Cedar, Hickory, Polk, & St Clair EMS Protocols

Part 0 - Front Matter

Section 0-010 - Master Signature Page

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This document is only valid for two years after this date or when the next version is released, whichever is sooner.

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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 179).

Dispatch Centers (Cedar County Sheriff Department and Polk County Central Dispatch):
Emergency Medical Dispatcher (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
	14-D-2 (underwater), dispatch **EMS Supervisor** (or additional ALS ambulance).	
Protocol 15 (Electrocution)	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).	

Additionally, communications center directors shall be familiar with and strive to meet NFPA 1221 (Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems), specifically:

- Section 7.2: Telecommunicator Qualifications and Training. This section references NFPA 1061 (Standard for Public Safety Telecommunications Personnel Professional Qualifications) and describes required certifications and training.
- Section 7.3: Staffing. This section requires sufficient staffing based on call volume with a minimum of two on duty at all times.
- Section 7.4 Operating Procedures. This section sets call answering and processing time requirements. Specifically, 90% of calls answered within 15 seconds and 90% of calls processed within 60 seconds. EMDs are required and CPR instructions shall be provided when a patient is unresponsive and not breathing. Refer to performance data for the four dispatch centers serving CMH EMS:
    - Timely Dispatches: **http://ozarksems.com/reports/02A(time).png**
    - Accurate Dispatches: **http://ozarksems.com/reports/02B(emd).png**

Citations: (National Fire Protecton Association, 2018)

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 231).

Additional research articles and papers are stored on a shared OneDrive account.
These can be found here:
http://ozarksems.com/research.php

Section 0-300 - Table of Contents

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Part 1 - Assessment Protocols

Protocol 1-010 - General Assessment and Treatment - Medical

EMD

- Utilize appropriate MPDS protocol for all calls where a patient may be ill.

EMR

- 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.
  - Two sets of vitals should be obtained that include time, blood pressure, pulse, respirations, SpO_2, and **Pain level**.
    - 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 **$ETCO_2$**.

EMT

- 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.

AEMT

- Ensure completion of applicable EMT items above.

RN / Medic

- Ensure completion of all applicable BLS items on the left.
- ALS indicated when new onset of the following:
  - Unresponsive.
  - Responsive meeting one of the following:
    - Altered mental status.
    - Respiratory distress.
    - Signs of shock.
    - Need for **IV**/**IO** or medications.
    - **Chest discomfort**.
- *Pediatric*: 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.

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)

Protocol 1-020 - General Assessment and Treatment - Trauma

EMD

- Utilize appropriate MPDS protocol for all calls where a patient may be injured.

EMR

- 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
- Consider **Protocol 5-075 - Hemorrhage** (page 71).
- ABCs.
- LOC.
- Consider **SMR**.
- Maintain patient **temperature** between 91-99 degrees F. Consider active re-warming.
- SAMPLE history.
- Focused assessment.
- Baseline vitals.
  - Two sets of vitals should be obtained that include time, blood pressure, pulse, respirations, SpO_2, and **Pain level**.
    - 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**, and **blood sugar**. Consider assisting ALS with **$ETCO_2$**.

EMT

- Ensure completion of applicable EMR items above.
- No significant MOI:
  - Treatment and transport decision (BLS/ALS). Goal of moving a critical trauma patient towards definitive care within 10 minutes. Current performance graph: **http://ozarksems.com/reports/03A(trauma).png**
- **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.

AEMT

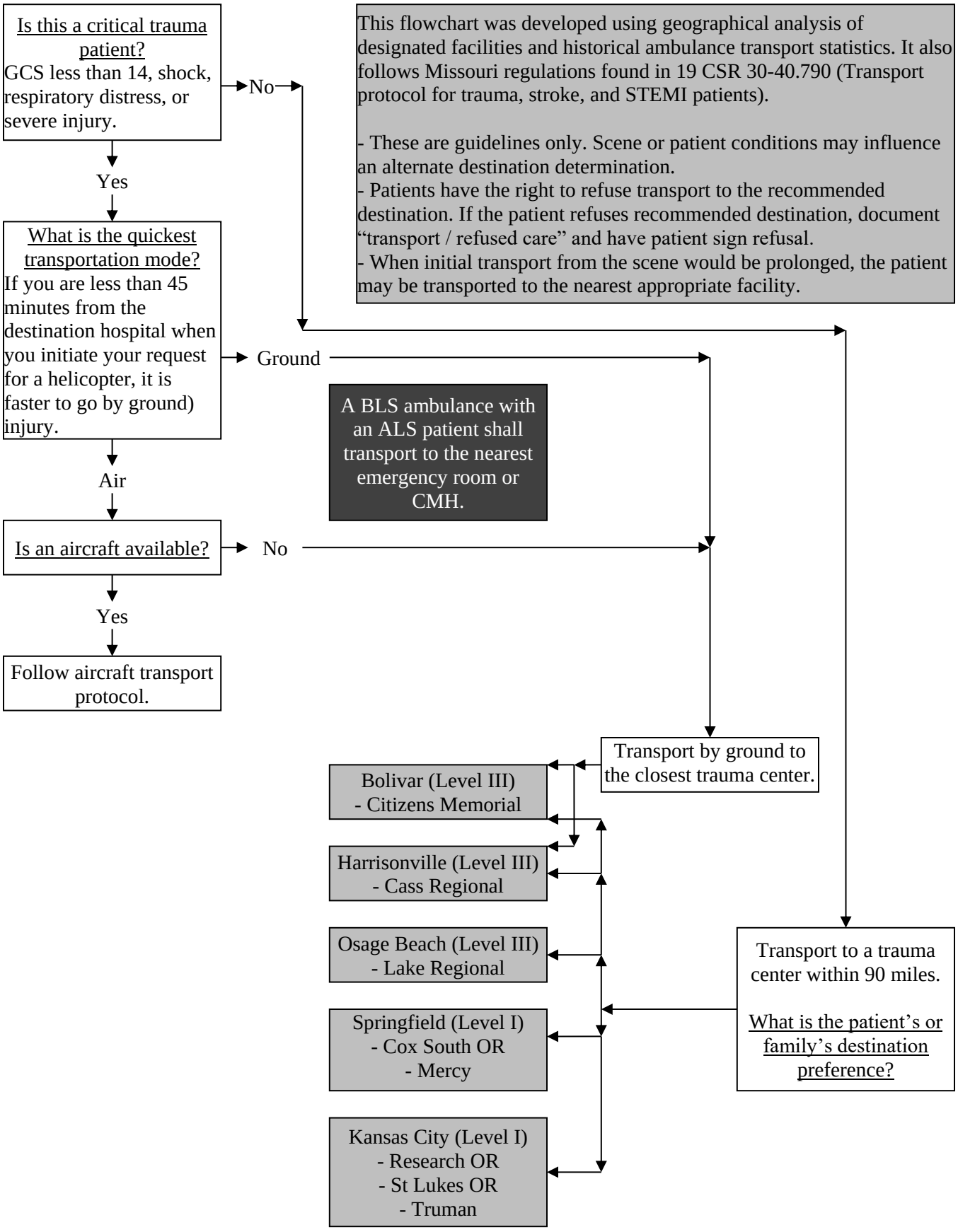
- Ensure completion of applicable EMT items above.
- Consider **LR IV** bolus to maintain SBP above 100.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- ALS indicated when new onset of the following:
  - Significant MOI.
  - Unresponsive.
  - Responsive meeting one of the following:
    - Altered mental status.
    - Respiratory distress.
    - Signs of shock.
    - Need for **IV**/**IO** or medications.
    - **Chest discomfort**.
    - Severe **Pain**.
- *Pediatric*: Utilize Broselow tape for equipment and drug dosages.
- Rapid trauma assessment.
- Treat per appropriate protocol.
- Transport according to **Section 1-021 - Trauma Destination Determination Flowchart** (page 15).
- Possible fracture: 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.), (Missouri Department of Health & Senior Services, 2019), (NASEMSO Medical Directors Council, 2017), (National Association of Emergency Medical Technicians, 2019)

Section 1-021 - Trauma Destination Determination Flowchart



Section 1-030 - Assessment Tools

Normal Vital Signs

Age	Ideal Weight	Broslow / Handtevy	Pulse	Respiratory Rate	Heart Rate	SBP
Preemie	2 kg	Grey	120-160	40-70	120-170	55-90
Newborn	4 kg	Grey	120-160	30-60	100-160	60-100
4 mo	6 kg	Pink	110-150	30-60	105-160	70-100
6 mo	8 kg	Red	110-150	24-38	110-160	70-100
1 yr	10 kg	Purple	100-140	22-30	90-150	75-105
2 yr	12 kg	Yellow	100-140	22-30	85-140	75-110
3 yr	15 kg	White	90-130	22-30	85-140	76-115
4 yr	17 kg	White	90-130	22-26	75-120	78-115
5 yr	20 kg	Blue	80-120	20-24	70-115	80-115
6 yr	22 kg	Blue	80-120	20-24	70-115	82-120
7 yr	25 kg	Orange	80-120	16-22	70-120	84-120
8 yr	27 kg	Orange	70-110	16-22	70-110	86-120
9 yr	30 kg	Green	60 - 100	16-22	65-105	88-120
10 yr	35 kg	Green	60 - 100	16-22	60-100	90-120
11 yr	40 kg	Green	60 - 100	16-22	60-100	90-120
12 yr	50 kg	Green	60 - 100	16-22	60-100	90-120
13 yr	60 kg	Green	60 - 100	16-22	60-100	90-120
Adult	75 kg	Light Blue	60 - 90	16-22	60-100	90-120
Adult	100 kg	Light Blue	60 - 90	16-22	60-100	90-120

Refer to Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) (page 93) for airway sizes.
Refer to Section 8-120 - Glucometer (page 191) for blood sugar ranges.
Refer to Section 8-380 - Thermometer (page 225) for normal temperature ranges.

Glasgow Coma Scale

	Adult	Pediatric	
	Eye Opening		
4	Spontaneous	Spontaneous	
3	To speech	To speech	
2	To pain	To pain	
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	
	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	

Citations: (BJC HealthCare, 2017), (Handtevy Inc.), (National Association of State EMS Officials, 2014), (Pieretti, 2007), (Ralston, 2011)

Part 2 - Cardiac Protocols

Protocol 2-010 - Asystole

EMR

- Refer to **Protocol 6-025 - Cardiopulmonary Resuscitation** (CPR) (page 78).

EMT

- Ensure completion of applicable EMR items above.

AEMT

- Ensure completion of applicable EMT items above.
- **IV NS/LR**.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- Confirm in 2 leads.
- Consider **IO NS/LR**.
- Consider **Intubation**.

- *Adult*:
  - **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).

- *Pediatric*:
  - **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).

- Consider and correct treatable causes: Hypovolemia, hypoxia, hypo/hyperkalemia, **Hypothermia**, **Hypoglycemia**, acidosis, **tension pneumothorax**, **toxins**, thrombosis, and **cardiac tamponade**.
- *Adult*: Consider contacting **MEDICAL CONTROL** if **$ETCO_2$** 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)

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

EMR

- ✱ Calm and reassure patient. Ensure patient does not exert themselves.
- ✱ **Oxygen** to maintain SpO_2 between 94-99%.
- ✱ Apply **cardiac monitor** limb leads.
- ✱ *Adult*: Rate greater than 150: Apply **Combo Pads** anterior / posterior.
- ✱ *Pediatric (child)*: Rate greater than 160: Apply **Combo Pads** anterior / posterior.
- ✱ *Pediatric (infant)*: Rate greater than 220: Apply **Combo Pads** anterior / posterior.
- ✱ Monitor pulseoximetry.
- ✱ Obtain vital signs.

EMT

- ✱ Ensure completion of applicable EMR items above.
- ✱ Consider assisting ALS with **Capnography**.

AEMT

- ✱ Ensure completion of applicable EMT items above.
- ✱ **IV NS/LR** in AC (left is preferred) with pigtail extension with 18 ga or greater.

RN Medic

- ✱ Ensure completion of all applicable BLS items on the left.
- ✱ Obtain **12-Lead EKG**.
- ✱ Consider **IO NS/LR**.
- ✱ *Adult*: Rate greater than 150:
  - ✱ Determine and treat the cause of tachycardia before Amiodarone or Cardizem administration (i.e. infection, dehydration, pain, etc.).
  - ✱ Pulmonary edema: **Amiodarone** 150 mg over 10 min. May repeat at 150 mg over 10 min if **Tachycardia** returns.
  - ✱ No pulmonary edema: **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.
    - ✚ If converted, **Cardizem** drip at 10 mg/hr.
- ✱ *Pediatric*: Rate greater than 160 (child), greater than 220 (infant):
  - ✱ **Contact MEDICAL CONTROL**:
    - ✚ 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**.

Citations: (NASEMSO Medical Directors Council, 2017)

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 179) for AED accessibility, supplies, maintenance, and instructions after use.

EMR

- 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

- Ensure completion of applicable EMR items above.

AEMT

- Ensure completion of applicable EMT items above.

RN **Medic**

- Ensure completion of all applicable BLS items on the left.
- If ALS and **LifePak** 12/15 available, manual **Defibrillation** is preferred.

Citations: (Priority Dispatch, 2012)

Protocol 2-040 - Bradycardia

EMR

- ✱ Calm and reassure patient. Ensure patient does not exert themselves.
- ✱ **Oxygen** to maintain SpO_2 between 94-99%.
- ✱ Apply **cardiac monitor** limb leads.
- ✱ Rate less than 60: Apply **Combo Pads** anterior / posterior.

- ✱ *Pediatric*: HR less than 50: **Ventilate**. Initiate Chest **compressions** if **ventilation** does not raise HR above 60.

- ✱ Monitor pulseoximetry.
- ✱ Obtain vital signs.

EMT

- ✱ Ensure completion of applicable EMR items above.
- ✱ Consider assisting ALS with **Capnography**.

AEMT

- ✱ Ensure completion of applicable EMT items above.
- ✱ **IV NS/LR**.

RN Medic

- ✱ Ensure completion of all applicable BLS items on the left.
- ✱ Obtain **12-Lead EKG**.
- ✱ Consider **IO NS/LR**. Do not delay for **IV/IO** if symptomatic.

- ✱ *Adult*: Rate less than 50 and **symptomatic**:
  - ✱ Contact **Medical Control** if **Hypothermia** patient.
  - ✱ Unstable: Consider **Pacing**.
    - ✚ Consider **Protocol 6-050 - Control of Pain** (page 81).
  - ✱ Stable: **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**.
    - ✚ Mix 1 mg in 100 ml **NS/LR**.
    - ✚ 2 mcg/min = 12 ml/hr.
    - ✚ 10 mcg/min = 60 ml/hr.

- ✱ *Pediatric*: Rate less than 60 and symptomatic:
  - ✱ 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:

0-1yr:	2-3yr:	4-5yr:	6-9yr:	10-18yr:
135	**130**	**105**	**90**	**80**

  - ✱ 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**.

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

Protocol 2-050 - Chest Discomfort

EMD

- MPDS **Aspirin** Diagnostic: EMDs are authorized to evaluate and administer **Aspirin** in patients presenting with chest pain according to MPDS guidelines.

EMR

- Calm and reassure patient. Ensure patient does not exert themselves.
- **Oxygen** to maintain SpO_2 between 94-99%.
- Apply **cardiac monitor** limb leads.
- Monitor pulseoximetry.
- Obtain vital signs.

- *Adult*: **Aspirin** 324 mg (4 chewable tablets - 81 mg each) within 5 minutes of patient contact.

- STEMI verified by ALS or physician:
  - Consider **Combo Pads** anterior / posterior.
  - Remove clothing and place patient in gown.

EMT

- Ensure completion of applicable EMR items above.
- Obtain **12-Lead EKG** within 10 minutes of patient contact. Current performance graph: **http://ozarksems.com/reports/03B(12lead).png**
  - If ALS is unavailable, transmit to closest or CMH ER and contact ER by phone to obtain interpretation.
- Consider assisting ALS with **Capnography**.

AEMT

- Ensure completion of applicable EMT items above.
- **IV NS/LR** 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.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- Consider **IO NS/LR**.
- Interpret **12-Lead EKG** within 10 minutes of patient contact.
  - **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):
    - Contact ER to activate STEMI as early as possible.
      - (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**.

- *Adult*:
  - Pulmonary edema: Refer to **Protocol 4-070 - Congestive Heart Failure (CHF)** (page 49).
  - Right-sided MI (ST elevation in V4R): **NS/LR** 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**:
    - 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.
  - 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.

Citations: (Chapter 190 - Emergency services, 2012), (Citizens Memorial Hospital, 2014), (Clemency, Thompson, Tundo, & Lindstrom, 2013), (Cooper, 2015), (Designated hospitals, n.d.), (Missouri Department of Health & Senior Services, 2019), (Missouri EMS Regional Committee - Southwest Region, 2013), (NASEMSO Medical Directors Council, 2017), (Proposed regulations, 2010)

Section 2-051 - EKG Interpretation Guide

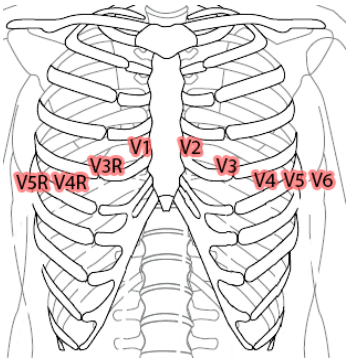
Check lead placement.

- Lead I positive and aVR negative: Good placement

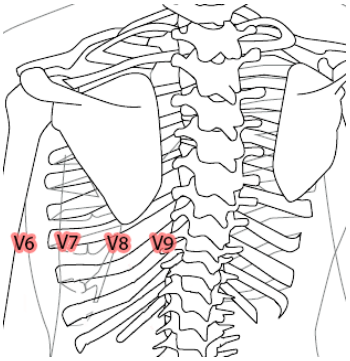
Rhythm:

- 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 with p-wave: 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

Anterior



Posterior:



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**

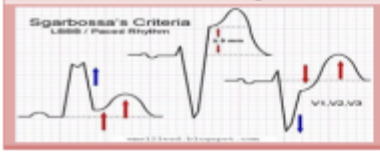
Sgarbossa Criteria (LBBB or Pacing):

- 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

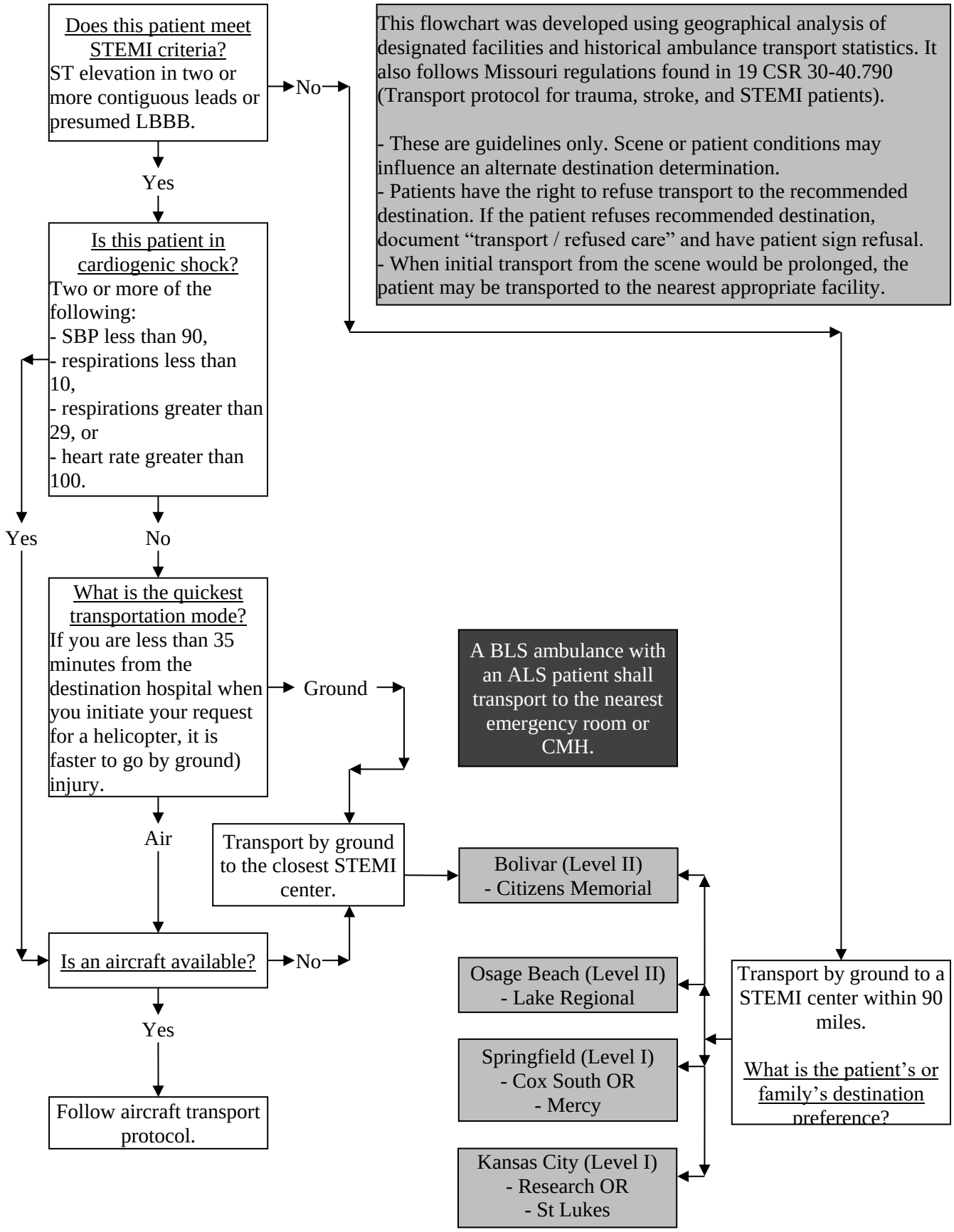
I Lateral • LAD & LCX *Reciprocal:* II, III, AVF	aVR	V1 Septal • LAD	V4 Anterior • LAD	V4R Right • RMA
II Inferior • RCA *Reciprocal:* I, aVL	aVL Lateral • LAD & LCX *Reciprocal:* II, III, AVF	V2 Septal • LAD	V5 Lateral • LAD & LCX *Reciprocal:* II, III, AVF	V8 Posterior • Post. branch of RCA *Reciprocal:*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

EMR

- Establish and maintain Airway and **Ventilate** with **Oxygen**.
  - Avoid hyperventilation.
  - Conscious: Attempt to maintain SpO_2 between 92-96%.
  - Unconscious: Attempt to maintain SpO_2 between 88-92%.
- Monitor pulseoximetry.
- Apply **cardiac monitor Combo Pads** and limb leads.
- Obtain vital signs.

EMT

- Ensure completion of applicable EMR items above.
- Assist ALS with **Capnography**.

AEMT

- Ensure completion of applicable EMT items above.
- **IV NS/LR**.

- *Adult*: Hypotension with clear lung sounds: **NS/LR** 250-500 ml **IV**.

- *Pediatric*: Hypotension with clear lung sounds: Consider 20 ml/kg **NS/LR**.

RN Medic

- 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/LR**.

- *Adult*:
  - Hypotension with pulmonary edema: Consider **Dopamine** 5-20 mcg/kg/min **IV/IO**.
  - Continued sedation: Refer to continued sedation section of **Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)** (page 93).

- *Pediatric*:
  - Hypotension with pulmonary edema: Contact **MEDICAL CONTROL** for **Dopamine** 5-20 mcg/kg/min **IV/IO**.
  - Continued sedation: 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:
  - No trauma,
  - No purposeful movement, AND
  - SBP greater than 90.

Citations: (NASEMSO Medical Directors Council, 2017)

Protocol 2-070 - Pulseless Electrical Activity (PEA)

EMR

✱ Refer to **Protocol 6-025 - Cardiopulmonary Resuscitation** (CPR) (page 78).

EMT

✱ Ensure completion of applicable EMR items above.

AEMT

✱ Ensure completion of applicable EMT items above.
✱ **IV NS/LR**.

RN **Medic**

✱ Ensure completion of all applicable BLS items on the left.
✱ Consider **Intubation**.
✱ Consider **IO NS/LR**.

✱ *Adult*:
  ✱ **Epinephrine 1:10,000** 1 mg **IV/IO** every 3-5 min or drip over 5 min.
  ✱ Slow PEA rate:
    ✚ 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:
    ✚ Consider large fluid bolus.
    ✚ Consider **Dopamine** 5-20 mcg/kg/min **IV/IO**.
  ✱ Consider **Sodium Bicarbonate** 1 mEq/kg **IV/IO**.

✱ *Pediatric*: **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**.

✱ *Adult*: Consider contacting **MEDICAL CONTROL** if **$ETCO_2$** less than 10 for 10 min or no response after 20 min for **termination of resuscitation**. Note: Narrow complex PEA should not be terminated in the field.

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

Protocol 2-080 - Tachycardia Narrow Stable

EMR

- ✱ Calm and reassure patient. Ensure patient does not exert themselves.
- ✱ **Oxygen** to maintain SpO_2 between 94-99%.
- ✱ Apply **cardiac monitor** limb leads.

- ✱ *Adult*: Rate greater than 150 OR *Pediatric*: Rate greater than 160 (child), greater than 220 (infant):
  - ✱ Consider: apply **Combo Pads** anterior / posterior.
- ✱ Monitor pulseoximetry.
- ✱ Obtain vital signs.

EMT

- ✱ Ensure completion of applicable EMR items above.
- ✱ Consider assisting ALS with **Capnography**.

AEMT

- ✱ Ensure completion of applicable EMT items above.
- ✱ **IV NS/LR** in AC (left is preferred) with pigtail extension with 18 ga or greater.

RN Medic

- ✱ Ensure completion of all applicable BLS items on the left.
- ✱ Obtain **12-Lead EKG**.
- ✱ **Vagal** maneuvers.
  - ✱ *Adult*: Have patient blow on 10 ml syringe to move the plunger for 15 seconds while sitting and immediately place supine and elevate feet afterward.
  - ✱ *Pediatric*: 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/LR**.

- ✱ *Adult*: Rate greater than 150:
  - ✱ **Adenosine** 6 mg RAPID **IV/IO**. If ineffective, second and/or third dose at 12 mg. If not converted:
    - ✚ Pulmonary edema: **Amiodarone** 150 mg over 10 min. May repeat at 150 mg over 10 min if Tachycardia returns (max 300 mg).
    - ✚ No pulmonary edema: **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.
      - ✖ If converted: **Cardizem** drip at 10 mg/hr.

- ✱ *Pediatric*: Rate greater than 160 (child), greater than 220 (infant):
  - ✱ Contact **MEDICAL CONTROL**:
    - ✚ 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**.

Citations: (Appelboam, et al., 2015), (NASEMSO Medical Directors Council, 2017)

Protocol 2-090 - Tachycardia Narrow Unstable

EMR

- Calm and reassure patient. Ensure patient does not exert themselves.
- **Oxygen** to maintain SpO_2 between 94-99%.
- Apply **cardiac monitor** limb leads.
- *Adult*: Rate greater than 150 OR *Pediatric*: Rate greater than 160 (child), greater than 220 (infant):
  - Apply **Combo Pads** anterior / posterior.
- Monitor pulseoximetry.
- Obtain vital signs.

EMT

- Ensure completion of applicable EMR items above.
- Consider assisting ALS with **Capnography**.

AEMT

- Ensure completion of applicable EMT items above.
- **IV NS/LR** in AC (left is preferred) with pigtail extension with 18 ga or greater.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- Obtain **12-Lead EKG** as soon as able.
- Consider **IO NS/LR**. Do not delay for **IV/IO** if symptomatic.
- *Adult*: Rate greater than 150 and symptomatic:
  - Conscious: Consider **Protocol 6-050 - Control of Pain** (page 81).
  - Synchronized **Cardioversion** 125 J (if unsuccessful, increase to 200 J).
- *Pediatric*: Rate greater than 180 (child), greater than 220 (infant) and symptomatic:
  - Consider **Vagal** maneuvers. See **Protocol 2-080 - Tachycardia Narrow Stable** (page 26).
  - **Adenosine** 0.1 mg/kg RAPID **IV/IO** (max 6 mg).
    - If ineffective, 2nd and/or 3rd dose at 0.2 mg/kg (max 12 mg).
  - Conscious: 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**.

Citations: (NASEMSO Medical Directors Council, 2017)

Protocol 2-100 - Tachycardia Wide Stable

EMR

- Calm and reassure patient. Ensure patient does not exert themselves.
- **Oxygen** to maintain SpO_2 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.

EMT

- Ensure completion of applicable EMR items above.
- Consider assisting ALS with **Capnography**.

AEMT

- Ensure completion of applicable EMT items above.
- **IV NS/LR** in AC (left is preferred) with pigtail extension with 18 ga or greater.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- Obtain **12-Lead EKG**.
- Consider **IO NS/LR**.

- *Adult*: Rate greater than 150:
  - **Amiodarone** 150 mg **IV/IO** over 10 min. Repeat as needed (max 2.2 gm over 24 hr).
    - 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):
  - Contact **MEDICAL CONTROL**:
    - 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**.

Citations: (NASEMSO Medical Directors Council, 2017)

Protocol 2-110 - Tachycardia Wide Unstable

EMR

- Calm and reassure patient. Ensure patient does not exert themselves.
- **Oxygen** to maintain SpO_2 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.

EMT

- Ensure completion of applicable EMR items above.
- Consider assisting ALS with **Capnography**.

AEMT

- Ensure completion of applicable EMT items above.
- **IV NS/LR** in AC (left is preferred) with pigtail extension with 18 ga or greater.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- Obtain **12-Lead EKG** as soon as able.
- Consider **IO NS/LR**. Do not delay for **IV/IO** if symptomatic.
- *Adult*: Rate greater than 150 and symptomatic:
  - 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:
  - 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**.

Citations: (NASEMSO Medical Directors Council, 2017)

Protocol 2-120 - Torsades de Pointes

EMR

- Calm and reassure patient. Ensure patient does not exert themselves.
- **Oxygen** to maintain SpO_2 between 94-99%.
- Apply **cardiac monitor** limb leads. Apply **Combo Pads** anterior / posterior.
- Monitor pulseoximetry.
- Obtain vital signs.

EMT

- Ensure completion of applicable EMR items above.
- Consider assisting ALS with **Capnography**.

AEMT

- Ensure completion of applicable EMT items above.
- **IV NS**/**LR**.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- Obtain **12-Lead EKG** as soon as able.
- Consider **Intubation**.
- Consider **IO NS**/**LR**.

- *Adult*:
  - **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.
  - Conscious: Consider **Protocol 6-050 - Control of Pain** (page 81).
  - Synchronized **Cardioversion** 200 J.

- *Pediatric*:
  - **Magnesium Sulfate** 25-50 mg/kg over 2 min.
  - Conscious: Consider **Protocol 6-050 - Control of Pain** (page 81).
  - Synchronized **Cardioversion** 0.5-1 J/kg.

Citations:

Protocol 2-130 - Ventricular Ectopy

EMR

- ✱ Calm and reassure patient. Ensure patient does not exert themselves.
- ✱ **Oxygen** to maintain SpO_2 between 94-99%.
- ✱ Apply **cardiac monitor** limb leads.
- ✱ Consider apply **Combo Pads** anterior / posterior.
- ✱ Monitor pulseoximetry.
- ✱ Obtain vital signs.

