Cedar, Hickory, Polk, & St Clair EMS Protocols

Part 0 - Front Matter

Section 0-010 - Master Signature Page

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The most recent version of this document can be found here:
http://ozarksems.com/cmh-ems-protocols.pdf

These protocols are designed to provide standing written orders to provide patient care. Refer to the next page (**Section 0-020 - Standing Orders for Agency Type** - Page 3) for specific standing order definitions based on the type of agency represented.

This document will be reviewed annually.

Unless specified Adult or Pediatric, protocols apply to both adult and pediatric patients. Pediatric is defined as a patient under the age of 18 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.

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

MPDS Card	Protocol Title	Page
All 9-1-1 calls	**Protocol 1-010 - General Assessment and Treatment - Medical**	9
	Protocol 1-020 - General Assessment and Treatment - Trauma	10
	Section 6-020 - Air Ambulance	72
	Protocol 6-085 - High-Threat Response	82
	Protocol 6-090 - Hazardous Atmosphere Standby	83
	Section 6-095 - Mutual Aid Maps	84
Aspirin Diagnostic	**Protocol 2-050 - Chest Discomfort**	17
Protocol 7 (**Burns**)	**Protocol 5-030 - Burns**	62
Protocol 8 (**Hazmat**)	**Protocol 4-140 - Poisoning or Overdose**	54
Protocol 9 (Cardiac Arrest) - Obvious death	**Section 6-140 - Termination of Resuscitation**	95
Protocol 9 (Cardiac Arrest) - Expected death	**Section 6-140 - Termination of Resuscitation**	95
Protocol 9 (Cardiac Arrest) - Cardiac arrest pathway	**Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)**	74
Protocol 14 (**Drowning**) - Obvious death	**Protocol 3-010 - Drowning**	31
Protocol 18 (Headache) - **Stroke** time window	**Protocol 4-050 - Cerebrovascular Accident (CVA) or Stroke**	39
Protocol 24 (**Pregnancy**) - High risk complications	**Protocol 4-090 - Childbirth**	47
Protocol 28 (**Stroke**) - **Stroke** time window	**Protocol 4-050 - Cerebrovascular Accident (CVA) or Stroke**	39
Protocol 33 (**Transfer**) - Acuity levels	**Section 6-125 - Transfer Out of Hospital**	93

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 15).
- **Section 8-010 - Automated External Defibrillator (AED)** (page 154).

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 71) 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 203).

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

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Part 1 - Assessment Protocols

Protocol 1-010 - General Assessment and Treatment - Medical

BLS - EMD

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

BLS - 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 **$ETCO_2$**.

BLS - 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.

BLS - AEMT

- Ensure completion of applicable EMT items above.

ALS - RN/Paramedic

- 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)

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

Protocol 1-020 - General Assessment and Treatment - Trauma

BLS - EMD

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

BLS - 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
- ABCs.
- LOC.
- Consider **SMR**.
- Control bleeding. If bleeding cannot be controlled by simple means:
  - Consider **Tourniquet**.
  - Consider **Hemostatic Agent**.
- 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 **tempurature**, and **Glucose**. Consider assisting ALS with **$ETCO_2$**.

BLS - EMT

- Ensure completion of applicable EMR items above.
- No significant MOI:
  - Treatment and transport decision (BLS/ALS).
- **Transfer** of patients meeting BLS criteria with the only exception of **Heparin**- or **Saline**-locked **IV** may be transported BLS.
- A BLS ambulance with an ALS patient shall request ALS intercept or transport to the nearest emergency room or CMH unless the destination is refused by the patient.

BLS - AEMT

- Ensure completion of applicable EMT items above.
- Consider **LR IV** bolus to maintain SBP above 90.

ALS - RN/Paramedic

- 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**.

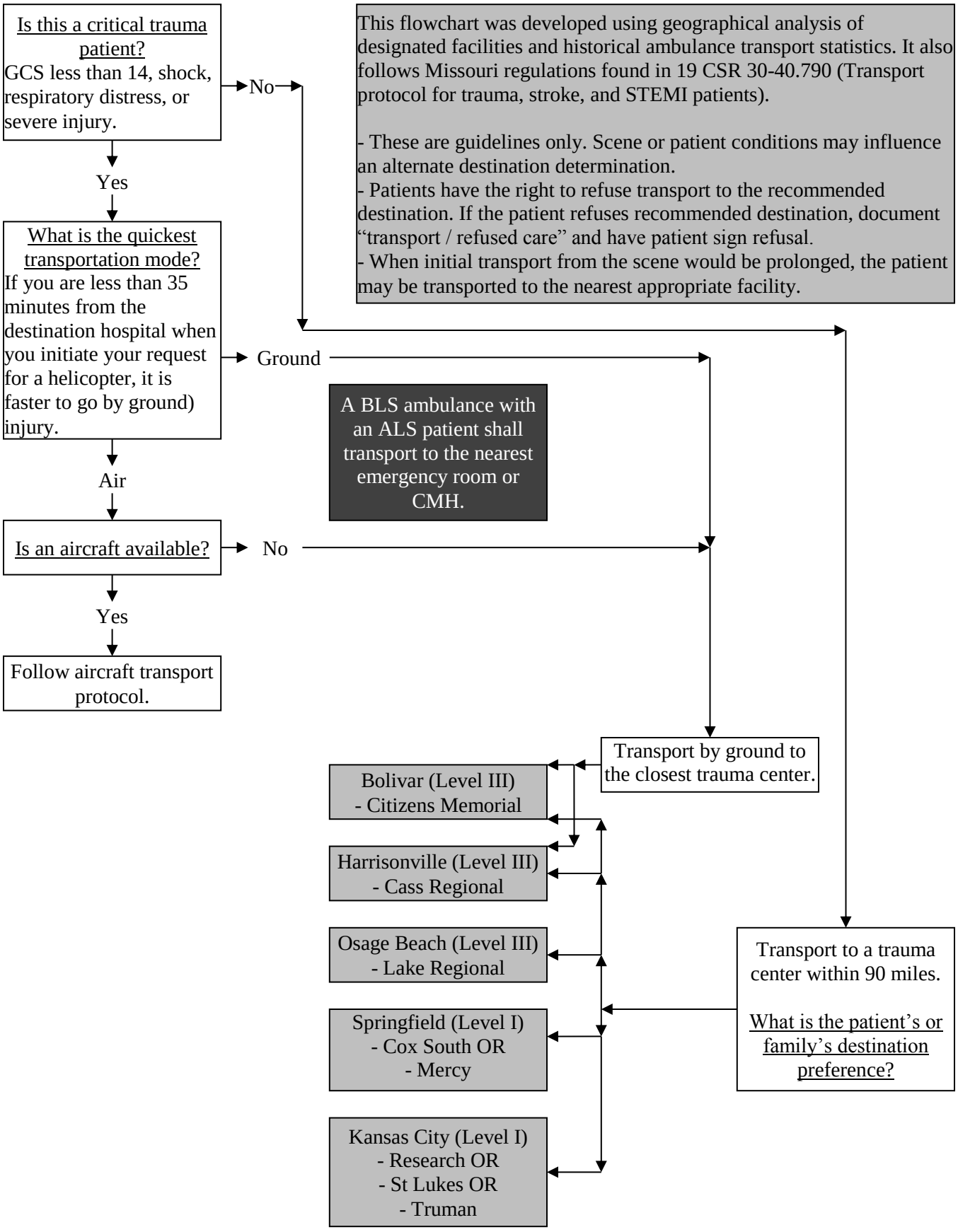
- *Pediatric*: Utilize Broselow tape for equipment and drug dosages.

- Rapid trauma assessment.
- Treat per appropriate protocol.
- Transport according to **Section 1-021 - Trauma Destination Determination Flowchart** (page 11). Target scene time of 10 minutes.
- Possible fracture: Consider **Protocol 6-050 - Control of Pain** (page 77).

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

NEMSIS Protocol 9914207: General Trauma Management

Section 1-021 - Trauma Destination Determination Flowchart



Section 1-030 - Assessment Tools

Normal Vital Signs

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

Glasgow Coma Scale

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

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

Part 2 - Cardiac Protocols

Protocol 2-010 - Asystole

BLS - EMR	ALS - RN/Paramedic
✱ Refer to **Protocol 6-025 - Cardiopulmonary Resuscitation** (CPR) (page 74).	✱ Ensure completion of all applicable BLS items on the left. ✱ Confirm in 2 leads. ✱ Consider **IO NS**. ✱ Consider **Intubation**.
BLS - EMT ✱ Ensure completion of applicable EMR items above.	✱ *Adult*: ✱ **Epinephrine 1:10,000** 1 mg **IV**/**IO** every 3-5 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).
BLS - AEMT ✱ Ensure completion of applicable EMT items above. ✱ **IV NS**.	✱ *Pediatric*: ✱ **Epinephrine 1:10,000** 0.01 mg/kg **IV**/**IO** every 3-5 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)
NEMSIS Protocol 9914011: Cardiac Arrest - Asystole

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

BLS - 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.

BLS - EMT

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

BLS - AEMT

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

ALS - RN/Paramedic

- ✱ Ensure completion of all applicable BLS items on the left.
- ✱ Obtain **12-Lead EKG**.
- ✱ Consider **IO NS**.
- ✱ *Adult*: Rate greater than 150:
  - ✱ 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 77).
    - ✚ 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)

NEMSIS Protocol 9914147: Medical - Supraventricular Tachycardia (Including Atrial Fibrillation)

Protocol 2-030 - Automated External Defibrillation (AED)

Community Responders

- Call or have someone call 9-1-1. Follow the instructions given by the dispatcher.
- Ensure the scene is safe and protect yourself from body substances.
- If the patient is unresponsive and not breathing (or only gasping):
  - Get or have someone get the AED. Follow the instructions given by the AED once it arrives.
  - Lay the patient flat on his/her back on the ground and remove any pillows.
  - Place the heel of your hand on the breastbone and put your other hand on top of that hand.
  - Pump the chest hard and fast at a rate of about 110 **compressions** per minute. **Compressions** should be about 2 inches deep on an adult or 1/3 the depth of the chest on a child.
  - Rotate compressors (if possible) after 200 **compressions** (about 2 minutes).
  - Continue **compressing** at a rate of at least 110 per minute until emergency responders relieve you.
- As soon as the AED is available:
  - Put the AED on the ground next to the patient's head on the side closest to you.
  - Undo or remove any clothing from his/her chest. If the chest is wet, dry it off.
  - Open the AED (if necessary) and press the "ON" button (if there is one).
  - Open the pads package and plug them into the machine.
  - Peel off the pad backing and apply them to his/her bare chest as shown on the pads.
  - Follow the AED's instructions.
- Refer to **Section 8-010 - Automated External Defibrillator (AED)** (page 154) for AED accessibility, supplies, maintenance, and instructions after use.

BLS - 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 74).

BLS - EMT

- Ensure completion of applicable EMR items above.

BLS - AEMT

- Ensure completion of applicable EMT items above.

ALS - RN/Paramedic

- 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

BLS - 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.

BLS - EMT

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

BLS - AEMT

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

ALS - RN/Paramedic

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

- ✱ *Adult*: Rate less than 50 and **symptomatic**:
  - ✱ Contact **Medical Control** if **Hypothermia** patient.
  - ✱ Unstable: Consider **Pacing**.
    - ✚ Consider **Protocol 6-050 - Control of Pain** (page 77).
  - ✱ 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 250 ml **NS**.
    - ✚ 2 mcg/min = 30 ml/hr.
    - ✚ 10 mcg/min = 150 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 77).

- ✱ 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)

NEMSIS Protocol 9914115: Medical - Bradycardia

Protocol 2-050 - Chest Discomfort

BLS - EMD

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

BLS - 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.

BLS - EMT

✱ Ensure completion of applicable EMR items above.
✱ Obtain **12-Lead EKG** within 10 minutes of patient contact. If ALS is unavailable, transmit to closest or CMH ER and contact ER by phone to obtain interpretation.
✱ Consider assisting ALS with **Capnography**.

BLS - AEMT

✱ Ensure completion of applicable EMT items above.
✱ **IV NS** in AC (left is preferred) with pigtail extension with 18 ga or greater. Consider second 18 ga **IV** in right AC.
✱ *Adult*: SBP greater than 100: **Nitroglycerin** 0.4 mg SL (1 spray or 1 tablet). Every 5 min until no Pain or SBP less than 90. Ensure **IV** access prior to **Nitroglycerin** administration, if possible. Contraindicated if phosphodiesterase inhibitor within 48 hours.

ALS - RN/Paramedic

✱ Ensure completion of all applicable BLS items on the left.
✱ Consider **IO NS**.
✱ 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 45).
  ✱ Right-sided MI (ST elevation in V4R): **NS** 1-2 L followed by **Nitroglycerin** 5+ mcg/min **IV**/**IO**.
  ✱ SBP less than 100: Consider **Nitroglycerin** 10+ mcg/min **IV**/**IO** titrated to blood pressure and Pain.
  ✱ Nausea/Vomiting: See **Protocol 6-040 - Control of Nausea** (page 76).
  ✱ 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 19). Target scene time of 10 minutes.

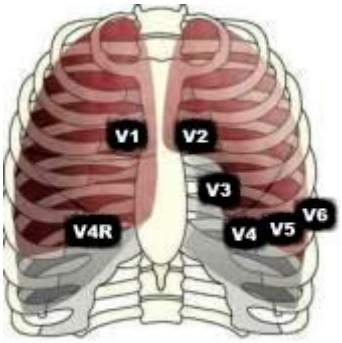
Citations: (Chapter 190 - Emergency services, 2012), (Citizens Memorial Hospital, 2014), (Clemency, Thompson, Tundo, & Lindstrom, 2013), (Cooper, 2015), (Designated hospitals, n.d.), (Missouri EMS Regional Committee - Southwest Region, 2013), (NASEMSO Medical Directors Council, 2017), (Proposed regulations,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

NEMSIS Protocol 9914117: Medical - Cardiac Chest Pain

Section 2-051 - EKG Interpretation Guide

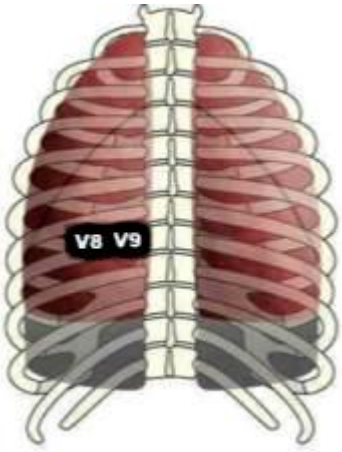
Check lead placement.

- Lead I positive and aVR negative: Good placement



Rhythm:

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



Axis:

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

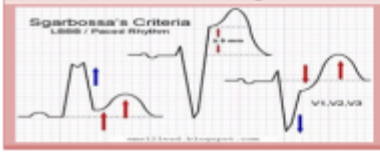
Sgarbossa Criteria (LBBB or Pacing):

- 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

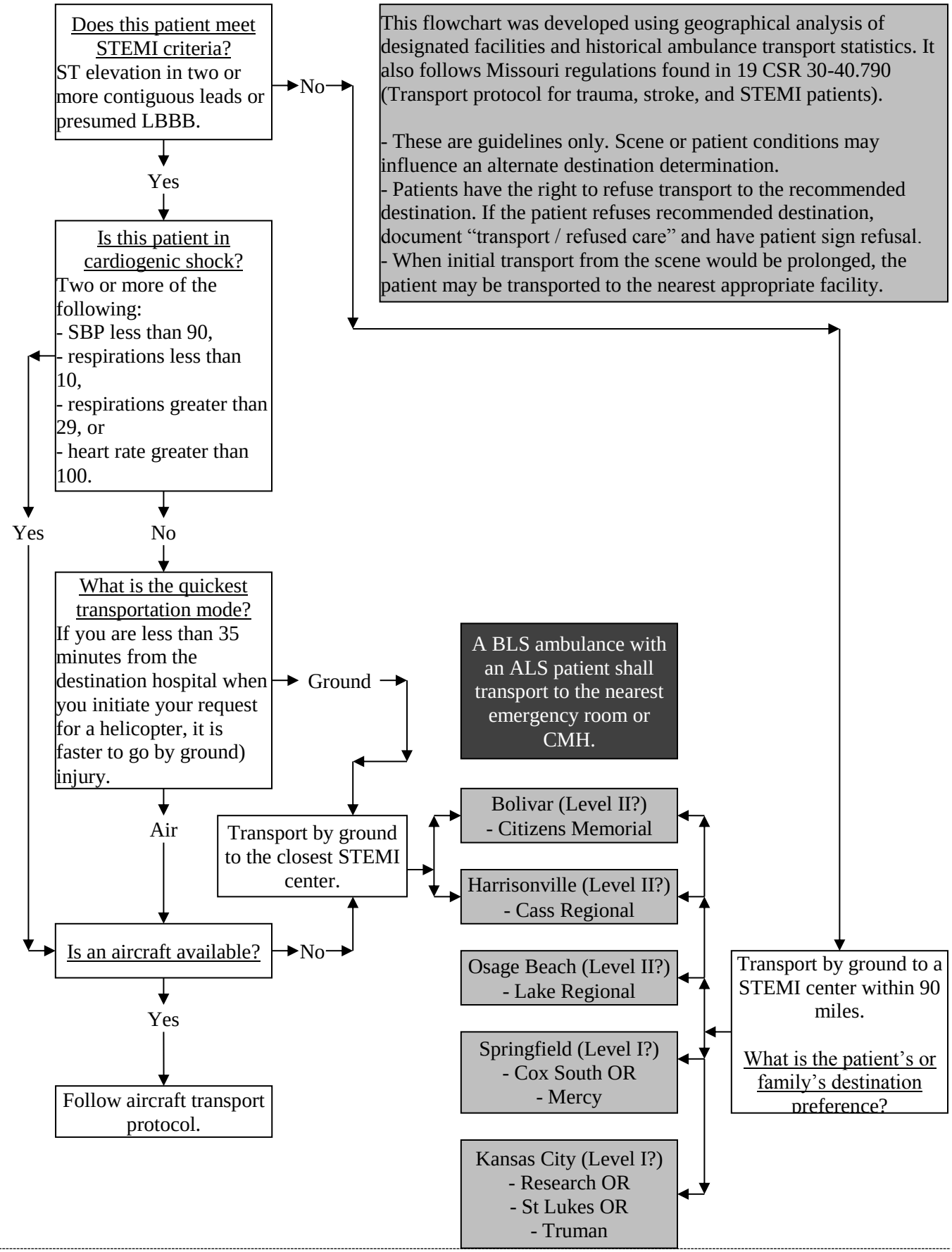
I Lateral • LAD & LCX *Reciprocal*: II, III, AVF	aVR	**V1** Septal • LAD	**V4** Anterior • LAD	**V4R** Right • RMA
II Inferior • RCA *Reciprocal*: I, aVL	**aVL** Lateral • LAD & LCX *Reciprocal*: II, III, AVF	**V2** Septal • LAD	**V5** Lateral • LAD & LCX *Reciprocal*: II, III, AVF	**V8** Posterior •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

BLS - 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.

BLS - EMT

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

BLS - AEMT

- Ensure completion of applicable EMT items above.
- **IV NS**.
- *Adult*: Hypotension with clear lung sounds: **NS** 250-500 ml **IV**.
- *Pediatric*: Hypotension with clear lung sounds: Consider 20 ml/kg **NS**.

ALS - RN/Paramedic

- 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**.
- *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 89).
- *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 89).
- 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)
NEMSIS Protocol 9914019: Cardiac Arrest - Post Resuscitation Care

Protocol 2-070 - Pulseless Electrical Activity (PEA)

BLS - EMR

- Refer to **Protocol 6-025 - Cardiopulmonary Resuscitation** (CPR) (page 74).

BLS - EMT

- Ensure completion of applicable EMR items above.

BLS - AEMT

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

ALS - RN/Paramedic

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

- *Adult*:
  - **Epinephrine 1:10,000** 1 mg **IV**/**IO** every 3-5 min.
  - Slow PEA rate:
    - Consider **Atropine** 1 mg **IV**/**IO** every 3-5 min (max 3 mg).
    - Consider **Pacing**.
  - Consider **Sodium Bicarbonate** 1 mEq/kg **IV**/**IO**.

- *Pediatric*: **Epinephrine 1:10,000** 0.01 mg/kg **IV**/**IO** every 3-5 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**.

Citations: (NASEMSO Medical Directors Council, 2017)
NEMSIS Protocol 9914015: Cardiac Arrest - Pulseless Electrical Activity

Protocol 2-080 - Tachycardia Narrow Stable

BLS - 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.

BLS - EMT

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

BLS - AEMT

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

ALS - RN/Paramedic

- ✱ 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**.

- ✱ *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 77).
    - ✚ 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)

NEMSIS Protocol 9914199: Medical - Tachycardia

Protocol 2-090 - Tachycardia Narrow Unstable

BLS - 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.

BLS - EMT

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

BLS - AEMT

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

ALS - RN/Paramedic

- Ensure completion of all applicable BLS items on the left.
- Obtain **12-Lead EKG** as soon as able.
- Consider **IO NS**. Do not delay for **IV**/**IO** if symptomatic.
- *Adult*: Rate greater than 150 and symptomatic:
  - Conscious: Consider **Protocol 6-050 - Control of Pain** (page 77).
  - 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 22).
  - **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 77).
  - 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)

NEMSIS Protocol 9914199: Medical - Tachycardia

Protocol 2-100 - Tachycardia Wide Stable

BLS - 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.

BLS - EMT

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

BLS - AEMT

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

ALS - RN/Paramedic

- ✱ Ensure completion of all applicable BLS items on the left.
- ✱ Obtain **12-Lead EKG**.
- ✱ Consider **IO NS**.
- ✱ *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 77).
    - ✚ 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)
NEMSIS Protocol 9914151: Medical - Ventricular Tachycardia (With Pulse)

Protocol 2-110 - Tachycardia Wide Unstable

BLS - 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.

BLS - EMT

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

BLS - AEMT

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

ALS - RN/Paramedic

- Ensure completion of all applicable BLS items on the left.
- Obtain **12-Lead EKG** as soon as able.
- Consider **IO NS**. Do not delay for **IV**/**IO** if symptomatic.
- *Adult*: Rate greater than 150 and symptomatic:
  - Conscious: Consider **Protocol 6-050 - Control of Pain** (page 77).
  - 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 77).
  - 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)
NEMSIS Protocol 9914151: Medical - Ventricular Tachycardia (With Pulse)

Protocol 2-120 - Torsades de Pointes

BLS - 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.

BLS - EMT

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

BLS - AEMT

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

ALS - RN/Paramedic

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

- *Adult*:
  - **Magnesium Sulfate** 1-2 g over 15-20 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 77).
  - Synchronized **Cardioversion** 200 J.

- *Pediatric*:
  - **Magnesium Sulfate** 25-50 mg/kg over 15-20 min.
  - Conscious: Consider **Protocol 6-050 - Control of Pain** (page 77).
  - Synchronized **Cardioversion** 0.5-1 J/kg.

Citations:

Protocol 2-130 - Ventricular Ectopy

BLS - 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.

BLS - EMT

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

BLS - AEMT

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

ALS - RN/Paramedic

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

Citations:

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

BLS - EMR

- Refer to **Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)** (page 74).

BLS - EMT

- Ensure completion of applicable EMR items above.

BLS - AEMT

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

ALS - RN/Paramedic

- 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**.
- *Adult*:
  - **Epinephrine 1:10,000** 1 mg **IV**/**IO** every 3-5 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 15-20 min **IV**/**IO**. Refer to **Protocol 2-120 - Torsades** de Pointes (page 26).
  - 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.
  - **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 15-20 min **IV**/**IO**. Refer to **Protocol 2-120 - Torsades** de Pointes (page 26).
- 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)
NEMSIS Protocol 9914017: Cardiac Arrest - Ventricular Fibrillation / Pulseless Ventricular Tachycardia

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

BLS - 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.

BLS - EMT

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

BLS - AEMT

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

ALS - RN/Paramedic

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

Citations:

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Part 3 - Environmental Protocols

Protocol 3-010 - Drowning

BLS - EMD

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

BLS - EMR

✱ Remove from water.
✱ Open and maintain Airway.
  ✱ Be prepared to **Suction** Airway.
✱ Pulseless: Refer to **Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)** (page 74).
✱ 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.

BLS - EMT

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

BLS - AEMT

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

ALS - RN/Paramedic

✱ Ensure completion of all applicable BLS items on the left.
✱ Consider **IO** warm **NS**.
✱ Pulseless: *Adult*: **V-Fib**: **Defibrillation** 360 J (OR consider biphasic dose of 200 J) once.
  ✱ 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 89).
✱ Treat cardiac dysrhythmias per specific protocol.
✱ Consider **Air Ambulance** to expedite transport.

Citations: (NASEMSO Medical Directors Council, 2017)
NEMSIS Protocol 9914093: Injury - Drowning / Near Drowning

Protocol 3-020 - Hyperthermia

BLS - 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.

