-120 - Glucometer	9/22/17	Added indication for hyperglycemia.
Section 8-160 - King LTSD Airway	8/24/17	Added contraindication for airway burns.
Section 8-240 - Nebulizer	8/24/17	Removed indications to Decadron and Ipratropium.
Section 8-350 - Spinal Motion Restriction (SMR)	9/22/17	Added comment that alert patients should not have manual cervical stabilization. Added contraindication to c-collar for penetrating neck injuries.
Section 9-050 - Glossary of Abbreviations	8/24/17	Removed this section due to combining abbreviations with the index.

Changes from version 9 to version 10 (Jenner)

Version ten is named in dedication to Edward Jenner who was an English physician and scientist who was the pioneer of the smallpox vaccine (the world's first vaccine).

Protocol	Date	Changes description
Entire Document	11/11/17	Added "consider" to a large number of protocol entries to allow critical thinking without being held to sometimes unrealistic mandatory requirements. Added links within document to allow quick reference in an electronic format.
	11/29/17	Obtained signatures from Megan Carter and Neal Taylor.
Section 0-020 - Standing Orders for Agency Type	11/11/17	Added reference to Protocol 6-090 - Hazardous Atmosphere Standby.
Section 0-100 - Protocol Deviation	11/11/17	Added this section with heavy reference to Denver Metro EMS Protocols.
Protocol 1-010 - General Assessment and Treatment - Medical	11/11/17	Clarified requirements for ALS vs BLS patients based on complaint to allow more flexibility.
Protocol 1-020 - General Assessment and Treatment - Trauma	11/11/17	Clarified requirements for ALS vs BLS patients based on complaint to allow more flexibility.
Protocol 2-020 - Atrial Fibrillation (A-Fib) or Atrial Flutter	11/11/17	Replaced Versed and Fentanyl with reference to Protocol 6-050 - Control of Pain for pre-cardioversion.
Protocol 2-040 - Bradycardia	11/11/17	Replaced Versed and Fentanyl with reference to Protocol 6-050 - Control of Pain for pre-cardioversion.
Protocol 2-050 - Chest Discomfort	11/11/17	Added reference to encrypted radio for patient reports.
Protocol 2-060 - Post Resuscitative Care	11/11/17	Replaced Versed and Fentanyl with reference to Protocol 6-050 - Control of Pain for pre-cardioversion.
Protocol 2-080 - Tachycardia Narrow Stable	11/11/17	Replaced Versed and Fentanyl with reference to Protocol 6-050 - Control of Pain for pre-cardioversion. Clarified Amiodarone and Cardizem to be given if Adenosine does not work.
Protocol 2-090 - Tachycardia Narrow Unstable	11/11/17	Replaced Versed and Fentanyl with reference to Protocol 6-050 - Control of Pain for pre-cardioversion.
Protocol 2-100 - Tachycardia Wide Stable	11/11/17	Replaced Versed and Fentanyl with reference to Protocol 6-050 - Control of Pain for pre-cardioversion. Removed directions to mix Amiodarone and Mag Sulfate.
Protocol 2-110 - Tachycardia Wide Unstable	11/11/17	Replaced Versed and Fentanyl with reference to Protocol 6-050 - Control of Pain for pre-cardioversion. Removed instructions to mix Mag Sulfate.