EMT

- ✱ Ensure completion of applicable EMR items above.
- ✱ Consider assisting ALS with **Capnography**.

AEMT

- ✱ Ensure completion of applicable EMT items above.
- ✱ **IV NS**/**LR**.

RN Medic

- ✱ Ensure completion of all applicable BLS items on the left.
- ✱ Obtain **12-Lead EKG**.
- ✱ Consider **IO NS**/**LR**.
- ✱ Treat causes of ectopy: Hypoxia, infarction, or ischemia.
- ✱ Consider contacting **MEDICAL CONTROL**:
  - ✱ Consider **Lidocaine**.
  - ✱ Consider **Amiodarone**.

Citations:

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

EMR

- Refer to **Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)** (page 78).

EMT

- Ensure completion of applicable EMR items above.

AEMT

- Ensure completion of applicable EMT items above.
- **IV NS/LR**.

RN Medic

- 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.
  - *Adult*: 360 J (OR consider biphasic dose of 200 J).
  - *Pediatric*: 4 J/kg.
- Consider **Intubation**.
- Consider **IO NS/LR**.
- *Adult*:
  - **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).
    - 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**.
- *Pediatric*:
  - **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).
    - 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.
- *Adult*: Consider contacting **MEDICAL CONTROL** If **$ETCO_2$** 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)

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

EMR

- Calm and reassure patient. Ensure patient does not exert themselves.
- **Oxygen** to maintain SpO_2 between 94-99%.
- Apply **cardiac monitor** limb leads.
- Consider apply **Combo Pads** anterior / posterior.
- Monitor pulseoximetry.
- Obtain vital signs.

EMT

- Ensure completion of applicable EMR items above.
- Consider assisting ALS with **Capnography**.

AEMT

- Ensure completion of applicable EMT items above.
- Heart rate greater than 150 and **symptomatic**: **IV NS/LR**.

RN Medic

- Heart rate greater than 150 and **symptomatic**:
  - Ensure completion of all applicable BLS items on the left.
  - Obtain **12-Lead EKG**.
  - Consider **IO NS/LR**.
  - **Amiodarone** 150 mg over 10 min.

Citations:

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Part 3 - Environmental Protocols

Protocol 3-010 - Drowning

EMD

- MPDS Protocol 14 (Drowning) - Obvious death: Submersion time does not indicate obvious death.

EMR

- Remove from water.
- Open and maintain Airway.
  - 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.

EMT

- Ensure completion of applicable EMR items above.
- *Adult*: Consider assisting ALS with **CPAP**.
- Assist ALS with **Capnography**.

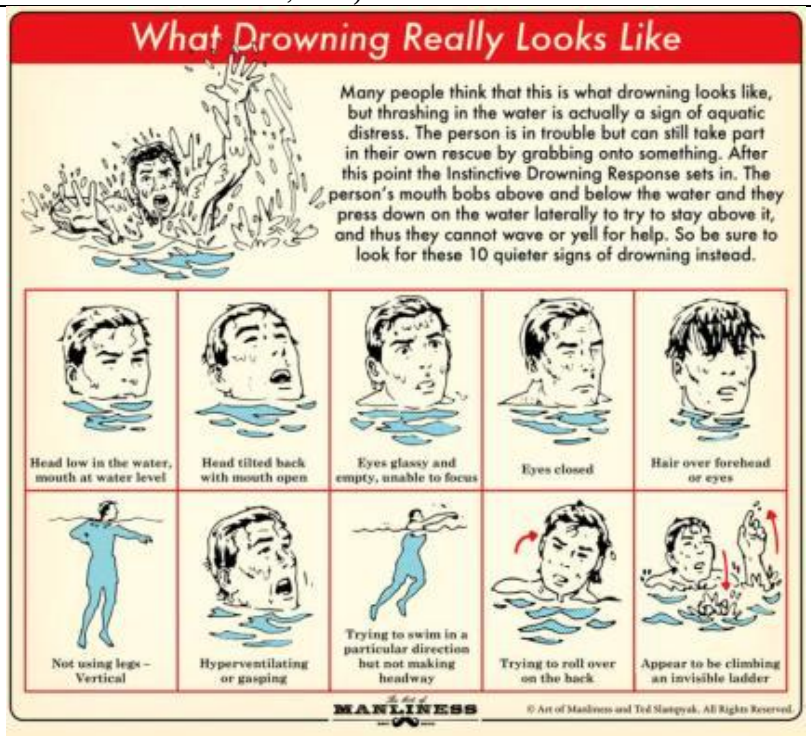
AEMT

- Ensure completion of applicable EMT items above.
- **IV** warm **NS**/**LR**.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- Consider **IO** warm **NS**/**LR**.
- Pulseless: *Adult*: **V-Fib**: **Defibrillation** 360 J (OR consider biphasic dose of 200 J) once.
  - 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.

Citations: (NASEMSO Medical Directors Council, 2017)



Protocol 3-020 - Hyperthermia

EMR

- Remove from exposure.
- Open and maintain Airway.
- Attempt to determine down-time, and history.
- Consider **Oxygen** if SpO_2 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.

EMT

- Ensure completion of applicable EMR items above.
- Consider assisting ALS with **Capnography**.

AEMT

- Ensure completion of applicable EMT items above.
- Consider **IV** cool **NS**/**LR**.
  - *Adult*: 125 ml/hr.
  - *Pediatric*: 20 ml/kg may repeat once.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- Consider **IO** cool **NS**/**LR**.
- Monitor closely for arrhythmias. Treat per protocol.

Citations: (NASEMSO Medical Directors Council, 2017)

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

EMR

- 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.

EMT

- Ensure completion of applicable EMR items above.
- Consider assisting ALS with **Capnography**.
- Pulseless:
  - Do not delay transport for rewarming.
  - **Rapid transport** to hospital.

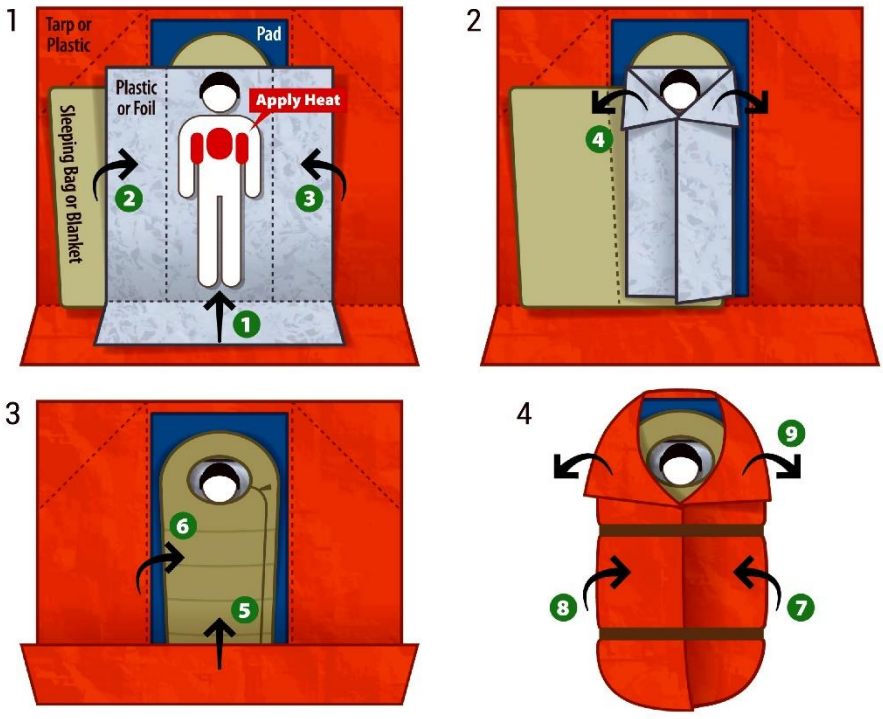
AEMT

- Ensure completion of applicable EMT items above.
- Consider **IV** warm **NS**/**LR**.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- Consider **IO** warm **NS**/**LR**.
- Consider **Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)** (page 93).
- Pulseless:
  - **V-Fib**:
    - **Defibrillation** once.
      - *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).

Citations: (Giesbrecht, 2018), (NASEMSO Medical Directors Council, 2017)



Sources: BICOrescue.com; Zafren, Giesbrecht, Danzl et al. Wilderness Environ Med. 2014, 25:S66-85.

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Part 4 - Medical Protocols

Protocol 4-010 - Abdominal Pain

EMR

- Consider **Oxygen** if SpO_2 less than 88%.
- Obtain vital signs.
- Monitor pulseoximetry.
- Apply **cardiac monitor** limb leads.
- Identify possible causes.
  - Emesis present: Inspect for blood.
  - Female: Determine last menstrual cycle.
  - Trauma cause: Refer to **Protocol 5-020 - Abdominal Trauma** (page 65).

EMT

- Ensure completion of applicable EMR items above.
- Transport in position of comfort.

AEMT

- Ensure completion of applicable EMT items above.
- Strongly assume abdominal discomfort may have **cardiac** causes. Consider **12-lead EKG**.
- Consider **IV NS**/**LR** in AC (left is preferred) with pigtail extension with 18 ga or greater.
- Monitor and treat for shock.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- Consider **IO NS**/**LR**.
- Refer to **Protocol 6-050 - Control of Pain** (page 81).
  - Severe pain: Consider **Phenergan** 12.5 mg **IV**/**IO** to potentiate narcotics.
- Nausea: Refer to **Protocol 6-040 - Control of Nausea** (page 80).
- Bowel obstruction: Consider stomach decompression.
- Esophageal obstruction: Consider contacting **MEDICAL CONTROL** for **Glucagon**:
  - Adult: 1-2 mg **IV**/**IO**.
  - Pediatric: 0.02-0.03 mg/kg **IV**/**IO**.

Citations: (NASEMSO Medical Directors Council, 2017)

Protocol 4-020 - Anaphylaxis

EMR

- Remove allergen.
- Obtain vital signs.
- **Oxygen** to maintain SpO_2 at 100%.
- Monitor pulseoximetry.
- Consider: Apply **cardiac monitor** limb leads.
- Identify possible causes.

EMT

- Ensure completion of applicable EMR items above.
- Assist ALS with **Capnography**.
- If RN or Paramedic unavailable and difficulty breathing, trouble swallowing, or hypotensive:
  - Consider **Epinephrine Auto-Injector**.
  - ALS unit should be en route.

AEMT

- Ensure completion of applicable EMT items above.
- Consider **IV NS**/**LR**.
- *Adult*:
  - Uncompensated shock: **Epinephrine 1:1,000** 0.3-0.5 mg IM/SQ.
  - **Wheezing** or obstructed **$ETCO_2$** waveform:
    - Consider **Duoneb** 3 ml **Nebulized** (max 1 dose).
    - Consider **Albuterol** 2.5 mg **Nebulized**.
    - Consider **Xopenex** 0.63-1.25 mg **Nebulized**.
- *Pediatric*:
  - **Epinephrine 1:1,000** 0.01 mg/kg IM/SQ (max 0.3 mg/dose) repeat every 15 min as needed.
  - **Wheezing** or obstructed **$ETCO_2$** waveform:
    - Consider **Albuterol** 2.5 mg **Nebulized**.
    - Greater than 6 yr old: Consider **Duoneb** 1.5 ml **Nebulized** (max 1 dose).

RN Medic

- Ensure completion of all applicable BLS items on the left.
- Consider **IO NS**/**LR**.
- *Adult*:
  - Uncompensated shock: 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**/IM .
- *Pediatric*:
  - Consider **Benadryl** 1 mg/kg **IV**/**IO**/IM (max 50 mg).
  - Consider **Solu-Medrol** 1-2 mg/kg **IV**/**IO**/IM (max 125 mg).

Citations: (Citizens Memorial Hospital, 2014), (NASEMSO Medical Directors Council, 2017)

Protocol 4-030 - Asthma

EMR

- **Oxygen** to maintain SpO_2 between 88-92%.
- Monitor pulseoximetry.
- Apply **cardiac monitor** limb leads.
- Obtain vital signs.

EMT

- Ensure completion of applicable EMR items above.
- Assist ALS with **Capnography**.

AEMT

- Ensure completion of applicable EMT items above.
- Consider **IV NS**/**LR** in AC (left is preferred) with pigtail extension with 18 ga or greater.

- *Adult*:
  - Consider **Duoneb** 3 ml **Nebulized** (max 1 dose).
  - Consider **Albuterol** 2.5 mg in **NS** 3 ml **Nebulized**.
  - HR greater than 110: 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**.
- *Pediatric*:
  - Consider **Duoneb** 1.5 ml **Nebulized** (max 1 dose).
  - Consider **Albuterol** 2.5mg in **NS** 3 ml **Nebulized**.
  - Greater than 6 yr old: Consider **Xopenex** 0.31-0.63 mg **Nebulized**.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- Consider **IO NS**/**LR**.

- *Adult*:
  - Consider **Decadron** 16 mg **Nebulized**
  - Consider **Solu-Medrol** 125 mg **IV**/**IO**/IM.
  - Consider contacting **MEDICAL CONTROL** for **Magnesium Sulfate** 1-2 g **IV**/**IO** over 15-20 min.
- *Pediatric*:
  - Consider contacting **MEDICAL CONTROL**:
    - Consider **Decadron** 4-8 mg **Nebulized**
    - Consider **Solu-Medrol** 1-2 mg/kg **IV**/**IO**/IM.
    - 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: (Heuser, Menaik, Gupta, & Rucco, 2017), (Keeney, et al., 2014), (NASEMSO Medical Directors Council, 2017)

Protocol 4-040 - Behavioral

EMR

- 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:
  - Help meet basic needs.
  - Provide simple, clear, and accurate information.
  - Listen with compassion.
  - Be friendly and calm.
  - Provide support and "presence."

EMT

- Ensure completion of applicable EMR items above.
- Consider performing **blood sugar check**.

AEMT

- Ensure completion of applicable EMT items above.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- Mild (responds to verbal de-escalation):
  - Consider **Versed** 1 mg **IV**/IM.
  - *Adult*: Consider **Haldol** 2-5 mg **IV**/IM.
  - Transport in **position of comfort**.
- Moderate to severe (requires **Restraint** for crew/patient safety):
  - Contact **MEDICAL CONTROL** for chemical or physical **restraints**. Note: If imminent risk of harm or danger, contact **MEDICAL CONTROL** **AFTER** sedation.
  - *Adult*:
    - **Physical Restraint**
      - **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.
  - *Pediatric*:
    - 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.
    - If over 6 years old: Consider **Haldol** 1-3 mg IM.
  - Monitor waveform **Capnography**.
  - Transport in **position of safety**.
- If **Haldol** given: Obtain **12-Lead EKG**, if able. Assess QT.

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

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

EMD

- MPDS Protocol 18 (Headache) and Protocol 28 (Stroke) - Stroke time window: Time window set by **medical control** is 24 hours. Greater than 24 hours since the patient was last seen normal is usually outside the therapeutic window.

EMR

- Complete **Section 4-051 - CMH EMS Stroke Assessment Tool** (page 44).
- **Oxygen** to maintain SpO_2 between 94-99%.
- Monitor pulseoximetry.
- Apply **cardiac monitor** limb leads.
- Obtain vital signs, including **temperature**, if able.
- Elevate Head of **cot**.

EMT

- Ensure completion of applicable EMR items above.
- Perform **blood sugar check**.
  - Blood sugar less than 60 mg/dl: Refer to **Protocol 4-120 - Hypoglycemia** (page 56).
- Obtain and record contact information for family and/or witness. If transporting by **aircraft**: Contact receiving facility with this information.
- Assist patient to walk to the **cot** to assess gait.
- Refer to **Section 4-051 - CMH EMS Stroke Assessment Tool** (page 44) and **Section 4-053 - Stroke Destination Determination Flowchart** (page 47).
  - If Large Vessel Occlusion: Emergent transport to nearest Level I Stroke Center.
  - If last seen normal less than 4.5 hours: Emergent transport to nearest tPA-capable ER.
  - If last seen normal between 4.5 and 24 hours: Transport to nearest Stroke Center (any level).
  - If last seen normal greater than 24 hours: Transport to any ER.
- Target scene time of 10 minutes or less.
- Repeat neuro assessment and document every 15 min.

AEMT

- Ensure completion of applicable EMT items above.
- **IV NS/LR** (18 ga in left AC is preferred). Avoid multiple **IV** attempts. Two **IV**s are preferred.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- Consider **IO NS/LR**.
- Obtain **12-Lead EKG**.
- Do not treat **hypertension**.
- Ensure accurate patient weight is obtained upon arrival at the ER, if able.

Citations: (Chapter 190 - Emergency services, 2012), (Designated hospitals, n.d.), (Missouri Department of Health & Senior Services, 2019), (NASEMSO Medical Directors Council, 2017), (NIH stroke scale international, 2003), (Proposed regulations, 2010), (University of Kansas Hospital)

Section 4-051 - CMH EMS Stroke Assessment Tool

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

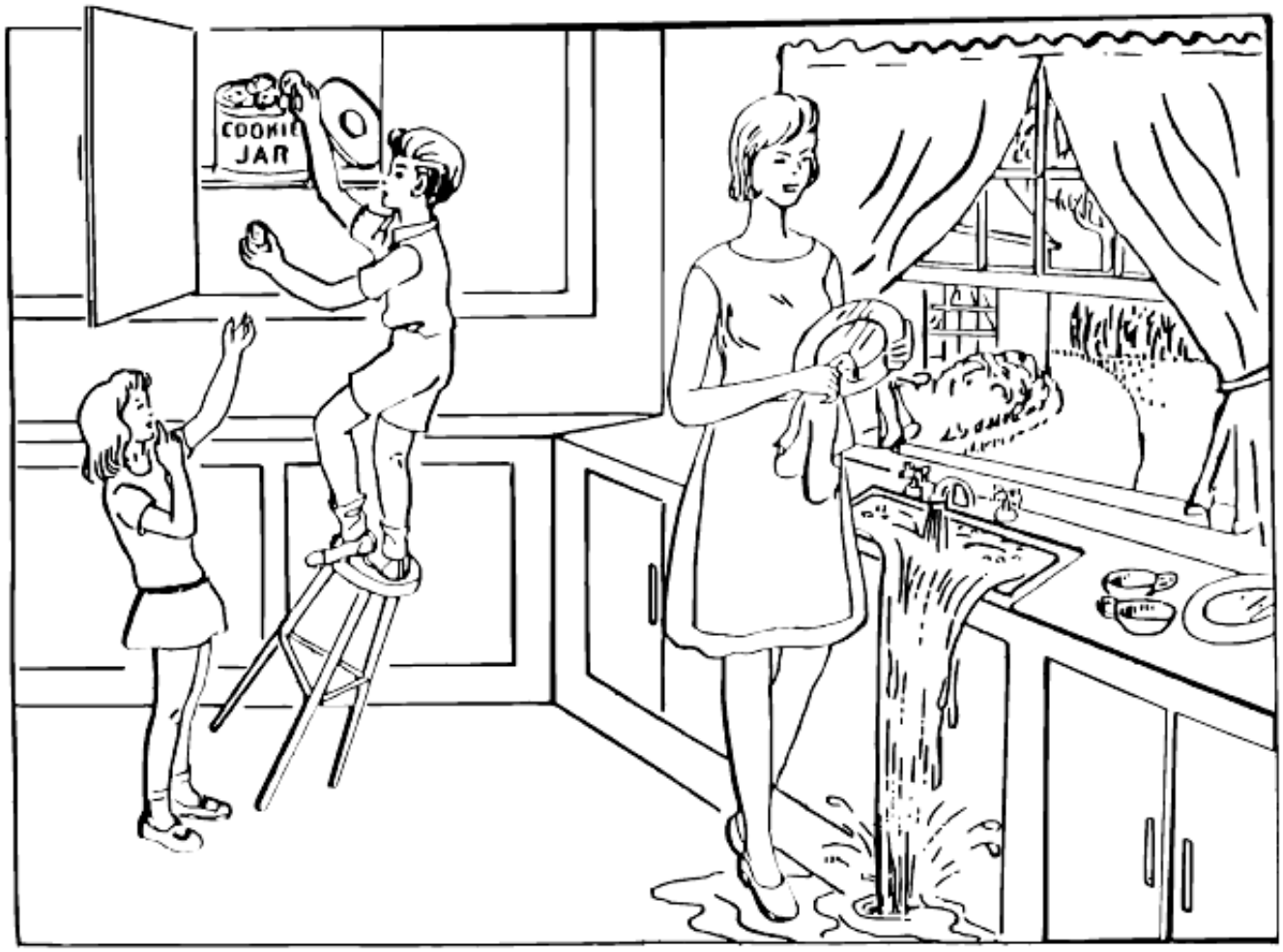
	Question	Answer	NIH	RACE Right	RACE Left
	Cincinnati Stroke Scale: Facial droop, arm drift, or speech problems?	No	Transport to any ER		
		Yes	Go to question 2.		
	When **last seen normal** (at arrival at stroke center)? Patient **age**?	Greater than 12 hours OR Greater than 89 years old	Transport to 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: • 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: • "**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: • "**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**?	LARGE VESSEL OCCLUSION: 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.

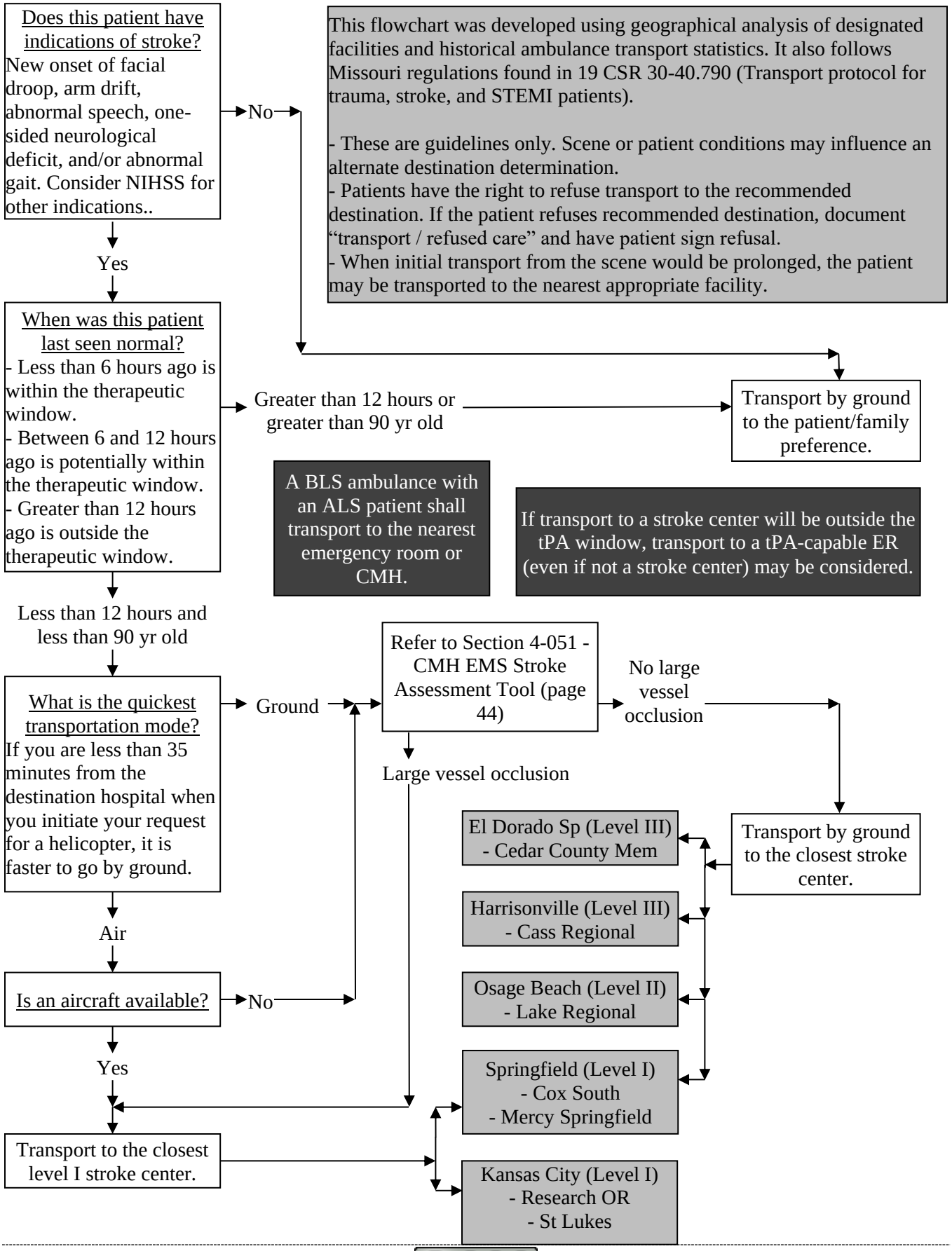
Down to earth.

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



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

EMR

- **Oxygen** to maintain SpO_2 between 88-92%.
- Monitor pulseoximetry.
- Apply **cardiac monitor** limb leads.
- Obtain vital signs.

EMT

- Ensure completion of applicable EMR items above.
- Assist ALS with **Capnography**.

- *Adult*: Consider assisting ALS with **CPAP**.

AEMT

- Ensure completion of applicable EMT items above.
- Consider **IV NS**/**LR** in AC (left is preferred) with pigtail extension with 18 ga or greater.

- *Adult*:
  - 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**.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- Consider **Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)** (page 93).
- Consider **IO NS**/**LR**.
- Consider **12-Lead EKG**.

- *Adult*:
  - Consider **Solu-Medrol** 125 mg **IV**/**IO**/IM.
  - Consider contacting **MEDICAL CONTROL** for **Magnesium Sulfate** 1-2 g **IV**/**IO** over 15-20 min.

Citations:

Protocol 4-070 - Congestive Heart Failure (CHF)

EMR

- **Oxygen** to maintain SpO_2 between 94-99%.
- Monitor pulseoximetry.
- Apply **cardiac monitor** limb leads.
- Obtain vital signs.
- Elevate Head of **cot**.

EMT

- Ensure completion of applicable EMR items above.
- Assist ALS with **Capnography**.
- *Adult*: Consider assisting ALS with **CPAP**.

AEMT

- Ensure completion of applicable EMT items above.
- Consider **IV Saline LOCK** in AC (left is preferred) with pigtail extension with 18 ga or greater.
- *Adult*: **Wheezing** or obstructed **$ETCO_2$** waveform:
  - 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**.
- *Pediatric*: **Wheezing** or obstructed **$ETCO_2$** waveform:
  - Consider **Duoneb** 1.5 ml **Nebulized** (max 1 dose).
  - Consider **Albuterol** 2.5 mg in **NS** 3 ml **Nebulized**.
  - Greater than 6 yr old: Consider **Xopenex** 0.31-0.63 mg **Nebulized**.

RN Medic

- 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**.
  - Consider **15-Lead EKG**.
- *Adult*:
  - SBP greater than 110:
    - 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.
  - SBP less than 110:
    - 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.

Citations: (Mercy EMS, 2013), (NASEMSO Medical Directors Council, 2017)

Protocol 4-080 - Croup

EMR

- **Oxygen** to maintain SpO_2 between 88-92%.
- Monitor pulseoximetry.
- Consider moving patient to a cold air environment.
- Consider applying **cardiac monitor** limb leads.
- Obtain vital signs.

EMT

- Ensure completion of applicable EMR items above.
- Assist ALS with **Capnography**, if able.

AEMT

- Ensure completion of applicable EMT items above.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- Consider **Decadron Nebulized**:
  - *Adult:* 16 mg
  - *Pediatric:* 8 mg
  - *Infant:* 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**.

Citations: (NASEMSO Medical Directors Council, 2017)

Protocol 4-090 - Childbirth

EMD

✱ MPDS Protocol 24 (Pregnancy) - High risk complications: The following conditions indicate a high-risk pregnancy or childbirth:
- ✱ Premature birth, multiple birth, bleeding disorder, placenta abruption, placenta previa, breech, prolapsed cord, OR unknown/ignored pregnancy.

EMR

✱ Consider **Oxygen** if SpO_2 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.
- ✱ Consider cleaning Vaginal area prior to birth.
- ✱ Inspect for prolapsed cord.
  - ✚ Breech: **Deliver** as best you can (see below).
  - ✚ No complications:
    - ✖ 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. If resuscitation is needed: 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:
    - ✖ 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.

EMT

✱ Ensure completion of applicable EMR items above.

AEMT

✱ Ensure completion of applicable EMT items above.
✱ **IV LR** titrated to blood pressure.

RN / Medic

✱ Ensure completion of all applicable BLS items on the left.
✱ Consider **IO LR** titrated to blood pressure.
✱ Treat any problems per appropriate protocol.

Citations: (NASEMSO Medical Directors Council, 2017)

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 SpO_2 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

EMR

- Consider **Oxygen** if SpO_2 less than 88%.
- Remove excess clothing / blankets.
- Monitor pulseoximetry.
- Consider: Apply **cardiac monitor** limb leads.
- Obtain vital signs.

EMT

- Ensure completion of applicable EMR items above.
- Consider assisting ALS with **Capnography**.

AEMT

- Ensure completion of applicable EMT items above.
- Consider **IV NS**/**LR**.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- Consider **IO NS**/**LR**.
- Fever greater than 102 F: Begin **cooling**.
  - *Adult*:
    - **Acetaminophen** NOT given within 4 hrs: Consider **Acetaminophen** 325-650 mg PO.
    - **Acetaminophen** given within 4 hrs: Consider **Ibuprofen** 200-400 mg PO.
  - *Pediatric*:
    - **Acetaminophen** NOT given within 4 hrs: Consider **Acetaminophen** Elixir 15 mg/kg PO.
    - **Acetaminophen** given within 4 hrs: Consider **Ibuprofen** Elixir 10 mg/kg PO.

Citations:

Protocol 4-110 - Hypertension

EMR

- ✱ Calm and reassure the patient.
- ✱ Identify possible causes.
- ✱ Consider **Oxygen** if SpO_2 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.
- ✱ Epistaxis: Refer to **Protocol 5-075 - Hemorrhage** (page 71).
- ✱ Pregnant:
  - ✱ Inspect for active bleeding / crowning. Determine amount of blood loss.
  - ✱ Consider transport in left lateral recumbent position to reduce risk of Vena Cava compression.

EMT

- ✱ Ensure completion of applicable EMR items above.

AEMT

- ✱ Ensure completion of applicable EMT items above.
- ✱ **IV NS/LR**.

RN Medic

- ✱ Ensure completion of all applicable BLS items on the left.
- ✱ Consider **IO NS/LR**.
- ✱ Diastolic greater than 115 with **Nausea**, ALOC, blurred vision, Headache, or **Chest Pain**: Contact **MEDICAL CONTROL** for:
  - ✱ *Adult*:
    - ✚ 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*:
    - ✚ 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):
  - ✱ 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:
    - ✚ **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.
  - ✱ $(MAP) = (Diastolic) + \frac{(Systolic) - (Diastolic)}{3}$

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

Protocol 4-115 - Hyperglycemia

EMR

- ✱ Identify possible causes.
- ✱ Consider **Oxygen** if SpO_2 less than 88%.
- ✱ Monitor pulseoximetry.
- ✱ Consider: Consider **cardiac monitor** limb leads.
- ✱ Obtain vital signs.

EMT

- ✱ Ensure completion of applicable EMR items above.
- ✱ Perform **blood sugar check**.
  - ✱ Refer to **Section 8-120 - Glucometer** (page 191) for blood sugar critical levels.