BLS - EMT

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

BLS - AEMT

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

ALS - RN/Paramedic

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

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

Heat Index Chart

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

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

Protocol 3-030 - Hypothermia

BLS - EMR

- Remove from exposure.
- Open and maintain Airway.
- Be prepared to **Suction** Airway.
- Pulseless: Refer to **Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)** (page 74).
- **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.

BLS - EMT

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

BLS - AEMT

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

ALS - RN/Paramedic

- Ensure completion of all applicable BLS items on the left.
- Consider **IO** warm **NS**.
- Consider **Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)** (page 89).
- 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 77).
- Nausea: Refer to **Protocol 6-040 - Control of Nausea** (page 76).

Citations: (NASEMSO Medical Directors Council, 2017)
NEMSIS Protocol 9914031: Environmental - Hypothermia

Wind Chill Chart

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

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

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Part 4 - Medical Protocols

Protocol 4-010 - Abdominal Pain

BLS - EMR

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

BLS - EMT

- ✱ Ensure completion of applicable EMR items above.

BLS - AEMT

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

ALS - RN/Paramedic

- ✱ Ensure completion of all applicable BLS items on the left.
- ✱ Consider **IO NS**.
- ✱ Refer to **Protocol 6-050 - Control of Pain** (page 77).
- ✱ Nausea: Refer to **Protocol 6-040 - Control of Nausea** (page 76).

Citations: (NASEMSO Medical Directors Council, 2017)

NEMSIS Protocol 9914109: Medical - Abdominal Pain

Protocol 4-020 - Anaphylaxis

BLS - EMR

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

BLS - 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.

BLS - AEMT

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

- ✱ *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) 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).

ALS - RN/Paramedic

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

- ✱ *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**.

- ✱ *Pediatric*:
  - ✱ Consider **Benadryl** 1 mg/kg **IV**/**IO**/IM (max 50 mg).
  - ✱ Consider **Solu-Medrol** 1-2 mg/kg **IV**/**IO** (max 125 mg).

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

NEMSIS Protocol 9914111: Medical - Allergic Reaction / Anaphylaxis

Protocol 4-030 - Asthma

BLS - EMR

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

BLS - EMT

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

BLS - AEMT

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

ALS - RN/Paramedic

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

- *Adult*:
  - Consider **Solu-Medrol** 125 mg **IV**/**IO**.
  - Consider contacting **MEDICAL CONTROL** for **Magnesium Sulfate** 1-2 g **IV**/**IO** over 15-20 min.
- *Pediatric*:
  - Consider contacting **MEDICAL CONTROL**:
    - Consider **Solu-Medrol** 1-2 mg/kg **IV**/**IO**.
    - Consider **Magnesium Sulfate** 25-50 mg/kg **IV**/**IO** in D5W over 15-20 min.
- Consider **Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)** (page 89)only as a last resort.

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

Protocol 4-040 - Behavioral

BLS - 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."

BLS - EMT

- ✱ Ensure completion of applicable EMR items above.
- ✱ Consider performing **Glucose check**.

BLS - AEMT

- ✱ Ensure completion of applicable EMT items above.

ALS - RN/Paramedic

- ✱ 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** after sedation if chemical or physical **restraints** are used.
  - ✱ *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**/IM.
    - ✚ 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)

NEMSIS Protocol 9914053: General - Behavioral / Patient Restraint

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

BLS - EMD

- ✱ MPDS Protocol 18 (Headache) and Protocol 28 (Stroke) - Stroke time window: Time window set by **medical control** is 12 hours. Greater than 12 hours since the patient was last seen normal is usually outside the therapeutic window.

BLS - EMR

- ✱ Complete **Section 4-051 - CMH EMS Stroke Assessment Tool** (page 40).
- ✱ **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**.

BLS - EMT

- ✱ Ensure completion of applicable EMR items above.
- ✱ Perform **Glucose check**.
  - ✱ **Glucose** less than 60 mg/dl: Refer to **Protocol 4-120 - Hypoglycemia** (page 52).
- ✱ 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.
- ✱ Transport according to
- ✱ **Section 4-053 - Stroke Destination Determination** Flowchart (page 43). Target scene time of 10 minutes.

BLS - AEMT

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

ALS - RN/Paramedic

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

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

NEMSIS Protocol 9914145: Medical - Stroke / TIA

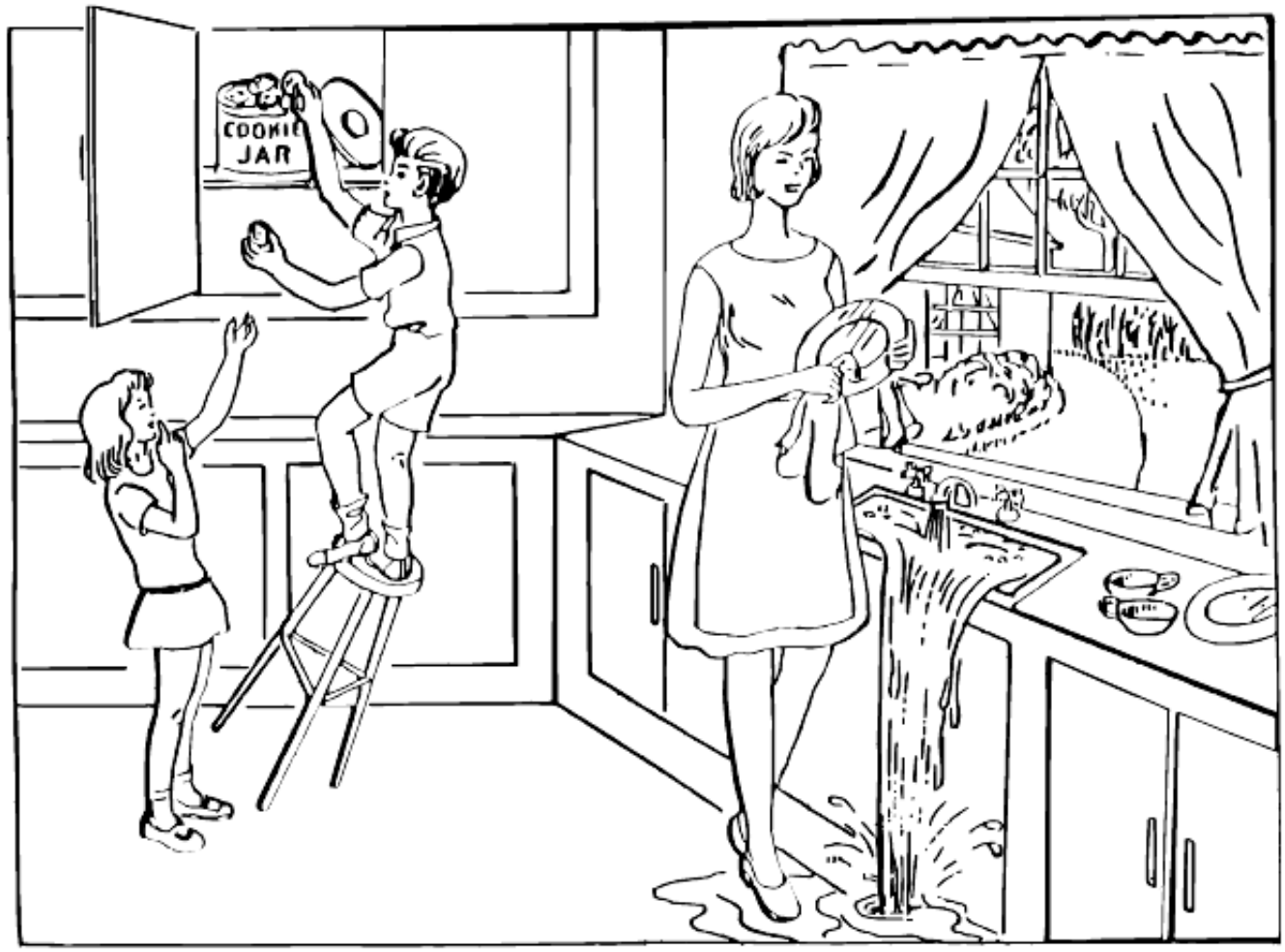
Section 4-051 - CMH EMS Stroke Assessment Tool

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

	Question	Answer	NIH	RACE Right	RACE Left
1	**Cincinnati Stroke Scale**: Facial droop, arm drift, or speech problems?	No	Transport to any ER		
		Yes	Go to question 2.		
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)			
3	**Level of consciousness**?	Alert (A)	0		
		Drowsy (V)	1		
		Stuporous (P)	2		
		Coma (U)	3		
4	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		
5	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
6	Patient **follow your finger horizontally** with their eyes?	Normal	0	0	0
		Only one direction	1	1	1
		Neither direction	2	2	2
7	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		
8	After demonstration: • Patient **show teeth**? • Patient **raise eyebrows**? • Patient **close eyes tightly**?	Normal	0		
		Minor paralysis	1		
		Lower paralysis only	2		
		Complete paralysis	3		
9	**Unaffected side arm drift**: Palm down, 90 degrees for 10 seconds.	No drift	0		
		Drift or jerky	1		
		Some effort but falls	2		
		No effort	3		
		No movement	4		
10	**Affected side arm drift**: Palm down, 90 degrees for 10 seconds.	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

11	**Unaffected side leg drift**: 30 degrees for 10 seconds.	No drift	0		
		Drift or jerky	1		
		Some effort but falls	2		
		No effort	3		
		No movement	4		
12	**Affected side leg drift**: 30 degrees for 10 seconds.	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
13	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		
14	Can patient feel **pinprick to face, arms, trunk, and legs**?	Normal	0		
		Mild to moderate loss	1		
		Severe loss	2		
15	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	
16	Repeat the following words: • "**Mama**" • "**Tip-Top**" • "**Fifty-Fifty**" • "**Thanks**" • "**Huckleberry**" • "**Baseball Player**"	Normal articulation	0		
		Mild to moderate dysarthria	1		
		Severe dysarthria	2		
17	"**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
18	**Total** each column on the right:				
19	All three columns are **zero**?	Transport to **any ER**.	=0	=0	=0
	Either **RACE column greater than four** OR **NIH greater than 21**?	Transport to **LEVEL 1 stroke center**	>21	>4	>4
	All other values	Transport to **closest stroke center**	>0	1-4	1-4

Section 4-052 - NIH Stroke Scale Images



You know how.

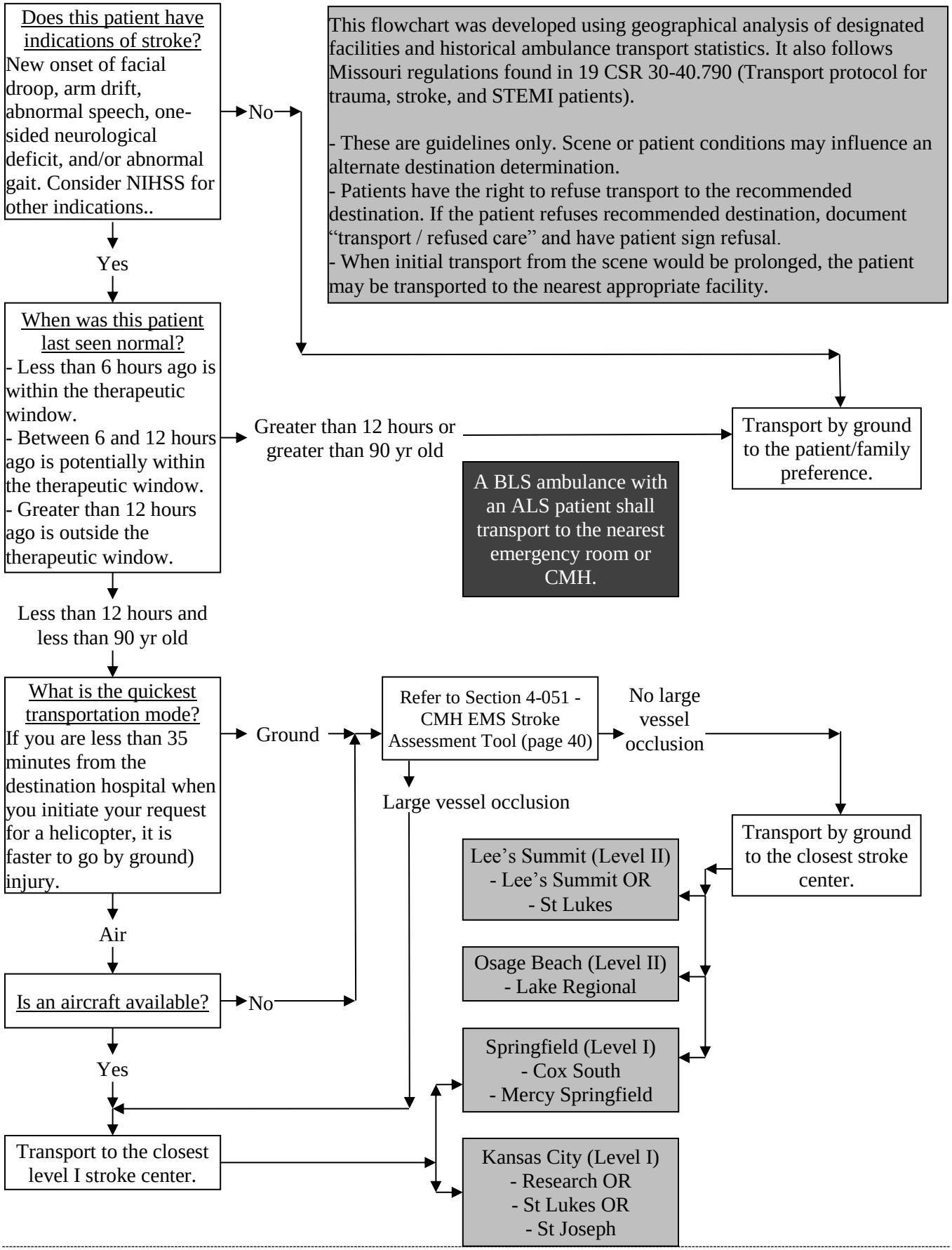
Down to earth.

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)

BLS - EMR

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

BLS - EMT

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

BLS - AEMT

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

ALS - RN/Paramedic

- Ensure completion of all applicable BLS items on the left.
- Consider **Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)** (page 89).
- Consider **IO NS**.
- Consider **12-Lead EKG**.
- *Adult*:
  - Consider **Solu-Medrol** 125 mg **IV**/**IO**.
  - Consider contacting **MEDICAL CONTROL** for **Magnesium Sulfate** 1-2 g **IV**/**IO** over 15-20 min.

Citations:

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

Protocol 4-070 - Congestive Heart Failure (CHF)

BLS - EMR

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

BLS - EMT

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

BLS - 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**.

ALS - RN/Paramedic

- Ensure completion of all applicable BLS items on the left.
- Consider **Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)** (page 89).
- 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** 50+ mcg/min titrate to SBP greater than 100 and dyspnea.

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

NEMSIS Protocol 9914137: Pulmonary Edema / CHF

Protocol 4-080 - Croup

BLS - EMR

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

BLS - EMT

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

BLS - AEMT

- ✱ Ensure completion of applicable EMT items above.

ALS - RN/Paramedic

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

NEMSIS Protocol 9914223: Medical - Respiratory Distress - Croup

Protocol 4-090 - Childbirth

BLS - 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.

BLS - 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 53).
      - Assess **Section 4-091 - Newborn Assessment** (page 48) 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 48) at 5 min intervals.

BLS - EMT

- Ensure completion of applicable EMR items above.

BLS - AEMT

- Ensure completion of applicable EMT items above.
- **IV NS** titrated to blood pressure.

ALS - RN/Paramedic

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

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

Section 4-091 - Newborn Assessment

APGAR Scoring System:

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

Total 0-3: Severely depressed.
Total 4-6: Moderately depressed.
Total 7-10: Excellent condition.

Targeted pre-ductal 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

BLS - EMR

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

BLS - EMT

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

BLS - AEMT

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

ALS - RN/Paramedic

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

NEMSIS Protocol 9914061: General - Fever

Protocol 4-110 - Hypertension

BLS - 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.
- 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.

BLS - EMT

- Ensure completion of applicable EMR items above.

BLS - AEMT

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

ALS - RN/Paramedic

- Ensure completion of all applicable BLS items on the left.
- Consider **IO NS**.
- Diastolic greater than 115 with **Nausea**, ALOC, blurred vision, Headache, or **Chest Pain**: Contact **MEDICAL CONTROL** for:
  - *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 57).
  - 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)

NEMSIS Protocol 9914123: Medical - Hypertension

Protocol 4-115 - Hyperglycemia

BLS - EMR

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

BLS - EMT

- ✱ Ensure completion of applicable EMR items above.
- ✱ Perform **Glucose check**.

BLS - AEMT

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

ALS - RN/Paramedic

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

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

NEMSIS Protocol 9914121: Medical - Hyperglycemia

Protocol 4-120 - Hypoglycemia

BLS - EMR

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

BLS - EMT

- Ensure completion of applicable EMR items above.
- Perform **Glucose check**.
  - **Glucose** less than 60 mg/dl: Conscious and able to swallow: **ORAL Glucose** 15 g PO.
- Have patient **eat** after treatment, if no transport.

BLS - AEMT

- Ensure completion of applicable EMT items above.
- Consider **IV NS**.
- *Adult*: **Glucose** less than 60 mg/dl and symptomatic:
  - **Dextrose** 25 g **IV**.
  - If unable to obtain **IV**: Consider **Glucagon** 1 mg IM/SQ/**IN**.
- *Pediatric*: **Glucose** less than 30 mg/dl and symptomatic:
  - **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*: **Glucose** 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.

ALS - RN/Paramedic

- Ensure completion of all applicable BLS items on the left.
- Consider **IO NS**.
- *Adult*: **Glucose** less than 60 mg/dl:
  - Consider **Thiamine** 100 mg IM. If given **IV**, infuse in **NS** over 30 min.
- Contact **MEDICAL CONTROL** prior to PRC if:
  - **IO** inserted (should not be PRC'd).

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

Protocol 4-130 - Neonatal Resuscitation

BLS - 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 47).
- 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.

BLS - EMT

- Ensure completion of applicable EMR items above.
- Consider assisting ALS with **Capnography**.
- Perform **Glucose check**.
  - **Glucose** less than 30 mg/dl: Refer to **Protocol 4-120 - Hypoglycemia** (page 52).

BLS - AEMT

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

ALS - RN/Paramedic

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

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

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

Citations: (Bloom, 2006), (NASEMSO Medical Directors Council, 2017)

NEMSIS Protocol 9914133: Medical - Newborn / Neonatal Resuscitation

Protocol 4-140 - Poisoning or Overdose

BLS - EMD

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

BLS - EMR

- ✱ Consider hazmat. Refer to **Protocol 6-055 - Decontamination** (page 78).
- ✱ 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.

BLS - EMT

- ✱ Ensure completion of applicable EMR items above.
- ✱ Consider assisting ALS with **Capnography**.
- ✱ Perform **Glucose check**.
  - ✱ **Glucose** less than 60 mg/dl: Refer to **Protocol 4-120 - Hypoglycemia** (page 52).
- ✱ 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).

BLS - AEMT

- ✱ Ensure completion of applicable EMT items above.
- ✱ Consider **IV NS**.
- ✱ Narcotic Overdose with respiratory depression and unable to **ventilate**: **Narcan IV**/**IN**/IM/SQ same doses as EMT.

Poisoning / Overdose Continued:

ALS - RN/Paramedic

- Ensure completion of all applicable BLS items on the left.
- Contact **POISON CONTROL**: **888-268-4195**.
- If patient can protect their Airway: Consider contacting **MEDICAL CONTROL** for **Activated Charcoal** 0.5-1 g/kg PO.
- Consider **IO NS**. If suspected intentional Poisoning or Overdose: Mandatory **ALS patient** and pre-hospital **IV or IO access** is required.
- Consider **Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)** (page 89).
- 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 57).
- Beta-Blocker Overdose:
  - Refer to **Protocol 2-040 - Bradycardia** (page 16)..
  - Consider contacting **MEDICAL CONTROL** for **Glucagon**:
    - *Adult*: 2-5 mg **IV/IO**. Repeat at 10 mg if **Bradycardia** and hypotension recur.
    - *Pediatric (25-40 kg)*: 1 mg **IV/IO** (max 20 mg/kg or 1 g).
    - *Pediatric (less than 25 kg)*: 0.5 mg **IV/IO** (max 20 mg/kg or 1 g).
- 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.
- 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 38).
- Monoamine Oxidase Inhibitor (MAOI) Overdose:
  - **Hyperthermia**: Contact **MEDICAL CONTROL** for **Versed** 0.1 mg/kg in 2 mg increments slow **IV** (max 5 mg). Half dose if over 69 yr old.
- Narcotic Overdose: **Narcan IV/IO/IN**/IM/SQ same doses as EMT.
- Selective Serotonin Reuptake Inhibitor (SSRI) Overdose:
  - Aggressively control **hyperthermia** with cooling measures.
  - Hypotension: **NS IV/IO** 20 ml/kg.
  - Contact **MEDICAL CONTROL**.
- Tricyclic Antidepressant Overdose:
  - Hypotension: **NS IV/IO** 20 ml/kg.
  - QRS greater than 100: Contact **MEDICAL CONTROL** for **Sodium Bicarbonate** 1-2 mEq/kg **IV**. Repeat as necessary to narrow QRS and improve BP.

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

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

Protocol 4-160 - Pre-Term Labor

BLS - 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.
- ✱ Consider orthostatic vital signs.
- ✱ Consider transport in left lateral recumbent position to reduce risk of Vena Cava compression.

BLS - EMT

- ✱ Ensure completion of applicable EMR items above.

BLS - AEMT

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

ALS - RN/Paramedic

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

Citations: (NASEMSO Medical Directors Council, 2017)
NEMSIS Protocol 9914161: OB/GYN - Pregnancy-Related Disorders

Protocol 4-170 - Seizures

BLS - 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.

BLS - EMT

- ✱ Ensure completion of applicable EMR items above.
- ✱ Consider assisting ALS with **Capnography**.
- ✱ Perform **Glucose check**.
  - ✱ **Glucose** less than 60 mg/dl: Refer to **Protocol 4-120 - Hypoglycemia** (page 52).

BLS - AEMT

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

ALS - RN/Paramedic

- ✱ Ensure completion of all applicable BLS items on the left.
- ✱ Consider **IO NS**.
- ✱ Actively seizing:
  - ✱ *Adult*:
    - ✚ Consider **Versed** 2.5-5 mg **IV**/**IO**/**IN**.
    - ✚ Consider **Versed** 10 mg IM.
    - ✚ 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 50).
  - ✱ *Pediatric*:
    - ✚ *12-18 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.
    - ✚ *1 mo - 12 yr old*: Consider **Versed** 0.2 mg/kg IN (max 10 mg/dose). May repeat every 5 min.
  - ✱ Consider contacting **MEDICAL CONTROL** for **Versed** higher dose.
- ✱ 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)

NEMSIS Protocol 9914141: Medical - Seizure

Protocol 4-175 - Sepsis

BLS - 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:
    - Suspected infection AND
    - **$EtCO_2$** less than 25 OR
    - At least two of the following:
      - **Temperature** greater than 100.9°F.
      - **Temperature** less than 96.8°F.
      - Heart rate greater than 90.
      - Respiratory rate greater than 20.
      - **$EtCO_2$** less than 32.
      - WBC greater than 12,000.
      - WBC less than 4,000.
      - **Hypoglycemia** or **hyperglycemia** without history of diabetes.
      - New onset altered mental status.

BLS - EMT

- Ensure completion of applicable EMR items above.
- Assist ALS with **Capnography**.
- Perform **Glucose check**.
  - **Glucose** less than 60 mg/dl: Refer to **Protocol 4-120 - Hypoglycemia** (page 52).

BLS - 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.

ALS - RN/Paramedic

- 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 52) to meet target blood **glucose** level of 180.
- If SBP less than 90 or MAP greater 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)

Protocol 4-180 - Vaginal Bleeding

BLS - 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.

BLS - EMT

- Ensure completion of applicable EMR items above.

BLS - AEMT

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

ALS - RN/Paramedic

- 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 **TXA** 1 g in 100 ml **NS** over 10 min (can be piggybacked into **LR**) if all of the following:
  - Major hemorrhage AND
  - Signs of shock (SBP less than 90 OR HR greater than 115 that is persistent after at least 500 ml fluid bolus [consider **TXA** before fluid bolus for obvious life-threatening hemorrhage]).

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

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Part 5 - Trauma Protocols

Protocol 5-020 - Abdominal Trauma

BLS - EMR

- ✱ Consider **SMR**.
- ✱ Assist **ventilations** as needed.
- ✱ Consider **Oxygen** 100%.
- ✱ Control bleeding / bandage / **splint** / stabilize impaled objects as required.
- ✱ Monitor pulseoximetry.
- ✱ Consider: Apply **cardiac monitor** limb leads.
- ✱ Obtain vital signs.
- ✱ Maintain body **temperature**.
- ✱ Moist, sterile **dressings** for eviscerations.
- ✱ Abdominal crush injury: Immediate release and rapid transport.

