Boone County, Missouri Joint EMS Protocols 2017

Overview

The joint system protocols contained within this document are intended to provide and ensure uniform treatment for all patients transported by participating agencies within Boone County, MO.

While attempts have been made to address all patient care scenarios, unforeseen circumstances and patient care needs may arise. For these instances, personnel should exercise their best judgment and the Medical Control at approved facilities to determine the best course of action. The best interest of the patient should be the final determinant for all decisions.

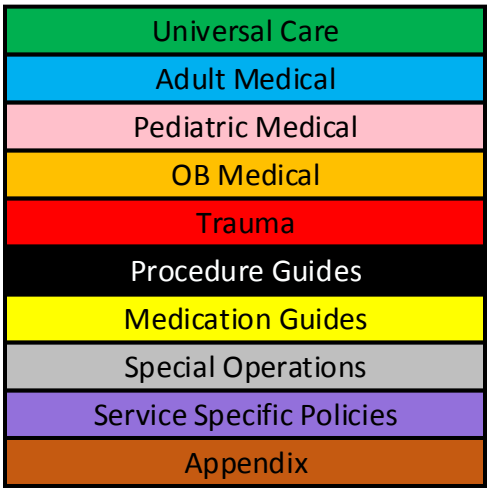
These protocols are presented in a flowchart format intended to reflect real-life decision points visually. A flowchart has certain limitations, and not every clinical scenario can be represented. Although a flowchart may imply a specific sequence of actions, it may often be necessary to provide care out of sequence from that described in the flowchart if dictated by clinical needs. Flowcharts provide decision-making support, but need not be rigidly adhered to and are no substitute for sound clinical judgment.

This document is also intended to be an evolving document as clinical practice and standards change, and as such may be amended or updated at any time.

Protocol Title and Agency List

Each protocol heading contains the protocol title and the name of each participating Boone County public safety agency. It is also color-coded to show the respective section at a quick glance.

Section Color Codes



History, Signs/Symptoms, and Differential

The information in these boxes is meant to guide assessments and potential treatments for each patient. Providers should use this information as a reminder and not let it take the place of clinical judgement.

Due to space concerns only the most important information is added to these three sections; additional information may be added either at the bottom of the page or on the back of the page in the Clinical Guidelines section.

Protocol Key

Provider Legend								
	E M R	Emergency Medical Responder	B	EMT	FP	Fire Paramedic	P	Paramedic	M	Medical Control

Actions, interventions, and medications are all color-coded for easy reference. Providers are able to act up to their license level as determined by the color identifying their license level.

Actions, interventions, and medications color-coded black are to be performed/administered only after direct contact with an attending physician at a Medical Control-approved facility.

Clinical Guidelines

Clinical Guidelines:

- Assess for signs and symptoms of trauma if there is an associated or suspected fall with syncope.
- Consider dysrhythmias, GI bleed, ectopic pregnancy, and seizure as possible causes of syncope.
- More than 25% of geriatric syncope is cardiac dysrhythmia based.

The Clinical Guidelines section allows for additional information that is considered clinically important to be added either at the bottom of each protocol or on the back page.

Protocol Addendums

Protocol addendums may be added to any protocol in order to address differences between responding agencies. This could be due to medication or equipment shortages, or a procedure/ medication that is unique to one agency or group of agencies.

Definition of a Patient

For purposes of emergency medical care, a patient is defined as any person who meets any of the following:

- Is identified by anyone as a possible patient because of some known, or reasonably suspected illness or injury.
- Has visible signs of injury or illness or has a medical complaint.
- Is evaluated or physically examined by an EMS provider.
- Receives treatment at a basic or advanced level.
- Requires assistance to change locations and/or position.
- Has a personal medical device that is evaluated or manipulated by providers.
- Requests assistance with the administration of personal medications or treatments.

Definition of a Pediatric Patient

A pediatric patient is defined as a patient, typically under age 14, who has not undergone puberty, defined as breast development in females and underarm hair in males. Patients who are known to be less than 14 years of age but whose weight exceeds 36 kg may still be considered pediatric patients given their chronological age; however weights will then need to be estimated and adult dosages should be used.

The Broselow tape should be used for a patients under 30 kg or 4 feet in height.

Patient Rights

Patients who are of sound mind have the right to accept or refuse medical care, even if the consequences of said refusal may be potentially harmful. In the event that a patient refuses medical care it is important that providers:

- Clearly advise patients of the consequences of refusing care, if possible in front of a witness.
- Involve Medical Control as necessary, if transport is considered warranted and the patient is refusing care and/or transport.
- Advise the patient to call back if they change their mind and wish to receive care.
- Obtain baseline vital signs or an assessment, if the patient allows it.
- Accurately document the patient encounter.

Special Considerations Involving Patient Care

Minors:

- In general, patients under the age of 18 may not consent to medical treatment or transport. The following groups may provide consent for treatment of a minor:
    - Parent or Legal Guardian or if the patient is an emancipated minor
    - An individual acting with written permission of a parent who can authorize medical treatment (school teacher, family friend, church group leader, etc.)
- No consent is required in the following circumstances:
    - Parent or Legal Guardian cannot be reached and the patient needs immediate medical attention.
    - The identity of the child is unknown and any delay in providing care would endanger the life of the child.
    - Individual is an emancipated minor (In Missouri, allowed by court order if parents give express consent (waive parental rights), implied consent (minor lives apart from parents and supports themselves), or has a significant change in status (married or enlisted in the military).
    - The patient is a minor and the treatment request is for a pregnancy-related issue, venereal disease, or drug/substance abuse.

Implied Consent:

- A patient of any age that is unable to communicate because of an injury or illness that appears to be life-threatening.
- The principle of implied consent presumes that the above individual, if they were of sound mind, would consent to emergency treatment.
- In these situations, the patient may be transported without their consent using the assistance of local law enforcement and physical/chemical restraints.

Involuntary Consent:

- In certain situations, a person other than the patient may authorize consent to treatment. Examples of these situations include court orders (legal guardianship), authorization by law enforcement for individuals in custody, or for those who have been deemed by law enforcement to be a danger to themselves or others (96 hour holds).

Patient Confidentiality

Pre-hospital providers must keep medical information confidential and restricted to any other health care providers who are tasked with providing care to that patient. Exceptions to this include: information that does not pertain to medical treatment or a medical condition, or that is unnecessary for diagnosis or treatment.

On-Scene Medical Personnel

Medical care provided within Boone County is the responsibility of the highest level of EMS provider who has responded by the usual dispatch systems to that scene. Health care providers passing by, even if potentially more highly trained than the system providers, may NOT assume patient care responsibility (except as outlined below) but may be allowed to assist at the discretion of the EMS providers on scene.

Physician on scene:

- Any physician wishing to assume care of a patient must contact an approved Medical Control facility and obtain approval. Physicians must be able to provide proof of licensure.
- The physician must assume full care and responsibility for the patient.
- Patient must be transported to a Columbia area hospital for care (MUHC, BHC, VA, WCH).
- The EMS crew transporting the patient will contact the destination facility and advise of current patient condition, which physician is guiding treatment, and that approval was given by Medical Control.
- If the patient starts to be harmed by any treatment provided by the physician, the EMS crew will reassume patient care. Law enforcement will be requested to assist if necessary.

Abused and/or Neglected Patients

Guidelines to be used for suspected abuse and/or neglect:

- Discrepancy between history of injury and physical exam.
- Prolonged interval between injury and the seeking of medical assistance.
- History or suspicion of repeated trauma.
- Poor nutritional status.
- Substandard living conditions.

Any history or physical exam findings, as well as environmental or circumstantial information, should be reported to the receiving facility and documented in the patient care report.

Emergency Medical Responders are mandated to report suspected abuse or neglect to the proper authorities. Use the Abuse Hotlines to report any suspicions:

- Child Abuse Hotline – 1-800-392-3738
- Elder Abuse Hotline – 1-800-392-0210

Crime Scenes

For any incident suspected of being a possible crime scene, stage at a safe location until law enforcement has arrived to secure the scene. Once the scene has determined to be safe by law enforcement, respond in to the scene and initiate medical interventions as required.

Some points to remember:

- Direct all providers to enter and exit through the same area, if possible, to reduce scene contamination.
- Do not touch or move anything at a crime scene unless it is necessary to do so for patient care.
- Leave patient clothing intact as much as possible and do not cut through gunshot or stabbing holes.
- Do not remove any items (pill bottles, etc.) from a scene unless law enforcement is aware.
- For deceased patients, notify law enforcement of the decision to not initiate or continue patient care. After care has been withdrawn, leave items related to patient care with the patient.

DNR and Advanced Directives

Do-not-resuscitate (DNR) orders:

- To be valid, a pre-hospital DNR must be a fully filled out Outside the hospital do-not-resuscitate order (OHDNR) signed by the patient or patient representative and the patient's attending physician.
- Providers will have immunity from liability if treatment is initiated or withheld prior to discovery of an OHDNR, provided the medical acts or omissions are done in good faith and in accordance with the provisions of Missouri Statute sections 190.600 to 190.621.
- Pre-hospital DNR orders shall be transferred with the patient when the patient is transported from one facility to another. If the patient is transferred outside of a hospital facility, the OHDNR form will be kept with the patient or patient representative.

Revocation of a DNR:

- A patient or family member may revoke a DNR or Advanced Directive by making written, oral, or other type of communication to a health care provider.
- Health care providers should document relation to the patient and time DHR was revoked.

Allowed Procedures:

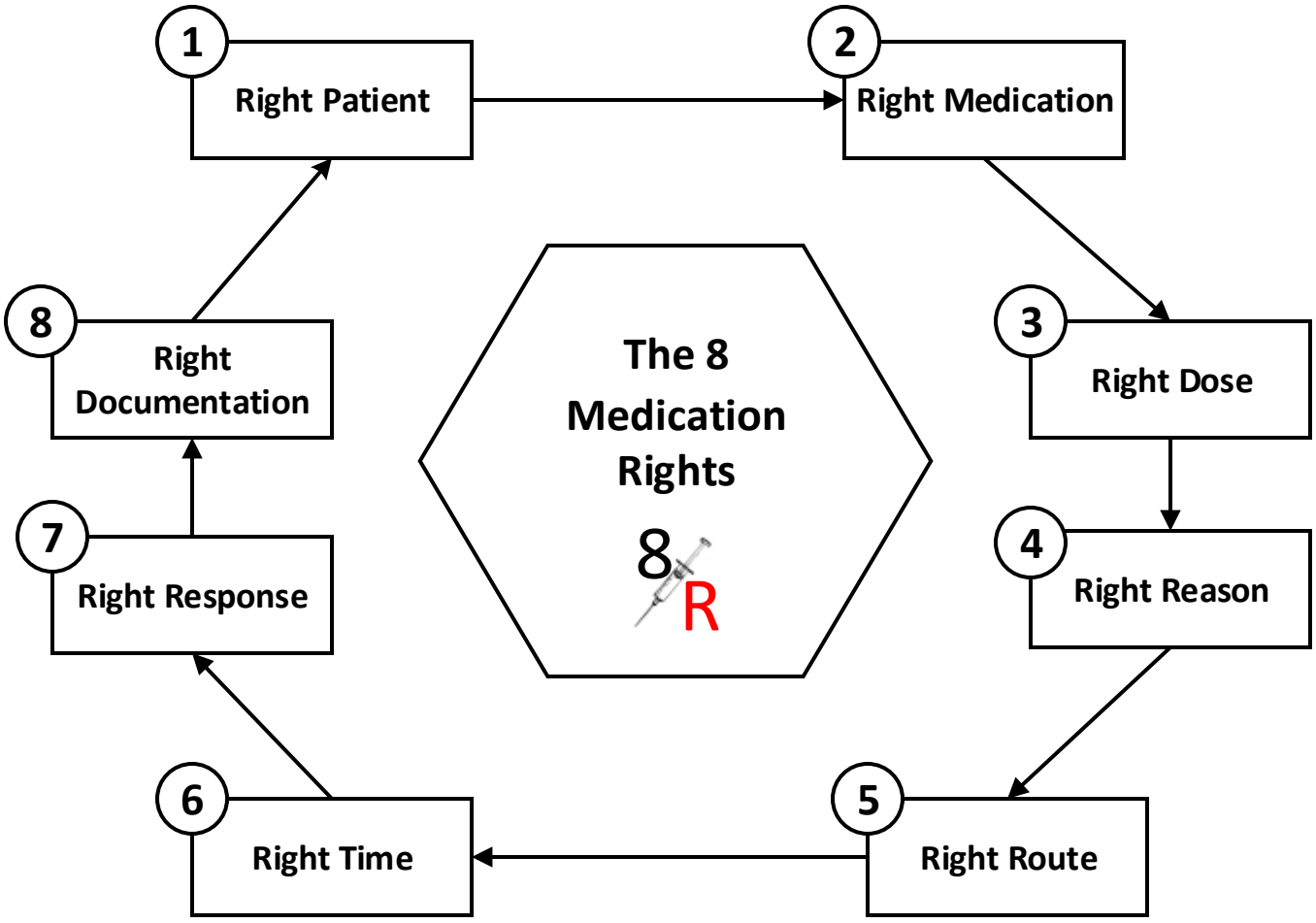
- If the patient is not in cardiac or respiratory arrest, and has a valid DNR order, appropriate medical treatment for injuries, pain, difficulty breathing, hemorrhage, and/or other medical conditions may be provided as needed.

Prohibited Procedures (unless otherwise stated on the DNR order):

- Cardiopulmonary resuscitation
- Advanced airway placement and/or assisted ventilations
- Defibrillation
- Resuscitation medications to treat cardiac arrest

The 8 Medication Rights

1. **Right Patient** – Make sure you are treating the right patient. Use two patient identifiers if possible.
2. **Right Medication** – Check the medication label and confirm the concentration and medication name. Check expiration date and ask the patient if any allergies are present.
3. **Right Dose** – Confirm the dose against current protocols and have another provider confirm it is correct.
4. **Right Reason** – Confirm the reason for administering the medication is correct. Remember, a patient has the right to refuse any medication.
5. **Right Route** – Confirm the medication route is correct and that the dose is right for the route.
6. **Right Timing** – Confirm you are giving the medication over the correct time period and at the time the patient needs it.
7. **Right Response** – Confirm the medication administered led to the desired effect. Check for any allergic or abnormal patient responses.
8. **Right Documentation** – Report the time, route, dose and response, as well as any other pertinent information, during the patient hand-off and during charting.



MU Health Care EMS Quick Care Reference – Updated 6/2018

Adult Protocols

A-Fib/Flutter: Cardizem (0.25mg/kg IV) over 5 mins max dose 25mg); Metoprolol (5 mg IV over 2 mins. May repeat dose every 5 min IV. Max of 3 doses or 15 mg).
Allergic Rxn: Epi 1:1000 (0.5mg IM). Can repeat once after 15 min; Benadryl (50mg IV/IM); Solumedrol (125mg IV); Racemic Epi nebulized; Duoneb&Albuterol nebulized; Epi Drip (2-20 mcg/min IV via IV PUMP. Start at 5 mcg/min).
Asthma: Epi 1:1000 (0.5mg IM) if resp. arrest imminent. DuoNeb&Albuterol nebulized, followed by Albuterol nebulized every 5 minutes; CPAP Mask (5-10 PEEP); Versed (1mg IV/IN every 3-5 minutes with BP >90); Solumedrol (125mg IV); Magnesium (2g/50ml IV over 20 minutes).
Bradycardia: Atropine (0.5 mg IV every 3-5 min, max total dose 3 mg); TCP (70bpm 0ma increase until capture); Versed (1mg IV/IN every 3-5 min with BP >90); Ketamine (0.5 mg/kg IV with SBP <90); Dopamine (5-20mcg/kg/min IV via **IV PUMP).**
Cardiac Arrest: Epi 1:10,000 (1mg IV every 3-5 min); Calcium Cloride (1g IV followed w/NS 1L IV) in a pt w/ dialysis or chronic renal failure. **VF/VT Arrest**-Amiodarone (300mg IV, followed after 4 mins by Amiodarone 150mg IV once). If ROSC, Amiodarone (150mg/100ml IV over 10 minutes with a pulse). Shock (1st: 120-200J, 2nd: 150-200J, 3rd and on: 200J).
Chest Pain: ASA (324mg PO); Nitro (0.4mg SL every 3-5 min with BP >90); Zofran (4-8mg IV); Fentanyl (1-2mcg/kg IV. Max initial dose 100mcg. Can repeat every 3-5 min to a max dose of 50mcg IV with BP >90).
COPD: DuoNeb & Albuterol nebulized, followed by Albuterol nebulized every 5 mins; Albuterol MDI **Breathing** (4 MDI doses in 30 sec intervals over 2 mins), **Apneic** (8 MDI doses in 15 sec intervals over 2 mins with BVM); CPAP Mask (5-10 PEEP, start at 5); Versed (1mg IV/IN every 3-5 mins with BP >90);
Crush Injury: Bicarb (1mEq/kg IVP).
Diabetic Hyperglycemia: NaCl (500ml bolus IV. Can repeat up to 40 mL/kg as needed if no S/S of fluid overload exist).
Diabetic Hypoglycemia: Dextrose 10% (100ml IV. Can repeat dose once); Glucose Paste (15g PO max 30g); Glucagon (1mg IM/IN).
Drowning: CPAP Mask (5-10 PEEP); Versed (1mg IV/IN every 3-5 mins with BP >90).
Drug Assisted Intubation: Ketamine Prepare 100mg/10mL concentration (1mg/kg IV, max dose 100mg). **Re-sedate by alternating every 2-5 min:** Versed (2-4mg IV BP >90), Fentanyl (1-2mcg/kg IV max initial dose 100mcg. May repeat Fentanyl with BP >90, up to 50mcg max. Total dose 200mcg prior to Medical Control contact).
Fever: Acetaminophen (up to 1 gram PO); Ibuprofen (up to 600mg PO).
Hypertension (SBP >220 with symptoms of hypertension) Labetalol (10mg IV over 2 min with HR > 65 and SBP >90); Hydralazine (10 mg IV with HR < 65).
Hypotension: NaCl (500ml bolus IV. Can repeat up to 40 mL/kg as needed if no S/S of fluid overload exist); **Primary vasopressor-** Levophed (2-40 mcg/min IV. Start at 5-10 mcg/min via IV PUMP), **Bradycardia-** Dopamine (5-20mcg/kg/min IV via IV PUMP); **Anaphylaxis-** Epi Drip (2-20 mcg/min IV via IV PUMP. Start at 5 mcg/min).
Hypothermia Arrest: Call MED CONTROL after 3 defibs.
Intubated Respiratory: Albuterol MDI **Breathing** (4 MDI doses in 30 sec intervals over 2 mins), **Apneic** (8 MDI doses in 15 sec intervals over 2 mins with BVM). Can repeat once after 5 mins.
Overdose/Poisoning: Opiate-Narcan (0.4-2mg IV/IN max dose 20mg); **Calcium Channel Blocker Overdose-**Calcium Chloride (1g SLOW IVP with 1L NaCl bolus);
Organophosphate overdose-Atropine (2mg IV initially. If no response, Atropine 4mg IV every 3-5 mins); **TCA overdose-**Bicarb (1mEq/kg IV).
Nausea/Vomiting: Zofran (4mg ODT/IV/IM. May repeat IV/IM, max dose 8mg); **OR** Phenergan (25 mg IV/IM once. If given IV, dilute in 50mL NS); **OR** Reglan (10 mg IV/IM once); **OR** Compazine (10 mg IV/IM once). Second line drug Haldol (5mg IV/IM every 3-5 min).
Pain Management: Fentanyl (1-2mcg/kg IV/IN with BP >90. Max initial dose 100mcg. Can repeat Fentanyl 50mcg every 5-10 mins. Max total dose 200mcg); Versed (1mg IV every 5-10 mins with BP >90); Ketorolac (15 mg IV or 30 mg IM); Ketamine (0.1-0.3 mg/kg IV if SBP < 90. Repeat as needed every 15min).
Post Delivery Bleeding: Birth NaCl (500ml IV bolus); **APGAR every 1, 5, 15 mins;** Pitocin (10units IM).
Pregnancy Seizures: Magnesium (4g IVP over 5 min); if unsuccessful follow with Versed (2-4mg IV every 3-5 minutes).
Psychiatric: Haldol **(**5mg IV/IM every 5-15 min); Versed (2-4mg IV/IM or 2mg IN every 5-15 mins); Ketamine (5mg/kg IM max of 500mg) or (1mg/kg IV max dose 100mg).
Pulm Edema: CPAP Mask (5-10 PEEP); Versed (1mg IV/IN every 3-5 mins with BP >90) OR Ketamine (0.1-0.3 mg/kg IV if SBP < 90. Repeat as needed every 15min); Nitro (0.4mg SL every 5 min with BP of >90); Nitro Drip (50-200mcg/min IV via IV PUMP with BP >90. Start at 50mcg/min, increase as needed 25mcg/min every 3-5min).
Seizure: Versed (2-4 mg IV/IM or 2mg IN, 1mL/nare. Repeat IV every 3-5 min until seizure stops or SBP drops below 90).
SVT: Valsalva Maneuver; Adenosine (6mg rapid IV, followed by a saline flush. Can repeat once at 12mg IV, followed by a saline flush); Cardiovert (50-100 J).
Torsade's- Magnesium (2g/50ml over 5 min IV); Cardiovert*Defib* (120-200J).
Trauma: NaCl (500ml bolus IV. Can repeat up to 40 mL/kg as needed if no S/S of fluid overload exist); TXA (1 gram in 100 mL normal saline IV over 10 minutes).
Wolff-Parkinson-White: Cardiovert (120-200J).
V-Tach w/pulse: Amiodarone (150mg/100ml IV over 10 minutes); Cardiovert (100 J).

Pediatric Protocols

Allergic: Epi 1:1000 (0.01mg/kg IM, max dose 0.5mg); Benadryl (0.5 - 1mg/kg IV/IM, max 50mg); Solumedrol (1mg/kg IV, max 125mg); Racemic Epi nebulized; Duoneb&Albuterol nebulized, followed by Albuterol nebulized every 5 min; Epi Drip (0.05-1 mcg/kg/min IV via Alaris Pump).
Asthma: If unstable Epi (0.01mg/kg IM, max 0.5mg); Duo&Albuterol nebulized followed by Albuterol nebulized every 5 min; Solumedrol (1mg/kg IV, max 125mg); Magnesium (25mg/kg/50ml NS IV over 20 min); Albuterol MDI (4 doses in 30 sec intervals over 2 min), **Apneic** (8 doses in 15 sec intervals over 2 min w/BVM).
Bradycardia: Epi 1:10,000 (0.1 mg/kg of 1:10,000 IV, max of 1 mg every 3-5 min); Atropine (0.02mg/kg IV); TCP (70bpm 0ma start till capture), Versed (0.1 mg/kg IV every 3-5 mins w/BP >90. Max dose 2mg); Dopamine (5-20 mcg/kg/min IV via Alaris Pump, if age related hypotension exists after fluid resuscitation).
Cardiac Arrest: Epi 1:10,000 (0.01mg/kg IV every 3-5 min); Defibrillation (2j/kg then 4j/kg for further doses); Calcium Chloride **Contact Medical Control**.
Diabetic Hyperglycemia: Under 10kg weight NaCl (10 mL/kg IV). Over 10kg weight NaCl (20ml/kg IV).
Diabetic Hypoglycemia: D10w Newborn (2mL/kg IV), Child < 20 kg (5mL/kg IV, to a max of 100 mL), Child > 20 kg (100 mL IV). D10w doses can be repeated once as needed; Glucose Paste (7.5g PO max 15g).
Croup: Racemic Epi nebulized. Discontinue after relief is noted.
Fever: 1st Choice Acetaminophen (15mg/kg PO); 2nd choice Ibuprofen (10mg/kg PO), unless antipyretic received in last 4 hrs.
Hypotension: Fluid Resus- Under 10kg weight NaCl (10 mL/kg IV). Over 10kg weight NaCl (20ml/kg IV); **Primary vasopressor-** Epi Drip (0.05-1 mcg/kg/min IV via Alaris Pump);
Bradycardia- Dopamine (5-20 mcg/kg/min IV via Alaris Pump); **Allergic Rxn-** Epi Drip (0.05-1 mcg/kg/min IV via Alaris Pump).
Hypothermia Arrest: Call MED CONTROL after 3 defibs.
Intubated Respiratory: Breathing Albuterol MDI (4 doses in 30 sec intervals over 2 min), **Apneic** (8 doses in 15 sec intervals over 2 min w/BVM). Repeat once after 5min.
Nausea/Vomiting: Zofran (0.1 mg/kg IV/IM. Max dose 4 mg); **OR** Phenergan (0.25 mg/kg IV/IM, max dose 12.5 mg. Do not use if age < 2 Years); **OR** Reglan (0.1 mg/kg IV/IM, max dose 10 mg. Do not use if age < 2 years); **OR** Compazine (0.1 mg/kg IV, max dose 10 mg. Do not use if age < 2 years). Second line Haldol (0.1mg/kg IV, max 5mg).
Overdose/Poisoning: Opiate Narcan (0.1mg/kg IV. Max single dose 2mg, total dose 10mg); **Stimulant**-Versed (0.01mg/kg IV, max 2mg); **Calcium Channel Blocker OD-CONTACT MED CONTROL; Organophosphate OD-**Atropine (0.02mg IV every 3-5min. Max total dose 0.5mg).
Pain Management: Fentanyl (0.5-1mcg/kg IV/IN. Max dose 50mcg, can give a half dose with BP normal for age once); Versed (0.1mg/kg IV/IN every 5-10min w/age appropriate BP).
Psychiatric: Versed (0.1mg/kg IV/IN/IM. Max 2mg); Ketamine (1 mg/kg IV or 4 mg/kg IM).
Seizure: Versed (0.1mg/kg IV/IN/IM, repeat every 3-5 as long as BP is above age appropriate minimum).
SVT: Adenosine (0.1mg/kg IV, max 6mg, 0.2mg/kg IV, max 12mg) Cardiovert (50-125j) Amiodarone (5mg/kg IV max dose 300mg in 100mL NS over 20 mins); Cardiovert (1j/kg, increase to 2j/kg for further doses); Versed (0.01mg/kg IV/IN. Max 2mg).
Tachycardia Wide: Amiodarone (5mg/kg IV max dose 300mg in 100mL NS over 20 mins); Adenosine (0.1mg/kg IV, max 6mg, 0.2mg/kg IV, max 12mg) Cardiovert (1j/kg increase to 2j/kg); Versed (0.01mg/kg IV. Max 2mg).

TORSADES w/pulse: Magnesium (25mg/kg/50ml IV over 10min).

- **Seizure:** Versed (2-4 mg IV/IM or 2mg IN, 1mL/nare. Repeat IV every 3-5 min until seizure stops or SBP drops below 90).
- **SVT:** Valsalva Maneuver; Adenosine (6mg rapid IV, followed by a saline flush. Can repeat once at 12mg IV, followed by a saline flush); Cardiovert (50-100 J).
- **Torsade's**- Magnesium (2g/50ml over 5 min IV); Cardiovert*Defib* (120-200J).
- **Trauma:** NaCl (500ml bolus IV. Can repeat up to 40 mL/kg as needed if no S/S of fluid overload exist); TXA (1 gram in 100 mL normal saline IV over 10 minutes).
- **Wolff-Parkinson-White:** Cardiovert (120-200J).
- **V-Tach w/pulse:** Amiodarone (150mg/100ml IV over 10 minutes); Cardiovert (100 J).

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- **Allergic:** Epi 1:1000 (0.01mg/kg IM, max dose 0.5mg); Benadryl (0.5 - 1mg/kg IV/IM, max 50mg); Solumedrol (1mg/kg IV, max 125mg); Racemic Epi nebulized; Duoneb&Albuterol nebulized, followed by Albuterol nebulized every 5 min; Epi Drip (0.05-1 mcg/kg/min IV via Alaris Pump).
- **Asthma: I**f unstable Epi (0.01mg/kg IM, max 0.5mg); Duo&Albuterol nebulized followed by Albuterol nebulized every 5 min; Solumedrol (1mg/kg IV, max 125mg); Magnesium (25mg/kg/50ml NS IV over 20 min); Albuterol MDI (4 doses in 30 sec intervals over 2 min), **Apneic** (8 doses in 15 sec intervals over 2 min w/BVM).
- **Bradycardia:** Epi 1:10,000 (0.1 mg/kg of 1:10,000 IV, max of 1 mg every 3-5 min); Atropine (0.02mg/kg IV); TCP (70bpm 0ma start till capture), Versed (0.1 mg/kg IV every 3-5 mins w/BP >90. Max dose 2mg); Dopamine (5-20 mcg/kg/min IV via Alaris Pump, if age related hypotension exists after fluid resuscitation).
- **Cardiac Arrest:** Epi 1:10,000 (0.01mg/kg IV every 3-5 min); Defibrillation (2j/kg then 4j/kg for further doses); Calcium Chloride **Contact Medical Control**.

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- **Diabetic Hyperglycemia:** Under 10kg weight NaCl (10 mL/kg IV). Over 10kg weight NaCl (20ml/kg IV).
- **Diabetic Hypoglycemia:** D10w Newborn (2mL/kg IV), Child < 20 kg (5mL/kg IV, to a max of 100 mL), Child > 20 kg (100 mL IV). D10w doses can be repeated once as needed; Glucose Paste (7.5g PO max 15g).
- **Croup:** Racemic Epi nebulized. Discontinue after relief is noted.
- **Fever:** 1st Choice Acetaminophen (15mg/kg PO); 2nd choice Ibuprofen (10mg/kg PO), unless antipyretic received in last 4 hrs.
- **Hypotension: Fluid Resus-** Under 10kg weight NaCl (10 mL/kg IV). Over 10kg weight NaCl (20ml/kg IV); **Primary vasopressor-** Epi Drip (0.05-1 mcg/kg/min IV via Alaris Pump); **Bradycardia-** Dopamine (5-20 mcg/kg/min IV via Alaris Pump); **Allergic Rxn-** Epi Drip (0.05-1 mcg/kg/min IV via Alaris Pump).
- **Hypothermia Arrest: Call MED CONTROL** after 3 defibs.

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- **Intubated Respiratory: Breathing** Albuterol MDI (4 doses in 30 sec intervals over 2 min), **Apneic** (8 doses in 15 sec intervals over 2 min w/BVM). Repeat once after 5min.
- **Nausea/Vomiting:** Zofran (0.1 mg/kg IV/IM. Max dose 4 mg); **OR** Phenergan (0.25 mg/kg IV/IM, max dose 12.5 mg. Do not use if age < 2 Years); **OR** Reglan (0.1 mg/kg IV/IM, max dose 10 mg. Do not use if age < 2 years); **OR** Compazine (0.1 mg/kg IV, max dose 10 mg. Do not use if age < 2 years). Second line Haldol (0.1mg/kg IV, max 5mg).
- **Overdose/Poisoning: Opiate** Narcan (0.1mg/kg IV. Max single dose 2mg, total dose 10mg); **Stimulant**-Versed (0.01mg/kg IV, max 2mg); **Calcium Channel Blocker OD- CONTACT MED CONTROL; Organophosphate OD-**Atropine (0.02mg IV every 3-5min. Max total dose 0.5mg).
- **Pain Management:** Fentanyl (0.5-1mcg/kg IV/IN. Max dose 50mcg, can give a half dose with BP normal for age once); Versed (0.1mg/kg IV/IN every 5-10min w/age appropriate BP).

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- **A-Fib/Flutter:** Cardizem (0.25mg/kg IV) over 5 mins max dose 25mg); Metoprolol (5 mg IV over 2 mins. May repeat dose every 5 min IV. Max of 3 doses or 15 mg).
- **Allergic Rxn:** Epi 1:1000 (0.5mg IM). Can repeat once after 15 min; Benadryl (50mg IV/IM); Solumedrol (125mg IV); Racemic Epi nebulized; Duoneb&Albuterol nebulized; Epi Drip (2-20 mcg/min IV via IV PUMP. Start at 5 mcg/min).
- **Asthma:** Epi 1:1000 (0.5mg IM) if resp. arrest imminent. DuoNeb&Albuterol nebulized, followed by Albuterol nebulized every 5 minutes; CPAP Mask (5-10 PEEP); Versed (1mg IV/IN every 3-5 minutes with BP >90); Solumedrol (125mg IV); Magnesium (2g/50ml IV over 20 minutes).
- **Bradycardia:** Atropine (0.5 mg IV every 3-5 min, max total dose 3 mg); TCP (70bpm 0ma increase until capture); Versed (1mg IV/IN every 3-5 min with BP >90); Ketamine (0.5 mg/kg IV with SBP <90); Dopamine (5-20mcg/kg/min IV via **IV PUMP).**

- **Cardiac Arrest:** Epi 1:10,000 (1mg IV every 3-5 min); Calcium Cloride (1g IV followed w/ NS 1L IV) in a pt w/ dialysis or chronic renal failure. **VF/VT Arrest**-Amiodarone (300mg IV, followed after 4 mins by Amiodarone 150mg IV once). If ROSC, Amiodarone (150mg/100ml IV over 10 minutes with a pulse). Shock (1st: 120-200J, 2nd: 150-200J, 3rd and on: 200J).
- **Chest Pain:** ASA (324mg PO); Nitro (0.4mg SL every 3-5 min with BP >90); Zofran (4-8mg IV); Fentanyl (1-2mcg/kg IV. Max initial dose 100mcg. Can repeat every 3-5 min to a max dose of 50mcg IV with BP >90).
- **COPD:** DuoNeb & Albuterol nebulized, followed by Albuterol nebulized every 5 mins; Albuterol MDI **Breathing** (4 MDI doses in 30 sec intervals over 2 mins), **Apneic** (8 MDI doses in 15 sec intervals over 2 mins with BVM); CPAP Mask (5-10 PEEP, start at 5); Versed (1mg IV/IN every 3-5 mins with BP >90).

- **Crush Injury:** Bicarb (1mEq/kg IVP).
- **Diabetic Hyperglycemia:** NaCl (500ml bolus IV. Can repeat up to 40 mL/kg as needed if no S/S of fluid overload exist).
- **Diabetic Hypoglycemia:** Dextrose 10% (100ml IV. Can repeat dose once); Glucose Paste (15g PO max 30g); Glucagon (1mg IM/IN).
- **Drowning:** CPAP Mask (5-10 PEEP); Versed (1mg IV/IN every 3-5 mins with BP >90).
- **Drug Assisted Intubation:** Ketamine Prepare 100mg/10mL concentration (1mg/kg IV, max dose 100mg). **Re-sedate by alternating every 2-5 min:** Versed (2-4mg IV BP >90), Fentanyl (1-2mcg/kg IV max initial dose 100mcg. May repeat Fentanyl with BP >90, up to 50mcg max. Total dose 200mcg prior to Medical Control contact).

- **Fever:** Acetaminophen (up to 1 gram PO); Ibuprofen (up to 600mg PO).
- **Hypertension (SBP >220 with symptoms of hypertension)** Labetalol (10mg IV over 2 min with HR > 65 and SBP >90); Hydralazine (10 mg IV with HR < 65).
- **Hypotension:** NaCl (500ml bolus IV. Can repeat up to 40 mL/kg as needed if no S/S of fluid overload exist); **Primary vasopressor-** Levophed (2-40 mcg/min IV. Start at 5-10 mcg/min via IV PUMP), **Bradycardia-** Dopamine (5-20mcg/kg/min IV via IV PUMP); **Anaphylaxis-** Epi Drip (2-20 mcg/min IV via IV PUMP. Start at 5 mcg/min).
- **Hypothermia Arrest: Call MED CONTROL after 3 defibs**.
- **Intubated Respiratory:** Albuterol MDI **Breathing** (4 MDI doses in 30 sec intervals over 2 mins), **Apneic** (8 MDI doses in 15 sec intervals over 2 mins with BVM). Can repeat once after 5 mins.

- **Overdose/Poisoning: Opiate-**Narcan (0.4-2mg IV/IN max dose 20mg); **Calcium Channel Blocker Overdose-**Calcium Chloride (1g SLOW IVP with 1L NaCl bolus); **Organophosphate overdose-**Atropine (2mg IV initially. If no response, Atropine 4mg IV every 3-5 mins); **TCA overdose-**Bicarb (1mEq/kg IV).
- **Nausea/Vomiting:** Zofran (4mg ODT/IV/IM. May repeat IV/IM, max dose 8mg); **OR** Phenergan (25 mg IV/IM once. If given IV, dilute in 50mL NS); **OR** Reglan (10 mg IV/IM once); **OR** Compazine (10 mg IV/IM once). Second line drug Haldol (5mg IV/IM every 3-5 min).
- **Pain Management:** Fentanyl (1-2mcg/kg IV/IN with BP >90. Max initial dose 100mcg. Can repeat Fentanyl 50mcg every 5-10 mins. Max total dose 200mcg); Versed (1mg IV every 5-10 mins with BP >90); Ketorolac (15 mg IV or 30 mg IM); Ketamine (0.1-0.3 mg/kg IV if SBP < 90. Repeat as needed every 15min).

- **Post Delivery Bleeding:** Birth NaCl (500ml IV bolus); **APGAR every 1, 5, 15 mins;** Pitocin (10units IM).
- **Pregnancy Seizures:** Magnesium (4g IVP over 5 min); if unsuccessful follow with Versed (2-4mg IV every 3-5 minutes).
- **Psychiatric:** Haldol (5mg IV/IM every 5-15 min); Versed (2-4mg IV/IM or 2mg IN every 5-15 mins); Ketamine (5mg/kg IM max of 500mg) or (1mg/kg IV max dose 100mg).
- **Pulm Edema:** CPAP Mask (5-10 PEEP); Versed (1mg IV/IN every 3-5 mins with BP >90) OR Ketamine (0.1-0.3 mg/kg IV if SBP < 90. Repeat as needed every 15min); Nitro (0.4mg SL every 5 min with BP of >90); Nitro Drip (50-200mcg/min IV via IV PUMP with BP >90. Start at 50mcg/min, increase as needed 25mcg/min every 3-5min).
- **Seizure:** Versed (2-4 mg IV/IM or 2mg IN, 1mL/nare. Repeat IV every 3-5 min until seizure stops or SBP drops below 90).

- **Psychiatric:** Versed (0.1mg/kg IV/IN/IM. Max 2mg); Ketamine (1 mg/kg IV or 4 mg/kg IM).
- **Seizure:** Versed (0.1mg/kg IV/IN/IM, repeat every 3-5 as long as BP is above age appropriate minimum).
- **SVT:** Adenosine (0.1mg/kg IV, max 6mg, 0.2mg/kg IV, max 12mg) Cardiovert (50-125j) Amiodarone (5mg/kg IV max dose 300mg in 100mL NS over 20 mins); Cardiovert (1j/kg, increase to 2j/kg for further doses); Versed (0.01mg/kg IV/IN. Max 2mg).
- **Tachycardia Wide:** Amiodarone (5mg/kg IV max dose 300mg in 100mL NS over 20 mins); Adenosine (0.1mg/kg IV, max 6mg, 0.2mg/kg IV, max 12mg) Cardiovert (1j/kg increase to 2j/kg); Versed (0.01mg/kg IV. Max 2mg).
- **TORSADES w/pulse:** Magnesium (25mg/kg/50ml IV over 10min).

Adult Clinical Protocols

MU Health Care

Protocol Pocket Guide – June 2018

Pediatric Clinical Protocols

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- **Childbirth**

Universal Care

History

- S – Signs / Symptoms
- A – Allergies
- M – Medication
- P – Past Medical History
- L – Last Meal
- E – Events Leading Up To Now

* Scene Size-Up

- Scene Safety/Situational Awareness
- PPE (consider splash, droplet, airborne)
- Determine the Number of Patients
- Determine Need for Additional Resources
- Determine the Mechanism of Injury/ Nature of Illness
- Take the appropriate equipment to the patient

Signs and Symptoms

- O – Onset
- P – Provokes or Relieves
- Q – Quality
- R – Radiates
- S – Severity (1-10 Scale)
- T – Timing

Primary Assessment/Resuscitation

EMR

Evaluate and correct any of the following:

Control C-spine (if injury suspected)
Assess LOC (AVPU)
Assess Airway (correct, if needed)
Assess Breathing (correct, if needed)
Assess Circulation (support, if needed)
Determine Chief Complaint

EMR

* Treatment Protocols

- Airway Management (U2)
- Altered Mental Status (U3)
- Cardiac Arrest (U4)
- Chest Pain (U5)
- Respiratory Distress (U8)
- Bleeding Control
- Trauma

Secondary Assessment/History

EMR

Vital Signs
- Pulse (rate, rhythm)
- Respiratory (rate, depth, effort)
- Oxygen saturation
- Blood pressure
- Temperature

Head-to-Toe Physical Exam
History (OPQRST/SAMPLE)

EMR

B Blood glucose B

* Treatment Protocols

- Airway Management (U2)
- Altered Mental Status (U3)
- Cardiac Arrest (U4)
- Chest Pain (U5)
- Respiratory Distress (U8)
- Bleeding Control
- Trauma

Monitor and Reassess

Clinical Guidelines:

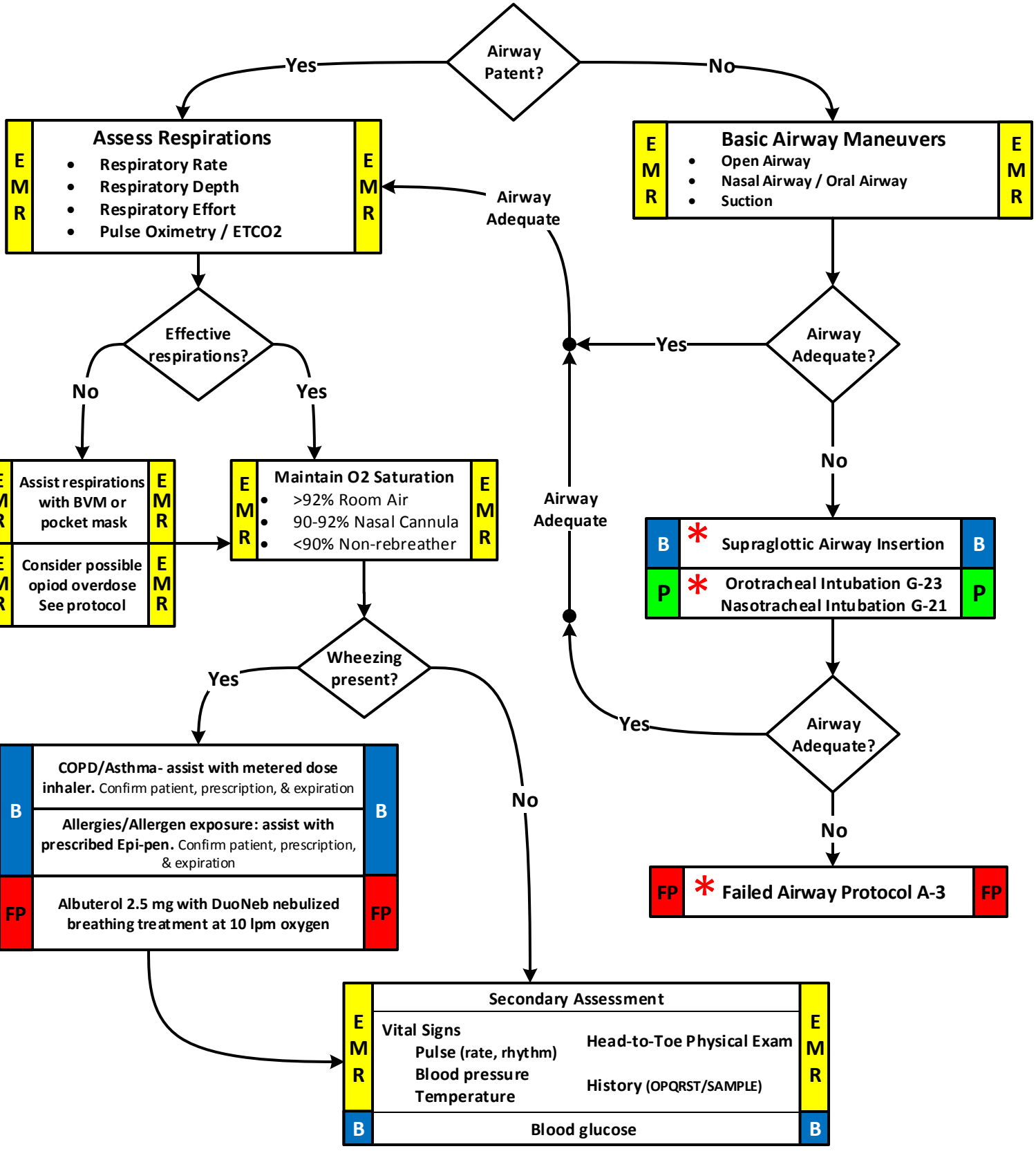
- First Responders on scene should upgrade/downgrade responding EMS units as needed.
- Upon arrival of ALS transport, patient care should be transitioned between care teams. Arriving personnel should receive a handoff from first responders or family on scene during assessment.