AEMT

- ✱ Ensure completion of applicable EMT items above.
- ✱ Consider **IV NS/LR**.
- ✱ Blood sugar greater than 250 mg/dl and symptomatic:
  - ✱ *Adult:*
    - ✚ **NS/LR** 1 L **IV/IO**.
  - ✱ *Pediatric:*
    - ✚ **NS/LR** 10 ml/kg **IV/IO**. May repeat up to 40 ml/kg after reassessment.

RN Medic

- ✱ Ensure completion of all applicable BLS items on the left.

Citations: (National Association of State EMS Officials, 2014), (NASEMSO Medical Directors Council, 2017)

Protocol 4-120 - Hypoglycemia

EMR

- Identify possible causes.
- Consider **Oxygen** if SpO_2 less than 88%.
- Monitor pulseoximetry.
- Consider: Consider **cardiac monitor** limb leads.
- Obtain vital signs.

EMT

- Ensure completion of applicable EMR items above.
- Perform **blood sugar check**.
  - Refer to **Section 8-120 - Glucometer** (page 191) for blood sugar critical levels.
  - Blood sugar less than 60 mg/dl: Conscious and able to swallow: **ORAL Glucose** 15 g PO.
- Have patient **eat** after treatment, if no transport.

AEMT

- Ensure completion of applicable EMT items above.
- Consider **IV NS/LR**.

- *Adult*: Blood sugar less than 60 mg/dl and symptomatic:
  - **Dextrose** 25 g **IV**.
  - If unable to obtain **IV**: Consider **Glucagon** 1 mg IM/SQ/**IN**.

- *Pediatric*: Blood sugar less than 30 mg/dl and symptomatic:
  - **Dextrose** 0.5-1 g/kg **IV/IO** (repeat as needed).
  - If unable to obtain **IV**:
    - 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*: Blood sugar less than 30 mg/dl: **Dextrose** 0.5-1 g/kg **IV/IO** (repeat as needed).

- Contact **MEDICAL CONTROL** prior to PRC if:
  - **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.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- Consider **IO NS/LR**.

- *Adult*: Blood sugar less than 60 mg/dl:
  - Consider **Thiamine** 100 mg IM. If given **IV**, infuse in **NS/LR/D10W** over 30 min.
- Contact **MEDICAL CONTROL** prior to PRC if:
  - **IO** inserted (should not be PRC'd).

Citations: (NASEMSO Medical Directors Council, 2017)

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 SpO_2 according to chart below.
  - Targeted Pre-Ductal SpO_2 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 **blood sugar check**.
  - Blood sugar less than 30 mg/dl: Refer to **Protocol 4-120 - Hypoglycemia** (page 56).

AEMT

- Ensure completion of applicable EMT items above.
- Consider **IV NS/LR** 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)

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 SpO_2 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 **blood sugar check**.
  - Blood sugar 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, SpO_2, and **$ETCO_2$ 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**/**LR**.

- 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/LR**. 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: **LR IV/IO** 20 ml/kg.
  - ✱ Contact **MEDICAL CONTROL**.

- ✱ Tricyclic Antidepressant Overdose:
  - ✱ Hypotension: **LR 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)

Protocol 4-160 - Pre-Term Labor

EMR

- ✱ Consider **Oxygen** if SpO_2 less than 88%.
- ✱ Inspect for active bleeding / crowning.
- ✱ Determine amount of blood loss.
- ✱ Monitor pulseoximetry.
- ✱ Consider appling **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.

EMT

- ✱ Ensure completion of applicable EMR items above.

AEMT

- ✱ Ensure completion of applicable EMT items above.
- ✱ **IV LR**.
- ✱ **LR** 500-1000 ml bolus.

RN Medic

- ✱ Ensure completion of all applicable BLS items on the left.
- ✱ Consider **IO LR**.

Citations: (NASEMSO Medical Directors Council, 2017)

Protocol 4-165 - Respiratory Distress

EMR

- ✱ Consider **Oxygen** to maintain SpO_2 between 88-92%.
- ✱ Monitor pulseoximetry.
- ✱ Consider appling **cardiac monitor** limb leads.
- ✱ Obtain vital signs.

EMT

- ✱ Ensure completion of applicable EMR items above.
- ✱ Assist ALS with **Capnography**.

AEMT

- ✱ Ensure completion of applicable EMT items above.
- ✱ Consider **IV NS/LR** 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).

RN / Medic

- ✱ Ensure completion of all applicable BLS items on the left.
- ✱ Consider **Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)** (page 93).

Citations: (NASEMSO Medical Directors Council, 2017)

Protocol 4-170 - Seizures

EMR

- ✱ Ensure open Airway.
- ✱ Identify possible **causes**.
- ✱ Clear area to decrease chance of injury.
- ✱ Consider **Oxygen** if SpO_2 less than 88%.
- ✱ Monitor pulseoximetry.
- ✱ Apply **cardiac monitor** limb leads.
- ✱ Obtain vital signs.

EMT

- ✱ Ensure completion of applicable EMR items above.
- ✱ Consider assisting ALS with **Capnography**.
- ✱ Perform **blood sugar check**.
  - ✱ Blood sugar less than 60 mg/dl: Refer to **Protocol 4-120 - Hypoglycemia** (page 56).

AEMT

- ✱ Ensure completion of applicable EMT items above.
- ✱ **IV NS/LR**.

RN Medic

- ✱ Ensure completion of all applicable BLS items on the left.
- ✱ Consider **IO NS/LR**.
- ✱ Actively seizing:
  - ✱ *Adult*:
    - ✚ Consider **Versed** 10 mg IM.
      - ✖ 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).
  - ✱ *Pediatric*:
    - ✚ *12-18 yr old:* Consider **Versed** same as adult.
    - ✚ *1 yr - 12 yr old*: Consider **Versed** 0.15 mg/kg (max 5 mg/dose) **IV/IO/**IM. May repeat every 5 min.
    - ✚ *1 mo - 12 mo old*: Consider **Versed** 0.2 mg/kg **IN/**IM (max 5 mg/dose). May repeat every 5 min.
  - ✱ Continue **Versed** until seizures stopped. Max single dose of 5 mg **IV/IO/IN** or 10 mg IM.
- ✱ Use **RSI** with caution in Seizure patients. Paralysis only masks the manifestation of Seizure.
  - ✱ Continued sedation for **intubated** patient: **Versed** 2.5-5 mg **IV/IO**.

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

Protocol 4-175 - Sepsis

EMR

- ✱ 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):
  - ✱ Suspected infection AND two or more of the following:
    - ✚ Altered mental status,
    - ✚ Hypotension (SBP < 100),
    - ✚ Tachypnea (respiratory rate > 22)

EMT

- ✱ Ensure completion of applicable EMR items above.
- ✱ Assist ALS with **Capnography**.
- ✱ Perform **blood sugar check**.
  - ✱ Blood sugar less than 60 mg/dl: Refer to **Protocol 4-120 - Hypoglycemia** (page 56).

AEMT

- ✱ 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.

RN Medic

- ✱ 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 sugar level of 180.

- ✱ If SBP less than 90 or MAP less than 70 after fluid bolus:
  - ✱ Notify Emergency Room of incoming SEPTIC SHOCK patient.
  - ✱ Initiate two large-bore **IV**s.
  - ✱ Consider contacting **MEDICAL CONTROL** for possible vasopressor.

- ✱ Target scene time of 10 minutes.
- ✱ Notify Emergency Room of incoming SEPSIS patient.
- ✱ Ensure accurate patient weight is obtained upon arrival at the ER.

Citations: (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.)

Protocol 4-180 - Vaginal Bleeding

EMR

- 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:
  - Massage the fundus.
  - Have mother breastfeed.
- Consider orthostatic vital signs.
- Consider transport in left lateral recumbent position to reduce risk of Vena Cava compression.

EMT

- Ensure completion of applicable EMR items above.

AEMT

- Ensure completion of applicable EMT items above.
- Consider **IV LR** titrated to SBP above 100.
- Post partum: Rapidly infuse **IV** fluids.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- Consider **IO LR**.
- Post partum:
  - Consider contacting **MEDICAL CONTROL** for **Oxytocin** 10-20 u in 1,000 ml **LR**. Run wide open.
- Consider **Protocol 5-075 - Hemorrhage** (page **71**) for **TXA**.

Citations: (NASEMSO Medical Directors Council, 2017)

Part 5 - Trauma Protocols

Protocol 5-020 - Abdominal Trauma

EMR

- ✱ Consider **Protocol 5-075 - Hemorrhage** (page 71).
- ✱ Consider **SMR**.
- ✱ Assist **ventilations** as needed.
- ✱ Consider **Oxygen** 100%.
- ✱ 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.

EMT

- ✱ Ensure completion of applicable EMR items above.

AEMT

- ✱ Ensure completion of applicable EMT items above.
- ✱ Consider **IV LR** titrated to SBP greater than 80.

RN Medic

- ✱ Ensure completion of all applicable BLS items on the left.
- ✱ Consider **IO LR** titrated to SBP greater than 100.
- ✱ 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).

- ✱ *Pediatric*:
  - ✱ Consider **MEDICAL CONTROL**.

Citations: (National Association of Emergency Medical Technicians, 2019)

Protocol 5-030 - Burns

EMD

- Dispatch a non-dedicated standby ambulance to the following incident types:
  - 1st alarm commercial structure fire.
  - 2nd alarm residential structure fire.
  - 2nd alarm natural cover fire.
  - 2nd alarm vehicle fire.

EMR

- 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%.
- Consider **Protocol 5-075 - Hemorrhage** (page **71**).
- Consider **saran wrap**.
- Consider: Apply **cardiac monitor** limb leads.
- Obtain vital signs.
- Remove all jewelry.
- Keep patient warm.
- Consider direct transport to **Burn Unit**.

EMT

- Ensure completion of applicable EMR items above.
- Assist ALS with **Capnography**.

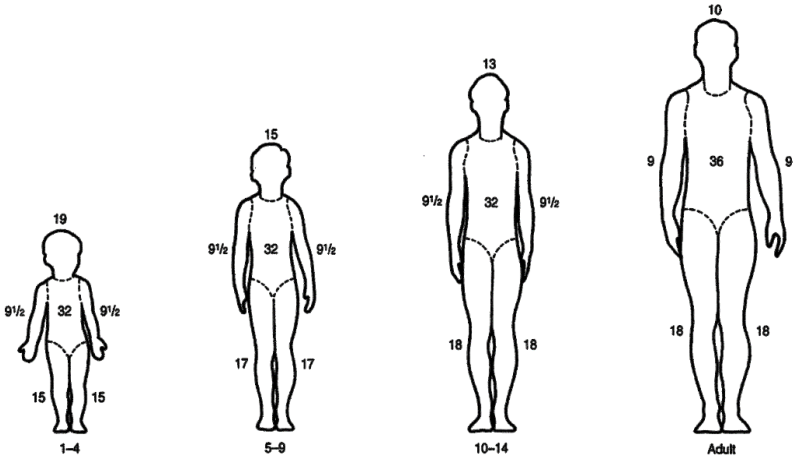
AEMT

- Ensure completion of applicable EMT items above.
- Consider **IV LR**.
  - *Adult (greater than 13 yr)*: 500 ml/hr.
  - *Pediatric (6-13 yr)*: 250 ml/hr.
  - *Pediatric (less than 6 yr)*: 125 ml/hr.
  - If 2nd & 3rd degree burns greater than 20% BSA, Modified Parkland Formula:
    - **LR** (2 ml/kg) x (% BSA)

RN Medic

- 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:
  - 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).

Citations: (Boland, Satterlee, & Jansen, 2014), (Cox Paramedics, 2014), (Finn, et al., 2004), (Mercy Burn Center, 2014), (NASEMSO Medical Directors Council, 2017), (National Association of Emergency Medical Technicians, 2019)



Protocol 5-040 - Chest Trauma

EMR

- ✱ Consider **SMR**.
- ✱ Assist **ventilations** as needed.
- ✱ Consider **Oxygen** 100%.
- ✱ Consider **Protocol 5-075 - Hemorrhage** (page 71).
- ✱ Bandage / **splint** / stabilize impaled objects as required.
- ✱ Monitor pulseoximetry.
- ✱ Consider: Apply **cardiac monitor** limb leads.
- ✱ Obtain vital signs.
- ✱ Consider: **Occlusive dressing** to open wounds.
- ✱ Chest crush injury: Immediate release and rapid transport.

EMT

- ✱ Ensure completion of applicable EMR items above.
- ✱ Consider assisting ALS with **Capnography**.
- ✱ Flail Chest: Stabilize.
  - ✱ *Adult*: Consider assisting respirations with positive pressure via **BVM** or assisting ALS with **CPAP**.
- ✱ Absent or decreased pulses: Consider Pelvic Binder.

AEMT

- ✱ Ensure completion of applicable EMT items above.
- ✱ Consider **IV LR** titrated to SBP greater than 80.

RN Medic

- ✱ Ensure completion of all applicable BLS items on the left.
- ✱ Consider **IO LR** titrated to SBP greater than 100.
- ✱ Consider **Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)** (page 93).
- ✱ Suspected **tension pneumothorax** (severe dyspnea and shock):
  - ✱ Consider **Chest Decompression**
    - ✚ 5th intercostal space, anterior axillary line OR
    - ✚ 2nd intercostal space, mid-clavicular line.
- ✱ Pain: Refer to **Protocol 6-050 - Control of Pain** (page 81).
- ✱ Nausea: Refer to **Protocol 6-040 - Control of Nausea** (page 80).
- ✱ *Pediatric*:
  - ✱ Consider **MEDICAL CONTROL**.

Citations: (Care Flight Collective, 2014), (National Association of Emergency Medical Technicians, 2019), (Zacher, 2017)

Protocol 5-050 - Extremity Trauma

EMR

- ✱ Consider **Protocol 5-075 - Hemorrhage** (page 71).
- ✱ Consider **SMR**.
- ✱ Assist **ventilations** as needed.
- ✱ Consider **Oxygen** 100%.
- ✱ Extremity crush injury: Do not release until ALS direction.
- ✱ Bandage / **splint** / stabilize impaled objects as required.
  - ✱ **Splint** in position of comfort.
  - ✱ Open fracture: Cover with sterile **Saline** dressings.
- ✱ Elevate.
- ✱ Assess distal neurovascular status.
- ✱ Consider **cold pack**.
- ✱ Monitor pulseoximetry.
- ✱ Consider: Apply **cardiac monitor** limb leads.
- ✱ Obtain vital signs.

EMT

- ✱ Ensure completion of applicable EMR items above.
- ✱ Consider Pelvic Binder.

AEMT

- ✱ Ensure completion of applicable EMT items above.
- ✱ No crush injury: Consider **IV LR** titrated to SBP greater than 100 after all active bleeding has been addressed.

- ✱ Extremity crush injury (suspected compartment and/or crush syndrome if Extremity pinned for 15 minutes to 6 hours depending on weight and other factors):
  - ✱ **IV NS/LR**. Two large bore **IV**s wide open.

RN Medic

- ✱ 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).

- ✱ *Pediatric*:
  - ✱ Consider **MEDICAL CONTROL**.

- ✱ Extremity crush injury (suspected compartment and/or crush syndrome if Extremity pinned for 15 minutes to 6 hours depending on weight and other factors):
  - ✱ Consider **IO NS**. Two large bore **IV**s wide open.
  - ✱ Contact **MEDICAL CONTROL**:
    - ✚ Consider **Tourniquet**.
      - ✖ (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.
      - ✖ (To alkalize blood and urine).
    - ✚ Consider **Calcium Chloride** 1g **IV**/**IO** over 10-15 min. Do not mix with **Sodium Bicarbonate**.
      - ✖ (To decrease cell membrane permeability).
    - ✚ Consider **Albuterol Nebulized** high dose (10-20 mg).
      - ✖ (To lower Potassium).
    - ✚ Consider **Dextrose IV**/**IO**.
      - ✖ (To facilitate insulin administration in ER).

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)

Protocol 5-060 - Eye Injury

EMR

- Consider **Oxygen** if SpO_2 less than 88%.
- Control bleeding / bandage / stabilize impaled objects as required.
- Monitor pulseoximetry.
- Obtain vital signs.
- Trauma:
  - Cover injured eye with domed or cupped cover.
  - Do not apply pressure to eye.
- Foreign substance:
  - Non-penetrating injuries: Flush Eye with at least 1 L **LR** over 20 min.

EMT

- Ensure completion of applicable EMR items above.

AEMT

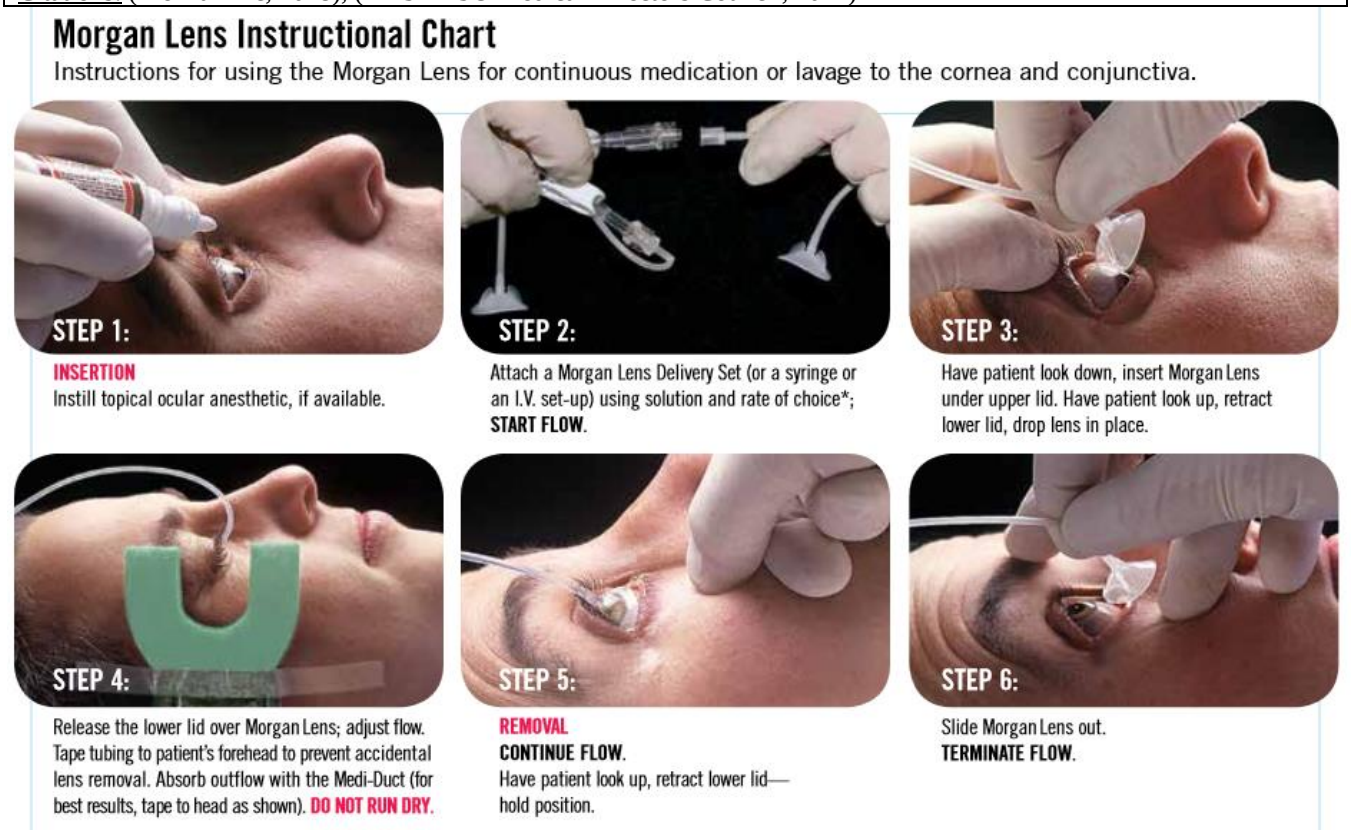
- Ensure completion of applicable EMT items above.
- Consider **IV**.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- Foreign substance:
  - Consider **Tetracaine** 1-2 drops in affected Eye.
  - Non-penetrating injuries: Flush Eye with at least 1 L **LR** over 20 min.
    - 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*:
  - Consider **MEDICAL CONTROL**.

Citations: (MorTan Inc, 2018), (NASEMSO Medical Directors Council, 2017)



Protocol 5-070 - Head Trauma

EMR

- Consider **SMR**. **C-collar** contraindicated with penetrating neck trauma.
- Assist **ventilations** as needed.
- Consider **Oxygen** 100%.
- Consider **Protocol 5-075 - Hemorrhage** (page **71**).
- Bandage / **splint** / stabilize impaled objects as required.
- Monitor pulseoximetry.
- Consider: Apply **cardiac monitor** limb leads.
- Obtain vital signs.
- Elevate Head of **cot**.
- Head crush injury: Immediate release and rapid transport.
- Maintain body **temperature** between 91 and 99 degrees F.
- Avulsed tooth: Do not touch root. Place in **saline**.

EMT

- Ensure completion of applicable EMR items above.
- Consider assisting ALS with **Capnography**.
- Severe head injury with signs of herniation: Moderate hyperventilation to target **$EtCO_2$** 30-35.

AEMT

- Ensure completion of applicable EMT items above.
- Consider **IV NS**/**LR** 20 ml/kg (max 40 ml/kg or 2 L) titrated to maintain SBP according to age:
  - Greater than 10 yr: SBP 110-120.
  - 1-10 yr: Greater than 70 + (2 x age) SBP.
  - 1-12 mo: Greater than 70 SBP.
  - 0-28 days: Greater than 60 SBP.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- Consider **IO NS**/**LR**.
- GCS less than 8 OR Cushing's Triad (abnormal breathing AND **bradycardia** AND **hypertension**): Consider **RSI**.

- *Adult*:
  - Consider **Fentanyl** 50-100 mcg every 5-20 min (max 300 mcg) **IV**/**IO**/**IN**. Over 65 yr old: 0.5-2 mcg/kg.
  - **Nausea**: Consider **Zofran** 4mg **IV**/IM/**IN** (max 8 mg).

- *Pediatric*:
  - Age less than 3 yrs: **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.)
  - Consider contacting **MEDICAL CONTROL**.

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)

Protocol 5-075 - Hemorrhage

EMR

- Consider direct pressure.
- Consider **Tourniquet** on humerus or femur until occlusion of distal pulse.
  - Lower extremity hemorrhage: Consider two **Tourniquets** side-by-side on femur until occlusion of distal pulse.
- Assist **ventilations** as needed.
- Consider **Oxygen** 100%.
- Consider **Hemostatic Agent**.
- Consider bandage.
- Consider **splint**.
- Consider stabilizing impaled object.
- Monitor pulseoximetry.
- Consider: Apply **cardiac monitor** limb leads.
- Obtain vital signs.
- Epistaxis: Squeeze nose for 10-15 min continuously.

EMT

- Ensure completion of applicable EMR items above.
- Consider assisting ALS with **Capnography**.

AEMT

- Ensure completion of applicable EMT items above.
- Consider **IV NS/LR** bolus to maintain SBP above 100.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- Consider **IO NS/LR**.
- Post partum: Refer to **Protocol 4-180 - Vaginal Bleeding** (page **64**).

- *Adult*: Major injury or hemorrhage with signs of shock:
  - Consider **TXA** 1 g in 100 ml **NS/LR** over 10 min.

- *Pediatric*:
  - Consider **MEDICAL CONTROL**.

Citations: (National Association of Emergency Medical Technicians, 2019)

Protocol 5-080 - Spinal Trauma

EMR

- ✱ Consider **SMR**. **C-collar** contraindicated with penetrating neck trauma.
- ✱ Assist **ventilations** as needed.
- ✱ Consider **Oxygen** 100%.
- ✱ Consider **Protocol 5-075 - Hemorrhage** (page **71**).
- ✱ Bandage / **splint** / stabilize impaled objects as required.
- ✱ Monitor pulseoximetry.
- ✱ Consider: Apply **cardiac monitor** limb leads.
- ✱ Obtain vital signs.

EMT

- ✱ Ensure completion of applicable EMR items above.

AEMT

- ✱ Ensure completion of applicable EMT items above.
- ✱ Consider **IV LR** titrated to SBP greater than 80.

RN Medic

- ✱ 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).
- ✱ *Pediatric*:
  - ✱ Consider **MEDICAL CONTROL**.

Citations: (NASEMSO Medical Directors Council, 2017)

Protocol 5-085 - Superficial Penetration

EMR

- If the injury meets any of the following, the patient should be transported and removed by ER staff:
  - 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:
  - The object is embedded superficially or subcutaneously,
  - Isolated injury, AND
  - The object is embedded in non-sensitive area.

- To remove Taser probe:
  - 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.

- To remove Fish hook:
  - 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.

EMT

- Ensure completion of applicable EMR items above.

AEMT

- Ensure completion of applicable EMT items above.

RN / Medic

- 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.

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

Protocol 5-090 - Trauma Arrest

EMR

- ✱ Consider **Protocol 5-075 - Hemorrhage** (page 71).
- ✱ Confirm pulselessness and apnea.
- ✱ Attempt to determine down-time, and history.
- ✱ Consider **SMR**.
- ✱ Begin **CPR**.
  - ✱ 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**.
  - ✱ Establish BLS **Airway**.
  - ✱ **Compressions** : **Ventilations** ratio = 30:2 unless intubated, then 8-10 breaths per min.
  - ✱ Avoid hyperventilation.
- ✱ Bandage / **splint** as required.
- ✱ Monitor pulseoximetry.
- ✱ Apply **cardiac monitor Combo Pads** and limb leads.

EMT

- ✱ Ensure completion of applicable EMR items above.
- ✱ Assist ALS with **Capnography**.
- ✱ Consider Pelvic Binder.

AEMT

- ✱ Ensure completion of applicable EMT items above.
- ✱ **IV LR** wide open (x2 large bore).

RN Medic

- ✱ Ensure completion of all applicable BLS items on the left.
- ✱ If chest trauma: Consider bilateral **Chest Decompression** and refer to **Protocol 5-040 - Chest Trauma** (page 67).
- ✱ Consider **IO LR**.
- ✱ Consider **Intubation**.
- ✱ If hypovolemia or obstructive shock is suspected: Treatment of those conditions should take priority over all other treatments (potentially including CPR).
- ✱ Treat rhythm per protocol.
- ✱ *Adult*: **Field termination** may be requested from **MEDICAL CONTROL** regardless of how long **ACLS** efforts have been underway.
  - ✱ Narrow complex PEA should not be terminated in the field.
- ✱ *Pediatric*: Contact **MEDICAL CONTROL**.
  - ✱ Immediate **transport**.

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

Part 6 - General Protocols

Section 6-010 - Acquisition of Medical Control

EMR

- 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).

EMT

- Ensure completion of applicable EMR items above.

AEMT

- Ensure completion of applicable EMT items above.

RN **Medic**

- Ensure completion of all applicable BLS items on the left.
- Medical control shall only be provided by a **Physician**. Medical control shall not accepted from nurses, nurse practitioners, Physician assistants, midwifes, 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.

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

EMD

- Request for air ambulance: Contact **Cox Air Care** and advise location, destination, and patient demographics (if known).

EMR

- Consider Air Ambulance if **ONE** or more of the following are true:
  - 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.
- Consider Air Ambulance if **TWO** or more of the following are true (also includes ALS list at right):
  - 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.

EMT

- Ensure completion of applicable EMR items above.

AEMT

- Ensure completion of applicable EMT items above.

RN / Medic

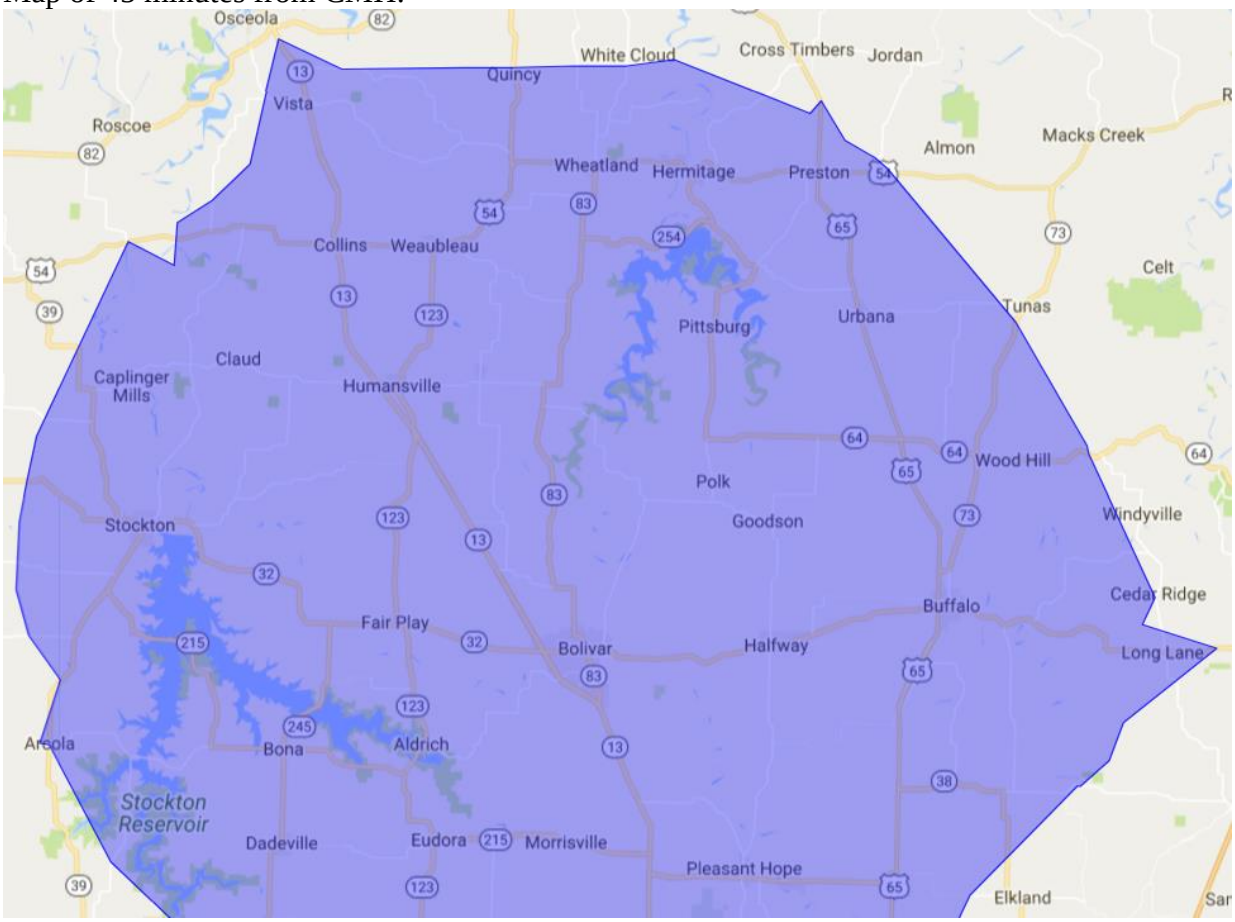
- Ensure completion of all applicable BLS items on the left.
- Consider Air Ambulance if **ONE** or more of the following are true:
  - Uncontrollable cardiac dysrhythmias;
  - Airway control intervention;
- Consider Air Ambulance if **TWO** or more of the following are true (also includes BLS list at left):
  - External **Pacing** in progress;
  - Medication administration requiring an **infusion pump**;

Citations: (Citizens Memorial Hospital, 2013)

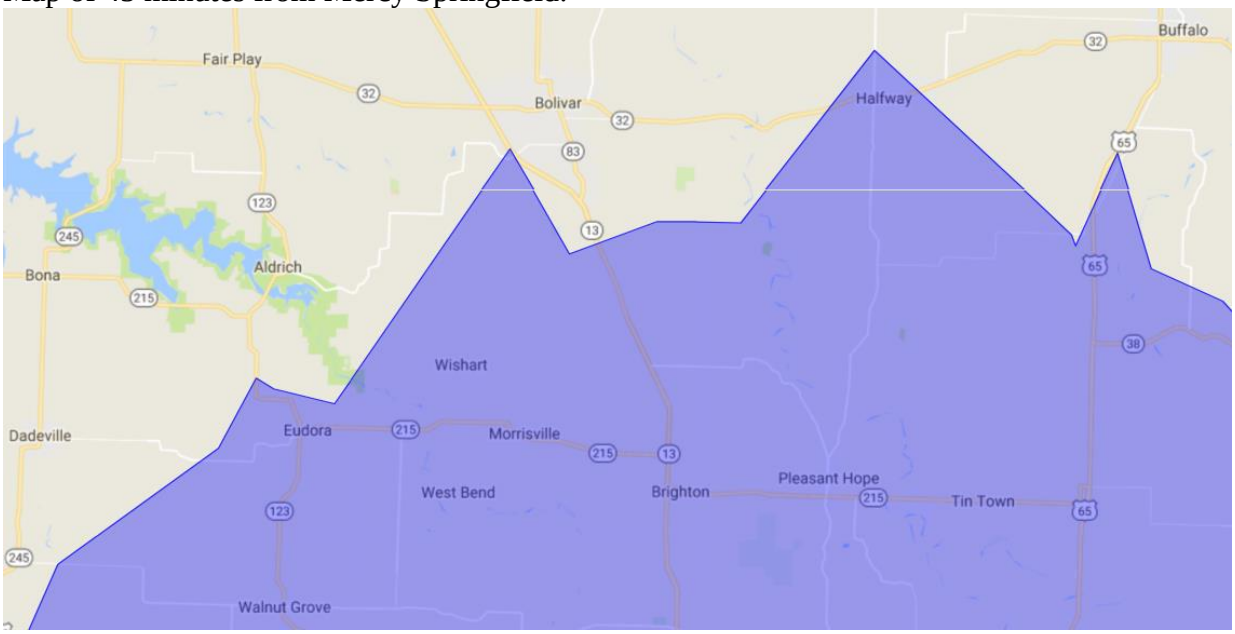
Section 6-021 - No Fly Zone

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

- MPDS Protocol 9 (Cardiac Arrest) - Cardiac arrest pathway: Continuous compressions instructions provided to callers until responder arrival is the treatment preference for adult arrest with suspected cardiac origin.