BLS - EMT

- ✱ Ensure completion of applicable EMR items above.

BLS - AEMT

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

ALS - RN/Paramedic

- ✱ Ensure completion of all applicable BLS items on the left.
- ✱ Consider **IO LR** titrated to SBP greater than 80.
- ✱ Consider **Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)** (page 89).
- ✱ Pain: Refer to **Protocol 6-050 - Control of Pain** (page 77).
- ✱ Nausea: Refer to **Protocol 6-040 - Control of Nausea** (page 76).

- ✱ *Adult*:
  - ✱ Consider **TXA** 1 g in 100 ml **NS** over 10 min (can be piggybacked into **LR**) if all of the following:
    - ✚ Major injury AND
    - ✚ Signs of shock (SBP less than 90 OR HR greater than 115 that is persistent after at least 500 ml fluid bolus [consider **TXA** before fluid bolus for obvious life-threatening hemorrhage]) AND
    - ✚ Recent injury (less than 3 hrs ago).

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

Citations:

NEMSIS Protocol 9914193: Injury - Thoracic

Protocol 5-030 - Burns

BLS - 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.

BLS - EMR

- Stop the burning process.
- Chemical burn: Refer to **Protocol 6-055 - Decontamination** (page 78)
- Assist **ventilations** as needed.
- Consider **Oxygen** 100%.
- Control bleeding / bandage. Consider **saran wrap**.
- Monitor pulseoximetry.
- Consider: Apply **cardiac monitor** limb leads.
- Obtain vital signs.
- Remove all jewelry.
- Keep patient warm.
- Consider direct transport to **Burn Unit** if:
  - 2nd degree burn greater than 10%,
  - 3rd degree burn of any size,
  - Critical area burned (hands, feet, face, genitals),
  - Electrical or chemical burn,
  - Inhalation burn,
  - Trauma, OR
  - Pediatric.

BLS - EMT

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

BLS - AEMT

- Ensure completion of applicable EMT items above.
- Consider **IV LR** titrated to SBP greater than 90.
  - *Adult (greater than 13 yr)*: 500 ml/hr.
  - *Pediatric (6-13 yr)*: 250 ml/hr.
  - *Pediatric (less than 6 yr)*: 125 ml/hr.

ALS - RN/Paramedic

- Ensure completion of all applicable BLS items on the left.
- Consider **IO LR**.
- Consider **Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)** (page 89) if any of the following:
  - Carbonaceous sputum,
  - Deep facial burns,
  - Hoarse voice,
  - Brassy cough, OR
  - Rhonchi / rales / crackles.
  - Be alert for Airway Burns.
  - **King Airway** contraindicated
  - **ET** 7.5 or larger desired.
- Pain: Refer to **Protocol 6-050 - Control of Pain** (page 77).
- Nausea: Refer to **Protocol 6-040 - Control of Nausea** (page 76).
- Smoke inhalation with altered mental status: Refer to **Protocol 4-140 - Poisoning or Overdose** (page 54).

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

NEMSIS Protocol 9914085: Injury - Burns - Thermal

Protocol 5-040 - Chest Trauma

BLS - EMR

- Consider **SMR**.
- Assist **ventilations** as needed.
- Consider **Oxygen** 100%.
- Control bleeding / bandage / **splint** / stabilize impaled objects as required.
- Monitor pulseoximetry.
- Consider: Apply **cardiac monitor** limb leads.
- Obtain vital signs.
- Consider: **Occlusive dressing** to open wounds.
- Chest crush injury: Immediate release and rapid transport.

BLS - 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**.

BLS - AEMT

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

ALS - RN/Paramedic

- Ensure completion of all applicable BLS items on the left.
- Consider **IO LR** titrated to SBP greater than 80.
- Consider **Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)** (page 89).
- Consider **Chest Decompression** (at 2nd intercostal space, mid-clavicular line) if respiratory compromise and suspect **tension pneumothorax**.
- Pain: Refer to **Protocol 6-050 - Control of Pain** (page 77).
- Nausea: Refer to **Protocol 6-040 - Control of Nausea** (page 76).

- *Adult*:
  - Consider **TXA** 1 g in 100 ml **NS** over 10 min (can be piggybacked into **LR**) if all of the following:
    - Major injury AND
    - Signs of shock (SBP less than 90 OR HR greater than 115 that is persistent after at least 500 ml fluid bolus [consider **TXA** before fluid bolus for obvious life-threatening hemorrhage]) AND
    - Recent injury (less than 3 hrs ago).

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

Citations:

NEMSIS Protocol 9914193: Injury - Thoracic

Protocol 5-050 - Extremity Trauma

BLS - EMR

- ✱ Consider **SMR**.
- ✱ Assist **ventilations** as needed.
- ✱ Consider **Oxygen** 100%.
- ✱ Extremity crush injury: Do not release until ALS direction.
- ✱ Control bleeding / bandage / **splint** / stabilize impaled objects as required.
  - ✱ **Splint** in position of comfort.
  - ✱ Open fracture: Cover with sterile **Saline** dressings.
- ✱ Consider **Tourniquet** on upper arm until occlusion of distal pulse.
- ✱ Consider two **Tourniquets** side-by-side on upper leg until occlusion of distal pulse.
- ✱ Elevate.
- ✱ Assess distal neurovascular status.
- ✱ Consider **cold pack**.
- ✱ Monitor pulseoximetry.
- ✱ Consider: Apply **cardiac monitor** limb leads.
- ✱ Obtain vital signs.

BLS - EMT

- ✱ Ensure completion of applicable EMR items above.

BLS - AEMT

- ✱ Ensure completion of applicable EMT items above.
- ✱ No crush injury: Consider **IV LR** titrated to SBP greater than 80 after all active bleeding has been addressed.
- ✱ 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**. Two large bore **IV**s wide open.

ALS - RN/Paramedic

- ✱ 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 77).
- ✱ Nausea: Refer to **Protocol 6-040 - Control of Nausea** (page 76).
- ✱ *Adult*:
  - ✱ Consider **TXA** 1 g in 100 ml **NS** over 10 min (can be piggybacked into **LR**) if all of the following:
    - ✚ Major injury AND
    - ✚ Signs of shock (SBP less than 90 OR HR greater than 115 that is persistent after at least 500 ml fluid bolus) AND
    - ✚ Recent injury (less than 3 hrs ago).
- ✱ *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), (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)

NEMSIS Protocol 9914097: Injury - Extremity

Protocol 5-060 - Eye Injury

BLS - 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 **NS** over 20 min.

BLS - EMT

- Ensure completion of applicable EMR items above.

BLS - AEMT

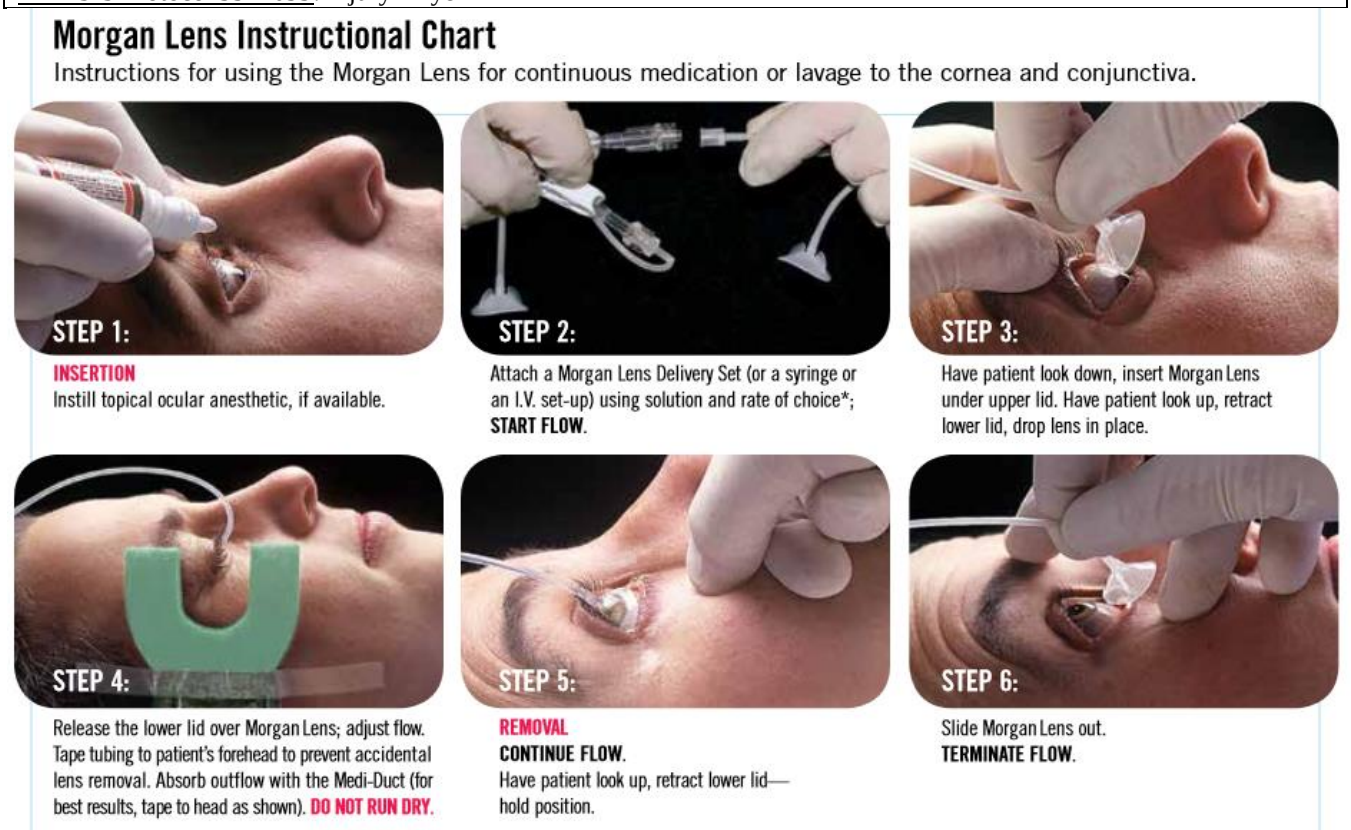
- Ensure completion of applicable EMT items above.
- Consider **IV Saline lock**.

ALS - RN/Paramedic

- 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 **NS** over 20 min.
    - Consider **Morgan Lens**.
- Pain: Refer to **Protocol 6-050 - Control of Pain** (page 77).
- Nausea: Refer to **Protocol 6-040 - Control of Nausea** (page 76).
- *Pediatric*:
  - Consider **MEDICAL CONTROL**.

Citations: (NASEMSO Medical Directors Council, 2017)

NEMSIS Protocol 9914099: Injury - Eye



Protocol 5-070 - Head Trauma

BLS - EMR

- Consider **SMR**. **C-collar** contraindicated with penetrating neck trauma.
- Assist **ventilations** as needed.
- Consider **Oxygen** 100%.
- Control bleeding / bandage / **splint** / stabilize impaled objects as required.
- Monitor pulseoximetry.
- Consider: Apply **cardiac monitor** limb leads.
- Obtain vital signs.
- Elevate Head of **cot**.
- 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**.
- Epistaxis: Squeeze nose for 10-15 min continuously.

BLS - 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.

BLS - AEMT

- Ensure completion of applicable EMT items above.
- Consider **IV NS** 20 ml/kg (max 40 ml/kg or 2 L) titrated to maintain SBP according to age:
  - 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.

ALS - RN/Paramedic

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

NEMSIS Protocol 9914101: Injury - Head

Protocol 5-080 - Spinal Trauma

BLS - EMR

- ✱ Consider **SMR**. **C-collar** contraindicated with penetrating neck trauma.
- ✱ Assist **ventilations** as needed.
- ✱ Consider **Oxygen** 100%.
- ✱ Control bleeding / bandage / **splint** / stabilize impaled objects as required.
- ✱ Monitor pulseoximetry.
- ✱ Consider: Apply **cardiac monitor** limb leads.
- ✱ Obtain vital signs.

BLS - EMT

- ✱ Ensure completion of applicable EMR items above.

BLS - AEMT

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

ALS - RN/Paramedic

- ✱ Ensure completion of all applicable BLS items on the left.
- ✱ Consider **IO LR**.
- ✱ Consider **Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI)** (page 89).
- ✱ Pain: Refer to **Protocol 6-050 - Control of Pain** (page 77).
- ✱ Nausea: Refer to **Protocol 6-040 - Control of Nausea** (page 76).
- ✱ *Pediatric*:
  - ✱ Consider **MEDICAL CONTROL**.

Citations: (NASEMSO Medical Directors Council, 2017)

NEMSIS Protocol 9914107: Injury - Spinal Cord

Protocol 5-085 - Superficial Penetration

BLS - 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 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.

BLS - EMT

- Ensure completion of applicable EMR items above.

BLS - AEMT

- Ensure completion of applicable EMT items above.

ALS - RN/Paramedic

- 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)

NEMSIS Protocol 9914203: Injury - Conducted Electrical Weapon

Protocol 5-090 - Trauma Arrest

BLS - EMR

- ✱ 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.
- ✱ **Control bleeding, bandage, splint** as required.
- ✱ Monitor pulseoximetry.
- ✱ Apply **cardiac monitor Combo Pads** and limb leads.

BLS - EMT

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

BLS - AEMT

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

ALS - RN/Paramedic

- ✱ Ensure completion of all applicable BLS items on the left.
- ✱ Consider **IO LR**.
- ✱ Consider **Intubation**.
- ✱ Treat rhythm per protocol.
- ✱ Bilateral **Chest Decompression** if Chest trauma etiology.
- ✱ *Adult*: **Field termination** may be requested from **MEDICAL CONTROL** regardless of how long **ACLS** efforts have been underway.
- ✱ *Pediatric*: Contact **MEDICAL CONTROL**.
  - ✱ Immediate **transport**.

Citations: (NASEMSO Medical Directors Council, 2017)
NEMSIS Protocol 9914087: Injury - Cardiac Arrest

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Part 6 - General Protocols

Section 6-010 - Acquisition of Medical Control

BLS - 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).

BLS - EMT

- ✱ Ensure completion of applicable EMR items above.

BLS - AEMT

- ✱ Ensure completion of applicable EMT items above.

ALS - RN/Paramedic

- ✱ 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.
- ✱ 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

BLS - EMD

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

BLS - 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.

BLS - EMT

- ✱ Ensure completion of applicable EMR items above.

BLS - AEMT

- ✱ Ensure completion of applicable EMT items above.

ALS - RN/Paramedic

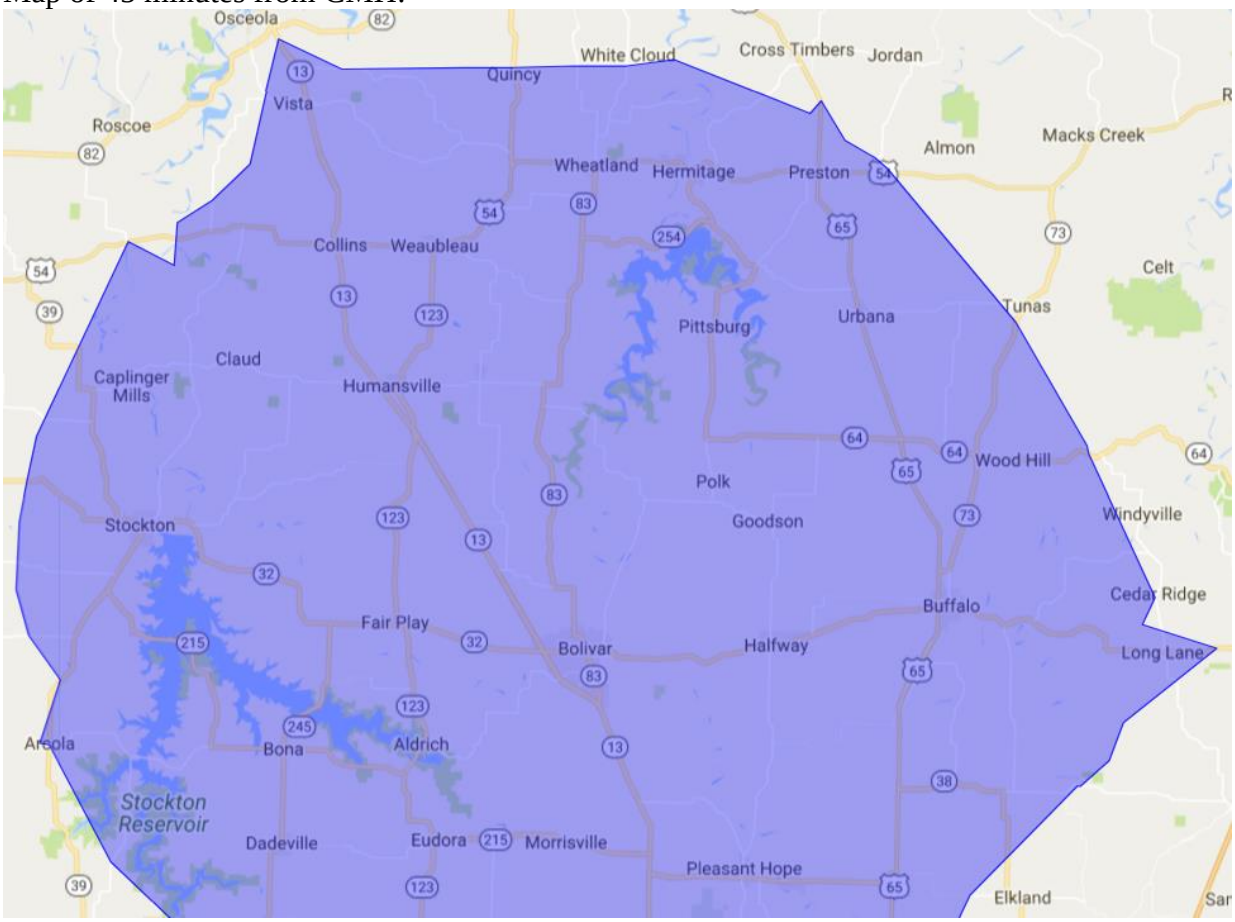
- ✱ Ensure completion of all applicable BLS items on the left.
- ✱ Consider Air Ambulance if **ONE** or more of the following are true:
  - ✱ Uncontrollable cardiac dysrhythmias;
  - ✱ Airway control intervention;
- ✱ Consider Air Ambulance if **TWO** or more of the following are true (also includes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

Citations: (Citizens Memorial Hospital, 2013)

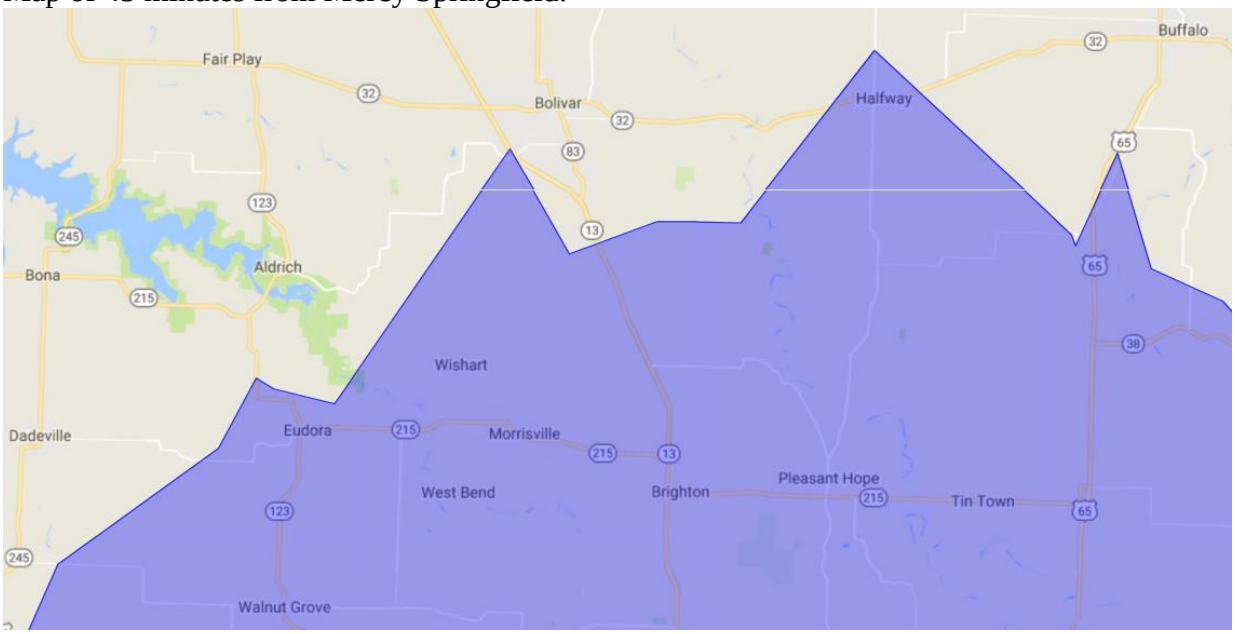
Section 6-021 - No Fly Zone

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)

BLS - 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.

BLS - EMR

- Confirm pulselessness and apnea.
- Consider **AED** or **LifePak** in AED mode. Refer to **Protocol 2-030 - Automated External Defibrillation (AED)** (page 15).
- 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**.

BLS - 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 **Glucose**.
- Prepare for **termination** or transport.

BLS - AEMT

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

ALS - RN/Paramedic

- 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.
  - *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 95).

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

NEMSIS Protocol 9914055: General - Cardiac Arrest

Section 6-030 - Competencies and Education

BLS - 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.
  - First responder agencies may deliver the competency locally with the approval of CMH EMS.
- Annually, each EMR shall successfully complete at least **one** BLS competency with at least a **90% pass rate**.

BLS - EMT

- Ensure completion of applicable EMR items above.
- Annually, each volunteer EMT shall successfully complete at least **two** BLS Competencies with at least a **90% pass rate**.
- Annually, each paid (career response agency, CMH, or EMH) employee shall:
  - Successfully complete **all** BLS Competencies with at least **90% pass rate**.
  - Successfully complete at least **one** **RSI** Simulation Scenario with a high-fidelity manikin.

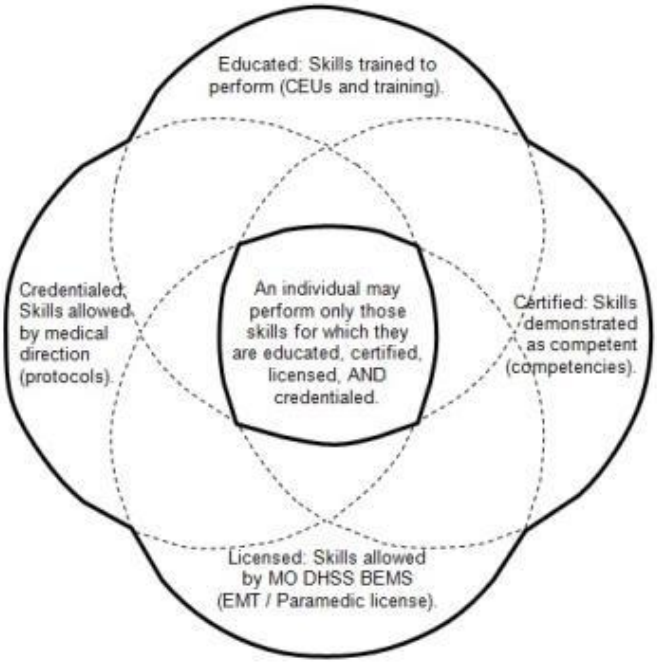
BLS - AEMT

- Ensure completion of applicable EMT items above.

ALS - RN/Paramedic

- Ensure completion of all applicable BLS items on the left.
- Annually, each RN and Paramedic shall:
  - Successfully complete **all** BLS and ALS Competencies with at least a **90% pass rate**.
  - Successfully complete at least **one** **RSI** Simulation Scenario.
- 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

BLS - EMR

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

BLS - EMT

- Ensure completion of applicable EMR items above.

BLS - AEMT

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

ALS - RN/Paramedic

- Ensure completion of all applicable BLS items on the left.
- Consider **IO NS** or **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** over 15-30 min.
  - Consider **Phenergan** 6.25-12.5 mg **IV**/**IO** diluted in **NS** flush very slow push.
  - Consider **Benadryl** 12.5-25 mg **IV**/**IO**/IM.
- *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** over 15-30 min.
  - Consider **Phenergan** 0.25 mg/kg **IV**/**IO** diluted in **NS** flush very slow push.
  - Consider **Benadryl** 0.1 mg/kg **IV**/**IO** (max 25 mg).
- *Pediatric (less than 2 yr)*: **Zofran** and **Phenergan** contraindicated.

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

NEMSIS Protocol 9914131: Medical - Nausea / Vomiting

Protocol 6-050 - Control of Pain

BLS - 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

BLS - EMT

- ✱ Ensure completion of applicable EMR items above.