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

Airway Management

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS



Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

Altered Mental Status / Neurological Deficit

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History

- Known diabetic, medic alert tag
- Drugs, drug paraphernalia
- Past medical history
- Medications
- History of trauma
- Change in condition

Signs and Symptoms

- Decreased mental status or lethargy
- Change in baseline mental status
- Bizarre behavior
- Hypoglycemia (cool, diaphoretic skin)
- Hyperglycemia (warm, dry skin; fruity breath; Kussmal resps; signs of dehydration

EMR * Universal Care Protocol U-1 EMR

B Blood Glucose? B

over 70 mg dL

Less than 70 mg dL

B Administer glucose paste (if awake and no risk of aspiration) B

FP * Diabetic Emergencies Protocol A-9 FP

EMR Consider other causes: EMR

- Trauma / Head Injury
- Overdose / Toxic Ingestion
- Stroke
- Hypothermia
- Cardiac
- Seizure

Stroke

EMR
Prehospital Stroke scale
- Facial Droop
- Arm Drift
- Speech
EMR

Determine onset of symptoms

Overdose

EMR If opiod related, administer 0.5 – 1 mg Narcan IN Reevaluate 3-5 min Repeat dose if necessary EMR

Hypothermia

EMR
- Remove from environment
- Remove any wet clothing
- Passive warming
EMR

Other

EMR Secondary Assessment/History EMR

Vital Signs
- Pulse (rate, rhythm)
- Respiratory (rate, depth, effort)
- Oxygen saturation
- Blood pressure
- Temperature

Head-to-Toe Physical Exam
History (OPQRST/SAMPLE)

B Blood glucose B

Clinical Guidelines:

- Be aware of AMS as presenting sign of an environmental toxin or Haz-Mat exposure and protect personal safety.
- It is safer to assume hypoglycemia than hyperglycemia if doubt exists.
- Do not let alcohol confuse the clinical picture. Alcoholics frequently develop hypoglycemia and may have unrecognized injuries.
- Low glucose (< 60), normal glucose (60 - 120), high glucose (> 250).
- Consider chemical/physical restraints if necessary for patient's and/or personnel's protection per the Restraint Procedure.

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

BLS Trauma

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History

- Mechanism of injury
- Events leading up to injury
- Pain level
- Medications and Allergies
- Seat belt/protective equipment use

Signs and Symptoms

- Pain, swelling
- Deformity, fractures, bleeding
- Respiratory distress
- Hypotension or shock
- Traumatic Arrest
- Decreased mental status/LOC

Scene Size-Up (EMR)
* Universal Care Protocol U-1 (EMR)

EMR — Notify receiving facility of Trauma Alert (if identified) — **EMR**

Burn Care (EMR)
- For chemical burns, see FD Response Policy
- Expose area and remove constricting items
- Cool burn and cover with a dry dressing
- Keep patient warm

Bleeding Control (EMR)
- Apply direct pressure using gauze
- Apply CAT tourniquet
- Apply Quik Clot

Go directly to tourniquet for serious bleeding

Splinting (EMR)
- Locate, expose, manually stabilize the injury
- Control hemorrhage and assess distal pulse/motor/ sensation
- Splint joints above and below injury
- Reassess pulse/motor/ sensation

Secondary Assessment/History (EMR)
- Vital Signs
  BP, pulse, resp. rate, oxygen saturation, temperature
- Head-to-Toe Physical Exam
- History (OPQRST/SAMPLE)
- Patient packaging (C-collar, long back board)

B — Blood glucose — **B**

Monitor and Reassess

Clinical Guidelines:
- First Responders on scene should upgrade/downgrade responding EMS units as needed.
- Upon arrival of ALS transport, patient care should be transitioned between care teams. Arriving personnel should receive a patient care hand-off from first responders or family on scene during assessment.

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

Cardiac Arrest

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History

- Events leading to arrest
- Bystander CPR / AED use
- Estimated down time
- DNR / Hospice status
- Medications
- Past medical history

Signs and Symptoms

- Unresponsive
- Abnormal breathing
- Pulselessness
- Lividity / rigor
- Cold skin
- Decomposition
- No pupillary response

* Universal Care Protocol U-1

Are criteria for withholding resuscitation present?

- Lividity
- Rigor Mortis
- DNR
- Obvious mortal wound

Yes →

- Reduce units
- Confirm Medical Examiner response
- Customer service

No ↓

EMR

- Begin compressions
- Apply AED
- Ventilate patient
  - Passive oxygenation (single rescuer up to 6 minutes)
  - NRB @ 15 lpm
  - OPA/NPA
  - BVM

B

- Supraglottic airway

FP

* Medication Access Procedure G-20
Epinephrine 1:10,000 1mg IV/IO, q 3-5 minutes

2 Minutes ↓

Pulse?

NO → **Consider reversible causes**

If suspected opioid overdose, administer Narcan following Altered Mental Status protocol

↑ back to EMR

YES →

EMR

Secondary Assessment/History

Vital Signs
- Pulse (rate, rhythm)
- Respiratory (rate, depth, effort)
- Oxygen saturation
- Blood pressure
- Temperature

Head-to-Toe Physical Exam
History (OPQRST/SAMPLE)

B

Blood glucose

Clinical Guidelines:

- Prioritize chest compressions and defibrillation over other interventions.
- Limit the interruption of chest compressions while performing airway maneuvers, giving ventilations, or administering medications to no more than 10 seconds.

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Chest Pain/Cardiac Issues

History

- Age
- Medications
- Erectile Dysfunction Medication
- Past medical history (MI, Angina, Diabetes, post menopausal)
- Allergies (Aspirin, Morphine, Lidocaine)
- Recent physical exertion
- Palliation / Provocation
- Quality (crampy, constant, sharp, dull, etc.)
- Region / Radiation / Referred
- Severity (0-10)
- Time (onset /duration / repetition

Universal Care Protocol U-1

Focused assessment:

- Start of and total duration of pain
- Location of pain (substernal, arm, jaw, neck)
- Quality (cramping, sharp, dull, pressure)
- Radiation
- Exertion prior to pain
- Anything make pain better/worse
- Pain on scale 0 - 10

Signs and Symptoms

- CP (pain, pressure, aching, vicelike tightness)
- Location (substernal, epigastric, arm, jaw, neck, shoulder)
- Radiation of pain
- Pale, diaphoresis
- Shortness of breath
- Nausea, vomiting, dizziness
- Time of Onset

EMR / B: **Oxygen therapy (maintain between 94-99%)**

B: **Administer 324 mg aspirin PO if:**
- patient has not already taken
- patient does not have allergy

EMR: **Secondary Assessment/History**

- Vital Signs
  - Pulse (rate, rhythm)
  - Respiratory (rate, depth, effort)
  - Oxygen saturation
  - Blood pressure
  - Temperature
- Head-to-Toe Physical Exam
- History (OPQRST/SAMPLE)

B: **Blood glucose**

B / FP: **12-Lead ECG (within 5 min of contact)**
ALS Interpretation of 12 Lead ECG

STEMI?

- No
- YES → **Limit scene time < 10 min**
  Notify receiving hospital

FP: * **IV Access Protocol**
Nitroglycerin 0.4 mg SL

Monitor and Reassess

Clinical Guidelines:

- Avoid Nitroglycerin in any patient who has used erectile dysfunction medication (Viagra or Levitra <24 hours; or Cialis <36 hours) due to the potential for severe hypotension.
- Monitor for hypotension after administration of nitroglycerin and narcotics.
- Diabetics and geriatric patients often have atypical pain, or only generalized complaints.

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

Childbirth

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History

- Number of pregnancies
- Number of births
- Prenatal care
- Expected due date
- Previous complications
- Hx of cesarean section
- Last baby checkup
- Confirm # of babies

Universal Care Protocol U-1

Is birth imminent?

- Presentation
- Urge to push
- Short duration between contractions

APGAR

- Appearance
- Pulse
- Grimace/Reflex
- Activity
- Respirations

Yes

No

Check presentation?

Normal

Abnormal
- Limb presentation
- Breech
- Prolapsed cord

E M R

Prepare for delivery
Deliver:
- Head
- Check for nuchal cord & reduce
- Suction mouth/nose
- Shoulders
- Keep baby at level of vagina until cord stops pulsing
- Stimulate/dry
- Swaddle/bundle

E M R

E M R

Delay delivery:
- Keep baby off cord
- Encourage not to push
- Elevate mother's hips
- Prepare for transport

E M R

Baby - Assessment

APGAR
1-minute
5- minute
Physical Exam

Prepare for afterbirth

Mother – Primary Reassessment

Reassess LOC (AVPU)
Reassess airway
Reassess breathing
Reassess circulation

Mother - Secondary Assessment

Vital Signs
Pulse (rate, rhythm)
Respiratory (rate, depth, effort)
Oxygen saturation
Blood pressure
Temperature
Head-to-Toe Physical Exam
History (OPQRST/SAMPLE)

B **Blood glucose** **B**

Clinical Guidelines:

- Inspect the perineum for crowning; do not perform a digital vaginal exam
- Duration between contractions measured from beginning of one contraction to the beginning of another
- Cutting the cord is not an urgent consideration. Cut 4" from baby once assessment complete and cord stops pulsing
- Consider fundal massage in cases of post partum hemorrhage more than 500 cc
- Watch for signs of pulmonary embolism (cough, rapid heart rate, chest pain, dyspnea)
- Watch for signs of uterine rupture (rigid abdomen, tearing pain)
- Consider a second ambulance if the pregnancy or delivery are high risk

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Adult Medical Section

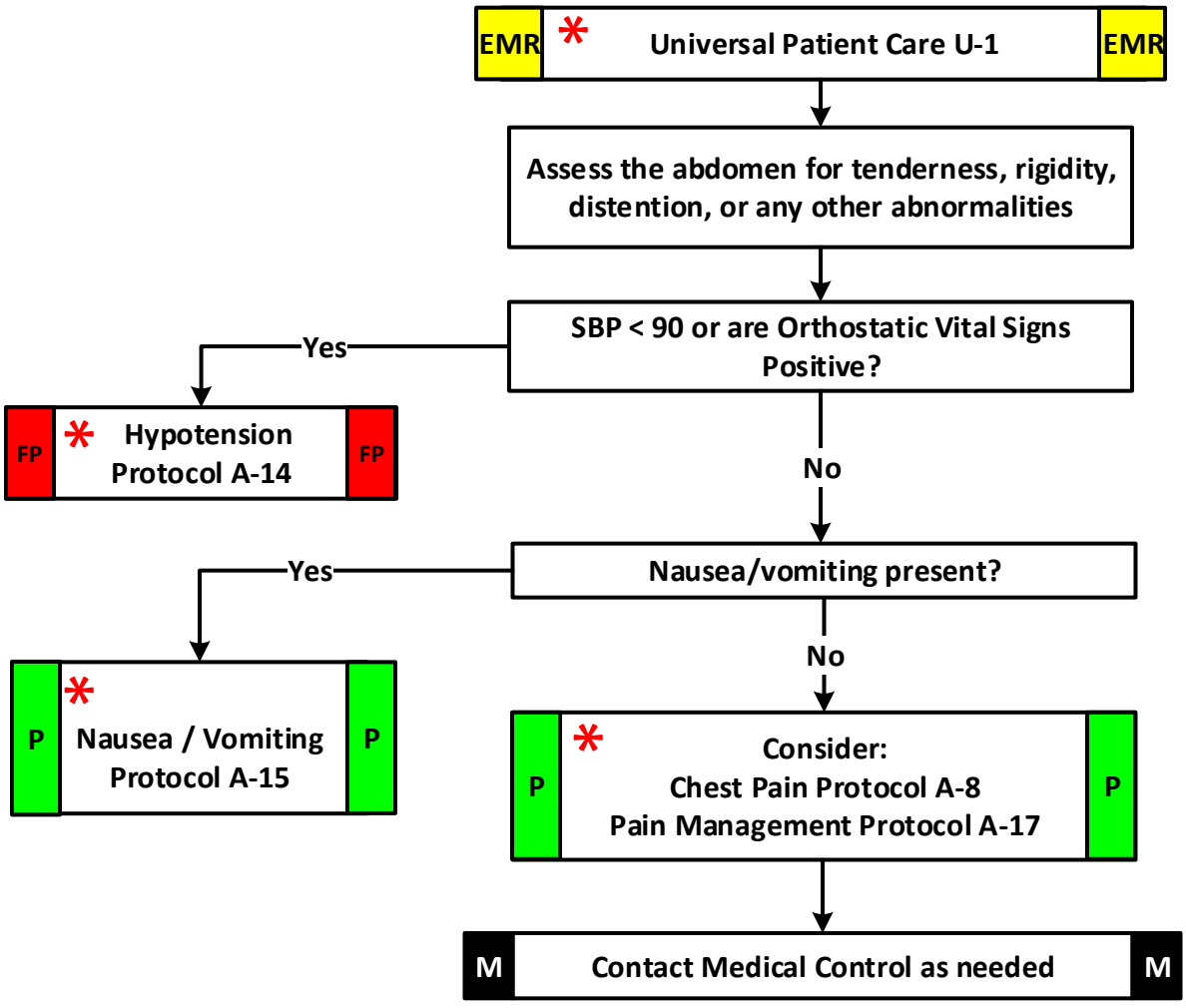
- Abdominal Pain
- Airway Management
- Airway, Failed
- Allergic Reaction
- Behavioral Emergencies
- Bradycardia
- Cardiac Arrest – Aystole/PEA
- Cardiac Arrest – Ventricular Arrest
- Chest Pain/ACS
- COPD/Asthma
- Diabetic Emergencies
- Environmental Emergencies
- Fever/Infection
- Hypertensive Crisis
- Hypotension
- Nausea/Vomiting
- Overdose/Toxic Exposure
- Pain Management
- Post-Resuscitation Care
- Pulmonary Edema
- Seizures
- Sepsis Alert
- Stroke/CVA
- Syncope
- Tachycardia

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

Abdominal Pain

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History	Differential Diagnosis	Signs / Symptoms
• Age • Last menstrual period • Pregnancy • Past medical / surgical history • Medications • Last meal eaten/type of food • Last bowel movement / emesis	• Pneumonia • Pulmonary embolus • Liver (hepatitis, CHF) • Peptic ulcer disease / Gastritis • Gallbladder • Myocardial Infarction • Pancreatitis • Kidney Stone • Abdominal aneurysm • Appendicitis • Bladder / Prostate disorder • Pelvic (PID, Ectopic pregnancy, ovarian cyst) • Mesenteric ischemia • Diverticulitis • Bowel obstruction • Gastroenteritis (infectious) • Trauma • Sepsis	• Pain • Nausea/Vomiting • Diarrhea • Dysuria • Constipation • Vaginal bleeding / discharge • Pregnancy • Fever

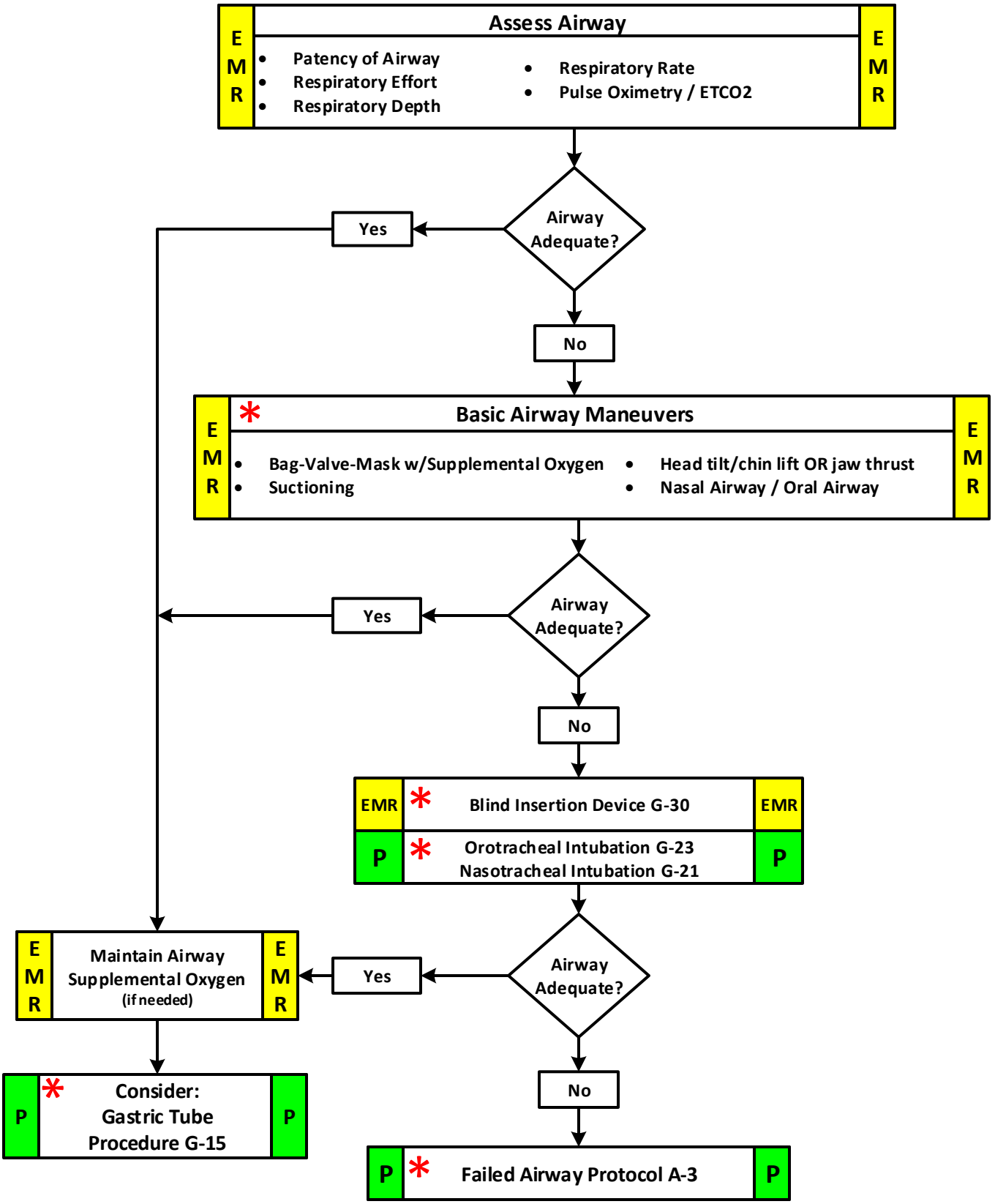


Clinical Guidelines:

- Abdominal pain in women of childbearing age should be treated as an ectopic pregnancy until proven otherwise
- The diagnosis of abdominal aneurysm should be considered with abdominal pain in patients over 50 Y/O.
- Pain control should be considered for any reported pain > 6/10, unless contraindicated.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Airway Management



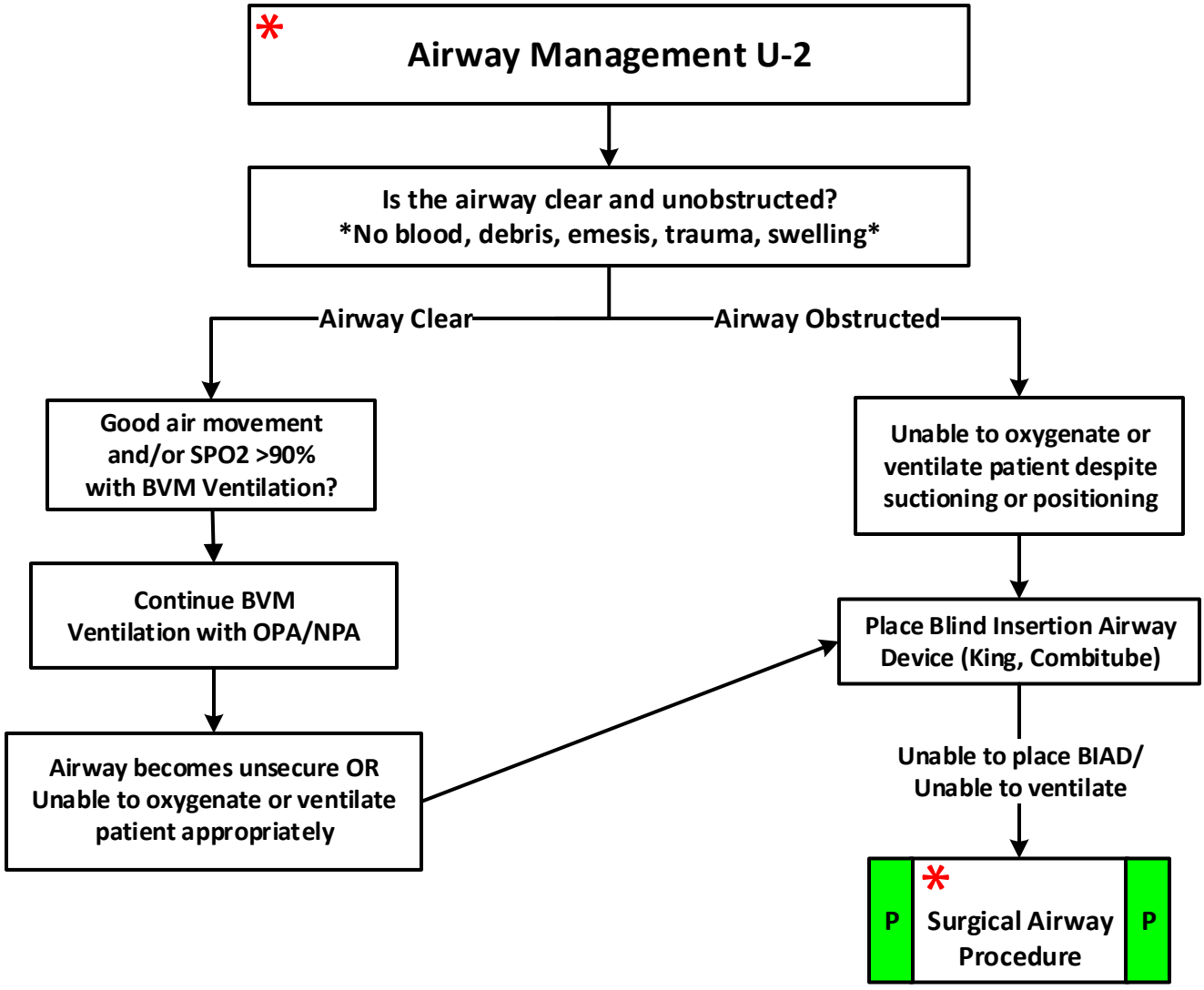
Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Airway Management

Clinical Guidelines:

- EtCO2 and pulse oximetry monitoring is mandatory with all respiratory complaints or any advanced airway placement.
- If an airway is being maintained by BVM with Pulse Oximetry ≥90%, an advanced airway is not required.
- If difficult intubation is anticipated consider early use of BIAD, or assisted intubation with the Bougie device.
- Lung sounds should be checked after airway placement, patient movement, or as appropriate.
- Ventilatory rate should be 10 - 12 per minute OR to maintain ETCO2 at 35-45 (when appropriate).
- Maintain SMR in those patients with suspected spinal injury.
- Hyperventilation in head trauma patients when herniation is suspected should be done to maintain ETCO2 of 30-35
- For advanced airways secure airway using tape or commercial device. Check placement during patient movement frequently.

Failed Airway



Clinical Guidelines:

- **EtCO2, pulse oximetry, and cardiac monitoring are all required with advanced airways.**
- **If an airway is being maintained by BVM with Pulse Oximetry >90%, it is acceptable to maintain basic airway measures instead of using a BIAD or ET. A secure airway is an airway where the patient is appropriately oxygenated and ventilated without obstruction (i.e. no secretions/blood).**
- **If a BIAD is providing good ventilatory exchange and is functioning appropriately: DO NOT REMOVE or EXCHANGE in the field.**
- Maintain SMR in those patients with a suspected spinal injury.
- Consider the **BURP** method to assist with difficult endotracheal intubations.
- Notify Destination Hospital ASAP regarding patient's difficult or failed airway.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

Allergic Reaction

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History	Differential Diagnosis	Signs and Symptoms
• Medication history • Onset and location • Past medical history / history of reactions • New clothing, soap, detergent • Medication allergy / exposure • Food allergy / exposure • Insect sting or bite	• Urticaria (rash only) • Anaphylaxis (systemic effect) • Shock (vascular effect) • Angioedema (drug induced) • Aspiration / Airway obstruction • Vasovagal event • CHF • Asthma or COPD	• Edema / Voice Changes • Itching or hives • Coughing / wheezing or respiratory distress • Chest or throat constriction • Difficulty swallowing • Hypotension or shock

8 R

EMR * Universal Patient Care U-1 EMR

Severe respiratory distress, angioedema, facial swelling, hypotension

EMR Assist with Adult EPI Pen EMR

P
Epi 0.5 mg 1:1000 IM. May repeat q 15 min prior to Medical Control Contact

Secure the airway as needed. See Adult/Pediatric Airway Protocol for guidance
P

Mild to Moderate Distress

FP DuoNeb 0.5/2.5 mg + Albuterol 2.5 mg Neb, continuous if needed FP

P
Diphenhydramine 50 mg IV/IM

500 mL NS bolus if MAP < 60. Repeat unless signs of fluid overload exist

ALS Monitoring
P

Continued Respiratory Distress?

P
Racemic Epi 0.5mL in 3 mL NS, administer until relief is noted, then discontinue.

Solu-Medrol 125 mg IV
P

Hives/Rash only
No Respiratory Distress

P
Diphenhydramine 50 mg IV/IM

ALS monitoring
P

Clinical Guidelines:

- These patients should receive a 12 lead ECG and continual ALS monitoring.
- During anaphylaxis, progress to cardiovascular collapse can occur quickly. The shorter the onset from exposure to symptoms, the more severe the reaction.
- ETCO2 and SpO2 values should be monitored on any patient with a respiratory complaint.
- Gastrointestinal symptoms occur most commonly in food-induced anaphylaxis, but can occur with other causes as well.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Behaviorial Emergencies

History	Differential Diagnosis	Signs and Symptoms
• Situational crisis • Psychiatric illness/medications • Injury to self or threats to others • Medic alert tag • Substance abuse / overdose • Diabetes • Determine current issue • Bipolar, Schizophrenia, anxiety disorders, etc	• Hypoxia • Alcohol Intoxication • Toxin / Substance abuse • Medication effect / overdose • Withdrawal syndromes • Bipolar (manic-depressive) • Schizophrenia, anxiety disorders, etc • Diabetic Issue • Traumatic Mechanism	• Anxiety, agitation, confusion • Affect change, hallucinations • Delusional thoughts, bizarre behavior • Combative/violent behavior • Expression of suicidal/ homicidal thoughts

8 R

EMR * Universal Patient Care U-1 EMR

Does the patient represent a threat to themselves or others?

Yes

P

Request law enforcement assistance.
Consider physical restraints
Consider chemical sedation:

General Anxiety - Midazolam 1 mg IV/IO/IM/IN, repeated PRN.

Moderate Agitation - Haldol 1-5 mg IV/IO/IM, may repeat once in 5-15 minutes.

Severe Agitation – Haldol 5 mg IV/IO/IM and Midazolam 2-4 mg IV/IO/IM/IN up to 4 mg max dose PRN.

Violent Patients –
IM Ketamine 5 mg/kg (max dose of 500 mg).
IV/IO Ketamine 1 mg/kg IV/IO (max dose 100 mg)

IV/IO Ketamine: dilute with 9 mL NS for a 100 mg/10 mL concentration. Give over 1 min to avoid apnea.

P

No

EMR

- Remove patient from the stressful situation, if possible.
- Obtain a history of situation/ issue and determine how best to assist the patient.
- Calm patient using verbal techniques.
- Maintain a high level of situational awareness.
- BLS transport as needed.

EMR

Patient becomes agitated and/or violent

M Contact Medical Control as needed M

Clinical Guidelines:

- Consider your safety first. Physical Restraint should be performed/assisted by Law Enforcement when available.
- **All patients receiving sedation require ALS transport. Monitor airway status closely in these patients using ETCO2 and SpO2.**
- Expect an onset of 10-20 min for Haldol IM administration. Do not administer in patients with seizure disorder and consider reduced dosing in elderly patients.
- Transported patients handcuffed/restrained by Law Enforcement should be accompanied by an officer whenever possible OR EMS must have the key to the restraints.
- Be sure to consider all possible medical/trauma causes for behavior.
- Restrained patients should never be maintained or transported in a prone position.

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

Bradycardia

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History	Signs and Symptoms	Signs and Symptoms
• Past Medical History • Beta Blockers • Calcium Channel Blockers • Digoxin • Cholinergics • Clonidine • Pacemaker • Events prior to onset	• Acute MI/Ischemia • Hypoxia • Hypothermia • Sinus Bradycardia • Electrolyte Abnormality (K+) • CVA, increased ICP, Head Injury • Sick Sinus Syndrome • AV Blocks • Overdose	• HR <60/min with signs of hypoperfusion • Hypotension • Acute altered LOC • Chest pain • CHF • Syncope

EMR * Universal Patient Care U-1 EMR

HR < 60 with symptoms: hypotension, acute altered LOC, chest pain, acute CHF?

No → Monitor and reassess

Yes

Is the patient unresponsive?

Yes

P * Transcutaneous Pacing Protocol
Consider sedation:
Versed 1.0 mg IV/IO/IN, may repeat IV/IO every 3-5 min as long as patient maintains SBP > 90 P

No

B * 12 Lead ECG Protocol B

P Consider Atropine 0.5 mg q 3-5 mins max of 3 mg if TCP not immediately available P

P * Transcutaneous Pacing Protocol
Consider Sedation: Versed 1.0 mg IV/IO/IN, may repeat IV/IO every 3-5 min as long as patient maintains SBP > 90 P

P If hypotensive post-TCP
Dopamine 5-20 mcg/kg/min IV/IO pump P

M Contact Medical Control as needed
- or for -
Epinephrine 1-10 mcg/min IV infusion if patient still hypotensive and unstable with max Dopamine Infusion M

Clinical Guidelines:

- The use of lidocaine in heart block can worsen bradycardia and lead to asystole and death.
- Treatment of bradycardia is based on the presence of symptoms. If asymptomatic, monitor only.
- The use of Atropine for bradycardia in the presence of an MI may worsen ischemia.
- Consider treatable causes for bradycardia (Beta blocker OD, Calcium channel blocker OD, etc.) - treat appropriately

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Bradycardia

2015 American Heart Association
Adult Bradycardia With a Pulse Algorithm

Assess clinical condition – stable vs. unstable.
Heart rate typically <50/min, if bradyarrhythmia.

↓

Identify and treat the underlying cause:

- Maintain patent airway and assist breathing as necessary
- Oxygen (if hypoxemic)
- Cardiac monitor to ID rhythm; blood pressure monitoring and oximetry
- IV access
- 12 Lead ECG

↓

Persistent bradyarrhythmia causing:

- Hypotension?
- Acutely altered mental status?
- Signs of shock?
- Ischemic chest discomfort?
- Acute heart failure?

No → **Monitor and observe**

Yes ↓

Atropine 0.5 mg bolus. Repeated every 3-5 minutes to a maximum dose of 3 mg. If atropine ineffective:

- Transcutaneous pacing
- Dopamine or Epinephrine infusion

↓

Consider:

- Expert consultation
- Transvenous pacing

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

Cardiac Arrest - Asystole / PEA

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History	Differential Diagnosis	Signs and Symptoms
• Past medical history • Medications • Events leading to arrest • Bystander CPR? • End stage renal disease • Estimated downtime • DNR?	• Medical or Trauma • Hypoxia • Potassium (hyper/hypo) • Drug overdose • Acidosis • Hypothermia • Equipment settings/ problems • Obvious Death	• Pulselessness • Abnormal Breathing (gasps) • Lack of Breathing • No electrical activity on ECG • No auscultated heart tones

EMR * Cardiac Arrest Protocol U-7 EMR

FP Confirm Asystole/PEA (No Shock Advised) Check rhythm and pulse q 2 minutes FP

- Establish IV/IO access
- Administer Epinephrine 1 mg 1:10,000 q 3-5 min IV/IO

Patient history of renal failure/dialysis?

Yes

P Administer Calcium Chloride 1 g IV/IO, followed with 1 liter NS bolus IV/IO P

No

FP Continue CPR, rhythm checks and Epi 1 mg 1:10,000 administration FP

ROSC after at least 20 minutes of resuscitation?

No

P * Consider: Termination of Resuscitation Protocol P

Yes

P * Post Resuscitation Care A-17 P

M Contact Medical Control as needed M

Look for treatable causes:

- **Hypoxia**
- **Hypothermia**
- **Hypovolemia**
  NS 1 L bolus IV/IO
- **Hypoglycemia**
  Dextrose Administration
- **Acidosis**
  Sodium Bicarbonate 1meq/kg IV/IO with Medical Control
- **Hyperkalemia**
  Calcium Chloride 1g IV/IO and Sodium Bicarbonate 1meq/kg IV/IO with Medical Control
- **OD Calcium Channel Blocker**
  Calcium Chloride 1g IV/IO
- **Tension Pneumothorax**
  Decompression
- **OD Opiates**
  Narcan 2 mg IV/IO

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Cardiac Arrest - Ventricular Arrest

History	Differential Diagnosis	Signs and Symptoms
• Estimated Down Time • Past Medical History • Medications • Events leading to arrest • Renal Failure / Dialysis • DNR • Bystander CPR / AED use	• Asystole • Artifact • Implanted Device Failure • Cardiac • Endocrine / Medicine • Drugs • Pulmonary	• Unresponsive • Apneic • Pulselessness • Ventricular fibrillation or ventricular tachycardia on ECG

8R

*AT ANY TIME: For changes in rhythm go to appropriate Protocol

EMR * Cardiac Arrest Guideline U-4 EMR

↓

FP * IV/IO Access Protocol
Epinephrine 1:10,000 1mg IV/IO, q 3-5 minutes FP

↓

P ALS Provider Arrival:
- Place multi-function pads and determine cardiac rhythm.
- Deliver defibrillation 120 J – 200 J, if a shockable rhythm is present.
- Establish a definitive airway, if not already performed. P

P Torsades de Pointes
Magnesium Sulfate 2 grams slow IV/IO push over 5 minutes.
Renal Failure/ Dialysis Arrest
Calcium Chloride 1 gram IV/IO push. P

→

P Amiodarone 300mg IV/IO push
Repeat in 4 min at 150 mg IV/IO push x 1 P
M Lidocaine 1 mg/kg IV/IO if patient is allergic to Amiodarone with Medical Control only. M

↓

Continue CPR with pulse checks q 2 minutes

↓

ROSC? — No → Transport to definitive care if Ventricular Arrest persistents
ROSC? — Yes → Post Resuscitation Care A-18

Clinical Guidelines:
- Reassess and document ETT/BIAD placement after every move and at transfer of patient care.
- Continuous ETCO2 should be initiated as soon as practicable.
- Tx priorities: uninterrupted compressions, defibrillation, then IV/IO and airway control.
- Effective CPR and prompt defibrillation are the keys to successful resuscitation.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

Chest Pain / ACS

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History	Differential Diagnosis	Signs and Symptoms
• Past medical history (MI, Hypertension, Hyperlipidemia, Angina, Diabetes) • Family HX cardiovascular disease • Chest Pain with exertion • Smoker • Stimulants	• Angina vs. Myocardial infarction • Pericarditis • Pulmonary embolism • Asthma / COPD • Pneumothorax • Aortic dissection • GI reflux or hernia • Esophageal spasm • Chest wall injury or pain • Pleuritic pain • Overdose (Stimulants) • Anxiety	• Pain or pressure between navel and jaw • CHF signs and symptoms • Syncope • Severe Weakness Difficulty breathing • Pale/Cool/Clammy skin

EMR * **Universal Patient Care U-1** EMR

Administer Supplemental Oxygen
Titrate to SpO2 >94%

B * **Apply 12 Lead ECG electrodes**
Perform 12 Lead EKG B

FP **Interpret 12 Lead ECG within 5 mins of Pt contact, unless doing so causes a significant delay in a critical intervention (i.e. cardioversion, pacing, and/or airway establishment)** FP

STEMI → **Notify receiving facility of a STEMI Alert**

P
- **Nitro SL 0.4 mg q 3-5 min if SBP ≥ 90 until patient is pain free**
- **Aspirin 324 mg PO**

Fentanyl 1-2 mcg/kg IV/IO/IN (maximum 100 mcg initial dose) for pain relief. Dose may repeated up to 50 mcg every 3-5 minutes as long as patient maintains SBP >90. P

M **Contact Medical Control as needed** M

* **Patient may develop:**
Hypotension
Dysrhythmias
Nausea/Vomiting

Treat per appropriate Clinical Protocol

Clinical Guidelines:

- The primary goals of Acute Coronary Syndrome treatment are early recognition, efficient scene times and emergent transport to definitive care.
- Do not administer Nitroglycerin in any patient who has used Viagra (sildenafil) or Levitra (vardenafil) in the past 24 hours or Cialis (tadalafil) in the past 48 hours due to the potential for severe hypotension.
- Monitor for hypotension and respiratory depression after administration of nitroglycerin and fentanyl.
- Remember: Diabetics and geriatric patients often have atypical pain, or only generalized complaints.
- ETCO2 and SpO2 values will be monitored if Narcotic Medications are administered
- Consider Ondansetron 4-8mg IV/IO to prevent nausea and vomiting
- Scene times should be limited to less than 10 minutes for Time Critical Diagnosis (TCD) patients whenever possible.

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

COPD/Asthma

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History	Differential Diagnosis	Signs and Symptoms
• Asthma, COPD, CHF, Stroke • Home treatment (oxygen, nebulizer) • Medication compliance • Toxic exposure, smoke inhalation	• Asthma/COPD • Anaphylaxis • Aspiration • Pleural effusion • Pneumonia • Pulmonary embolus • Pneumothorax • Cardiac (MI or CHF) • Pericardial tamponade • Hyperventilation / Anxiety • Inhaled toxin	• Shortness of breath • Pursed lip breathing • Decreased ability to speak • Increased respiratory rate and effort • Wheezing, rhonchi, stridor • Use of accessory muscles • Fever, cough, tachycardia

8 R

EMR * Respiratory Distress U-2 EMR

Rales or signs of CHF?