Protocol 2-120 - Torsades de Pointes	11/11/17	Replaced Versed and Fentanyl with reference to Protocol 6-050 - Control of Pain for pre-cardioversion. Removed instructions to mix Mag Sulfate.
Protocol 3-030 - Hypothermia	11/11/17	Removed reference to Protocol 2-030 - Automated External Defibrillation (AED).
Protocol 4-050 - Cerebrovascular Accident (CVA) or Stroke	11/19/17	Added comment to obtain temperature, if able and 18ga in L AC is preferred IV access.
Protocol 4-090 - Childbirth	11/11/17	Added unknown or ignored pregnancy to the list of high-risk pregnancy conditions.
Protocol 4-140 - Poisoning or Overdose	11/13/17	Made this protocol two pages for easier reading.
Protocol 4-180 - Vaginal Bleeding	11/11/17	Changed NS to LR. Added consideration for medical control for TXA use.
Protocol 5-020 - Abdominal Trauma	11/11/17	Added comment that TXA could be used before fluid bolus if obvious life-threatening hemorrhage.
Protocol 5-040 - Chest Trauma	11/11/17	Added comment that TXA could be used before fluid bolus if obvious life-threatening hemorrhage.
Protocol 5-060 - Eye Injury	11/11/17	Moved trauma eye covering from ALS to BLS.
Protocol 5-070 - Head Trauma	11/11/17	Removed Lidocaine before intubation.
Section 6-030 - Competencies and Education	11/11/17	Updated competency schedule.
Protocol 6-040 - Control of Nausea	11/14/17	Changed minimum initial dosage of Phenergan to 6.25 mg to allow more flexibility.
Protocol 6-050 - Control of Pain	11/14/17	Changed minimum initial dosage of Fentanyl to 25 mcg to allow more flexibility.
Protocol 6-055 - Decontamination	11/11/17	Added comment to not put anyone in an ambulance without decontaminating them first.
Protocol 6-090 - Hazardous Atmosphere Standby	11/11/17	Renamed this protocol from IDLH and added EMD section.
Section 6-105 - Quality Improvement	11/11/17	Removed data presentation details. Added "at least one representative" to all the meeting requirements.
	11/19/17	Changed percentage of quality reviews from 10% to 15%. and made adjustments to no longer having monthly meetings in each county.
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)	11/11/17	Removed Lidocaine for head injury prior to intubation. Added comment that continued paralysis is if patient movement even after sedation.
	11/29/17	Updated quick reference chart to new dosages.
Section 6-125 - Transfer Out of Hospital	11/11/17	Updated according to new CMH policy.
Section 6-135 - SALT Triage	11/11/17	Added this section from the image that was too small to read in Protocol 6-130 - Triage.
Section 7-001 - Medications Currently on Response Vehicles	11/11/17	Changes required for new IV pumps: Amiodarone bags and Magnesium Sulfate bags. Removed Lidocaine from RSI kit.
	11/19/17	Increased rocuronium from 2 vials to 4 vials in RSI kit due to increased dosages in version 9 protocols.
Section 7-370 - Lidocaine (Xylocaine)	11/11/17	Removed indications for Protocol 5-070 - Head Trauma and Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)
Section 7-330 - Ketamine (Ketalar)	11/29/17	Updated quick reference chart.
Section 7-380 - Magnesium Sulfate	11/11/17	Removed reference to Section 7-040 - Albuterol (Proventil, Ventolin) and removed mixing instructions.