BLS - AEMT

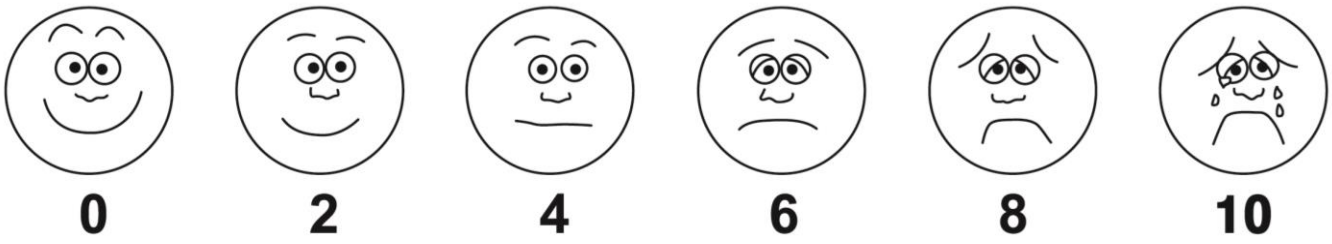
- ✱ Ensure completion of applicable EMT items above.
- ✱ Consider **IV NS** or **LR**.

ALS - RN/Paramedic

- ✱ Ensure completion of all applicable BLS items on the left.
- ✱ Consider **IO NS** or **LR**.
- ✱ Acute (non traumatic) or chronic (acute exacerbation) with autonomic signs and symptoms:
  - ✱ *Adult*:
    - ✚ Consider **Fentanyl** 25-100 mcg may repeat every 5 min (max 300 mcg) **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 (max 150 mcg) **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. extrication): 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)

NEMSIS Protocol 9914071: General - Pain Control



Protocol 6-055 - Decontamination

BLS - 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 94).
- ✱ Create transport plan.
- ✱ All persons leaving the warm zone must be technically decontaminated:
  - ✱ **Remove ALL clothing** and jewelry.
  - ✱ Gentle **washing** with soap and water.

BLS - EMT

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

BLS - AEMT

- ✱ Ensure completion of applicable EMT items above.

ALS - RN/Paramedic

- ✱ 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)

BLS - 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.
  - Dated within the last 365 days.
- If any doubt exists regarding the validity of the Documentation, immediate resuscitation should be initiated.

BLS - EMT

- Ensure completion of applicable EMR items above.

BLS - AEMT

- Ensure completion of applicable EMT items above.

ALS - RN/Paramedic

- 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** 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)
NEMSIS Protocol 9914169: Cardiac Arrest - Do Not Resuscitate

Section 6-070 - Documentation

BLS - 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.
  - 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 is the 9-1-1 caller or at any time requested medical care or an ambulance: 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.

BLS - 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.

BLS - AEMT

- Ensure completion of applicable EMT items above.

ALS - RN/Paramedic

- 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)

NEMSIS Protocol 9914189: General - Refusal of Care

Protocol 6-080 - Event Standby

BLS - EMR

- ✱ Treat illnesses and injuries per appropriate protocol.

BLS - 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.

BLS - AEMT

- ✱ Ensure completion of applicable EMT items above.

ALS - RN/Paramedic

- ✱ 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

BLS - 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.

BLS - 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 94).

BLS - EMT

- ✱ Ensure completion of applicable EMR items above.

BLS - AEMT

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

ALS - RN/Paramedic

- ✱ 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** over 10 min (can be piggybacked into **LR**) if major injury AND signs of shock.
  - ✱ If it will not delay extraction: Refer to **Protocol 6-050 - Control of Pain** (page 77).

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

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

Protocol 6-090 - Hazardous Atmosphere Standby

BLS - EMD

- Dispatch a non-dedicated standby 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.

BLS - EMR

- Treat illnesses and injuries per appropriate protocol.
- Refer to **Protocol 6-055 - Decontamination** (page 78) as appropriate prior to contaminating personnel, equipment, and ambulance.

BLS - 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%.

BLS - AEMT

- Ensure completion of applicable EMT items above.

ALS - RN/Paramedic

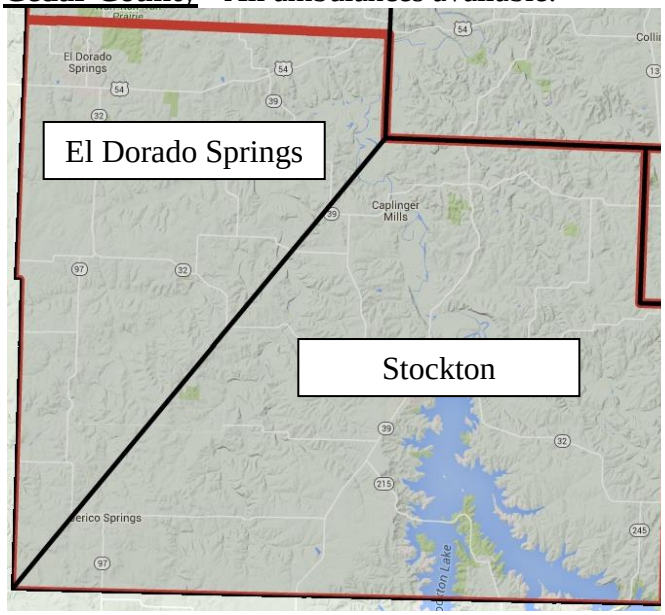
- Ensure completion of all applicable BLS items on the left.
- Treat illnesses and injuries according to appropriate protocol.

Citations: (Wake County EMS System, 2010)

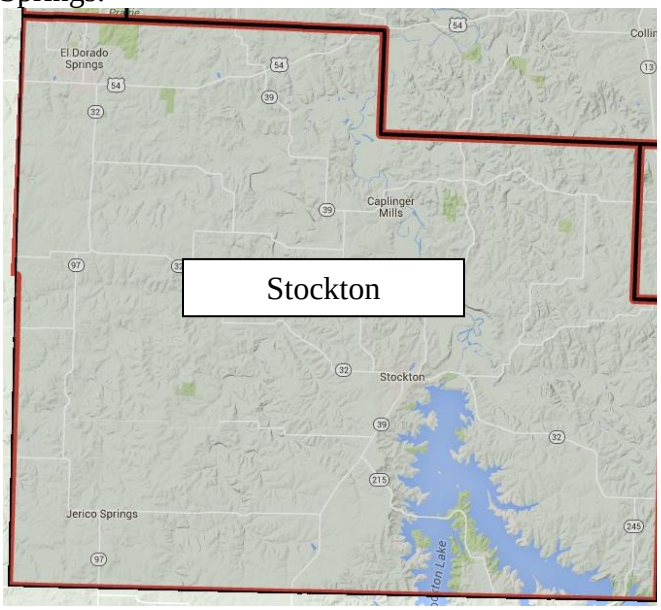
Section 6-095 - Mutual Aid Maps

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.

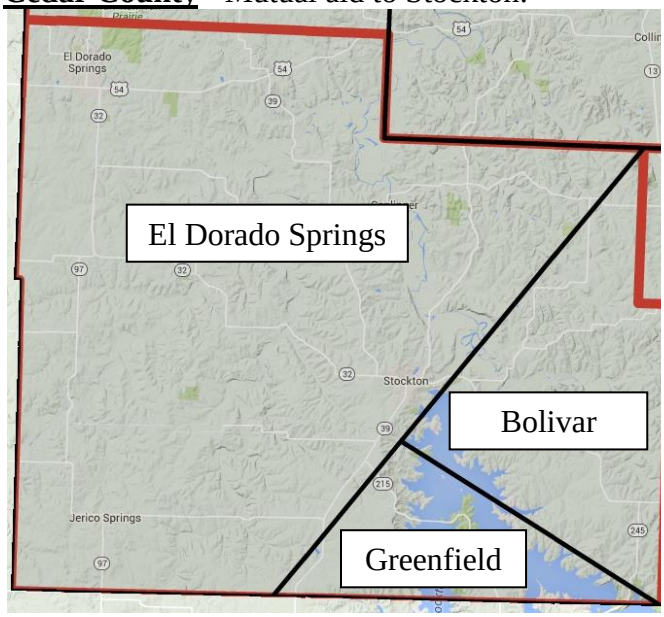
Cedar County - All ambulances available:



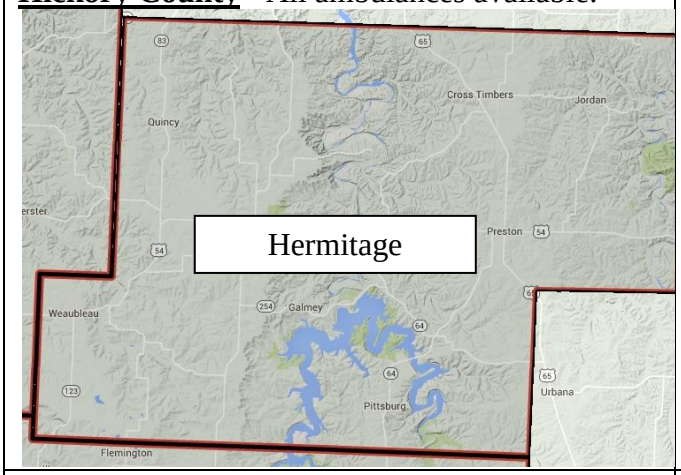
Cedar County - Mutual aid to El Dorado Springs:



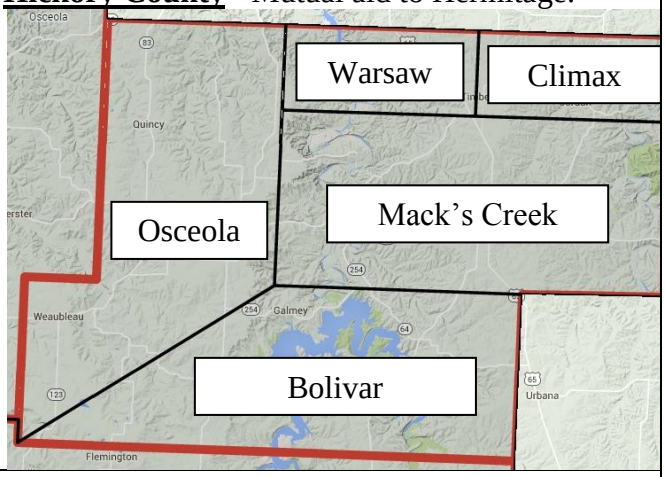
Cedar County - Mutual aid to Stockton:



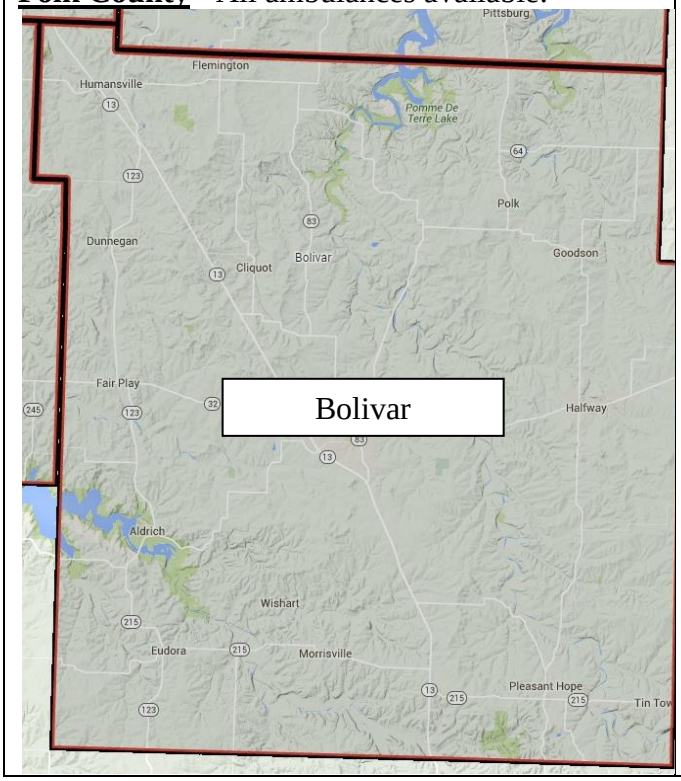
Hickory County - All ambulances available:



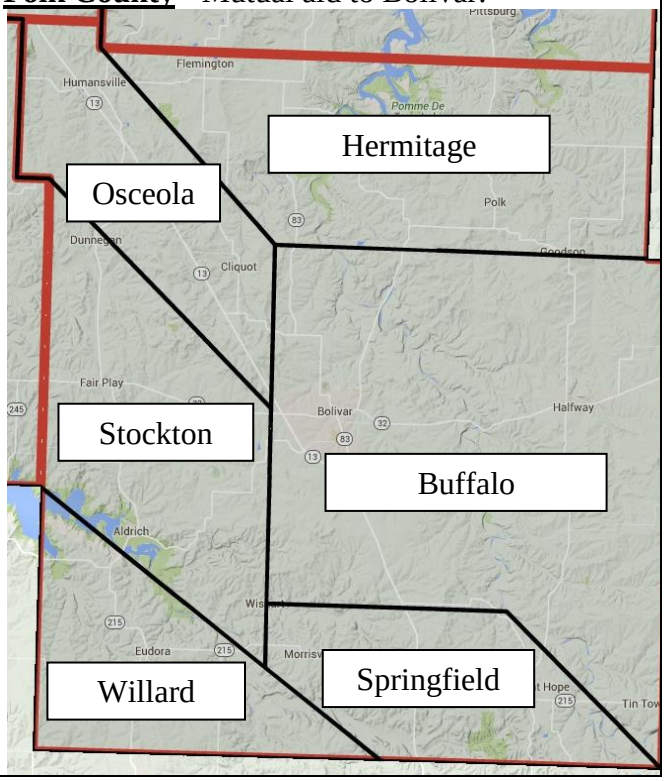
Hickory County - Mutual aid to Hermitage:



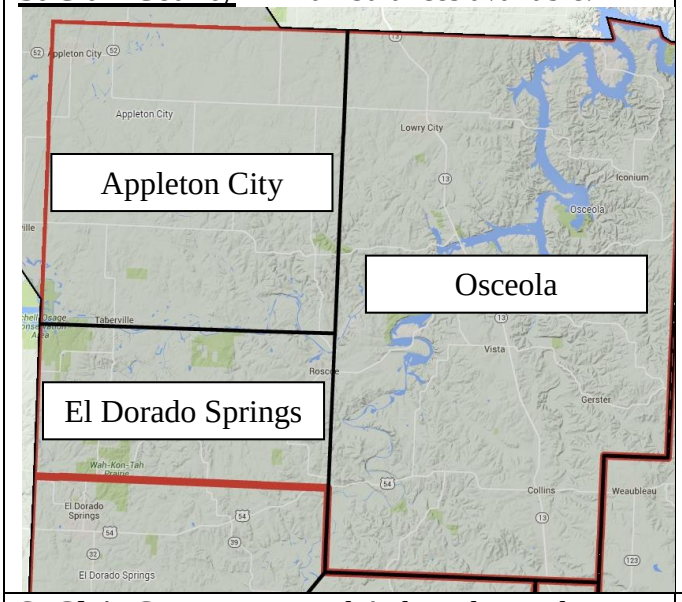
Polk County - All ambulances available:



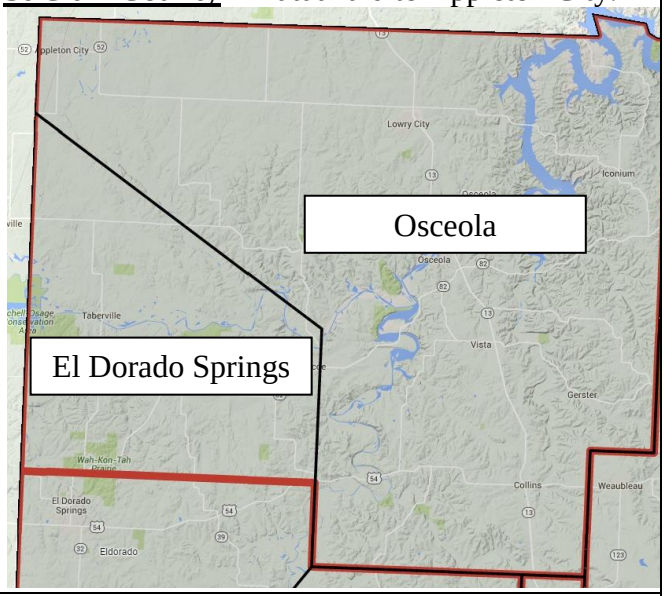
Polk County - Mutual aid to Bolivar:



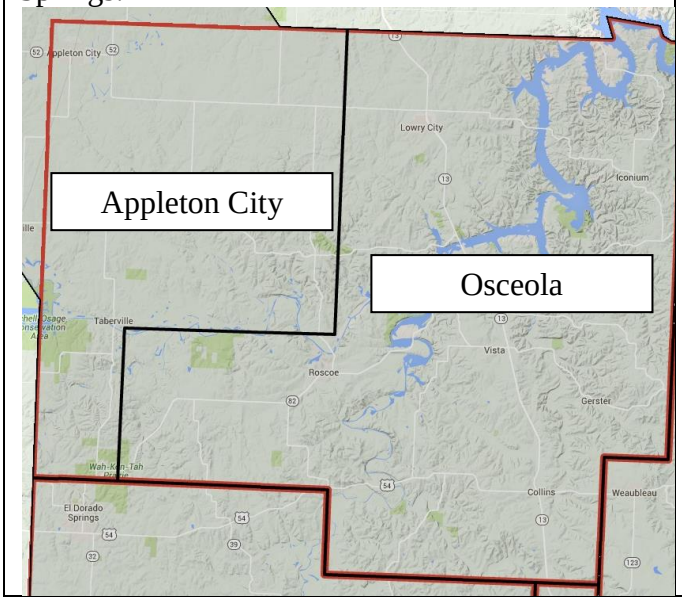
St Clair County - All ambulances available:



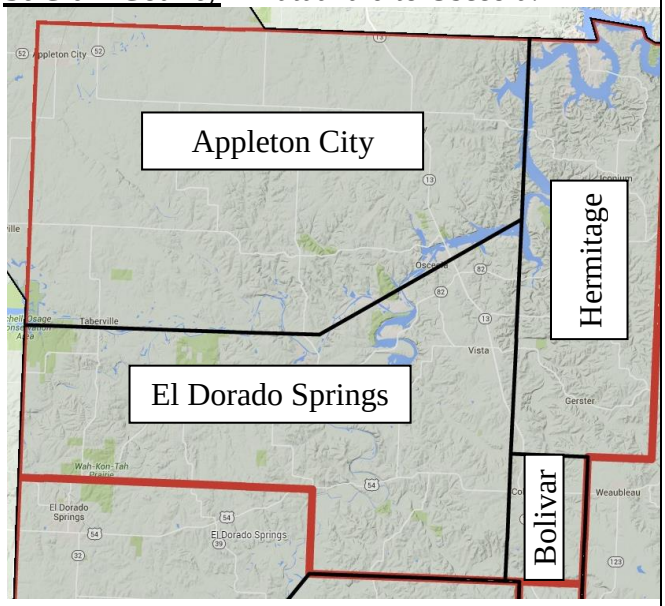
St Clair County - Mutual aid to Appleton City:



St Clair County - Mutual Aid to El Dorado Springs:



St Clair County - Mutual aid to Osceola:



Section 6-100 - Off-Duty Protocols

BLS - EMR

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

BLS - 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.

BLS - AEMT

- ✱ Ensure completion of applicable EMT items above.

ALS - RN/Paramedic

- ✱ 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

BLS - EMD

- ✱ Each month, a Quality meeting will be scheduled and held at CMH. Dispatchers, first responders, and ambulance crew involved in the call will be invited to attend.
  - ✱ Demographic and statistical data from the previous months will be presented by all represented agencies.
  - ✱ Additionally, any response agency or dispatch agency may request a detailed review of one or more specific calls.
- ✱ Ongoing in-house Quality improvement must include at least a 15% review rate of Documentation by management staff to ensure protocol compliance and appropriate patient care.
- ✱ Annually, each dispatch agency must participate in quality meetings quarterly with at least one representative.

BLS - EMR

- ✱ Ensure completion of applicable EMD items above.
- ✱ Annually, each volunteer BLS agency must participate in quality meetings bi-annually with at least one representative.

BLS - EMT

- ✱ Ensure completion of applicable EMR items above.
- ✱ Annually, each career BLS agency must participate in quality meetings quarterly with at least one representative.

BLS - AEMT

- ✱ Ensure completion of applicable EMT items above.

ALS - RN/Paramedic

- ✱ Ensure completion of all applicable BLS items on the left.
- ✱ Annually, each ALS agency must participate in all applicable 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)

BLS - 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**.

BLS - 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.
  - ✱ Upper Airway obstruction.
- ✱ Press "**PRINT**" on the **monitor** after **Intubation** and at **transfer** to ER/LZ to record **Capnography** waveform.
- ✱ Maintain warmth for paralyzed patient.

BLS - AEMT

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

RSI Continued:

ALS - RN/Paramedic

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

- ✱ Premedicate:
  - ✱ *Adult*:
    - ✚ Bradycardic: **Atropine** 0.5 mg **IV**/**IO**.
    - ✚ Seizing: Refer to **Protocol 4-170 - Seizures** (page 57).
    - ✚ **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 57).
    - ✚ Consider **Fentanyl** 1-2 mcg/kg **IV**/**IO**/**IN** (max 150 mcg).

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

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

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

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

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

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

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

Section 6-111 - RSI Dosing Sheet

Use ideal body weight for weight-based doses.

CMH/EMH EMS RSI Quick Reference Dosing/Sizing Sheet																	
Patient Age		New	3 mo	6 mo	1 yr	2 yr	4 yr	6 yr	8 yr	10 yr	12 yr	14 yr	adult	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	
RSI - Prepare Equipment																	
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 (grn)	2 (grn)	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 ml	11.0 ml	13.7 ml	16.4 ml	
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 ml	1.0 ml	1.2 ml	1.4 ml	

Section 6-120 - Transfer of Care

BLS - 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.).

BLS - 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).

BLS - AEMT

- Ensure completion of applicable EMT items above.

ALS - RN/Paramedic

- 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

BLS - 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).

BLS - EMR

- ✱ Ensure completion of applicable EMD items above.

BLS - EMT

- ✱ Ensure completion of applicable EMR items above.

BLS - AEMT

- ✱ Ensure completion of applicable EMT items above.

ALS - RN/Paramedic

- ✱ 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).

Citations:

NEMSIS Protocol 9914181: General - Interfacility Transfer

Protocol 6-130 - Triage

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

HEAR Report:

- Every patient radio report on shall be 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.

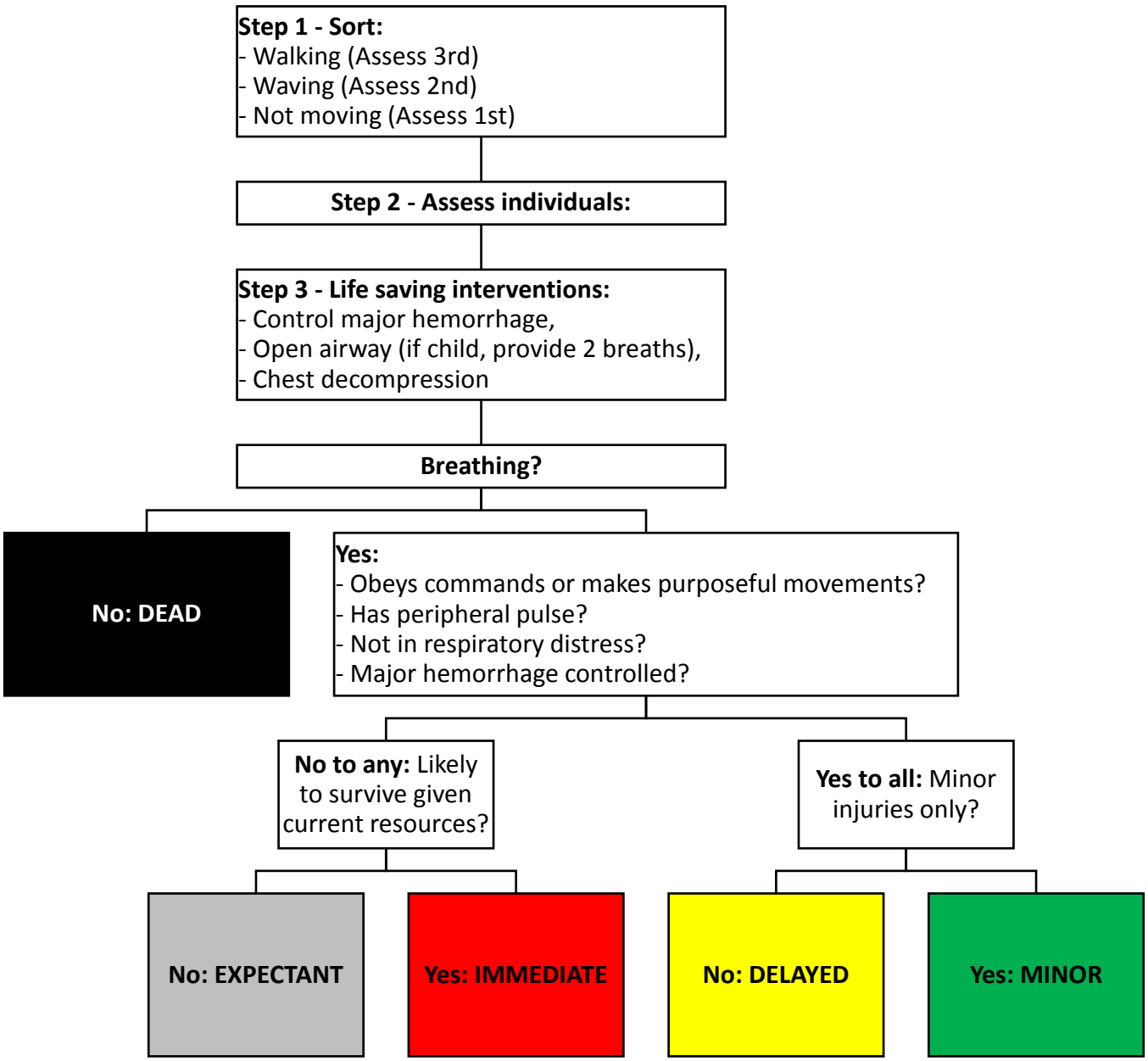
Mass Casualty Incident (MCI):

- Defined as greater than **five patients**.
- EMS scene communications should be conducted on **VTAC12**.
- **Notify** ER as soon as possible (include number of patients, if known).
- First arriving ambulance assignments:
  - RN/Paramedic: Designated **TRIAGE OFFICER**.
    - **Determine** number of patients.
    - **Establish** Triage area(s).
    - **Triage** and tag patients according to **Section 6-135 - SALT Triage** (page 95).
  - EMT: Designated **TRANSPORTATION OFFICER**.
    - **Communicate** number of patients.
    - **Establish** staging area(s).
    - **Coordinate** patient transport.
- Second arriving ambulance assignment:
  - **Establish** treatment area(s).