Yes → * Pulmonary Edema Guideline A-19

No

Unstable
- Altered mentation
- SpO2 < 92%
- Respirations <10 or >30
- Significant work of breathing
- Wheezing present

Stable
- SpO2 ≥ 92%
- Respiratory rate 10-30
- No significant work of breathing
- Wheezing present

P — If patient has ineffective breathing, give 0.5 mg 1:1000 EPI IM — P

* If patient becomes apneic, see Airway Management Protocol A-2

P — DuoNeb + Albuterol 2.5 mg Neb
Continuous Neb as needed
Solu-Medrol 125 mg IV/IO
ALS Monitoring — P

P
- CPAP 5-10 PEEP, as long as patient can maintain airway
- Midazolam 1 mg IV/IO/IN, may repeat IV/IO every 3-5 min as long as SBP > 90

P

P — DuoNeb + Albuterol 2.5 mg Neb. Administer continuous Neb as needed
Albuterol MDI for ET/Trach
If breathing - 1 puff q 30 sec for 2 mins (4 doses total)
If apneic - 1 puffs q 15 sec intervals via BVM for 2 minutes (8 doses total) — P

M — If patient does not improve:
- Consider alternate differentials
- Contact Medical Control as needed — M

P
- Magnesium Sulfate 2 g in 50 mL/NS infused over 20 min
- Solu-Medrol 125 mg IV/IO

P

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Diabetic Emergencies

History	Differential Diagnosis	Signs and Symptoms
• Known diabetic, medic alert tag • Past medical history • Medications • Change in condition • Alcoholism • Recent trauma • Recent sickness	• Head trauma • CNS (stroke, tumor, seizure, infection) • Cardiac (MI, CHF) • Thyroid (hyper / hypo) • Shock (septic, metabolic, traumatic) • Diabetes (hyper / hypoglycemia) • Toxicologic/Carbon Monoxide • Acidosis / Alkalosis • Pulmonary (Hypoxia)	• Decreased mental status / change in baseline • Bizarre behavior • Hypoglycemia • Hyperglycemia • Signs of dehydration

EMR * Universal Patient Care U-1 EMR

No ← FP * Blood Glucose Procedure FP

Glucose 70 - 300

Glucose < 70

Glucose > 300 or Signs of dehydration

EMR Oral Glucose 15 grams if patient is not obtunded. May repeat once as needed. EMR

P Assess Cardiac Monitor & 12 Lead ECG P

P IV NS 1000 mL Bolus; Cardiac Monitor & 12 Lead ECG P

P Dextrose 10% IV/IO Infusion 100 mL bag titrated to patient condition. Can repeat once. P

Glucagon 1 mg IM/IN

Consider alternate differentials:
Seizure
Overdose
Behavioral
Fever/Sepsis
Stroke

ALS Transport

M Contact Medical Control as needed M

No

Return to baseline ? — Yes → * Consider: Refusal of Transport

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Diabetic Emergencies

Clinical Guidelines:

- If hypoglycemic patients have returned to baseline and wish to refuse care make certain that the patient eats and that there is someone to observe them for repeat hypoglycemic episodes.
- DIABETIC REFUSAL CRITERION: No Medical Control contact is necessary if following criterion are met:
    - No apparent disease process causing emergency other than diabetes.
    - Patient is without further complaint or symptoms.
    - Blood glucose has been corrected to greater than 80 mg/dL.
    - Patient is eating or has eaten complex carbohydrates/protein after treatment.
    - A responsible adult is present to monitor patient and has access to 911.
    - No medication dosing or pump error contributed to patient's diabetic emergency.
    - Patient's insulin dose has not changed in the previous 10 days.
    - Patient has been instructed to contact their primary care physician as soon as possible.
    - Patient has been instructed to withhold insulin dosing until primary care physician is consulted.
    - Patient has agreed to recheck blood glucose every hour for two hours and every other hour for next four hours.

Environmental Emergencies

History	Differential Diagnosis	Signs and Symptoms
• Recent exertion or environmental exposure • Lack of acclimatization • Limited access/control of fluid intake • Cardiovascular disease • Medications (antipsychotics, anticholinergics, diuretics)	• Stroke • Dehydration • Encephalopathy • Meningitis/Sepsis • Head Trauma • Overdose/Toxin • Hypoglycemia • Psychiatric issue	• Weakness • Nausea & vomiting • Cramping • Syncope • Dry or diaphoretic skin • Altered Mental Status • Hypotension • Tachycardia

8 R

EMR * Universal Patient Care U-1 EMR

Suspected Heat Exposure

EMR Remove to shaded/cool environment
Discontinue any physical activity EMR

Temp > 39 C (102 F)
and/or altered mental status?

EMR Loosen and/or remove clothing
Ice packs to neck, axilla and groin EMR
* Check Blood Glucose G-6

SBP < 90?

No → (to Transport and ALS monitoring)

Yes

FP Initiate IV/IO access FP
P Cooled Normal Saline
20 mL/kg IV/IO. May
repeat as long as
lung sounds are clear
and no underlying medical
condition contraindicating
fluid replacement exists P

→ P Transport and ALS monitoring P

Suspected Cold Exposure

EMR Move to a warm environment
Remove any wet clothes EMR

Temp < 36 C (96 F)
and/or altered mental status?

EMR Rewarm using blankets
Avoid excess movement EMR

FP Initiate IV/IO access FP
P Warmed
Normal Saline
20 mL/kg IV/IO P

Is patient experiencing pain due to frostbite?

No → (to Transport and ALS monitoring)

Yes

P * Pain Management
Protocol A-16 P

→ P Transport and ALS monitoring P

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

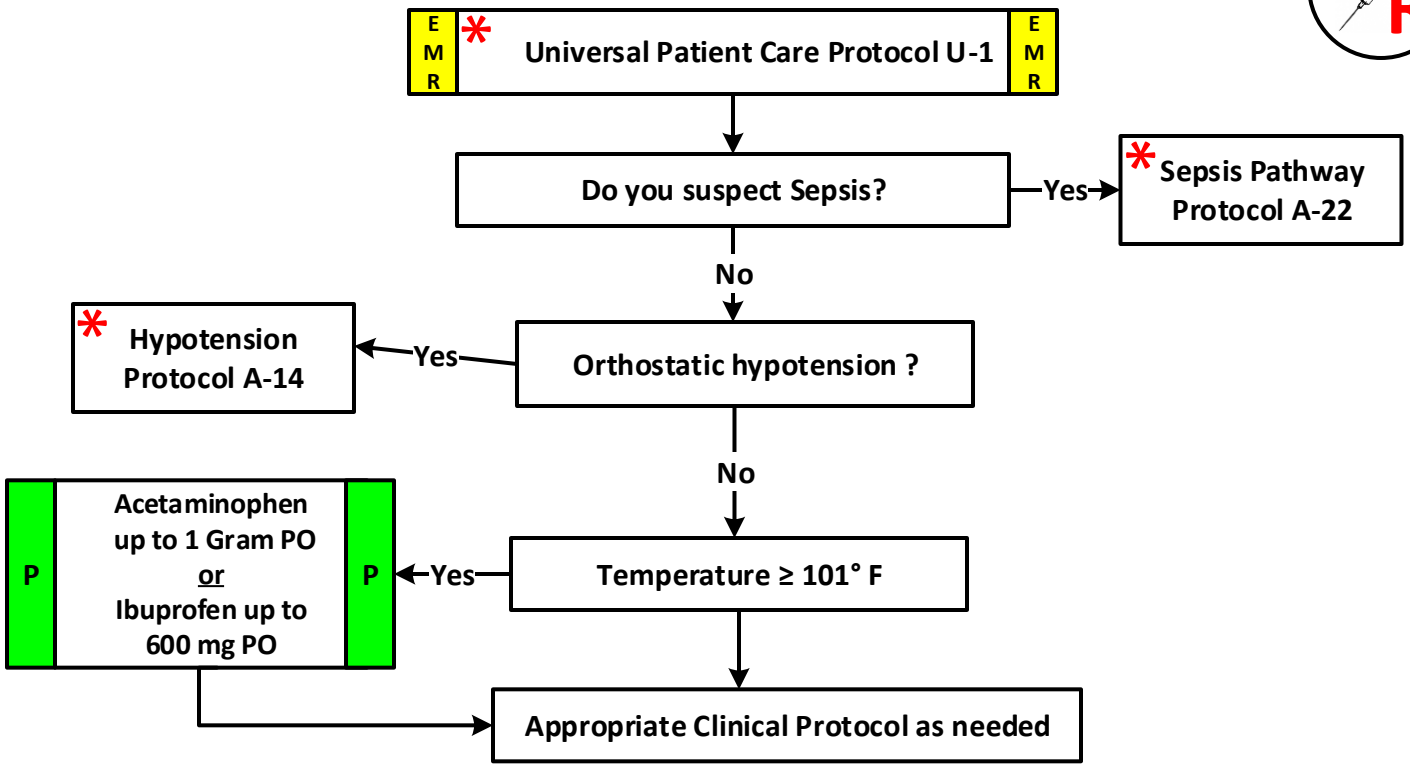
Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

Fever/Infection Control

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History	Differential Diagnosis	Signs and Symptoms
• Age • Duration and severity of fever • Past medical history • Medications • Immunocompromised (transplant, HIV, diabetes, cancer) • Environmental exposure • Last acetaminophen or ibuprofen dose	• Infections / Sepsis • Cancer / Tumors / Lymphomas • Medication or drug reaction • Connective tissue disease • Arthritis • Vasculitis • Hyperthyroid • Heat Stroke • Meningitis	• Warm/Flushed/Sweaty skin condition • Chills/Rigors • Muscle pain • Cough • Chest pain • Headache • Abdominal pain • Mental status changes • Rash

8 R



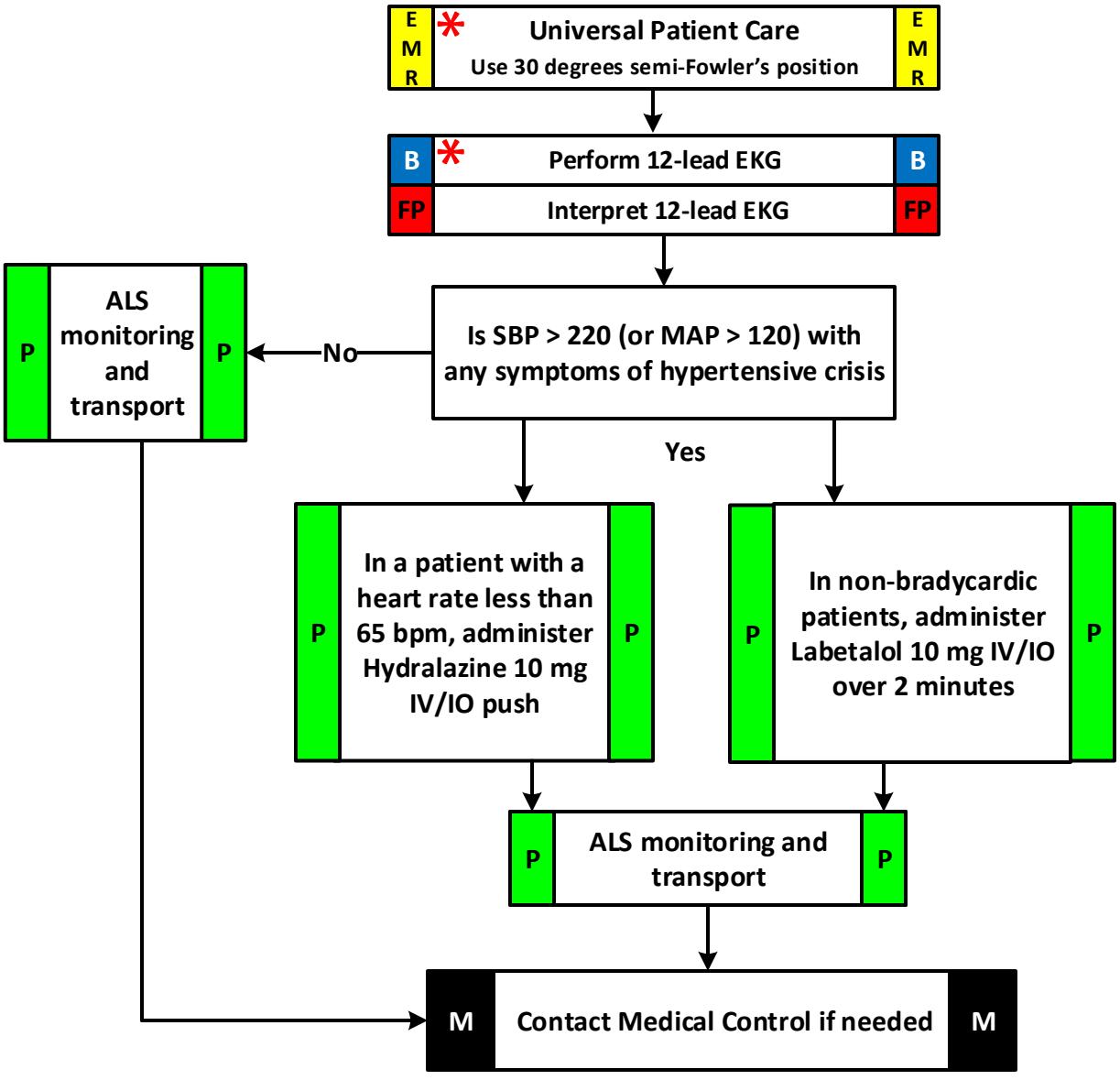
Clinical Guidelines:

- Patients with a history of liver failure should not receive acetaminophen.
- **Contact precautions** include standard PPE plus utilization of a gown, change of gloves after every patient contact, and strict hand washing precautions. This level of precaution is utilized when multi-drug resistant organisms (e.g. MRSA, scabies, or zoster (shingles)), or with other illnesses spread by contact are suspected.
- **Droplet precautions** include standard PPE plus a standard surgical mask for providers who accompany patients in the back of the ambulance and a surgical mask or NRB O2 mask for the patient. This level of precaution should be utilized with influenza, meningitis, mumps, streptococcal pharyngitis, and other illnesses spread via large particle droplets are suspected. A patient with a potentially infectious rash should be treated with droplet precautions.
- **All-hazards precautions** (Airborne Precautions) include standard PPE, contact precautions plus N-95 mask for providers. This level of precautions is utilized during the initial phases of an outbreak when the etiology of the infection is unknown or when the causative agent is found to be highly contagious (e.g. SARS,TB).
- Rehydration with fluids increases the ability to sweat and improves heat loss.
- Allergies to NSAID's (non-steroidal anti-inflammatory medications) are a contraindication to Ibuprofen.
- Tylenol should not be used in the setting of environmental heat emergencies.

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Hypertensive Crisis

History	Differential Diagnosis	Signs and Symptoms
• Medical history • Medication compliance • Events leading to episode • Stroke / TIA history	• Syncope • Altered mental status • Seizures • Chest pain • Generalized weakness • Nausea/vomiting • Anxiety • Stroke • Difficulty breathing	• Headache • Dizziness • Blurred vision • Tinnitus • Nosebleed • Vomiting • Paresthesia



Clinical Guidelines:

- Mean Arterial Pressure = Diastolic Pressure + 1/3(Systolic Pressure + Diastolic Pressure)

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Hypotension

History	Differential Diagnosis	Signs and Symptoms
• Blood loss due to trauma • Recent sickness (vomiting and/or diarrhea) • Recent infections • Cardiac history • Medications • Allergen history • Pregnancy	• Shock / Sepsis • Ectopic pregnancy • Dysrhythmias / Cardiac ischemia • Pulmonary embolus • Tension pneumothorax • Toxic exposure • Allergic Reaction • GI bleed	• Restlessness, confusion • Weakness, dizziness • Hypotension • Weak, rapid pulse • Pale, cool, clammy skin • Delayed capillary refill • Coffee-ground emesis • Tarry stools

8 R

EMR * Universal Patient Care EMR

Is significant trauma/hemorrhage present?
- Yes → * ALS Trauma Protocol
- No ↓

Is patient hypotensive? Hypotension is defined as: SBP < 90 mmHG or MAP < 60 mmHg
- No → P ALS monitoring and transport P
- Yes ↓

P Normal Saline 500 mL bolus. Repeat up to 40 mL/kg as long as patient remains hypotensive w/o signs of fluid overload P

Does hypotension resolve?
- Yes → P ALS monitoring and transport P
- No ↓

Determine cause of condition and select vasopressor

Allergic Rxn	First-line vasopressor	Bradycardia
P Epinephrine 2-20 mcg/min IV (may start at 5 mcg/min) P Epi 8 mg in 250 mL NS	P Levophed 2-40 mcg/min IV (may start at 5-10 mcg/min) P Levophed 8 mg in 250 mL NS	P Dopamine 5-20 mcg/kg/min IV P Premix 3200 mg/mL

Clinical Guidelines:
- Vasopressor infusions will always utilize the Alaris Medication pump, if available.
- Patients should always have adequate intravascular fluid load prior to the use of vasopressors .
- Place in supine position unless otherwise contraindicated.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Nausea / Vomiting

History	Differential Diagnosis	Signs and Symptoms
• Time of last meal • Last bowel movement / emesis • Past medical / surgical history • Medications • LMP / Pregnancy • Travel history • Bloody Emesis or diarrhea • Recent Sickness	• Headache • Stroke, Trauma • Cardiac • Drugs or Medications • GI or Renal disorders • Diabetic Ketoacidosis • Uremia • Gynecologic disease (Ovarian Cyst / PID) • Infections (pneumonia, influenza) • Electrolyte abnormalities • Food or Toxic Ingestion • Pregnancy	• Fever • Pain • Constipation • Diarrhea • Anorexia • Hematemesis • Vertigo / Dizziness • Dehydration

8 R

EMR * Universal Patient Care Guideline U-1 EMR

EMR * Glucose < 70 or > 300? EMR — Yes → * Diabetic Emergencies Protocol A-10

Positive Orthostatic Vital Signs? — Yes → * Hypotension Protocol A-14

P

First-Line Medications

- **Ondansetron (Zofran) ODT** 4 mg PO/ODT
- **Ondansetron (Zofran)** 4 mg IV/IM. May repeat IV/IM, max dose 8 mg
- **Promethazine (Phenergan)** 25 mg IV/IM x 1 dose. If given IV, dilute in 50 mL of NS.
- **Metoclopramide (Reglan)** 10 mg IV/IM x 1 dose.
- **Prochlorperazine (Compazine)** 10 mg IV/IM x 1 dose

Second-Line Medication
Haloperidol (Haldol) 5 mg IV/IM.

For dystonia/dysphoria/dyskinesia, administer Diphenhydramine (Benadryl) 25-50 mg PO/IV/IM

P

Clinical Guidelines:

- Diabetic ketoacidosis may present as vomiting and/or abdominal pain.
- Number of times of emesis and appearance of emesis: (bloody, coffee grounds, color, solids and liquid or just liquid).
- Before administering medications, attempt to reduce nausea/vomiting through non-invasive means such as: reducing environmental stimulation, providing fresh air, providing oxygen, reducing unpleasant odors, and using distracting techniques.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

Overdose and Toxins

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History	Differential Diagnosis	Signs and Symptoms
• Ingestion/suspected ingestion of a toxic substance • Substance ingested, route, quantity, time of ingestion • Reason (suicidal, accidental, criminal) • Available medication in home • Past medical history	• Tricyclic antidepressants • Acetaminophen (Tylenol) • Depressants • Stimulants • Anticholinergic • Cardiac medications • Solvents, alcohols, cleaning agents • Insecticides (organophosphates)	• Mental status changes • Hypotension/ hypertension • Decreased respiratory rate • Tachycardia, dysrhythmias • Seizures

EMR * Universal Patient Care Guideline U-1 EMR

Other

P * Obtain 12 Lead EKG

Tricyclic overdose:
Sodium Bicarbonate 1 mEq/kg IV/IO

Calcium Channel Blocker OD:
Calcium Chloride 1 gram IV over 10 minutes, followed by 1L NS Bolus

Organophosphates:
Atropine 2 mg IV/IO; if no response, Atropine 4 mg IV/IO every 3-5 min until symptoms resolve.

Alcohol Ingestion:
Support airway and breathing status
Check blood glucose
Administer Zofran 4-8 mg for nausea.

Beta Blockers:
Anticipate treatment of bradycardia and hypotension per protocol

P

Stimulant OD

P **Sedation:** Administer Midazolam 1 mg IV/IO/IM/IN, may repeat as long as SBP > 90, until patient is relaxed. P

12 Lead Continuous Monitor

* Consider:
Behavioral Emergencies A-6
Chest Pain A-8
Diabetic Emergencies A-10
Respiratory Distress A-20

Narcotic OD

EMR Naloxone 0.5 mg IN, if respirations depressed EMR

P Naloxone Up to 2 mg slow IV/IN, if respirations depressed. Max dose 10 mg P

M Contact Medical Control or Pharm D as needed M

Clinical Guidelines:

- Do not rely on patient history of ingestion especially in suicide attempts.
- Tricyclic: 4 major areas of toxicity: seizures, dysrhythmias, hypotension, decreased mental status or coma; rapid progression from alert mental status to death.
- Depressants: decreased HR, decreased BP, decreased temperature, decreased respirations, non-specific pupils.
- Stimulants: increased HR, increased BP, increased temperature, dilated pupils, seizures.
- Anticholinergic: increased HR, increased temperature, dilated pupils, mental status changes.
- Cardiac Meds: dysrhythmias and mental status changes.
- Solvents: Nausea, vomiting, and mental status changes.
- Insecticides: increased or decreased HR, increased secretions, nausea, vomiting, diarrhea, pinpoint pupils.
- Consult medical control, Emergency Room pharmacist (ASCOM 573-771-7672), and/or Poison Control (1-800-222-1222) for assistance

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

Pain Management

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History	Differential Diagnosis	Signs and Symptoms
• Age • Location • Duration • Severity (1-10) • Past Medical History • Medications / Allergies • Medications taken prior to arrival	• Musculoskeletal pain • Visceral (abdominal) pain • Cardiac pain / chest pain • Pleural / Respiratory • Neurogenic pain • Renal (colic) pain	• Severity (pain scale) • Quality • Radiation • Relation to movement, respiration • Increased with palpation of area.

8R

EMR * Universal Patient Care U-1 EMR

Pain severity > 6 and/or Patient requests pain medication

No → B Supportive care: splinting, positioning, cold packs. B

Yes

P

Musculoskeletal, Burn, Soft Tissue, or Abdominal Pain

Fentanyl: 1-2 mcg/kg IV/IO/IN. May repeat up to 50 mcg every 5-10 minutes as long as SBP > 90. Max dose 200 mcg. May contact Medical Control for additional doses.
Ketorolac: 15 mg IV or 30 mg IM. No repeat doses.
Ketamine: 0.1 – 0.3 mg/kg. Dose may be repeated every 15 minutes as needed.
Versed: 1 mg IV/IO initial dose. May be repeated every 5-10 minutes as long as SBP > 90.

Cardioversion/Pacing

Normotensive/hypertensive patients (SBP > 90): Midazolam 1 mg IV/IO/IN. Dose may repeated IV/IO every 3-5 min as long as SBP > 90.

Hypotensive patients (SBP < 90): Ketamine 0.1 – 0.3 mg/kg. Dose may be repeated every 15 minutes as needed.

P

M Contact Medical Control as needed M

Clinical Guidelines:

- Determine severity using either the 0-10 pain scale or the Wong-Baker FACES scale. Transport time should not be a deciding factor in the decision to treat pain.
- EtCO2 values will be monitored on all patients that receive pain medication.
- Consider Ondansetron 4-8 mg IV/IO prior to narcotic administration.
- Contraindications for narcotic use include hypotension, head injury, respiratory distress, or severe COPD.
- Ketorolac contraindications: pregnancy, stroke, head injured patients, patients actively bleeding, trauma, peptic ulcer, and GI bleed.

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

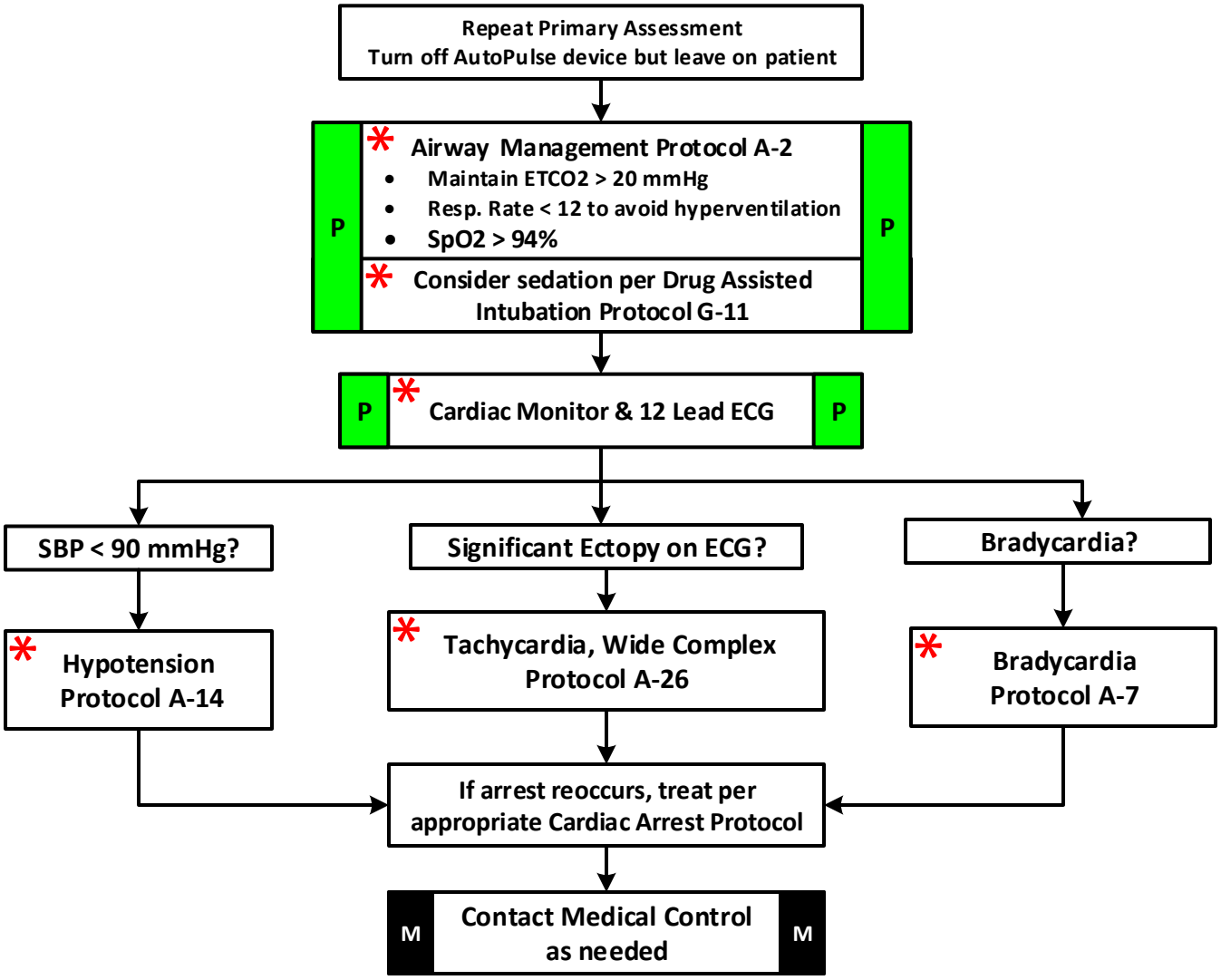
Ketamine Dosage Chart	
Patient Weight	Drug Amount in mL
22 lbs/10 kg	0.1 mL
44 lbs/20 kg	0.2 mL
66 lbs/30 kg	0.3 mL
88 lbs/40 kg	0.4 mL
110 lbs/50 kg	0.5 mL
132 lbs/60 kg	0.6 mL
154 lbs/70 kg	0.7 mL
176 lbs/80 kg	0.8 mL
198 lbs/90 kg	0.9 mL
220 lbs/100 kg	1 mL

Drug will be diluted in 9 mL normal saline to prevent apnea

Chart based on a 500 mg/5 mL concentration, for IV use only

Post-Resuscitation Care

History	Differential Diagnosis	Signs and Symptoms
• Respiratory Arrest • Cardiac Arrest	• Continue to address specific differentials associated with original dysrhythmia	• Return of pulse • Return of spontaneous respirations • Purposeful movement • Dysrhythmias • Hypotension



Clinical Guidelines:

- Hyperventilation is a significant cause of hypotension and cardiac arrest in the post resuscitation phase and it must be avoided.
- If electrical conversion of VF/VT occurred before an antiarrhythmic could be initiated, administer Amiodarone 150 mg/50 mL NS over 10 min.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

Pulmonary Edema

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History	Differential Diagnosis	Signs and Symptoms
• Past medical history • Medications (digoxin, lasix) • Cardiac history (myocardial infarction, CHF) • Medication Compliance • Dietary Indiscretion • Recent weight gain	• Myocardial infarction • Congestive heart failure • Pulmonary embolus • Pericardial tamponade • Pleural effusion • Pneumonia • Asthma • Anaphylaxis • Aspiration • COPD • Toxic Exposure	• Jugular vein distention • Pink, frothy sputum • Peripheral edema • Diaphoresis • Hypotension, shock • Chest pain • Respiratory distress • Tripod position

EMR * Universal Patient Care U-1 EMR

↓

FP IV/IO access FP

↓

P Administer Nitro 0.4 mg SL every 5 minutes as indicated and as long as SBP > 90 and no contraindications exist P

↓

P * CPAP 5-10 PEEP, as long as no contraindications exist

For anxiety - Midazolam 1 mg IV/IO/IN, may repeat IV/IO every 3-5 min as long as SBP > 90 P

↓

* Perform 12 Lead ECG G-1

↓

P Once CPAP is applied, if patient is still in pain and hypertensive, initiate a Nitro Drip at 50-200 mcg/min using a medication pump. Start at 50 mcg/min, increase as needed 25 mcg/min every 3-5 minutes. Discontinue infusion if SBP < 90. P

↓

M Contact Medical Control as needed M

Use Nitro with caution if:

- Viagra/Levitra have been used in the past 24 hrs or Cialis in the past 48 hrs due to the potential for hypotension.
- Acute MI is present. Be prepared to administer fluids as needed.

* **Consider Hypotension Protocol if SBP < 90 mmHg**

CPAP Contraindications:

- Unconsciousness
- Respiratory arrest
- Agonal breathing
- Pneumothorax
- Hemodynamic instability
- Persistent nausea and vomiting
- Facial trauma
- Active upper GI bleed

Clinical Guidelines:

- Ensure ETCO2/SpO2 values are monitored if possible.
- Early application of CPAP can prevent the need for more invasive airway maneuvers.
- Consider myocardial infarction in all these patients.
- Be prepared to manage the airway as needed if patient becomes apneic or deteriorates.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Seizures

History	Differential Diagnosis	Signs and Symptoms
• Reported / witnessed seizure activity • Previous seizure history • Medical alert tag information • Seizure medications • History of trauma • History of diabetes • History of pregnancy	• CNS (Head) trauma • Tumor • Hepatic or Renal failure • Hypoxia • Electrolyte abnormality • Drugs and Medications • Infection / Fever • Alcohol withdrawal • Eclampsia • Stroke • Hyperthermia • Hypoglycemia	• Decreased mental status • Sleepiness • Incontinence • Observed seizure activity • Evidence of trauma • Unconsciousness

8 R

EMR * Universal Patient Care U-1 EMR

Consider: Selective Spinal Immobilization Protocol T-12

Actively Seizing

EMR * Airway Management U-2 EMR

P Midazolam 2-4 mg IM/IO/IV or 2 mg IN. Repeat PRN with SBP > 90 mmHg.

Eclampsia - Magnesium Sulfate 4 g IV/IO over 5 minutes. P

Seizure continues?

No

Yes

Postictal State

EMR * Glucose Procedure G-6 EMR

Consider:
- Altered Mental Status U-3
- Diabetic Emergencies A-10
- Patient Refusal Procedure SP-28

M Contact Medical Control as needed M

Clinical Guidelines:
- Status epilepticus is defined as two or more successive seizures without a period of consciousness or recovery. This is a true emergency requiring rapid airway control, treatment, and transport.
- **Grand mal seizures (generalized)** are associated with loss of consciousness, incontinence, and tongue trauma.
- **Focal seizures (petit mal)** effect only a part of the body and are not usually associated with a loss of consciousness.
- Assess possibility of occult trauma and substance abuse.
- Be prepared to assist ventilations, as well as monitor ETCO2 and SpO2 values if Midazolam is used.
- For any seizure in a pregnant or recently post partum patient, follow the **OB Emergencies Protocol.**

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

Sepsis Pathway

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History	Differential Diagnosis	Signs and Symptoms
• History of recent sickness • History of recent infection • Note available medications in home • Past medical history, including recent hospital admissions/ discharges • History of immunosuppression	• Diabetic Emergency • Mental status change • Stroke • Respiratory distress • Chest pain • Bowel obstruction • Hypovolemic shock • CHF exacerbation	• Mental status changes • Hypotension • Tachypnia • Tachycardia • Seizures • Cough/Sputum • Joint swelling/pain • Rash

8 R

EMR * Universal Patient Care U-1 EMR

FP

Perform Sepsis Evaluation:

- Hyperthermia (>101 F or 38 C) or hypothermia (<98.8 F or 36 C)
- Heart rate greater than 90 beats per minute
- Respiratory rate > 20 per minute OR mechanically ventilated
- Mean Arterial Pressure < 65
- SpO2 < 90% OR ETCO2 < 25 mmHg

If an infection source is present WITH any two of the above criterion, call a Sepsis Alert

FP

FP IV Access Protocol (Initiate at least one large-bore IV, if possible) FP

P Using aseptic technique, draw blood cultures and labs, including a grey top tube P

SBP < 90?

P Administer a 500mL fluid bolus. If patient remains SBP < 90 post bolus, w/o signs of fluid overload, begin a Levophed infusion at 2-40 mcg/min (may start at 5-10 mcg/min). P

SBP > 90?

P Continue to monitor vital signs and provide supportive care P

Clinical Guidelines:

- Mean Arterial Pressure (MAP) = DBP + 1/3(SBP-DBP)
- Notify receiving facility of an inbound Sepsis Alert patient as soon as condition is identified.
- Remember: document times when bacterial cultures and labs are drawn.
- Levophed Infusion – 8 mg in 250 cc NS. Must be delivered via Alaris Infusion Pump.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

Stroke

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History

- Previous CVA, TIA's
- Previous cardiac / vascular surgery
- Associated diseases: diabetes, hypertension, CAD
- Atrial fibrillation
- Medications (blood thinners)
- History of trauma
- History of cancer

EMR * Universal Care Protocol U-1 EMR

Initial Stroke Exam

Negative

Positive

Blood Glucose?

< 70

FP * Diabetic Emergencies Protocol A-10 FP

Blood Glucose > 70 with symptoms unresolved?

Yes

* Consider:
- Stroke A-23
- Altered Mental Status U-3
- Hypertension A-13
- Seizure A-21
- Overdose/Toxins A-16

> 70

Stroke Alert
Limit Scene Time to 10 Minutes.
Provide early notification to the receiving facility

P **Stroke Alert Care:** P
- IV Access (at least one 18 ga in AC)
- 12 Lead EKG
- MEND Stroke Exam
- Determine onset of symptoms
- Maintain SpO2 between 90%- 94%
- Maintain $EtCO_2$ between 35 and 45

Monitor and Reassess / Contact Medical Control as needed

Signs and Symptoms

- Altered mental status
- One-sided weakness or paralysis
- Blindness or other sensory loss
- Impaired speech
- Syncope
- Vertigo / Dizzyness
- Altered gait
- Vomiting
- Headache
- Seizures
- Respiratory pattern change
- Hypertension / Hypotension

Initial Stroke Exam

- **Facial Droop:** Ask the person to smile. Does the person understand and move both sides of their face evenly and with equal ease?
- **Arm Drift:** Ask the person to close their eyes and hold their arms out in front of them for 10 seconds. Does the person understand and move both arms to the same level with ease?
- **Abnormal Speech:** Ask the person to repeat this sentence: "You can't teach an old dog new tricks." Does the person understand and is their speech understandable?

MEND Stroke Exam

Mental Status:
- AVPU
- Questions (Age, Month)
- Commands (close & open eyes)

Cranial Nerves:
- Visual Fields (four quadrants)
- Horizontal Gaze (side to side)

Limbs:
- Leg Drift (open eyes, lift each leg separately)
- Sensory - Arm (close eyes & touch, pinch)
- Sensory – Leg (close eyes & touch, pinch)
- Coordination – Arm (finger-nose)
- Coordination – Leg (heel-shin)

Clinical Guidelines:

- **The Onset of Symptoms** is defined as the last witnessed time the patient was symptom free (i.e. awakening with stroke symptoms would be defined as an onset time of the previous night when patient was symptom free).
- Obtain a phone number for any family members, especially if the patient is unable to speak or respond.
- Place/transport patient in a position that facilitates central venous drainage, i.e. 30 degrees Semi-Fowler's position.
- Elevated blood pressure is commonly present with stroke. Consider Hypertension Protocol if diastolic is > 110 mmHg.
- Be alert for airway problems (swallowing difficulty, vomiting/aspiration).
- Hypoglycemia can present as a localized neurologic deficit, especially in the elderly.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Stroke

Initial Stroke Screen & MEND Exam

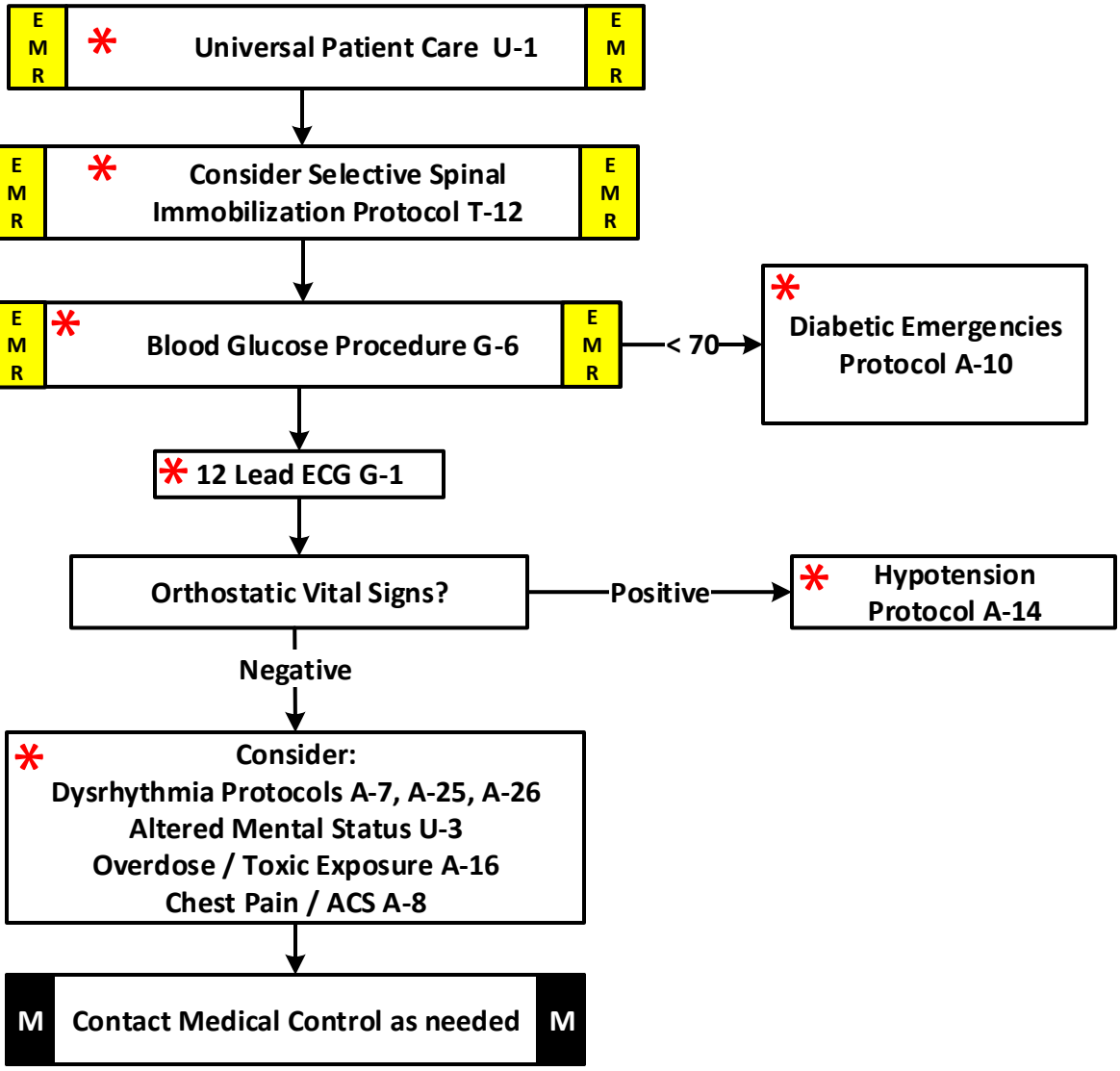
Mental Status Check	Mark If Abnormal		
	On Scene	Enroute 1	Enroute 2
Speech Test – "You can't teach an old dog new tricks" Abnormal findings include wrong words, slurred speech, aphasia			
Level of Consciousness (AVPU) Highest level of mental function noted upon stimulation			
Ability to Follow Commands (close/open eyes)			
Ability to Answer Questions (How old are you? AND What month is it?)			

Cranial Nerve Check	Mark If Abnormal					
	On Scene		Enroute 1		Enroute 2	
	L	R	L	R	L	R
Facial Drooping (have the patient smile) An abnormal finding is a lack of symmetry from one side to the other						
Visual Fields (wiggle fingers in each of the four quadrants)						
Horizontal Gaze (side-to-side eye movement w/o moving head)						

Motor/Sensory/Coordination Check	Mark If Abnormal					
	On Scene		Enroute 1		Enroute 2	
	L	R	L	R	L	R
Arm Drift (close eyes and hold out both arms) An abnormal finding is an arm that can't move or that drifts down						
Leg Drift (open eyes and lift each leg separately)						
Sensory – Arm and Leg (close eyes and touch/pinch each extremity)						
Coordination – Arm (have patient extend arm and touch finger to nose) Abnormal findings are an inability to perform the motion or shaking						
Coordination – Leg (heel slide from the knee down to the shin) Abnormal findings are an inability to keep the foot on the shin						

Syncope

History	Differential Diagnosis	Signs and Symptoms
• Presyncopal symptoms • Occult blood loss (GI, ectopic) • LMP, vaginal bleeding • Nausea, vomiting, diarrhea • Chest pain/palpitations • Shortness of breath • PMHx: Cardiac, CVA, Sz • New medications	• Vasovagal • Hypotension/Shock • Cardiac • Stroke • Hypoglycemia • Seizure • Toxicologic • Medication effect (hypotension)	• Loss of consciousness with recovery • Lightheadedness, dizziness • Palpitations, slow or rapid pulse • Pulse irregularity • Decreased blood pressure



Clinical Guidelines:

- Assess for signs and symptoms of trauma if there is an associated or suspected fall with syncope.
- Consider dysrhythmias, GI bleed, ectopic pregnancy, and seizure as possible causes of syncope.
- More than 25% of geriatric syncope is cardiac dysrhythmia based.