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Protocol	Date	Changes description
Section 7-578 - TXA (Tranexamic Acid)	11/11/17	Added indication for Protocol 4-180 - Vaginal Bleeding.
	11/14/17	Added comment to all locations of TXA that it can be mixed with LR.
Section 8-001 - Equipment Currently on Response Vehicles	11/11/17	Replaced “turkel needle” with “decompression needle.”
Section 8-380 - Thermometer	11/29/17	Updated quick reference chart.

Changes from version 10 to version 11 (Koch)

Version eleven is named in dedication to Robert Heinrich Herman Koch who was a German physician and founder of modern bacteriology.

Protocol	Date	Changes description
Entire Document	8/24/18	Added Creative Commons log at the bottom of each page. Added link at the top of each page for the link back to the table of contents.
	10/15/18	Various typo corrections.
Section 0-010 - Master Signature Page	8/24/18	Added two-year expiration to the title page. Added Collins Fire, Iconium Fire, Lowry City Fire, Sac Osage Fire, and Wheatland Fire. Changed signatory names as needed for new personnel. Changed definition of pediatric from 18 yr to 16 yr old.
	10/1/18	Obtained signature from Neal Taylor and Jordon Graham.
	10/10/18	Obtained signature from Abel Smith.
	10/16/18	Changed Melissa Fletcher to Robert Coskey for Ellett.
	10/17/18	Added signatures from Kirk Jones, Kevin Presley, and James Ludden.
	10/18/18	Removed Iconium Fire from list of associated fire departments.
	10/31/18	Added signatures from Megan Carter, LaDell Heryford, Travis Foley, Robert Coskey, Justin Norris, and Paul Kramer.
	11/1/18	Changed John Hopkins to Emma Igo. Added signatures from Emma Igo and Greg Wood.
	11/5/18	Added signature from Sarah Newell.
	Section 0-020 - Standing Orders for Agency Type	8/24/18
Section 1-021 - Trauma Destination Determination Flowchart	8/24/18	Changed aircraft transportation mode from 35 min to 45 min.
Protocol 2-010 - Asystole	8/24/18	Added option to drip Epi over 5 min.
Protocol 2-020 - Atrial Fibrillation (A-Fib) or Atrial Flutter	8/24/18	Per Dr. Kramer, added comment to determine and treat cause of tachycardia before Amiodarone or Cardizem.
Protocol 4-030 - Asthma	10/15/18	Added option for Decadron.
Protocol 2-050 - Chest Discomfort	5/3/18	Added comment to ensure accurate weight upon arrival at ER.
Section 2-051 - EKG Interpretation Guide	8/24/18	Fixed axis determination from I, II, III leads to I & AVF.
Protocol 2-060 - Post Resuscitative Care	8/24/18	Added comment to consider remaining on scene to stabilize for ten minutes after ROSC.
Protocol 2-070 - Pulseless Electrical Activity (PEA)	8/24/18	Added option for Epi drip over five min. Added option to consider Dopamine if profound shock is suspected.
Protocol 4-080 - Croup	10/15/18	Added option for Decadron.
Protocol 2-120 - Torsades de Pointes	8/3/18	Per Dr. Kramer, changed Mag Sulfate administration from 15-20 min to 2 min.
Protocol 2-140 - Ventricular Fibrillation (V-Fib or V-Tach)	8/3/18	Per Dr. Kramer, changed Mag Sulfate administration from 15-20 min to 2 min.
	8/24/18	Added option for Epi drip over five min.
Protocol 4-010 - Abdominal Pain	7/3/18	Significantly added to this protocol from paramedic class discussions.
Protocol 4-050 - Cerebrovascular Accident (CVA) or Stroke	3/5/18	Per Mercy Stroke Center, added comments to repeat neuro assessment every 15 min and have two IVs.
Section 4-051 - CMH EMS Stroke Assessment Tool	3/5/18	Aligned numbers to NIHSS. Added comment to arm drift if ataxic rate at 0. Add list of terminology definitions. Changed NIH score to transport to level I center from >21 to >6.
Section 4-053 - Stroke Destination Determination Flowchart	8/24/18	Requested change from 12-hours to 24-hours since last normal. Dr. Carter denied request. Added comment about if transporting to stroke center takes outside of tPA window, it is OK to transport to tPA-capable ER.
Protocol 4-070 - Congestive Heart Failure (CHF)	8/24/18	Per Dr. Kramer, adjusted Nitro drip dose (from 50+ to 60+) and target SBP (from 100 to 90).
Protocol 4-090 - Childbirth	8/24/18	Changed fluid from NS to LR.
Protocol 4-100 - Fever	8/24/18	Fixed typo to indicate Acetaminophen and Ibuprofen treatment is only if fever is greater than 102.
Protocol 4-115 - Hyperglycemia	8/24/18	Added comment to refer to glucometer ranges.
Protocol 4-120 - Hypoglycemia	8/24/18	Added comment to refer to glucometer ranges.
Protocol 4-140 - Poisoning or Overdose	8/24/18	Per Dr. Kramer, added bolded DECON to every step and every level. Moved Glucagon word to each dosage under beta-blocker for reader clarity. Added comment that any Fluorine exposure can be treated as HF exposure.
Protocol 4-160 - Pre-Term Labor	12/21/17	Added comment to consider limb leads.
Protocol 4-165 - Respiratory Distress	8/24/18	Created this section at the request of multiple staff with references to other protocols.
Protocol 4-170 - Seizures	8/24/18	Removed requirement to contact medical control for higher doses of Versed. Added IM option for Versed to 2 mo - 12 yr old.
Protocol 4-175 - Sepsis	8/24/18	Changed SEPSIS definition from SIRS to QSOFA. Changed typo for MAP "greater" to MAP "less."
Protocol 5-030 - Burns	8/24/18	Added link to poisoning protocol. Removed comment to titrate LR to SBP. Added rule of nine graphic.
Protocol 5-040 - Chest Trauma	12/19/17	Added comment to consider pelvic binder if absent or decreased pulses.
Protocol 5-050 - Extremity Trauma	12/19/17	Added comment to consider pelvic binder.
Protocol 5-060 - Eye Injury	8/24/18	Per Morgan Lens manufacturer, requested indication for Morgan Lens for all occupants of a vehicle with airbag deployment. Dr. Carter denied request. Per Morgan Lens manufacturer, changed eye flush solution from NS to LR.
Protocol 5-085 - Superficial Penetration	8/24/18	Per Dr. Kramer, added comment to wrap other hooks before manipulation.
Protocol 5-090 - Trauma Arrest	12/19/17	Added comment to consider pelvic binder.