EMR

- Confirm pulselessness and apnea.
- Consider **AED** or **LifePak** in AED mode. Refer to **Protocol 2-030 - Automated External Defibrillation (AED)** (page 19).
- Perform **Compressions**.
  - Consider **Chest Compressor**.
  - Minimize interruptions.
  - Use CPR metronome set at 110/min, if available or count out loud.
  - No advanced airway in place:
    - **Compressions** at 30:2 ratio at 110/min.
      - Witness arrest with shock able rhythm: Perform continuous **compressions** at 110/min with passive **Oxygen** and basic airway adjunct for 3 cycles.
    - Rotate compressors every 2 minutes.
  - Advanced airway in place:
    - 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**.

EMT

- Ensure completion of applicable EMR items above.
- Prepare **IV**/**IO** and any requested medications from ALS.
- Consider **KING** or **LMA AIRWAY**.
- Attach **Capnography**.
- Check **blood sugar**.
- Prepare for **termination** or transport.

AEMT

- Ensure completion of applicable EMT items above.
- Start **IV** with **Fluid Bolus**.
- Consider **Narcan** for Overdose.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- Every 2 minutes, **Charge monitor** in anticipation of shock able rhythm.
  - *Adult*: 360 J (OR consider biphasic dose of 200 J).
  - *PEDIATRIC*: 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.
  - *Adult*: 1 mg.
  - *Pediatric*: 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.
  - OR **Amiodarone** 300 mg.
- Consider **Pacing**.
- Consider **Dextrose** for **Hypoglycemia**.
- Dialysis Patient or Known Hyperkalemia: Consider contacting **MEDICAL CONTROL** for **Calcium Chloride** 1 g **IV**/**IO**.
- Perform **Physical Exam**.
- Begin **termination**/transportation conversation.
  - 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).

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

Section 6-030 - Competencies and Education

EMR

- 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. Typically, one competency topic per semester (three semesters per year).
  - First responder agencies may deliver the competency locally with the approval of CMH EMS.
- **Annually, each EMR shall attend and successfully complete 33% of the offered topics that year.**

EMT

- Ensure completion of applicable EMR items above.
- **Annually, each volunteer EMT shall attend and successfully complete 66% of the offered topics that year.**
- **Annually, each career EMT shall attend and successfully complete 100% of the offered topics that year.**

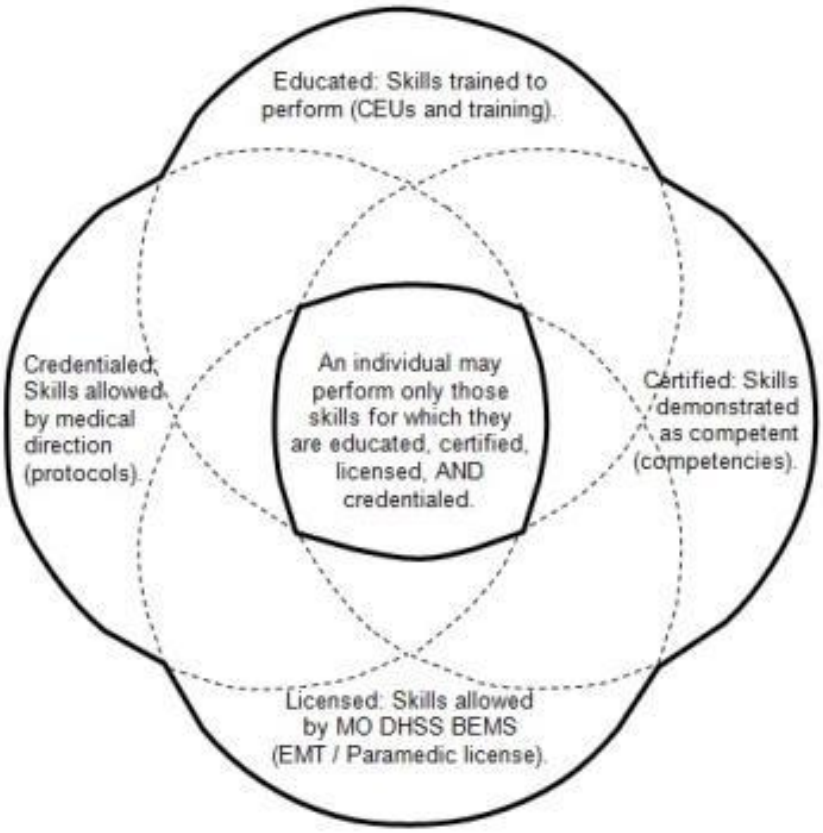
AEMT

- Ensure completion of applicable EMT items above.

RN / Medic

- Ensure completion of all applicable BLS items on the left.
- **Annually, each RN or Paramedic shall attend and successfully complete 100% of the offered topics that year.**
- A volunteer RN or Paramedic working in BLS-only capacity for a first response agency, shall meet the requirements for volunteer EMT.

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



Protocol 6-040 - Control of Nausea

EMR

- Identify possible causes.
- Consider **Oxygen** if SpO_2 less than 88%.
- Monitor pulseoximetry.
- Consider: Apply **cardiac monitor** limb leads.
- Obtain vital signs.

EMT

- Ensure completion of applicable EMR items above.

AEMT

- Ensure completion of applicable EMT items above.
- Consider **IV NS**/**LR**.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- Consider **IO NS**/**LR**.

- *Adult (greater than 27 kg)*:
  - 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**/**LR** over 15-30 min.
  - Consider **Phenergan** 6.25-12.5 mg **IV**/**IO** diluted in **NS**/**LR** flush very slow push.
  - Consider **Benadryl** 12.5-25 mg **IV**/**IO**/IM.
- *Pediatric (greater than 2 yr & less than 27 kg)*:
  - 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**/**LR** over 15-30 min.
  - Consider **Phenergan** 0.25 mg/kg **IV**/**IO** diluted in **NS**/**LR** flush very slow push.
  - Consider **Benadryl** 0.1 mg/kg **IV**/**IO** (max 25 mg).
- *Pediatric (less than 2 yr)*: **Zofran** and **Phenergan** contraindicated.

Citations: (NASEMSO Medical Directors Council, 2017), (Taney County Ambulance District, 2014)

Protocol 6-050 - Control of Pain

EMR

- Identify possible causes.
- Consider **Oxygen** if SpO_2 less than 88%.
- Monitor pulseoximetry.
- Consider: Apply **cardiac monitor** limb leads.
- Obtain vital signs.
- Consider pain relief actions:
  - **Splinting** or **immobilizing**
  - Elevating
  - Cold pack
  - Verbal sedation

EMT

- Ensure completion of applicable EMR items above.
- If narcotic given: consider assisting ALS with **Capnography**.

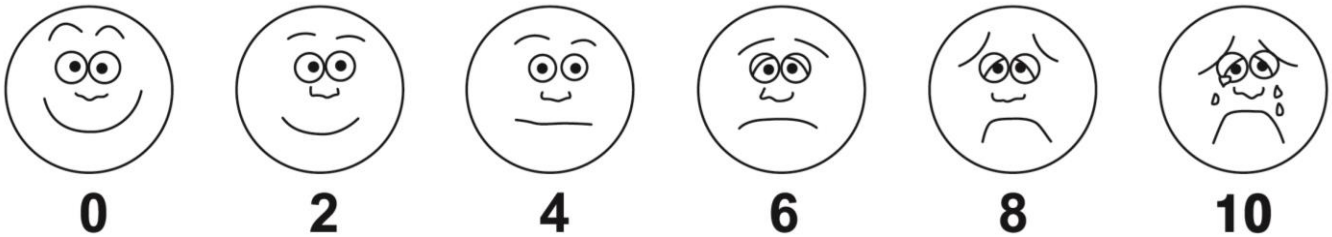
AEMT

- Ensure completion of applicable EMT items above.
- Consider **IV NS/LR**.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- Consider **IO NS/LR**.
- Acute (non traumatic) or chronic (acute exacerbation) with autonomic signs and symptoms:
  - *Adult*:
    - Consider **Fentanyl** 12.5-100 mcg may repeat every 5 min **IV/IO**/IM/**IN**. Over 65 yr old: 25-50 mcg (max 150 mcg).
      - OR **Morphine** 2-5 mg (max 10 mg) **IV/IO**/IM. Maintain SBP greater than 100.
        - 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).
  - *Pediatric*:
    - 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.
        - Consider **Benadryl** 1 mg/kg (max 50 mg) to potentiate **Morphine** and reduce hypotension.
    - **Anxiety**: Consider contacting **MEDICAL CONTROL** for **Versed**:
      - 12-18 yr old: Same as adult.
      - 2 mo - 12 yr old: Consider 0.15 mg/kg **IV/IO**.
      - 1 mo - 12 yr old: Consider 0.2 mg/kg **IN**.
  - Severe pain: 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.
  - Painful procedure of short duration (i.e. cardioversion or extrication):
    - Cardioversion: 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.
- Chronic without autonomic signs and symptoms: Transport in position of comfort.
- Any patient receiving Narcotics must be transported.

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



Protocol 6-055 - Decontamination

EMR

- ✱ 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.
- ✱ All persons leaving the hot zone must be gross decontaminated:
  - ✱ **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.
- ✱ All persons leaving the warm zone must be technically decontaminated:
  - ✱ **Remove ALL clothing** and jewelry.
  - ✱ Gentle **washing** with soap and water.

EMT

- ✱ Ensure completion of applicable EMR items above.
- ✱ Do not contaminate ambulances with patients or responders that have not been decontaminated.

AEMT

- ✱ Ensure completion of applicable EMT items above.

RN Medic

- ✱ 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.

Citations: (Wake County EMS System, 2010)

Protocol 6-060 - Do Not Resuscitate (DNR)

EMR

- 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:
  - Patient signature.
  - Patient's Physician signature.
- If any doubt exists regarding the validity of the Documentation, immediate resuscitation should be initiated.

EMT

- Ensure completion of applicable EMR items above.

AEMT

- Ensure completion of applicable EMT items above.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- All therapeutic care and vigorous support (**IV**s, 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**.
- Peri-arrest TPOPP/MOLST/POLST patient requiring comfort measures: 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.
  - If additional comfort measure orders are specified on the form, contact **MEDICAL CONTROL**.
  - Agitated delirium / hallucinations:
    - 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.
  - **Anxiety**:
    - Consider **Ativan** 0.5-2 mg PO.
    - Consider **Haldol** 5 mg **IV**.
    - Consider **Versed** 1-3 mg **IV**/**IN** every 10 minutes PRN.
  - Dehydration:
    - Consider **NS**/**LR** 10-20 ml/kg **IV**.
  - **Fever**:
    - Consider **Acetaminophen** PO/suppository.
    - Cool cloth to forehead, neck, and/or underarms.
  - **Nausea**:
    - Consider **Zofran** 4-8 mg PO/**IV**.
    - Consider **Ativan** 0.5-2 mg PO.
  - **Pain management**:
    - Consider **Morphine** 1-5 mg **IV** every 10 minutes PRN.
    - Consider **Fentanyl** 25-50 mcg **IV**/**IN** every 10 minutes PRN.
  - Work of breathing: Tachypnea, accessory muscle use, or hypoxia with agitation (Low SpO_2 alone does not indicate work of breathing).
    - 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**.

Citations: (NASEMSO Medical Directors Council, 2017)

Section 6-070 - Documentation

EMR

- A Patient Care Report (PCR) must be completed for **every EMS response**. An Electronic Patient Care Report (ePCR) is required for EMS transport agencies.
  - 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.
  - 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: 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.
  - If no ambulance is dispatched: 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.
    - 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:
      - 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.

EMT

- Ensure completion of applicable EMR items above.
- CMH or EMH ambulance crew:
  - 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.

AEMT

- Ensure completion of applicable EMT items above.

RN / Medic

- 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:
  - Drug or alcohol intoxication.
  - Acute mental impairment.
  - Attempted **suicide**, verbalized **suicidal intent**, or EMS providers suspect **suicidal intent**.

Citations: (Citizens Memorial Hospital, 2013), (NASEMSO Medical Directors Council, 2017)

Protocol 6-080 - Event Standby

EMR

- Treat illnesses and injuries per appropriate protocol.

EMT

- 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.
- Dedicated standby:
  - 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.
  - Football player or other event with significant padding and helmet:
    - Assist athletic trainers in removing athletic equipment prior to transport.
      - 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.
    - 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.

AEMT

- Ensure completion of applicable EMT items above.

RN Medic

- 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.

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

Protocol 6-085 - High-Threat Response

EMD

- Tier One incident (threat of MCI): Dispatch primary agency and notify secondary agency supervisors.
- Tier Two incident (Incident with less than six casualties): Dispatch all in-county on-duty agency resources and notify all supervisors.
- Tier Three incident (MCI with six or more casualties): Dispatch on-duty agency resources, notify supervisors, and follow **mutual aid** protocols.

EMR

- 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.
- *PREPARATION*:
  - 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**.
- *DIRECT THREAT CARE* (Hot zone - Immediate threat may exist):
  - 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.
- *INDIRECT THREAT CARE* (Warm zone - Secondary threats may exist):
  - 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**:
    - Major hemorrhage control: Consider **Tourniquet** and/or **Hemostatic Agent**.
    - Airway management: Positioning, **NPA**.
    - Respirations: Consider vented **Occlusive Dressing**.
    - Head / **Hypothermia**: Treat life-threatening head injuries and maintain warmth.
- *EVACUATION*:
  - Reassess all patients and refer to **Protocol 6-130 - Triage** (page 98).

EMT

- Ensure completion of applicable EMR items above.

AEMT

- Ensure completion of applicable EMT items above.
- Consider **IV LR** fluid bolus after addressing active bleeding.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- **MARCH**:
  - Major hemorrhage control.
  - Airway management: Consider **Intubation**.
  - Respirations: Consider **Needle Decompression**.
  - Circulation:
    - Consider **IO LR**.
    - Consider **TXA** 1 g in 100 ml **NS**/**LR** over 10 min if major injury AND signs of shock.
  - If it will not delay extraction: Refer to **Protocol 6-050 - Control of Pain** (page 81).

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)

Protocol 6-090 - Hazardous Atmosphere Standby

EMD

- Dispatch a non-dedicated standby ALS ambulance to the following:
  - All hazardous materials releases where emergency response is required by other agencies.
  - All structure fires where firefighters may be entering a hazardous atmosphere.

EMR

- Treat illnesses and injuries per appropriate protocol.
- Refer to **Protocol 6-055 - Decontamination** (page 82) as appropriate prior to contaminating personnel, equipment, and ambulance.

EMT

- 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.
  - 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**.
  - 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.
  - 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:
    - 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:
      - SBP greater than 200.
      - Pulse greater than 110.
      - Respirations greater than 40.
      - **Temperature** greater than 101.
      - PulseOx less than 90%.

AEMT

- Ensure completion of applicable EMT items above.

RN / Medic

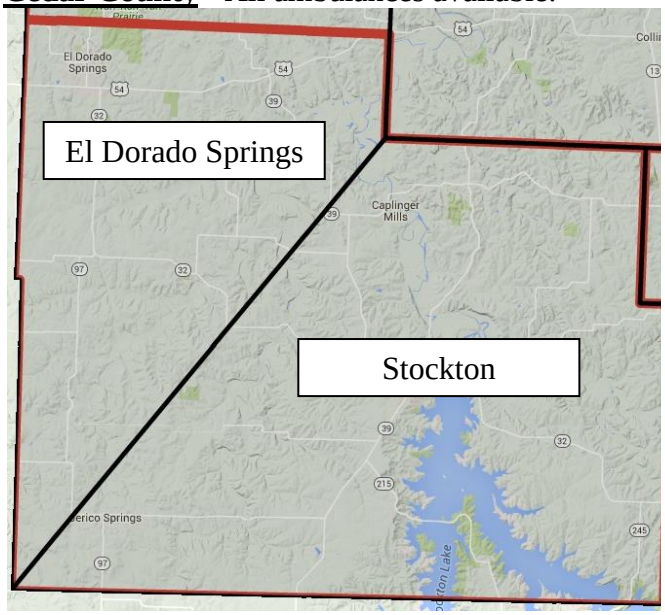
- Ensure completion of all applicable BLS items on the left.
- Treat illnesses and injuries according to appropriate protocol.

Citations: (Wake County EMS System, 2010)

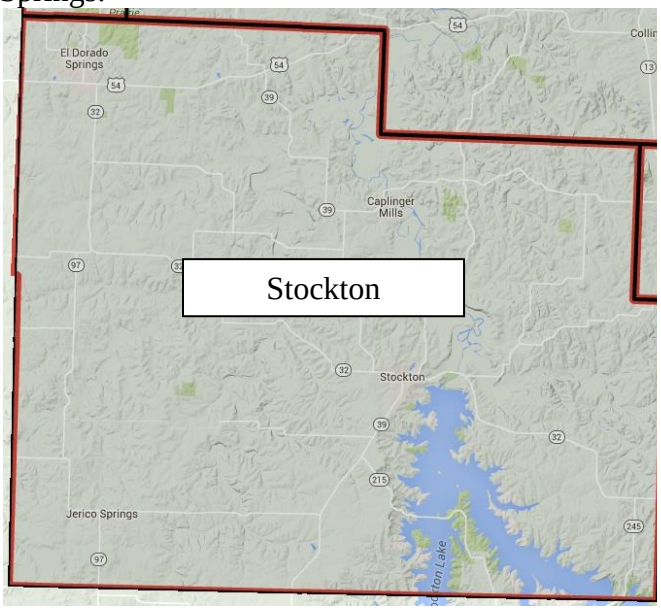
Section 6-095 - Mutual Aid Maps

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.

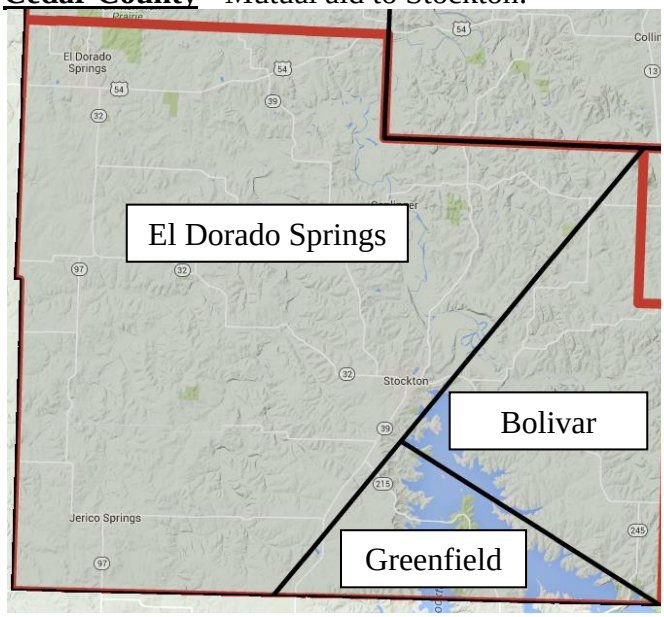
Cedar County - All ambulances available:



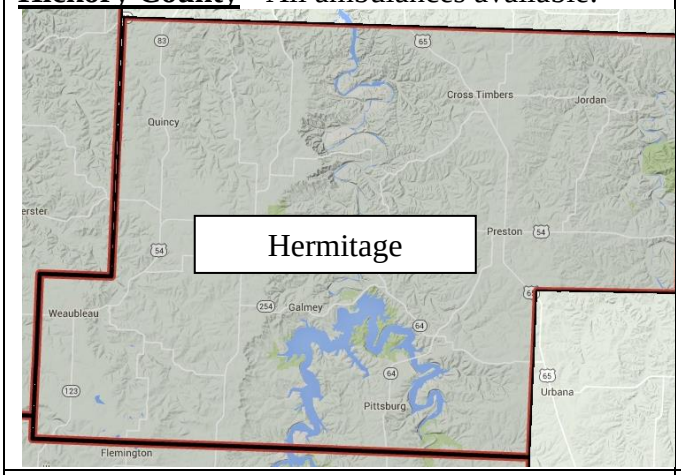
Cedar County - Mutual aid to El Dorado Springs:



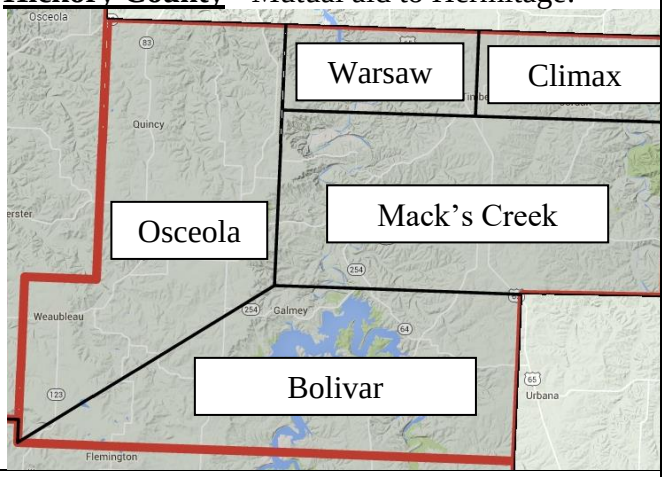
Cedar County - Mutual aid to Stockton:



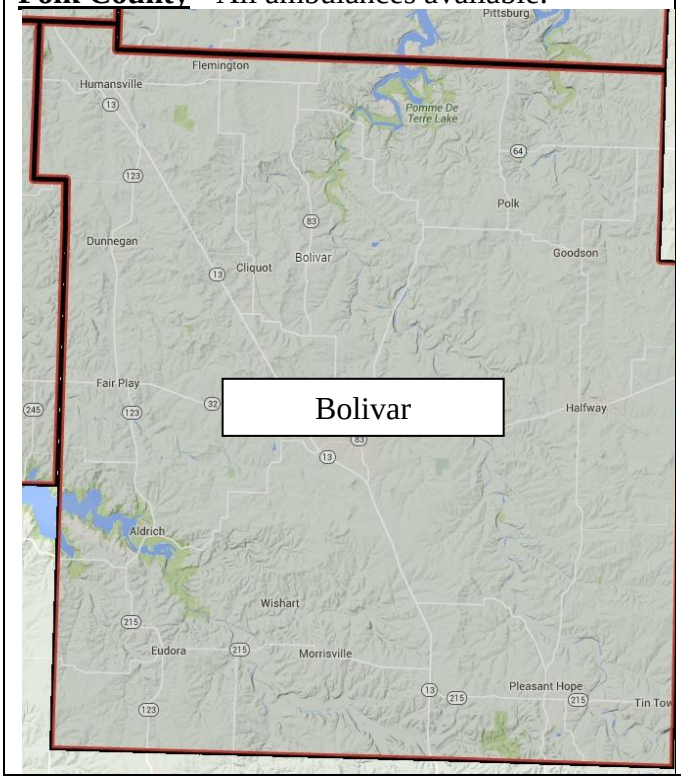
Hickory County - All ambulances available:



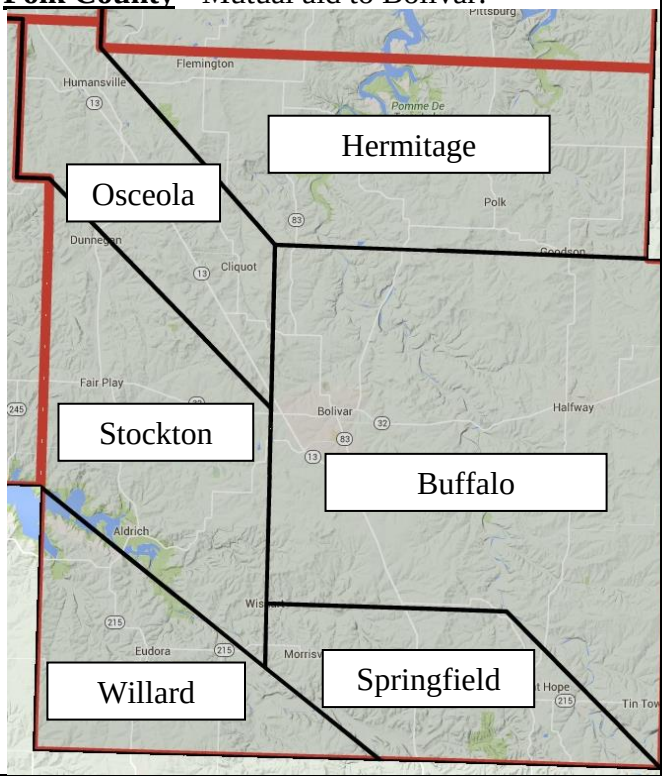
Hickory County - Mutual aid to Hermitage:



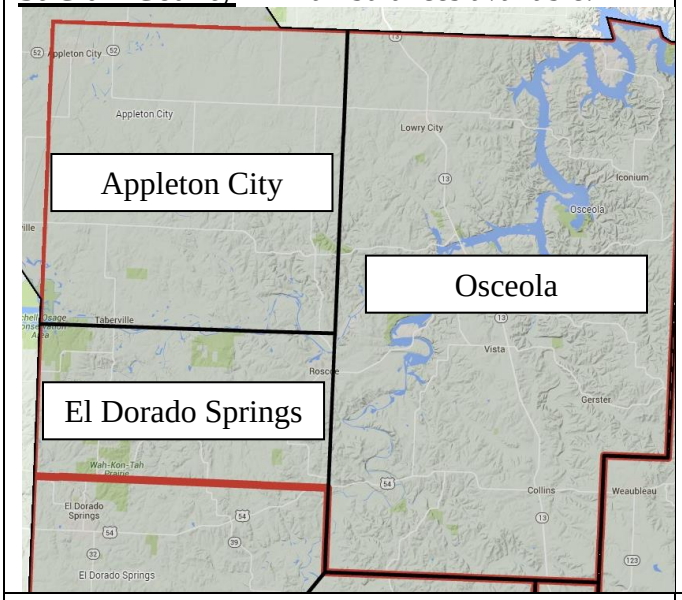
Polk County - All ambulances available:



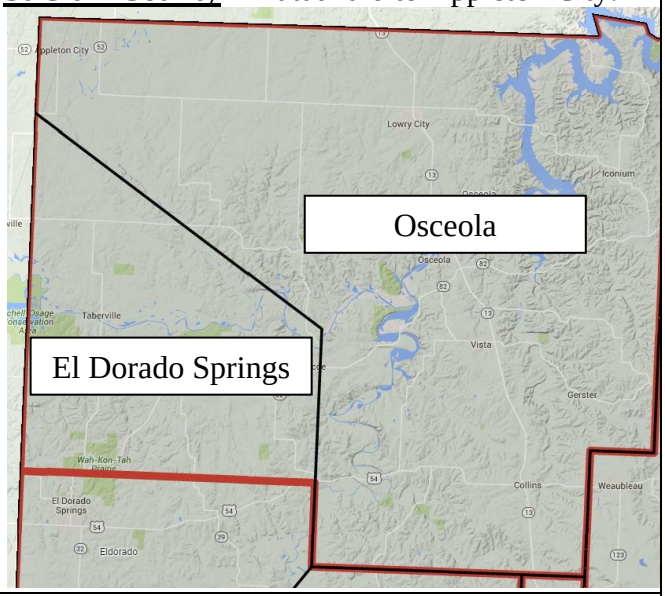
Polk County - Mutual aid to Bolivar:



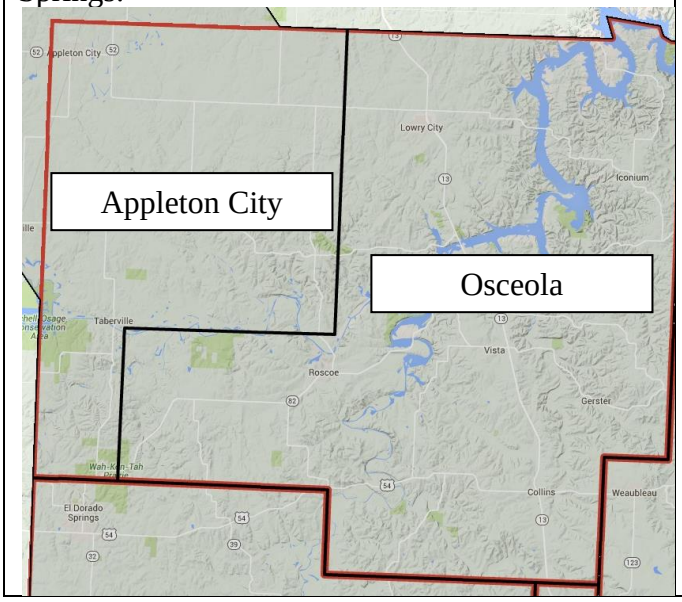
St Clair County - All ambulances available:



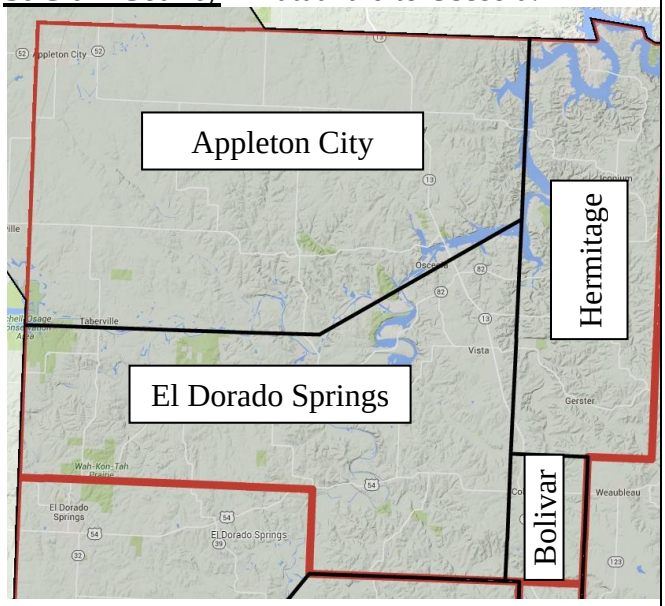
St Clair County - Mutual aid to Appleton City:



St Clair County - Mutual Aid to El Dorado Springs:



St Clair County - Mutual aid to Osceola:



Section 6-100 - Off-Duty Protocols

EMR

- These protocols do not apply to EMR personnel while off-duty.