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

Tachycardia, Narrow Complex

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History	History	Signs and Symptoms
• Medications • Stimulant use • Past medical history • History of palpitations / heart racing • History of recent syncope and/or near syncope	• Heart disease (WPW) • Sick sinus syndrome • Myocardial infarction • Electrolyte imbalance • Exertion, Pain, Emotional stress • Hypovolemia or Anemia • Drug effect / Overdose (see Hx) • Hyperthyroidism • Fever • Hypoxia • Pulmonary embolus	• QRS less than 0.12 Sec • Rate related (Dizziness, Chest Pain, Shortness of breath) • Potential presenting rhythm (Sinus tachycardia, A-fib/A-flutter, MAT)

8 R

EMR * Universal Patient Care U-1 EMR

QRS > 0.12 sec OR History of WPW

Yes → * Tachycardia, Wide Complex Protocol A-26

Unstable/Pre-Arrest
Altered mentation or no palpable radial pulse

Stable but symptomatic

* 12 Lead EKG Protocol

Regular

Irregular

P * Obtain initial 12 Lead ECG P

Synchronized Cardioversion
Narrow, regular: 50-100 J
Narrow, irregular: 120-200 J
Wide regular: 100 J
Wide irregular: 120-200 J **Defib**
REPEAT CARDIOVERSION AS NEEDED

Consider Sedation:
Versed 1.0 mg IV/IO/IN, may repeat IV/IO every 3-5 min as long as patient maintains SBP > 90

Repeat 12 lead ECG upon conversion

P Adenosine 6 mg rapid IV/IO push w/ flush. Can repeat Adenosine 12 mg rapid IV/IO push w/flush. P

P Diltiazem 0.25 mg/kg IV/IO over 5 mins (Max dose 25 mg). If the initial dose is ineffective, after 15 mins, a second dose of 0.35 mg/kg IV/IO (max dose 25 mg) over 5 minutes may be given. Both doses can be infused in 50 mL NS
– OR –
Metoprolol 5 mg IV/IO push over 2 mins. May repeat the dose every 5 minutes to a maximum of 3 doses or 15 mg P

Patient Stable ?

No

Yes

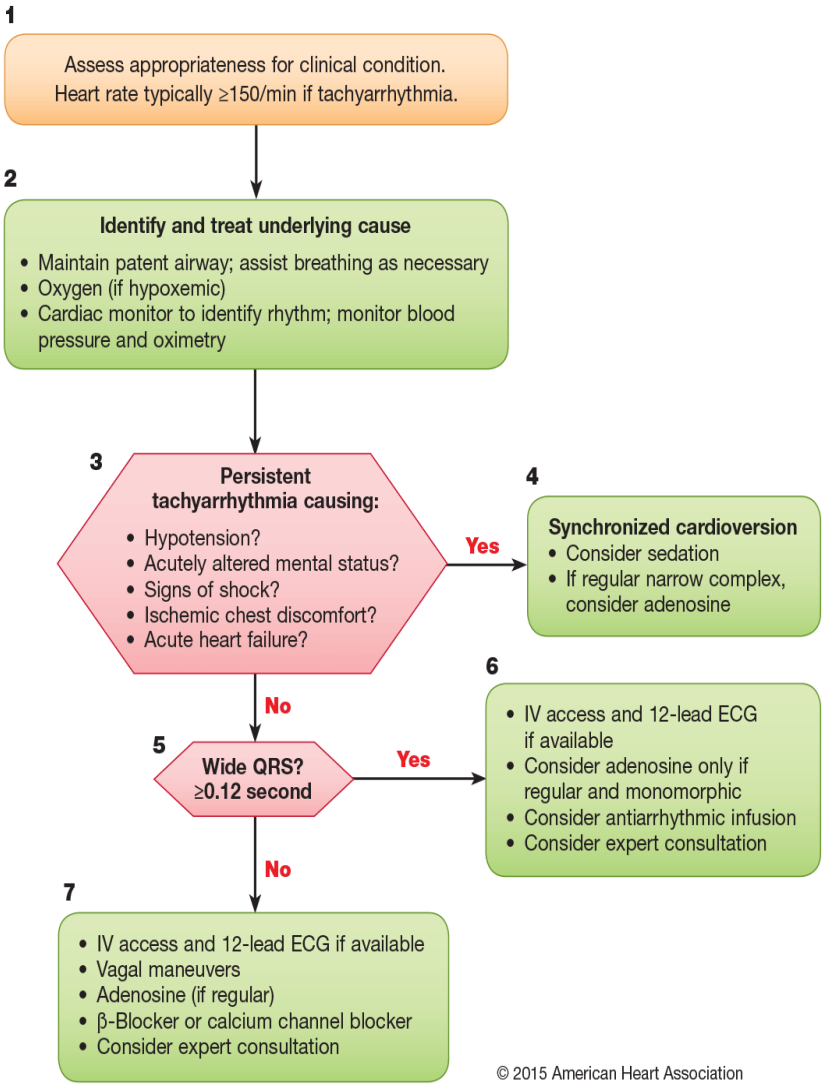
P ALS monitoring and transport P
M Contact Medical Control as needed M

Clinical Guidelines:

- **If patient has history of or 12 Lead ECG reveals Wolff-Parkinson-White (WPW), DO NOT administer Diltiazem, go to VT with Pulse.**
- **If patient is stable and non-symptomatic, ALS monitor only.**
- If patient requires multiple conversion attempts without resolution consider alternative cause of dysrhythmia
- If possible, monitor ETCO2 values and be aware of respiratory depression and hypotension associated with Midazolam.
- Document all rhythm changes with monitor strips and obtain monitor strips with each therapeutic intervention.
- Maximum physiologic heart rate (Sinus Tachycardia) is 220 bpm minus the patient age in years.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Adult Tachycardia With a Pulse Algorithm



Doses/Details

Synchronized cardioversion:
Initial recommended doses:
- Narrow regular: 50-100 J
- Narrow irregular: 120-200 J biphasic or 200 J monophasic
- Wide regular: 100 J
- Wide irregular: defibrillation dose (*not* synchronized)

Adenosine IV dose:
First dose: 6 mg rapid IV push; follow with NS flush.
Second dose: 12 mg if required.

Antiarrhythmic Infusions for Stable Wide-QRS Tachycardia

Procainamide IV dose:
20-50 mg/min until arrhythmia suppressed, hypotension ensues, QRS duration increases >50%, or maximum dose 17 mg/kg given. Maintenance infusion: 1-4 mg/min. Avoid if prolonged QT or CHF.

Amiodarone IV dose:
First dose: 150 mg over 10 minutes. Repeat as needed if VT recurs. Follow by maintenance infusion of 1 mg/min for first 6 hours.

Sotalol IV dose:
100 mg (1.5 mg/kg) over 5 minutes. Avoid if prolonged QT.

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

Tachycardia (Wide Complex)

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History	Differential Diagnosis	Signs and Symptoms
• Past medical history / medications, diet, drugs • Syncope / Near syncope • Palpitations • Pacemaker • Allergies: Lidocaine or Amiodarone • CAD, CHF, Cardiomyopathy	• Artifact • Implanted Device Failure • Cardiac • Endocrine/Electrolyte • Hyperkalemia • Drugs/Toxic exposure • Pulmonary disease	• Ventricular Tachycardia (Runs or Sustained) • Conscious, rapid pulse • Chest Pain, Shortness of Breath • Dizziness • Rate usually 150-180 bpm for sustained V-Tach

8 R

EMR * Universal Patient Care U-1 EMR

QRS > 0.12 sec?

No → * Tachycardia, Narrow Complex A-25

Yes

Unstable/Pre-Arrest — Altered mentation or no palpable radial pulse

Stable — No chest pain, GCS 15, palpable radial pulse

Unstable/Pre-Arrest

B * Perform 12 lead ECG B

P * **Synchronized Cardioversion**
Narrow, regular: 50-100 J
Narrow, irregular: 120-200 J
Wide regular: 100 J
Wide irregular: 120-200 J **Defib**
REPEAT CARDIOVERSION AS NEEDED

Consider Sedation:
Versed 1.0 mg IV/IO/IN, may repeat IV/IO every 3-5 min as long as patient maintains SBP > 90 P

B Repeat 12 lead ECG upon conversion B

P Amiodarone 150mg/100 mL NS IV/IO infusion over 10 min. P

M Contact Medical Control as needed M

Stable

B * 12 Lead ECG Protocol G-1 B

P Amiodarone 150mg/100 mL NS IV/IO infusion over 10 minutes.

If regular, consider Adenosine:
6 mg rapid IV/IO. Can repeat 12 mg IV/IO push once if needed.

If torsades de pointes consider:
Magnesium Sulfate 50% 2 grams
Slow IV/IO push over 5 min P

M If pt has Amiodarone allergy: Lidocaine 1 mg/kg IV with Medical Control only M

Patient Stable ?

No → Unstable/Pre-Arrest

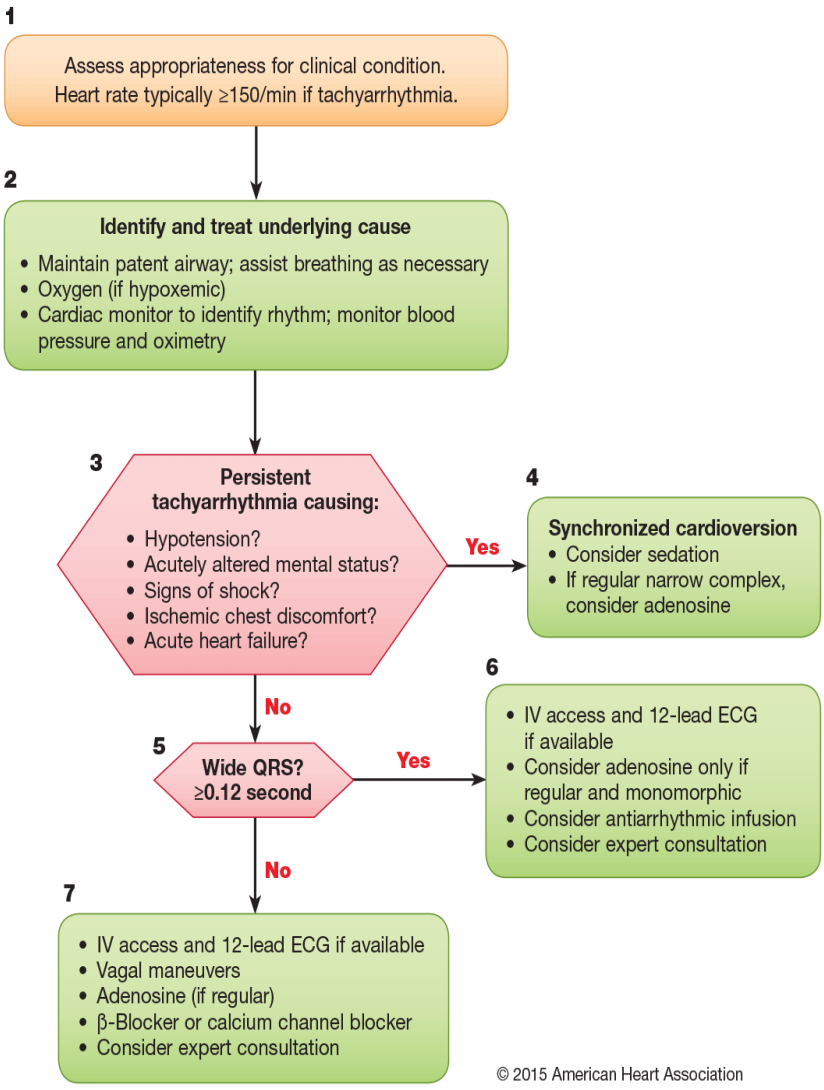
Yes → P ALS monitoring and transport P

Clinical Guidelines:

- For Sinus Tachycardia, treat the underlying cause.
- For slow wide complex tachycardias consider Hyperkalemia
- The maximum dose of an antiarrhythmic should be given before changing that antiarrhythmic.
- ETCO2 values will be monitored in all patients that receive Midazolam (Versed) for sedation.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Adult Tachycardia With a Pulse Algorithm



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Antiarrhythmic Infusions for Stable Wide-QRS Tachycardia

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Amiodarone IV dose:
First dose: 150 mg over 10 minutes. Repeat as needed if VT recurs. Follow by maintenance infusion of 1 mg/min for first 6 hours.

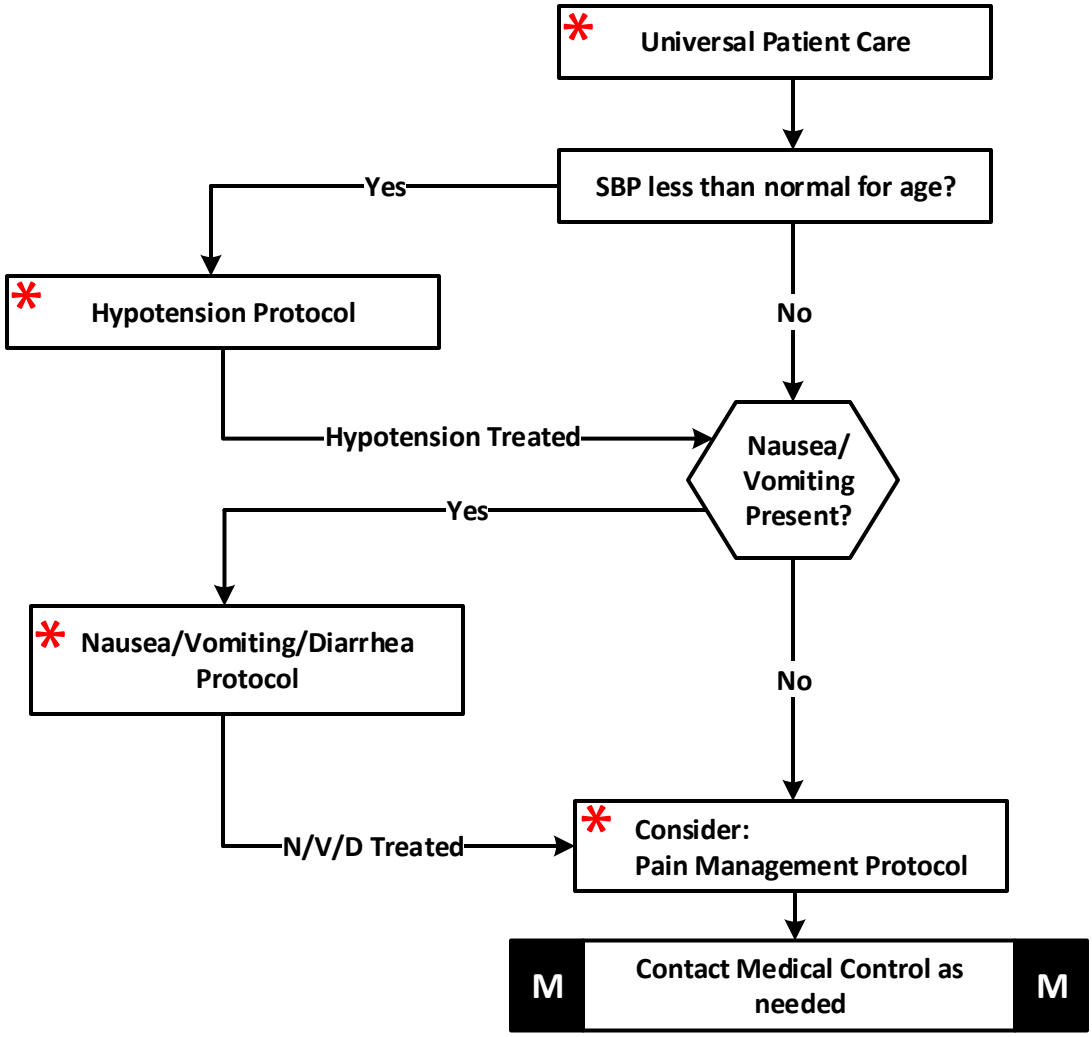
Sotalol IV dose:
100 mg (1.5 mg/kg) over 5 minutes. Avoid if prolonged QT.

Pediatric Section

- Abdominal Pain
- Airway Management
- Airway, Failed
- Allergic Reaction
- Asthma Exacerbation
- Behavioral Emergencies
- Bradycardia
- Cardiac Arrest – Asystole/PEA
- Cardiac Arrest – Ventricular Arrest
- Croup and Epiglottitis
- Diabetic Emergencies
- Environmental Emergencies
- Fever and Infection
- Hypotension
- Nausea, Vomiting, Diarrhea
- Overdose and Toxic Exposure
- Pain Management
- Post-Resuscitation Care
- Respiratory Distress
- Seizures
- Tachycardia, Narrow Complex
- Tachycardia, Wide Complex

Abdominal Pain

History	Differential Diagnosis	Signs and Symptoms
• Age • Last menstrual period • Pregnancy • Past medical/surgical history • Medications • Trauma history • Last meal eaten • Last bowel movement/emesis • Determine abdominal quadrant involved and have patient describe pain	• Ectopic pregnancy/ovarian cyst • Bowel obstruction • Trauma • Sepsis • Anxiety • Gastroenteritis • Abuse/Non-accidental trauma • Testicular torsion • Pneumonia • Appendicitis • UTI	• Pain • Nausea/vomiting • Diarrhea • Dysuria • Constipation • Pregnancy • Fever • Respiratory distress • Vaginal bleeding • Abdominal distention or rebound tenderness

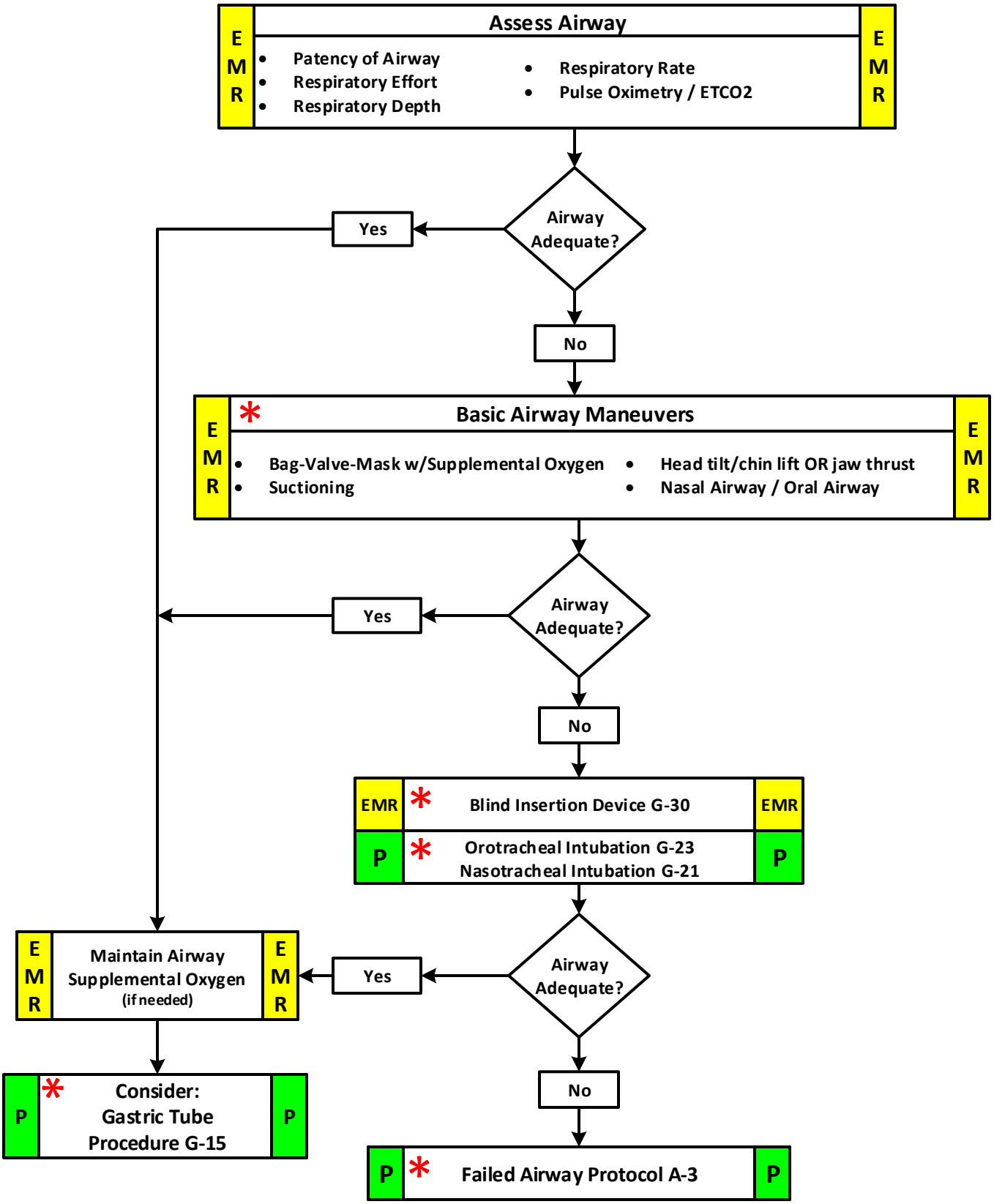


Clinical Guidelines:

- Pediatric hypotension is defined as a SBP < 70 + (age in years x 2) mmHg
- Abdominal pain in women of childbearing age should be treated as an ectopic pregnancy until proven otherwise.
- Consider pain control in patients complaining of pain > 6/10.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Airway Management



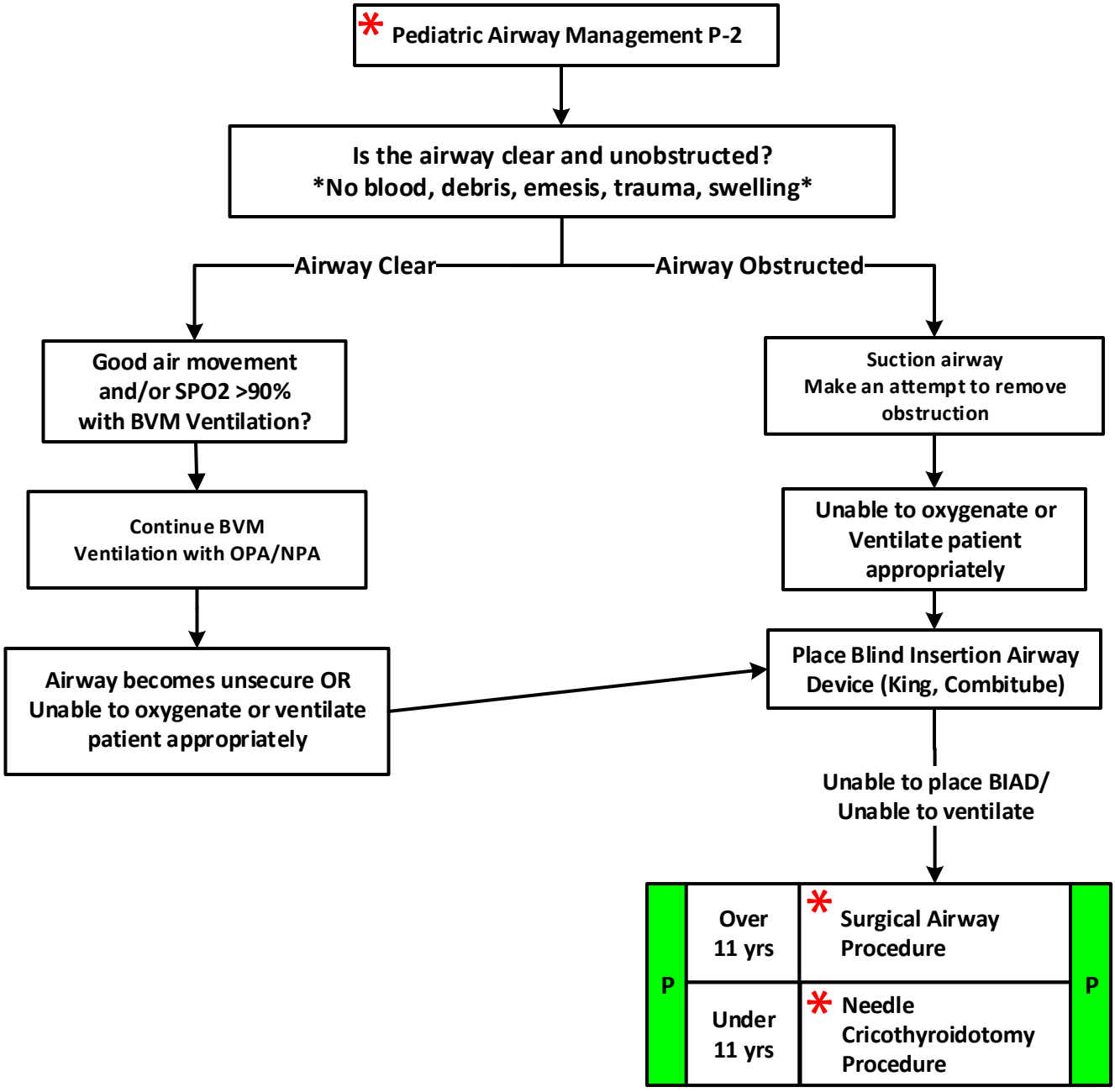
Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Airway Management

Clinical Guidelines:

- EtCO2 and pulse oximetry monitoring is mandatory with all respiratory complaints or any advanced airway placement.
- If an airway is being maintained by BVM with Pulse Oximetry ≥90%, an advanced airway is not required.
- If difficult intubation is anticipated consider early use of BIAD, or assisted intubation with the Bougie device.
- Lung sounds should be checked after airway placement, patient movement, or as appropriate.
- Ventilatory rate should be 10 - 12 per minute OR to maintain ETCO2 at 35-45 (when appropriate).
- Maintain SMR in those patients with suspected spinal injury.
- Hyperventilation in head trauma patients when herniation is suspected should be done to maintain ETCO2 of 30-35
- For advanced airways secure airway using tape or commercial device. Check placement during patient movement frequently.

Airway, Failed



Clinical Guidelines:

- The narrowest portion of the pediatric airway is at the cricoid ring.
- Stridor is caused by rapid turbulent airflow through a narrowed airway.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Allergic Reaction

History	Differential Diagnosis	Signs and Symptoms
• Medication history • Onset and location • Past medical history / history of reactions • New clothing, soap, detergent • Medication allergy / exposure • Food allergy / exposure • Insect sting or bite	• Urticaria (rash only) • Anaphylaxis (systemic effect) • Shock (vascular effect) • Angioedema (drug induced) • Aspiration / Airway obstruction • Vasovagal event • Asthma or COPD	• Edema / Voice Changes • Itching or hives • Coughing / wheezing or respiratory distress • Chest or throat constriction • Difficulty swallowing • Hypotension or shock

EMR * Universal Patient Care U-1 EMR

Severe respiratory distress, angioedema, facial swelling, hypotension

EMR Assist with Pediatric EPI Pen EMR

P — Epi 0.01 mg/kg 1:1000 IM. Max dose 0.5 mg. May repeat q 15 min prior to Medical Control Contact

Secure an airway as needed. See Pediatric Airway Protocol for guidance — P

Mild to Moderate Distress

FP DuoNeb 0.5/2.5 mg + Albuterol 2.5 mg Neb, continuous if needed FP

P — Diphenhydramine 1 mg/kg IV/IM

20 mL/kg NS bolus over 10 mins

10 mL/kg NS bolus over 20 mins, if patient weighs less than 10 kg — P

ALS Monitoring

Continued Respiratory Distress?

P — Racemic Epi 0.5mL in 3 mL NS, administer until relief is noted, then discontinue.

Methylprednisolone 1 mg/kg IV — P

Continue to reassess airway

Hives/Rash only No Respiratory Distress

P — Diphenhydramine 1 mg/kg IV/IM (Max 50 mg) — P

ALS monitoring

Clinical Guidelines:

- These patients should receive a 12 lead ECG and continual ALS monitoring.
- The shorter the onset from exposure to symptoms, the more severe the reaction.
- ETCO2 and SpO2 values will be monitored on any patient with a respiratory complaint.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

Asthma Exacerbation

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History	Differential Diagnosis	Signs and Symptoms
• Time of onset • FBAO • Fever or infection • Sick contacts • Asthma • Treatment (oxygen, nebulizer) • Medications: steroids, inhalers • Toxic exposure • Trauma	• Asthma/Anaphylaxis • Aspiration/Foreign body • Drowning • Pneumonia/Broncholitis • Croup/Epiglottis • Congenital heart disease • Medication or Toxin • Trauma	• Shortness of breath • Pursed lip breathing • Decreased ability to speak • Increased respiratory rate and effort • Wheezing, rhonchi, stridor • Use of accessory muscles • Fever, cough, tachycardia

8R

* Respiratory Distress P-18

Is the airway patent?

No → * Pediatric Airway Management

Yes

Unstable?
- Altered mentation
- SpO2 < 90%
- Respirations <10 or >30
- Significant work of breathing

P — If patient has ineffective breathing, give 0.01 mg 1:1000 EPI (max 0.5 mg) IM immediately — P

P — DuoNeb + Albuterol 2.5 mg Neb, continuous Neb as needed
ET/Trach - Albuterol MDI 1 puff q 30 sec for 2 min if breathing (4 puffs total); if apneic, 1 puff q 15 sec intervals for 2 min via BVM (8 puffs total) — P

P — Magnesium Sulfate 25 mg/kg (max 2 grams) in 50 mL/NS infused over 20 min — P
Solu-Medrol 1 mg/kg IV/IO (max 125 mg)

Stable?
- SpO2 ≥ 92%
- Respiratory rate 10-30
- No significant work of breathing

P — DuoNeb + Albuterol 2.5 mg Neb — P

P — Albuterol 2.5 mg Neb
Solu-Medrol 1 mg/kg IV/IO (max 125 mg) — P

If the patient does not improve, consider alternate differentials

M — Contact Medical Control as needed — M

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Behavioral Emergencies

History	Differential Diagnosis	Signs and Symptoms
• Situational crisis • Psychiatric illness/medications • Injury to self or threats to others • Medic alert tag • Substance abuse / overdose • Diabetes • Determine current issue • Bipolar, Schizophrenia, anxiety disorders, etc	• Hypoxia • Alcohol Intoxication • Toxin / Substance abuse • Medication effect / overdose • Withdrawal syndromes • Bipolar (manic-depressive) • Schizophrenia, anxiety disorders, etc • Diabetic Issue • Traumatic Mechanism	• Anxiety, agitation, confusion • Affect change, hallucinations • Delusional thoughts, bizarre behavior • Combative/violent behavior • Expression of suicidal/ homicidal thoughts

8R

EMR * Universal Patient Care U-1 EMR

Does the patient represent a threat to themselves or others?

Yes

P
- Request law enforcement assistance.
- Consider physical restraints.
- Consider chemical sedation:
  - Midazolam 0.1 mg/kg IV/IO/ IM. Dose may be repeated to a max of 2 mg prior to Medical Control contact.
  - Ketamine 1 mg/kg IV/IO or 4 mg/kg IM.

Reassess the patient after 15 minutes for IM medication administration, and after 3-5 minutes for IV/IO administration.
P

M Contact Medical Control as needed M

No

EMR
- Remove patient from the stressful situation, if possible.
- Obtain a history of situation/ issue and determine how best to assist the patient.
- Calm patient using verbal techniques.
- Maintain a high level of situational awareness.
- BLS transport as needed.
EMR

Patient becomes agitated and/or violent → P

Clinical Guidelines:
- Consider your safety first. Physical Restraint should be performed/assisted by Law Enforcement when available.
- **All patients receiving sedation require ALS transport. Monitor airway status closely in these patients using ETCO2 and SpO2.**
- Transported patients handcuffed/restrained by Law Enforcement should be accompanied by an officer whenever possible OR EMS must have the key to the restraints.
- Be sure to consider all possible medical/trauma causes for behavior.
- Restrained patients should never be maintained or transported in a prone position.

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Bradycardia

History	Differential Diagnosis	Signs and Symptoms
• Past Medical History • Events prior to onset • Medications	• Hypoxia • Hypothermia • Sinus Bradycardia • CVA • Increased ICP • Head Injury • Trauma • Respiratory effort • Respiratory obstruction • Croup • Epiglotitis • Hypovolemia • Infection / Sepsis • Medication or Toxin • Hypoglycemia	• HR below age-based standard • Hypotension/Shock • Acute altered LOC • Chest pain • Syncope • Lethargy

8 R

EMR * Universal Patient Care U-1 EMR
* Pediatric Airway Management

HR < 60 with symptoms: hypotension, acute altered LOC, chest pain, respiratory insufficiency?

No → Monitor and reassess

Yes

FP 1 yr or less – Is HR < 80 with poor perfusion, despite airway interventions?
1 yr – 8 yr: Is HR < 60 with poor perfusion, despite airway interventions? FP

Yes → Begin CPR Procedure at 15:2 ratio

No

M Contact Medical Control as needed M

FP Obtain IV/IO access FP

P Epinephrine 0.01 mg/kg IV/IO (0.1 mL/kg of 1:10,000) to a max of 1 mg. Repeat every 3-5 minutes. P

P Atropine 0.02 mg/kg IV/IO (Max 1 mg) May repeat x 1 in 5 minutes P

P Transcutaneous Pacing Protocol
Consider Sedation: Versed 0.1 mg/kg IV/IO/IN, may repeat IV/IO every 3-5 min to a max of 2 mg, as long as patient maintains appropriate BP P

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Bradycardia

Age-based Bradycardia Rates	
0-3 years	< 100 bpm
3-9 years	< 60 bpm
9-16 years	< 50 bpm

Age-based Blood Pressure Minimums	
0-28 days	60 Systolic BP
1-12 months	70 Systolic BP
9-16 years	70 Systolic BP + (age in years x 2)

Clinical Guidelines:

- **Treatment of bradycardia is based on the presence of symptoms. If asymptomatic, monitor only.**
- **Parents are often the best resource for a baseline understanding of their child, especially in the case of the child with special healthcare needs.**
- Consider treatable causes for bradycardia (Beta blocker OD, Calcium channel blocker OD, etc.) - treat appropriately
- The use of lidocaine in heart block can worsen bradycardia and lead to asystole and death.
- Altered mental status may be a sign of poor perfusion.
- Consider treatable causes for bradycardia (Beta blocker OD, Calcium channel blocker OD, etc.) - treat appropriately
- Be sure to aggressively oxygenate the patient and support respiratory effort.
- Use a volume control device (IV Burette or Alaris pump) Fluid infusions.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Cardiac Arrest – Asystole/PEA

History	Differential Diagnosis	Signs and Symptoms
• Past medical history • Medications • Events leading to arrest • Bystander CPR? • Estimated downtime	• Medical or Trauma • Hypoxia • Medication/drug overdose • Hypothermia • Obvious Death	• Pulselessness • Abnormal Breathing (gasps) • Lack of Breathing • No electrical activity on ECG

8 R

EMR * Cardiac Arrest Protocol U-7 EMR

FP

Confirm Asystole/PEA (No Shock Advised)
Check rhythm and pulse q 2 minutes

Begin CPR 100-120/min at a 15:2 ratio

- Establish IV/IO access
- Administer Epinephrine 0.01 mg (0.1 mL/kg) 1:10,000 q 3-5 min IV/IO

- Place an advanced airway (BIAD, ET tube)
- Provide BVM ventilations 10 respirations/ minute with continuous CPR

FP

Patient history of renal failure/dialysis?

Yes

M Contact Medical Control for Calcium Chloride dosage M

No

FP Continue CPR, rhythm checks and Epi 0.01 mg (0.1 mL/kg) 1:10,000 administration FP

Rapid transport to facility of choice

M Contact Medical Control as needed M

Look for treatable causes:

- **Hypoxia**
- **Hypothermia**
- **Hypovolemia**
  NS bolus 10 mL/kg IV/IO
- **Hypoglycemia**
  Dextrose Administration
- **Acidosis**
  Contact Medical Control
- **Hyperkalemia**
  Contact Medical Control
- **OD Calcium Channel Blocker**
  Contact Medical Control
- **Tension Pneumothorax**
  Decompression
- **OD Opiates**
  Narcan 0.1 mg/kg IV/IO. Max dose 2 mg.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

Cardiac Arrest – Ventricular Arrest

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History	Differential Diagnosis	Signs and Symptoms
• Estimated Down Time • Past Medical History • Medications • Events leading to arrest • Renal Failure / Dialysis • DNR • Bystander CPR / AED use	• Asystole • Artifact • Implanted Device Failure • Cardiac • Endocrine / Medicine • Drugs • Pulmonary	• Unresponsive • Apneic • Pulselessness • Ventricular fibrillation or ventricular tachycardia on ECG

EMR * **Universal Cardiac Arrest Guideline** EMR
CPR at 15:2 ratio. Pulse checks q 2 min

FP * IV/IO Access Protocol FP
Administer Epinephrine 0.01 mg (0.1 mL/kg)
1:10,000 q 3-5 min IV/IO

↓

P **ALS Provider Arrival:** P
- Place multi-function pads and determine cardiac rhythm.
- Deliver defibrillation dose 2-4 J/kg, if a shockable rhythm is present.
- Establish a definitive airway, if not already performed.

↓

P **Torsades de Pointes** - Magnesium Sulfate 25 mg/kg (max 2 grams) slow IV/IO push over 5 minutes. P

Amiodarone 5 mg/kg (max 300 mg) IV/IO push.
Can repeat 5mg/kg bolus up to 300 mg max dose.

M Lidocaine IV/IO if patient is allergic to Amiodarone - with Medical Control only. M

↓

Continue CPR with pulse checks q 2 minutes

↓

ROSC? — No → P ALS Transport P / M Contact Medical Control M

ROSC? — Yes → * Post Resuscitation Care P-17

* **AT ANY TIME:** For changes in rhythm go to appropriate Protocol

Look for treatable causes:
- **Hypoxia**
- **Hypothermia**
- **Hypovolemia**
  NS bolus 10 mL/kg IV/IO
- **Hypoglycemia**
  Dextrose Administration
- **Acidosis**
  Contact Medical Control
- **Hyperkalemia**
  Contact Medical Control
- **OD Calcium Channel Blocker**
  Contact Medical Control
- **Tension Pneumothorax**
  Decompression
- **OD Opiates**
  Narcan 0.1 mg/kg IV/IO. Max dose 2 mg.

Clinical Guidelines:
- Reassess and document ETT/BIAD placement after every move and at transfer of patient care.
- Continuous ETCO2 should be initiated as soon as practicable.
- Tx priorities: uninterrupted compressions, defibrillation, then IV/IO and airway control.
- Effective CPR and prompt defibrillation are the keys to successful resuscitation.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Croup and Epiglottitis

History	Differential Diagnosis	Signs and Symptoms

• Medical history
• Any possibility of trauma or foreign body airway obstruction
• Immunization status
• Events leading up to illness
  • Recent flu or cold symptoms
  • Onset acute or gradual?
	• Airway obstruction
	• Influenza
	• Acute respiratory distress
	• Respiratory arrest/failure
	• Allergic reaction
	• Trauma
	• Infection
	• Airway mass
	• Asthma
		• Agitation
		• Cough
		• Fever
		• Tachycardia
		• Tachypnea
		• Stridor
		• Mental status change
		• Drooling/difficulty in swallowing

* Universal Patient Care

Croup vs. Epiglottitis

Croup

- Age typically < 4 yrs old.
- Spontaneous, barking cough.
- Seldom drooling/difficulty in swallowing present.
- Typically does not progress quickly (over several days).
- Low grade fever.
- Often nocturnal onset of symptoms.

Treatment

- Administer Racemic Epinephrine 0.5 in 3 mL normal saline via high-flow oxygen.
- ALS monitoring and transport.

Epiglottitis

- Age typically > 4 yrs old.
- No cough present.
- Copious secretions and difficulty swallowing present.
- Can progress very quickly (under 6 hours).
- High fever.
- Relatively rare condition.

Treatment

- Administer antipyretics per Pediatric Fever Protocol.
- ALS monitoring and transport.

Clinical Guidelines:

- Avoid any unnecessary stimulation of the patient. Use family members on scene to help keep the patient calm.
- Monitor $ETCO_2$ and SpO_2 values, provided those interventions are available and the patient will tolerate it.
- Do not intubate in the field unless an acute airway obstruction is present. If unable to intubate, cricothyroidotomy is indicated.
- Racemic Epinephrine administration is contraindicated in Epiglottitis.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Diabetic Emergencies

History	Differential Diagnosis	Signs and Symptoms
• Known diabetic, medic alert tag • Past medical history • Medications • Change in condition • Recent trauma • Recent sickness	• Head trauma • CNS (stroke, tumor, seizure, infection) • Thyroid (hyper / hypo) • Shock (septic, metabolic, traumatic) • Diabetes (hyper / hypoglycemia) • Toxicologic/Carbon Monoxide • Acidosis / Alkalosis • Pulmonary (Hypoxia)	• Decreased mental status / change in baseline • Bizarre behavior • Jitteriness, seizures • Hypoglycemia • Hyperglycemia • Signs of dehydration

EMR * Universal Patient Care U-1 EMR

EMT * Blood Glucose Procedure EMT

No

Glucose < 70

Glucose 70 - 300

Glucose > 300 or Signs of dehydration

EMR Oral Glucose 7.5 grams PO if patient is not obtunded. Repeat once as needed. EMR

P Assess Cardiac Monitor & 12 Lead ECG P

P Under 10 kg – IV NS 10 mL/kg
Over 10 kg – IV NS 20 mL/kg
Cardiac Monitor & 12 Lead ECG P

P Newborn – D10w 2 mL/kg IV.
Child < 20 kg – D10w 5 mL/kg IV/IO, to a max dose of 100 mL (10 g).
Child > 20 kg – D10w bolus of 100 mL (10 g).
Doses can be repeated once as needed. P

Consider alternate differentials:
Seizure
Overdose
Behavioral
Fever/Sepsis
Stroke

ALS Transport

M Contact Medical Control as needed M

No

Return to baseline ?