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

NEMSIS Protocol 9914191: Injury - Mass/Multiple Casualties

Section 6-135 - SALT Triage



Section 6-140 - Termination of Resuscitation

BLS - 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.

BLS - 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.

BLS - EMT

- Ensure completion of applicable EMR items above.

BLS - AEMT

- Ensure completion of applicable EMT items above.

ALS - RN/Paramedic

- 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)

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

Part 7 - Medication Protocols

Section 7-001 - Medications Currently on Response Vehicles

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

Refer to **Section 8-001 - Equipment Currently on Response Vehicles** (page 151) for equipment.

ALS Ambulance

Cabinets:

6 vials	**Section 7-040 - Albuterol (Proventil, Ventolin) (page 102)**
1 bag 250ml D10W	**Section 7-150 - Dextrose (page 112)**
1 kit	**Section 7-170 - Dopamine (Intropin) (page 113)**
4 vials	**Section 7-180 - Duoneb (Ipratropium and Albuterol, Combivent) (page 115)**
1 vial	**Section 7-210 - Epinephrine Racemic (Micronefrin) (page 118)**
2 bags 1L	**Section 7-350 - Lactated Ringers (LR) (page 130)**
1 kit	**Section 7-370 - Lidocaine (Xylocaine) - Drip (page 131)**
1 kit	**Section 7-420 - Nitroglycerin (Nitrostat, Nitrolingual, Tridil) - Drip (page 136)**
6 bags 1L	**Section 7-440 - Normal Saline (NS, Sodium Chloride) (page 137)**
2 tanks	**Section 7-460 - Oxygen (page 138)**
6 vials	**Section 7-610 - Xopenex (Levalbuterol) (page 149)**

Cot:

1 vial	**Section 7-040 - Albuterol (Proventil, Ventolin) (page 102)**
1 tank	**Section 7-460 - Oxygen (page 138)**
1 vial	**Section 7-610 - Xopenex (Levalbuterol) (page 149)**

IV Tray (in cabinet):

10 flushes	**Section 7-440 - Normal Saline (NS, Sodium Chloride) (page 137)**

Monitor:

4 tablets	**Section 7-060 - Aspirin (Bayer) (page 104)**
1 bottle	**Section 7-420 - Nitroglycerin (Nitrostat, Nitrolingual, Tridil) (page 136)**

Med Pack (One pack in first-in bag and one pack in cabinet):

3 vials	**Section 7-030 - Adenosine (Adenocard) (page 101)**
2 vials	**Section 7-050 - Amiodarone (Cordarone) (page 103)**
2 bags 150 mg in 100 ml	**Section 7-050 - Amiodarone (Cordarone) (page 103)**
1 bag 300 mg in 200 ml	**Section 7-050 - Amiodarone (Cordarone) (page 103)**
3 vials	**Section 7-080 - Atropine (Sal-Tropine) (page 106)**
1 vial	**Section 7-090 - Benadryl (Diphenhydramine) (page 107)**
1 bag 100ml D5W	**Section 7-150 - Dextrose (page 112)**
2 vials	**Section 7-190 - Epinephrine 1:1,000 (page 116)**
4 vials	**Section 7-200 - Epinephrine 1:10,000 (page 117)**
1 kit	**Section 7-240** - Glucagon **(page 121)**
2 vials	**Section 7-370 - Lidocaine (Xylocaine) (page 131)**
1 bag 2 g in 50 ml	**Section 7-380 - Magnesium Sulfate (page 132)**
2 vials	**Section 7-400 - Narcan (Naloxone) (page 134)**
1 bag 100 ml	**Section 7-440 - Normal Saline (NS, Sodium Chloride) (page 137)**
2 vials	**Section 7-530 - Sodium Bicarbonate (Soda) (page 142)**

1 vial	**Section 7-570 - Thiamine (Vitamin B1) (page 145)**

Big Bag:

1 bag 250ml D10W	**Section 7-150 - Dextrose (page 112)**

Extra Med Box (in cabinet):

1 kit	**CMH ONLY - Section 7-120 - Cardizem (Diltiazem) (page 110)**
2 cups	**Section 7-010 - Acetaminophen (Tylenol) (page 99)**
1 tube	**Section 7-020 - Activated Charcoal (Actidose) (page 100)**
16 tabs	**Section 7-060 - Aspirin (Bayer) (page 104)**
1 vial multidose	**Section 7-080 - Atropine (Sal-Tropine) (page 106)**
1 vial	**Section 7-100 - Calcium Chloride (Calciject) (page 108)**
2 tabs	**Section 7-110 - Captopril (Capoten) (page 109)**
2 tubes	**Section 7-250 - Glucose (page 122)**
1 vial	**Section 7-260 - Haldol (Haloperidol) [CMH ONLY]**
1 vial	**Section 7-270 - Heparin (page 124) [CMH ONLY]**
1 vial	**Section 7-280 - Hydralazine (Apresoline) (page 125) [CMH ONLY]**
2 cups	**Section 7-300 - Ibuprofen (Advil, Pediaprofen) (page 126)**
1 vial	**Section 7-340 - Labetalol (Nomadyne) (page 129)**
1 bottle	**Section 7-410 - Neo-Synephrine (Phenylephrine) (page 135) [CMH ONLY]**
1 bottle	**Section 7-420 - Nitroglycerin (Nitrostat, Nitrolingual, Tridil) (page 136)**
2 vials	**Section 7-470 - Oxytocin** (Pitocin) **(page 139)**
2 vials	**Section 7-480 - Phenergan (Promethazine) (page 140)**
2 vials	**Section 7-540 - Solu-Medrol (Methylprednisolone) (page 143)**
1 bottle	**Section 7-560 - Tetracaine (page 144)**
2 vials	**Section 7-575 - Toradol (Ketorolac) (page 146)**
1 vial	**Section 7-578 - TXA (Tranexamic Acid) (page 147)**
6 vials	**Section 7-620 - Zofran (Ondansetron) (page 150)**

Narcotic Box (in narcotic cabinet):

4-8 vials	**Section 7-230 - Fentanyl (Sublimaze) (page 120)**
2 vials	**Section 7-330 - Ketamine (Ketalar) (page 127) [CMH ONLY]**
2-6 vials	**Section 7-390 - Morphine (page 133)**
3-6 vials	**Section 7-600 - Versed (Midazolam) (page 148)**

RSI Kit (in narcotic cabinet):

1 vial	**Section 7-080 - Atropine (Sal-Tropine) (page 106) [CMH ONLY]**
1 vial	**Section 7-220 - Etomidate (Amidate) (page 119) [CMH ONLY]**
4 vials	**Section 7-520 - Rocuronium (Zemuron) (page 141) [CMH ONLY]**

Section 7-010 - Acetaminophen (Tylenol)

Scope of Practice: ✱ ☐ EMD ✱ ☐ EMR ✱ ☐ EMT ✱ ☐ AEMT ✱ ☑ RN/Paramedic *Class*: ✱ Analgesic. Antipyretic. *Action*: ✱ Analgesic mechanism unknown. Antipyretic is through direct action on hypothalmus. *Route*: ✱ PO.	*Half-Life*: ✱ 1-4 hours. *Contraindications*: ✱ Hypersensitivity.

Indications:
Protocol 4-100 - Fever (Fever greater than 102 degrees F) ..... page 49
Section 7-300 - Ibuprofen (Advil, Pediaprofen)(has been ineffective or administered within 6 hours)..... page 126

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference. *Adult dosage:* ✱ 325-650 mg every 4-6 hrs. *Pediatric dosage:* ✱ 15 mg/kg every 4-6 hrs.	*Precautions*: ✱ Avoid in patients with severe liver disease. Chronic alcohol use. Impaired renal function. PKU. *Side effects*: ✱ Rash, uticaria, **Nausea**. *Antidote*: ✱ Acetylcysteine or mucomyst.

Citations: (Cox Paramedics, 2014)

Section 7-020 - Activated Charcoal (Actidose)

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

Class:
- ✱ Adsorbent.

Action:
- ✱ Adsorbs toxins by chemical binding and prevents gastrointestinal absorption.

Route:
- ✱ Oral.

Half-Life:
- ✱

Contraindications:
- ✱ 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.

Indications:
Protocol 4-140 - Poisoning or Overdose (Poisoning following emesis or when emesis is contraindicated) ..... page 54

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
- ✱ 50-100 g mixed with glass of water to form slurry.

Pediatric dosage:
- ✱ 0.5-1 g/kg mixed with glass of water to form slurry.

Precautions:
- ✱ Aspiration may cause pneumonitis.

Side effects:
- ✱ **Nausea, vomiting**, constipation, diarrhea.

Antidote:
- ✱

Citations:

Section 7-030 - Adenosine (Adenocard)

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

Class:
✱ Antiarrhythmic.

Action:
✱ Slows AV conduction.

Route:
✱ **IV**/**IO** slam followed by rapid flush.

Half-Life:
✱ less than 10 seconds.

Contraindications:
✱ 2nd or 3rd degree heart block.
✱ Sick Sinus Syndrome.
✱ Drug-induced **Tachycardia**.

Indications:
Protocol 2-020 - Atrial Fibrillation (A-Fib) or Atrial Flutter (Symptomatic PSVT)..... page 14
Protocol 2-080 - Tachycardia Narrow Stable (Symptomatic PSVT) ..... page 22
Protocol 2-090 - Tachycardia Narrow Unstable (Symptomatic PSVT)..... page 23

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
✱ 6 mg.
✱ If ineffective, second and/or third dose at 12 mg.

Pediatric dosage:
✱ 0.1 mg/kg (max 6 mg/dose).
✱ If ineffective, second and/or third dose at 0.2 mg/kg (max 12 mg/dose).

Precautions:
✱ Arrhythmias, including blocks, are common at the time of Cardioversion. Use caution in patients with **Asthma**.

Side effects:
✱ 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:

Section 7-040 - Albuterol (Proventil, Ventolin)

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

Class:
- Beta-2 selective sympathomimetic.

Action:
- Binds and stimulates beta-2 receptors, resulting in relaxation of bronchial smooth muscle.

Route:
- **Nebulized**.

Half-Life:
- 1.6 hours.

Contraindications:
- Angioedema.

Indications:

Protocol 4-020 - Anaphylaxis ..... page 36
Protocol 4-030 - Asthma ..... page 37
Protocol 4-060 - Chronic Obstructive Pulmonary Disease (COPD) (Reversible bronchospasm associated with COPD) ..... page 44
Protocol 4-070 - Congestive Heart Failure (CHF) ..... page 45
Protocol 5-050 - Extremity Trauma ..... page 64
Section 7-180 - Duoneb (Ipratropium and Albuterol, Combivent) ..... page 115

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Dosage:
- 2.5 mg in 2.5 ml **NS** over 5-15 min **Nebulized**.

Precautions:
- Blood pressure, pulse, and **EKG** should be monitored. Use caution in patients with known heart disease.

Side effects:
- Palpitations, **anxiety**, Headache, dizziness, sweating, **hyperglycemia**, hypokalemia, insomnia, **Tachycardia**, **Nausea, vomiting**, throat irritation, dry mouth, epistaxis, **Hypertension**, dyspepsia, and paradoxical bronchospasm.

Antidote:
-

Citations:

Section 7-050 - Amiodarone (Cordarone)

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

Class:
- Class III antiarrhythmic.

Action:
- Sodium, Calcium, and Potassium channel blocker. Prolongs intranodal conduction. Prolongs refractoriness of the AV node.

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

Half-Life:
- 58 days.

Contraindications:
- Cardiogenic shock.
- Sinus **Bradycardia**.
- 2nd or 3rd degree AV block.
- Sick Sinus Syndrome.
- Sensitivity to benzyl alcohol and iodine.

Indications:

Protocol 2-020 - Atrial Fibrillation (A-Fib) or Atrial Flutter (Second-line agent for Atrial arrhythmias) ..... page 14
Protocol 2-080 - Tachycardia Narrow Stable ..... page 22
Protocol 2-100 - Tachycardia Wide Stable ..... page 24
Protocol 2-110 - Tachycardia Wide Unstable ..... page 25
Protocol 2-130 - Ventricular Ectopy ..... page 27
Protocol 2-140 - Ventricular Fibrillation (V-Fib or V-Tach) ..... page 28
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR) ..... page 74

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
- **V-Fib/Pulseless V-Tach**: 300 mg initial, 150 mg recurrent.
- Narrow complex **Tachycardia**: 150 mg in 100 ml D5W over 10 min.

Pediatric dosage:
- 5 mg/kg up (max 300 mg/dose) may repeat to a total of 15 mg/kg max.

Precautions:
- 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.

Side effects:
- Hypotension, **Bradycardia** (slow down the rate of infusion).

Antidote:
- **Section 7-100 - Calcium Chloride (Calciject)** (page 108).
-
-
- **Section 7-240** - Glucagon (page 121).

Citations:

Section 7-060 - Aspirin (Bayer)

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

Class:
- Platelet inhibitor. Anti-inflammatory. Analgesic.

Action:
- Prevents formation of thromboxane A2. Blocks platelet aggregation.

Route:
- PO.

Half-Life:
- 3.1-3.2 hours.

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

Indications:
Protocol 2-050 - Chest Discomfort (New Chest Pain suggestive of AMI)..... page 17

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
- Chew 324 mg (four 81 mg "baby Aspirin").

Pediatric dosage:
- Not indicated.

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

Side effects:
- Heartburn, **Nausea, vomiting**, **wheezing**, **Anaphylaxis**, angioedema, bronchospasm, bleeding, stomach irritation.

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 7-070 - Ativan (Lorazapam)

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

Class:
- Benzodiazepine.

Action:
- Anticonvulsant. Skeletal muscle relaxant. Sedative. Binds to benzodiazepine receptor and enhances effects of GABA.

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

Half-Life:
- 9-16 hours.

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

Indications:
Protocol 6-060 - Do Not Resuscitate (DNR) ..... page 79

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
- **Status epilepticus**: 4 mg may be repeated once in 10 min.
- Acute **anxiety**: 2-4 mg.
- Premedication before **Cardioversion**: 2 mg.

Pediatric dosage:
- **Status epilepticus**: 0.1 mg/kg (max 2 mg/dose).
- **Cardioversion**: 0.05 mg/kg (max 2 mg).

Precautions:
- **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.

Side effects:
- 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.), (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:
- ☐ EMD
- ☐ EMR
- ☐ EMT
- ☐ AEMT
- ☑ RN/Paramedic

Class:
- Parasympatholytic (anticholinergic).

Action:
- Competes with acetylcholine at the site of muscarinic receptor. Increases heart rate. Decreases gastrointestinal secretions.

Route:
- **IV**/**IO**. **ET** at twice the dose.

Half-Life:
- 2 hours.

Contraindications:
- None when used in emergency situations.

Indications:

Protocol 2-010 - Asystole ..... page 13
Protocol 2-040 - Bradycardia ..... page 16
Protocol 2-070 - Pulseless Electrical Activity (PEA) ..... page 21
Protocol 4-140 - Poisoning or Overdose (Organophosphate Poisoning) (Nerve agent exposure) ..... page 54
Protocol 5-070 - Head Trauma ..... page 66
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR) ..... page 74
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) (RSI of pediatrics under 10 or any bradycardic patients) ..... page 89

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
- **Asystole**/**PEA**: 1 mg every 3-5 min (max 3 mg).
- **Bradycardia**: 0.5 mg every 5 min (max 3 mg).
- **Organophosphate Poisoning**: 2-5 mg. May require greater than 10 mg.

Pediatric dosage:
- **Asystole**/**PEA**: 1 mg every 3-5 min (max 3 mg).
- **Bradycardia**: 0.02 mg/kg (min 0.1 mg, max 0.5 mg per dose) (max 1 mg).
- **Organophosphate Poisoning**: 0.05 mg/kg.
- Head trauma: 0.02 mg/kg (min 0.1 mg).

Precautions:
- **Tachycardia**. **Hypertension**. May cause paradoxical **Bradycardia** if dose is too low or administered too slowly.
- May prolong QT interval. 12-lead is indicated after administration.

Side effects:
- 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: (Cox Paramedics, 2014)

Section 7-090 - Benadryl (Diphenhydramine)

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

Class:
✱ Antihistamine.

Action:
✱ Blocks H1 histamine receptors. Has some sedative effects.

Route:
✱ **IV**/**IO**/IM.

Half-Life:
✱ 8-17 hours.

Contraindications:
✱ **Asthma**.
✱ Nursing mothers.

Indications:
Protocol 4-020 - Anaphylaxis..... page 36
Protocol 4-040 - Behavioral ..... page 38
Protocol 6-040 - Control of Nausea ..... page 76
Protocol 7-260 - Haldol (Haloperidol) (Extra Pyramidal Symptoms (EPS)) ..... page 105
Protocol 7-480 - Phenergan (Promethazine) (Extra Pyramidal Symptoms (EPS)) ..... page 123

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
✱ 25-50 mg.

Pediatric dosage:
✱ 1.25 mg/kg.

Precautions:
✱ Hypotension.
✱ May prolong QT interval. 12-lead is indicated after administration.

Side effects:
✱ 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:

Section 7-100 - Calcium Chloride (Calciject)

Scope of Practice: ✱ ☐ EMD ✱ ☐ EMR ✱ ☐ EMT ✱ ☐ AEMT ✱ ☑ RN/Paramedic *Class*: ✱ Electrolyte. *Action*: ✱ Increases cardiac contractility. *Route*: ✱ **IV**/**IO**.	*Half-Life*: ✱ *Contraindications*: ✱ Patients on digitalis.

Indications:

Protocol 4-140 - Poisoning or Overdose (Calcium channel blocker Overdose (Verapamil, Nifedipine)) ..... page 54
Protocol 5-050 - Extremity Trauma ..... page 64
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR) ..... page 74
Section 7-050 - Amiodarone (Cordarone) ..... page 103
Section 7-120 - Cardizem (Diltiazem) ..... page 110
Section 7-380 - Magnesium Sulfate (antidote for Overdose) ..... page 132

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference. *Dosage:* ✱ Contact **medical control**.	*Precautions*: ✱ **IV** line should be flushed between Calcium Chloride and **Sodium Bicarbonate** administration. *Side effects*: ✱ Arrhythmias (**Bradycardia** and **Asystole**), and hypotension. *Antidote*: ✱

Citations:

Section 7-110 - Captopril (Capoten)

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

Class:
✱ ACE inhibitor.

Action:
✱ Competitive inhibitor of Angiotension Converting Enzyme (ACE).

Route:
✱ SL.

Half-Life:
✱ 1.9 hours.

Contraindications:
✱ Hypersensitivity to any ACE inhibitor.

Indications:
Protocol 4-070 - Congestive Heart Failure (CHF) ..... Page 45

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
✱ SBP greater than 110: 25 mg.
✱ SBP 90-110: 12.5 mg.

Pediatric dosage:
✱ Not indicated.

Precautions:
✱ May cause hyperkalemia, especially in patients with renal deficiency. Aortic stenosis, bilateral renal artery stenosis, hypertrophic obstructive cardiomyopathy, pericardial tamponade, elevated serum Potassium levels, acute kidney failure.

Side effects:
✱ Hypotension, angioedema, Headache, dizziness, fatigue, depression, **Chest Pain**, palpitations, cough, dyspnea, **Nausea, vomiting**, rash, pruritus, renal failure.

Antidote:
✱

Citations:

Section 7-120 - Cardizem (Diltiazem)

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

Class:
- Calcium channel blocker.

Action:
- Slows conduction through the AV node.

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

Half-Life:
- 3-4.5 hours.

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

Indications:

Protocol 2-020 - Atrial Fibrillation (A-Fib) or Atrial Flutter (A-Fib with rapid Ventricular response) ..... page 14
Protocol 2-080 - Tachycardia Narrow Stable ..... page 22

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
- 0.25 mg/kg (max 20 mg) over 2 min.
- May repeat at 0.35 mg/kg (max 25 mg) after 15 min.
- Infusion at 5-15 mg/hr.

Pediatric dosage:
- Call **medical control**.

Precautions:
- Hypotension. Should not be used in patients receiving **IV** Beta-Blockers.

Side effects:
- **Nausea, vomiting**, hypotension, dizziness, **Bradycardia**, flushing, Headache, heart block, cardiac Arrest.

Antidote:
- **Section 7-100 - Calcium Chloride (Calcicject)** (page 108).
-
-
- **Section 7-240** - Glucagon (page 121).

Citations:

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
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 7-150 - Dextrose

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

Class:
✱ Carbohydrate.

Action:
✱ Elevates blood **Glucose** level rapidly.

Route:
✱ **IV**/**IO**.

Half-Life:
✱

Contraindications:
✱ Intracranial hemorrhage.

Indications:

Protocol 2-100 - Tachycardia Wide Stable ..... page 24
Protocol 2-110 - Tachycardia Wide Unstable ..... page 25
Protocol 2-120 - Torsades de Pointes ..... page 26
Protocol 2-150 - Wolff-Parkinson-White (WPW) ..... page 29
Protocol 4-120 - Hypoglycemia ..... page 52
Protocol 5-050 - Extremity Trauma ..... page 64
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR) ..... page 74
Section 7-050 - Amiodarone (Cordarone) ..... page 103

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
✱ **D10W** 25 g.

Pediatric dosage:
✱ **D10W** 0.5-1 g/kg.

Neonate Dosage:
✱ **D10W** 0.5-1 g/kg.

Precautions:
✱ **Blood sample** should be drawn before administering.

Side effects:
✱ Local venous irritation. **Hyperglycemia**, warmth, thrombosis.

Antidote:
✱

Citations:

Section 7-170 - Dopamine (Intropin)

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

Class:
- Sympathomimetic.

Action:
- Stimulates alpha and beta adrenergic receptors. Increases cardiac contractility. Causes peripheral vasoconstriction.

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

Half-Life:
- 2 minutes.

Contraindications:
- Hypovolemic shock where complete fluid resuscitation has not occurred.
- Severe tachyarrhythmias.
- Ventricular Fibrillation or Ventricular arrhythmias.

Indications:

Protocol 2-040 - Bradycardia (Bradycardia unresponsive to **Atropine**) ..... page 16
Protocol 2-060 - Post Resuscitative Care (Hypovolemic shock - only after complete fluid resuscitation)..... page 20
Protocol 4-070 - Congestive Heart Failure (CHF) (Cardiogenic shock)..... page 45

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
- Beta effects (increased rate, contractility): 5-10 mcg/kg/min.
- Alpha effects (vasoconstriction): 10-20 mcg/kg/min.

Colorado down and dirty Dopamine dose:
- With 1600 mg/ml mixture only.
- $\frac{(Patient's weight\ in\ pounds)}{10} - 2 = ml/hr\ for\ 5\ mcg/kg/min$

Pediatric dosage:
- 5-20 mcg/kg/min.
  - Mix 6 mg/kg with enough D5W to make 100 ml.

Precautions:
- Ventricular irritability.

Side effects:
- Ventricular tachyarrhythmias. **Hypertension**. Angina, dyspnea, Headache, **Nausea, vomiting**.