EMT

- 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.

AEMT

- Ensure completion of applicable EMT items above.

RN **Medic**

- 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:
  - 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.

Citations:

Section 6-105 - Quality Improvement

EMD

- ✱ Ongoing in-house Quality improvement must include at least a 10% review rate of Documentation by management staff to ensure protocol compliance and appropriate patient care.
  - ✱ Current performance graph: **http://ozarksems.com/reports/03T(qa-percent).png**
- ✱ 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.
  - ✱ **Annually, each dispatch agency must participate in 75% of the quality meetings with at least one representative.**
    - ✚ Current performance graph: **http://ozarksems.com/reports/03K(qi-type).png**

EMR

- ✱ Ensure completion of applicable EMD items above.
- ✱ **Annually, each EMR-only agency must participate in 25% of the quality meetings with at least one representative.**

EMT

- ✱ Ensure completion of applicable EMR items above.
- ✱ **Annually, each volunteer EMT agency must participate in 25% of the quality meetings with at least one representative.**
- ✱ **Annually, each agency with career EMTs must participate in 50% of the quality meetings with at least one representative.**

AEMT

- ✱ Ensure completion of applicable EMT items above.

RN Medic

- ✱ Ensure completion of all applicable BLS items on the left.
- ✱ **Annually, each agency with RNs or Paramedics must participate in 100% of the quality meetings 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.

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 SpO_2 above 90% at all times.
  - ✱ Consider nasal cannula at 15 LPM after sedation.
  - ✱ Avoid BVM prior to **intubation** if SpO_2 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/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**/**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**.

- ✱ Paralyze: Consider delayed paralysis to allow preoxygenation.
  - ✱ Delayed: **Rocuronium** 0.1 mg/kg *[ideal body weight]* **IV**/**IO** (2 min onset, 10 min duration).
  - ✱ Rapid: **Rocuronium** 1.2 mg/kg *[ideal body weight]* **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 *[ideal body weight]* **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)

Section 6-111 - RSI Dosing Sheet

CMH/EMH EMS RSI Quick Reference Dosing/Sizing Sheet																
Patient Age	Newborn	4 mo	6 mo	1 yr	2 yr	4 yr	6 yr	8 yr	10 yr	12 yr	14 yr	adult	adult	adult	adult	adult
Broslow Color	Grey	Pink	Red	Purple	Yellow	White	Blue	Orange	Green		Light Blue					
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	250 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	114 kg	136	
RSI - Prepare Equipment																
Tidal Volume (5 ml/kg)	25 ml	35 ml	45 ml	55 ml	70 ml	90 ml	115 ml	135 ml	180 ml	205 ml	250 ml	340 ml	455 ml	570 ml	680 ml	
Laryngoscope	1 mil	1 mil	1 mil	1.5 mil	2 mil	2 mil	2	2	3	3	4	4	4	4	4	
ET Size	3.5	3.5	3.5	4	4.5	5	5.5	6	6.5	7	7.5	7.5	8	8	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)	4 (red)	5 (pur)	5 (pur)	
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) (50 mcg/ml)	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	2.0 ml	2.0 ml	2.0 ml	
Atropine (0.5 mg) (0.1 mg/ml)	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	5.0 ml	5.0 ml	5.0 ml	
Ketamine (1 mg/kg) (50 mg/ml)	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	1.9 ml	2.3 ml	2.8 ml	
Ketamine (2 mg/kg) (50 mg/ml)	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	2.8 ml	3.7 ml	4.6 ml	5.5 ml	
Etomidate (0.3 mg/kg) (2 mg/ml)	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	13.7 ml	17.1 ml	20.4 ml	
Rocuronium (1.2 mg/kg) (10 mg/ml)	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 [ideal body weight]				
RSI - Medicate After Intubation (ml)																
Ketamine (1 mg/kg) (50 mg/ml)	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	1.9 ml	2.3 ml	2.8 ml	
Versed (1 mg/ml)	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	5.0 ml	5.0 ml	5.0 ml	
Fentanyl (50 mcg/ml)	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	2.0 ml	2.0 ml	2.0 ml	
Rocuronium (0.1 mg/kg) (10 mg/ml)	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 [ideal body weight]				

Section 6-120 - Transfer of Care

EMR

- 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.).

EMT

- 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).

AEMT

- Ensure completion of applicable EMT items above.

RN Medic

- 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.

Citations:

Section 6-125 - Transfer Out of Hospital

EMD

- 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.
  - Transfers will be dispatched in the following order of importance:
    - 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):
    - 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):
    - 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):
    - 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.):
    - 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).

EMR

- Ensure completion of applicable EMD items above.

EMT

- Ensure completion of applicable EMR items above.

AEMT

- Ensure completion of applicable EMT items above.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- Priority 1 transfers:
  - 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**:
  - Consider replacing **Propofol** at hospital bedside with **Ketamine** from ambulance stock.
  - *Adult:*
    - **Ketamine** 1 mg/kg **IV**/**IO**.
    - Consider **Fentanyl** 50-100 mcg **IV**/**IO**/**IN** (max 300 mcg).
  - *Pediatric*:
    - **Ketamine** 1 mg/kg **IV**/**IO**.
    - Consider **Fentanyl** 1-2 mcg/kg **IV**/**IO**/**IN** (max 150 mcg).
- Current performance graph: **http://ozarksems.com/reports/01A(tertiary).png**

Citations:

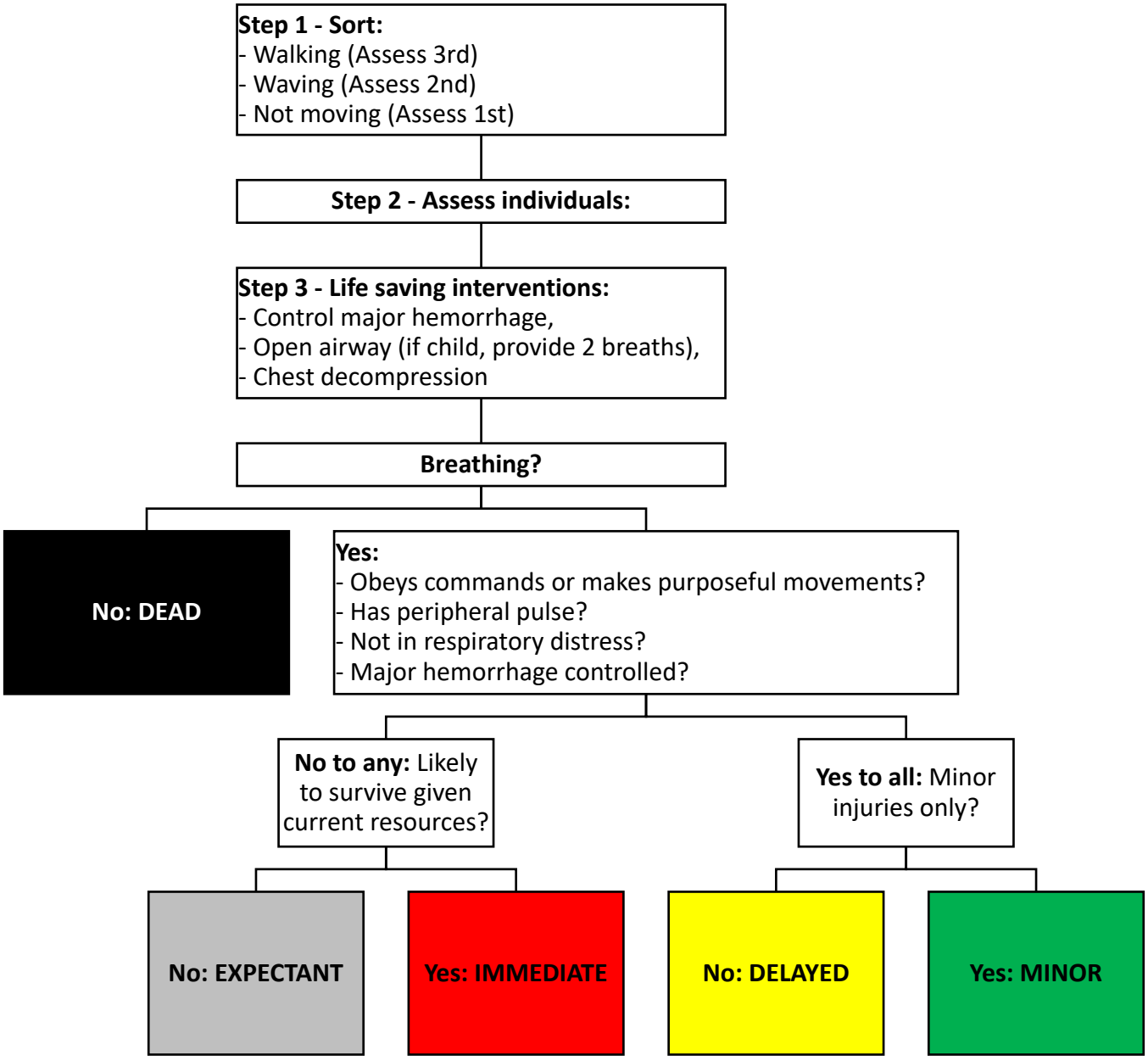
Protocol 6-130 - Triage

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:	**Mass Casualty Incident (MCI):**
✱ Every patient radio report on shall be Triaged 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.	✱ 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: ✱ **TRIAGE OFFICER**. ✚ **Determine** number of patients. ✚ **Establish** Triage area(s). ✚ **Triage** and tag patients according to **Section 6-135 - SALT Triage** (page 99). ✱ **TRANSPORTATION OFFICER**. ✚ **Communicate** number of patients. Refer to **Section 6-010 - Acquisition of Medical Control** (page **75**) for contact information. ✚ **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)

Section 6-135 - SALT Triage



Section 6-140 - Termination of Resuscitation

EMD

- MPDS Protocol 9 (Cardiac Arrest) - Obvious death: The following conditions indicate obvious death:
  - Decapitation,
  - OR Decomposition,
  - OR Putrefaction,
  - OR Incineration.
- MPDS Protocol 9 (Cardiac Arrest) - Expected death: The following conditions indicate expected death:
  - **DNR order**, OR
  - Hospice care.

EMR

- Initiate **CPR** immediately in the event of acute cardiac or respiratory Arrest if:
  - 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:
  - 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.

EMT

- Ensure completion of applicable EMR items above.

AEMT

- Ensure completion of applicable EMT items above.

RN Medic

- Ensure completion of all applicable BLS items on the left.
- The following scenarios should always be transported to the closest appropriate facility as soon as possible and field termination is not an option:
  - 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.
  - If none of the above apply: Patients should receive at least 20 minutes of ACLS resuscitative efforts on the scene prior to considering movement.
- If witnessed, non-trauma Arrest: 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:
  - CMH providing **medical control** to CMH ambulance OR
  - EMH providing **medical control** to EMH ambulance.

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

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 fulfils that requirement for equipment.

Refer to **Section 8-001 - Equipment Currently on Response Vehicles** (page 169) for equipment.

EMS SUPERVISOR VEHICLE

Bag, Big

LR (1 bag - 1 L)

Bag, Medication

Adenosine (3 vials)
Amiodarone (3 vials - 150 mg ea)
Atropine (3 vials)
Benadryl (1 vial)
Dextrose (1 bag - 250 ml D10W)
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)
Normal Saline (1 vial - 3 ml)
Oxygen (1 tank)
Xopenex (1 vial) [stapled to an NS 3 ml 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)
Decadron (1 vial - 16 mg)
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
LR (1 bag - 1 L)

Bag, Medication
Adenosine (3 vials)
Amiodarone (3 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 (2 bags - 100 ml)
Sodium Bicarbonate (2 vials)
Thiamine (1 vial)

Bag, Small
LR (1 bag - 1 L)

Box, Medication
Acetaminophen (2 cups)
Activated Charcoal (1 tube)
Aspirin (16 tabs)
Atropine (1 vial multidose)
Calcium Chloride (1 vial)
Captopril (2 tabs)
Cardizem [CMH Only] (2 kits)
Decadron (1 vial - 20 mg)
Dextrose (1 bag 250 ml D10W)
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)

Cabinets
Albuterol (6 vials)
Dopamine (1 kit)
Duoneb (4 vials)
Epinephrine Racemic (1 vial)
Lactated Ringers (4 bags - 1 L ea)
Lidocaine (1 kit)
Nitroglycerin (1 kit)
Normal Saline (1 vial - 3 ml)
Normal Saline (4 bags - 500 ml ea)
Oxygen (2 tanks)
Xopenex (6 vials) [each stapled to an NS 3ml vial]

Cot
Albuterol (1 vial)
Oxygen (1 tank)
Xopenex (1 vial) [stapled to an NS 3m vial]

IV Tray
Normal Saline (10 flushes)

Monitor
Aspirin (4 tabs)
Nitroglycerin (1 bottle)

RSI Kit [CMH Only]
Atropine (1 vial)
Etomidate (1 vial)
Rocuronium (4 vials)

BLS AMBULANCE

Bag, Medication

- Adenosine (3 vials)
- Amiodarone (3 vials - 150 mg ea)
- Atropine (3 vials)
- Benadryl (1 vial)
- Dextrose (1 bag - 250 ml D10W)
- 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 (2 bags - 100 ml ea)
- Sodium Bicarbonate (2 vials)
- Thiamine (1 vial)

Cabinets

- Lactated Ringers (1 bag - 1 L)
- Normal Saline (1 bag - 500 ml)
- Oxygen (2 tanks)

Cot

- Albuterol (1 vial)
- Oxygen (1 tank)
- Xopenex (1 vial) [stapled to an NS 3 ml vial]

Monitor

- Aspirin (4 tabs)
- Nitroglycerin (1 bottle)

BOLIVAR FIRE MEDICAL RESPONSE VEHICLE

Bag, Medical

- Glucose (2 tubes)
- Oxygen (1 bottle)

CEDAR COUNTY FIRST RESPONDERS MEDICAL RESPONSE VEHICLE

List pending…

COLLINS FIRE MEDICAL RESPONSE VEHICLE

List pending…

HUMANSVILLE FIRE MEDICAL RESPONSE VEHICLE

List pending…

LOWRY CITY FIRE MEDICAL RESPONSE VEHICLE

List pending…

MORRISVILLE FIRE MEDICAL RESPONSE VEHICLE

List pending…

PLEASANT HOPE FIRE HEAVY RESCUE VEHICLE

Compartments

- Oxygen

PLEASANT HOPE FIRE LIGHT RESCUE VEHICLE

Compartments

- Oxygen

SAC OSAGE FIRE MEDICAL RESPONSE VEHICLE

List pending…

WHEATLAND FIRE MEDICAL RESPONSE VEHICLE

List pending…

Section 7-010 - Acetaminophen (Tylenol)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ PO.	✱ Analgesic. Antipyretic. ✱ Analgesic mechanism unknown. Antipyretic is through direct action on hypothalmus. *Pharmacokinetics:* ✱ *Half-Life*: 1-4 hours. ✱ *Onset time*: 30-45 minutes. ✱ *Peak action time*: 30-60 minutes. ✱ *Duration of action*: 4-6 hours.

Indications:
Protocol 4-100 - Fever (Fever greater than 102 degrees F)..... page 53
Section 7-300 - Ibuprofen (Advil, Pediaprofen)(has been ineffective or administered within 6 hours) ..... page 135

Contraindications:	*Precautions and adverse effects*:
✱ Hypersensitivity. *Pregnancy risk factor*: ✱ B Category B (No risks have been found in humans). *Potential incompatibilities*: ✱	✱ Avoid in patients with severe liver disease. ✱ Use caution with Chronic alcohol use. Impaired renal function. PKU. ✱ May cause Rash, uticaria, **Nausea**. *Antidote*: ✱ Acetylcysteine or mucomyst.

Citations: (Comerford & Labus, 2010), (Cox Paramedics, 2014)

Section 7-020 - Activated Charcoal (Actidose)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ Oral.	✱ Adsorbent. ✱ Adsorbs toxins by chemical binding and prevents gastrointestinal absorption. *Pharmacokinetics:* ✱ *Half-Life*: Unknown ✱ *Onset time*: Immediate ✱ *Peak action time*: Unknown ✱ *Duration of action*: Unknown

Indications:
Protocol 4-140 - Poisoning or Overdose
(Poisoning following emesis or when emesis is contraindicated) ..... page 58

Contraindications:	*Precautions and side effects*:
✱ 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. *Pregnancy risk factor*: ✱ C Category C (Not enough research has been done to determine if this drug is safe). *Potential incompatibilities*: ✱	✱ Aspiration may cause pneumonitis. ✱ May cause **Nausea, vomiting**, constipation, diarrhea. *Antidote*: ✱

Citations: (Comerford & Labus, 2010)

Section 7-030 - Adenosine (Adenocard)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ **IV**/**IO** slam followed by rapid flush.	✱ Antiarrhythmic. ✱ Slows AV conduction. *Pharmacokinetics:* ✱ *Half-Life*: less than 10 seconds. ✱ *Onset time*: Immediate ✱ *Peak action time*: Immediate ✱ *Duration of action*: Unknown

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

Contraindications:	*Precautions and adverse effects*:
✱ 2nd or 3rd degree heart block. ✱ Sick Sinus Syndrome. ✱ Non-cardiac-related **Tachycardia** (i.e. hypovolemia, dehydration, etc.). *Pregnancy risk factor*: ✱ C Category C (Not enough research has been done to determine if this drug is safe). *Potential incompatibilities*: ✱	✱ 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. *Antidote*: ✱

Citations: (Comerford & Labus, 2010)

Section 7-040 - Albuterol (Proventil, Ventolin)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ AEMT ✱ RN ✱ Medic *Route*: ✱ **Nebulized**.	✱ Beta-2 selective sympathomimetic. ✱ Binds and stimulates beta-2 receptors, resulting in relaxation of bronchial smooth muscle. *Pharmacokinetics:* ✱ *Half-Life*: 1.6 hours. ✱ *Onset time*: 5-15 minutes. ✱ *Peak action time*: 30-120 minutes. ✱ *Duration of action*: 2-6 hours.

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 123

Contraindications:	*Precautions and adverse effects*:
✱ Angioedema. *Pregnancy risk factor*: ✱ C Category C (Not enough research has been done to determine if this drug is safe). *Potential incompatibilities*: ✱	✱ Potassium depleater and may cause hypokalemia. ✱ Blood pressure, pulse, and **EKG** should be monitored. ✱ Use caution in patients with known heart disease. ✱ May cause Palpitations, **anxiety**, Headache, dizziness, sweating, **hyperglycemia**, insomnia, **Tachycardia**, **Nausea, vomiting**, throat irritation, dry mouth, epistaxis, **Hypertension**, dyspepsia, and paradoxical bronchospasm. *Antidote*: ✱

Citations: (Comerford & Labus, 2010)

Section 7-050 - Amiodarone (Cordarone)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ **IV**/**IO**.	✱ Class III antiarrhythmic. ✱ Potassium channel blocker. Prolongs intranodal conduction. Prolongs refractoriness of the AV node. *Pharmacokinetics:* ✱ *Half-Life*: 40-50 days. ✱ *Onset time*: Unknown. ✱ *Peak action time*: Unknown. ✱ *Duration of action*: Variable.

Indications:

Contraindications:	*Precautions and adverse effects*:
✱ Cardiogenic shock. ✱ Sinus **Bradycardia**. ✱ 2nd or 3rd degree AV block. ✱ Sick Sinus Syndrome. ✱ Sensitivity to benzyl alcohol and iodine. *Pregnancy risk factor*: ✱ D Category D (Adverse reactions have been found in humans). *Potential incompatibilities*: ✱	✱ 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). *Antidote*: ✱ **Section 7-100 - Calcium Chloride (Calciject)** (page 114). ✱ **Section 7-240 - Glucagon** (page 130).

Citations: (Comerford & Labus, 2010)

Section 7-060 - Aspirin (Bayer)

Scope of Practice:
- EMD
- EMR
- EMT
- AEMT
- RN
- Medic

Route:
- PO.

Pharmacodynamics (class and mechanism of action):
- Platelet inhibitor. Anti-inflammatory. Analgesic.
- Prevents formation of thromboxane A2. Blocks platelet aggregation.

Pharmacokinetics:
- *Half-Life*: 15-20 minutes.
- *Onset time*: 5-30 minutes.
- *Peak action time*: 25-40 minutes.
- *Duration of action*: 1-4 hours.

Indications:
Protocol 2-050 - Chest Discomfort (New Chest Pain suggestive of AMI) ..... page 21

Contraindications:
- GI bleeding.
- Active ulcer disease.
- Hemorrhagic **stroke**.
- Bleeding disorders.
- Children with chickenpox or flu-like symptoms.

Pregnancy risk factor:
- D Category D (Adverse reactions have been found in humans).

Potential incompatibilities:
-

Precautions and adverse effects:
- Aspirin may trigger **Asthma** attacks in certain individuals with sensitivity.
- Use caution with GI bleeding and upset stomach, trauma, decreased LOC of unknown origin.

Antidote:
- **Sodium Bicarbonate**

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 (Lorazapam)

Scope of Practice:
- RN
- Medic

Route:
- **IV**/IM/PR/SL.

Pharmacodynamics (class and mechanism of action):
- Benzodiazepine.
- Anticonvulsant. Skeletal muscle relaxant. Sedative. Binds to benzodiazepine receptor and enhances effects of GABA.

Pharmacokinetics:
- *Half-Life*: 9-16 hours.
- *Onset time*:
  - 1 hour (PO),
  - 5 minutes (**IV**),
  - 15-30 minutes (IM).
- *Peak action time*:
  - 2 hours (PO),
  - 60-90 minutes (**IV**/IM).
- *Duration of action*:
  - 12-24 hours (PO),
  - 6-8 hours (**IV**/IM).

Indications:
Protocol 6-060 - Do Not Resuscitate (DNR) ..... page 83

Contraindications:
- Pregnancy and nursing.
- Sensitivity to benzodiazepines, polyethylene glycol, benzyl alcohol.
- **COPD**.
- Shock.
- Coma.
- Closed angle glaucoma.

Pregnancy risk factor:
- D Category D (Adverse reactions have been found in humans).

Potential incompatibilities:
-

Precautions and adverse effects:
- 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**.

Antidote:
- Flumazenil.

DEA NUMBER: 2885
Schedule: IV - Low potential for abuse.
Narcotic: No

Street names:
- Control, Silence

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, Offie of Diversion Control, n.d.)

Section 7-080 - Atropine (Sal-Tropine)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ **IV**/**IO**. **ET** at twice the dose.	✱ Parasympatholytic (anticholinergic). ✱ Competes with acetylcholine at the site of muscarinic receptor. Increases heart rate. Decreases gastrointestinal secretions. *Pharmacokinetics:* ✱ *Half-Life*: 2 hours. ✱ *Onset time*: Immediate. ✱ *Peak action time*: 2-4 minutes. ✱ *Duration of action*: 4 hours.

Indications:

Contraindications:	*Precautions and adverse effects*:
✱ None when used in emergency situations. *Pregnancy risk factor*: ✱ C Category C (Not enough research has been done to determine if this drug is safe). *Potential incompatibilities*: ✱ **Section 7-270 - Heparin**	✱ 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. *Antidote*: ✱ Physostigmine (Antilirium)

Citations: (Comerford & Labus, 2010), (Cox Paramedics, 2014)

Section 7-090 - Benadryl (Diphenhydramine)

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

Indications:

Contraindications:	*Precautions and adverse effects*:
✱ **Asthma**. ✱ Nursing mothers. *Pregnancy risk factor*: ✱ B Category B (No risks have been found in humans). *Potential incompatibilities*: ✱ **Section 7-530 - Sodium Bicarbonate (Soda)**	✱ 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. *Antidote*: ✱ Physostigmine (Antilirium)

Citations: (Comerford & Labus, 2010)

Section 7-100 - Calcium Chloride (Calciject)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ **IV**/**IO**.	✱ Electrolyte. ✱ Facilitates cardiac contractility. *Pharmacokinetics:* ✱ *Half-Life*: Unknown. ✱ *Onset time*: Immediate. ✱ *Peak action time*: Immediate. ✱ *Duration of action*: 0.5-2 hours.

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 109
Section 7-120 - Cardizem (Diltiazem) ..... page 116
Section 7-380 - Magnesium Sulfate (antidote for Overdose) ..... page 143

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

Citations: (Comerford & Labus, 2010)

Section 7-110 - Captopril (Capoten)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱  ✱ *Route*: ✱ SL.	✱ ACE inhibitor. ✱ Competitive inhibitor of Angiotension Converting Enzyme (ACE). *Pharmacokinetics:* ✱ *Half-Life*: 1.9 hours. ✱ *Onset time*: 15-60 minutes. ✱ *Peak action time*: 60-90 minutes. ✱ *Duration of action*: 6-12 hours.

Indications:
Protocol 4-070 - Congestive Heart Failure (CHF) .....Page 49

Contraindications:	*Precautions and adverse effects*:
✱ Hypersensitivity to any ACE inhibitor. *Pregnancy risk factor*: ✱  Category D (Adverse reactions have been found in humans). *Potential incompatibilities*: ✱	✱ 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. *Antidote*: ✱

Citations: (Comerford & Labus, 2010)

Section 7-120 - Cardizem (Diltiazem)

Scope of Practice:
- RN
- Medic

Route:
- **IV**/**IO**.

Pharmacodynamics (class and mechanism of action):
- Calcium channel blocker.
- Slows conduction through the AV node.

Pharmacokinetics:
- *Half-Life*: 3-9 hours.
- *Onset time*: 2 minutes.
- *Peak action time*: 2-7 minutes.
- *Duration of action*: 1-10 hours.

Indications:

Protocol 2-020 - Atrial Fibrillation (A-Fib) or Atrial Flutter
(A-Fib with rapid Ventricular response)..... page 18
Protocol 2-080 - Tachycardia Narrow Stable..... page 26

Contraindications:
- Heart blocks.
- Conduction disturbances.
- **WPW**.
- Congestive heart failure (pulmonary edema).
- Hypotension.

Pregnancy risk factor:
- C Category C (Not enough research has been done to determine if this drug is safe).

Potential incompatibilities:
-

Precautions and adverse effects:
- Should not be used in patients receiving **IV** Beta-Blockers.
- May cause hypotension, **Nausea, vomiting**, dizziness, **Bradycardia**, flushing, Headache, heart block, cardiac Arrest.

Antidote:
- **Section 7-100 - Calcium Chloride (Calciject)** (page 114).
- **Section 7-240 - Glucagon** (page 130).

Citations: (Comerford & Labus, 2010)

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	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	250 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	114 kg	136
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	28.5 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	39.9 ml	47.6 ml
Cardizem Maintenance Infusion																
Drip	5 mg/hr	5.0 ml/hr														
Drip	10 mg/hr	10.0 ml/hr														
Drip	15 mg/hr	15.0 ml/hr														

Section 7-140 - Decadron (Dexamethasone)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ **IV**/**IO**/IM/PO. ✱ Inhalation as last resort.	✱ Steroid. ✱ Anti-inflammatory. Reduces inflammation and immune response. ✱ Increases pulmonary microcirculation. *Pharmacokinetics:* ✱ *Half-Life*: 1-2 days. ✱ *Onset time*: 1-2 hours. ✱ *Peak action time*: 1-2 hours. ✱ *Duration of action*: 2-6 days.

Indications:
Protocol 4-030 - Asthma ..... page 41
Protocol 4-080 - Croup ..... page 50

Contraindications:	*Precautions and adverse effects*:
✱ None in emergency setting. *Pregnancy risk factor*: ✱ C Category C (Not enough research has been done to determine if this drug is safe). *Potential incompatibilities*: ✱	✱ Use with caution in the following conditions: Cushings, fungal infections, measles, varicella. ✱ May cause nausea, vomiting, headache, vertigo, anxiety, hypokalemia, hyperglycemia, tremors, hypertension, immunosuppression. *Antidote*: ✱

Citations: (Comerford & Labus, 2010), (Heuser, Menaik, Gupta, & Rucco, 2017), (Hochhaus, et al., 2001), (Keeney, et al., 2014), (Miyabo, Nakamura, Kuwazima, & Kishida, 1981)

Section 7-150 - Dextrose

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ AEMT ✱ RN ✱ Medic *Route*: ✱ **IV**/**IO**.	✱ Carbohydrate. ✱ Elevates blood sugar level rapidly. *Pharmacokinetics:* ✱ *Half-Life*: Unknown. ✱ *Onset time*: Immediate. ✱ *Peak action time*: Immediate. ✱ *Duration of action*: Unknown.

Indications:

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

Citations: (Comerford & Labus, 2010)

Section 7-160 - Dilaudid (Hydromorphone)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ **IV**/**IO**/IM.	✱ Narcotic analgesic. ✱ Analgesia and sedation. CNS depressant. Decreased sensitivity to pain. *Pharmacokinetics:* ✱ *Half-Life*: 2-4 hours ✱ *Onset time*: 10-15 minutes. ✱ *Peak action time*: ✱ 15-30 minutes (**IV**), ✱ 30-60 minutes (IM). ✱ *Duration of action*: ✱ 2-3 hours (**IV**), ✱ 4-5 hours (IM).

Indications:
Not in current standing order protocols.

Contraindications:	*Precautions and adverse effects*:
✱ Hypersensitivity. *Pregnancy risk factor*: ✱ C Category C (Not enough research has been done to determine if this drug is safe). *Potential incompatibilities*: ✱ **Section 7-270 - Heparin**	✱ Respiratory depression may last longer than analgesia. ✱ May cause Bradycardia, respiratory depression, euphoria. *Antidote*: ✱ **Section 7-400 - Narcan (Naloxone)** (page 145).

DEA Number: 9150 *Schedule*: II - High potential for abuse with severe dependence. *Narcotic*: Yes.	*Street names*: ✱ 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.