Yes

* Consider:
Refusal of Transport

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Diabetic Emergencies

Clinical Guidelines:

- If hypoglycemic patients have returned to baseline and wish to refuse care make certain that the patient eats and that there is someone to observe them for repeat hypoglycemic episodes. Assure the following:
    - No apparent disease process causing emergency other than diabetes.
    - Patient is without further complaint or symptoms.
    - No medication dosing or pump error contributed to patient's diabetic emergency.
    - Blood glucose has been corrected to greater than 80 mg/dL.
    - Patient is eating or has eaten complex carbohydrates/protein after treatment.
- Contact Medical Control prior to refusing a pediatric diabetic patient. Make sure to advise the patient and/or family of the following:
    - A responsible adult should be present to monitor patient who has access to 911.
    - Patient/family has been instructed to contact their primary care physician as soon as possible.
    - Patient/family has been instructed to withhold insulin dosing until primary care physician is consulted.
    - Patient/family has agreed to recheck blood glucose every hour for two hours and every other hour for next four hours.

Environmental Emergencies

History	Differential Diagnosis	Signs and Symptoms
• Recent exertion • Details of incident • Lack of acclimatization • Control of fluid intake • Medications • Total time of exposure • Neglect / abuse	• Dehydration • Heat stroke • Heat exhaustion • Sepsis • Unconsciousness • Nausea and vomiting • Sick person • Thyroid storm • Altered Mental Status • Frost bite • Hypothermia • Hypothyroidism	• Weakness • Nausea & vomiting • Cramping • Syncope • Dry or diaphoretic skin • Altered Mental Status • Hypotension • Dysrhythmias

8 R

* Universal Patient Care U-1

Suspected Heat Exposure
- Remove to shaded/cool environment
- Discontinue any physical activity

Temp > 39° C (102° F) and/or altered mental status?

Loosen and/or remove clothing
Ice packs to neck, axilla and groin

EMT * Check Blood Glucose EMT

Assess for hypotension. Is SBP > 70 mmHg + (2 x Age in years)?

No

Yes

FP | Initiate IV/IO access | FP

P | Cool Normal Saline:
> 10 kg - 10 mL/kg IV/IO
< 10 kg - 20 mL/kg IV/IO
May repeat if lung sounds are clear and no signs of fluid overload exist | P

Suspected Cold Exposure
- Move to a warm environment
- Remove any wet clothes

Temp < 36° C (96° F) and/or altered mental status?

Rewarm using blankets
Avoid excess movement

FP | Initiate IV/IO access | FP

P | Warmed Normal Saline:
> 10 kg - 10 mL/kg IV/IO
< 10 kg - 20 mL/kg IV/IO
May repeat if lung sounds are clear and no signs of fluid overload exist | P

Is patient experiencing pain due to frostbite?

No

Yes

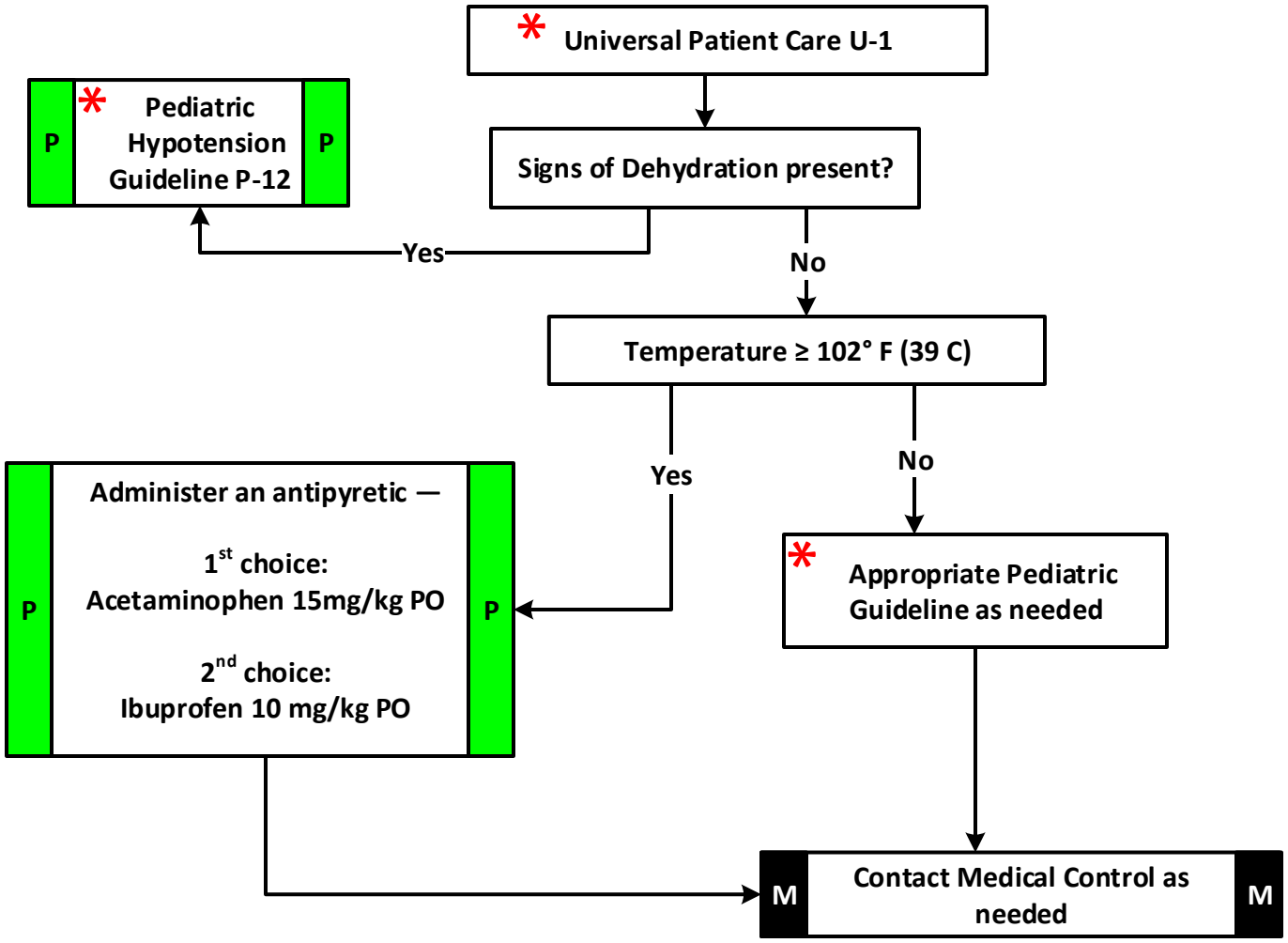
P * Consider Pain Management P

P Transport and ALS monitoring P

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Fever / Infection

History	Differential Diagnosis	Signs and Symptoms
• Age and weight • Onset and duration of fever • Severity of fever • Past medical history • Medications • Environmental exposure • Last acetaminophen or ibuprofen administration	• Urinary Tract Infection • Sepsis • Meningitis • Respiratory Distress • Influenza • Flu-like symptoms • Fever of unknown cause	• Warm, flushed skin • Chills/Rigors • Tachycardia • Cough • Headache, mental status changes • Abdominal pain • Rash, Petechiae



Clinical Guidelines:

- Utilize respiratory protection if influenza is suspected.
- If increased temperature; utilize passive cooling by removing excessive clothing or covers.
- Allergies to NSAID's (non-steroidal anti-inflammatory medications) are a contraindication to Ibuprofen administration.
- NSAID drugs should not be used for environmental heat emergencies.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Fever / Infection

Acetaminophen Oral Solution (32 mg / mL concentration)		
	2 – 3 kg	32 mg (1 mL)
	4 kg	64 mg (2.0 mL)
	5 kg	80 mg (2.5 mL)
	6 – 7 kg	96 mg (3 mL)
	8 – 9 kg	128 mg (4 mL)
	10 – 11 kg	144 mg (4.5 mL)
	12 – 14 kg	192 mg (6 mL)
	15 – 18 kg	256 mg (8 mL)
	19 – 23 kg	304 mg (9.5 mL)
	24 – 29 kg	400 mg (12.5 mL)
	30 – 36 kg	496 mg (15.5 mL)
Adult Dose		650 mg (20.3 mL)

Ibuprofen Oral Solution (20 mg / mL concentration)		
	2 – 3 kg	30 mg (1.5 mL)
	4 kg	40 mg (2 mL)
	5 kg	50 mg (2.5 mL)
	6 – 7 kg	64 mg (3.2 mL)
	8 – 9 kg	84 mg (4.2 mL)
	10 – 11 kg	100 mg (5 mL)
	12 – 14 kg	130 mg (6.5 mL)
	15 – 18 kg	170 mg (8.5 mL)
	19 – 23 kg	210 mg (10.5 mL)
	24 – 29 kg	270 mg (13.5 mL)
	30 – 36 kg	330 mg (16.5 mL)
Adult Dose		600 mg (30 mL)

Hypotension

History	Differential Diagnosis	Signs and Symptoms
• Vomiting • Diarrhea • Fever • Infection • Sick contacts • PO intake • Last wet diaper/urine • Allergen Exposure • Ingestions/Medications	• Infection/Sepsis • Dehydration • Vomiting • Diarrhea • Congenital heart disease • Medication or Toxin • Anaphylaxis • Meningitis • Cardiac Failure (myocarditis)	• Restlessness, confusion, weakness • Syncope • Tachycardia • Diaphoresis • Pale, cool, clammy skin • Delayed capillary refill

8R

EMR * Universal Patient Care EMR

Is significant trauma/hemorrhage present?
- Yes → * ALS Trauma Protocol
- No ↓

Is patient hypotensive? Hypotension is defined as:
Infant/Child – SBP < 70 + (2 x age) mmHG or MAP < 40 + (1.5 x age) mmHg
Neonate – SBP < (Gestational age at birth in weeks) + (age in weeks) mmHg
- No → P ALS monitoring and transport P
- Yes ↓

P
Weight-based Normal Saline bolus:
- >10 kg with dry lungs: 20 mL/kg IV/IO bolus
- <10 kg or with crackles/rales: 10 mL/kg IV/IO bolus with buretrol set

Repeat up to 40 mL/kg as long as no signs of fluid overload exist
P

Does hypotension resolve?
- Yes → P ALS monitoring and transport P
- No ↓

Determine cause of condition and select vasopressor

Second-line vasopressor

P
Levophed
0.05-1 mcg/kg/min IV
Starting dose: 0.1 mcg/kg/min IV
Epi 8 mg in 250 mL NS
P

First-line vasopressor

P
Epinephrine
0.05-1 mcg/kg/min IV
Epi 8 mg in 250 mL NS
P

Bradycardia

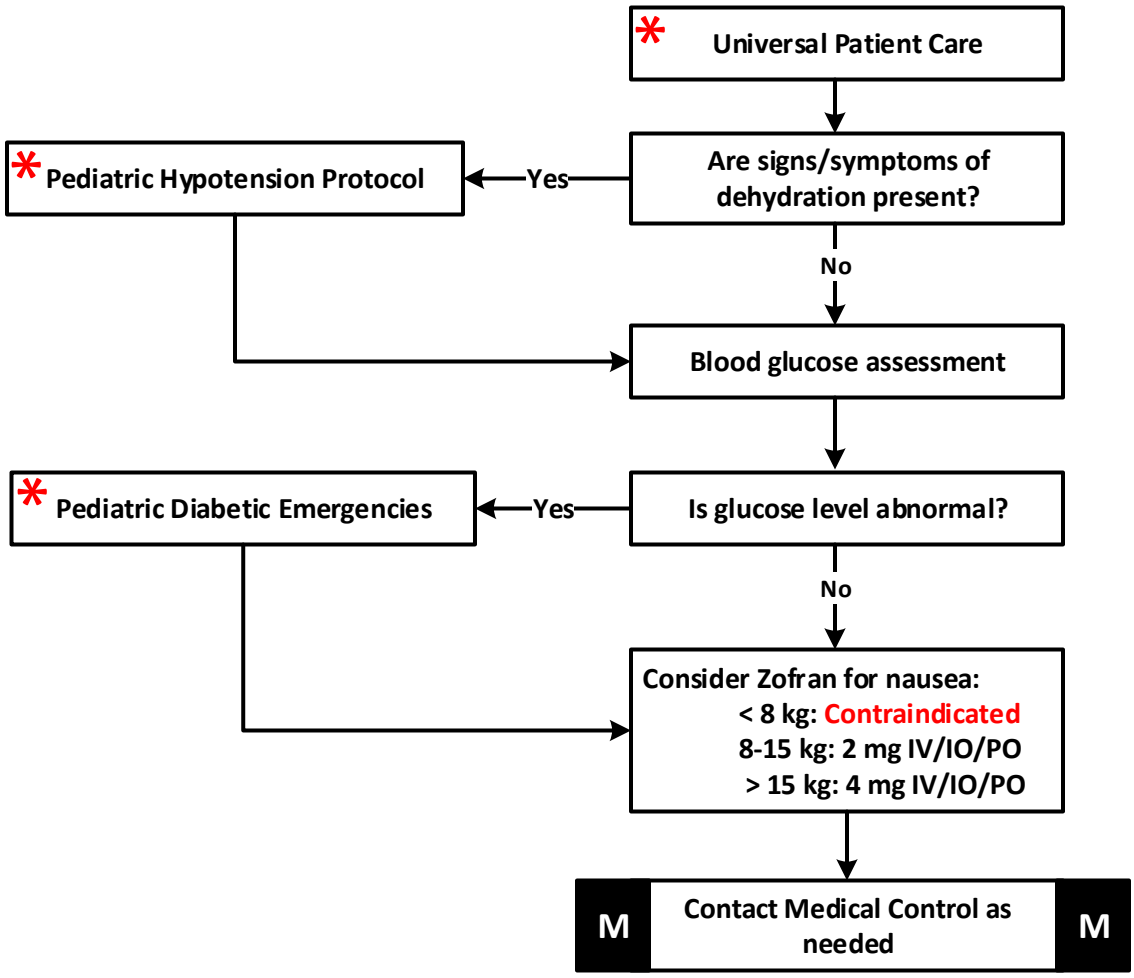
P
Dopamine
5-20 mcg/kg/min IV
Premix 3200 mg/mL
P

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Nausea/Vomiting/Diarrhea

History	Differential Diagnosis	Signs and Symptoms
• Age • Time of last meal • Last bowel movement / emesis • Improvement or worsening with food or activity • Past Medical/Surgical History • Medications • Travel history • Bloody Emesis or diarrhea	• CNS (Increased pressure, headache, tumor, trauma or hemorrhage) • Drugs/Toxins • Appendicitis • Gastroenteritis • GI or Renal disorders • Diabetic Ketoacidosis • Infection/Sepsis (pneumonia, influenza, UTI)	• Pain • Distension • Constipation • Diarrhea • Anorexia • Fever • Cough • Nausea/vomiting

8 R



Clinical Guidelines:

- Assess for signs and symptoms of dehydration, such as tachycardia, weak peripheral pulses, increased capillary refill, sunken fontanel, cool extremities, and lethargy.
- Blood pressure approximation – 70 + (2 x age in years).

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

Overdose/Toxic Exposure

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History	Differential Diagnosis	Signs and Symptoms
• Ingestion/suspected ingestion of a toxic substance • Substance ingested, route, quantity, time of ingestion • Reason (suicidal, accidental, criminal) • Available medication in home • Past medical history	• Tricyclic antidepressants • Acetaminophen (Tylenol) • Depressants • Stimulants • Anticholinergic • Cardiac medications • Solvents, alcohols, cleaning agents • Insecticides (organophosphates)	• Mental status changes • Hypotension/ hypertension • Decreased respiratory rate • Tachycardia, dysrhythmias • Seizures

EMR * Universal Patient Care Guideline U-1 EMR

Other

P * Obtain 12 Lead EKG

P * **Alcohol Ingestion:**
Support airway and breathing status
Check blood glucose
Consider Nausea/Vomiting Protocol P-14

P **Organophosphates:**
Atropine 0.02 mg/kg IV/IO. Repeat dose every 3-5 min until symptoms resolve.

M **Tricyclic overdose:**
Contact Medical Control for orders
Treat dysrhythmias per protocol

M **Calcium Channel Blocker OD:**
Contact Medical Control for orders

M **Beta Blockers:**
Contact Medical Control for orders
Treatment of bradycardia and hypotension per protocol

Stimulant OD

P **Sedation:** Administer Midazolam 0.1 mg IV/IO/IM/ IN, may repeat as long as SBP normal for age. Max 2 mg. P

P 12 Lead Continuous Monitor

* Consider:
Behavioral Emergencies P-7
Hypotension P-13
Respiratory Distress P-18

Narcotic OD

EMR Naloxone 0.5 mg IN, if respirations depressed EMR

P Naloxone 0.1 mg/kg IV/IN (Max single dose 2 mg), if respirations are depressed. Max total dose 10 mg. P

M Contact Medical Control or Pharm D as needed M

Clinical Guidelines:

- Do not rely on patient history of ingestion especially in suicide attempts.
- Tricyclic: 4 major areas of toxicity: seizures, dysrhythmias, hypotension, decreased mental status or coma; rapid progression from alert mental status to death.
- Depressants: decreased HR, decreased BP, decreased temperature, decreased respirations, non-specific pupils.
- Stimulants: increased HR, increased BP, increased temperature, dilated pupils, seizures.
- Anticholinergic: increased HR, increased temperature, dilated pupils, mental status changes.
- Cardiac Meds: dysrhythmias and mental status changes.
- Solvents: Nausea, vomiting, and mental status changes.
- Insecticides: increased or decreased HR, increased secretions, nausea, vomiting, diarrhea, pinpoint pupils.
- Consult Women's and Children's Hospital ER (573-771-9400), Emergency Room pharmacist (ASCOM 573-771-7672), and/ or Poison Control (1-800-222-1222) for assistance.

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Pain Management

History	Differential Diagnosis	Signs and Symptoms
• Age • Location and Duration of pain • Severity (0-10) or Faces Scale • Quality, Radiation • Past Medical History • Medications • Drug allergies	• Chest Pain • Musculoskeletal Pain • Abdominal Pain • Respiratory Pain • Genitourinary Pain	• Anxiety • Respiratory distress • Altered mental status • Obvious trauma

EMR * Universal Patient Care U-1 EMR

Pain severity > 6 and/or Patient requests pain medication

No → B Supportive care: splinting, positioning, cold packs. B

Yes

P

See Nausea/Vomiting protocol for anti-emetic drugs and dosing

Consider Pain Management:

Fentanyl – 0.5-1 mcg/kg IV/IO/IN to a max dose of 50 mcg. May repeat half the initial dose once.
Versed – 0.1 mg/kg IV/IO to a max dose of 2 mg. May repeat every 3-5 minutes as long as SBP is normal for age.

Cardioversion/Pacing

Midazolam 0.1 mg/kg max 2mg IV/IO/IN. Dose may be repeated IV/IO every 3-5 min as long as SBP is within range normal for age.

P

M Contact Medical Control as needed M

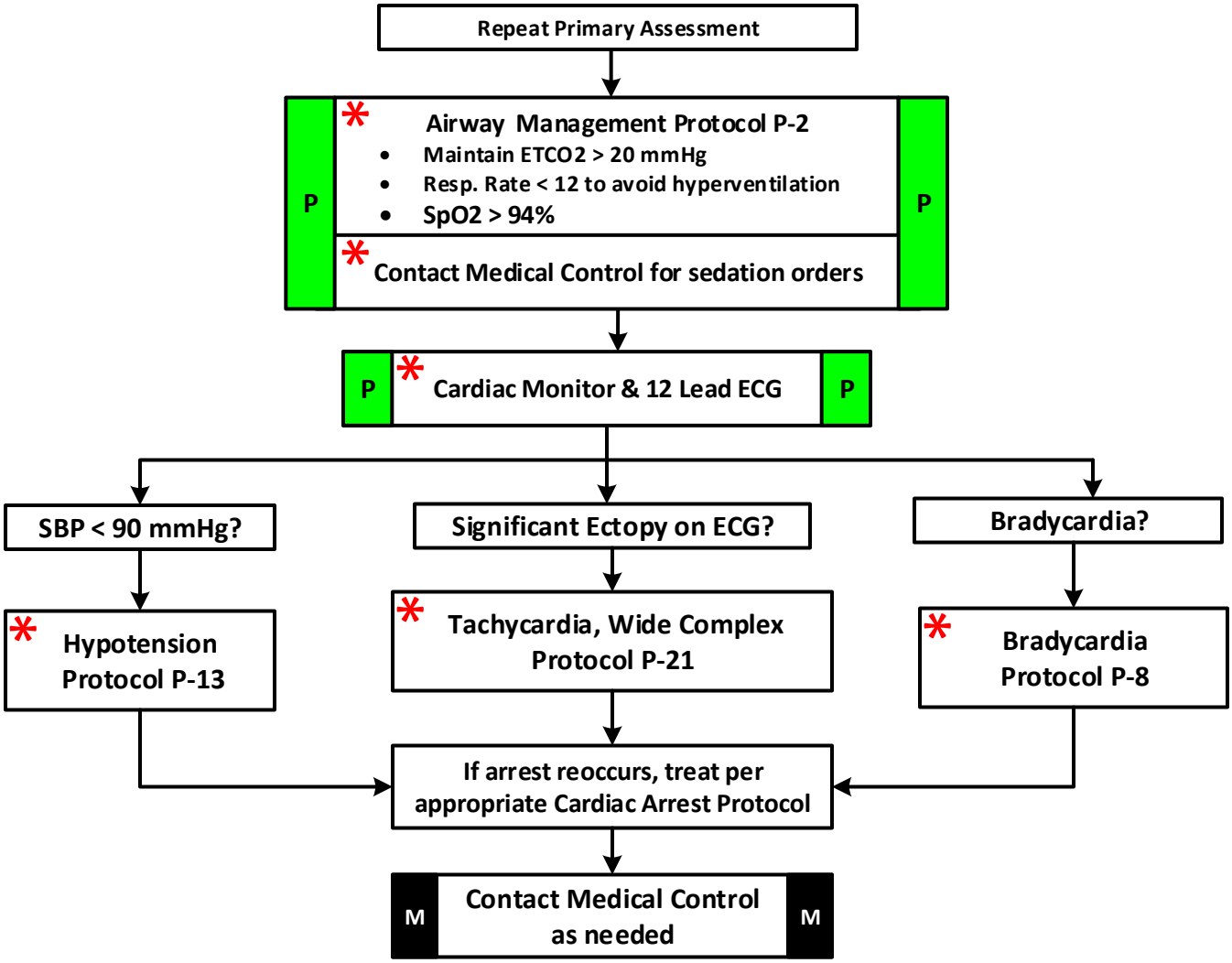
Clinical Guidelines:

- Determine severity using either the 0-10 pain scale or the Wong-Baker FACES scale. Transport time should not be a deciding factor in the decision to treat pain.
- EtCO2 values will be monitored on all patients that receive pain medication, if able.
- Contraindications for narcotic use include hypotension, head injury, or respiratory failure.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Post-Resuscitation Care

History	Differential Diagnosis	Signs and Symptoms
• Respiratory Arrest • Cardiac Arrest • Apparent Life-Threatening Event	• Continue to address specific differentials associated with original dysrhythmia	• Return of pulse • Return of spontaneous respirations • Purposeful movement • Dysrhythmias • Hypotension



Clinical Guidelines:

- Hyperventilation is a significant cause of hypotension and cardiac arrest in the post resuscitation phase and it must be avoided.
- If electrical conversion of VF/VT occurred before an antiarrhythmic could be initiated, administer Amiodarone 5 mg/kg (max 300 mg) in 100 mL NS over 20 min.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

Respiratory Distress

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History	Differential Diagnosis	Signs and Symptoms
• Asthma • Home oxygen or nebulizer? • Medication compliance • Toxic exposure • Smoke inhalation • Recent sickness • Time on onset • Allergies	• Asthma • Anaphylaxis • Aspiration • Pleural effusion • Pneumonia • Pulmonary embolus • Pneumothorax • Pericardial tamponade • Hyperventilation / Anxiety • Inhaled toxin • Foreign body • Drowning • Broncholitis • Croup/Epiglottis • Congenital heart disease • Overdose • Trauma	• Shortness of breath • Pursed lip breathing • Decreased ability to speak • Increased respiratory rate and effort • Wheezing, rhonchi, stridor • Use of accessory muscles • Fever, cough, tachycardia

8 R

EMR * Universal Patient Care U-1 EMR

EMR * Airway Management P-2 EMR

Observed signs/symptoms

- Hives/wheezing/itching → * Allergic Reaction Protocol
- Stridor/barking cough/fever → * Croup/Epiglotittis Protocol
- Wheezing w/Asthma history → * Asthma Exacerbation Protocol
- Other → * Consider:
  - Trauma
  - Pain Management
  - Fever/Infection
  - Hypotension
  - Overdose/Toxins
  - Obstructed Airway

M Contact Medical Control as needed M

Clinical Guidelines:

- A quiet chest is indicative of severe bronchospasm.
- Patient respiratory status must be reassessed after each breathing treatment to determine need for additional dosing.
- Do not force a child into a position, allow them to assume position of comfort. They will protect their airway by their body position.
- The most important component of respiratory distress is airway control.
- Bronchiolitis is a viral infection typically affecting infants which results in wheezing which may not respond to beta-agonists.
- **Suspected epiglottitis**: Abrupt onset of severe symptoms. Patients deteriorate rapidly. Usually patients present with fever first, followed by stridor and labored breathing.
- **Suspected croup:** Clinical syndrome of hoarse voice, barking cough, and inspiratory stridor. It is usually caused by a viral infection and mostly affects children between six months and thirty-six months of age, although it may occur in older children.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

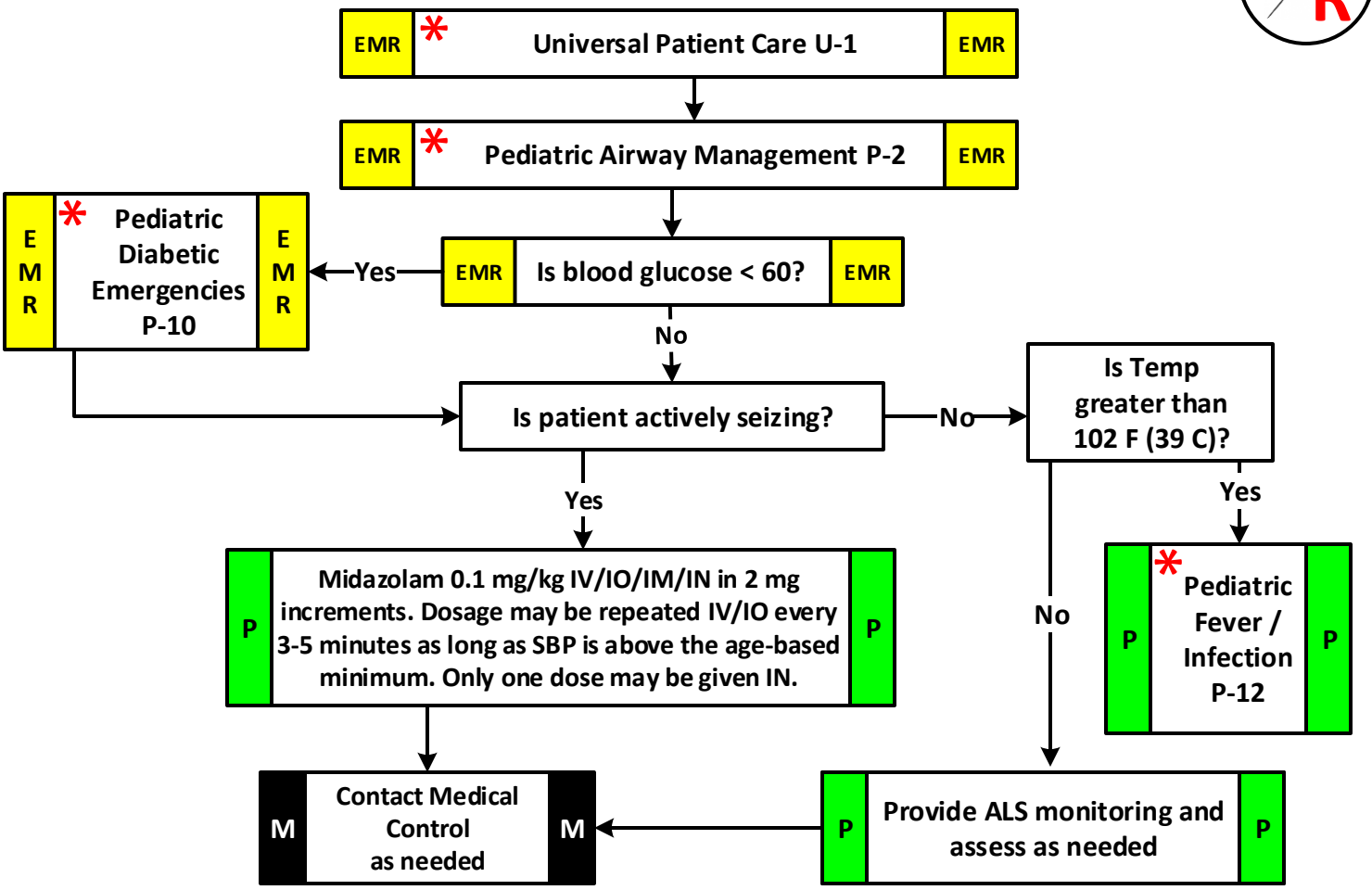
Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

Seizures

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History	Differential Diagnosis	Signs and Symptoms
• Reported / witnessed seizure activity • Previous seizure history • Medical alert tag information • Seizure medications • History of trauma • History of diabetes • History of sickness / fever	• Fever • Infection • Head trauma • Medication or Toxin • Hypoxia or Respiratory failure • Hypoglycemia • Metabolic abnormality / acidosis • Tumor	• Decreased mental status • Sleepiness • Incontinence • Observed seizure activity • Evidence of trauma • Unconsciousness • Nuchal rigidity

8 R



Clinical Guidelines:

- Any patient who has received Midazolam for seizure control will have ETCO2 and SpO2 values monitored, if possible.
- Involve parents/guardians in treatment decisions. If the parents or legal guardian does not wish the patient to be transported, encourage them to follow up with a pediatrician as soon as possible.
- Be prepared to assist ventilations, especially if a benzodiazepine is used. Avoiding hypoxemia is extremely important.
- In an infant, a seizure may be the only evidence of a closed head injury.
- Status epilepticus is defined as two or more successive seizures or a continuous seizure lasting 5 min without a period of consciousness or recovery. This is a true emergency requiring rapid airway control, treatment, and transport.
- Grand mal seizures (generalized) are associated with loss of consciousness, incontinence, and tongue trauma.
- Focal seizures (petit mal) effect only a part of the body and are not usually associated with a loss of consciousness

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

Tachycardia, Narrow Complex

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History	Differential Diagnosis	Signs and Symptoms
• Medications • Stimulant use • Past medical history • History of palpitations / heart racing • History of recent syncope and/or near syncope • Onset of symptoms	• Heart disease (WPW) • Sick sinus syndrome • Electrolyte imbalance • Exertion, Pain • Hypovolemia or Anemia • Drug effect / Overdose (see Hx) • Hyperthyroidism • Pulmonary Embolism • Fever • Hypoxia • Emotional stress	• QRS less than 0.12 Sec • Rate related symptoms (Dizziness, Chest Pain, Shortness of breath) • Potential presenting rhythm (Sinus tachycardia, A-fib/A-flutter, MAT)

8 R

EMR * Universal Patient Care U-1 EMR

QRS ≤ 0.09 sec OR history of WPW

Yes → * Tachycardia, Wide Complex Protocol P-21

No

Unstable/Pre-Arrest
Altered mentation or no palpable radial pulse

Stable but symptomatic

P * Determine Rhythm
Obtain initial 12 Lead ECG P

Synchronized Cardioversion @ 0.5-1 J/kg. Treatment may be repeated at 2 J/kg if previous dose unsuccessful.
REPEAT CARDIOVERSION AS NEEDED

Consider Sedation:
Versed 0.1 mg/kg IV/IO/IN. Dose may be repeated up to 2 mg, as long as the patient maintains an appropriate blood pressure for age.

Repeat 12 lead ECG upon conversion

* 12 Lead EKG Protocol G-1
Vagal Maneuvers

Irregular

M Contact Medical Control for orders M

Regular

P Adenosine 0.1 mg/kg (6 mg max) rapid IV/IO push w/ flush.
Can repeat Adenosine 0.2 mg/kg (12 mg max) rapid IV/IO push w/ flush. P

No

Patient Stable ?

Yes

P ALS monitoring and transport P
M Contact Medical Control as needed M

Clinical Guidelines:

- **If patient has history of or 12 Lead ECG reveals Wolff-Parkinson-White (WPW), DO NOT administer Diltiazem, go to VT with Pulse.**
- **If patient is stable and non-symptomatic, ALS monitor only.**
- If patient requires multiple conversion attempts without resolution consider alternative cause of dysrhythmia
- Monitor ETCO2 values and be aware of respiratory depression and hypotension associated with Midazolam.
- Document all rhythm changes with monitor strips and obtain monitor strips with each therapeutic intervention.
- Maximum physiologic heart rate (Sinus Tachycardia) is 220 bpm minus the patient age in years.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Joint EMS Protocols
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Centralia Fire Dept
Columbia Fire Dept

Tachycardia, Wide Complex

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History	Differential Diagnosis	Signs and Symptoms
• Past medical history / medications, diet, drugs • Syncope / Near syncope • Palpitations • Allergies: Lidocaine or Amiodarone • CAD, CHF, Cardiomyopathy	• Artifact • Implanted Device Failure • Cardiac • Endocrine/Electrolyte • Hyperkalemia • Drugs/Toxic exposure • Pulmonary disease	• Ventricular Tachycardia (Runs or Sustained) • Conscious, rapid pulse • Chest Pain, Shortness of Breath • Dizziness • Rate usually 150-180 bpm for sustained V-Tach

8 R

EMR * Universal Patient Care U-1 EMR

QRS ≤ 0.09 sec with a pulse?

Yes → * Tachycardia, Narrow Complex Protocol P-20

No

Unstable/Pre-Arrest
Altered mentation or no palpable radial pulse

Stable but symptomatic

P * Determine Rhythm
Obtain initial 12 Lead ECG

Synchronized Cardioversion @ 0.5-1 J/kg. Treatment may be repeated at 2 J/kg if previous dose unsuccessful.
REPEAT CARDIOVERSION AS NEEDED

Consider Sedation:
Versed 0.1 mg/kg IV/IO/IN. Dose may be repeated up to 2 mg, as long as the patient maintains an appropriate blood pressure for age.

Repeat 12 lead ECG upon conversion P

P Amiodarone 5 mg/kg (max 150 mg) IV/IO in 100 mL NS over 20 minutes.

Torsades de pointes -
Mag Sulfate 25 mg/kg (max 2 g) in 50 mL NS over 10 minutes P

* 12 Lead EKG Protocol G-1
Vagal Maneuvers

P Amiodarone 5 mg/kg (max 150 mg) IV/IO in 100 mL NS over 20 minutes.

Torsades de pointes -
Mag Sulfate 25 mg/kg (max 2 g) in 50 mL NS over 10 minutes P

No → Patient Stable ?

Yes

P ALS monitoring and transport P
M Contact Medical Control as needed M

Clinical Guidelines:
- For Sinus Tachycardia, treat the underlying cause.
- For slow wide complex tachycardias consider Hyperkalemia as a cause. Contact Medical Control to administer Sodium Bicarbonate.
- ETCO2 values will be monitored in all patients that receive Midazolam (Versed) for sedation.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

OB Section

- **Childbirth**
- **High Risk Childbirth**
- **Postpartum Newborn Care**
- **Post-Delivery Maternal Care**
- **OB Emergencies**
- **Preeclampsia**

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

Childbirth

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

APGAR Score

- Appearance
- Pulse
- Grimace/Reflex
- Activity
- Respirations

* Universal Childbirth U-13

Assume care from first responders

History

- Para/Gravida
- Prenatal care
- Expected due date
- Last menstrual period
- Predicted complications

Reassessment: Is birth imminent?

- Urge to push/bear down?
- Frequent contractions?
- Is the baby presenting?

Yes

No

Presentation Normal? Gestation > 32 weeks?

Abnormal/ < 32 weeks

* High Risk Childbirth Protocol

Normal/ > 32 weeks

Overall Treatment Guidelines:

- Establish IV access.
- Time contractions and note strength.
- ALS monitoring.
- Prepare for possible delivery during transport.
- Transport to facility of choice.

Prepare for delivery:

- Rule of thumb: Typically 24 weeks is the earliest a fetus can be viable.
- If time allows, establish IV access in the mother and initiate oxygen therapy and ALS monitoring.
- Prepare a sterile field and the delivery equipment.
- Position mother in semi-Fowler's with knees bent and open. Coach breathing.
- Inspect the perineum for crowning; do not perform a digital vaginal exam.
- Control the delivery of the head gently and support it as it emerges. Protect the perineum with gentle pressure and puncture the amniotic membrane if still intact.
- Check if nuchal cord is present and remove; clamp and cut cord if it is unable to be removed.
- Suction the mouth and then the nose using a bulb syringe as needed.
- As the shoulders emerge, guide head and neck downward to deliver anterior shoulder; support and lift
- Keep the newborn level with the vagina until the cord ceases pulsating. Clamp 4" and 6" from the baby.
- Cut between the umbilical clamps.
- Dry the newborn and wrap in a warm blanket, place infant on the mother's chest to maintain warmth.

* Newborn Care Protocol

* Post-Delivery Maternal Care Protocol

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

High Risk Childbirth

History

- Gravida/Para?
- Estimated due date?
- Prenatal care? Complications?
- Past medical history
  - Gestational diabetes
  - PIH
  - Pre-eclampsia
  - Seizure history

* Universal Childbirth Protocol U-13

- Consider adding an additional medic unit to assist.
- Notify the receiving facility early.

Differential Diagnosis

- Breech birth
- Frank delivery
- Shoulder dystocia
- Nuchal cord
- Prolapsed cord
- Premature delivery

Emergent Transport

Prolapsed Cord

- Position the patient in Trendelenberg position, hips elevated and knees to chest.
- Prepare for a potential resuscitation of the newborn if delivery occurs.
- Saline Dressing over any exposed cord sections to prevent it from drying.
- Have a provider insert their fingers into the vagina to relieve pressure on cord and/ or to create an air passage . Maintain this position until relieved by another medical professional or delivery occurs.
- Start IV, give high-flow O_2, and provide ALS monitoring.

Premature Birth (24-36 weeks)

- Perform an assessment and look for crowning.
- If delivery does not appear imminent, start an IV, give high-flow O_2, and provide ALS monitoring.
- Transport the patient on her left side to prevent hypotension.
- Monitor duration, frequency, and intensity of any uterine contractions.
- Prepare for a potential field delivery.
- Prepare for potential resuscitation of the newborn if delivery does occur.

Shoulder Dystocia

- Failure to deliver can result in poor fetal outcome or death.
- If delivery is in process and the shoulders become stuck perform McRobert's maneuver:
  1. Dedicate one provider to delivery of the baby. This provider will need to enter the vagina to create an air passage for the newborn;
  2. Hyperflex the legs of the mother;
  3. Push downward on the abdomen superior to the symphysis pubis
- Never pull on any presenting parts of the newborn.

Breech Birth

- Determine which part of newborn is presenting.
- Prepare for a potential resuscitation of the newborn if delivery occurs.
- Create air passage by supporting presenting part of infant. Place 2 fingers along side nose and push away from face.
- Transport in Knee to Chest Position or Left Lateral Position.
- Start IV, give high-flow O_2, and provide ALS monitoring.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

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Newborn Care

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

Assessment Triangle

- Appearance
- Work of breathing
- Circulation

Neonatal Assessment Triangle

Dry / Warm Newborn
(Use towel and stimulate back for 30 seconds)

Place newborn in sniffing position. Use bulb syringe to clear airway as needed (Mouth, then nose)

Assess the patient – Less than 60 seconds

Normal Vital Signs

- Heart rate: 120-160 bpm
- Resp/min: 40-60
- SpO_2 at 1 min: 60-65%
- SpO_2 at 5 min: 80-85%

Gasping / Apneic Respirations

Clamp / Cut cord

Ventilations over 30 secs at a rate of 40-60 a min using flow inflating bag.

Reassess Breathing / Heart Rate

HR > 100 with Crying / Adequate Respirations

Keep Warm and Reassess

HR < 100

CPR at 120/min Ventilations at 3:1 Ratio with CPR

HR > 100 Crying / Adequate Respirations

Crying / Adequate Respirations

Is Heart Rate > 100?

Yes

No

Clamp / Cut cord

Ventilations over 30 secs at a rate of 40-60 a min using flow inflating bag.

Reassess Breathing / Heart Rate

HR > 100 Crying / Adequate Respirations

HR < 100

CPR at 120/min Ventilations at 3:1 Ratio with CPR

Reassess Breathing / Heart Rate

HR < 60

CPR at 120/min Ventilations at 3:1 Ratio with CPR

- Obtain IV/IO access.
- Give Epi per Broslow Tape
- Intubation

HR 60-100 bpm

Ventilations over 30 secs at a rate of 40-60 a min using flow inflating bag. Reassess afterwards.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Newborn Care

APGAR Score Chart

SCORE	0	1	2
APPEARANCE	Blue/pale	Pink Body/Blue Extremities	Pink
PULSE	Absent	Slow (< 100/minute)	> 100/minute
GRIMACE	No response to suction	Grimace to suction	Cough or Sneeze to suction
ACTIVITY	Limp	Some Flexion	Active Motion
RESPIRATIONS	Absent	Slow/Irregular	Good/Crying

Newborn Drug Dosages

Medication/Dosage	1 kg	2 kg	3 kg	4 kg
Epinephrine 1:10,000 Dosage: 0.1 mL/kg	0.1 mL	0.2 mL	0.3 mL	0.4 mL
Normal Saline Dosage: 10 mL/kg	10 mL	20 mL	30 mL	40 mL
Naloxone Dosage: 0.1 mL/kg	0.1 mL	0.2 mL	0.3 mL	0.4 mL
Dextrose $D10_W$ (Blood Glucose < 40 mg/dL) Dosage: 2 mL/kg	2 mL	4 mL	6 mL	8 mL

Post-Delivery Maternal Care

History	Signs and Symptoms
• Gravida/Para? • Estimated due date? • Prenatal care? Complications? • Past medical history	• Hypotension • Chest pain • Nausea/vomiting • Fatigue • Shortness of breath • Postpartum hemorrhage

8 R

* Universal Patient Care Protocol U-1

Has the placenta been delivered?