Antidote:
- Rigitine.

Citations:

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	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:
- ☐ EMD
- ☐ EMR
- ☐ EMT
- ☑ AEMT
- ☑ RN/Paramedic

Class:
- Beta adrenergic. Anticholinergic.

Action:
- Binds and stimulates beta-2 receptors, resulting in relaxation of bronchial smooth muscle, and antagonizes the acetylcholine receptor, producing bronchodilation.

Route:
- **Nebulized**.

Half-Life:
-

Contraindications:
- Hypersensitivity to Ipratropium, **Albuterol**, or **Atropine**.
- Allergy to soybeans or peanuts.
- Closed angle glaucoma.
- Bladder neck obstruction.
- Prostatic hypertrophy.

Indications:
Protocol 4-020 - Anaphylaxis..... page 36
Protocol 4-030 - Asthma..... page 37
Protocol 4-060 - Chronic Obstructive Pulmonary Disease (COPD)..... page 44
Protocol 4-070 - Congestive Heart Failure (CHF)..... page 45
Section 7-040 - Albuterol (Proventil, Ventolin) (Bronchoconstriction refractory to **Albuterol**)..... page 102

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
- 3 ml = 0.5 mg Ipratropium + 2.5 mg **Albuterol** (max 1 dose).

Pediatric dosage:
- 3 ml = 0.25 mg Ipratropium + 2.5 mg **Albuterol** (max 1 dose).

Precautions:
- Blood pressure, pulse, and **EKG** should be monitored. Use caution in patients with known heart disease. May cause paradoxical acute bronchospasm.

Side effects:
- Palpitations, **anxiety**, Headache, dizziness, sweating, **Tachycardia**, cough, **Nausea**, arrhythmias, paradoxical acute bronchospasm.

Antidote:
- Physostigmine.

Citations:

Section 7-190 - Epinephrine 1:1,000

Scope of Practice:
✱ ☐ EMD
✱ ☐ EMR
✱ ☑ EMT - Only auto-injector pen for **anaphylaxis**.
✱ ☑ AEMT - Only IM or SQ for **anaphylaxis**.
✱ ☑ RN/Paramedic

Class:
✱ Sympathomimetic.

Action:
✱ Binds with both alpha and beta receptors. Bronchodilation.

Route:
✱ SQ/IM/**ET**.

Half-Life:
✱ 2 minutes.

Contraindications:
✱ Cardiovascular disease.
✱ **Hypertension**.
✱ Pregnancy.
✱ Patients with tachyarrhythmias.
✱ CerebroVascular disease.
✱ Diabetes.

Indications:
Protocol 2-010 - Asystole ..... page 13
Protocol 2-070 - Pulseless Electrical Activity (PEA) ..... page 21
Protocol 2-140 - Ventricular Fibrillation (V-Fib or V-Tach) ..... page 28
Protocol 4-020 - Anaphylaxis ..... page 36
Protocol 4-030 - Asthma ..... page 37
Protocol 4-080 - Croup ..... page 46
Protocol 4-130 - Neonatal Resuscitation ..... page 53
Section 7-200 - Epinephrine 1:10,000 ..... page 117

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
✱ 0.3-0.5 mg (max 1 mg).

Pediatric dosage:
✱ 0.01 mg/kg (max 0.5 mg).
✱ **ET** dose where **IV** access for **Section 7-200 - Epinephrine 1:10,000** (page 117) concentration unavailable: 0.1 mg/kg.

Precautions:
✱ Medication should be protected from light. Blood pressure, pulse and **EKG** must be constantly monitored.

Side effects:
✱ 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)

Section 7-200 - Epinephrine 1:10,000

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

Class:
- Sympathomimetic.

Action:
- Binds with both alpha and beta receptors. Increases heart rate. Increases cardiac contractility. Causes bronchodilation.

Route:
- **IV**/**IO**.
- **ET**: see **Section 7-190 - Epinephrine 1:1,000** (page 116).

Half-Life:
- 2 minutes.

Contraindications:
- None when used in emergency setting.

Indications:

Protocol 2-010 - Asystole ..... page 13
Protocol 2-040 - Bradycardia ..... page 16
Protocol 2-070 - Pulseless Electrical Activity (PEA) ..... page 21
Protocol 2-140 - Ventricular Fibrillation (V-Fib or V-Tach) ..... page 28
Protocol 4-020 - Anaphylaxis ..... page 36
Protocol 4-130 - Neonatal Resuscitation ..... page 53
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR) ..... page 74
Section 7-340 - Labetalol (Nomadyne) (Overdose) ..... page 129

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
- Cardiac Arrest: 1 mg every 3-5 min.
- **Bradycardia**: 2-10 mcg/min.
  - Mix 1 mg in 250 ml **NS**. 2 mcg/min = 30 ml/hr. 10 mcg/min = 150 ml/hr.
- Severe **Anaphylaxis**: 0.3 mg. Consider 05-15 mcg/min.

Pediatric dosage:
- Cardiac Arrest: 0.01 mg/kg every 3-5 min.
- **Bradycardia**: 0.01 mg/kg every 3-5 min.
- Severe **Anaphylaxis**: 0.1-1 mcg/kg/min.

Precautions:
- Medication should be protected from light. Can be deactivated by alkaline solutions.

Side effects:
- Tachyarrhythmias. Palpitations. **Anxiety**, **Chest Pain**, **Hypertension**, **Nausea, vomiting**, Headache.

Antidote:
-

Citations:

Section 7-210 - Epinephrine Racemic (Micronefrin)

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

Class:
- Nonselective alpha and beta agonist.

Action:
- Arteriole constriction. Positive inotrope. Positive chronotrope. Bronchial smooth muscle relaxant. Blocks histamine release. Inhibits insulin secretion. Relaxes GI smooth muscle.

Route:
- **Nebulized**.

Half-Life:
- 2 minutes.

Contraindications:
- Glaucoma.
- Elderly.
- Cardiac disease.
- **Hypertension**.
- Thyroid disease.
- Diabetes.
- Sensitivity to sulfites.

Indications:
Protocol 4-080 - Croup (Croup with moderate to severe respiratory distress) ..... page 46

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Dosage:
- 0.5 ml mixed with 3 ml **NS**.

Precautions:
- Observe 2-4hrs after administration.

Side effects:
- Palpitations, **anxiety**, Headache, **Hypertension**, **Nausea, vomiting**, arrhythmias, rebound edema. Dizziness, tremor, **Tachycardia**.

Antidote:
-

Citations:

Section 7-220 - Etomidate (Amidate)

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

Class:
✱ Sedative, non-barbiturate hypnotic.

Action:
✱ Unknown GABA-like effects. No analgesic effects. Has few Cardiovascular or respiratory effects. Cerebro-protective decreases ICP, IOP.

Route:
✱ **IV**/**IO**.

Half-Life:
✱ 75 minutes.

Contraindications:
✱ Hypersensitivity.
✱ **Sepsis**.

Indications:
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) (Sedation prior to **Intubation**)..... page 89

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Dosage:
✱ 0.3 mg/kg.

Precautions:
✱ Single dose only. Marked hypotension. Severe **Asthma**.

Side effects:
✱ 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:
- ☐ EMD
- ☐ EMR
- ☐ EMT
- ☐ AEMT
- ☑ RN/Paramedic

Class:
- Narcotic analgesic.

Action:
- Binds to opiate receptors. Analgesia and sedation. Central nervous system depressant. Decreased sensitivity to **Pain**.

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

Half-Life:
- **IV**: 10-20 minutes
- **IN**: 6.5 minutes.

Contraindications:
- Hypersensitivity.

Indications:

Protocol 2-050 - Chest Discomfort ..... page 17
Protocol 3-030 - Hypothermia ..... page 33
Protocol 4-010 - Abdominal Pain ..... page 35
Protocol 5-070 - Head Trauma ..... page 66
Protocol 6-050 - Control of Pain ..... page 77
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) ..... page 89
Section 8-080 - Endotracheal Tube (ET) ..... page 164
Section 8-160 - King LTSD Airway ..... page 173
Section 8-170 - Laryngeal Mask Airway (LMA) Supreme ..... page 174

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
- 50 mcg every 5-20 min PRN for **Pain** (max 300 mcg). Maximum of 50 mcg per dose.
- Greater than 65 yr: 25-50 mcg (max 150 mcg).

Pediatric dosage:
- 0.5-2 mcg/kg.

Precautions:
- 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.

Side effects:
- **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 134).

DEA Number: 9801
Schedule: 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), (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:
✱ ☐ EMD
✱ ☐ EMR
✱ ☐ EMT
✱ ☑ AEMT - Only IM for **hypoglycemia**.
✱ ☑ RN/Paramedic

Class:
✱ Other endocrine/metabolism.

Action:
✱ Converts hepatic glycogen to **Glucose**.

Route:
✱ IM/SQ/**IV**/**IO**.

Half-Life:
✱

Contraindications:
✱ Pheochromocytoma.
✱ Insulinoma.

Indications:
Protocol 4-120 - Hypoglycemia (Severe Hypoglycemia when unable to establish vascular access) ..... page 52
Protocol 4-140 - Poisoning or Overdose (Beta-Blocker Overdose)..... page 54

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
✱ **Hypoglycemia**: 1 mg. May repeat once after 20 min.
✱ Beta-Blocker Overdose: 2-5 mg. May repeat at 10 mg if **Bradycardia** and hypotension recur.

Pediatric dosage:
✱ **Hypoglycemia**: 0.5 mg. May repeat once after 20 min.
✱ Beta-Blocker Overdose: 30-150 mcg/kg (max 5 mg).

Precautions:
✱ May cause severe rebound **hyperglycemia**.

Side effects:
✱ Hypotension. **Nausea/vomiting**. Uticaria. Respiratory distress. **Tachycardia**.

Antidote:
✱

Citations:

Section 7-250 - Glucose

Scope of Practice: ✱ ☐ EMD ✱ ☐ EMR ✱ ☑ EMT ✱ ☑ AEMT ✱ ☑ RN/Paramedic *Class*: ✱ Carbohydrate. *Action*: ✱ Elevates blood sugar levels. *Route*: ✱ PO.	*Half-Life*: ✱ *Contraindications*: ✱ Patients with altered level of consciousness that cannot protect Airway.

Indications:
Protocol 4-120 - Hypoglycemia ..... page 52

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference. *Dosage:* ✱ 15 g.	*Precautions*: ✱ If alcohol abuse is suspected, then Glucose should be given after 100mg of **Thiamine** is administered. *Side effects*: ✱ None. *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: ✱ ☐ EMD ✱ ☐ EMR ✱ ☐ EMT ✱ ☐ AEMT ✱ ☑ RN/Paramedic *Class*: ✱ Antipsychotic. *Action*: ✱ Competitive postsynaptic **Dopamine** receptor blocker. *Route*: ✱ **IV**/IM/**IO**.	*Half-Life*: ✱ 10-30 hours. *Contraindications*: ✱ Parkinson's disease. ✱ Severe CNS depression. ✱ Comatose states.

Indications:
Protocol 4-040 - Behavioral (Agitation) (Aggressive behavior) ..... page 38

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference. *Adult dosage:* ✱ Mild agitation: 2-5 mg. ✱ Moderate to severe agitation: 5 mg. *Pediatric dosage:* ✱ Not recommended.	*Precautions*: ✱ Severe Cardiovascular disorders due to possible hypotension. If vasopressor is needed, use norEpinephrine. ✱ May prolong QT interval. 12-lead is indicated after administration. *Side effects*: ✱ 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 107). *Antidote*: ✱

Citations: (CredibleMeds, 2015)

Section 7-270 - Heparin

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

Class:
- ✱ Anticoagulant.

Action:
- ✱ Inhibition of Thrombin. Acts on antithrombin III to reduce ability to clot.

Route:
- ✱ **IV**.

Half-Life:
- ✱ 1.5 hours.

Contraindications:
- ✱ Previously given low molecular weight Heparin.
- ✱ Dissecting thoracic aortic aneurysm.
- ✱ Peptic ulceration.

Indications:
Protocol 2-050 - Chest Discomfort (New Chest Pain suggestive of an acute myocardial infarction) ..... page 17

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
- ✱ 60 u/kg followed by 12 u/kg/hr (max 4,000 u bolus and 1,000 u/hr).

Pediatric dosage:
- ✱ Not indicated.

Precautions:
- ✱ Oral anticoagulants.

Side effects:
- ✱ Bleeding.

Antidote:
- ✱ Protamine sulfate.

Citations:

Section 7-280 - Hydralazine (Apresoline)

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

Class:
✱ Vasodilator.

Action:
✱ Directly dilates peripheral blood vessels.

Route:
✱ **IV**/**IO**/IM.

Half-Life:
✱ 2-8 hours.

Contraindications:
✱ Taking diazoxide or MAOIs.
✱ Coronary artery disease.
✱ **Stroke**.
✱ Angina
✱ Aortic aneurysm.
✱ Heart disease.

Indications:
Protocol 4-110 - Hypertension (Hypertensive crisis or associated with preeclampsia and eclampsia)..... page 50

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
✱ Preeclampsia and eclampsia: 5-10 mg. Repeat every 20-30 min until SBP less than 105.
✱ **Hypertension**: 10-20 mg.

Pediatric dosage:
✱ **Hypertension**: 0.1-0.2 mg/kg (max 20 mg).

Precautions:
✱ May cause reflex **Tachycardia**.

Side effects:
✱ Headache, angina, flushing, palpitations, **Tachycardia**, anorexia, **Nausea, vomiting**, diarrhea, hypotension, syncope, vasodilation, edema, paresthesias.

Antidote:
✱

Citations:

Section 7-300 - Ibuprofen (Advil, Pediaprofen)

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

Class:
- ✱ NSAID.

Action:
- ✱ Inhibits cyclooxygenase and lipoxygenase and reduces prostaglandin synthesis.

Route:
- ✱ PO.

Half-Life:
- ✱ 1.8-2 hours.

Contraindications:
- ✱ ASA/NSAID induced **Asthma**.
- ✱ History of GI bleeds.
- ✱ Renal insufficiency.

Indications:

Protocol 4-100 - Fever (Fever greater than 102 degrees F)..... page 49
Section 7-010 - Acetaminophen (Tylenol) (Acetaminophen has been ineffective or given within last 4hrs)..... page 99

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
- ✱ 200-400 mg every 4-6 hrs.

Pediatric dosage:
- ✱ 10 mg/kg.

Precautions:
- ✱ Caution in **Hypertension**, **CHF**. Avoid in patients currently taking anticoagulants such as Coumadin.

Side effects:
- ✱ **Anaphylaxis**, **Abdominal Pain**, **Nausea**, Headache, dizziness, rash.

Antidote:
- ✱

Citations: (Cox Paramedics, 2014)

Section 7-330 - Ketamine (Ketalar)

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

Class:
✱ Dissociative anesthetic. NMDA receptor antagonist.

Action:
✱ 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.

Route:
✱ **IV**/**IO**/IM.

Half-Life:
✱ 2.5-3 hours.

Contraindications:
✱ Hypersensitivity.

Indications:
Protocol 4-040 - Behavioral ..... page 38
Protocol 6-050 - Control of Pain (Pain and anesthesia for procedures of short duration) ..... page 77
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) ..... page 89

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Analgesic dosage:
✱ **IV**/**IO**: 0.1-0.2 mg/kg.
✱ IM: 0.8-1.0 mg/kg.

Dissociative dosage:
✱ **IV**/**IO**: 1-2 mg/kg. Produces dissociation within 30 sec lasting 5-10 min.
✱ IM: 4-5 mg/kg. Produces dissociation within 3-4 min lasting 12-25 min.

Over 65 yr old: Half doses above.

Precautions:
✱ Use caution in patients where significant **hypertension** would be hazardous (i.e. **stroke**, head trauma, ICP, MI).
✱ Glaucoma, hypovolemia, dehydration, cardiac disease.

Side effects:
✱ 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:
- ☐ EMD
- ☐ EMR
- ☐ EMT
- ☐ AEMT
- ☑ RN/Paramedic

Class:
- Antihypertensive.

Action:
- 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.

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

Half-Life:
- 5.5 hours.

Contraindications:
- Bronchial **Asthma**.
- Heart block.
- Cardiogenic shock.
- **Bradycardia**.
- Hypotension.
- Pulmonary edema.
- Heart failure.
- Sick Sinus Syndrome.

Indications:
Protocol 4-110 - Hypertension ..... page 50

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
- 20 mg over 2 min while patient is supine.

Pediatric dosage:
- 0.4-1 mg/kg/hr (max 3 mg/kg/hr).

Precautions:
- Blood pressure should be constantly monitored. Cannot give at the same time with Lasix.

Side effects:
- Dizziness, flushing, **Nausea**, Headaches, weakness, postural hypotension. Hypotension, **vomiting**, bronchospasm, arrhythmia, **Bradycardia**, AV block.

Antidote:
- **Section 7-200 - Epinephrine 1:10,000** (page 117).
-
-
- **Section 7-240** - Glucagon (page 121).

Citations:

Section 7-350 - Lactated Ringers (LR)

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

Class:
✱ Crystalloid solution.

Action:
✱

Route:
✱ **IV**/**IO**.

Half-Life:
✱

Contraindications:
✱ None.

Indications:

Protocol 3-020 - Hyperthermia ..... page 32
Protocol 5-020 - Abdominal Trauma ..... page 61
Protocol 5-030 - Burns ..... page 62
Protocol 5-040 - Chest Trauma ..... page 63
Protocol 5-050 - Extremity Trauma ..... page 64
Protocol 5-080 - Spinal Trauma ..... page 67
Protocol 5-090 - Trauma Arrest ..... page 69
Protocol 6-040 - Control of Nausea ..... page 76
Protocol 6-050 - Control of Pain ..... page 77
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) ..... page 89

Section 7-470 - Oxytocin (Pitocin) ..... page 139

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
✱ 500-1,000 ml for volume replacement.

Pediatric dosage:
✱ 20 ml/kg for volume replacement (max x3).

Precautions:
✱ NA.

Side effects:
✱ Pulmonary Edema.

Antidote:
✱

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

Section 7-370 - Lidocaine (Xylocaine)

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

Class:
- Antiarrhythmic.

Action:
- Blocks sodium channels, increasing recovery period after repolarization. Suppresses automaticity in the His-Purkinje system and depolarization in the ventricles.

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

Half-Life:
- 1.5-2 hours.

Contraindications:
- High degree heart blocks.
- PVCs in conjunction with **Bradycardia**.
- Bleeding.

Indications:

Protocol 2-100 - Tachycardia Wide Stable ..... page 24
Protocol 2-130 - Ventricular Ectopy (Ventricular arrhythmias when **Amiodarone** is not available) ..... page 27
Protocol 2-140 - Ventricular Fibrillation (V-Fib or V-Tach) (Cardiac Arrest from VF/VT) ..... page 28
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR) ..... page 74
Section 8-135 - Intraosseous (IO) Needle ..... page 169

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
- Pulseless VT/VF: 1-1.5 mg/kg repeat at 0.5-0.75 mg/kg every 5-10 min (max 3 mg/kg).
- Post-code: 1-4 mg/min (max 300 mg/hr).
- Arrhythmias: 0.5-0.75 mg/kg. Maintain at 1-4 mg/min.

Pediatric dosage:
- Pulseless VT/VF: 1 mg/kg (max 100 mg).
- Post-code: 20-50 mcg/kg/min.
- Arrhythmias: 1 mg/kg. Maintain at 20-50 mcg/min.

Precautions:
- 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.

Side effects:
- **Anxiety**, drowsiness, dizziness, confusion, **Nausea, vomiting**, convulsions, widening of QRS. Arrhythmias, hypotension.

Antidote:
-

Citations:

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:
- ☐ EMD
- ☐ EMR
- ☐ EMT
- ☐ AEMT
- ☑ RN/Paramedic

Class:
- Anticonvulsant. Smooth muscle relaxer.

Action:
- CNS depressant. Cofactor in neurochemical transmission and muscular excitability. Controls **Seizure** by blocking peripheral neuromuscular transmission. Peripheral vasodilator and platelet inhibitor.

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

Half-Life:
-

Contraindications:
- Heart block.
- Recent MI.
- Renal insufficiency or renal failure.
- GI obstruction.

Indications:
Protocol 2-100 - Tachycardia Wide Stable ..... page 24
Protocol 2-110 - Tachycardia Wide Unstable ..... page 25
Protocol 2-120 - Torsades de Pointes ..... page 26
Protocol 2-140 - Ventricular Fibrillation (V-Fib or V-Tach) (Refractory V-Fib/ V-Tach) ..... page 28
Protocol 4-030 - Asthma ..... page 37
Protocol 4-060 - Chronic Obstructive Pulmonary Disease (COPD) ..... page 44
Protocol 4-110 - Hypertension (Eclampsia) ..... page 50

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
- **Torsades de Pointes**: 1-2 g over 15 min. Followed with 0.5-1 g/hr.
- Eclampsia: 4-6 g over 30 min. Followed by 1-2 g/hr.
- **Status Asthmaticus**: 2 g over 20 min.

Pediatric dosage:
- **Torsades de Pointes**: 25-50 mg/kg over 15 min (max 2 g).
- **Status Asthmaticus**: 25-50 mg/kg over 20 min (max 2 g).

Precautions:
- Digitalis. Hypotension. Magnesium toxicity.

Side effects:
- Respiratory depression. Drowsiness.

Antidote:
- **Section 7-100 - Calcium Chloride (Calciject)** (page 108).
-
-
- **Section 7-240** - Glucagon (page 121).

Citations: (Sanadi, 2017)

Section 7-390 - Morphine

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

Class:
✱ Opiate.

Action:
✱ 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.

Route:
✱ **IV**/**IO**/IM/SQ.

Half-Life:
✱ 1-2 min onset.
✱ 2-3 hours.

Contraindications:
✱ Head injury.
✱ Volume depletion.
✱ Undiagnosed **Abdominal Pain**.

Indications:
Protocol 2-050 - Chest Discomfort ..... page 17
Protocol 6-050 - Control of Pain ..... page 77

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
✱ 2-5 mg (max 10 mg).

Pediatric dosage:
✱ 0.1-0.2 mg/kg.

Precautions:
✱ May worsen **Bradycardia** and heart block in patients with acute inferior wall MI. Acute **Asthma**.

Side effects:
✱ 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 134).

DEA Number: 9300
Schedule: 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), (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:
- ☐ EMD
- ☐ EMR
- ☑ 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/Paramedic

Class:
- Narcotic antagonist.

Action:
- Binds to opiod receptor and blocks the effect of Narcotics.

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

Half-Life:
- 1-1.5 hours.

Contraindications:
- Hypersensitivity.

Indications:

Protocol 4-130 - Neonatal Resuscitation ..... page 53
Protocol 4-140 - Poisoning or Overdose (Narcotic Overdoses) ..... page 54
Can include: Darvon, Demerol, Dilaudid, **Fentanyl**, Heroin, Methadone, **Morphine**, Nubain, Paregoric, Percodan, Stadol, Talwin, Tylenol 3, Tylox.
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR) ..... page 74
Section 7-230 - Fentanyl (Sublimaze) (Overdose) ..... page 120
Section 7-390 - Morphine (Overdose) ..... page 133

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
- 0.4 mg (max 2 mg).

Pediatric dosage:
- 0.1 mg/kg.

Precautions:
- May cause withdrawal 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.

Side effects:
- **Nausea, vomiting**, restlessness, diaphoresis, **Tachycardia**, **Hypertension**, tremulousness, **Seizure**, cardiac Arrest, withdrawal.

Antidote:
-

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

Section 7-410 - Neo-Synephrine (Phenylephrine)

Scope of Practice: ✱ ☐ EMD ✱ ☐ EMR ✱ ☐ EMT ✱ ☐ AEMT ✱ ☑ RN/Paramedic *Class*: ✱ Vasoconstrictor (alpha). *Action*: ✱ Topical vasoconstriction. *Route*: ✱ Topical.	*Half-Life*: ✱ 2.1-3.4 hours. *Contraindications*: ✱ **Hypertension**. ✱ Thyroid disease.

Indications:
Section 8-080 - Endotracheal Tube (ET) (Premedication for nasal **Intubation** to prevent epistaxis)..... page 164

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference. *Dosage:* ✱ 2 sprays in each nare 1-2 min prior to **Intubation**.	*Precautions*: ✱ Enlarged prostate with dysuria. *Side effects*: ✱ Nasal burning, stinging, sneezing, or increased nasal discharge. *Antidote*: ✱

Citations:

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

Scope of Practice:
- ☐ EMD
- ☐ EMR
- ☐ EMT
- ☑ AEMT - Only SL for **chest discomfort** after **IV** access.
- ☑ RN/Paramedic

Class:
- Nitrate vasodilator.

Action:
- Smooth muscle relaxant. Dilates coronary and systemic arteries.

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

Half-Life:
- 3 minutes.