Citations: (About Drugs, n.d.), (Comerford & Labus, 2010), (Sober Recovery, n.d.), (Street Rx, n.d.), (US Department of Justice, Drug Enforcement Administration, Offie of Diversion Control, n.d.)

Section 7-170 - Dopamine (Intropin)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ **IV**/**IO**.	✱ Sympathomimetic. ✱ Stimulates alpha and beta adrenergic receptors. Increases cardiac contractility. Causes peripheral vasoconstriction. *Pharmacokinetics:* ✱ *Half-Life*: 2 minutes. ✱ *Onset time*: 5 minutes. ✱ *Peak action time*: Unknown. ✱ *Duration of action*: Less than 10 minutes.

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

Contraindications:	*Precautions and adverse effects*:
✱ Hypovolemic shock where complete fluid resuscitation has not occurred. ✱ Severe tachyarrhythmias. ✱ Ventricular Fibrillation or Ventricular arrhythmias. *Pregnancy risk factor*: ✱ C Category C (Not enough research has been done to determine if this drug is safe). *Potential incompatibilities*: ✱	✱ May cause Ventricular irritability, Ventricular tachyarrhythmias. **Hypertension**. Angina, dyspnea, Headache, **Nausea, vomiting**. *Antidote*: ✱ Rigitine.

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	250 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	114 kg	136
Dopamine Beta Effects (Chronotropy, Inotropy, Dromotropy) [ml/hr]															
Beta 2 mcg/kg/min	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	8.6	10.2
Beta 4 mcg/kg/min	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	17.1	20.4
Beta 6 mcg/kg/min	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	25.7	30.6
Beta 8 mcg/kg/min	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	34.2	40.8
Dopamine Alpha Effects (Vasoconstriction) [ml/hr]															
Alpha 10 mcg/kg/min	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	42.8	51.0
Alpha 20 mcg/kg/min	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	85.5	102.0
Alpha 30 mcg/kg/min	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	128.3	153.0
Alpha 40 mcg/kg/min	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	171.0	204.0
Alpha 50 mcg/kg/min	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	213.8	255.0

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

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ AEMT ✱ RN ✱ Medic *Route*: ✱ **Nebulized**.	✱ Beta adrenergic. Anticholinergic. ✱ Binds and stimulates beta-2 receptors, resulting in relaxation of bronchial smooth muscle, and antagonizes the acetylcholine receptor, producing bronchodilation. *Pharmacokinetics:* ✱ *Half-Life*: 1.6-2 hours. ✱ *Onset time*: 5-15 minutes. ✱ *Peak action time*: 0.5-2 hours. ✱ *Duration of action*: 2-6 hours.

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 108

Contraindications:	*Precautions and adverse effects*:
✱ Hypersensitivity to **Ipratropium**, **Albuterol**, or **Atropine**. ✱ Allergy to soybeans or peanuts. ✱ Closed angle glaucoma. ✱ Bladder neck obstruction. ✱ Prostatic hypertrophy. *Pregnancy risk factor*: ✱ C Category C (Not enough research has been done to determine if this drug is safe). *Potential incompatibilities*: ✱	✱ 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. *Antidote*: ✱ Physostigmine.

Citations: (Comerford & Labus, 2010)

Section 7-190 - Epinephrine 1:1,000

Scope of Practice:

- EMT - Only auto-injector pen for **anaphylaxis**.
- AEMT - Only IM or SQ for **anaphylaxis**.
- RN
- Medic

Route:

- SQ/IM/**ET**.

Pharmacodynamics (class and mechanism of action):

- Sympathomimetic.
- Binds with both alpha and beta receptors. Bronchodilation.

Pharmacokinetics:

- *Half-Life*: Unknown.
- *Onset time*:
  - Variable (IM),
  - 1-5 minutes (Neb).
- *Peak action time*: Unknown.
- *Duration of action*:
  - 1-4 hours (IM),
  - 1-3 hours (Neb).

Indications:

Contraindications:

- Cardiovascular disease.
- Severe **Hypertension**.
- Pregnancy.
- Patients with tachyarrhythmias.
- CerebroVascular disease.

Pregnancy risk factor:

- C Category C (Not enough research has been done to determine if this drug is safe).

Potential incompatibilities:

-

Precautions and adverse effects:

- Diabetes. Monitor blood sugar levels after administration.
- 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**.

Antidote:

-

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

Scope of Practice:
- 

Route:
- **IV**/**IO**.
- **ET**: see **Section 7-190 - Epinephrine 1:1,000** (page 124).

Pharmacodynamics (class and mechanism of action):
- Sympathomimetic.
- Binds with both alpha and beta receptors. Increases heart rate. Increases cardiac contractility. Causes bronchodilation.

Pharmacokinetics:
- *Half-Life*: Unknown.
- *Onset time*: Immediate.
- *Peak action time*: 5 minutes.
- *Duration of action*: Short.

Indications:

Contraindications:
- None when used in emergency setting.

Pregnancy risk factor:
- 

Category C (Not enough research has been done to determine if this drug is safe).

Potential incompatibilities:
-

Precautions and adverse effects:
- Medication should be protected from light.
- Can be deactivated by alkaline solutions.
- May cause Tachyarrhythmias. Palpitations. **Anxiety**, **Chest Pain**, **Hypertension**, **Nausea, vomiting**, Headache.

Antidote:
-

Citations: (Comerford & Labus, 2010)

Section 7-205 - Epinephrine 1:100,000 (Push-Dose Epi)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ **IV**/**IO**.	✱ Sympathomimetic. ✱ Binds with both alpha and beta receptors. Increases heart rate. Increases cardiac contractility. Causes bronchodilation. *Pharmacokinetics:* ✱ *Half-Life*: Unknown. ✱ *Onset time*: Immediate. ✱ *Peak action time*: 5 minutes. ✱ *Duration of action*: Short.

Indications:
Not in current protocols - must call for orders for push-dose epinephrine for treating hypotension.
Instructions for preparing:
✱ Waste 1 ml out of 10 ml saline flush.
✱ Draw 1 ml (0.1 mg) of **Epinephrine 1:10,000** into flush. You now have Epinephrine 1:100,000 (100 mcg in 10 ml) at a concentration of 10 mcg/ml.
✱ Typical push dose is 5-20 mcg (0.5-2 ml) every 2-5 minutes.

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

Citations: (Comerford & Labus, 2010),

Section 7-210 - Epinephrine Racemic (Micronefrin)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱  ✱  *Route*: ✱ **Nebulized**.	✱ 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. *Pharmacokinetics:* ✱ *Half-Life*: 2 minutes. ✱ *Onset time*: Rapid ✱ *Peak action time*: Unknown. ✱ *Duration of action*: 3 minutes.

Indications:
Protocol 4-080 - Croup (Croup with moderate to severe respiratory distress) ..... page 50

Contraindications:	*Precautions and adverse effects*:
✱ Glaucoma. ✱ Elderly. ✱ Cardiac disease. ✱ **Hypertension**. ✱ Thyroid disease. ✱ Diabetes. ✱ Sensitivity to sulfites. *Pregnancy risk factor*: ✱  Category C (Not enough research has been done to determine if this drug is safe). *Potential incompatibilities*: ✱	✱ Observe 2-4hrs after administration. ✱ May cause Palpitations, **anxiety**, Headache, **Hypertension**, **Nausea, vomiting**, arrhythmias, rebound edema. Dizziness, tremor, **Tachycardia**. *Antidote*: ✱

Citations:

Section 7-220 - Etomidate (Amidate)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ **IV**/**IO**.	✱ Sedative, non-barbiturate hypnotic. ✱ Unknown GABA-like effects. No analgesic effects. Has few Cardiovascular or respiratory effects. Cerebro-protective decreases ICP, IOP. *Pharmacokinetics:* ✱ *Half-Life*: 75 minutes. ✱ *Onset time*: 30-60 seconds. ✱ *Peak action time*: 1 minute. ✱ *Duration of action*: 3-5 minutes.

Indications:
Protocol 6-050 - Control of Pain (cardioversion)..... page 81
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)
(Sedation prior to **Intubation**)..... page 93

Contraindications:	*Precautions and adverse effects*:
✱ Hypersensitivity. *Pregnancy risk factor*: ✱ C Category C (Not enough research has been done to determine if this drug is safe). *Potential incompatibilities*: ✱	✱ **Sepsis**. ✱ 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. *Antidote*: ✱

Citations:

Section 7-230 - Fentanyl (Sublimaze)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ **IV**/**IN**/IM/**IO**.	✱ Narcotic analgesic. ✱ Binds to opiate receptors. Analgesia and sedation. Central nervous system depressant. Decreased sensitivity to **Pain**. *Pharmacokinetics:* ✱ *Half-Life*: 3.5 hours. ✱ *Onset time*: ✱ 1-2 minutes (**IV**), ✱ 7-15 minutes (IM), ✱ 5-15 minutes (IN). ✱ *Peak action time*: ✱ 3-5 minutes (**IV**), ✱ 20-30 minutes (IM/IN). ✱ *Duration of action*: ✱ 30-60 minutes (**IV**), ✱ 1-2 hours (IM), ✱ Unknown (IN).

Indications:

Contraindications:	*Precautions and adverse effects*:
✱ Hypersensitivity. *Pregnancy risk factor*: ✱ C Category C (Not enough research has been done to determine if this drug is safe). *Potential incompatibilities*: ✱ **Section 7-270 - Heparin**	✱ 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. *Antidote*: ✱ **Section 7-400 - Narcan (Naloxone)** (page 145).

DEA Number: 9801 *Schedule*: II II - High potential for abuse with severe dependence. *Narcotic*: Yes.	*Street names*: ✱ 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.

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, Offie of Diversion Control, n.d.)

Section 7-240 - Glucagon

Scope of Practice: ✱ AEMT - Only IM for **hypoglycemia**. ✱ RN ✱ Medic *Route*: ✱ IM/SQ/**IV**/**IO**.	*Pharmacodynamics (class and mechanism of action)*: ✱ Other endocrine/metabolism. ✱ Converts hepatic glycogen to **Glucose**. *Pharmacokinetics:* ✱ *Half-Life*: 8-18 minutes. ✱ *Onset time*: ✱ Immediate (**IV**), ✱ 4-10 minutes (IM). ✱ *Peak action time*: ✱ 30 minutes (**IV**), ✱ 13 minutes (IM). ✱ *Duration of action*: ✱ 60-90 minutes (**IV**), ✱ 12-32 minutes (IM).

Indications:

Contraindications: ✱ Pheochromocytoma (adrenal tumor). ✱ Insulinoma (pancreas tumor). *Pregnancy risk factor*: ✱ B Category B (No risks have been found in humans). *Potential incompatibilities*: ✱	*Precautions and adverse effects*: ✱ May cause severe rebound **hyperglycemia** ,hypotension. **Nausea/vomiting**. Uticaria. Respiratory distress. **Tachycardia**. *Antidote*: ✱

Citations: (Comerford & Labus, 2010)

Section 7-250 - Glucose

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ EMT ✱ AEMT ✱ RN ✱ Medic *Route*: ✱ PO.	✱ Carbohydrate. ✱ Elevates blood sugar levels. *Pharmacokinetics:* ✱ *Half-Life*: NA. ✱ *Onset time*: NA. ✱ *Peak action time*: NA. ✱ *Duration of action*: NA.

Indications:
Protocol 4-120 - Hypoglycemia ..... page 56

Contraindications:	*Precautions and adverse effects*:
✱ Patients with altered level of consciousness that cannot protect Airway. *Pregnancy risk factor*: ✱ NA. *Potential incompatibilities*: ✱	✱ If alcohol abuse or malnourishment is suspected, then 100mg of **Thiamine** should be administered to facilitate Glucose use by cells. *Antidote*: ✱

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)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ **IV**/IM/**IO**.	✱ Antipsychotic. ✱ Competitive postsynaptic **Dopamine** receptor blocker. *Pharmacokinetics:* ✱ *Half-Life*: 21 hours. ✱ *Onset time*: Unknown. ✱ *Peak action time*: ✱ Unknown (**IV**), ✱ 10-20 minutes (IM) ✱ *Duration of action*: Unknown.

Indications:
Protocol 4-040 - Behavioral (Agitation) (Aggressive behavior) ..... page 42

Contraindications:	*Precautions and adverse effects*:
✱ Parkinson's disease. ✱ Severe CNS depression. ✱ Comatose states. *Pregnancy risk factor*: ✱ C Category C (Not enough research has been done to determine if this drug is safe). *Potential incompatibilities*: ✱	✱ 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. ✱ EPS is a movement disorder such as the inability to move or restlessness. ✱ Treat with **Section 7-090 - Benadryl (Diphenhydramine)** (page 113). *Antidote*: ✱ **Section 7-090 - Benadryl (Diphenhydramine)**

Citations: (CredibleMeds, 2015), (Comerford & Labus, 2010)

Section 7-270 - Heparin

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ **IV**.	✱ Anticoagulant. ✱ Inhibition of Thrombin. Acts on antithrombin III to reduce ability to clot. *Pharmacokinetics:* ✱ *Half-Life*: 1-2 hours. ✱ *Onset time*: Immediate. ✱ *Peak action time*: Unknown. ✱ *Duration of action*: Variable.

Indications:
Protocol 2-050 - Chest Discomfort
(New Chest Pain suggestive of an acute myocardial infarction) ..... page 21

Contraindications:	*Precautions and adverse effects*:
✱ Previously given low molecular weight Heparin. ✱ Dissecting thoracic aortic aneurysm. ✱ Peptic ulceration. *Pregnancy risk factor*: ✱ C Category C (Not enough research has been done to determine if this drug is safe). *Potential incompatibilities*: ✱ **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)**	✱ Use caution with oral anticoagulants and bleeding. *Antidote*: ✱ Protamine sulfate.

Citations: (Comerford & Labus, 2010)

Section 7-280 - Hydralazine (Apresoline)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ **IV**/**IO**/IM.	✱ Vasodilator. ✱ Directly dilates peripheral blood vessels. *Pharmacokinetics:* ✱ *Half-Life*: 3-7 hours. ✱ *Onset time*: ✱ 5-20 minutes (**IV**), ✱ 10-30 minutes (IM). ✱ *Peak action time*: ✱ 10-80 minutes (**IV**), ✱ 1 hour (IM). ✱ *Duration of action*: 2-6 hours.

Indications:
Protocol 4-110 - Hypertension
(Hypertensive crisis or associated with preeclampsia and eclampsia) ..... page 54

Contraindications:	*Precautions and adverse effects*:
✱ Taking diazoxide or MAOIs. ✱ Coronary artery disease. ✱ **Stroke**. ✱ Angina ✱ Aortic aneurysm. ✱ Heart disease. *Pregnancy risk factor*: ✱ C Category C (Not enough research has been done to determine if this drug is safe). *Potential incompatibilities*: ✱	✱ May cause reflex **Tachycardia**, headache, angina, flushing, palpitations, **Tachycardia**, anorexia, **Nausea, vomiting**, diarrhea, hypotension, syncope, vasodilation, edema, paresthesias. *Antidote*: ✱

Citations: (Comerford & Labus, 2010)

Section 7-300 - Ibuprofen (Advil, Pediaprofen)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ PO.	✱ NSAID. ✱ Inhibits cyclooxygenase and lipoxygenase and reduces prostaglandin synthesis. *Pharmacokinetics:* ✱ *Half-Life*: 2-4 hours. ✱ *Onset time*: ✱ 30-60 minutes (analgesia), ✱ 7 days (anti-inflammatory) ✱ *Peak action time*: ✱ 1-2 hours (analgesia), ✱ 1-2 weeks (anti-inflammatory) ✱ *Duration of action*: 4-6 hours (analgesia).

Indications:
Protocol 4-100 - Fever (Fever greater than 102 degrees F)..... page 53
Section 7-010 - Acetaminophen (Tylenol)
(Acetaminophen has been ineffective or given within last 4hrs)..... page 105

Contraindications:	*Precautions and adverse effects*:
✱ ASA/NSAID induced **Asthma**. ✱ History of GI bleeds. ✱ Renal insufficiency. *Pregnancy risk factor*: ✱ D Category D (Adverse reactions have been found in humans). *Potential incompatibilities*: ✱	✱ Caution in **Hypertension**, **CHF**. ✱ Avoid in patients currently taking anticoagulants such as Coumadin. ✱ May cause **Anaphylaxis**, **Abdominal Pain**, **Nausea**, Headache, dizziness, rash. *Antidote*: ✱

Citations: (Comerford & Labus, 2010), (Cox Paramedics, 2014)

Section 7-320 - Ipratropium (Atrovent)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ AEMT ✱ RN ✱ Medic *Route*: ✱ Nebulized.	✱ Beta adrenergic. ✱ Binds and stimulates beta-2 receptors, resulting in relaxation of bronchial smooth muscle, producing bronchodilation. *Pharmacokinetics:* ✱ *Half-Life*: 2 hours. ✱ *Onset time*: 5-15 minutes. ✱ *Peak action time*: 1-2 hours. ✱ *Duration of action*: 3-6 hours.

Indications:
Not in current standing order protocols.

Contraindications:	*Precautions and adverse effects*:
✱ Hypersensitivity to Ipratropium, Albuterol, or Atropine. ✱ Allergy to soybeans or peanuts. ✱ Closed angle glaucoma. ✱ Bladder neck obstruction. ✱ Prostatic hypertrophy. *Pregnancy risk factor*: ✱ B Category B (No risks have been found in humans). *Potential incompatibilities*: ✱	✱ 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. *Antidote*: ✱ Physostigmine (Antilirium)

Citations: (Comerford & Labus, 2010), (Cox Paramedics, 2014)

Section 7-330 - Ketamine (Ketalar)

Scope of Practice:
- RN
- Medic

Route:
- **IV**/**IO**/IM.

Pharmacodynamics (class and mechanism of action):
- 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 opiod receptor.

Pharmacokinetics:
- *Half-Life*: 2.5-3 hours.
- *Onset time*:
  - Seconds (**IV**),
  - 1-5 minutes (IM).
- *Peak action time*: Unknown.
- *Duration of action*:
  - Unknown (**IV**),
  - 0.5-2 hours (IM)

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

Contraindications:
- Hypersensitivity.

Pregnancy risk factor:
- C Category C (Not enough research has been done to determine if this drug is safe).

Potential incompatibilities:
-

Precautions and adverse effects:
- 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**.

Antidote:
-

DEA Number: 7285
Schedule: III - Potential for abuse with moderate dependence.
Narcotic: No.

Street names:
- 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.

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, Offie 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	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	250 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	114 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	11.4	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	2.3	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	57.0	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	11.4	13.6

Section 7-340 - Labetalol (Nomadyne)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ **IV**/**IO**.	✱ 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. *Pharmacokinetics:* ✱ *Half-Life*: 5.5 hours. ✱ *Onset time*: 2-5 minutes. ✱ *Peak action time*: 5 minutes. ✱ *Duration of action*: 2-4 hours.

Indications:
Protocol 4-110 - Hypertension ..... page 54

Contraindications:	*Precautions and adverse effects*:
✱ Bronchial **Asthma**. ✱ Heart block. ✱ Cardiogenic shock. ✱ **Bradycardia**. ✱ Hypotension. ✱ Pulmonary edema. ✱ Heart failure. ✱ Sick Sinus Syndrome. *Pregnancy risk factor*: ✱ C Category C (Not enough research has been done to determine if this drug is safe). *Potential incompatibilities*: ✱	✱ 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. *Antidote*: ✱ **Section 7-200 - Epinephrine 1:10,000** (page 125). ✱ **Section 7-240 - Glucagon** (page 130).

Citations: (Comerford & Labus, 2010)

Section 7-350 - Lactated Ringers (LR)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ AEMT ✱ RN ✱ Medic *Route*: ✱ **IV**/**IO**.	✱ Crystalloid solution. *Pharmacokinetics:* ✱ *Half-Life*: NA. ✱ *Onset time*: NA. ✱ *Peak action time*: NA. ✱ *Duration of action*: NA.

Indications:
Virtually all protocols.

Contraindications:	*Precautions and adverse effects*:
✱ None. *Pregnancy risk factor*: ✱ NA. *Potential incompatibilities*: ✱	✱ May cause Pulmonary Edema. *Antidote*: ✱

Citations: (Laszlo, et al., 2006), (Phillips, et al., 2009), (Schott, 2010), (Todd & Malinoski, 2007)

Section 7-360 - Lasix (Furosemide)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ **IV**/**IO**/IM.	✱ Potent diuretic. ✱ Inhibits reabsorption of sodium chloride. Promotes prompt diuresis. Vasodilation. Decreases absorption of water and increased production of urine. *Pharmacokinetics:* ✱ *Half-Life*: 30 minutes ✱ *Onset time*: 5 minutes. ✱ *Peak action time*: 30 minutes. ✱ *Duration of action*: 2 hours.

Indications:
Not in current standing order protocols.

Contraindications:	*Precautions and adverse effects*:
✱ **Pregnancy**. ✱ Dehydration. *Pregnancy risk factor*: ✱ C Category C (Not enough research has been done to determine if this drug is safe). *Potential incompatibilities*: ✱	✱ 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. *Antidote*: ✱

Citations: (Comerford & Labus, 2010), (Dobson, Jensen, Karim, & Travers, 2009), (Pan, Stiell, Dionne, & Maloney, 2015)

Section 7-370 - Lidocaine (Xylocaine)

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

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 194

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

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

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ **IV**/**IO**/IM.	✱ 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. *Pharmacokinetics:* ✱ *Half-Life*: Unknown. ✱ *Onset time*: ✱ 1-2 minutes (**IV**), ✱ 1 hour (IM). ✱ *Peak action time*: ✱ *Duration of action*:

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

Contraindications:	*Precautions and side effects*:
✱ Heart block. ✱ Recent MI. ✱ Renal insufficiency or renal failure. ✱ GI obstruction. *Pregnancy risk factor*: ✱ A Category A (No known adverse reactions). *Potential incompatibilities*: ✱	✱ Use caution with Digitalis. Hypotension. Magnesium toxicity. ✱ May cause Respiratory depression. Drowsiness. *Antidote*: ✱ **Section 7-100 - Calcium Chloride (Calciject)** (page 114). ✱ **Section 7-240 - Glucagon** (page 130).

Citations: (Comerford & Labus, 2010), (Sanadi, 2017)

Section 7-390 - Morphine

Scope of Practice: ✱ RN ✱ Medic *Route*: ✱ **IV**/**IO**/IM/SQ.	*Pharmacodynamics (class and mechanism of action)*: ✱ Opiate. ✱ CNS depressant. Causes peripheral vasodilation. Decreases sensitivity to **Pain**. Binds with opiod receptors. Depresses vasomotor centers of brain. Releases histamine. Reduces stimulation of sympathetic nervous system. *Pharmacokinetics:* ✱ *Half-Life*: 2-3 hours. ✱ *Onset time*: ✱ 5 minutes (**IV**), ✱ 10-30 minutes (IM). ✱ *Peak action time*: ✱ 20 minutes (**IV**), ✱ 30-60 minutes (IM). ✱ *Duration of action*: 4-5 hours.

Indications:
Protocol 2-050 - Chest Discomfort..... page 21
Protocol 6-050 - Control of Pain..... page 81

Contraindications: ✱ Head injury. ✱ Volume depletion. *Pregnancy risk factor*: ✱ C Category C (Not enough research has been done to determine if this drug is safe). *Potential incompatibilities*: ✱ **Section 7-270 - Heparin** ✱ **Section 7-480 - Phenergan (Promethazine)**	*Precautions and adverse effects*: ✱ 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. *Antidote*: ✱ **Section 7-400 - Narcan (Naloxone)** (page 145). ✱ **Section 7-090 - Benadryl (Diphenhydramine)** (page 113) may be used to reduce the histamine reaction caused by Morphine and reduce the incidence and severity of hypotension.

DEA Number: 9300 *Schedule*: II II - High potential for abuse with severe dependence. *Narcotic*: Yes.	*Street names*: ✱ C & M, Cotton Brothers, Dreamer, Emsel, First Line, God's Drug, Hows, M, Miss Emma, Mister Blue, Morf, Morpho, MS, New Jack Swing, Unkie.

Citations: (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, Offie of Diversion Control, n.d.)

Section 7-400 - Narcan (Naloxone)

Scope of Practice:

- 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

Route:

- **IV**/**IO**/**IN**/IM/SQ/**ET**.

Pharmacodynamics (class and mechanism of action):

- Narcotic antagonist.
- Binds to opiod receptor and blocks the effect of Narcotics.

Pharmacokinetics:

- *Half-Life*:
  - 90-80 minutes (adults),
  - 3 hours (neonates).
- *Onset time*:
  - 1-2 minutes (**IV**),
  - 2-5 minutes (IM).
- *Peak action time*: 5-15 minutes.
- *Duration of action*: Variable

Indications:

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 129
Section 7-390 - Morphine (Overdose) ..... page 144

Contraindications:

- Hypersensitivity.

Pregnancy risk factor:

- B Category B (No risks have been found in humans).

Potential incompatibilities:

-

Precautions and adverse effects:

- 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.

Antidote:

-

Citations: (Clarke, Dargan, & Jones, 2005), (Comerford & Labus, 2010), (Missouri revised statutes, 2014)

Section 7-410 - Neo-Synephrine (Phenylephrine)

Scope of Practice:
- RN
- Medic

Route:
- Topical.

Pharmacodynamics (class and mechanism of action):
- Vasoconstrictor (alpha).
- Topical vasoconstriction.

Pharmacokinetics:
- *Half-Life*: 2.1-3.4 hours.
- *Onset time*: Rapid.
- *Peak action time*: Unknown.
- *Duration of action*: 0.5-4 hours.

Indications:
Section 8-080 - Endotracheal Tube (ET)
(Premedication for nasal **Intubation** to prevent epistaxis)..... page 189

Contraindications:
- **Hypertension**.
- Thyroid disease.

Pregnancy risk factor:
- C Category C (Not enough research has been done to determine if this drug is safe).

Potential incompatibilities:
-

Precautions and adverse effects:
- Use caution with Enlarged prostate with dysuria.
- May cause Nasal burning, stinging, sneezing, or increased nasal discharge.

Antidote:
-

Citations: (Comerford & Labus, 2010)

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

Scope of Practice:

- AEMT - Only SL for **chest discomfort** after **IV** access.
- RN
- Medic

Route:

- SL.
- **IV**. Delivery by **infusion pump** only. Must have glass bottle and non-PVC tubing.

Pharmacodynamics (class and mechanism of action):

- Nitrate vasodilator.
- Smooth muscle relaxant. Dilates coronary and systemic arteries.

Pharmacokinetics:

- *Half-Life*: 1-4 minutes.
- *Onset time*:
  - 20-45 minutes (PO),
  - Immediate (**IV**),
  - 30 minutes (topical),
  - 1-3 minutes (SL).
- *Peak action time*: Unknown.
- *Duration of action*:
  - 3-8 hours (PO),
  - 3-5 minutes (**IV**),
  - 2-24 hours (topical),
  - 30-60 minutes (SL).

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

Contraindications:

- 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)

Pregnancy risk factor:

- C Category C (Not enough research has been done to determine if this drug is safe).

Potential incompatibilities:

-

Precautions and adverse effects:

- 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.

Antidote:

-

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)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ EMR - Only topical as wound irrigation. ✱ EMT - Only topical as wound irrigation. ✱ AEMT ✱ RN ✱ Medic *Route*: ✱ **IV**/**IO**/topical.	✱ Crystalloid solution. ✱ NA. *Pharmacokinetics:* ✱ *Half-Life*: NA. ✱ *Onset time*: NA. ✱ *Peak action time*: NA. ✱ *Duration of action*: NA.

Indications:
IV access for medical emergencies.
Irrigation of open wound and **Burns**.

Contraindications:	*Precautions and adverse effects*:
✱ NA. *Pregnancy risk factor*: ✱ NA. *Potential incompatibilities*: ✱	✱ May cause Pulmonary edema. *Antidote*: ✱ NA.

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), (Laszlo, et al., 2006), (Phillips, et al., 2009), (Schott, 2010), (Todd & Malinoski, 2007)

Section 7-460 - Oxygen

Scope of Practice:

- EMR
- EMT
- AEMT
- RN
- Medic

Route:

- Inhalation.

Pharmacodynamics (class and mechanism of action):

- Gas.
- Necessary for aerobic cellular metabolism.

Pharmacokinetics:

- *Half-Life*: NA.
- *Onset time*: NA.
- *Peak action time*: NA.
- *Duration of action*: NA.

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).

Titrate administration to SpO_2:

	SpO_2	
	100%	**Anaphylaxis**, anemia, CO, toxin, or trauma
Conscious ROSC	99%	**Cardiac** or **stroke**
	98%	
	97%	
	96%	
	95%	
	94%	
	93%	
	92%	Dyspnea or Unconscious ROSC
	91%	
	90%	
	89%	
	88%	

Contraindications:

- Known **Paraquat Poisoning** unless SpO_2 is less than 88%.

Pregnancy risk factor:

- NA.

Potential incompatibilities:

-

Precautions and adverse effects:

- 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.

Antidote:

- NA.

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)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ **IV**.	✱ Hormone. ✱ Causes uterine contraction. Causes lactation. Slows postpartum Vaginal bleeding. *Pharmacokinetics:* ✱ *Half-Life*: 3-5 minutes. ✱ *Onset time*: Immediate. ✱ *Peak action time*: Unknown. ✱ *Duration of action*: 1 hour.

Indications:
Protocol 4-180 - Vaginal Bleeding (Postpartum Vaginal bleeding)..... page 64

Contraindications:	*Precautions and adverse effects*:
✱ Any condition other than postpartum bleeding. ✱ Cesarean section. *Pregnancy risk factor*: ✱ NR. *Potential incompatibilities*: ✱	✱ 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. *Antidote*: ✱

Citations: (Comerford & Labus, 2010)

Section 7-480 - Phenergan (Promethazine)

Scope of Practice:
- RN
- Medic

Route:
- IM or **IV**/**IO** if infused in **NS**/**LR** over 15-30 min.

Pharmacodynamics (class and mechanism of action):
- Anti-emetic.
- Decreases **Nausea and vomiting** by antagonizing H1 receptors.

Pharmacokinetics:
- *Half-Life*: 16-19 hours.
- *Onset time*:
  - 3-5 minutes (**IV**),
  - 20 minutes (IM)
- *Peak action time*: Unknown.
- *Duration of action*: Less than 12 hours.

Indications:
Protocol 4-010 - Abdominal Pain ..... page 39
Protocol 6-040 - Control of Nausea ..... page 80

Contraindications:
- ALOC.
- Jaundice.

Pregnancy risk factor:
- C Category C (Not enough research has been done to determine if this drug is safe).

Potential incompatibilities:
- **Section 7-270 - Heparin**
- **Section 7-390 - Morphine**

Precautions and adverse effects:
- 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.
  - EPS is a movement disorder such as the inability to move or restlessness.
  - Treat with **Section 7-090 - Benadryl (Diphenhydramine)** (page 113).

Antidote:
-

Citations: (Comerford & Labus, 2010)

Section 7-490 - Procainamide (Pronestyl)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ **IV**/**IO**.	✱ Antiarrhythmic. ✱ Slows conduction through myocardium. Elevates ventricular fibrillation threshold. Suppresses ventricular ectopy. *Pharmacokinetics:* ✱ *Half-Life*: 2.5-4.5 hours. ✱ *Onset time*: Immediate. ✱ *Peak action time*: Immediate. ✱ *Duration of action*: Unknown.