No →
- Await delivery of placenta
- Do not pull on the umbilical cord

Yes

Perform fundal massage

Is there postpartum bleeding > 500 mL?

Yes

Postpartum hemorrhage:
- Place infant to breast
- Establish IV access
- Administer a 1 liter Normal Saline bolus

If bleeding continues after fundal massage, administer 10 units Pitocin intramuscular

No

Overall treatment Guidelines:
- IV access
- ALS monitoring
- Save placenta for transport
- Transport newborn and mother together, if possible

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

OB Emergencies

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History	Differential Diagnosis	Signs and Symptoms

• Gravida/Para?
• Estimated due date?
• Prenatal care? Complications?
• Past medical history
  • Gestational diabetes
  • PIH
  • Pre-eclampsia
  • Seizure history
	• Vaginal bleeding
	• Ovarian torsion
	• Endometritis
	• Ectopic pregnancy
	• Abdominal hemorrhage
	• Spontaneous abortion
	• Sexual trauma
	• Uterine rupture
	• Placenta previa
	• Vasa previa
	• Abruptio placenta
	• Menstruation
	• Neoplasm
	• Uterine fibroid
		• Hypotension
		• Nausea/vomiting
		• Abdominal pain/tenderness
		• Dizziness
		• Cramping
		• Foul discharge
		• Bleeding

* Universal Patient Care Protocol U-1

Signs/Symptoms:
- Third trimester
- Dark-colored vaginal blood
- Abdominal and/or back pain
- Uterine tenderness
- Signs of labor
- Hypotension

Abruptio Placenta

Signs/Symptoms:
- Second or third trimester
- Bright red vaginal blood
- No pain
- Detectable fetal movement
- Hypotension

Placenta Previa

Signs/Symptoms:
- Loss of fetal contour
- Sharp/tearing abdominal pain
- Weakness/ dizziness
- Hypotension
- Can be trauma related

Uterine Rupture

Signs/Symptoms:
- Symptoms start 5-8 weeks after last menstruation
- Cramping
- Abdominal pain, acute onset
- Bleeding
- Hypotension

Ectopic Pregnancy

Signs/Symptoms:
- First trimester
- Cramping
- Abdominal pain
- Bleeding
- Possible expulsion of fetal tissue and/ or blood clots

Spontaneous Abortion

Treatment Guidelines:
- Provide bleeding control. Do not pack vagina with gauze.
- Estimate blood loss. Treat hypotension per protocol.
- Oxygen therapy as needed.
- Pain management per protocol.
- Provide emotional support.

ALS monitoring.
Transport on left side, recumbent position as needed

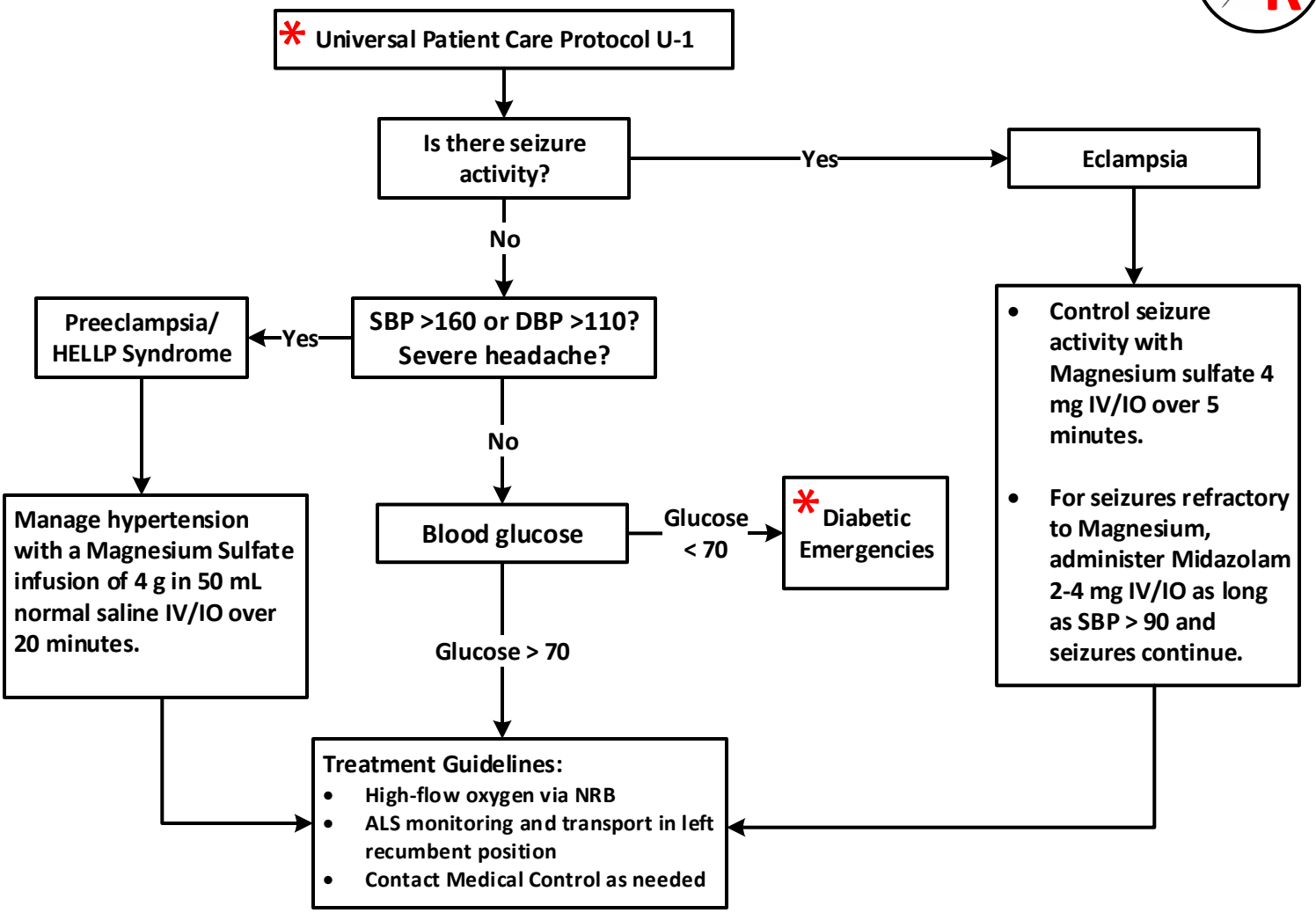
Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Preeclampsia

History	Differential Diagnosis	Signs and Symptoms

• Gravida/Para?
• Estimated due date?
• Prenatal care? Complications?
• Past medical history
  • Gestational diabetes
  • PIH
  • Pre-eclampsia
  • Seizure history
	• Seizures
	• Hypertensive crisis
	• Hypertension
	• Headache, migraine
	• Abdominal pain
	• Chest pain
	• CHF
	• Respiratory distress
		• Severe headache
		• Hypertension
		• Vision changes
		• Edema
		• RUQ pain
		• Nausea/vomiting
		• Fatigue
		• Shortness of breath

8 R



Clinical Guidelines:

- **Preeclampsia – gestational hypertension between 20 weeks and up to 12 weeks postpartum.** Hypertension in pregnancy is defined as a SBP over 160 mmHg and a DBP over 110 mmHg.
- **Signs of Magnesium overdose include: reduced muscle tone, reduced reflexes and hypotension.**
- Maintain patient in a left lateral position to minimize risk of supine hypotensive syndrome, which may occur as the fetus gets large enough to compress the vena cava.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Trauma Section

- Trauma Level Criteria
- ALS Trauma Care
- BLS Trauma Care
- Amputation
- Assault and Abuse
- Bites and Envenomation
- Burn
- Chest Wall Trauma
- Crush Injury
- Drowning and Submersion
- Eye Trauma
- Fractures and Dislocations
- Head Trauma
- Impaled Object
- Pregnant Trauma
- Selective Spinal Immobilization
- Traumatic Arrest
- Wound Care

Joint EMS Protocols
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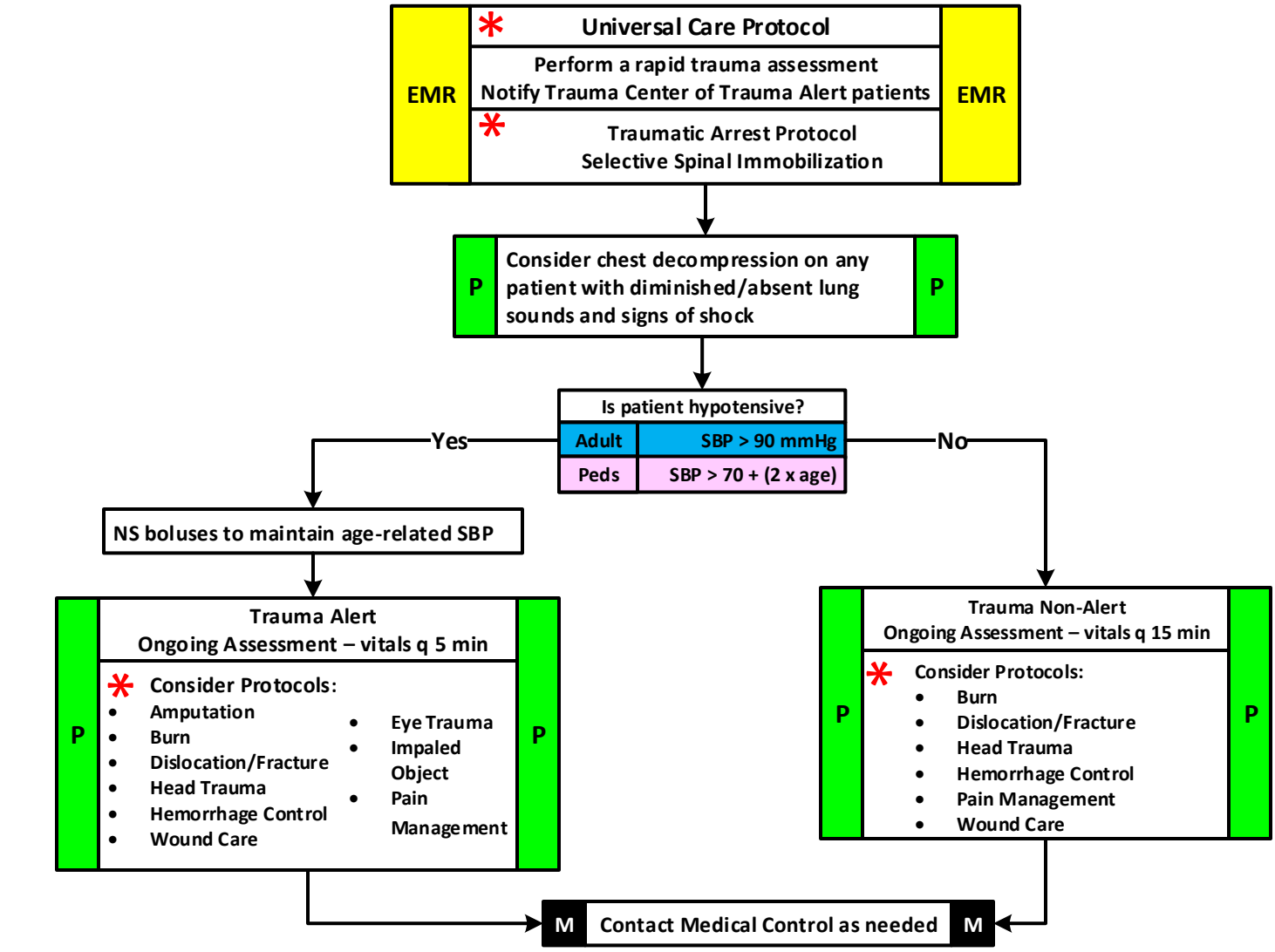
ALS Trauma Care

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History	Differential Diagnosis	Signs and Symptoms
• Time and mechanism of injury • Damage to structure or vehicle • Location in structure or vehicle • Others injured or dead • Speed and details of MVC • Restraints/protective equipment • Medical history/Medications	• Tension pneumothorax • Flail chest • Pericardial tamponade • Open chest wound • Hemothorax • Intra-abdominal bleeding • Pelvis/Femur fracture • Spine fracture/cord injury • Head injury • Extremity fracture/ Dislocation • Airway obstruction • Hypothermia	• Burns, pain, swelling • Dizziness • Loss of consciousness • Hypotension/shock • Airway compromise/distress • Deformity, lesions, bleeding • Altered mental status • Cardiac Arrest



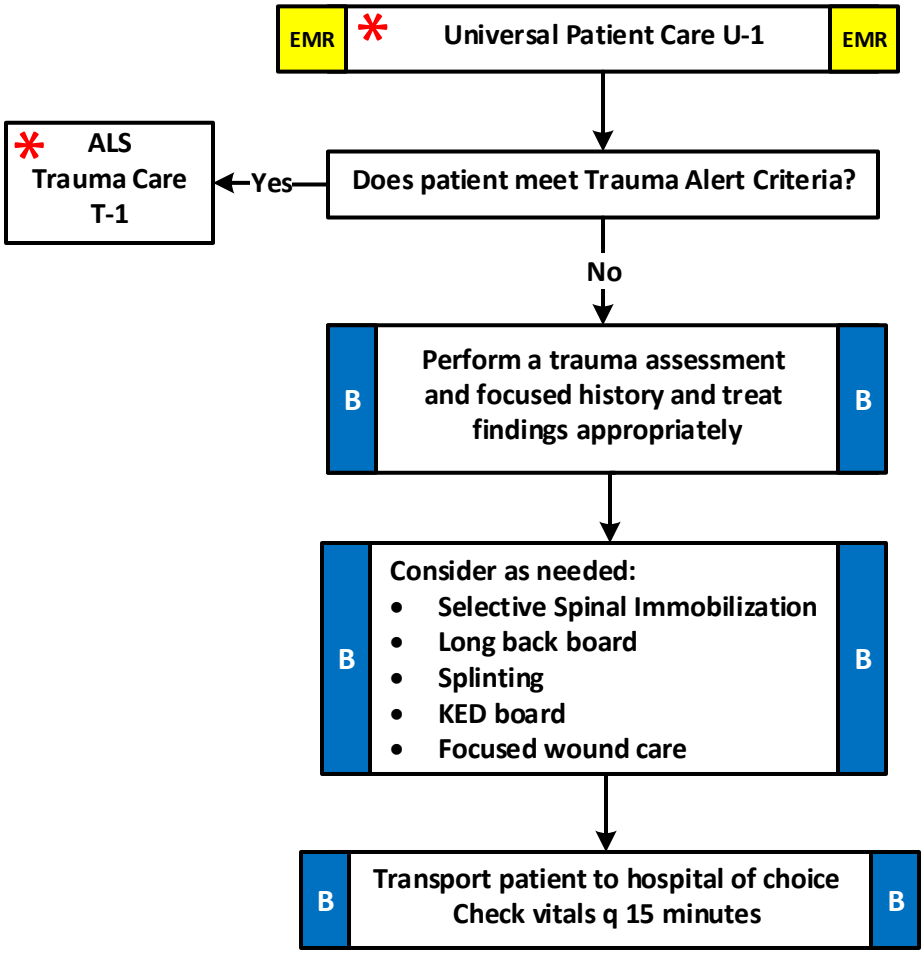
Clinical Guidelines:

- Consider Chest Decompression with signs of shock and diminished/absent breath sounds. If patient arrests perform bilateral decompression.
- See the current University Hospital Trauma Guidelines for criteria when declaring a trauma alert.
- Minimize scene times if a patient meets Trauma Activation criteria. Necessary interventions should be performed while transporting.
- Severe bleeding from an extremity unable to be controlled by direct pressure requires the application of a tourniquet.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

BLS Trauma Care

History	Differential Diagnosis	Signs and Symptoms
• Mechanism of injury • Events leading up to injury • Pain level • Medications • Allergies • Protective equipment use	• Minor wounds • Sprain/Strain • Insect bite • MVC with minor injuries • Fall • Abrasions • Lacerations with minor bleeding • Soft tissue bruising	• Pain reported as less than 6/10 • Isolated neck or back pain post-MVC or fall • Minor bleeding • No loss of consciousness • Abrasions/bruising/lacerations • Stable vital signs



Clinical Guidelines:

- BLS Trauma care is appropriate for either BLS/ALS level caregivers to operate as primary caregiver. If any of the following exist during transport, an ALS provider is to assume care of the patient for the duration of the transport:
  - Respiratory distress
  - Hypotension or acute mental status change
  - Acute chest or abdominal pain

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Amputation

History	Differential Diagnosis	Signs and Symptoms
• Traumatic mechanism • Time of injury • Previous care received • Medications (blood thinners) • Medical history	• Multisystem trauma • Avulsion • Degloving • Amputation • Abdominal eviseration	• Pain • Hemorrhage • Hypotension • Unconsious • Pulselessness • Altered mental status

EMR * Universal Care Protocol U-1 EMR

↓

* ALS Trauma Care T-1

↓

Amputation

- Control hemorrhaging per protocol.
- Bring all amputated body parts to the hospital with the patient.
- Wrap in moist sterile dressings and place in a biohazard bag.
- Place sealed bag on cold packs.

Avulsion/ Degloving

- Do not replace the flapped or loose skin.
- Dress with saline soaked gauze.
- Apply direct pressure or a pressure dressing to control bleeding.

Eviseration

- Do not place any body organs back into the body.
- Cover evisceration site with a large saline soaked trauma dressing.

↓

P Consider Pain Management Protocol A-17, P-16 P

M Contact Medical Control as needed M

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Assault and Abuse

History	Differential Diagnosis	Signs and Symptoms

• History of previous suspicious injuries
• Location of suspected assailant
• Time and day of assault
• Time and day of injury
• Medications
• Allergies
	• Fall
	• Accidental burn
	• Hemorrhage
	• Altered mental status
	• Sexual assault
	• Weakness
	• Failure to thrive
	• Alcohol Intoxication
	• Dehydration
	• Infection
		• Bruising
		• Vaginal or rectal bleeding
		• Fractures
		• Lacerations
		• Hemorrhage
		• Non-accidental burn patterns:
		  • Waterline burns
		  • Stock/glove patterns

EMR * Universal Trauma Care U-1 EMR

Sexual Assault

Respect the patient:
- Confine the history and physical exam to the current pertinent needs
- Provide a same-sex provider, if possible
- Give emotional and physical space, if the patient requests it

↓

Protect evidence:
- No washing or changing of clothes
- If possible, transport any removed clothing in a paper bag or give it to law enforcement

↓

Transport to facility of choice, however a facility with a SANE Program is preferred

Abuse and/or neglect

Observe the patients behavior around caregivers

↓

Watch out for:
- Injuries that don't match the stated mechanism
- A significant delay in reporting the injury or in seeking treatment
- Inappropriate blaming
- Conflicting stories
- Injuries in several stages of healing

↓

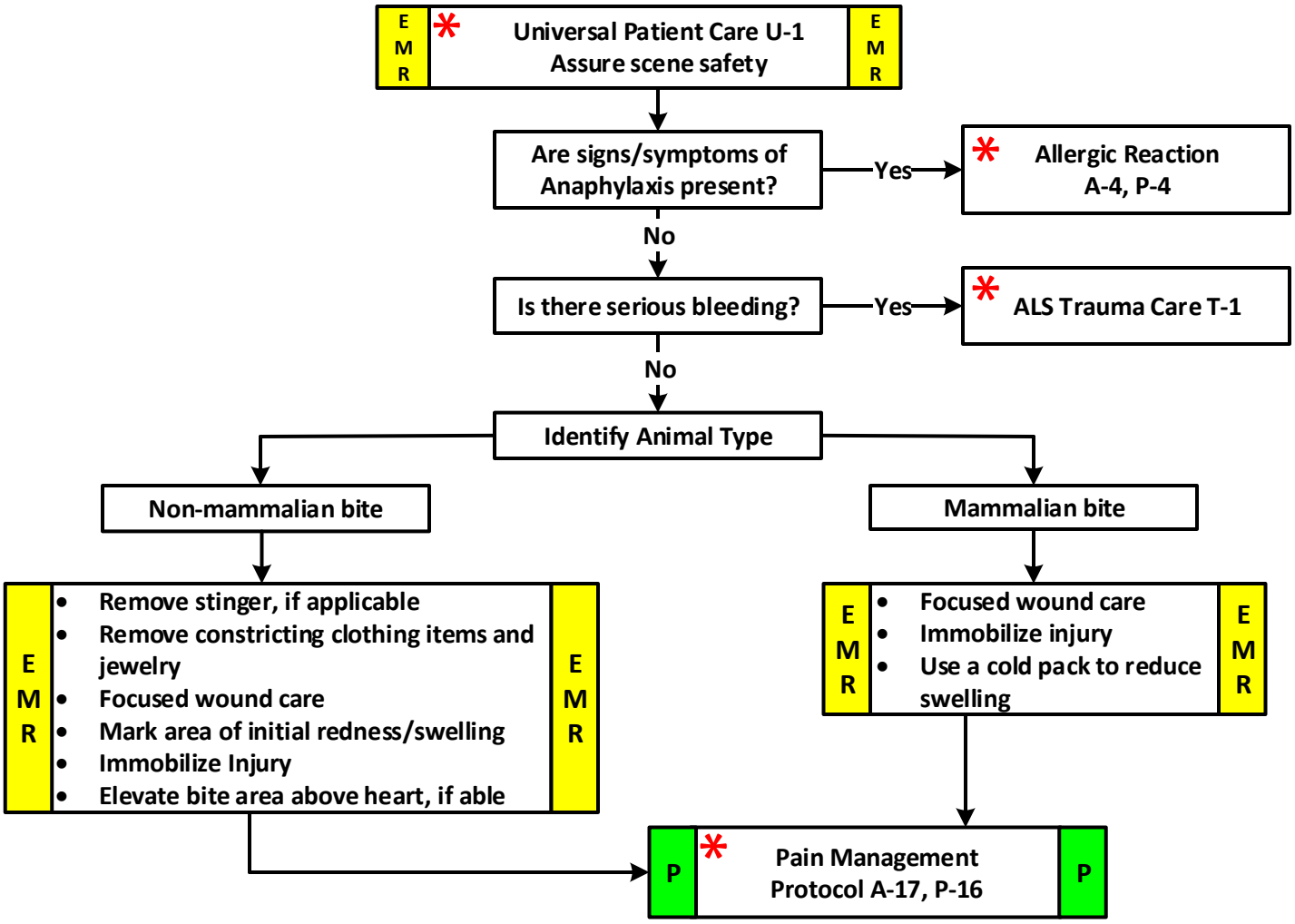
Report any abuse/neglect situations to the receiving facility. Document which facility representatives were notified

Clinical Guidelines:
- SANE Program hospitals in Boone County:
  - 13 or younger – Women's and Children's Hospital
  - 13 or older – University Hospital
- Do not judge, accuse, or confront either the suspected assailant or victim.
- Document the entire interaction appropriately in the patient care narrative, making sure to add any pertinent information necessary to support any suspected assault, abuse, or neglect.
- Adult Abuse and Neglect hotline: 1-800-392-0210.
- Child Abuse and Neglect hotline: 1-800-392-3738.

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Bites/Envenomation

History	Differential Diagnosis	Signs and Symptoms
• Time of injury/onset • Medical Hx • Tetanus status • Medications • Previous history of reactions? • Type of animal or insect • Domestic vs. wild	• Animal bite • Human bite • Spider bite • Snake bite • Insect sting • Rabies / Tetanus • Anaphylaxis	• Pain, swelling, blood • Evidence of infection: drainage, redness, fever, red streaks • Open wound / swelling • Shortness of breath / wheezing • Hives / rash / itching • Allergic reaction • Hypotension / shock



Clinical Guidelines:

- Human bites have higher infection rates than animal bites due to normal mouth bacteria.
- Carnivore bites are much more likely to become infected and all have risk of Rabies exposure.
- Cat bites may progress to infection rapidly due to a specific bacteria (Pasteurella multicoda).
- Poisonous exotic species may be found at zoos, pet stores, or in rare cases at private residences (legally or illegally).
- If no pain or swelling, envenomation is unlikely. About 25 % of snake bites are “dry” bites.
- Black Widow spider bites tend to be minimally painful, but over a few hours, muscular pain and severe abdominal pain may develop (spider is black with red hourglass on belly). Brown Recluse spider bites are minimally painful to painless. Little reaction is noted initially but tissue necrosis at the site of the bite develops over the next few days (brown spider with fiddle shape on back).

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Burn Care

History	Differential Diagnosis	Signs and Symptoms
• Type of exposure (heat, gas, chemical) • Inhalation injury • Time of Injury • Past medical history and Medications • Other trauma • Loss of Consciousness • Tetanus/Immunization status	• Superficial (1°) red and painful • Partial thickness (2°) blistering • Full thickness (3°) painless/charred or leathery skin • Full thickness plus bone/muscle/tendon (4°) • Chemical • Thermal • Electrical • Radiation	• Burns, pain, swelling • Dizziness • Loss of consciousness • Hypotension/shock • Airway compromise/distress, singed facial or nasal hair, hoarseness / wheezing

8 R

EMR * Universal Care Protocol U-1 EMR

↓

EMR * Airway Management Protocol A-2, P-2 EMR

Expose area
Remove rings, bracelets, other items
Brush off dry chemicals or powder
Stop burning process – Cool burn with water
Cover with dry dressing

↓

FP Estimate the depth, severity, and % of TBSA affected

Obtain IV/IO access: In burns greater than 30% TBSA, initiate two large bore IV catheters FP

↓

P Age-based fluid resuscitation:
- 5 years or younger – 125 mL fluid/hr
- 5 years to 13 years – 250 mL fluid/hr
- 14 years to adult – 500 mL fluid/hr

Adult Pain Control: Fentanyl 1-2 mcg/kg IV/IO/IN. May repeat up to 50 mcg every 5-10 minutes as long as SBP > 90. Max dose 200 mcg. Contact Medical Control for additional doses.

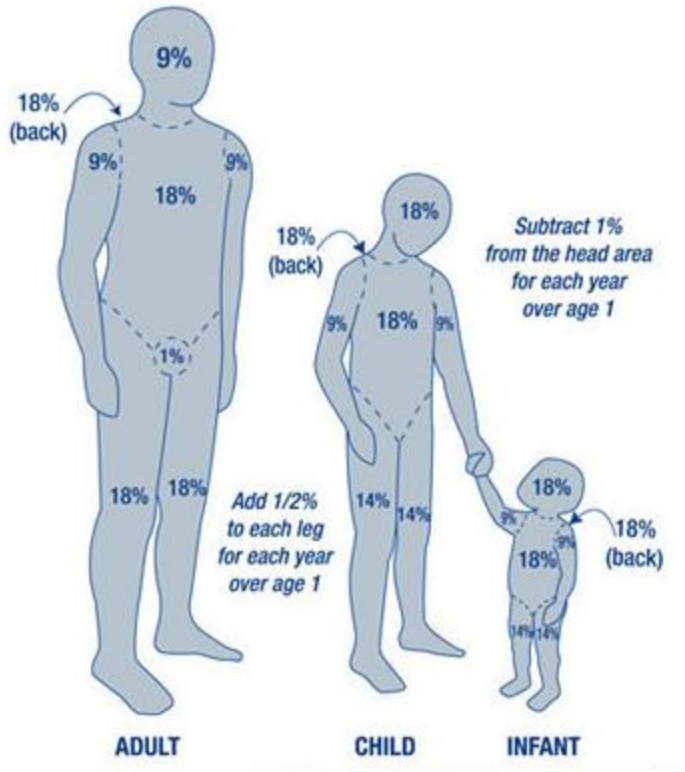
Pediatric Pain Control: Fentanyl 0.5-1 mcg/kg IV/IO/IN to a max dose of 50 mcg. May repeat half the initial dose once. Contact Medical Control for additional doses.

Notify facility of Trauma Alert prior to transport P

Trauma Alert Criteria
- Burns with associated multi-system trauma
- Suspected/ confirmed inhalation injury
- TBSA > 35%

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Burn Care



Clinical Guidelines:

- Evaluate BSA : Use chart or use one side of patients hand = 1% BSA
- In electrical burns, obtain a 12 lead EKG and treat any dysrhythmias noted.
- Potential CO exposure should be treated with 100% oxygen.
- Circumferential burns to extremities are dangerous due to potential vascular compromise secondary to soft tissue swelling.
- Burn patients are prone to hypothermia - Never apply ice or cool burns that involve >10% body surface area.
- Avoid affected skin if possible when initiating IV/IO access.
- Monitor ETCO2 values if Narcotic medications are administered.

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

Chest Wall Trauma

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History	Differential Diagnosis	Signs and Symptoms
• Mechanism of injury • Time of injury • Past medical history and medications • Acute trauma • Loss of consciousness	• Airway obstruction • Flail chest • Rib fracture • Pulmonary contusion • Hemothorax • Pneumothorax • Aortic rupture • Diaphragmatic tear • Cardiac tamponade • Cardiac contusion	• Altered mentation • Cyanosis • Shortness of breath • Diminished lung sounds • Hypotension • Tachycardia • Pain • JVD • Edema

EMR * Universal Care Protocol U-1 EMR

P * ALS Trauma Care Protocol T-1 P

Airway Injury

- Manage airway per Adult or Pediatric Medical – Airway Management
- Perform surgical airway procedure early

Hemo/Pneumothorax

- Place an occlusive dressing over open pneumothorax
- Use a catheter between the 2nd and 3rd ribs, midclavicular, to relieve tension pneumothorax

Flail Chest

- Stabilize the chest using a bulky dressing and tape
- Use BVM with PEEP device to ventilate patient

Cardiac Tamponade

- 1 liter NS bolus
- Levophed 2 mcg/ min IV/IO, if no improvement in hypotension after two NS boluses

P * Consider:
- Airway Management Protocol
- Hypotension Protocol
- Pain Management Protocol
P

M Contact Medical Control as needed M

Clinical Guidelines:

- S/S of pneumo or hemothorax: hypotension, JVD, tracheal shift, cyanosis, shortness of breath, altered mental status, unequal lung sounds/ absent lung sounds.
- Use an angiocatheter of the appropriate size to relieve tension pneumothorax (adult – 10 gauge, pediatric – 14 to 20 gauge, depending on size of patient).
- S/S of cardiac tamponade: hypotension, decreasing pulse pressure, JVD, pulsus paradoxus, tachycardia, muffled heart tones.
- Flail chest is caused by a free-floating section of fractured ribs. Avoid too much pressure when bagging patients with flail chest in order to avoid creating a pneumothorax.

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Crush Injury

History	Differential Diagnosis	Signs and Symptoms
• History of previous traumatic injury • Current traumatic injury • Medical history • Allergies	• Compartment Syndrome • Entrapment over 1 hour • MVC with prolonged extrication	• Pain • Increased capillary refill time • Numbness/tingling to affected limb • Paralysis of affected limb • Hemorrhage • Loss of consciousness • Respiratory distress

8 R

E M R * Universal Patient Care U-1 E M R

↓

* ALS Trauma Care Protocol T-1

↓

If adequate respiration is prevented by the compression, do not delay removal to initiate medications and/or fluids

Compartment Syndrome

Early signs:
- Pain
- Pallor
- Numbness/tingling

Late signs:
- Loss of Pulse
- Paralysis

Entrapment < 1 hour | Entrapment > 1 hour

P — Treatment Guidelines:
- Remove any constricting items (jewelry, clothing, etc).
- Apply cardiac monitoring. Treat any dysrhythmias per protocol.
- Administer a 500 mL IV/IO normal saline bolus, unless signs of fluid overload are present.
- Consider Pain Management Protocol.

P — Treatment Guidelines:
- Remove any constricting items (jewelry, clothing, etc).
- Apply cardiac monitoring. Treat any dysrhythmias found per protocol.
- Administer a 500 mL IV/IO normal saline bolus, unless signs of fluid overload are present.
- Administer sodium bicarbonate 1 mEq/kg slow IV/IO push.
- Consider Pain Management Protocol.

↓

M Contact Medical Control as needed M

Clinical Guidelines:
- Work with the jurisdictional fire department while extrication is being completed. Remember: provider safety is first.
- If the patient has hypotension and bradycardia associated with EKG evidence of hyperkalemia, contact Medical Control for orders.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

Drowning/Submersion

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History

- Submersion in water regardless of depth
- Possible history of trauma ie: diving board
- Duration of immersion
- Temperature of water
- Static vs. swift water

Scene Size-Up

EMR

Scene Safety/Situational Awareness
PPE (consider splash, droplet, airborne)
Determine the Number of Patients
Determine Need for Additional Resources
Determine the Mechanism of Injury/ Nature of Illness
Take the appropriate equipment to the patient

EMR

Signs and Symptoms

- Unresponsive
- Mental status changes
- Decreased or absent vital signs
- Vomiting
- Respiratory Distress
- Cardiac arrest

8 R

Universal Patient Care U-1

EMR … EMR

Consider:
Selective Spinal Immobilization Protocol T-16
Environmental Emergencies Protocol A-11 or P-11

Respiratory Distress ?

No → ALS Monitoring (P … P)

Yes → Airway Management A-2, P-2 (P … P)

In an adult, conscious patient:
CPAP 5-10 PEEP with the presence of rales/ronchi indicating wet lung sounds

For anxiety - Midazolam 1 mg IV/IO/IN, repeated every 3-5 min IV/IO
as needed with SBP > 90.

Contact Destination or Medical Control

M … M

Clinical Guidelines:

- Criteria for resuscitation includes suspected arrest from cause other than submersion, patient submersion time less than 20 minutes from arrival of the first Public Safety entity until the patient is in a position for resuscitative efforts to be initiated. On-scene rescuers should consider conversion from rescue to recovery at 20 minutes unless the patient is a diver with an air source or a patient trapped with a potential air source. Final decision for transition from rescue to recovery mode rests with on-scene command.
- Drowning is a leading cause of death among would-be rescuers. Allow appropriately trained rescuers to remove victims from areas of danger.
- SMR should be used when a suspected or known traumatic mechanism preceded the drowning.
- All victims should be transported for evaluation due to the possibility of deterioration within hours of the drowning event.
- Treat any dysrhythmias per protocol.
- Patients requiring intubation should be ventilated with a PEEP valve.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Eye Trauma

History	Differential Diagnosis	Signs and Symptoms
• Time and injury/onset • Blunt/penetrating/chemical • Involved chemicals/MSDS • Wound Contamination • Medical Hx • Tetanus status • Normal visual acuity • Medications	• Detached retina • Abrasion/Laceration • Globe rupture • Retinal nerve damage • Chemical/thermal burn • Orbital Fx • Acute glaucoma • Retinal artery occlusion	• Pain, swelling, blood • Visual deficit/Loss • Leaking aqueous/vitreous humor • Upwardly fixed eye • Shooting or streaking light • Visual contaminants • Lacrimation

8 R

EMR * Universal Patient Care U-1 EMR

EMR Cover unaffected eye with gauze EMR

Avulsed / Eye Out of Socket

Eye still in socket

EMR Cover eye with NS soaked gauze EMR

Mechanism of Injury?

Trauma

Chemical / Toxin / Burn

EMR Stabilize impaled object and cover affected eye EMR

EMR Irrigate affected eye with NS 1-2 liters EMR

P Zofran 4-8 mg IV/IO/PO for nausea P

P * Pain Management Protocol A-17, P-16 P

M Contact Medical Control as needed M

Clinical Guidelines:

- Normal visual acuity can be present even with severe injury.
- Remove contact lens when possible. If adherent to globe do not force. Irrigation may assist removal.
- Any chemical or thermal burns to the face/eyes should raise suspicion for associated respiratory injuries.
- Always cover both eyes to prevent further injury.
- Use shield not pads for physical trauma to the eye. Pads are okay to place over the uninjured eye.
- DO NOT remove impaled objects
- Suspected globe ruptures require emergent evaluation.

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Fracture/Dislocation

History	Differential Diagnosis	Signs and Symptoms
• Nature of injury • Time of Injury • Other trauma • Loss of Consciousness • Past medical history • Medications	• Fall • Dislocation • Pelvic injury • Generalized musculoskeletal pain • Fracture • MVC • Traumatic injury	• Pain • Swelling • Dizziness • Loss of consciousness • Hypotension/shock • Bleeding • Open fracture

EMR * Universal Care Protocol U-1 **EMR**

↓

* Selective Spinal Immobilization Protocol T-14

↓

- Locate, expose, and manually stabilize the injury
- Control any hemorrhage and assess distal pulse/motor/sensation
- If no distal pulse is present, make an attempt to reposition the fracture and restore circulation

↓

* Consider as needed:
  - A pelvic binder for pelvic injuries
  - A traction splint for mid-shaft femur injuries
  - Sling application
  - SAM splint
  - Vacuum splint application

↓

* Consider:
  - Pain Management Protocol A-17, P-16
  - Hypotension Protocol A-14, P-13
  - Application of cold packs to reduce swelling

Clinical Guidelines:

- This protocol is intended for stable patients complaining of isolated fractures/dislocations. Follow the ALS Trauma Care guideline for multi-systems trauma patients.
- Immobilize the injured limb above and below the fracture and/or closest joint.
- Reassess pulse/motor/sensation after every intervention.

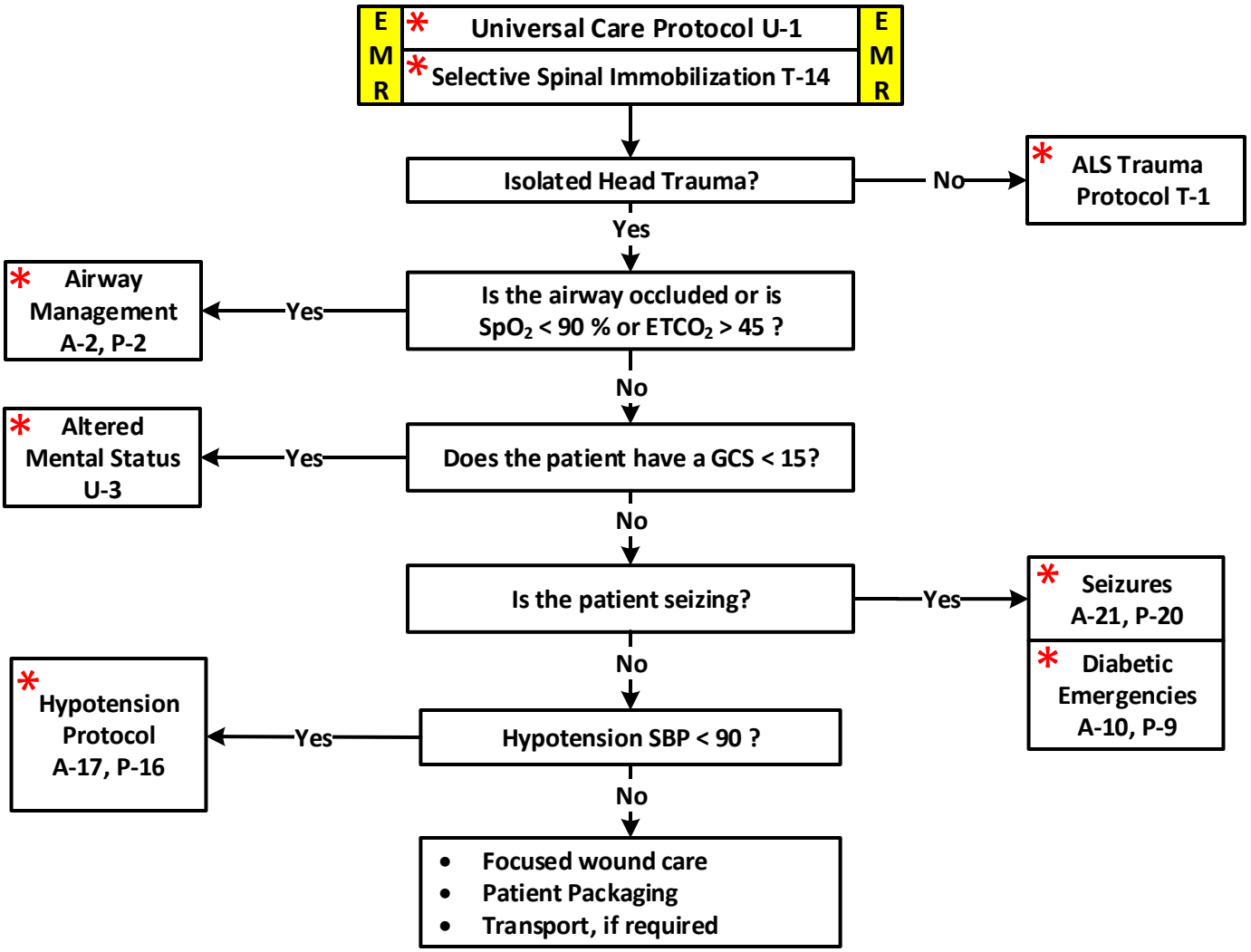
Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Joint EMS Protocols
Boone County FPD
Boone Hospital EMS
Centralia Fire Dept
Columbia Fire Dept

Head Trauma

Joint EMS Protocols
Columbia Regional Airport
Southern Boone County FPD
University Hospital EMS

History	Differential Diagnosis	Signs and Symptoms
• Time of injury • Mechanism: blunt / penetrating • Loss of consciousness • Medical history/Medications • Allergies • Evidence of multi-trauma • Helmet use or damage to helmet	• Skull fracture • Brain injury (concussion, contusion, hemorrhage, or laceration) • Epidural/subdural hematoma • Alcohol Intoxication • Subarachnoid/intracranial hemorrhage • Spinal injury • Abuse	• Pain, swelling, bleeding • Altered mental status • Unconscious • Respiratory distress / failure • Vomiting • Significant mechanism of injury • Pupillary abnormalities • CSF from ears, nose, mouth



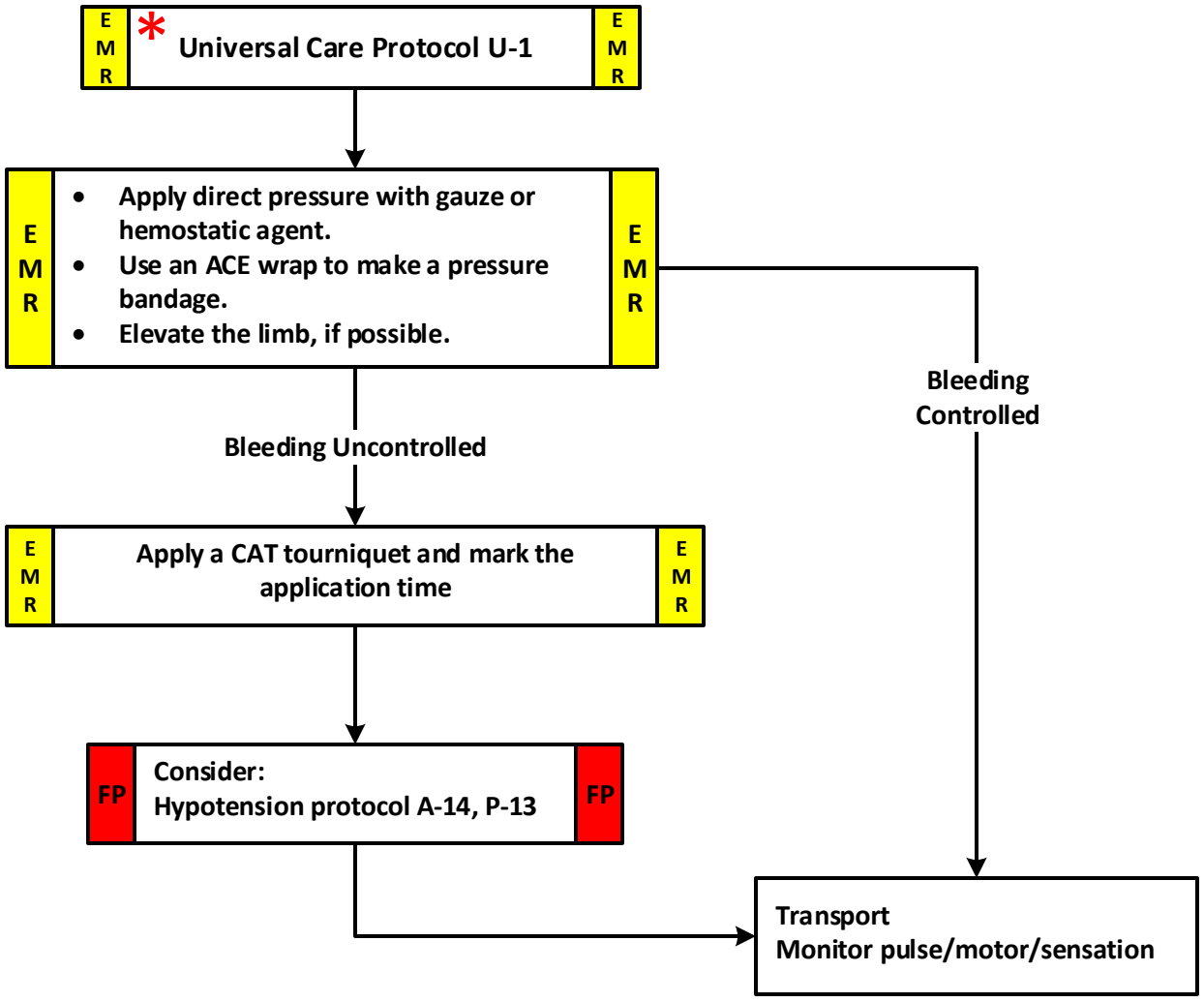
Clinical Guidelines:

- Monitor ETCO2 values on any patient with a respiratory complaint, if able.
- If evidence of brain herniation (blown pupil, hypertension, rapid decline in GCS, or bradycardia) titrate adult $ETCO_2$ to 30 - 35 mmHg.
- The most important item to monitor and document is a change in the level of consciousness and GCS.
- Consider Restraints if necessary for patient's and/or personnel's protection per the Restraint Procedure.
- Any documented loss of consciousness, prolonged confusion or mental status abnormality should be evaluated by a physician.