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)

Indications:
Protocol 2-050 - Chest Discomfort (Unstable angina) ..... page 17
Protocol 4-070 - Congestive Heart Failure (CHF) (Acute CHF secondary to AMI) ..... page 45
Protocol 4-110 - Hypertension ..... page 50

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
- **Chest discomfort** (SL): 0.4 mg - 1 tablet or 1 spray every 5 min until no **Pain/discomfort** or SBP less than 90.
- **CHF** (SL): 0.4-0.8 mg every 3-5 min until no dyspnea or SBP less than 90.

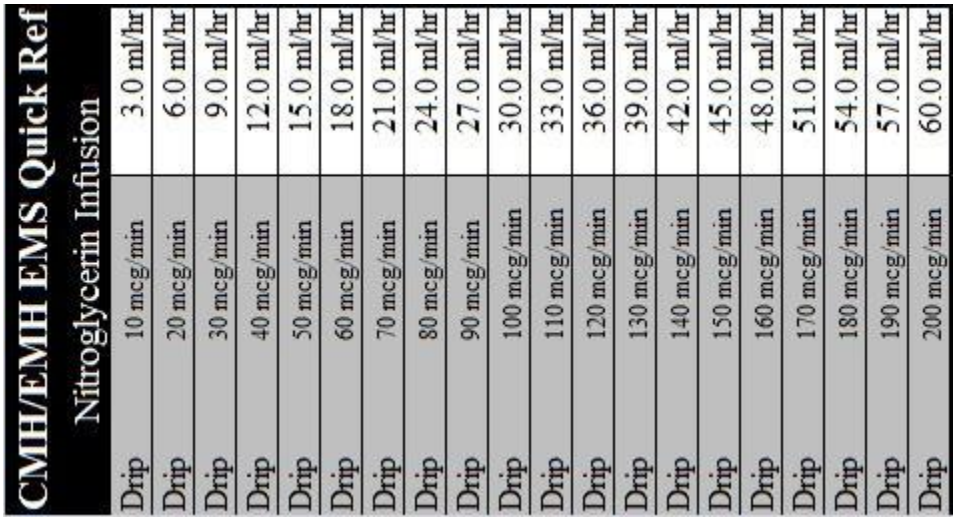
Pediatric dosage:
- Not indicated.

Precautions:
- 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. Syncope. Drug must be protected from light. Expires quickly once bottle is opened.

Side effects:
- Headache, dizziness, hypotension. **Bradycardia**, lightheadedness, flushing.

Antidote:
-

Citations: (Clemency, Thompson, Tundo, & Lindstrom, 2013), (NASEMSO Medical Directors Council, 2017)



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

Scope of Practice: ✱ ☐ EMD ✱ ☑ EMR - Only topical as wound irrigation. ✱ ☑ EMT - Only topical as wound irrigation. ✱ ☑ AEMT ✱ ☑ RN/Paramedic *Class*: ✱ Crystalloid solution. *Action*: ✱ NA. *Route*: ✱ **IV**/**IO**/topical.	*Half-Life*: ✱ *Contraindications*: ✱ NA.

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

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference. *Adult dosage:* ✱ **IV**/**IO**: 250-500 ml. ✱ Topical: 1,000 ml. *Pediatric dosage:* ✱ **IV**/**IO**: 20 ml/kg (max x3). ✱ Topical: 500-1,000 ml.	*Precautions*: ✱ NA. *Side effects*: ✱ **IV**: Pulmonary edema. *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), (Laszlo, et al., 2006), (Phillips, et al., 2009), (Schott, 2010), (Todd & Malinoski, 2007)

Section 7-460 - Oxygen

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

Class:
- Gas.

Action:
- Necessary for aerobic cellular metabolism.

Route:
- Inhalation.

Half-Life:
-

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

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).

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Dosage:
- Titrate administration to SpO_2:

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

Precautions:
- 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.
- 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.

Side effects:
- Drying of mucous membranes.

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), (Citizens Memorial Hospital, 2013), (Sheppard, 2013)

Section 7-470 - Oxytocin (Pitocin)

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

Class:
- Hormone.

Action:
- Causes uterine contraction. Causes lactation. Slows postpartum Vaginal bleeding.

Route:
- **IV**.

Half-Life:
- 1-6 minutes.

Contraindications:
- Any condition other than postpartum bleeding.
- Cesarean section.

Indications:
Protocol 4-180 - Vaginal Bleeding (Postpartum Vaginal bleeding)..... page 59

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
- 10-20 u in 1000 ml **LR**.

Pediatric dosage:
- Not indicated.

Precautions:
- Essential to assure that the placenta has delivered and that there is not another fetus present before administering. Overdosage can cause uterine rupture. **Hypertension**.
- May prolong QT interval. 12-lead is indicated after administration.

Side effects:
- **Anaphylaxis**. Cardiac arrhythmias.

Antidote:
-

Citations:

Section 7-480 - Phenergan (Promethazine)

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

Class:
✱ Anti-emetic.

Action:
✱ Decreases **Nausea and vomiting** by antagonizing H1 receptors.

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

Half-Life:
✱ 16-19 hours.

Contraindications:
✱ ALOC.
✱ Jaundice.

Indications:
Protocol 6-040 - Control of Nausea ..... page 76

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
✱ 12.5-25 mg.

Pediatric dosage:
✱ 0.25-1 mg/kg.
  ✱ less than 2 yr old: Contraindicated.
  ✱ greater than 27 kg: Use adult dose.

Precautions:
✱ **Seizure disorder**.
✱ May prolong QT interval. 12-lead is indicated after administration.

Side effects:
✱ 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 107).

Antidote:
✱

Citations:

Section 7-520 - Rocuronium (Zemuron)

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

Class:
- Non-depolarizing neuromuscular blockade.

Action:
- Binds to post-synaptic muscle receptor sites. Antagonizes acetylcholine at the motor end plate, producing skeletal muscle paralysis.

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

Half-Life:
- 66-80 minutes.

Contraindications:
- Unable to **Ventilate** the patient.
- Sensitivity to bromides.

Indications:
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) ..... page 89

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Rapid dosage:
- 1.2 mg/kg.

Delayed dosage:
- 0.1 mg/kg.

Precautions:
- Patient will be paralyzed for up to 30min. Heart disease. Liver disease.

Side effects:
- Muscle paralysis, apnea, dyspnea, respiratory depression, **Tachycardia**, uticaria.

Antidote:
-

Citations: (Swaminathan, 2014)

Section 7-530 - Sodium Bicarbonate (Soda)

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

Class:
✱ Alkalinizing agent.

Action:
✱ Combines with excessive acids to form a weak volatile acid. Increases pH.

Route:
✱ **IV**/**IO**.

Half-Life:
✱

Contraindications:
✱ Alkalotic states.

Indications:

Protocol 2-010 - Asystole (Late in management of cardiac Arrest) ..... page 13
Protocol 2-070 - Pulseless Electrical Activity (PEA) (Late in management of cardiac Arrest) ..... page 21
Protocol 2-140 - Ventricular Fibrillation (V-Fib or V-Tach) (Late in management of cardiac Arrest) ..... page 28
Protocol 4-140 - Poisoning or Overdose ..... page 54
Protocol 5-050 - Extremity Trauma ..... page 64
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR) (Late in management of cardiac Arrest) ..... page 74

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Dosage:
✱ 1 mEq/kg followed by 0.5 mEq/kg every 10 min as indicated.

Precautions:
✱ Correct dosage is essential. Can deactivate catecholamines. Can precipitate with **Calcium**. Delivers large sodium load. Can worsen acidosis if not **intubated** and adequately **Ventilated**.

Side effects:
✱ Alkalosis. Hypernatremia, fluid retention, peripheral edema.

Antidote:
✱

Citations:

Section 7-540 - Solu-Medrol (Methylprednisolone)

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

Class:
✱ Corticosteriod.

Action:
✱ Anti-inflammatory. Immune suppressant.

Route:
✱ **IV**/**IO**/IM.

Half-Life:
✱ 18-26 hours.

Contraindications:
✱ None in emergency setting.
✱ Cushing's syndrome.
✱ Fungal infection.
✱ Measles.
✱ Varicella.

Indications:
Protocol 4-020 - Anaphylaxis..... page 36
Protocol 4-030 - Asthma..... page 37
Protocol 4-060 - Chronic Obstructive Pulmonary Disease (COPD)..... page 44
Protocol 4-080 - Croup..... page 46

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
✱ 125-250 mg.

Pediatric dosage:
✱ 1-2 mg/kg.

Precautions:
✱ Must be reconstituted and used properly. Onset of action may be 2-5hrs. Active infections, renal disease, penetrating spinal cord injury, **Hypertension**, **Seizure**, **CHF**.

Side effects:
✱ GI bleeding. Prolonged wound healing. Suppression of natural steroids. Depression, euphoria, Headache, restlessness, **Hypertension**, **Bradycardia**, **Nausea, vomiting**, swelling, diarrhea, weakness.

Antidote:
✱

Citations:

Section 7-560 - Tetracaine

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

Class:
✱ Anesthetic.

Action:
✱ Local anesthesia.

Route:
✱ Topical.

Half-Life:
✱ 1.8 hours.

Contraindications:
✱ Hypersensitivity.

Indications:
Protocol 5-060 - Eye Injury (Need for Eye irrigation) ..... page 65
Section 8-210 - Morgan Lens ..... page 184

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Dosage:
✱ 1-2 drops per Eye (max 2 drops)

Precautions:
✱ Patient will be unaware of objects touching their Eye. Be careful to protect the Eye from foreign debris and from the patient rubbing eyes.

Side effects:
✱ Burning, conjunctival redness, photophobia, lacrimation.

Antidote:
✱

Citations:

Section 7-570 - Thiamine (Vitamin B1)

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

Class:
- Vitamin.

Action:
- 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**.

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

Half-Life:
-

Contraindications:
- Known sensitivity.

Indications:
Protocol 4-120 - Hypoglycemia (Coma of unknown origin) ..... page 52
Section 7-150 - Dextrose (precedes **Dextrose** with suspected alcohol abuse or malnutrition) ..... page 112

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
- 100 mg IM or 100 mg **IV** in **NS** over 15-30 min.

Pediatric dosage:
- Not recommended.

Precautions:
- Rare **anaphylactic** reactions.

Side effects:
- Itching, rash.

Antidote:
-

Citations: (Cox Paramedics, 2014)

Section 7-575 - Toradol (Ketorolac)

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

Class:
- Non-Steroidal Anti-Inflamatory (NSAID).

Action:
- Inhibit prostaglandin synthesis by decreasing the activity of the enzyme, cyclooxygenase, which results in decreased formation of prostaglandin precursors.

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

Half-Life:
- 2.5-6 hours.

Contraindications:
- **Pregnant or nursing women.**
- Allergies to **Aspirin**, Motrin, or NSAIDs.
- Advanced renal impairment.
- Suspected **CVA**.
- GI bleeds.
- Peptic ulcers.
- Surgical candidates.

Indications:
Protocol 6-050 - Control of Pain (Acute exacerbation of chronic Pain) ..... page 77

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
- 30 mg **IV**/**IO** or 60 mg IM.
  - greater than 65 yr old: half the above dosage due to kidney dysfunction.

Pediatric dosage:
- Contraindicated

Precautions:
- Toradol inhibits platelet function. Hypersensitivity reactions have occurred (bronchospasm and **Anaphylaxis**). Avoid in patients currently taking anticoagulants such as Coumadin.

Side effects:
- Can cause peptic ulcers, gastrointestinal bleeding and/or perforation. May adversely affect fetal circulation and the uterus.

Antidote:
-

Citations: (Cox Paramedics, 2014), (McAuley, 2014)

Section 7-578 - TXA (Tranexamic Acid)

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

Class:
- Antifibrinolytic

Action:
- Synthetic derivative of the amino acid lysine that inhibits fibrinolysis by blocking the lysine binding sites on plasminogen.

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

Half-Life:
- 2 hours.

Contraindications:
- Age less than 16.
- Renal failure.
- Hypersensitivity.
- History of thromboembolism.
- Known subarachnoid aneurism.
- Injury greater than three (3) hours old.
- Isolated head injury.
- Colorblindness.

Indications:

Protocol 4-180 - Vaginal Bleeding ..... page 59
Protocol 5-020 - Abdominal Trauma ..... page 61
Protocol 5-040 - Chest Trauma ..... page 63
Protocol 5-050 - Extremity Trauma ..... page 64
Protocol 6-085 - High-Threat Response ..... page 82

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
- Reconstitute 1 gram in 100 ml **NS** and infuse over 10 min. Can be piggybacked into **LR**.

Pediatric dosage:
- 16-18 yr old: 15 mg/kg in 100 ml **NS** and infuse over 10 min (max 1 g).
- Contraindicated less than 16 yrs old.

Precautions:
- **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.

Side effects:
- 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 7-600 - Versed (Midazolam)

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

Class:
- Benzodiazepine.

Action:
- Sedative, anxiolytic, amnesic (2-3x more potent than Valium). Binds to benzodiazepine receptor and enhances effects of GABA.

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

Half-Life:
- 1.8-6.4 hours.

Contraindications:
- Hypotension.
- Pregnancy.
- Acute-angle glaucoma.

Indications:

Protocol 4-140 - Poisoning or Overdose ..... page 54
Protocol 4-170 - Seizures ..... page 57
Protocol 6-050 - Control of Pain ..... page 77
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) ..... page 89
Section 8-050 - Continuous Positive Airway Pressure (CPAP) ..... page 159
Section 8-080 - Endotracheal Tube (ET) (Endotracheal tube tolerance) ..... page 164
Section 8-160 - King LTSD Airway ..... page 173
Section 8-190 - LifePak ..... page 176

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
- 2.5-5 mg. Can be repeated once (max 10 mg).

Pediatric dosage:
- 12-18 yr old: Same as adult.
- 2 mo - 12 yr old: 0.15 mg/kg **IV**/**IO**.
- 1 mo - 12 yr old: 0.2 mg/kg **IN**.

Precautions:
- **COPD**, acute alcohol intoxication, Narcotics, barbiturates, elderly, neonates.

Side effects:
- Hypoventilation, respiratory depression, respiratory Arrest, hypotension, laryngospasm. **Nausea, vomiting**, Headache, hiccups, cardiac Arrest.

Antidote:
- Romazicon

DEA Number: 2884
Schedule: IV - Low potential for abuse.
Narcotic: No.

Street names:
- Dazzle.

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

Section 7-610 - Xopenex (Levalbuterol)

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

Class:
- Beta-2 Agonist.

Action:
- Beta-2 receptor agonist with some beta-1 activity.

Route:
- **Nebulized**.

Half-Life:
- 1.6 hours.

Contraindications:
- Hypersensitivity to levalbuterol or racemic **Albuterol**.

Indications:
Protocol 4-020 - Anaphylaxis..... page 36
Protocol 4-030 - Asthma..... page 37
Protocol 4-060 - Chronic Obstructive Pulmonary Disease (COPD)..... page 44
Protocol 4-070 - Congestive Heart Failure (CHF)..... page 45

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference.

Adult dosage:
- 0.63-1.25 mg.

Pediatric dosage:
- less than 6 yr old: not recommended.
- 6-12 yr old: 0.31 mg (max 0.63 mg).
- 12-18 yr old: 0.63-1.25 mg.

Precautions:
- Arrhythmias, **Hypertension**, paradoxical bronchospasm.

Side effects:
- Rhinitis, Headache, tremor, sinusitis, **Tachycardia**, nervousness, edema, **hyperglycemia**, hypokalemia.

Antidote:
-

Citations:

Section 7-620 - Zofran (Ondansetron)

Scope of Practice: ✱ ☐ EMD ✱ ☐ EMR ✱ ☐ EMT ✱ ☐ AEMT ✱ ☑ RN/Paramedic *Class*: ✱ Antiemetic. *Action*: ✱ Selective 5-HT receptor antagonist. *Route*: ✱ PO/**IV**/IM/**IN**.	*Half-Life*: ✱ 5.7 hours. *Contraindications*: ✱ Hypersensitivity.

Indications:

Protocol 2-050 - Chest Discomfort ..... page 17
Protocol 5-070 - Head Trauma ..... page 66
Protocol 6-040 - Control of Nausea ..... page 76

Note: Refer to protocols identified in indications section above or on-line **medical control** for specific dosages for age and condition. Below are only for generic reference. *Adult dosage:* ✱ 4 mg (max 8 mg). *Pediatric dosage:* ✱ 0.15 mg/kg. ✱ less than 2 yrs old: Contraindicated. ✱ greater than 27 kg: Use adult dose.	*Precautions*: ✱ May prolong QT interval. 12-lead is indicated after administration. *Side effects*: ✱ None. *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 97) 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

Cabinets:

14 Fr NG (1)
14 Fr **Suction** Cath (1)
15mmX22mm adapter (1)
16 Fr **Suction** Cath (1)
18 Fr NG (1)
50 PSI adapter for **CPAP** (1)
60 ml Toomey Syringe (1)
ABD Pads (4)
Ace Wrap 4" (2)
Aluminum Foil (1)
Battery size 9V (1)
Battery size C (2)
Bed Pans (2)
Blankets (6)
Blood Tubing (1)
Bougie (1)
Burn Sheets (2)
Burn Towels (2)
BVM, Adult (1)
BVM, Ped (1)
Celox Trauma Gauze (1)
Chux (4)
CO2 intubation adapter (2)
CO2 Nasal Cannula (4)
CO2/SpO2 monitor (1)
CO2/SpO2 monitor charger (1)
Coban (4)
Cold Pack (4)
Combo Pads, Adult (1)
Combo Pads, Ped (1)
Cot belt extensions (5)
CPAP Kit with Large mask (2)
CPAP mask medium(1)
CPAP mask small (1)
Cricothyrotomy kit (1)
Decompression Needle (1)
Doppler (1)
Doppler Gel (1)
EKG Patches (1 bag)
Emergency Blanket (2)
Emesis Bag (6)
Extra **cot** Belts: Complete (1 set)
Extra Med Box (1)
Extra Pillow (2)
Face Shields (4)
Fish Hook/Wire Cutter (1)
Glucometer
Glucometer Base Station
Hand Sanitizer (1)
Hot Pack (4)
Infant BVM (1)
IV Pump (1)
IVTray
Kerlix (6)
Kling 4" (6)
Lactated Ringers 1000ml (2)
Med Pack: Red (1)
Monitor Paper (1)
Morgan Lens (1 set)
Multi size BP Cuff Kit
N95 Mask (4)
Nasal Cannula, Adult (4)
Nebulizer Handhelds (4)
Nebulizer Mask, Adult (2)
Nebulizer Mask, Ped (2)
Non sterile 4X4
Normal Saline bottle (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)
Ped **ETCO2** Nasal Cannula (2)
Pediatric Bag Black (1)
Pediatric Bag Blue (1)
PediMate Plus (1)
Pillow Case (6)
Plastic Wrap (1)
Portable **Suction** Unit (1)
Port-A-Cath Kit (1)
PPE Gowns (4)
Primary **IV** tubing (6)
Pt belonging bags (6)
Pt Gowns (4)
Pump Tubing (2)
Razor (1)
Restraint (Blue) Wrist Set (1)
Restraint (Red) Ankle Set (1)
Sam Splint (2)
Sani Clothes Grey (1)
Sani Clothes Yellow (1)
Sharps Container (1)
Sheets (6)
Spare **Monitor** Batteries (2)
Spare **Suction** unit battery (1)
SPO2 finger wrap for Nelcor
Sterile 4X4 gauze sponges (6)
Sterile 4X4 tubs (4)
Sterile Water (2)
Suction Tubing & Canisters (2)
Surgilube (6)
Survival blanket (2)
Tape 1" (4 rolls)
Tape 2" (2 rolls)
Tape 3" (2 rolls)
Thermal blanket (2)
Thermometer (1)
Thermometer Covers Box (1)
Tourniquet (1)
Towels (6)
Trash Bag (6)
Trauma Dressing (2)
Triangular Bandages (2)
Urinal (2)
Vaseline Gauze (2)
Wash Cloth (6)
Yankauer Container (2)
Yankauer **Suction** (2)
Yankauer Tubing (2)

Cot:

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

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

Monitor:

BP Cuff (SM/RG/Long/XL)
BP Cuff Adaptor
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

Small Bag:

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

Big Bag:

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

Med Pack:

1 ml Syringe (1)
18ga needle (2)
22g Needle (1)
25g Needle (1)
3 ml Syringe (1)
3 way stop cock
5 ml Syringe (1)
Alcohol prep pads (10)
Filter Straw (2)
IV Saline Lock (2)
Smart tip (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
MFA Fuel card
Protocols
Triage Kit (2)
WEX Fuel Card

Triage Kit:

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

SMR Bag:

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

Outside Compartments:

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

Pediatric Bag:

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

Laryngoscope handle (1)
LMA Size 1 & 5ml syringe (1)
LMA Size 2 & 10ml syringe (1)
Mac Blade 0 (1)
Mac Blade 1 (1)
Mac Blade 2 (1)
Magill Forceps Child (1)
Miller Blade 0 (1)
Miller Blade 00 (1)
Miller Blade 1 (1)
Miller Blade 2 (1)
Normal Saline 1000ml (1)
OPA 40mm (1)
OPA 60mm (1)
OPA 70mm (1)
OPA 80mm (1)
Primary Tubing (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)

AccuCheck Kit:

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

OB Kit:

4X4 Sterile Tubs (2)
Bulb Syringe 2oz (1)
Disposable ½ Drape (3)
Drape with fluid collection (1)
ET 3.0 uncuffed (2)
Infant Bunting Blanket (1)
Meconium Aspirator 10 (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 (2)
Umbilical Cord Scissors (1)
Underpaid 17”x24” (1)
Vinyl Twist Tie (2)
White Professional Towel (2)

RSI Kit (in narcotic cabinet):

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

Section 8-010 - Automated External Defibrillator (AED)

*NOTE: When using **LifePak** in AED mode, use **Section 8-190 - LifePak** (page 176).

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 15
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR) ..... page 74

Procedure:

- Refer to **Protocol 2-030 - Automated External Defibrillation (AED)** (page 15) 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:	*Contraindications*:
✱ ☐ EMD ✱ ☐ EMR ✱ ☐ EMT ✱ ☐ AEMT ✱ ☑ RN/Paramedic *Precautions:* ✱ Avoid venipuncure in arms with dialysis shunts or injuries proximal to insertion site.	✱ None.

Indications:
Section 8-140 - Intravascular (IV) Needle ..... page 170

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.
- ✱ 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.

Citations: (Citizens Memorial Hospital, 2013)

Section 8-030 - Bougie

Scope of Practice:	*Contraindications*:
✱ ☐ EMD ✱ ☐ EMR ✱ ☐ EMT ✱ ☐ AEMT ✱ ☑ RN/Paramedic *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 89
Section 8-070 - Cricothyrotomy Kit ..... page 162

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*:
✱ ☐ 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.	✱ 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*:
✱ ☐ EMD ✱ ☑ EMR ✱ ☑ EMT ✱ ☑ AEMT ✱ ☑ RN/Paramedic *Precautions:* ✱	✱ Patient is too large for the device to be secured.

Indications:
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR) ..... page 74

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:
- ☐ EMD
- ☐ EMR
- ☐ EMT
- ☐ AEMT
- ☑ RN/Paramedic

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:
Protocol 3-010 - Drowning (Near Drowning - awake and alert) ..... page 31
Protocol 4-030 - Asthma (Consider trial prior to **Intubation** of severe Asthma patient) ..... page 37
Protocol 4-060 - Chronic Obstructive Pulmonary Disease (COPD) ..... page 44
Protocol 4-070 - Congestive Heart Failure (CHF) (Pulmonary edema) ..... page 45
Protocol 5-040 - Chest Trauma (Pulmonary contusion or Flail Chest) ..... page 63

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:
- ☐ EMD
- ☑ EMR
- ☑ EMT
- ☑ AEMT
- ☑ RN/Paramedic

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:
- ✱ ☐ EMD
- ✱ ☐ EMR
- ✱ ☐ EMT
- ✱ ☐ AEMT
- ✱ ☑ RN/Paramedic

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 89

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:	*Contraindications*:
✱ ☐ EMD ✱ ☐ EMR ✱ ☐ EMT ✱ ☐ AEMT ✱ ☑ RN/Paramedic *Precautions:* ✱ Complications may include laceration of intercostals vessels, creation of **pneumothorax**, laceration of lung tissue, and risk of infection.	✱ None in presence of **tension pneumothorax**.