Indications:
None in current standing order protocols.

Contraindications:	*Precautions and adverse effects*:
✱ High degree heart blocks. ✱ PVCs in conjunction with bradycardia. *Pregnancy risk factor*: ✱ C Category C (Not enough research has been done to determine if this drug is safe). *Potential incompatibilities*: ✱	✱ 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. *Antidote*: ✱

Citations: (Comerford & Labus, 2010)

Section 7-500 - Propofol (Diprivan)

Scope of Practice: ✱ RN ✱ Medic *Route*: ✱ **IV**/**IO**.	*Pharmacodynamics (class and mechanism of action)*: ✱ Anesthetic. ✱ Produces rapid and brief state of general anesthesia. *Pharmacokinetics:* ✱ *Half-Life*: ✱ *Initial phase (distribution)*: 2-10 minutes, ✱ *Second phase (redistribution)*: 21-70 minutes, ✱ *Terminal phase (elimination)*: 1.5-31 hours. ✱ *Onset time*: Less than 40 seconds. ✱ *Peak action time*: Unknown. ✱ *Duration of action*: 10-15 minutes.

Indications:
None in current standing order protocols.

Contraindications: ✱ Hypovolemia. ✱ Sensitivity to soybean oil or eggs. *Pregnancy risk factor*: ✱ B Category B (No risks have been found in humans). *Potential incompatibilities*: ✱	*Precautions and adverse effects*: ✱ May cause apnea, arrhythmias, asystole, hypotension, hypertension. *Antidote*: ✱

Citations: (Comerford & Labus, 2010)

Section 7-505 - Reglan (Metoclopramide)

Scope of Practice: ✱ RN ✱ Medic *Route*: ✱ **IV**/**IO**.	*Pharmacodynamics (class and mechanism of action)*: ✱ 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. *Pharmacokinetics:* ✱ *Half-Life*: 4-6 hours. ✱ *Onset time*: 1-3 minutes. ✱ *Peak action time*: Unknown. ✱ *Duration of action*: 1-2 hours.

Indications:
None in current standing order protocols.

Contraindications: ✱ Bleeding or blockage in stomach or intestines. ✱ Epilepsy or other seizure disorder. ✱ Adrenal gland tumor (pheochromocytoma). *Pregnancy risk factor*: ✱ B Category B (No risks have been found in humans). *Potential incompatibilities*: ✱	*Precautions and adverse effects*: ✱ 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. *Antidote*: ✱

Citations: (Comerford & Labus, 2010)

Section 7-520 - Rocuronium (Zemuron)

Scope of Practice: ✱ RN ✱ Medic *Route*: ✱ **IV**/**IO**.	*Pharmacodynamics (class and mechanism of action)*: ✱ Non-depolarizing neuromuscular blockade. ✱ Binds to post-synaptic muscle receptor sites. Antagonizes acetylcholine at the motor end plate, producing skeletal muscle paralysis. *Pharmacokinetics:* ✱ *Half-Life*: 66-80 minutes. ✱ *Onset time*: 1 minute. ✱ *Peak action time*: ✱ 0.5-1 minute (pediatrics), ✱ 1-3.7 minutes (adults). ✱ *Duration of action*: ✱ 26-40 minutes (pediatrics), ✱ 31 minutes (adults).

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

Contraindications: ✱ Unable to **Ventilate** the patient. ✱ Sensitivity to bromides. *Pregnancy risk factor*: ✱ C Category C (Not enough research has been done to determine if this drug is safe). *Potential incompatibilities*: ✱	*Precautions and adverse effects*: ✱ Calculate dose based on ideal body weight. ✱ Patient will be paralyzed for up to 30min. ✱ Use caution with Heart disease. Liver disease. ✱ May cause Muscle paralysis, apnea, dyspnea, respiratory depression, **Tachycardia**, uticaria. *Antidote*: ✱

Citations: (Swaminathan, 2014)

Section 7-530 - Sodium Bicarbonate (Soda)

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

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

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

Citations: (Comerford & Labus, 2010)

Section 7-540 - Solu-Medrol (Methylprednisolone)

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

Indications:

Contraindications:	*Precautions and adverse effects*:
✱ None in emergency setting. *Pregnancy risk factor*: ✱ C Category C (Not enough research has been done to determine if this drug is safe). *Potential incompatibilities*: ✱	✱ 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. *Antidote*: ✱

Citations: (Comerford & Labus, 2010)

Section 7-550 - Succinylcholine (Anectine)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ **IV**/**IO**.	✱ Depolarizing neuromuscular blocker. Ultra-short acting. ✱ Competes with the acetylcholine receptor of the motor end plate on the muscle cell, resulting in muscle paralysis. *Pharmacokinetics:* ✱ *Half-Life*: 24-70 seconds. ✱ *Onset time*: 30-60 seconds. ✱ *Peak action time*: 1-2 minutes. ✱ *Duration of action*: 4-10 minutes.

Indications:
Not in current standing order protocols

Contraindications:	*Precautions and adverse effects*:
✱ 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) *Pregnancy risk factor*: ✱ C Category C (Not enough research has been done to determine if this drug is safe). *Potential incompatibilities*: ✱	✱ Calculate dose based on ideal body weight. ✱ 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. *Antidote*: ✱ Dantroline

Citations: (Comerford & Labus, 2010)

Section 7-560 - Tetracaine

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ Topical.	✱ Anesthetic. ✱ Local anesthesia. *Pharmacokinetics:* ✱ *Half-Life*: 1.8 hours. ✱ *Onset time*: 15 seconds. ✱ *Peak action time*: Unknown. ✱ *Duration of action*: 10-20 minutes.

Indications:
Protocol 5-060 - Eye Injury (Need for Eye irrigation) ..... page 69
Section 8-210 - Morgan Lens ..... page 213

Contraindications:	*Precautions and adverse effects*:
✱ Hypersensitivity. *Pregnancy risk factor*: ✱ C Category C (Not enough research has been done to determine if this drug is safe). *Potential incompatibilities*: ✱	✱ 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. *Antidote*: ✱

Citations:

Section 7-570 - Thiamine (Vitamin B1)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ **IV**/**IO**/IM.	✱ 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**. *Pharmacokinetics:* ✱ *Half-Life*: NA. ✱ *Onset time*: NA. ✱ *Peak action time*: NA. ✱ *Duration of action*: NA.

Indications:
Protocol 4-120 - Hypoglycemia (Coma of unknown origin) ..... page 56
Section 7-140 - (precedes **Dextrose** with suspected alcohol abuse or malnutrition) ..... page 118

Contraindications:	*Precautions and adverse effects*:
✱ Known sensitivity. *Pregnancy risk factor*: ✱ A Category A (No known adverse reactions). *Potential incompatibilities*: ✱	✱ May cause Rare **anaphylactic** reactions. Itching, rash. *Antidote*: ✱

Citations: (Comerford & Labus, 2010), (Cox Paramedics, 2014)

Section 7-575 - Toradol (Ketorolac)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ **IV**, **IO**, IM.	✱ Non-Steroidal Anti-Inflamatory (NSAID). ✱ Inhibit prostaglandin synthesis by decreasing the activity of the enzyme, cyclooxygenase, which results in decreased formation of prostaglandin precursors. *Pharmacokinetics:* ✱ *Half-Life*: 4-6 hours. ✱ *Onset time*: ✱ Immediate (**IV**), ✱ 10 minutes (IM). ✱ *Peak action time*: ✱ 1-3 minutes (**IV**), ✱ 30-60 minutes (IM). ✱ *Duration of action*: 6-8 hours.

Indications:
Protocol 6-050 - Control of Pain (Acute exacerbation of chronic Pain) ..... page 81

Contraindications:	*Precautions and adverse effects*:
✱ **Pregnant or nursing women.** ✱ Allergies to **Aspirin**, Motrin, or NSAIDs. ✱ Advanced renal impairment. ✱ Suspected **CVA**. ✱ GI bleeds. ✱ Peptic ulcers. ✱ Surgical candidates. *Pregnancy risk factor*: ✱ D Category D (Adverse reactions have been found in humans). *Potential incompatibilities*: ✱	✱ 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. *Antidote*: ✱

Citations: (Comerford & Labus, 2010), (Cox Paramedics, 2014), (McAuley, 2014)

Section 7-578 - TXA (Tranexamic Acid)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ **IV**/**IO**.	✱ Antifibrinolytic ✱ Synthetic derivative of the amino acid lysine that inhibits fibrinolysis by blocking the lysine binding sites on plasminogen. *Pharmacokinetics:* ✱ *Half-Life*: 2 hours. ✱ *Onset time*: 5-15 minutes. ✱ *Peak action time*: Unknown. ✱ *Duration of action*: 3 hours.

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

Contraindications:	*Precautions and adverse effects*:
✱ Age less than 16. ✱ Renal failure. ✱ Hypersensitivity. ✱ History of thromboembolism. ✱ Known subarachnoid aneurysm. ✱ Injury greater than three (3) hours old. ✱ Isolated head injury. ✱ Colorblindness. *Pregnancy risk factor*: ✱ B Category B (No risks have been found in humans). *Potential incompatibilities*: ✱	✱ **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. *Antidote*: ✱

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)

Scope of Practice:
- RN
- Medic

Route:
- **IV**/**IN**/**IO**/IM.

Pharmacodynamics (class and mechanism of action):
- Tranquilizer. Anticonvulsant. Skeletal muscle relaxant. Sedative.
- Binds to benzodiazepine receptor and enhances effects of GABA.

Pharmacokinetics:
- *Half-Life*: 1-12 days.
- *Onset time*:
  - 1-5 minutes (**IV**),
  - Unknown (IN/IM).
- *Peak action time*:
  - 1-5 minutes (**IV**),
  - 2 hours (IM),
  - Unknown (IN).
- *Duration of action*:
  - 15-60 minutes (**IV**),
  - Unknown (IM/IN).

Indications:
Not in current standing order protocols

Contraindications:
- Age less than six months.
- Acute-angle glaucoma.
- CNS depression.
- Alcohol intoxication.

Pregnancy risk factor:
- D Category D (Adverse reactions have been found in humans).

Potential incompatibilities:
-

Precautions and adverse effects:
- Short duration of effect.
- May precipitate with other drugs.
- May cause local venous irritation, drowsiness, hypotension, respiratory depression, fatigue, headache, confusion, nausea, and sedation.

Antidote:
- Romazicon

DEA Number: 2765
Schedule: IV - Low potential for abuse.
Narcotic: No.

Street names:
- Benzos, Blue Vs, Dead Flower, Downers, Drunk Pills, FooFoo, Howards, Ludes, Old Joes, Powers, Sleep Away, Tranks, Vs, Yellow Vs..

Citations: (Comerford & Labus, 2010)

Section 7-590 - Vecuronium (Norcuron)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ **IV/IO**	✱ Non-depolarizing neuromuscular blocker. ✱ Does not have any analgesic or sedative effects. Sedation must accompany paralysis. *Pharmacokinetics:* ✱ *Half-Life*: 51-80 minutes. ✱ *Onset time*: 1 minute. ✱ *Peak action time*: 3-5 minutes. ✱ *Duration of action*: 15-25 minutes.

Indications:
Not in current standing order protocols

Contraindications:	*Precautions and adverse effects*:
✱ Unable to ventilate. ✱ Sensitivity to bromides. *Pregnancy risk factor*: ✱ C Category C (Not enough research has been done to determine if this drug is safe). *Potential incompatibilities*: ✱	✱ Calculate dose based on ideal body weight. ✱ Use caution with impaired liver function, severe obesity, impaired respiratory function. ✱ May cause arrhythmias, bronchospasm, hypertension, hypotension, apnea, dyspnea, tachycardia, and uticaria. *Antidote*: ✱

Citations:

Section 7-600 - Versed (Midazolam)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ **IV/IN/IO**.	✱ Benzodiazepine. ✱ Sedative, anxiolytic, amnesic (2-3x more potent than Valium). Binds to benzodiazepine receptor and enhances effects of GABA. *Pharmacokinetics:* ✱ *Half-Life*: 1.8-6.4 hours. ✱ *Onset time*: 1.5-5 minutes. ✱ *Peak action time*: Rapid. ✱ *Duration of action*: 2-6 hours.

Indications:

Contraindications:	*Precautions and adverse effects*:
✱ **Pregnancy.** ✱ Hypotension. ✱ Acute-angle glaucoma. *Pregnancy risk factor*: ✱ D Category D (Adverse reactions have been found in humans). *Potential incompatibilities*: ✱ **Section 7-270 - Heparin**	✱ 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. *Antidote*: ✱ Romazicon

DEA Number: 2884 *Schedule*: IV IV - Low potential for abuse. *Narcotic*: No.	*Street names*: ✱ Dazzle.

Citations: (Citizens Memorial Hospital, 2013), (Comerford & Labus, 2010), (Holsti, et al., 2007), (Silbergleit, et al., 2012)

Section 7-610 - Xopenex (Levalbuterol)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ AEMT ✱ RN ✱ Medic *Route*: ✱ **Nebulized**.	✱ Beta-2 Agonist. ✱ Beta-2 receptor agonist with some beta-1 activity. *Pharmacokinetics:* ✱ *Half-Life*: 3.25-4 hours. ✱ *Onset time*: 5-15 minutes. ✱ *Peak action time*: 1 hour. ✱ *Duration of action*: 3-4 hours.

Indications:

Contraindications:	*Precautions and adverse effects*:
✱ Hypersensitivity to levalbuterol or racemic **Albuterol**. *Pregnancy risk factor*: ✱ C Category C (Not enough research has been done to determine if this drug is safe). *Potential incompatibilities*: ✱	✱ Use caution with Arrhythmias, **Hypertension**, paradoxical bronchospasm. ✱ May cause Rhinitis, Headache, tremor, sinusitis, **Tachycardia**, nervousness, edema, **hyperglycemia**, hypokalemia. *Antidote*: ✱

Citations: (Comerford & Labus, 2010), (Donohue, et al., 2008), (Lam & Chen, 2003), (Nowak, et al., 2006), (Tripp, et al., 2008), (Truitt, Witko, & Halpern, 2003)

Section 7-620 - Zofran (Ondansetron)

Scope of Practice:	*Pharmacodynamics (class and mechanism of action)*:
✱ RN ✱ Medic *Route*: ✱ PO/**IV**/IM/**IN**.	✱ Antiemetic. ✱ Selective Serotonin 5-HT receptor antagonist. *Pharmacokinetics:* ✱ *Half-Life*: 4 hours. ✱ *Onset time*: ✱ Unknown (PO/IM), ✱ Immediate (**IV**). ✱ *Peak action time*: ✱ Unknown (PO), ✱ 10 minutes (**IV**), ✱ 41 minutes (IM). ✱ *Duration of action*: Unknown.

Indications:

Protocol 2-050 - Chest Discomfort..... page 21
Protocol 5-070 - Head Trauma ..... page 70
Protocol 6-040 - Control of Nausea ..... page 80

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

Citations:

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 fulfils 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)
- 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)
- Chest Seal (1 set)
- Decompression Needle (1)
- Dressing 4X4 non sterile
- Dressing ABD pad (2)
- Dressing Celox (1)
- Dressing Multi Trauma (1)
- Emesis Bag (1)
- ET 6.0 Endotrol (1)
- ET 6.5 (1)
- ET 7.0 Endotrol (1)
- ET 7.5 (1)
- ET 8.0 Endotrol (1)
- ET 8.5 (1)
- ET Holder (2)
- ET Stylet 12fr (1)
- ET Stylet 14fr (1)
- 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)
- Suction catheter 14fr (1)
- Suction OG 14fr (1)
- Surgi-lube (4)
- Survival Blanket (1)
- Syringe 10ml (1)
- Tape 1" (1 roll)
- Torpedo Sharp Container (1)
- Tourniquet (1)

Bag, Medication

- 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, Oxygen

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

Cab

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

IV Start Kit

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

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

RSI Kit

- 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)

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, Airway

- ET Holder (2)
- ETCO2 adapter (2)
- King Airway size 3 (1)
- King Airway size 4 (1)
- King Airway size 5 (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)
- Suction catheter 14fr (1)
- Suction OG 14fr (1)

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)
- Chest Seal (1 set)
- Decompression Needle (1)
- Dressing 4X4 non sterile
- Dressing ABD pad (2)
- Dressing Celox (1)
- Dressing Multi Trauma (1)
- Emesis Bag (1)
- ET 6.0 Endotrol (1)
- ET 6.5 (1)
- ET 7.0 Endotrol (1)
- ET 7.5 (1)
- ET 8.0 Endotrol (1)
- ET 8.5 (1)
- ET Stylet 12fr (1)
- ET Stylet 14fr (1)
- 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)
- 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)
- Pressure Infuser Bag (1)
- Sam Splint (1)
- Surgi-lube (4)
- Survival Blanket (1)
- Syringe 10ml (1)
- Tape 1" (1 roll)
- Torpedo Sharp Container (1)
- Tourniquet (1)

Bag, Medication

- 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, Oxygen

- Adult Nasal Cannula
- Adult NRB
- CO2 Nasal Cannula
- Emesis bag
- Nebulizer Handheld
- Nebulizer Mask
- Ped NRB

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

Cab

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

Cabinets

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

Compartments, Outside

- Adult Traction Splint (1)
- Backboard (2)
- KED (1)
- Lucas II (1) * Cedar County
- Ped Traction Splint (1)
- PFD (2)
- Scoop Stretcher (1)
- Scoop Stretcher Straps (3)
- SMR Bag (2)
- Stair Chair (1)
- Surgi-Lift (1)

Cot

- Blanket
- Pillow
- Sheet

IV Start Kit

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

IV Tray

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

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)

<u>Added supplies:</u>

- 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

- Decompression Needle (1)
- Oral airways (6)
- Pen (3)
- Stickers Red
- Trauma Sheers
- Triage tags (25)

BLS AMBULANCE

Accucheck Kit

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

Bag, Airway

- Chest Seal (1 set)
- ET Holder (2)
- ETCO2 adapter (2)
- King Airway size 3 (1)
- King Airway size 4 (1)
- King Airway size 5 (1)
- LMA Size 1 & 5ml syringe (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)
- Suction catheter 14fr (1)
- Suction OG 14fr (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, 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 Multi Size (4)
- C-Collar Ped
- Spider Straps (1)
- Stable Block (2)
- Tape 2”
- Towels (2)

Cab

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

Cabinets

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

Compartments, Outside

- Adult Traction Splint (1)
- Backboard (1)
- Ped Traction Splint (1)
- PFD (2)
- Scoop Stretcher (1)
- Scoop Stretcher Straps (3)
- SMR Bag (2)
- Surgi-Lift (1)

Cot

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

IV Start Kit

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

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)

<u>Added supplies:</u>

- ET 3.0 uncuffed (2)
- Meconium Aspirator 10 (1)
- Umbilical cord clamps (1 set)

Triage Kit

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

Bag, SMR Blue

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

Bag, SMR Red

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

Compartments

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

Suction Unit

- Suction Tip
- Suction Tubing

CEDAR COUNTY FIRST RESPONDER MEDICAL RESPONSE VEHICLE

List pending…

COLLINS FIRE MEDICAL RESPONSE VEHICLE

List pending…

HUMANSVILLE FIRE MEDICAL RESPONSE VEHICLE

List pending…

LOWRY CITY FIRE MEDICAL RESPONSE VEHICLE

List pending…

MORRISVILLE FIRE MEDICAL RESPONSE VEHICLE

List pending…

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
- Bandaids
- 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
- Syction 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
- Bandaids
- 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
- BVM Adult
- Glucometer
- King Airway 3
- King Airway 4
- King Airway 5
- King Tube Holder
- Lubrication
- NRB Adult
- NRB Ped
- OPA
- Sharps Container

Bag, First-In

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

Bag, Pediatric

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

Bag, SMR

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

Compartments

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

SAC OSAGE FIRE MEDICAL RESPONSE VEHICLE

List pending…

WHEATLAND FIRE MEDICAL RESPONSE VEHICLE

List pending…

Section 8-010 - Automated External Defibrillator (AED)

*NOTE: When using **LifePak** in AED mode, use **Section 8-190 - LifePak** (page 201).

Precautions:

- ✱ 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.

Contraindications:

- ✱ Pulse.

Indications:

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

Scope of Practice:

- RN
- Medic

Precautions:

- Avoid venipuncure in arms with dialysis shunts or injuries proximal to insertion site.

Contraindications:

- None.

Indications:

Section 8-140 - Intravascular (IV) Needle ..... page 195

Procedure:

- 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:
  - 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.
  - 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.

Blood draw for alcohol analysis Procedure:

- 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 or draw blood if an officer brings a non-patient to the crew for the sole purpose of drawing blood. An IV must be required for medical purposes and the blood draw is secondary to that action.
- 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.
- The requesting officer must be present, supply the blood tube, and witness the blood sample being taken.
- The task will not distract attention away from the primary task of patient care.
- Documentation shall include patient consent and officer requesting.

Citations: (Citizens Memorial Hospital, 2013)

Section 8-030 - Bougie

Scope of Practice:	*Contraindications*:
✱ RN ✱ Medic *Precautions:* ✱ None.	✱ Age less than 8 years. ✱ Use of a 6.0 or smaller **ETT**.

Indications:

Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) (Predicted difficult **Intubation**)..... page 93
Section 8-070 - Cricothyrotomy Kit..... page 187

Procedure:

✱ 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**.

Citations:

Section 8-032 - Capnometer

Scope of Practice:	*Contraindications*:
✱ RN ✱ Medic *Precautions:* ✱ None	✱ 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

Scope of Practice:	*Contraindications*:
✱ EMR ✱ EMT ✱ AEMT ✱ RN ✱ Medic *Precautions:* ✱	✱ Patient is too large for the device to be secured.

Indications:
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)..... page 78

Procedure:
- ✱ 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.

Citations: (Physio-Control, 2012)

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 **$ETCO_2$**.

Indications:

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

Scope of Practice:

- EMR
- EMT
- AEMT
- RN
- Medic

Precautions:

- 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.

Contraindications:

- None.

Indications:

Need to move non-ambulatory patient.

Generic Procedure:

- 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**.

X-Frame Procedure:

- Loading with a patient:
  - 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:
  - 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):
  - 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):
  - 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 Kit

Scope of Practice:

- RN
- Medic

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:

- RN
- Medic

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

ARS / SPEAR Procedure:

- Select site:
  - Fifth intercostal space on anterior axillary line OR
  - Second intercostal space on mid-clavicular line.
- Cleanse site.
- Remove red cap from case with twisting motion and remove needle from case.
- Insert needle through skin targeting the rib below the level of intended insertion site. Direct needle superiorly over rib and into thoracic cavity ensuring perpendicular position relative to thoracic cavity.
  - Ensure needle entry is not medial to nipple line and not directed toward heart.
- Release catheter from needle by ¼ turn and advance catheter. Remove needle only when catheter has been fully inserted.
- If **tension pneumothorax** returns, repeat procedure.

Turkel Procedure:

- Select site:
  - Fifth intercostal space on anterior axillary line OR
  - Second intercostal space on mid-clavicular line.
- Clean area with antiseptic.
- Insert Turkel into skin over just over superior border of third rib.
- Insert catheter through paretal pleura until air escapes.
- During insertion, the color band will show RED until through paretal 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:

- Select site:
  - Fifth intercostal space on anterior axillary line OR
  - Second intercostal space on mid-clavicular line.
- Clean area with antiseptic.
- Insert Jelco into skin over just over superior border of third rib.
- Insert catheter through paretal 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: (North American Rescue, 2018)

Section 8-080 - Endotracheal Tube (ET)

Scope of Practice:	*Contraindications*:
✱ RN ✱ Medic *Precautions:* ✱ Can induce **Hypertension** and increase ICP in Head injured patients. Can induce Vagal response and **Bradycardia**. Can induce hypoxia-related arrhythmias.	✱

Indications:

Protocol 6-085 - High-Threat Response ..... page 86
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) (Need for definitive Airway)..... page 93

Procedure:

✱ **Hyperventilate** with **BVM** and basic adjunct.
✱ Assemble, check, and prepare equipment.
✱ Consider **Neo-Synephrine** (2-3 sprays in each nare) 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:
  ✱ 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**.

Citations:

Section 8-110 - Gastric Tube

Scope of Practice:	*Contraindications*:
✱ RN ✱ Medic *Precautions:* ✱	✱ **Epiglottitis** or **Croup**. ✱ Use orogastric route when: facial trauma or basilar skull fracture.

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 189
Section 8-160 - King LTSD Airway (Evacuation of air or fluids in stomach) ..... page 198
Section 8-170 - Laryngeal Mask Airway (LMA) Supreme ..... page 199

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

Scope of Practice:

- EMT
- AEMT
- RN
- Medic

Precautions:

- Do not rely on readings of other entities or patient's own Glucometer.

Contraindications:

- None.

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:

Blood sugar 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

Scope of Practice:	*Contraindications*:
✱ EMR ✱ EMT ✱ AEMT ✱ RN ✱ Medic *Precautions:* ✱ None.	✱ None.

Indications:
Protocol 1-020 - General Assessment and Treatment - Trauma ..... page 14
Protocol 6-085 - High-Threat Response ..... page 86

Procedure:
✱ 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.

Citations: (Medtrade Products Ltd)

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:

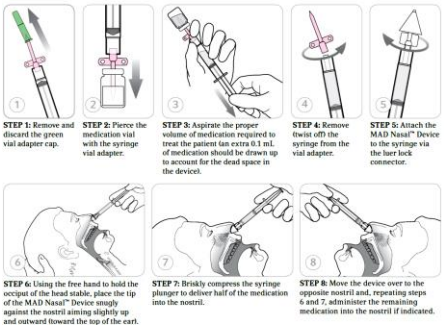
Medication administration without **IV** access.

Section 7-230 - Fentanyl (Sublimaze)..... page 129
Section 7-400 - Narcan (Naloxone)..... page 145
Section 7-600 - Versed (Midazolam)..... page 166
Section 7-620 - Zofran (Ondansetron)..... page 168

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:

- RN
- Medic

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 site:
  - Proximal humerus,
  - Proximal tibia,
  - Distal tibia, or
  - Distal femur (infants only).
- 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**/**LR** 5-10 ml bolus.
- Connect tubing and apply pressure bag.
- Apply dressing.

Citations: (Vidacare Corporation, 2009)

Section 8-140 - Intravascular (IV) Needle

Scope of Practice:	*Contraindications*:
✱ AEMT ✱ RN ✱ Medic *Precautions:* ✱ Avoid venipuncuture in arms with dialysis shunts or distal to injuries.	✱ None.

Indications:
Any patient requiring **IV** medications.

Procedure:
- ✱ 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:
  - ✱ 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.

Citations: (Citizens Memorial Hospital, 2013), (Merk, 2016)

Section 8-142 - IV Pump

Scope of Practice:	*Contraindications*:
✱ RN ✱ Medic *Precautions:* ✱	✱

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)

Scope of Practice:

- EMR
- EMT
- AEMT
- RN
- Medic

Precautions:

Contraindications:

- Patients with easy access requiring rapid extrication.

Indications:

Section 8-350 - Spinal Motion Restriction (SMR) (Patients that are seated and meet criteria for **SMR**) ..... page 221
Section 8-360 - Splint..... page 222

Procedure:

- 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.

Citations:

Section 8-160 - King LTSD Airway

Scope of Practice:

- EMT
- AEMT
- RN
- Medic

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 189

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 **$ETCO_2$**.
- 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_2O	60 cm H_2O	60 cm H_2O	60 cm H_2O	60 cm H_2O
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
KLTSD Cuff Volume	n/a	n/a	40-55 ml	50-70 ml	60-80 ml

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

Scope of Practice:	*Contraindications*:
✱ AEMT ✱ RN ✱ Medic *Precautions:* ✱	✱ Swallow or gag reflex.

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 189

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

Scope of Practice:	*Contraindications*:
✱ RN ✱ Medic *Precautions:* ✱	✱

Indications:
Future location of video laryngoscope

Procedure:
✱

Citations:

Section 8-190 - LifePak

Automated External Defibrillation *Scope of Practice:* ✱ EMT ✱ AEMT ✱ RN ✱ Medic *Precautions:* ✱ Exercise safety precautions.	*Contraindications*: ✱ If ALS is available, manual mode is preferred. ✱ None in cardiac Arrest.

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 169

Procedure:
✱ Confirm patient is in cardiac Arrest.
✱ Apply and connect combo-pads.
✱ Press “ANALYZE.”
✱ Follow on-screen messages and voice prompts.

12/15-Lead acquisition	*Contraindications*:
Scope of Practice: ✱ ☐ EMD ✱ ☐ EMR ✱ ☑ EMT ✱ ☑ AEMT ✱ ☑ RN/Paramedic *Precautions:* ✱	✱

Indications:

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.

Vitals *Scope of Practice:* ✱ ☐ EMD ✱ ☐ EMR ✱ ☑ EMT ✱ ☑ AEMT ✱ ☑ RN/Paramedic *Precautions:* ✱ Accuracy is dependent upon adequate perfusion at probe site, bright ambient lighting, **Carbon Monoxide Poisoning, Cyanide Poisoning**, nail polish, and polycythemia.	*Contraindications*: ✱ Do not attempt blood pressures on injured extremities, side of previous mastectomies, or dialysis shunts.

Indications:
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. .....

Procedure:
✱ 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.

Manual Defibrillation	*Contraindications*:
Scope of Practice: ✱ ☐ EMD ✱ ☐ EMR ✱ ☐ EMT ✱ ☐ AEMT ✱ ☑ RN/Paramedic *Precautions:* ✱ Exercise safety precautions.	✱ None in cardiac Arrest.

Indications:

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.

Download to ePCR *Scope of Practice:* ✱ ☐ EMD ✱ ☐ EMR ✱ ☑ EMT ✱ ☑ AEMT ✱ ☑ RN/Paramedic *Precautions:* ✱	*Contraindications*: ✱

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."

Synchronized Cardioversion

Scope of Practice:
- ☐ EMD
- ☐ EMR
- ☐ EMT
- ☐ AEMT
- ☑ RN/Paramedic

Precautions:
- Exercise safety precautions. Cardiovert with extreme caution in patients on digitalis, Beta-Blockers, and Calcium channel blockers.

Contraindications:
-

Indications:

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.

Transcutaneous Pacing

Scope of Practice:
- ☐ EMD
- ☐ EMR
- ☐ EMT
- ☐ AEMT
- ☑ RN/Paramedic

Precautions:
- Exercise safety precautions. Do not place pacer electrodes directly over implanted pacemaker or AICD.

Contraindications:
- None in emergency setting.

Indications:
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:

Programming Standards

Scope of Practice:
- ☐ EMD
- ☐ EMR
- ☐ EMT
- ☐ AEMT
- ☑ RN/Paramedic

Precautions:
- Programming shall only be done by qualified and authorized individuals.

Contraindications:
- None in emergency setting.