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Hemorrhage Control

History	Differential Diagnosis	Signs and Symptoms
• Time of Injury • Mechanism of injury • Previous care • Past medical history and Medications • Other trauma • Loss of Consciousness	• Assault • GSW • Puncture wound • Respiratory distress • Cardiac arrest • Amputation • Avulsion • Laceration	• Bleeding • Dizziness • Loss of consciousness • Hypotension/shock • Traumatic injury • Respiratory distress



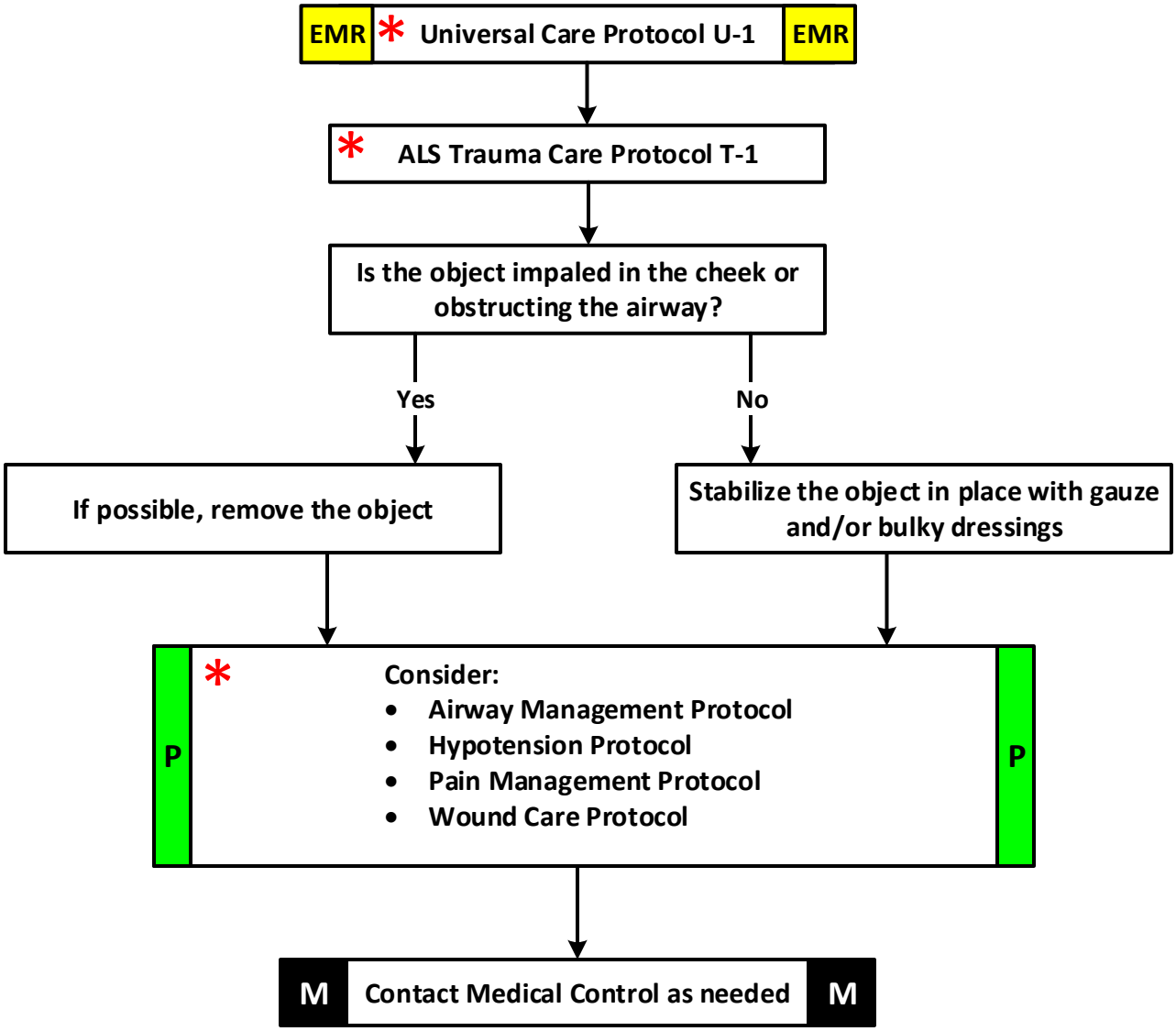
Clinical Guidelines:

- Any sucking chest, back, or neck wounds should have occlusive dressings applied. Monitor for tension pneumothorax.
- Tourniquets are indicated in life-threatening hemorrhages whenever bleeding cannot be controlled by direct pressure. Apply tourniquets in the most accessible, proximal position. Cut away clothing prior to applying a tourniquet.
- If a hemorrhage is uncontrolled by one tourniquet, apply a second tourniquet, without overlapping the first.
- Minor injuries without Trauma Alert criteria can be treated in the field without transport.

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Impaled Object

History	Signs and Symptoms
• Time of Injury • Past medical history and Medications • Other trauma • Loss of Consciousness • Tetanus/Immunization status	• Burns, pain, swelling • Dizziness • Loss of consciousness • Hypotension/shock • Airway compromise/distress



Clinical Guidelines:

- Prepare to manage the airway aggressively if the object is an airway obstruction.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Trauma in Pregnancy

History		Signs and Symptoms	
• Gravida/Para • Last menstrual period (LMP) • Due date (if known)	• Pregnancy complications • Traumatic mechanism • Safety equipment used	• Abdominal pain • Vaginal bleeding • Pelvic injury • Thoracic injury	• Seizures • Bruising • Blunt trauma

EMR * Universal Care Protocol U-1 EMR

Perform a rapid trauma assessment and provide the appropriate level of care (ALS vs. BLS trauma care)

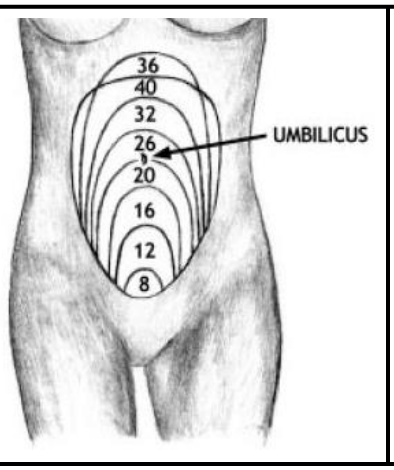
Estimated Gestational Age < 20 weeks

- The priority is the mother.
- Transport all patients with any thoracic, abdominal, or pelvis injury.

Estimated Gestational Age > 20 weeks

- The priority is the mother.
- Transport all patients with any thoracic, abdominal, or pelvis injury.
- Avoid the supine position:
  - Place in left lateral recumbent position, if possible.
  - If immobilized, tilt the backboard 15-30 degrees to the left side.

Estimated Gestational Age (EGA)



If the top of the uterus is at the level of the umbilicus, then the EGA is > 20 weeks

<u>Estimated by LMP</u>
Due Date = LMP + 9 months + 7 days

EGA= due date – current date

Clinical Guidelines:

- Any obviously pregnant female in traumatic arrest should be transported for peri-mortem c-section. For viable fetuses, outcomes are best within 5 minutes of maternal arrest, however fetal survivors have been delivered after up to 30 mins.
- A pregnant patient with any thoracic, abdominal, or pelvic injury may require fetal monitoring, even if they are asymptomatic and the mechanism is minor.
- Interpret vital signs in a pregnant patient with caution. These patients have: an increased heart rate, decreased blood pressure, increased blood volume.

Provider Legend	E M R Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Selective Spinal Immobilization

EMR: Is MOI present?

No → EMR: Do not immobilize EMR

Yes ↓

EMR: Universal Patient Care EMR

↓

EMR: GCS < 15 Secondary to trauma? - or - Is there a loss of pulse, motor and sensation secondary to trauma? EMR

Yes → EMR: Perform full Spinal Immobilization EMR

No ↓

EMR: Evidence of intoxicants? Alcohol/Drug ingestion - Distracting injury? Pain > 5/10 - Head or neck injury? Trauma above clavicles - Neck or back pain? Pain/abnormalities to midline spine - Range of motion? Pain with range of motion or pain upon palpation of spine - Subjective symptoms? Nausea/dizziness/numbness - History of spinal surgery? Surgery within 6 months - Age? Younger than 3 or older than 65 EMR

Yes to any → EMR:

Perform modified spinal immobilization:

- Apply a rigid C-collar or immobilize in another manner if the patient will not tolerate a cervical collar.
- Ambulatory patients – may be assisted to the ambulance stretcher.
- Non-ambulatory – use a scoop stretcher or backboard to move patient, then discontinue once on the stretcher.
- Providers may support the head of the patient, if necessary, to prevent any rotation.
- Secure the patient to the stretcher in supine position or position of comfort.
- A rigid C-collar may be removed if it causes the patient additional pain or distress.

EMR

No to all → EMR: Do not immobilize EMR

P: For patients in SMR prior to arrival of EMS: Use the flowchart to determine if SMR should be continued. If without positive findings, discontinue SMR P

Traumatic Arrest

History

- Events leading to arrest
- Establish traumatic mechanism (burn vs. drowning vs. MVC)
- Estimated downtime
- Past medical history
- Bystander CPR

* Scene Size-Up

EMR

- Scene Safety/Situational Awareness
- PPE (consider splash, droplet, airborne)
- Determine the Number of Patients
- Determine Need for Additional Resources
- Determine the Mechanism of Injury/ Nature of Illness
- Take the appropriate equipment to the patient

EMR

Signs and Symptoms

- Blunt trauma
- Penetrating trauma
- Unresponsive
- Abnormal breathing (gasps)
- Pulselessness
- Lividity or rigor

* Universal Patient Care Protocol U-1

Are injuries incompatible with life present?

EMR

Yes → * Deceased Person Protocol A-9

No

EMR

Prioritize the following interventions:

- Begin CPR
- Control any exsanguinating hemorrhage

EMR

FP

- Establish a patent airway using a supraglottic airway device and ventilate
- Perform any interventions from above not done
- Establish large-bore IV/IO access

FP

P

When arrival, prioritize the following interventions:

- Fluid bolus 500 mL, followed by a reassessment. To be repeated as necessary.
- Bilateral pleural decompression of any blunt or truncal penetrating trauma
- Determination of cardiac rhythm
- Administer Epi 1:10,000 IV/IO per AHA Guidelines

P

Return of pulse?

Yes → Transport Trauma Alert to the Trauma Center

No → M Contact Medical Control for direction M

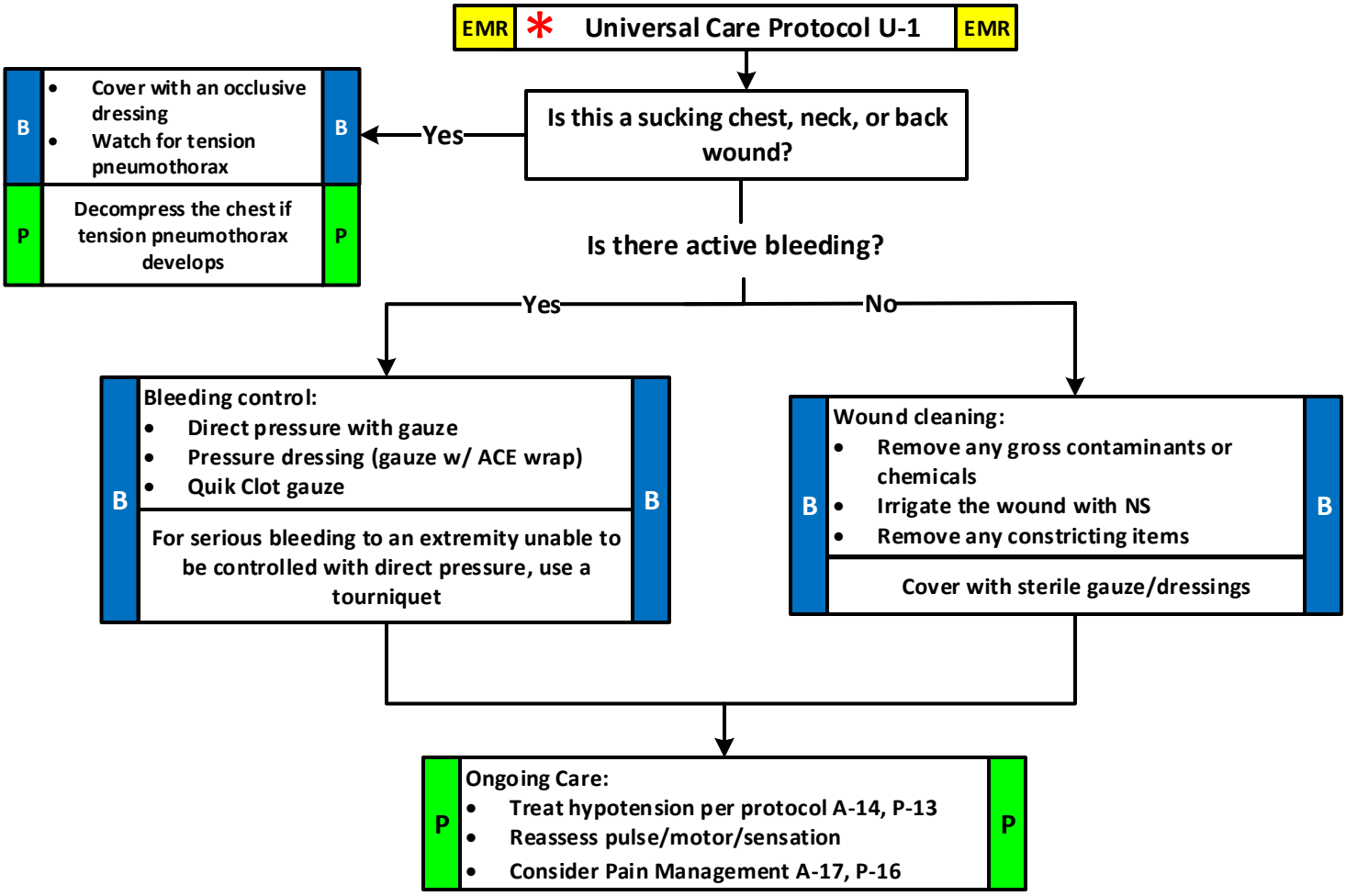
Notify medical control to terminate efforts if the patient:

- Is pulseless and apneic with no pupillary response upon arrival of the first provider on scene AND
- Lacks respiratory effort after basic airway maneuvers AND
- Has no organized electrical effort on ECG

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Wound Care

History	Differential Diagnosis	Signs and Symptoms
• Mechanism of injury • Assault? • Time of Injury • Past medical history and Medications • Loss of Consciousness • Tetanus/Immunization status	• Open blisters • Avulsion • Burn • Abrasion • Open fracture • Laceration • Amputation of limb • Puncture	• Bleeding • Laceration/cut • Pain • Numbness/tingling • Loss of sensation • Loss of pulse • Loss of motor ability • Amputation • Evisceration



Clinical Guidelines:

- Do not irrigate: actively bleeding wounds, previous arterial bleeding, punctures below the skin surface (inside the body cavity), abdominal evisceration, burns > 15% TBSA.
- Serious bleeding should have tourniquet placement immediately. For wounds on a junctional site where a tourniquet cannot be placed, use impregnated gauze (Quik Clot) to control bleeding.
- Sucking chest wound: Place an occlusive dressing on the wound. Vent dressing or needle the chest if the signs/symptoms of a Tension Pneumothorax occur.
- Impaled objects: stabilize with gauze and control bleeding. Do not remove the object unless it interferes with airway maintenance.

Provider Legend	EMR Emergency Medical Responder	B EMT	FP Fire Paramedic	P Paramedic	M Medical Control

Procedure Guides Section

- 12 Lead Placement
- AED Usage
- Airway Suctioning
- Alaris Medication Pump
- Zoll AutoPulse
- BAAM Device
- Blood Glucose Check
- Bougie Introducer
- CAT Tourniquet
- Cardioversion
- CPAP Administration
- Drug-Assisted Intubation
- ETCO2 Monitoring
- External Jugular Cannulation
- EZ-IO Device
- Gastric Tube Insertion
- Helicopter Operations
- KED Device
- MAD Device
- McGrath MAC Video Laryngoscope
- Nasal Intubation
- Obstructed Airway (FBO)
- Oral Endotracheal Intubation
- Patient Classification
- Pelvic Binder
- Pepper Spray Washout
- Physical Restraint Use
- Pit Crew CPR
- Prehospital Radio Report
- Prehospital Stroke Screens
- Splinting
- Supraglottic Airway Insertion
- Surgical Airway
- TASER Barb Removal
- Thoracostomy
- Transcutaneous Pacing
- Triage Procedure
- Ventricular Assist Devices

12 Lead Placement

Clinical Indications:

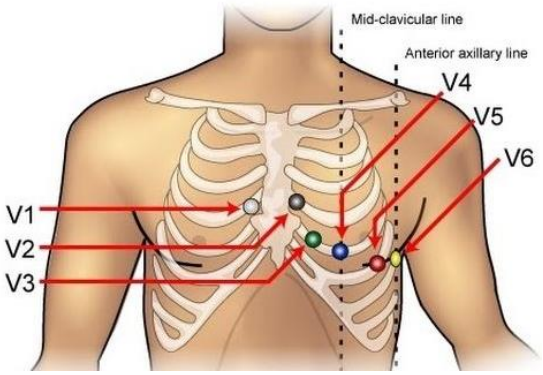
Any patient ≥ 30 years old with the following:

- Suspected cardiac patient
  - Pain between navel and jaw
  - Pressure, discomfort, tightness or heartburn
  - "Heart racing", "palpitations", or "heart too slow"
  - CHF signs and symptoms
- Electrical injuries
- Syncope
- Severe Weakness
- New onset stroke symptoms
- Difficulty breathing (no obvious respiratory cause)
- Suspected overdose
- Patient of any age with any of the above symptoms **AND** history of: (cardiac, diabetes, obesity, family history of early CAD, or recent amphetamine/stimulant use).

If the patient meets any of the above criteria: Providers are to attach ECG electrodes within 5 minutes of ALS patient contact. If STEMI, transmit 12 Lead or contact the receiving facility of an inbound STEMI Alert.

Procedure:

- Assess patient and explain the 12 lead procedure (if clinical condition permits).
- Expose chest and prep as necessary.
- Apply chest leads and extremity leads using the following landmarks:
  - RA - Right arm
  - LA - Left arm
  - RL - Right leg
  - LL - Left leg
  - V1 - 4th intercostal space at right sternal border
  - V2 - 4th intercostal space at left sternal border
  - V3 - Directly between V2 and V4
  - V4 - 5th intercostal space at midclavicular line
  - V5 - Level with V4 at left anterior axillary line
  - V6 - Level with V5 at left midaxillary line



- Prepare ECG monitor and connect patient cable with electrodes.
- Instruct patient to remain still.
- Press the appropriate button to acquire the 12 Lead ECG.
- For patients with cardiac complaint, keep all leads connected at all times to allow for repeat 12 leads to be performed.
- Monitor the patient while continuing with the treatment guideline.
- Document the procedure, time, and results on/with the patient care report (PCR).

AED Usage

Clinical Indications:

Patients in cardiac arrest (pulseless, non-breathing).

Notes/Precautions:

- Age < 8 years, use Pediatric Pads, if available, or if device has "energy attenuating" key, be sure to activate key.
- If Pediatric pads are not available use Adult pads
- If AED Pads touch due to patient size use an Anterior-Posterior pad placement.

Procedure:

1. If multiple rescuers available, one rescuer should provide uninterrupted chest compressions while the AED is being prepared for use.
2. Remove any medication patches on the chest and wipe off any residue.
3. Turn on AED, begin narration and follow Clinical Procedure in accordance with Pit Crew CP-19.
4. Apply defibrillator pads per manufacturer recommendations. Use alternate placement when implanted devices (pacemakers, AICDs) occupy preferred pad positions.
5. Keep interruption in CPR as brief as possible.
6. If shock advised, Assertively state "CLEAR" and visualize that no one, including yourself, is in contact with the patient then press the shock button. If BIAD has been placed, Position 3 will continue to hold BVM to stabilize BIAD in vertical position.
7. Immediately return to chest compressions.
8. If no shock advised, immediately return to chest compressions.
9. Allow AED to analyze when prompted (approximately 2 minutes). Perform pulse check at this time.
10. Repeat steps 6 through 8.
11. Keep interruption of CPR compressions as brief as possible. Adequate CPR is a key to successful resuscitation
12. If pulse returns:

    See Post Resuscitation Guidelines

AED Failure:

In rare cases, providers may encounter a situation in which the AED fails to function at all as evidenced by either 1) not powering on, or 2) not delivery a shock even though the AED reached a shock advised decision. If a System credentialed provider encounters such a situation, take the following actions.

1. Disarm the AED shock, unplug the pads from the AED, or turn off the AED.
2. Immediately resume CPR.
3. If another AED is available, immediately apply the second AED to the patient.
4. If another AED is not available, continue uninterrupted CPR until a functioning defibrillator (AED or Manual) arrives and is placed on the patient.

Airway Suctioning

Clinical Indications:

- Obstruction of the airway (secondary to secretions, blood, or any other substance) in a patient without an airway adjunct, or with a simple airway adjunct (oral airway or nasal airway).

- Obstruction of the airway (secondary to secretions, blood, or any other substance) in a patient currently being assisted by an advanced airway adjunct such as a nasal ET tube, endotracheal tube, tracheotomy tube, or a cricothyrotomy tube.

General Procedure:

1. Ensure the suction device is in proper working order and that all necessary parts are present.
2. Preoxygenate the patient.
3. Attach the appropriate suction catheter to suction device, keeping sterile plastic covering over the catheter.
   - Use a hard suction tip (Yankauer tip) for oropharyngeal suctioning.
   - Use a flexible suction tip (French) for suctioning of nares or advanced airways.

Hard Suction Tip Procedure:

1. Open the mouth of the patient (if applicable) using the scissors technique.
2. Suction the oropharynx as necessary for up to 5 seconds for infants/children and 15 seconds for adults.
3. Making sure to preoxygenate between attempts, repeat procedure as needed.
4. Document the time and result of intervention in the patient care report (PCR).

Flexible Suction Tip Procedure:

1. Using the proximal opening of the airway and the suprasternal notch and the endpoints, measure the depth desired for the catheter (judgment must be used regarding the depth of suctioning with cricothyrotomy and tracheostomy tubes).
2. If applicable, remove ventilation devices from the airway (e.g., ventilator or BVM).
3. With the thumb port of the catheter uncovered (suction off), insert the catheter through the airway device.
4. Once the desired depth (measured previously) has been reached, occlude the thumb port and remove the suction catheter slowly.
5. A small volume (< 10 ml) of normal saline lavage may used as needed (Ex: saline bullet or flush) to break up or dilute thick secretions.
6. Reattach ventilation device (e.g., bag-valve mask) and ventilate the patient.
7. Document the time and result of intervention in the patient care report (PCR).

Alaris Medication Pump

Indications:
- To deliver a precise medication infusion over a specified time.
- To continue an ongoing infusion during an interfacility transfer.

Equipment:
- Alaris Pump
- Alaris Pump Channel(s)
- Alaris Pump intravenous infusion tubing set(s)
- Patent IV/IO line
- Medication to be infused

Medications that must be infused using the Alaris:
- Dopamine – 5-20 mcg/min/kg
- Epinephrine – 1-10 mcg/min with direct Medical Control only
- Levophed – 2 mcg/minute
- Magnesium sulfate – 2 gram/50 mL over 20 minutes
- Any medication ordered to be infused by Medical Control

Infusion Procedure:
1). Power on Alaris pump and ensure adequate battery power. A self-test will run and the Main Display screen will illuminate.
2). Select "New Patient" when prompted.
3). Select "Adult Critical Care" when prompted.
4). Enter in patient identifiers and press "CONFIRM".
5). Attach channel bank, if not preattached. To attach a channel bank, position the free module at a 45 degree angle, making sure to align the IUI connectors at the top. Bring the module down against the Alaris unit or attached module, until the bottom latch snaps in place.
6). Attach Alaris Pump IV Infusion tubing to medication to be infused and flush the line free of air. Close the roller clamp on the IV line. Drip chamber should be 2/3 full.
7). Open the channel door by pulling upwards on the grey locking handle. The channel bank door will swing open.
8). Place the Alaris Pump IV Infusion tubing into the device by first removing the blue pump segment protective sheath, then aligning the blue upper fitment into the notch. The upper blue fitting should fit securely within the notch space.
9). Plug the safety clamp into the Alaris channel space by holding the white handle and plugging the blue clamp into the device. The blue arrows should face into the device.
10). Using your fingertip, firmly push the tubing toward the back of the Air-in-Line Detector. The Air-in-Line Detector is located just below the safety clamp.
11). Gently close the channel bank door and lower the grey latch.
12). Press the "CHANNEL SELECT" soft key on the channel to be infused.
13). Choose either the "GUARDRAILS DRUGS" or "BASIC INFUSION" soft key. If you are infusing a medication, choose the "GUARDRAILS DRUGS" key; if you wish to infuse a volume of fluids, choose "BASIC INFUSION".

(See reverse for continuation of instructions)

Alaris Medication Pump

14). Choose medication to be infused by selecting the first letter of the drug from the alphabetical list using the soft keys on the right.
15). Use the "PAGE UP" or "PAGE DOWN" keys to locate the appropriate drug. Drugs will be in alphabetical order.
16). Choose the appropriate drug concentration from the listing, if applicable.
17). If medication is weight based, add the weight in kilograms when prompted. Hit "NEXT" to confirm.
18). Enter in the desired dosage.
19). Enter in the volume to be infused or "VTBI" key.
20). The rate should autofill based on the dosage and volume chosen.
21). CONFIRM ALL VALUES ARE CORRECT.
22). Hit the "START" key to begin infusion.

Changing the Rate, VTBI, or Dose of an Infusion:

1). To change the rate, volume to be infused, or dose of an infusion:
- Press "CHANNEL SELECT" on the channel you want to change.
- Press the "RATE", "VTBI", or "DOSE" soft key on the Alaris unit.
- Enter the information using the numeric keys, or, for rate titration, use the "Up" or "Down" arrow key.
- Verify that the information is correct and press the "START**"** soft key.

Pausing/Resuming an Infusion:

1). During an infusion there may be circumstances that require you to pause and restart the infusion, change the infusion parameters, or restore a completed infusion.
- To pause an infusion, press the "PAUSE" key on the channel you want to pause.
- To restart the infusion, press the "RESTART" key on the channel you want to restart.

Alaris System Alarms:

An Alarm is an audio and visual signal indicating that a potentially unsafe condition is present. Immediate action is required and the infusion stops until the condition is corrected. The audio may be silenced for approximately two minutes by pressing the "SILENCE" key. An example of an alarm is an occlusion that must be cleared.

Alaris System Errors:

1). An error is an audio and/or visual signal that a system hardware or software failure has been detected and immediate action is required.
2). It is important to understand the difference between a system error and a channel error. When a system error occurs, such as the defective battery, the attached modules continue to run. The Alaris unit can then be replaced when the time is appropriate. A channel error stops the affected module, which must then be replaced.

(See the next page for continuation of instructions)

Alaris Medication Pump

Remove Infusion Tubing:

1). Press the "Pause" key on the Alaris Pump module.
2). Close the drip set roller clamp.
3). Open the Alaris Pump module door, which automatically closes the safety clamp on the pumping mechanism.
4). Remove the safety clamp on the pumping mechanism by gently pulling out the tubing below the Air-in-Line Detector.
5). Lift the upper fitment from its recess.

Change a Primary Infusion Container/Fluid or Medication Bag:

1). Press the "PAUSE" key on the Alaris Pump module to stop the infusion.
2). Remove the empty solution container or fluid/medication bag.
3). Insert the administration set spike into the new solution container and hang the container 20 inches above the Alaris Pump module.
4). Press the "CHANNEL SELECT" key on the Alaris Pump module.
5). Press the "VTBI" soft key and use the numeric keys to enter the value.
6). Press the "START" soft key to resume the infusion.
7). Power Down a Channel Module:
    - Press and hold the "CHANNEL OFF" key until you hear a beep (two to three seconds). When you release the key, the channel will begin to power down.
    - If none of the other channels are currently operating when you press a "CHANNEL OFF" key, the entire system will power down. To interrupt the powering down process, quickly press any of the numeric keys on the Alaris unit.

Detach a Channel Module:

1). Ensure that the channel is powered off.
2). Push the release button located at the bottom left corner of the channel bank, between the Alaris unit (attached module) and channel bank. Button will be colored grey.
3). Angle the module up and away from the Alaris unit (or attached module) to disengage the connectors.

Power Down the Alaris Unit:

1). Press the "OPTIONS" key, which is located to the left of the Main Display. Press the "POWER DOWN ALL CHANNELS" soft key.
2). To confirm that you want to Power Down All Channels, press the "YES" soft key. While the unit is powering off, the Main Display will flash Powering Down.

Special Considerations:

- If you need to limit access to the keypad panel, you may use the black Tamper Resist Switch, located on the back of the Alaris unit. To lock the keypad panel, press and hold the Tamper Resist Switch for three to four seconds. Your action is confirmed by an advisory tone and a three second prompt on the Main Display that indicates the panel is locked or unlocked. Repeat this procedure to unlock the keypad panel.
- Up to four channel banks may be attached to the Alaris Pump.

Zoll AutoPulse

Indications:

- A patient in cardiac arrest
- A patient 18 years of age or older, unless patient meets size criterion
- Weight under 300 pounds
- Chest circumference between 29.9 and 51.2 inches
- Chest width between 9.8 to 15 inches

Contraindications:

The AutoPulse is **NOT** to be used on any patient in cardiac arrest following a traumatic injury.

Equipment:

- Zoll AutoPulse with primary battery installed
- Fully charged reserve battery in pouch
- Adjustable adult cervical collar and Headbed device
- Lifeband
- Webbing-style adjustable chest harness
- Extra-large zip ties
- Patient carry tarp

Procedure:

1). Power unit on. Unit will undergo a self-test; assure that no user advisories or fault messages are received.
2). Remove the patient's torso clothing in the most feasible and expeditious manner.
3). Place the patient on the AutoPulse by sitting the patient up, sliding the device behind them, and laying the patient onto the platform. The patient can also be log-rolled onto the device.
4). Ensure patient alignment with the yellow silhouette on the AutoPulse.
5). Secure Lifeband around the patient's chest. If the Lifeband is unable to be secured around the chest, immediately discontinue use of the AutoPulse and start manual CPR.
6). While maintaining tension on Lifeband, ensure alignment with the patient's armpits and that there are no obstructions between the band and the torso of the patient.
7). Press and release the “Start” button. The Lifeband will tighten and self adjust to the patient's circumference. Then press “Start” again to initiate compressions.
8). The AutoPulse is defaulted to a 30:2 compression ratio. Once a definitive airway is placed, depress the “Switch to continuous” button as denoted by the display.
9). The patient must be appropriately restrained to maintain proper alignment for continued use of the device. Secure the torso of the patient with the included shoulder harness straps. A c-collar and Headbed is also recommended to ensure maintenance of the airway device during use of the AutoPulse.
10). To reassess the cardiac rhythm or realign the patient, press the “Stop/Cancel” button. Press “Start/Continue” to restart compressions.
11). For transport, use either the patient movement tarp or a long back board. If a long back board is used, secure the AutoPulse to it using included zip ties.
12). Replace batteries as needed to ensure as little interruption as possible in compressions.

SPECIAL CONSIDERATIONS:

- If the patient must be realigned or moved, you must press the Stop/Cancel button before adjustment.
- Failure to properly position a patient, both vertically and laterally with respect to the AutoPulse platform, may cause injury to the patient.
- Clean the AutoPulse with either a super sani-cloth germicidal wipe that is of a non-bleach formula or a spray disinfectant that is of a non-bleach formula. Avoid any heavy liquid use when using any of the above cleaning methods and assure the device is kept as dry as possible during cleaning.

BAAM Device

Indications:

- As an adjunct to blind nasotracheal intubation in the patient with spontaneous respirations.
- As an aid to reconfirming airway patency or reassessing respiratory effort in the intubated patient with respiratory effort. This device is not to be used as the primary method for assessing airway patency in the intubated patient.
- Airway protection to minimize aspiration in the setting of sustained altered mental status with a Glasgow Coma Scale Score ≤ 8.
- Impending airway edema in the setting of respiratory tract burns or anaphylaxis.
- Patients more compliant with intubation attempts in a sitting position.
- Oral anatomy, injury, or jaw clenching preventing indicated orotracheal intubation.
- A patient nare able to accommodate size 6.0 or 7.0 endotracheal tube.

Contraindications:

- Apnea or inability to hear device during endotracheal tube insertion.
- Midfacial injuries with bony instability.
- Suspected basilar skull fracture.
- Anticoagulant use is a relative contraindication, orotracheal intubation is preferred to minimize bleeding complications.

Equipment:

- 6.0 or 7.0 endotracheal tube
- BAAM device
- 10 cc syringe
- Bag valve mask device

Procedure:

- Attach the orange BAAM device to the 15 mm adaptor of the appropriately-sized endotracheal tube. The device will attach only one way to the tube.
- Preoxygenate and/or ventilate while preparing the patient for nasotracheal intubation.
- Perform nasotracheal intubation. As the ET Tube nears the larynx an audible increase in whistling will be heard from the device, indicating that the tip of the endotracheal tube is near the entrance to the trachea.
- Carefully advance the endotracheal tube through larynx into the trachea when device and airway sounds are at their peak. Confirm that successful intubation has occurred.
- Once intubated, quickly remove the BAAM device and begin ventilating the patient.
- Confirm tube placement by visualization, auscultation, and ETCO2 values.

Special Considerations:

- An unobstructed endotracheal tube with its tip located in the pharynx can also produce the whistle sound, therefore, it is important to always confirm placement in the trachea.
- Due to the narrow aperture of the BAAM device, it is never to be left attached to the endotracheal tube for greater the 15 seconds at any time for assessment of the previously intubated patient. Partial airway obstruction, hypoxia and increased airway pressure can occur if left in place for prolonged periods of time.

Blood Glucose Check

Clinical Indications:

- Routine check in patients with diabetes in their medical history
- Any patient with an altered mental status (Ex: Suspected alcohol/drug ingestion)
- Patient in cardiac arrest
- Patients with metabolic or endocrine disorders, and presenting with non-specific complaints
- Bradycardia or hypothermia in infants
- Stroke Assessment

Procedure:

1. Gather and prepare equipment. Go through the check procedure that is appropriate for your particular glucometer.
2. Find an appropriate site. Samples for performing glucose analysis should be obtained through a finger-stick (heel for infants). Cleanse site with a ChloraPrep or alcohol prep and allow to dry.
3. Use a lancet to obtain a blood sample. Discard the lancet in a sharps container.
4. Wipe the first drop clean using a clean gauze 2 x 2.
5. Squeeze the finger site to obtain another blood sample.
6. Fill the glucometer strip with the sample per the manufacturer's instructions.
7. Document the glucometer reading and treat the patient as indicated by the analysis and proper guideline.
8. Repeat glucose analysis as indicated for reassessment after treatment and as per guideline.
9. If any clinically suspicious readings are noted take the meter our of service and notify a supervisor or chief as appropriate.

Bougie

Clinical Indications:

- Any patient who meets clinical indication for orotracheal intubation
- Predicted difficult intubation
- Digital intubation

Contraindications:

- None

Notes/Precautions:

- Soft tissue damage or bronchial rupture may occur:
    - During blind intubation
    - Positioning past the carina
    - If undue pressure is applied
    - If ET tube is passed over introducer without the use of a laryngoscope
- This is a single-use device. Do not attempt to clean or sterilize
- For optimal use, store flat in the same shape as packaged. Do not fold or roll up to save space.

Procedure:

1. Prepare and perform an optimal direct laryngoscopy in accordance with the orotracheal intubation procedure.
2. Begin insertion of introducer.
3. Tactile confirmation will be present as the distal tip of the Bougie bumps against the tracheal rings (tracheal "clicking"). If this tracheal clicking cannot be felt, continue to gently advance the introducer until an obstacle is felt (the carina). Tracheal "clicking" and hitting the carina are positive signs that the introducer has entered the trachea.
4. Lack of these tactile signs is an indication you have an esophageal placement.
5. While holding the introducer securely, and without removing laryngoscope, advance endotracheal tube over the proximal tip of the introducer.
6. As the tip of the endotracheal tube passes beyond the teeth, rotate the tube 90 degrees counter clockwise (1/4 turn to the left) so tube bevel does not catch on the arytenoid cartilage.
7. Advance endotracheal tube to the proper depth.
8. Holding endotracheal tube securely, remove introducer.
9. Verify correct ET tube placement and secure the tube.

CAT Tourniquet

Indication: Assess for unrecognized hemorrhage and control bleeding. Conventional methods such as direct pressure, fracture reduction/splinting or hemostatic dressings should be used first. A tourniquet should be applied to any wound with continued life-threatening hemorrhage:

- Is anatomically feasible to tourniquet application.
- Any traumatic amputation.

Equipment:

- Appropriate personal protective equipment.
- Combat application tourniquet.

Contraindications:

- Placement directly over a joint.
- Non-extremity application of tourniquet.

Procedure:

1). Expose the extremity by removing clothing in proximity to the injury.
2). Place directly over exposed skin at least 5 centimeter (cm) proximal to the injury.
3). Route the self-adhering band around the extremity.
4). Pass the band through the outside slit of the buckle.
5). Pull the self-adhering band tight.
6). Twist the rod (windlass) until bright red bleeding stops.
7). Lock the rod (windlass) in place with the clip.
8). Clearly record the date/time of application of the tourniquet and relay this information to the receiving facility.

Evaluation:

- The tourniquet is effectively applied when there is cessation of bleeding from the injured extremity and loss of distal arterial flow.
- If one tourniquet does not provide adequate control, in addition to direct pressure, an additional tourniquet may be placed proximal to first tourniquet.

Tourniquet Time and Removal:

1). **REPORT TIME OF PLACEMENT DURING CLINICAL REPORT.**
2). Tourniquets should be removed as soon as possible under conditions where the hemorrhage can be directly controlled.
3). Tourniquet placement must be communicated in patient reports for all prehospital to hospital and interhospital transfers.
4). Tourniquet time >6 hours is associated with distal tissue loss.
5). Keep tourniquet on throughout the transport – a correctly applied tourniquet should only be removed by the receiving hospital.

Special Considerations: Consider pain control if patient reports high levels of pain from the tourniquet administration and is hemodynamically stable.

Cardioversion

Clinical Indications:

- An unstable tachydysrhythmia with a pulse (e.g., ventricular tachycardia, torsade de pointes, SVT, A-fib/Flutter with RVR, etc.) in accordance with the appropriate tachydysrhythmia guideline.