Indications:
Protocol 5-040 - Chest Trauma (Absent lung sounds on affected side with respiratory distress) ..... page 63
Protocol 6-085 - High-Threat Response ..... page 82

Turkel Procedure:
✱ Identify second intercostal space, midclavicular line, on affected side.
✱ Clean area with antiseptic.
✱ Insert Turkel into skin over just over superior border of third rib.
✱ Insert catheter through 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:
✱ Identify second or third intercostal space, midclavicular line, on affected side.
✱ Clean area with antiseptic.
✱ Insert Jelco into skin over just over superior border of third rib.
✱ Insert catheter through 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:

Section 8-080 - Endotracheal Tube (ET)

Scope of Practice:	*Contraindications*:
✱ ☐ EMD ✱ ☐ EMR ✱ ☐ EMT ✱ ☐ AEMT ✱ ☑ RN/Paramedic *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 82
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) (Need for definitive Airway)..... page 89

Procedure:

✱ **Hyperventilate** with **BVM** and basic adjunct.
✱ Assemble, check, and prepare equipment.
✱ Consider **Neo-Synephrine** 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*:
✱ ☐ EMD ✱ ☐ EMR ✱ ☐ EMT ✱ ☐ AEMT ✱ ☑ RN/Paramedic *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 89
Section 8-080 - Endotracheal Tube (ET) (Evacuation of air or fluids in stomach)..... page 164
Section 8-160 - King LTSD Airway (Evacuation of air or fluids in stomach)..... page 173
Section 8-170 - Laryngeal Mask Airway (LMA) Supreme ..... page 174

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:	*Contraindications*:
✱ ☐ EMD ✱ ☐ EMR ✱ ☑ EMT ✱ ☑ AEMT ✱ ☑ RN/Paramedic *Precautions:* ✱ Do not rely on readings of other entities or patient's own Glucometer.	✱ None.

Indications:

Protocol 4-050 - Cerebrovascular Accident (CVA) or Stroke (Any patient that presents with ALOC)..... page 39
Protocol 4-115 - Hyperglycemia (Any patient that presents with ALOC) ..... page 51
Protocol 4-120 - Hypoglycemia (Any patient that presents with ALOC)..... page 52
Protocol 4-140 - Poisoning or Overdose (Any patient that presents with ALOC)..... page 54
Protocol 4-170 - Seizures (Any patient that presents with ALOC) ..... page 57
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)..... page 74

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:

Section 8-125 - Hemostatic Agent

Scope of Practice:	*Contraindications*:
✱ ☐ EMD ✱ ☑ EMR ✱ ☑ EMT ✱ ☑ AEMT ✱ ☑ RN/Paramedic *Precautions:* ✱ None.	✱ None.

Indications:

Protocol 1-020 - General Assessment and Treatment - Trauma ..... page 10
Protocol 6-085 - High-Threat Response..... page 82

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:
- ☐ EMD
- ☑ 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/Paramedic

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.

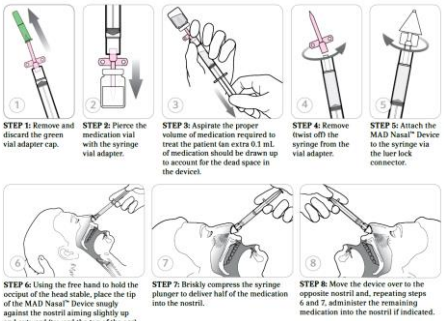
Contraindications:
- If **IV** access can be obtained, **IV** is preferred medication route.

Indications:
Medication administration without **IV** access.

Section 7-230 - Fentanyl (Sublimaze) ..... page 120
Section 7-400 - Narcan (Naloxone) ..... page 134
Section 7-600 - Versed (Midazolam) ..... page 148
Section 7-620 - Zofran (Ondansetron) ..... page 150

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:
- ☐ EMD
- ☐ EMR
- ☐ EMT
- ☐ AEMT
- ☑ RN/Paramedic

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

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

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

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

Citations: (Vidacare Corporation, 2009)

Section 8-140 - Intravascular (IV) Needle

Scope of Practice:	*Contraindications*:
✱ ☐ EMD ✱ ☐ EMR ✱ ☐ EMT ✱ ☑ AEMT ✱ ☑ RN/Paramedic *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*:
✱ ☐ EMD ✱ ☐ EMR ✱ ☐ EMT ✱ ☐ AEMT ✱ ☑ RN/Paramedic *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:	*Contraindications*:
✱ ☐ EMD ✱ ☑ EMR ✱ ☑ EMT ✱ ☑ AEMT ✱ ☑ RN/Paramedic *Precautions:* ✱	✱ 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 192
Section 8-360 - Splint..... page 193

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:	*Contraindications*:
✱ ☐ EMD ✱ ☐ EMR ✱ ☑ EMT ✱ ☑ AEMT ✱ ☑ RN/Paramedic *Precautions:* ✱	✱ Airway **burns**. ✱ Responsive patient with intact gag reflex. ✱ Known esophageal disease. ✱ Caustic substance ingestion.

Indications:

Protocol 6-025 - Cardiopulmonary Resuscitation (CPR)..... page 74
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) ..... page 89
Section 8-080 - Endotracheal Tube (ET) (Considered alternate Airway to endotracheal tube)..... page 164

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*:
✱ ☐ EMD ✱ ☐ EMR ✱ ☑ EMT ✱ ☑ AEMT ✱ ☑ RN/Paramedic *Precautions:* ✱	✱ Swallow or gag reflex.

Indications:

Protocol 6-025 - Cardiopulmonary Resuscitation (CPR) ..... page 74
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) ..... page 89
Section 8-080 - Endotracheal Tube (ET) (Considered alternate Airway to endotracheal tube) ..... page 164

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*:
✱ ☐ EMD ✱ ☐ EMR ✱ ☐ EMT ✱ ☐ AEMT ✱ ☑ RN/Paramedic *Precautions:* ✱	✱

Indications:
Future location of video laryngoscope

Procedure:
✱

Citations:

Section 8-190 - LifePak

Automated External Defibrillation	*Contraindications*:
Scope of Practice: ✱ ☐ EMD ✱ ☐ EMR ✱ ☑ EMT ✱ ☑ AEMT ✱ ☑ RN/Paramedic *Precautions:* ✱ Exercise safety precautions.	✱ 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 15
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR) (Cardiac Arrest without ALS assistance)..... page 74
Section 8-010 - Automated External Defibrillator (AED) (Cardiac Arrest without ALS assistance)..... page 151

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:

Protocol 2-020 - Atrial Fibrillation (A-Fib) or Atrial Flutter ..... page 14
Protocol 2-040 - Bradycardia ..... page 16
Protocol 2-050 - Chest Discomfort (Suspected myocardial infarction) ..... page 17
Protocol 2-060 - Post Resuscitative Care ..... page 20
Protocol 2-080 - Tachycardia Narrow Stable ..... page 22
Protocol 2-090 - Tachycardia Narrow Unstable ..... page 23
Protocol 2-100 - Tachycardia Wide Stable ..... page 24
Protocol 2-110 - Tachycardia Wide Unstable ..... page 25
Protocol 2-120 - Torsades de Pointes ..... page 26
Protocol 2-130 - Ventricular Ectopy ..... page 27
Protocol 2-150 - Wolff-Parkinson-White (WPW) ..... page 29
Protocol 4-040 - Behavioral (Non-specific complaints) ..... page 38
Protocol 4-050 - Cerebrovascular Accident (CVA) or Stroke (Non-specific complaints) ..... page 39
Protocol 4-060 - Chronic Obstructive Pulmonary Disease (COPD) (Unexplained dyspnea) ..... page 44
Protocol 4-070 - Congestive Heart Failure (CHF) (Unexplained dyspnea) ..... page 45

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

Indications:

Protocol 2-030 - Automated External Defibrillation (AED) ..... page 15
Protocol 2-140 - Ventricular Fibrillation (V-Fib or V-Tach) ..... page 28
Protocol 3-010 - Drowning ..... page 31
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR) ..... page 74
Section 8-010 - Automated External Defibrillator (AED) ..... page 151

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

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:
Protocol 2-020 - Atrial Fibrillation (A-Fib) or Atrial Flutter ..... page 14
Protocol 2-080 - Tachycardia Narrow Stable ..... page 22
Protocol 2-090 - Tachycardia Narrow Unstable ..... page 23
Protocol 2-100 - Tachycardia Wide Stable ..... page 24
Protocol 2-110 - Tachycardia Wide Unstable ..... page 25
Protocol 2-120 - Torsades de Pointes ..... page 26

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 13
Protocol 2-040 - Bradycardia ..... page 16
Protocol 2-070 - Pulseless Electrical Activity (PEA) ..... page 21
Protocol 6-025 - Cardiopulmonary Resuscitation (CPR) ..... page 74

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

Citations:

Section 8-200 - Meconium Aspirator

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

Indications:
Protocol 4-130 - Neonatal Resuscitation ..... page 53

Procedure:
✱

Citations:

Section 8-210 - Morgan Lens

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

Indications:
Protocol 5-060 - Eye Injury (need for Eye irrigation)..... page 65

Procedure:
✱ **Pain**: Consider topical anesthetic (**Tetracaine** 1-2 drops).
✱ Attach **NS** 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:

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

Scope of Practice:	*Contraindications*:
✱ ☐ EMD ✱ ☐ EMR ✱ ☑ EMT ✱ ☑ AEMT ✱ ☑ RN/Paramedic *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*:
✱ ☐ EMD ✱ ☐ EMR ✱ ☐ EMT ✱ ☑ AEMT - Only for beta agonists for dyspnea with **wheezing**. ✱ ☑ RN/Paramedic *Precautions:* ✱	✱

Indications:

Protocol 4-020 - Anaphylaxis ..... page 36
Protocol 4-030 - Asthma ..... page 37
Protocol 4-060 - Chronic Obstructive Pulmonary Disease (COPD) ..... page 44
Protocol 4-070 - Congestive Heart Failure (CHF) ..... page 45
Protocol 4-080 - Croup ..... page 46
Section 7-040 - Albuterol (Proventil, Ventolin) ..... page 102
Section 7-180 - Duoneb (Ipratropium and Albuterol, Combivent) ..... page 115
Section 7-210 - Epinephrine Racemic (Micronefrin) ..... page 118
Section 7-610 - Xopenex (Levalbuterol) ..... page 149

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:	*Contraindications*:
✱ ☐ EMD ✱ ☑ EMR ✱ ☑ EMT ✱ ☑ AEMT ✱ ☑ RN/Paramedic *Precautions:* ✱	✱ 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*:
✱ ☐ EMD ✱ ☐ EMR ✱ ☐ EMT ✱ ☐ AEMT ✱ ☑ RN/Paramedic *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 38

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*:
✱ ☐ EMD ✱ ☐ EMR ✱ ☐ EMT ✱ ☐ AEMT ✱ ☑ RN/Paramedic *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**. 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*:
✱ ☐ EMD ✱ ☐ EMR ✱ ☐ EMT ✱ ☐ AEMT ✱ ☑ RN/Paramedic *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**.
✱ 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:	*Contraindications*:
✱ ☐ EMD ✱ ☐ EMR ✱ ☐ EMT ✱ ☐ AEMT ✱ ☑ RN/Paramedic *Precautions:* ✱ Demand setting requires constant patient monitoring. If patient condition deteriorates, consider extubation and BVM.	✱ 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:
- ✱ ☐ EMD
- ✱ ☑ EMR
- ✱ ☑ EMT
- ✱ ☑ AEMT
- ✱ ☑ RN/Paramedic

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 10
Protocol 5-020 - Abdominal Trauma ..... page 1061
Protocol 5-040 - Chest Trauma ..... page 1063
Protocol 5-050 - Extremity Trauma ..... page 1064
Protocol 5-070 - Head Trauma ..... page 1066
Protocol 5-080 - Spinal Trauma ..... page 1067
Protocol 5-090 - Trauma Arrest ..... page 1069
Protocol 6-080 - Event Standby ..... page 1081

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:	*Contraindications*:
✱ ☐ EMD ✱ ☑ EMR ✱ ☑ EMT ✱ ☑ AEMT ✱ ☑ RN/Paramedic *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.	✱

Indications:
Protocol 5-050 - Extremity Trauma ..... page 64

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*:
✱ ☐ EMD ✱ ☑ EMR ✱ ☑ EMT ✱ ☑ AEMT ✱ ☑ RN/Paramedic *Precautions:* ✱	✱

Indications:
Section 8-060 - Cot..... page 160

Procedure:
✱

Citations:

Section 8-370 - Suction

Scope of Practice:	*Contraindications*:
✱ ☐ EMD ✱ ☑ EMR - Only upper airway. ✱ ☑ EMT - Only upper airway. ✱ ☑ AEMT - Only upper airway and tracheobronchial suctioning of already **intubated** patient. ✱ ☑ RN/Paramedic *Precautions:* ✱ Be sure to switch off as soon as possible to avoid shorting batteries.	✱

Indications:

Protocol 4-130 - Neonatal Resuscitation ..... page 53
Protocol 6-110 - Rapid/Delayed Sequence Intubation (RSI) ..... page 89

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:	*Contraindications*:
✱ ☐ EMD ✱ ☑ EMR ✱ ☑ EMT ✱ ☑ AEMT ✱ ☑ RN/Paramedic *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.	✱

Indications:
Protocol 1-010 - General Assessment and Treatment - Medical ..... page 9
Protocol 1-020 - General Assessment and Treatment - Trauma ..... page 10

Oral Temperature Procedure:

✱ Using Probe with Blue Ejection Button and Blue Probe Well

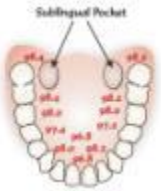
✱ When used correctly, the SureTemp Plus thermometer accurately measures an oral temperature in approximately 4–6 seconds. The ability of the SureTemp Plus thermometer to take an accurate oral temperature requires correct user technique.

✱ 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


Pediatric Axillary Mode Icon

- To ensure optimal accuracy, always confirm that the correct axillary mode is selected.
- After a temperature is taken and the probe is returned to the probe well, the instrument reverts to the original measurement site mode.
- Do not take an axillary temperature through patient's clothing. Direct contact between patient's skin and the probe is required.
- Load a probe cover by inserting the probe into a probe cover and pressing the probe handle down firmly. The probe handle will move slightly to engage the probe cover.
- Use only Welch Allyn probe covers. The use of other manufacturer's probe covers or no probe cover may produce temperature measurement errors and/or inaccuracy.
- With the correct axillary mode indicator flashing, lift the patient's arm so that the entire axilla is easily seen. Place the probe as high as possible in the axilla. Do not allow the probe tip to come into contact with the patient until the probe is placed in the measurement site. Before this, any contact between the probe tip and the tissue or other material may cause inaccurate readings.
- Verify that the probe tip is completely surrounded by axillary tissue and place the arm snugly at the patient's side. Hold the patient's arm in this position and do not allow movement of the arm or probe during the measurement cycle. Rotating "walking" segments appear on the display, indicating that measurement is in progress.
- The unit will beep three times when the final temperature is reached. The measurement site, temperature scale, and patient temperature will display on the LCD. The final temperature will remain on the display for 30 seconds.
- If you cannot correctly measure the patient's temperature in Normal Mode, the unit will automatically enter Monitor Mode. In this mode, measurement time is extended. Either repeat the temperature measurement in Normal Mode in the opposite axilla or keep the probe in place for five minutes in Monitor Mode. The thermometer will not beep to indicate a final temperature. Record the temperature before removing the probe from the site, as the temperature reading is not maintained in memory.

- Long-term continuous monitoring beyond five minutes is not recommended in the Axillary Mode.
- After the temperature measurement is complete, remove the probe from the patient's axilla. Eject the probe cover by firmly pressing the ejection button on the top of the probe.
- Return the probe to the probe well. The LCD display will go blank.
- Probe contact with electrodes, bandages, etc., poor tissue contact, taking a temperature over clothing, or prolonged exposure of axilla to ambient air can cause inaccurate temperature readings.

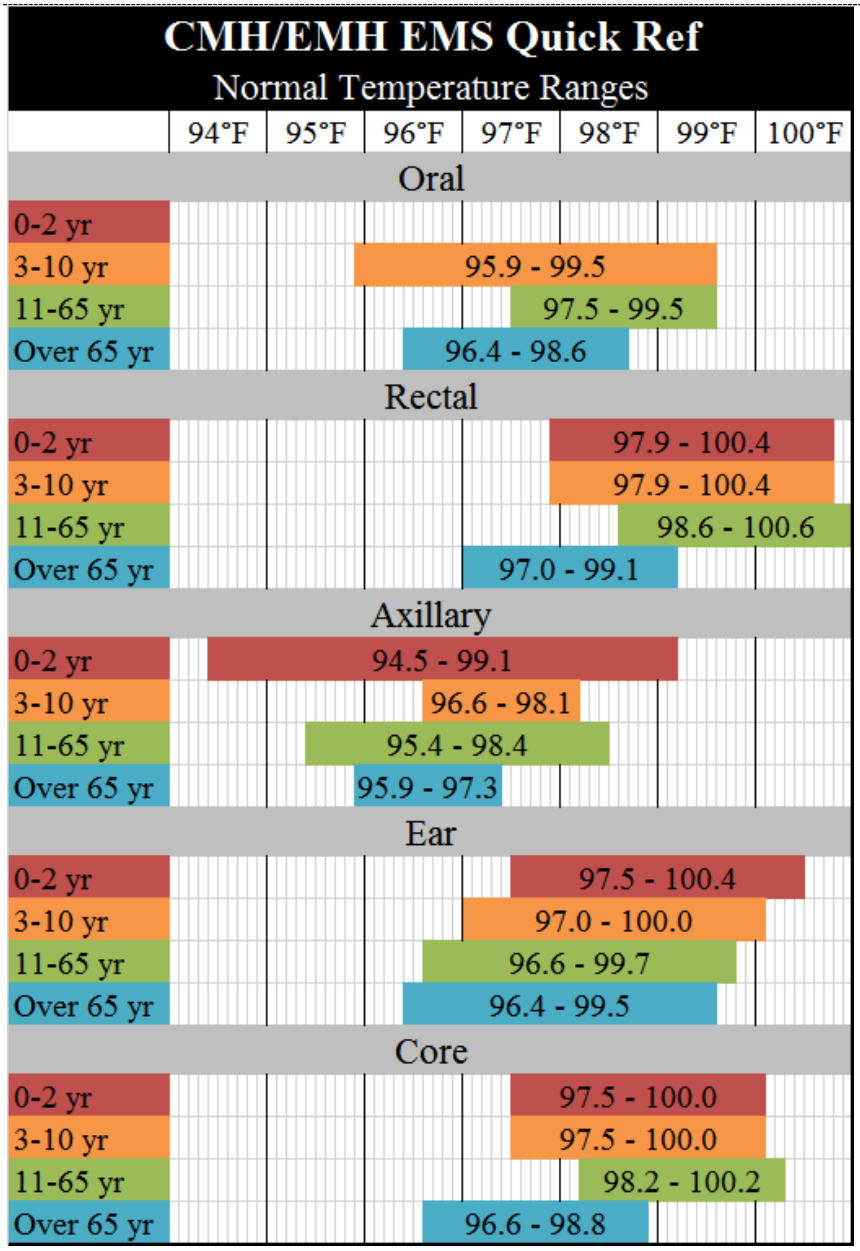
Rectal Temperature Procedure:

- Using Probe with Red Ejection Button and Red Probe Well
- When used correctly, the SureTemp Plus thermometer accurately measures rectal temperature in approximately 10–13 seconds.
- Ensure that the rectal probe (red ejection button) and the red probe well are installed. The instrument will only operate in Rectal Mode when the red rectal probe and probe well are installed.
- Holding the probe handle with your thumb and two fingers on the indentations of the probe handle, withdraw the probe from the probe well.
- Observe the flashing lower-body icon on the unit's display. Load a probe cover by inserting the probe into a probe cover and pressing the probe handle down firmly. The probe handle will move slightly to engage the probe cover.

- With the Rectal Mode indicator flashing, separate the patient's buttocks with one hand. Using the other hand, gently insert the probe only 1.5 cm (5/8 in.) inside the rectum (less for infants and children). The use of a lubricant is optional.
- Incorrect insertion of probe can cause bowel perforation.
- Tilt the probe so that the tip of the probe is in contact with tissue. Keep the hand separating the buttocks in place, and hold the probe in place throughout the measurement process. Rotating "walking" segments appear on the display, indicating that measurement is in progress.
- The unit will beep three times when the final temperature is reached. The measurement site, temperature scale, and patient temperature will display on the LCD. The final temperature will remain on the display for 30 seconds.
- If you cannot correctly measure the patient's temperature in Normal Mode, the unit will automatically enter Monitor Mode. In this mode, measurement time is extended. Either repeat the temperature measurement in Normal Mode or keep the probe in place for three minutes in Monitor Mode. The thermometer will not beep to indicate a final temperature. Record the temperature before removing the probe from the site, as the temperature reading is not maintained in memory.

- Long-term continuous monitoring beyond three minutes is not recommended in Rectal Mode.
- After the temperature measurement is complete, remove the probe from the patient's rectum. Eject the probe cover by firmly pressing the ejection button on the top of the probe.
- Return the probe to the probe well. The LCD display will go blank.
- Wash your hands. Washing hands greatly reduces the risk of cross-contamination and Nosocomial Infection.

Citations: (Welch Allyn, Inc.)


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

Section 8-390 - Tourniquet

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

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:
-

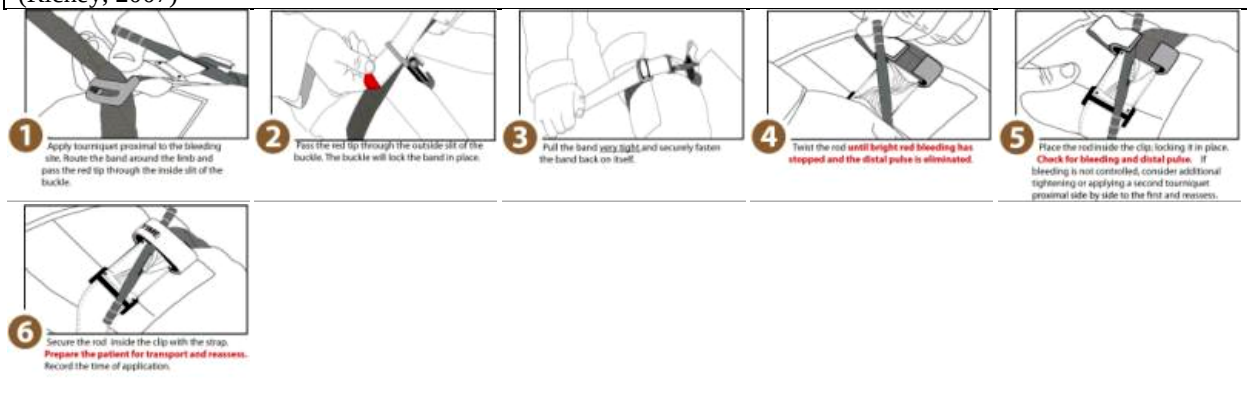
Indications:
Protocol 1-020 - General Assessment and Treatment - Trauma ..... page 10
Protocol 5-050 - Extremity Trauma (Life-threatening limb hemorrhage uncontrolled by simple methods) ..... page 64
Protocol 6-085 - High-Threat Response ..... page 82

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 77) 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:
- ☐ EMD
- ☐ EMR
- ☑ EMT
- ☑ AEMT
- ☑ RN/Paramedic

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 64

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:

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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.

Protocol	Date	Changes description
Section 8-230 - Naso-Pharyngeal Airway (NPA)	1/5/14	Removed “Unconscious or unresponsive” from indications.
Section 8-330 - Portable Ventilator	12/29/14	Added this protocol from 8-270 (ParaPac Ventilator) and removed 8-270.
Section 8-350 - Spinal Motion Restriction (SMR)	4/3/15	Clarified indications and added “Consider KED.”
Section 8-370 - Suction	12/29/14	Removed “S-Scort” from the name of this protocol.
Section 8-400 - Traction Splint	12/29/14	Added info from 8-340 (Sager Splint) and removed 8-340.
Section 9-030 - Subject Matter Experts	4/3/15	Created this section to track SMEs.
Section 9-040 - Index	4/3/15	Created this section.
Section 9-050 - Glossary of Abbreviations	4/14/15	Created this section at the specific request of Dr. Merk.

Changes from version 4 to version 5 (Einthoven)

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

Protocol	Date	Changes description
Entire document	11/17/15	Added EMH (Ellett Memorial Hospital) to each location where CMH (Citizens Memorial Hospital) is mentioned.
	11/18/15	Version 5 dated December 1st, 2015 approved and signed 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 7-150 - Dextrose	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.

Protocol	Date	Changes **description**
Section 7-490 - Procainamide	8/24/17	Removed this section.
Section 7-500 - Propofol	8/24/17	Removed this section
Section 7-505 - Reglan	8/24/17	Removed this section.
Section 7-520 - Rocuronium (Zemuron)	8/24/17	Adjusted doses from adult/pediatric to rapid/delayed.
Section 7-525 - Romazicon	8/24/17	Removed this section.
Section 7-530 - Sodium Bicarbonate (Soda)	9/22/17	Added indication to poisoning.
Section 7-550 - Succinylcholine	8/24/17	Removed this section.
Section 7-570 - Thiamine (Vitamin B1)	9/22/17	Fixed typo link to hyperglycemia instead of hypoglycemia.
Section 7-575 - Toradol (Ketorolac)	8/24/17	Moved contraindication for pregnant women to the top and bolded it.
Section 7-580 - Valium (Diazepam)	8/24/17	Removed link to Romazicon.
	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.

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