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Protocol	Date	Changes description
Section 6-010 - Acquisition of Medical Control	8/24/18	Added comment that the sending physician can also be consulted for medical control orders.
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)	8/24/18	Added option to drip Epi over five min.
Protocol 6-050 - Control of Pain	8/24/18	Added comment to consider capnography if narcotic used. Added option for Etomidate for procedural sedation of cardioversion. Removed maximum Fentanyl dose. Changed minimum adult Fentanyl dose from 25 to 12.5 mcg.
Protocol 6-060 - Do Not Resuscitate (DNR)	12/26/17	Per Dr. Carter, removed requirement for DNR to be dated within 365 days.
Section 6-070 - Documentation	12/22/17	Modified comment requiring PRC if individual at any time requested medical treatment
	10/15/18	Added "every effort will be made" to complete PCR within 24 hours at the request of Bolivar Fire.
Section 6-105 - Quality Improvement	10/15/18	Added clarification of percent of meetings are required by each agency.
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)	12/13/17	Per Dr. Carter, removed upper airway obstruction as an RSI contraindication.
Part 7 - Medication Protocols	8/24/18	Added sections back in on common EMS or ER medications for reference only (Decadron, Dilaudid, Ipratropium, Lasix, Procainamide, Propofol, Reglan, Succinylcholine, Valium, Vecuronium). Also made major changes to the layout of each page to add much more information. Removed dosing information to eliminate confusion between these sections and the actual protocols where doses should be found.
Section 7-001 - Medications Currently on Response Vehicles	8/24/18	Made changes to quantities to accurately reflect ALS stock. Created section placeholders for BLS ambulance, EMS supervisor, and rescue vehicles.
	10/15/18	Updated ALS Ambulance, added EMS Supervisor, added BLS Ambulance, added PHFPD, added BCFD.
Section 7-050 - Amiodarone (Cordarone)	8/24/18	Added antidote option of Mag Sulfate if torsades.
Section 7-060 - Aspirin (Bayer)	8/24/18	Added antidote option of Sodium Bicarb.
Section 7-150 - Dextrose	8/24/18	Removed indication of WPW. Added comment about Thiamine administration.
Section 7-170 - Dopamine (Intropin)	8/24/18	Added indication of PEA.
Section 7-220 - Etomidate (Amidate)	8/24/18	Added indication for Control of Pain.
Section 7-240 - Glucagon	8/24/18	Added clarifications for contraindications. Added indication of abdominal pain.
Section 7-250 - Glucose	8/24/18	Removed Thiamine comment.
Section 7-260 - Haldol (Haloperidol)	8/24/18	Added antidote option of Benadryl.
Section 7-330 - Ketamine (Ketalar)	8/24/18	Added comment about slow push to avoid apnea.
Section 7-380 - Magnesium Sulfate	8/24/18	Fixed typo.
Section 7-390 - Morphine	8/24/18	Removed contraindication of abdominal pain.
Section 7-480 - Phenergan (Promethazine)	8/24/18	Added indication of abdominal pain.
Section 7-540 - Solu-Medrol (Methylprednisolone)	8/24/18	Fixed typo. Moved contraindications to precautions.
Section 7-600 - Versed (Midazolam)	8/24/18	Highlighted the importance of pregnancy being a contraindication.
Part 8 - Equipment Protocols	8/24/18	Created section placeholders for BLS ambulance, EMS supervisor, and rescue vehicles.
Section 8-001 - Equipment Currently on Response Vehicles	10/15/18	Updated ALS Ambulance, added EMS Supervisor, added BLS Ambulance, added PHFPD, added BCFD.
Section 8-032 - Capnometer	10/15/18	Moved precautions that pertained to pulseox to LifePak section.
Section 8-120 - Glucometer	8/24/18	Added glucose ranges.
Section 8-190 - LifePak	10/15/18	Added precautions for pulseox from Capnometer section.
Section 8-210 - Morgan Lens	8/24/18	Changed fluid from NS to LR.
Section 8-295 - PICC and Central Line Access Kit	4/5/18	Per CMH Vascular Access Team, added comment to use at least a 10 ml syringe and use a push-pull method.
Section 8-320 - Port Access Kit	4/5/18	Per CMH Vascular Access Team, added comment to use at least a 10 ml syringe and use a push-pull method.
Section 8-350 - Spinal Motion Restriction (SMR)	10/15/18	Fixed issues with page numbers in indications section.
Section 8-390 - Tourniquet	8/24/18	Added scope of practice to all levels.

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