General Settings:
- Language ..... US English
- Code summary ..... Long
- Trend summary ..... Off
- Site number ..... APPLETON, BOLIVAR, HERMITAGE, STOCKTON, ELDORADO, OSCEOLA
- Device ID ..... *[match property ID tag]*
- Auto log ..... On
- Line filter ..... 60 Hz
- Timeout speed ..... 60 sec

Manual Mode Settings:
- Sync after shock ..... On
- Pads default 360
- Energy protocol ..... Inactive
- Internal default 10
- Voice prompts ..... On
- Shock tone ..... On
- Manual access ..... Manual / Direct
- No passcode required for manual mode

AED Mode Settings:
- Energy protocol ..... 360 - 360 - 360
- Auto analyze ..... Off
- Motion detection ..... On
- Pulse check ..... Never

CPR Settings:
- CPR time 1 ..... 120 sec
- CPR time 2 ..... 120 sec
- Initial CPR ..... CPR first
- Initial CPR time ..... 120 sec
- Preshock CPR ..... Off

CPR Metronome Settings:

- Metronome ..... On
- Adult - No airway ..... 30 : 2
- Adult - Airway ..... 100 : 0
- Youth - No airway ..... 15 : 2
- Youth - Airway ..... 100 : 0

Pacing Settings:

- Rate ..... 70 ppm
- Current ..... 0 mA
- Mode ..... Demand
- Internal pacer ..... Detection on

Monitoring Channels Settings:

- Default set ..... Set 1
- Set 1 ..... I, II, EtCO2
- Set 2 ..... II, SpO2, EtCO2
- Set 3 ..... I, II, III
- Set 4 ..... II, III, aVF
- Set 5 ..... aVL, V5, V6
- Set 6 ..... II, V1, V6

Monitoring Settings:

- Continuous ECG ..... On
- SpO2 tone ..... Off
- CO2 units ..... mmHg
- CO2 BTPS ..... Off
- NIBP initial pressure ..... 160 mmHG
- NIBP interval ..... 10 min
- Trends ..... On

12-Lead Settings:

- Auto transmit ..... Off
- Auto print ..... On
- Print speed ..... 25 mm/sec
- Interpretation ..... Off
- Format ..... 3-channel standard

Events Pages Settings:

- ✱ 1 ..... Generic
- ✱ 2 ..... Medication - Albuterol
- ✱ 3 ..... Medication - Aspirin
- ✱ 4 ..... Medication - Atropine
- ✱ 5 ..... Medication - Benadryl
- ✱ 6 ..... Medication - Cardizem
- ✱ 7 ..... Medication - Dextrose
- ✱ 8 ..... Medication - Duoneb
- ✱ 9 ..... Medication - Epinephrine 1:10,000
- ✱ 10 ..... Medication - Fentanyl
- ✱ 11 ..... Medication - Glucose
- ✱ 12 ..... Medication - Morphine
- ✱ 13 ..... Medication - Narcan
- ✱ 14 ..... Medication - Nitroglycerin
- ✱ 15 ..... Medication - Oxygen
- ✱ 16 ..... Medication - Phenergan
- ✱ 17 ..... Medication - Solu-Medrol
- ✱ 18 ..... Medication - Versed
- ✱ 19 ..... Medication - Xopenex
- ✱ 20 ..... Medication - Zofran
- ✱ 21 .....
- ✱ 22 .....
- ✱ 23 ..... Treatment - Airway insert
- ✱ 24 ..... Treatment - CPAP
- ✱ 25 ..... Treatment - Vascular access

Alarms Settings:

- ✱ Volume 5
- ✱ Alarms ..... Off
- ✱ VF / VT alarm ..... Off

Auto Print Settings:

- ✱ Defibrillation ..... On
- ✱ Pacing ..... Off
- ✱ Check patient ..... Off
- ✱ SAS ..... Off
- ✱ Patient alarms ..... Off
- ✱ Events ..... Off
- ✱ Initial rhythm ..... Off

Printer Settings:

- ✱ ECG mode ..... Monitor
- ✱ Monitor mode ..... 1 - 30 Hz
- ✱ Diagnostic mode ..... 0.05 - 40 Hz
- ✱ Alarm waveforms ..... On
- ✱ Event waveforms ..... On
- ✱ Vitals waveforms ..... On

Transmission Sites Settings:

- Site 1.....TUFF BOOK
- Site 2..... CMH ER
- Site 3.....Mercy ER
- Site 4.....Cox South ER
- Site 5.....Lake Regional ER

Transmission Settings:

- Default site .....TUFF BOOK
- Default report .....All
- Wireless .....Off
- Search filter .....Off

Clock Settings:

- Clock mode..... Real time
- Time zone ..... -6 US Central

Citations:

Section 8-200 - Meconium Aspirator

Scope of Practice:	*Contraindications*:
✱ RN ✱ Medic *Indications*: ✱	✱ *Precautions:* ✱

Indications:
Protocol 4-130 - Neonatal Resuscitation ..... page 57

Procedure:
✱

Citations:

Section 8-210 - Morgan Lens

Scope of Practice:	*Contraindications*:
✱ RN ✱ Medic *Precautions:* ✱	✱ Penetrating eye injury.

Indications:
Protocol 5-060 - Eye Injury (need for Eye irrigation)..... page 69

Procedure:
✱ **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.

Citations: (MorTan Inc, 2018)

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

Scope of Practice:	*Contraindications*:
✱ EMT ✱ AEMT ✱ RN ✱ Medic *Precautions:* ✱	✱

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

Scope of Practice:	*Contraindications*:
✱ AEMT - Only for beta agonists for dyspnea with **wheezing**. ✱ RN ✱ Medic *Precautions:* ✱	✱

Indications:

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)

Scope of Practice:

- EMR
- EMT
- AEMT
- RN
- Medic

Precautions:

-

Contraindications:

- Gag reflex.

Indications:

Unconscious or unresponsive.

Procedure:

- **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.

Citations:

Section 8-290 - Physical Restraint

Scope of Practice:	*Contraindications*:
✱ RN ✱ Medic *Precautions:* ✱ If restrained by law enforcement (i.e. hand-cuffs), an officer from the Arresting agency must be present throughout EMS transport.	✱

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:	*Contraindications*:
✱ RN ✱ Medic *Precautions:* ✱ Sterile technique must be utilized.	✱ 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**/**LR**. 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

Scope of Practice:	*Contraindications*:
✱ RN ✱ Medic *Precautions:* ✱ Sterile technique must be utilized.	✱ 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:

✱ 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**/**LR**. 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.

Citations: (Citizens Memorial Hospital, 2013)

Section 8-330 - Portable Ventilator

Scope of Practice:
- ✱ RN
- ✱ Medic

Precautions:
- ✱ Demand setting requires constant patient monitoring. If patient condition deteriorates, consider extubation and BVM.

Contraindications:
- ✱ None.

Indications:
Need for ventilation of **intubated** patient.

Procedure:
- ✱ Adjust settings (may be based on existing Ventilator settings or anticipated patient needs):
  - ✱ 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**.

Citations:

Section 8-350 - Spinal Motion Restriction (SMR)

Scope of Practice:

- EMR
- EMT
- AEMT
- RN
- Medic

Precautions:

- 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.

Contraindications:

- 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:
  - 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.

Indications:

- High-energy mechanism of injury AND any of the following:
  - **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.

Protocol 1-020 - General Assessment and Treatment - Trauma ..... page 14
Protocol 5-020 - Abdominal Trauma ..... page 65
Protocol 5-040 - Chest Trauma ..... page 67
Protocol 5-050 - Extremity Trauma ..... page 68
Protocol 5-070 - Head Trauma ..... page 70
Protocol 5-080 - Spinal Trauma ..... page 72
Protocol 5-090 - Trauma Arrest ..... page 74
Protocol 6-080 - Event Standby ..... page 85

Procedure:

- Assess distal pulse, motor, and sensation.
- Maintain manual stabilization, measure, size, and secure cervical collar.
- Seated patient: Consider **KED**.
- If no posterior injuries suspected: Eight-person lift a few inches and slide board underneath or use scoop stretcher.
  - 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.

Citations: (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)

Section 8-360 - Splint

Scope of Practice:

- EMR
- EMT
- AEMT
- RN
- Medic

Precautions:

- 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.

Contraindications:

-

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

Scope of Practice:	*Contraindications*:
✱ EMR ✱ EMT ✱ AEMT ✱ RN ✱ Medic *Precautions:* ✱	✱

Indications:
Section 8-060 - Cot..... page 185

Procedure:
✱

Citations:

Section 8-370 - Suction

Scope of Practice:

- EMR - Only upper airway.
- EMT - Only upper airway.
- AEMT - Only upper airway and tracheobronchial suctioning of already **intubated** patient.
- RN
- Medic

Precautions:

- Be sure to switch off as soon as possible to avoid shorting batteries.

Contraindications:

-

Indications:

Protocol 4-130 - Neonatal Resuscitation ..... page 57
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) ..... page 93

Procedure:

- 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.

Citations:

Section 8-380 - Thermometer

Scope of Practice:

- EMR
- EMT
- AEMT
- RN
- Medic

Precautions:

- 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.

Contraindications:

-

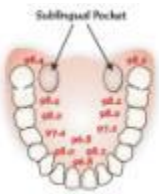
Indications:

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 model 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.


Adult Axillary Mode Icon

✱ To ensure optimal accuracy, always confirm that the correct axillary mode is selected.


Pediatric Axillary Mode Icon

✱ 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.

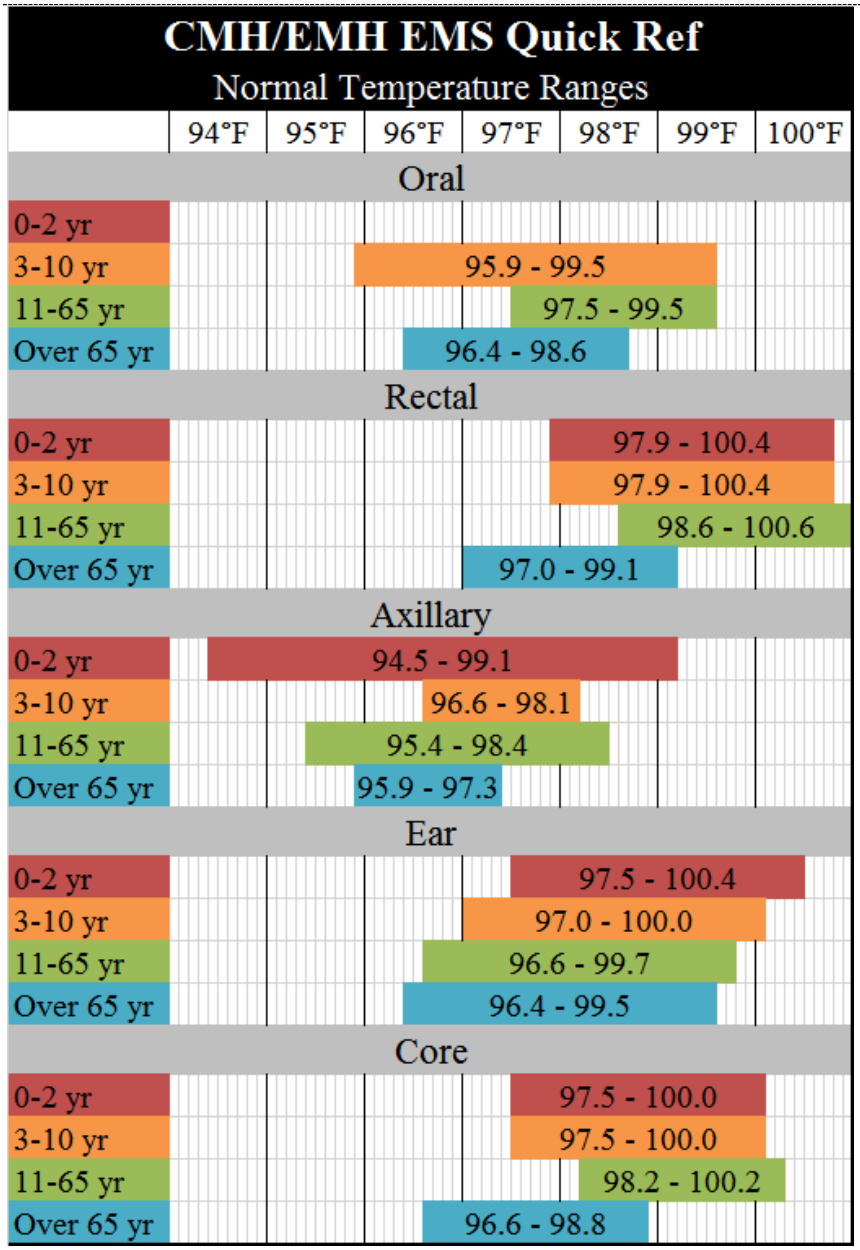
Rectal Temperature Procedure:

- 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

Scope of Practice:

- EMD
- EMR
- EMT
- AEMT
- RN
- Medic

Precautions:

- Prolonged Tourniquet application may result in nerve damage, rhabdomyolysis, compartment syndrome, ischemia, and re-profusion injury. Time of Tourniquet application MUST be reported to accepting ER.
- Do not apply Tourniquet over a joint.

Contraindications:

-

Indications:

Protocol 1-020 - General Assessment and Treatment - Trauma ..... page 14
Protocol 5-050 - Extremity Trauma (Life-threatening limb hemorrhage uncontrolled by simple methods) ..... page 68
Protocol 6-085 - High-Threat Response ..... page 86

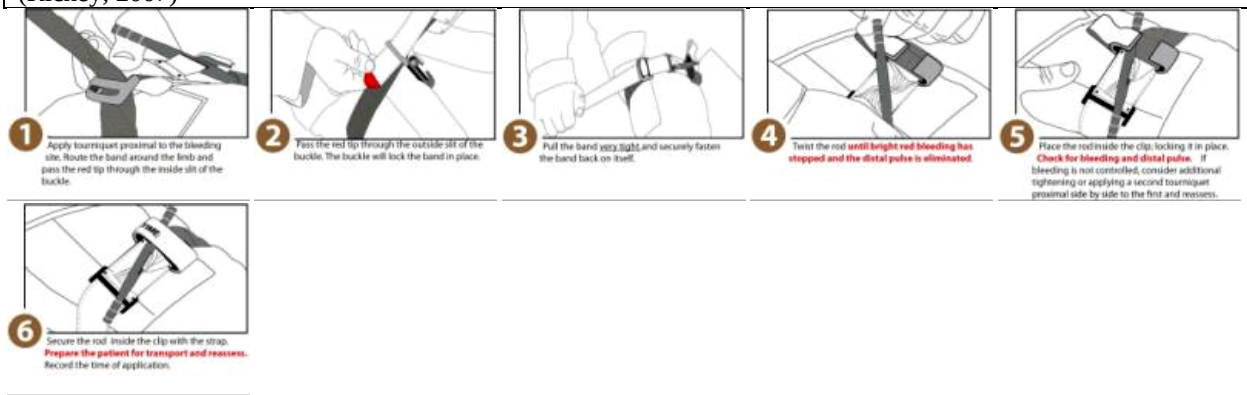
Procedure:

- 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.

Advanced Life Support

- 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:
  - Not in circulatory shock.
  - Stable vitals.
  - Enough personnel and resources.
  - Not an amputated Extremity.
- Contact **MEDICAL CONTROL**.
  - Apply pressure dressing and loosen Tourniquet (leave in place).
  - Re-tighten Tourniquet if significant bleeding returns.

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:

- EMT
- AEMT
- RN
- Medic

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.

Citations:

Part 9 - Appendix

Section 9-010 - References

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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 (Lorazapam)	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.

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-profusion 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.
	4/14/15	4/1/15 version approved and signed by Dr. Merk and Neal Taylor.
Part 0 - Front Matter	12/12/14	Added definition of pediatric. Added DELIBERATE ACTIONS.
	3/2/15	Removed DELIBERATE ACTIONS.
	3/30/15	Added statement about EMR, EMT, and medic and the adoption of these protocols by first responder agencies.
Section 0-300 - Table of Contents	12/12/14	Added column to identify Subject Matter Experts (SME).
	3/2/15	Removed SME column and created separate Excel document.
Protocol 1-010 - General Assessment and Treatment - Medical	12/12/14	Added if patient contact time less than 15 min, only one set of vitals needed. Added definition of DELIBERATE ACTIONS.
	3/2/15	Removed DELIBERATE ACTIONS.
Protocol 1-020 - General Assessment and Treatment - Trauma	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.
	4/3/15	Added “consider SMR.”
Protocol 2-010 - Asystole	12/12/14	Added consider Gastric Tube.
	4/3/15	Moved Gastric Tube to Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI).
Protocol 2-020 - Atrial Fibrillation (A-Fib) or Atrial Flutter	12/12/14	Added Procainamide if pulmonary edema based on Dr. Nix conversation about a specific patient.
	4/3/15	Removed Procainamide after conversation with Dr. Merk. Clarified when to apply Combo Pads according to age and rates.
Protocol 2-040 - Bradycardia	12/12/14	Added contact medical control for Pacing Hypothermia patient. Added weight-based Fentanyl dose for greater than 65 yr.
	12/15/14	Added “do not delay for IV.”
Protocol 2-050 - Chest Discomfort	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.
	4/3/15	Added “Use Tablet” for STEMI transmission.
Protocol 2-070 - Pulseless Electrical Activity (PEA)	12/12/14	Added consider Gastric Tube.
	4/3/15	Moved Gastric Tube to Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI).
Protocol 2-090 - Tachycardia Narrow 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 2-100 - Tachycardia Wide Stable	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.
	4/3/15	Clarified when to apply Combo Pads according to age and rates.
Protocol 2-120 - Torsades de Pointes	12/12/14	Added consider Gastric Tube.
	4/3/15	Moved Gastric Tube to Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI).
Protocol 2-140 - Ventricular Fibrillation (V-Fib or V-Tach)	12/12/14	Added consider Gastric Tube.
	4/3/15	Moved Gastric Tube to Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI).
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 secion.
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 $ETCO_2$ 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 (Lorazapam)	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 (Hydomorphone)	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 (Turkel Needle). Removed 8-380 and 8-410.
Section 8-080 - Endotracheal Tube (ET)	4/3/15	Added “Consider Neo-Synephrine” 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.

Protocol	Date	Changes description
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 my 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	11/17/5	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).
	11/17/15	Added comment to consider biphasic energy doses.
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.
Protocol 3-010 - Drowning	12/14/14	Replaced CPR with CCR.
	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.
Protocol 3-030 - Hypothermia	12/15/14	Replaced CPR with CCR.
	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.
Protocol 3-040 - Hypothermia Arrest	12/15/14	Replaced CPR with CCR.
	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 brochodialator treatments to Albuterol unless over 6 yr old, then Duoneb.
Protocol 4-030 - Asthma	11/17/15	Increased Xopanex 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.
Protocol 5-020 - Abdominal Trauma	12/26/14	Added TXA.
	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.
Protocol 5-030 - Burns	12/12/14	Made Intubation and RSI DELIBERATE ACTIONS. Added indications for RSI.
	3/2/15	Removed DELIBERATE ACTIONS.
Protocol 5-040 - Chest Trauma	12/26/14	Added TXA.
	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.
	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.
Protocol 5-070 - Head Trauma	12/12/14	Added RSI indications.
	11/17/15	Removed comment that Morphine is contraindicated in head trauma.
Section 6-010 - Acquisition of Medical Control	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.
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)	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.
	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 reccomendations. 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 disassociative 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 recoommendations 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 reccomendations 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 readibility.
	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	11/171/15	Added this section.
	11/24/15	Added levomepromazine, Nosinan, Nozinan, Levoprome, delamanid, Deltyba, and papaverine to the list.
Section 7-020 - Activated Charcoal (Actidose)	11/17/15	Modified contraindication from unconsiousness to any altered mental state.
Section 7-080 - Atropine (Sal-Tropine)	5/5/15	Added Physostigmine as antidote.
	6/1/15	Added incidation for Protocol 6-025 - Cardiopulmonary Resuscitation (CPR).
Section 7-090 - Benadryl (Diphenhydramine)	5/5/15	Added Physostigmine as antidote.
Section 7-120 - Cardizem (Diltiazem)	6/8/15	Added quick reference dosage chart.
Section 7-170 - Dopamine (Intropin)	6/8/15	Added quick reference dosage chart.
Section 7-230 - Fentanyl (Sublimaze)	10/21/15	Added comment that rigid chest syndrome precaution usually occurs with doses greater than 200 mcg.
	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.
Section 7-320 - Ipratropium (Atrovent)	5/5/15	Added Physostigmine as antidote.
Section 7-330 - Ketamine (Ketalar)	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 7-370 - Lidocaine (Xylocaine)	6/1/15	Added indication for Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI).
	6/8/15	Added quick reference dosage chart.
Section 7-390 - Morphine	10/21/15	Added 1-2 minute onset time.
Section 7-400 - Narcan (Naloxone)	6/1/15	Added indication for Protocol 6-025 - Cardiopulmonary Resuscitation (CPR).
Section 7-420 - Nitroglycerin (Nitrostat, Nitrolingual, Tridil)	6/8/15	Added quick reference dosage chart.
Section 7-575 - Toradol (Ketorolac)	9/16/15	Corrected misspelling of Ketorolac.
Section 7-578 - TXA (Tranexamic Acid)	12/29/14	Added protocol.
	5/31/15	Added content.
	8/6/15	Added colorblindness contraindication. Added precaution for rapid infusion. Added requirement to transport to LI, LII, or LIII trauma center.
Section 8-001 - Equipment Currently on Response Vehicles	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 incidation 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 anethesiologist.
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 accessiblity, 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 brochodilators 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 bronchodialators 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 bronchodialators 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 bronchodialators 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 bronchodialators 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.
Protocol 5-050 - Extremity Trauma	7/22/16	Moved fluid bolus to AEMT section.
	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.
Protocol 5-085 - Superficial Penetration	7/25/16	At the request of Dr. Merk, added comment to recommend followup with physician for infection monitoring.
	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 intbuations.
	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 dissasociative 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 Guideance 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 warrented.
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 2nd 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 acetylcholinersterasse inhibitor exposure, Atropine dose up to 2,000 mg for acetylcholinesterase, removed medical for calcium chloride jelly for HF exposure, added trycyclic 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 thins 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 suidical intent.
Protocol 6-085 - High-Threat Response	9/22/17	Clarify tier two dispatching for notifiying 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 reivew 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 parayzation 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 prgnancy 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 (Lorazapam)	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 - Ipratrpoium	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.
Section 7-490 - Procainamide	8/24/17	Removed this section.
Section 7-500 - Propofol	8/24/17	Removed this section

Protocol	Date	Changes **description**
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.
	9/22/17	Removed this section.
Section 7-590 - Vecuronium	8/24/17	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 Amidoarone 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.

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	Added dispatch codes and other requirments for dispatchers to dispatch EMS Supervisor and Rescue Task Force.
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.

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.

Changes from version 11 to version 12 (Lister)

Version eleven is named in dedication to Sir Joseph Lister who was a British surgeon and pioneer of antiseptic surgery.

Protocol	Date	Changes description
Entire document	4/5/19	Changed all fluid bolus from NS to LR except crush injry. APPROVED BY DR. CARTER 4/5/19.
	7/23/19	Removed NEMSIS standardized protocol references. Changed all references to "glucose" as a measurement (not medication) to "blood sugar."
	7/31/19	Changed medical director to Gustavo Nix.
	8/1/19	Changed medical director to Tony Cauchi.
	8/14/19	Changed Travis Foley to Cheyenne Stone for signature for Sac Osage Fire.
Trauma protocols	3/1/19	Changed target SBP from 80 or 90 to 100 due to version 9 PHTLS guidelines. APPROVED BY DR. CARTER ON 4/5/19.
Section 0-020 - Standing Orders for Agency Type	7/23/19	Added dispatch requirements and link to performance graphs.
Protocol 1-020 - General Assessment and Treatment - Trauma	7/23/19	Added reference to new hemhorrage protocol. Moved requirement for 10 minute scene time from ALS to EMT. Added link to performance graph.
Section 1-021 - Trauma Destination Determination Flowchart	7/23/19	Verified designated trauma centers with BEMS website.
Section 1-030 - Assessment Tools	7/23/19	Added links for airway stuff, blood sugar, and temperatures to RSI, glucometer, and thermometer sections. Added standard weights. Matched table to Handtevy.
Protocol 2-020 - Atrial Fibrillation (A-Fib) or Atrial Flutter	7/23/19	Fixed typo.
Protocol 2-040 - Bradycardia	7/23/19	Fixed the math for Epi drip.
Protocol 2-050 - Chest Discomfort	7/23/19	Added link to performance graph for 12-lead time.
Section 2-051 - EKG Interpretation Guide	7/23/19	Added "p-wave" to LBBB definition. Improved graphics for 12-lead placement.
Section 2-052 - STEMI Destination Determination Flowchart	7/23/19	Verified designated STEMI centers with BEMS website.
Protocol 2-070 - Pulseless Electrical Activity (PEA)	3/1/19	Added comment that narrow PEA trauma arrest should not be terminated in the field based on PHTLS version 9 recommendation.
Protocol 3-030 - Hypothermia	7/23/19	Added Burrito graphic.
Protocol 4-020 - Anaphylaxis	7/23/19	Added "per dose" max Epi 1:1k pediatric.
Protocol 4-030 - Asthma	7/23/19	Added IM option for Solu-Medrol.
Protocol 4-040 - Behavioral	12/18/18	Re-worded when to call for med control after sedation when patient is risk based on Dr. Carter recommendations.
Protocol 4-050 - Cerebrovascular Accident (CVA) or Stroke	7/31/19	Clarified CMH Activation and Alert levels of 4.5 and 24 hours. Increased EMD therapeutic window to 24 hours.
Section 4-053 - Stroke Destination Determination Flowchart	7/23/19	Verified designated stroke centers with BEMS website. Added Cedar County Memorial as level III stroke center.
Protocol 4-110 - Hypertension	7/23/19	Added reference to new hemorrhage protocol if epistaxis.
Protocol 4-120 - Hypoglycemia	7/23/19	Added options to mix Thiamine with LR or D10W for infusion.
Protocol 4-170 - Seizures	7/23/19	Fixed some confusion with pediatric age ranges for Versed doses.
Protocol 4-180 - Vaginal Bleeding	7/23/19	Added link to new hemorrhage protocol and removed TXA.
Protocol 5-020 - Abdominal Trauma	3/1/19	Changed targeted SBP from 80 to 100 based on PHTLS ver 9 recommendation.
	7/23/19	Added link to new hemorrhage protocol and removed TXA.
Protocol 5-030 - Burns	3/1/19	Added modified Parkland formula based on new recommendations from PHTLS version 9.
	7/23/19	Added link to new hemorrhage protocol.
Protocol 5-040 - Chest Trauma	3/1/19	Changed targeted SBP from 80 to 100 based on PHTLS ver 9 recommendation. Added needle decompression sites with a preference being 5th intercostal midaxillary also based on PHTLS ver 9.
	7/23/19	Added link to new hemorrhage protocol and removed TXA.
Protocol 5-050 - Extremity Trauma	3/1/19	Changed targeted SBP from 80 to 100 based on PHTLS ver 9 recommendation.
	7/23/19	Added link to new hemorrhage protocol and removed tourniquets and TXA.
Protocol 5-070 - Head Trauma	7/23/19	Added link to new hemorrhage protocol and removed epistaxis.
Protocol 5-075 - Hemorrhage	7/23/19	Created this protocol as one place for all things hemorrhage, even non-traumatic causes of hemorrhage.
Protocol 5-080 - Spinal Trauma	7/23/19	Added link to new hemorrhage protocol.
Protocol 5-090 - Trauma Arrest	3/1/19	Added comment that narrow PEA should not be terminated in the field based on recommendations from PHTLS version 9. APPROVED BY DR. CARTER ON 4/5/19.
	4/12/19	Added comment to consider not performing chest compressions until hypovolemia and obstructive shock causes are fixed.
	7/23/19	Added link to new hemorrhage protocol.
Section 6-030 - Competencies and Education	7/23/19	Modified and clarified requirements for individuals to attend competencies.
Protocol 6-060 - Do Not Resuscitate (DNR)	7/23/19	Fixed typo.

Protocol	Date	Changes description
Protocol 6-090 - Hazardous Atmosphere Standby	7/23/19	Added the requirement for the standby ambulance be ALS.
Section 6-105 - Quality Improvement	7/23/19	Modified and clarified requirements for agencies to attend quality meetings. Added links to performance graphs.
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)	12/18/18	Removed contraindication of sepsis for Etomidate.
	7/23/19	Added note to use ideal body weight for paralytic dosing.
Section 6-111 - RSI Dosing Sheet	7/23/19	Added tidal volumes for ventilation based on weight. Made adjustments for paralytics to be dosed by ideal body weight.
Section 6-125 - Transfer Out of Hospital	7/23/19	Added link to performance graph.
Protocol 6-130 - Triage	7/23/19	Removed specifics of which crew member on the first arriving ambulance is triage officer and which is transportation officer. Added link to acquisition of medical control protocol for contact info.
Section 7-001 - Medications Currently on Response Vehicles	1/16/19	Made adjustments based on equipment committee recommendations.
	3/20/19	Made adjustments based on equipment committee recommendations.
Section 7-030 - Adenosine (Adenocard)	7/23/19	Specified contraindication of non-cardiac-related tachycardia.
Section 7-040 - Albuterol (Proventil, Ventolin)	7/23/19	Added comment about potassium depletion and hypokalemia.
Section 7-050 - Amiodarone (Cordarone)	7/23/19	Clarified potassium-channel blocker.
Section 7-090 - Benadryl (Diphenhydramine)	7/23/19	Added indication of Morphine with hypotension.
Section 7-100 - Calcium Chloride (Calciject)	7/23/19	Clarified facilitation of cardiac contractility.
Section 7-140 - Decadron (Dexamethasone)	7/23/19	Added indications for Asthma and Croup.
Section 7-190 - Epinephrine 1:1,000	7/23/19	Added contraindication of severe hypertension. Moved diabetes from contraindication to precaution with note to monitor blood sugar.
Section 7-205 - Epinephrine 1:100,000 (Push-Dose Epi)	7/23/19	Added this section for reference only if orders from medical control.
Section 7-220 - Etomidate (Amidate)	12/18/18	Moved sepsis from contraindication to precaution per Dr. Carter.
Section 7-350 - Lactated Ringers (LR)	7/23/19	Fixed typo.
Section 7-390 - Morphine	7/23/19	Added conversation about Benadryl for hypotension.
Section 7-520 - Rocuronium (Zemuron)	7/23/19	Added note to use ideal body weight for dosing calculations.
Section 7-550 - Succinylcholine (Anectine)	7/23/19	Added note to use ideal body weight for dosing calculations.
Section 7-590 - Vecuronium (Norcuron)	7/23/19	Fixed typo. Added note to use ideal body weight for dosing calculations.
Section 7-620 - Zofran (Ondansetron)	7/23/19	Specified serotonin in the pharmacodynamics.
Section 8-001 - Equipment Currently on Response Vehicles	1/16/19	Made adjustments based on equipment committee recommendations.
	3/20/19	Made adjustments based on equipment committee recommendations.
	4/5/19	CHANGES TO THIS SECTION UP TO THIS POINT APPROVED BY DR. CARTER.
Section 8-020 - Blood Draw Kit	5/1/19	Made adjustments to align with CMH policy PHS02-06.
Section 8-075 - Decompression Needle	3/1/19	Added mid-axillary as the preferred site due to PHTLS ver 9 recommendations.
	3/20/19	Added ARS procedure.
Section 8-080 - Endotracheal Tube (ET)	4/5/19	Added dose of 2-3 sprays in each nare for neo-synephrine. APPROVED BY DR. CARTER 4/5/19.
Section 8-135 - Intraosseous (IO) Needle	7/23/19	Clarified locations of IO insertion.
Section 8-190 - LifePak	7/23/19	Added standardized programming for LifePak into protocol for medical director approval.

Section 9-040 - Index