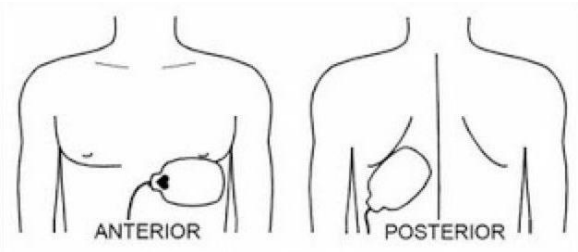
Contraindications:

- Self-terminating or short-lived tachycardias (e.g., runs of non-sustained VT).
- A patient who is alert and oriented is probably perfusing adequately. Pharmacological intervention is the first modality for a stable patient.

Procedure:

Caution: The SYNC button must be pressed after each defib attempt to reactivate the SYNC function.

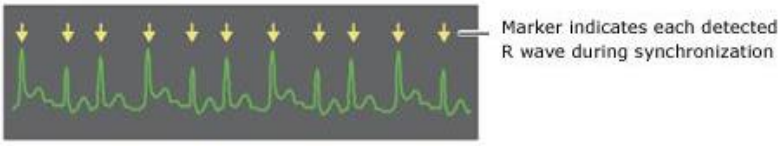
1. Connect both the four-lead patient cables and the defibrillation cables with pads to the patient. Apply self-adhesive pads in the anterior/posterior position, ensuring firm contact with patient's skin.



2. Confirm that the rhythm on the monitor is a tachydysrhythmia and that electrical therapy is appropriate.
3. If patient condition allows, obtain IV access and provide pain management.
4. Select desired energy level on ENERGY SELECT rocker and charge device to the appropriate energy level per Patient Care Guidelines.

Synchronized cardioversion:
Initial recommended doses:
- Narrow regular: 50-100 J
- Narrow irregular: 120-200 J biphasic or 200 J monophasic
- Wide regular: 100 J
- Wide irregular: defibrillation dose (*not* synchronized)

5. Clear all personnel from direct patient contact.
6. Press the 5th left softkey (SYNC). Ensure the QRS marker is visible on the screen.



7. Press the CHARGE button. The device will indicate charging with an audible beep and the screen will state charging to XXX JOULES. The unit will be ready to shock when the SHOCK button is lit.
8. Press the orange SHOCK button.
9. If further SYNCHRONIZED cardioversion is needed, the SYNC button must be pressed again prior to shock.
10. Reassess the patient. If rhythm deteriorates into VF/pulseless VT, switch to asynchronous mode and immediately defibrillate per the appropriate cardiac arrest protocol.
11. Document the procedure, time performed and patient response in the patient care report.

CPAP Administration

Indications: Signs or symptoms of moderate to severe respiratory distress due to congestive heart failure (CHF) or chronic obstructive pulmonary disease (COPD).

- Rales (crackles)
- Dyspnea with hypoxia, despite oxygen administration
- Inability to speak full sentences
- Accessory muscle use
- Diminished tidal volume
- Respiratory rate over 24/minute (min)

Contraindications:

- Agonal respirations/respiratory arrest
- Shock associated with cardiac insufficiency
- Gastric distension/upper gastrointestinal (GI) bleeding
- Claustrophobia
- Decreased/altered mental status
- Facial abnormalities or trauma
- Pneumothorax
- Nausea/vomiting

Intervention Procedure:

1). Reassure patient and inform them about the procedure.
2). If patient becomes anxious, consider Midazolam 1 mg IV/IO/IN. May be repeated IV/IO every 3-5 min as long as systolic blood pressure > 90.
3). Prepare the equipment: oxygen source, face mask, mask straps, blue T-piece in-line nebulizer adapter and oxygen tubing with flow meter.
4). EKG rhythm, $ETCO_2$ and oxygen saturation by pulse oximeter must be monitored throughout procedure.
5). Turn on oxygen supply to desired CPAP setting:
    - 8 liters per minute oxygen = 5 centimeters water.
    - 15 liters per minute oxygen = 11 centimeters water.
6). Verify cm H2O on flow meter gauge. DO NOT EXCEED 25 cm H2O.
7). Hold the mask firmly against the patient – DO NOT attach the straps yet.
8). Instruct the patient to take slow deep breaths to help relax during placement of the mask.
9). Only attach the straps when patient has tolerated the mask.
10). Reassess lung sounds on a frequent basis.
11). If needed, administer a Duoneb 0.5 mg/2.5 mg with additional Albuterol 2.5 mg via in-line nebulizer. Connect the nebulizer chamber to the blue T-piece adapter.
12). Monitor the patient for comfort, anxiety, and nausea. Treat any nausea per protocol.
13). Remember, if nausea develops the mask MUST BE UNSTRAPPED. Hold mask in place (or have the patient help you) until nausea subsides, or remove entirely if necessary.
14). Remember that chronic obstructive pulmonary disease patients will have a higher propensity for their lungs to become over inflated during CPAP application. Lung sounds MUST be monitored diligently.

Deceased Person

Clinical Indications:

- A patient in cardiac arrest.

Indications where resuscitation is not indicated:

- A valid DNR; rigor mortis and/or dependent lividity; decomposition, decapitation; obvious mortal wounds (severe trauma with obvious signs of organ destruction); in an MCI where resources are not available to attempt resuscitation; if resuscitation efforts pose a danger to the health and safety of personnel.
- If an obviously pregnant female is in cardiac arrest, transport the patient emergently for a c-section, unless the patient has rigor mortis, dependent lividity, or some other sign of extended arrest.

Procedure:

1. If the patient meets the system criterion for obvious death or a valid DNR is present, shift focus to customer service. Reduce incoming units to non-emergency, confirm that law enforcement and the Medical Examiner are responding, and comfort and console family/bystanders as needed.

2. If a valid Out-of-Hospital Advanced Directive is presented:
   - Resuscitation should not be initiated and/or should be discontinued.
   - Consult Medical Direction if any family member or legal guardian requests resuscitation be performed, despite the presence of a valid DNR.
   - If any of the above are present and used as rationale to terminate or not initiate resuscitation efforts, document them in your patient care report.

3. Once resuscitation is initiated, if any of the following exist, patient transport is warranted unless Medical Control advises otherwise:
   - Lack of intravenous or intraossesous access.
   - Lack of an airway.
   - Presence of return of circulation (ROSC) during resuscitation.
   - Presence of ventricular fibrillation or ventricular tachycardia, refractory to interventions.
   - Non-traumatic cardiac arrest in a public place.
   - Special resuscitation circumstances such as hypothermia, electrocution, etc.

4. Resuscitation efforts may be terminated after 20 minutes of unsuccessful Advanced Life Support care, if:
   - All patient care guidelines and protocols have been followed, including, but not limited to: chest compressions, ventilation, defibrillation, medication administration, and/or the reversal of any causes of death that are able to be reversed in the field using the available equipment.
   - Medical Control is contacted and agrees further resuscitation efforts would be futile.

5. Expected death with an advanced directive:
   - In these situations it may be appropriate to respond non-emergency to the scene.
   - Consult with the patient, family, and any caregivers on scene to outline in detail the appropriate measures that should be taken to care for the patient.

6. During termination of resuscitation in the field:
   - Transition from providing direct patient care to a customer support role by addressing any concerns or needs that family members or others on the scene may have.
   - Ensure that a law enforcement agency is on the scene and is available to begin the transition from patient care to investigation, per their departmental policies and procedures.
   - Do not remove any disposable resuscitation items, unless directed to do so by law enforcement or the Medical Examiner. All disposable supplies should remain attached to the patient.
   - Assist any authorities on scene with duties as necessary.
   - Contact supervisory staff for any unusual requests for assistance and/or to obtain resources for the family.

7. Document in your patient care report patient presentation and DNR status, as well as any care given, in your patient care report. This includes time of death as determined by Medical Control, as well as the Attending Physician who was consulted.

Drug Assisted Intubation

Indication:
- Actual/potential airway impairment or a risk of aspiration
- Signs/symptoms of impending respiratory failure
- A GCS less than 8 secondary to an acute, irreversible condition
- An intact gag reflex with any of the above conditions

Contraindications:
- Massive neck trauma or swelling
- A patient in whom cricothyrotomy would be difficult or impossible
- Acute epiglottitis
- Upper airway obstruction
- A patient who would be impossible to intubate or ventilate after sedation

Cautions:
- Hypersensitivity to the necessary medications
- Expected rapid reversal of an underlying cause, such as: a postictal state, hypoglycemia, or an opiate overdose

Procedure:
1. Gather the necessary equipment and medications.
2. Obtain baseline vital signs and monitor cardiac rhythm, pulse oximetry, and ETCO2.
3. Preoxygenate with 15 lpm oxygen via non-rebreather mask for 4-5 minutes, or ventilate the patient with 15 lpm oxygen via BVM for 1-2 minutes.
4. Secure at least one IV or IO line running normal saline. Pre-medicate patient with Ondansetron 4-8 mg IV/IO to prevent vomiting.
5. Administer Ketamine 1 mg/kg IV/IO, diluted with 9 mL saline for 100 mg/10mL concentration, 100 mg maximum single dose. Anticipate an onset of 1-5 minutes.
6. Perform intubation, check for proper placement, and secure the airway.
7. If intubation is not successful, move to the Failed Airway Protocol A-3.
8. Maintain sedation by alternating the following medications every 2-5 minutes:
    - Midazolam 2-4 mg IV/IO, repeated as long as SBP > 90.
    - Fentanyl 1-2 mcg/kg IV/IO (maximum 100 mcg per dose), repeated up to 50 mcg (max 200 mcg) as long as SBP > 90.
9. If available, ETCO2 and SpO2 values will be monitored with all advanced airways.

Ketamine Dosage Chart

Patient Weight	Drug Amount in mL
22 lbs/10 kg	0.1 mL
44 lbs/20 kg	0.2 mL
66 lbs/30 kg	0.3 mL
88 lbs/40 kg	0.4 mL
110 lbs/50 kg	0.5 mL
132 lbs/60 kg	0.6 mL
154 lbs/70 kg	0.7 mL
176 lbs/80 kg	0.8 mL
198 lbs/90 kg	0.9 mL
220 lbs/100 kg	1 mL

Drug will be diluted in 9 mL normal saline to prevent apnea

Chart based on a 500 mg/5 mL concentration, for IV use only

ETCO2 Monitoring

Clinical Indications:

- All patients with a potential, or actual, change in metabolism, circulation, and/or respiratory function
- Hypoventilation or shock states
- Respiratory distress
- Chest pain
- Congestive Heart Failure
- All patients with advanced airways or receiving CPR
- Altered mental status
- Any patient receiving/having received sedating medications or pain control

Notes/Precautions:

- A patient with normal cardiac and pulmonary function will have an $ETCO_2$ level between 35-45 mmHg.
- When no CO_2 is detected, 3 factors must be quickly evaluated for the cause:
    - Loss of airway function- Improper tube placement, apnea
    - Loss of circulatory function- Massive PE, cardiac arrest, exsanguination
    - Equipment malfunction- Tube dislodgement or obstruction
- All advanced airway patients will have capnography (when available) applied and a printed copy of the post-intubation readings attached to the Patient Care Record.

Zoll X-Series Procedure:

1. Assure cardiac monitor is on and functioning normally.
2. Open tubing connector door and connect the ETCO2 Filterline tubing. Tubing should be connected to monitor before being connected to the patient's airway.
3. Connect the tubing to patient airway.
4. Scroll to the proper screen and assure that the ETCO2 module is functioning. Allow the system to run through the start-up process.
5. Record values and/or the waveform.
6. For patients meeting the indications for capnography the capnometer shall remain in place and be monitored throughout prehospital care and transport.
7. Continuous capnometry should be monitored as airway procedures are performed to aid in verification or correction of an airway problem.
8. Any loss of CO2 detection or waveform combined with a clinical deterioration should be immediately evaluated for loss of airway or circulatory compromise.
9. In all patients with a pulse an ETCO2 reading > 20 is expected. In the post-resuscitation patient no effort should be made to lower ETCO2 by modification of the ventilatory rate.
10. In the pulseless patient an ETCO2 waveform with an ETCO2 value > 10 may be utilized to confirm the adequacy of an airway, including BVM ventilations and advanced airway devices.

External Jugular Cannulation

Indications: Consider accessing the external jugular vein when an extremity peripheral IV cannot be established and the patient is not a candidate for IO placement.

Contraindications:

- Patient less than 12 years of age.
- An ability to obtain peripheral IV access.
- Vomiting, anxious or combative patients.
- A patient that cannot tolerate being placed supine.
- Trauma or swelling to the neck.

Equipment:

- Alcohol or Betadine swab
- IV catheter
- Saline flush
- Venigard or tape
- Saline lock device

Procedure:

1). Consider IO access.
2). Position the patient: supine, with the patient's head down and turned to the opposite side from the procedure.
3). Cleanse the site.
4). Using the non-dominant hand “tourniquet” the vein lightly with one finger above the clavicle.
5). Use the thumb of that same hand to pull traction on the skin around the puncture site.
6). Align the cannula in the direction of the vein with the point aimed toward the ipsilateral nipple, on the same side.
7). Make the puncture midway between the angle of the jaw and midclavicular line.
8). Occlude the vessel while attaching the IV tubing to catheter. Do not allow air to be drawn into the catheter.
9). Secure tubing to patient's neck with tape or veniguard.
10). Monitor for signs of infiltration.

EZ-IO Placement

Indications: A seriously ill or injured patient in whom intravenous access cannot be established in a timely fashion by other means. Intraosseous access is especially indicated in cardiac arrest.

Contraindications:
- Inability to locate landmarks.
- Fracture or recent surgery in the extremity to be used.
- Infection over the insertion site.
- Any evidence of a history of surgery at or near the insertion site.

Prepare equipment:

- EZ-IO Driver
- EZ-IO needle sets
- EZ-Stabilizer
- Alcohol or Betadine swab
- EZ-Extension set
- Normal saline 10 mL syringe
- IV fluids
- Drip set
- Pressure bag
- Lidocaine 2% pre-filled syringe

Locate landmarks:

- Tibia: The anatomical insertion site is located 2 centimeters (2 fingerbreadths) below the crest of the tibial tuberosity and 1 cm (1 fingerbreadth) medial to that point, towards big toe of the patient.

- Humerus: expose the shoulder. Properly position the arm for maximum humeral head exposure. Do this by placing the palm of the hand over the umbilicus. The elbow should remain adducted (close to the body) and posteriorly located. Slide thumb up the anterior shaft of the humerus until you feel the greater tubercle. This is the surgical neck. Approximately 1 cm (depending on patient anatomy) above the surgical neck is the insertion site. This is the preferred site for patients who are responsive to pain. Once the insertion is completed, consider securing the arm in place to prevent movement and accidental dislodgement of the IO catheter.

Procedure:
1). Load needle onto driver.
2). Stabilize the chosen insertion site and cleanse with an alcohol or Betadine swab.
3). Firmly press the needle against the site at a 90 degree angle until needle reaches bone. Make sure the 5 millimeter black marking on the needle is visible. If not, choose a larger needle.
4). Operate the driver using firm, gentle pressure until a decrease in resistance is felt and the flange of the needle rests against the skin.
5). Stop pressure and remove the driver.
6). Remove the stylet from the needle and place into sharps box. Do not attempt to aspirate as this may clog the needle and tubing.

(See reverse for continuation of instructions)

EZ-IO Placement

7). Secure using the EZ-Stabilizer.
8). Flush and attach extension set to IO hub.
9). In patients responsive to painful stimuli, administer 2% Lidocaine Hydrochloride to reduce discomfort from increased intramedullary pressure, if time permits and no contraindications exist.
- Adult dosage: Lidocaine 2% 40 milligram slow intravenous push.
- Pediatric dosage: Lidocaine 2% 0.5 mg/kilogram (kg) slow IVP.

10). Follow with a rapid flush with a 10 milliliter (mL) bolus of normal saline for an adult patient or 5 mL bolus of normal saline for a pediatric patient. This is to ensure the fibrin mesh network is displaced, allowing for optimum flow. Repeat flushes may be necessary.
11). If no signs or symptoms of infiltration are noted, attach the IV line and infuse fluids and medications as needed, using the IV pressure bag.
12). Device may remain in place for up to 24 hours post-insertion.

Special Considerations:
- Flow rate: Due to the anatomy of the IO space, flow rates may appear to be slower than those achieved with an IV catheter.
- Any medications, fluids, or blood products that can be given intravenously may be given via the intraosseous route.

Removal Procedure:
1). Firmly grasp the needle flange, or attach a luer lock syringe (to use as a handle).
2). Pull the catheter straight out at a 90 degree angle to the skin while rotating clockwise.
3). Clean and dress the site.

Gastric Tube Insertion

Equipment Needed:
Salem sump or feeding tube of the appropriate size
Water soluble lubricant
60 milliliter (ml) catheter tip syringe
Tape or other securing device
Stethoscope

Indications:
Comatose patient
Gastrointestinal bleeding
Overdose
Gastric distention or obstruction
Cardiac arrest
Intubated patient
Gastric emptying or gastric decompression

Complications:
Nasal bleeding
Gagging
Airway obstruction
Tracheal placement

Suggested Salem Sump/Feeding Tube Sizes
Premature Infant 5 French
Infant to Child 8 – 10 French
Adolescents to Adults 12 – 18 French

Nasogastric:
1. Explain the protocol to the patient.
2. Measure the nasogastric (NG) tube alongside the patient. The end of the tube should be placed at the tip of the nose, extended to the corner of the ear, and then to the xyphoid process. This is the depth the tube should be inserted.
3. Lubricate the end of the tube and begin to insert it into one of the patient's nares. Pass the tube gently along the floor of the nasal passage and advance it as the patient swallows. Remove the tube if patient coughs or experiences dyspnea.
4. After the NG tube has been inserted, assess the tube for correct placement. A 60 cubic centimeter (cc) syringe should be attached to the tube and gastric contents should be aspirated. Next, a 20 cc bolus of air should be given via the NG tube while the provider listens over the abdomen for the gurgling sound that indicates correct placement.
5. Once gastric placement is confirmed, secure the NG tube in place with tape.

Orogastric:
1. Measure the NG tube alongside the patient. The end of the tube should be placed at the corner of the mouth, to the tip of the ear, and extended to the xyphoid process. This is the depth the tube should be inserted.
2. Insert tube into the oral cavity and advance into the stomach.
3. After the tube has been inserted, assess the tube for correct placement. A 60 cc syringe should be attached to the tube and gastric contents should be aspirated. Next, a 20 cc bolus of air should be given via the orogastric (OG) tube while the provider listens over the abdomen for the gurgling sound that indicates correct placement.
4. Once gastric placement is confirmed, secure the tube in place with tape.

Helicopter Utilization

Under certain circumstances, aeromedical transport is the best method to transport a critical patient to the most appropriate definitive care facility in the shortest amount of time. Responding units may activate a medical helicopter if flight response time, scene time, and return flight time would still potentially allow a critical patient to arrive at an appropriate destination hospital significantly faster by air.

Patients that may benefit from helicopter transport:

- Patients that meet Trauma Alert criteria;
- A Mass Casualty situation with Multiple Trauma Alert patients;
- Time Critical Diagnosis (TCD) patients (STEMI, stroke, sepsis) that would benefit from a significantly lowered transport time when compared to ground transport;
- TCD patients that would benefit from the increased capability or care that a Flight Team could provide.

Inappropriate uses of helicopter transport:

Medical helicopter transport rarely affects outcome in already moribund patients or in stable patients without apparent serious illness/injury. A medical helicopter should typically not be utilized for the following patients:

- Medical or Traumatic Cardiac Arrest without Return of Spontaneous Circulation;
- Trauma Patients with minimal traumatic injury, without apparent risk of life/limb loss;
- OB patients who are in active labor;
- Patients with stable vital signs and without signs of serious illness/injury.

Medical helicopter utilization is very rarely indicated within the city limits of Columbia. Extenuating circumstances include the following:

- Hazardous or impassible road conditions resulting in significant ground transport response or transport times for critically injured or ill patients;
- Multiple casualty incidents with high numbers of critical patients;
- A combination of lengthy extrication times and extended ground transportation times;
- Any other situation where a critically ill or injured patient may benefit from the increased capability or care that a Flight Team can provide, as determined by the Incident Commander or most experienced EMS provider on scene.

Landing Zone and Safety Guidelines:

- Appropriate fire personnel will be responsible for establishing and maintaining a safe landing zone. Appropriate landing zones should be level, free of wire/debris/obstacles, and at least 100 ft x 100 ft.
- Do not approach the helicopter after landing. The flight crew will approach you or signal you to approach when it is safe.
- Remain clear of the helicopter at all times unless accompanied by a flight crew member. No unauthorized personnel or vehicles within 100 feet of the aircraft.
- Always be aware of blade clearance and the tail rotor area:
    - When approaching the helicopter on a slope, never approach from the uphill side.
    - Always approach from the downhill side because the main rotor blade to ground clearance distance is greater.
    - Do not carry any objects above the head.
    - Never walk around the tail rotor area.
- Follow the direction of the flight crew in properly preparing the patient for transport.

Cancellation of Medical Helicopter Activation:

Medical helicopter response may be cancelled after being activated if patient condition significantly improves or deteriorates to make aeromedical transport impractical. Generally, it is unwise to cancel a medical helicopter response if that response is imminent arrival. This is to avoid repeat medical helicopter responses to the same incident, which prolongs scene and helicopter response times, in addition to conveying indecisive patient care.

KED Device

Indications: The KED is designed to immobilize a patient found in a sitting position. It is most commonly used in automobile accidents where the patient is stable.

Contraindications: An unstable patient in need of immediate extrication and treatment.

Procedure:

1). Rescuer #1 should be positioned behind the patient to stabilize the head and neck while Rescuer #2 checks the neurological and vascular response of all extremities.
2). Rescuer #2 measures and applies the cervical collar.
3). The KED is slid into position behind the patient.
4). The KED is wrapped around the patient snug beneath the patient's armpits and the middle strap is secured.
5). Next secure the bottom strap.
6). Each leg strap is wrapped around the leg and secured.
7). The top strap of the KED is secured.
8). The patient's head is secured into the KED, padding behind the head if necessary.
9). All of the straps are tightened down
10). A long spine board is placed under the patient's buttocks.
11). The patient is removed from the vehicle and transferred to the long spine board.
12). Disconnect the leg straps, allowing the patient's legs to lay flat on the long spine board.
13). Neurological and vascular checks should be performed on the patient prior to and after extrication and any changes noted.

MAD Device

Overview: In the absence of established intravenous access, intranasal is a rapid route offering a high level of bio-availability of the medication being administered. The intranasal route can reduce the risk of needle sticks while delivering effective medication levels.

The rich vasculature of the nasal cavity provides a direct route into the bloodstream for medications that easily cross the mucous membranes. Due to this direct absorption into the bloodstream, rate and extent of absorption are relatively comparable to IV administration.

Indications: A need for immediate medication delivery without the ability to obtain IV access and medications which are inappropriate for the intraosseous route.

Approved Intranasal Medications:
- Fentanyl
- Glucagon
- Midazolam
- Naloxone

Needed Equipment:
- Mucosal Atomizing Device (MAD)
- Transfer needle
- Appropriate medication
- Syringe

Contraindications:
- Facial trauma
- Epistaxis
- Nasal congestion or discharge
- Nasal septal abnormalities

Procedure:
1). Determine appropriate medication dose per applicable protocol.
2). Draw up medication into a syringe using the appropriate transfer needle.
3). Purge air from syringe.
4). Remove transfer needle and place mucosal atomization device on the end of the syringe, screwing it into place.
5). Gently insert the atomizer into the nare. Stop once resistance is met.
6). Rapidly administer the medication when patient fully exhales and before inhalation.
7). **Administer 1/2 dose in each nostril. For adults, do not exceed 1 mL per nostril. For patients less than 10 years, do not exceed 0.5 mL per nostril.**
8). Evaluate the effectiveness of the medication. If desired effect has not been achieved, consider repeating and/or changing the route of administration.
9). Obtain IV access, if possible.

Special Considerations:
- Nasal administration does not always work for every patient.
- ETCO2 values need to be monitored if narcotics or benzodiazepines have been administered.
- If the patient cannot be placed into a recumbent or semi-Fowler's position, the nostrils may need to be compressed immediately following medication administration.
- Nasal administration is less likely to be effective if the patient has been abusing inhaled vasoconstrictors such as cocaine.
- Oil-based medications are incompatible with the MAD device.

McGrath MAC

Indications:

1). Direct laryngoscopy.
2). Video laryngoscopy due to:
- Difficult airways due to trauma, obesity, or abnormal anatomy.
- Restricted access to an airway due to ongoing extrication or entrapment.

3). Removal of airway obstructions.

Equipment:

- McGrath MAC device
- McGrath MAC battery with greater than 5 minutes of battery life
- Adult stylet
- McGrath MAC blades, sizes 2, 3, 4 or X
- Endotracheal (ET) tube, size appropriate for patient
- Thomas ET tube holder
- 10 cc syringe
- Water-based lubricant, if necessary
- Adult Bag Valve Mask (BVM)

Procedure:

1). Prepare equipment: the McGrath MAC device with charged battery, MAC blade appropriate for the patient, adult stylet, Thomas ET tube holder, and ET tube with attached 10 cc syringe.
2). Turn on device. Screen should turn on. Number at the bottom right of the screen indicates available battery life in minutes.
3). Pre-oxygenate patient and place patient in the sniffing position, if possible, or neutral position if trauma is present. An assistant or cervical collar can be used to keep head in neutral position.
4). Choose an appropriate blade, based on patient size and anatomy
- Mac 2 blade –Pediatric patients older than eight weeks or at least 4.5 kg
- Mac 3 blade – Adult patient
- Mac 4 blade – Large adult patient
- Mac X blade – For difficult adult intubations

5). Fit the blade over the McGrath device. Blade should click onto the fiber optic wand.
6). Looking directly into the patient's mouth and with the McGrath MAC device in the left hand, introduce it into the midline of the oral pharynx.
7). With the laryngoscope inserted, look at the screen to identify the base of the tongue and uvula, then the epiglottis.
8). Maneuver the tip of the MAC blade into the vallecula like you would a normal Mackintosh blade.
9). Lift the anatomy up slightly to expose the vocal cords. You can use the device for indirect or direct visualization of the vocal cords.
10). Carefully guide the distal tip of the tube into position near the tip of the laryngoscope and pass ET tube through the vocal cords.
11). Look to the monitor to verify the intubation is successful.
12). Using a BVM, ventilate the patient to confirm present lung sounds and absence of sounds in epigastric region.
13). Secure ET tube using Thomas ET tube holder.
14). Monitor ETCO2, SpO2, EKG and other vital signs.
15). After use, remove the stat blade from the video baton and dispose of it appropriately. Clean the McGrath MAC device as needed using disinfectant wipes.

Nasal Intubation

Indications:

- Nasotracheal intubation is preferred when direct laryngoscopy is difficult or impossible due to:
- An inability to open the patient's mouth.
- Patient positioning, i.e. difficult to access airway due to ongoing extrication or entrapment.
- An awake patient or presence of a gag reflex.
- Oral anatomic abnormality.

Contraindications:

- Apnea
- Pediatric patients less than age 12
- Coagulopathy or anticoagulant therapy
- Major mid-facial trauma

Procedure:

1). Constrict the nasal mucosa with a vasoconstrictor, either Neo-Synephrine (Phenylephrine hydrochloride 1.0%) or Afrin (Oxymetazoline hydrochloride .05%) spray by administering one spray per nare.
2). Consider Midazolam 1 mg IV/IO/IN if patient is anxious or requires sedation. May be repeated IV/IO every 3-5 minutes as long as systolic blood pressure > 90.
3). Consider pre-treating with Ondansetron 4 mg IV/IO for nausea. Repeat if necessary up to 8 mg.
4). Gather and test appropriate equipment prior to starting: 7.0 endotracheal tube with cuff tested, Zoll ETCO2 device, Bag-Valve-Mask (BVM), tape, Lidocaine 2% Jelly.
5). Establish suction and utilize if necessary.
6). Unless contraindicated because of trauma, place the head of the patient in the sniffing position with the face midline. If trauma is present, head may be held in in-line position and stabilized by an assistant or a cervical collar may be placed on patient.
7). Lubricate the ET tube with Lidocaine 2% jelly and insert it in the unobstructed right nare, along the floor of the nasal cavity. The right nare is used to avoid trauma to Kesselbach's Plexus. Keep the ET tube close to the nasal floor to avoid damage to the turbinates.
8). Monitor breath sounds through the ET tube as it is gently advanced. A decrease in resistance indicates passage into the nasopharynx.
9). Advance the ET tube into the trachea during an inspiratory effort. Never force the ET tube. Request oriented patients cough to assist with advancement.
10). Confirm tube placement with:
    - Symmetrical chest rise.
    - Equal bilateral auscultated breath sounds.
    - Fogging of the endotracheal tube.
    - Compliance of a bag valve upon oxygen delivery.
    - Absent breath sounds in the gastric region.
    - Application of ETCO2 monitoring
11). Note depth of ET tube and secure at the nose using tape or veniguard.
12). Reassess lung sounds during transport and monitor EKG, oxygen saturation by pulse oximeter, ETCO2.

Special Considerations:

- Unrecognized esophageal intubation resulting in hypoxic brain injury.
- Injury to anatomy that results in hemorrhage.
- Improper placement depth with vocal cord or laryngeal damage.
- Subcutaneous and/or mediastinal emphysema.
- Vomiting and aspiration.

Obstructed Airway (FBO)

Indications:

- Sudden onset of respiratory distress, often presenting with coughing, wheezing, gagging, or stridor due to a foreign-body obstruction (FBO) of the upper airway.
- Respiratory arrest where ventilation cannot be accomplished after repositioning of airway.
- Unconscious patient with a suspected obstructed airway/foreign body obstruction.

Procedure:

1. If patient is unconscious/unresponsive upon initial contact, begin Pit Crew CPR Procedure.
2. If patient remains conscious, assess the degree of airway obstruction:
   - In a mild obstruction (characterized by coughing or a limited ability to speak), allow the patient to attempt to clear their own airway, if possible.
   - In a severe obstruction (patient unable to speak or make a sound), interventions may be required.
3. **For infants** – deliver continuous cycles of five back blows, followed by five chest thrusts until the object is expelled or the patient becomes unconscious/unresponsive.
4. **For children** – perform the Heimlich Maneuver until the object is expelled or the patient becomes unconscious/ unresponsive.
5. **For adults** – perform the Heimlich Maneuver until the object is expelled or the patient becomes unconscious/ unresponsive. In obese or pregnant patients, the hand position normally used for the Heimlich Maneuver may need to be higher than normal.
6. **If patient becomes unconscious/unresponsive:**
   - Initiate Pit Crew CPR Procedure.
   - ALS providers should position themselves at the airway and attempt to visualize and remove the obstruction with Magill forceps.
   - Support ventilation and oxygenation if the object is removed.
   - If the object remains in the airway, continue to follow Pit Crew CPR Procedure.

Oral Endotracheal Intubation

INDICATIONS:

A patient who is unable to protect their own airway.
An inability to adequately ventilate a patient with a Bag-Valve Mask (BVM)
An unconscious patient without a gag reflex who is apneic or is demonstrating inadequate respiratory effort.

CONTRAINDICATIONS:

Attempting to orally intubate a patient who has a patent airway.
Attempting to orally intubate a patient who is conscious or has a gag reflex, without utilizing sedatives.

EQUIPMENT:

Endotracheal tube (ET), properly sized for the patient
Stylet
Laryngoscope blade, properly sized for the patient
Laryngoscope handle
Suction
Thomas tube holder, or tape
Water-based lubricant
Bag-Valve Mask
Positive and expiratory Pressure (PEEP) valve

PROCEDURE:

1. Perform primary survey to discover treatable life-threatening conditions.
2. Prepare, position and oxygenate the patient with 100% oxygen.
3. Sedate the patient if necessary per Drug Assisted Intubation protocol.
4. Prepare and check equipment: inflate and deflate the ET tube cuff to assure patency, lube the distal tip of the ET tube and insert the stylet.
5. Place patient into the sniffing position, if possible. If trauma prevents this, use a cervical collar or assistant to keep patient in the neutral position.
6. Remember to limit each intubation attempt to 30 seconds with BVM oxygen delivery between attempts.
7. Holding the laryngoscope in the left hand, Insert it to right of midline. Move it to midline, pushing the tongue to left and out of view.
8. Lift up on blade to expose posterior pharynx. Stay off teeth or gums.
9. Identify the epiglottis: the tip of curved blade should sit in vallecula anterior to epiglottis. The straight blade should slip over epiglottis.
10. Insert tube from right side of mouth, slide along blade into trachea under direct visualization.
11. Visualize the ET tube (ETT) passing through vocal cords and advance it 2-3 cm beyond the cords.
12. Remove the blade and inflate the ET tube cuff with 5-10 mL of air.
13. Confirm and document tube placement by ventilating the patient, auscultating for bilaterally equal breath sounds and absence of sounds over the epigastrium.
14. Secure the tube using the Thomas tube holder or tape.
15. If you are unsure of placement, remove tube and ventilate patient with bag-valve mask using a PEEP valve set at 5.
16. Document ETT size, time, result (success), and placement location by the centimeter marks either at the patient's teeth or lips.
17. Also document positive or negative breath sounds before and after each movement of the patient.
18. Monitor ETCO2, oxygen saturation by SpO2, EKG, and vital signs during transport.

SPECIAL CONSIDERATIONS:

Consider placing a nasogastric (NG) or orogastric (OG) tube to clear stomach contents after the airway is secured with an ET tube.
Consider using the GlideScope device if the airway is judged to be a difficult one.
Consider using a supraglottic airway device if intubation efforts are unsuccessful.
REMEMBER: The goal is to always ventilate the patient. Do not sacrifice good ventilation with repeated attempts at intubation.

Patient Classification

J4 Medical/Trauma (Deceased):
1. Prehospital Declaration of Death

Medical I (Near-Death):
1. Cardiac arrest with ROSC or Transported
2. Intubation or SGA Placed/Attempted by EMS
3. ECMO, Balloon Pump, Impella, or other similar device
4. Vasopressor Infusion
5. Any Class II felt to have significant life threats

Medical II (Critical Illness):
1. CPAP Application
2. Epinephrine IM
3. Sepsis Alert
4. STEMI Alert
a. > 1 mm ST Elevation in 2 or more contiguous leads
5. Stroke Alert
a. Positive stroke scale without identifiable cause within 12 hours of symptom onset or last known normal.
6. Altered mental status (GCS < 11)
7. Significantly abnormal vital signs (Hypotension, hypoxia, tachypnea)

Trauma I (Critical Injury):
1. Meets MU Alert 1 Criteria
a. Intubated trauma patient
b. Adults: RR < 10 > 29, HR > 120, SBP < 90; Peds: Age-specific criteria
c. Active hemorrhage
d. GCS < 11 from trauma
e. Paralysis from trauma
f. Penetrating neck, torso, groin, or proximal extremity injury
g. Traumatic arrest
h. Mangled, crushed, or pulses extremity
i. Amputation proximal to elbow or knee
j. Blood transfusion
k. Burns > 35% BSA

Trauma II (Moderate Injury):
1. Meets MU Alert 2 or Alert 3 Criteria
2. See Trauma Team Activation – Protocol for specific criteria

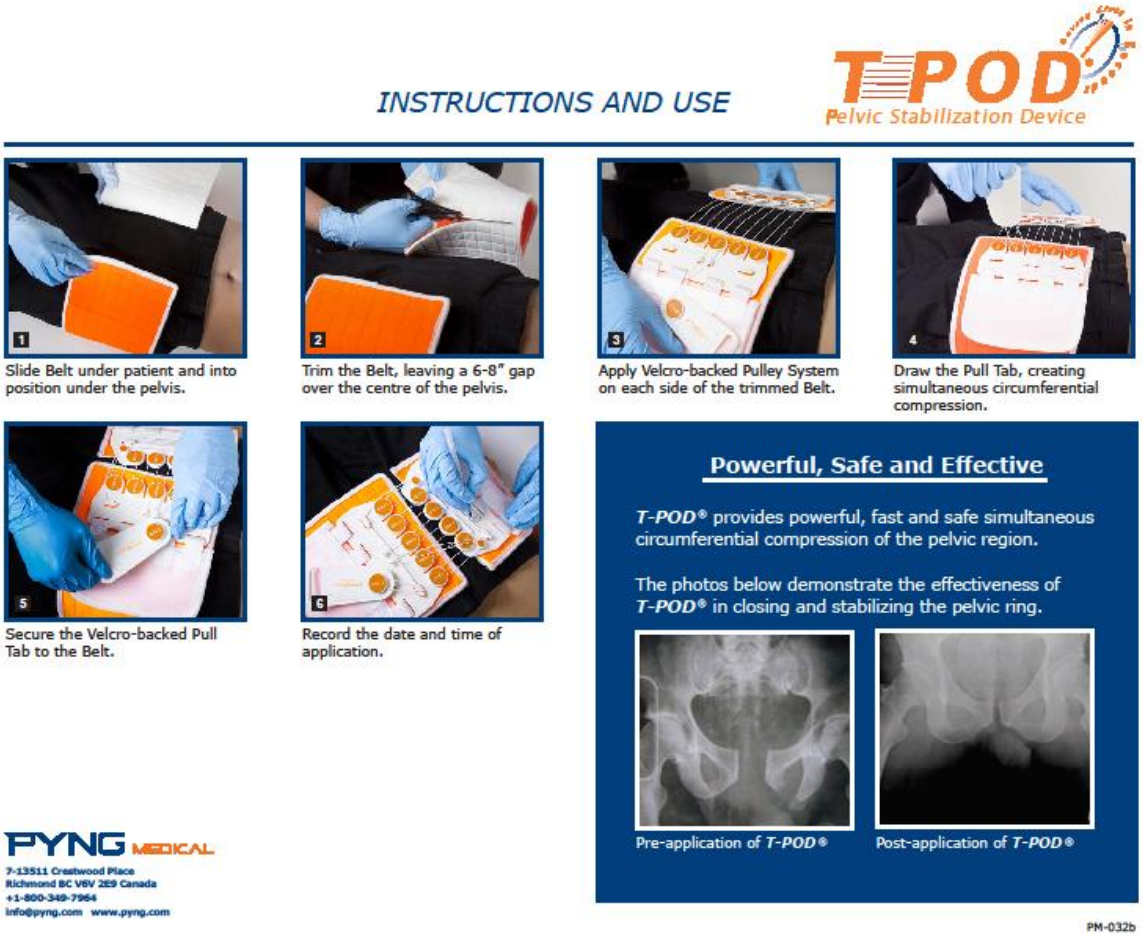
Class III (All Others):
1. Any patient without apparent life threat that does not have a time-critical diagnosis.

Pelvic Binder

Indication:
A patient with the potential for a pelvic fracture.

Guidelines:
- The T-Pod Responder® is a quick, safe, and effective method for the initial treatment of pelvic injury and possible pelvic fractures. The device provides circumferential compression using a pulley system that can decrease pain and/or blood loss.
- Except for the x-ray detectable tab, the T-Pod® is transparent to X-rays.
- If necessary to place the device on a bariatric patient, two belts may be affixed together using one power unit as an extender and the other as the pulley.

Procedure:
1. Place the patient into a supine position and unfold the device with white surface facing up.
2. Slide the belt under the patient and into position under the pelvis. Smoothly and with minimal force roll the patient to aid in positioning the belt. Align the top edge of the Belt at the level of the iliac crest. Alternatively the belt can be centered at the level of the greater trochanters.
3. Trim the belt, leaving a 6-8" gap over the center of the pelvis.
4. Apply the Velcro-backed Mechanical Advantage Pulley System to each side of the trimmed belt.
5. Slowly draw tension on the pull tab, creating simultaneous, circumferential compression.
6. Secure the cord to the hooks and the Velcro-backed pull tab to the belt.
7. Record the date and time of application on the space provided.



Pepper Spray Washout

Indication:
Any request by law enforcement on scene to examine a person subjected to pepper spray or mace products. Pepper spray and tear gas are inflammatory agents and cause immediate closing of the eyes, difficulty breathing, runny nose and coughing. The duration of its effects depends on the strength of the spray but average full effects last around thirty to forty-five minutes with diminished effects lasting for hours.

Contraindications:
- Violent or uncontrolled patient.
- Unsafe scenes.

Procedure:
1. Reassure patient that pepper spray mace will wear off without lasting effects in approximately thirty minutes.
2. If the patient is wearing contact lenses, remove them, and instruct patient to not touch the affected areas.
3. Irrigate face with 0.9% sodium chloride and remove clothing if heavily contaminated.
4. Moving air across the affected area is usually the most appropriate treatment. This should already have been instituted by the law enforcement agency.
5. In most cases, with the exception of a patient having an allergic reaction, transport is unnecessary. Obtain a patient refusal per the Refusal of Transport Policy for your agency.

Physical Restraint Use

INDICATIONS:

- Patients who are a danger to themselves or others due to psychiatric or behavioral disorder, mental disability, drug-induced psychosis, stroke, traumatic brain injury, or other condition that is not self-limiting. Restraining must be performed in a humane manner and used only as a last resort.
- Soft-restraints or restraint mitts may be used during interfacility transfers or continued to destination if initiated at the discharging facility.
- Spit hoods may be used as needed. EMS personnel must assure the patient has an intact airway during transport.

PROCEDURE:

1. Ensure scene safety. Crews should retreat or stage at a safe location if at any time they feel their safety is compromised.
2. Request law enforcement assistance, as necessary.
3. When appropriate, attempt less restrictive means of managing the patient, including:
    - Verbal de-escalation
    - Removal of any individuals aggravating the situation
4. If physical restraints are deemed necessary, assure that there are sufficient personnel available to physically restrain the patient safely.
5. Restrain the patient in a lateral or supine position utilizing soft restraints. Assure at least 1 finger can be placed between the skin of the patient and the restraint. Equipment like backboards, splints, or other devices may not be placed on top of the patient and no restraint shall ever be placed across a patients chest or restrict the ability to ventilate /oxygenate.
6. The patient must be under constant observation by the EMS crew at all times. This includes direct visualization of the patient as well as cardiac, pulse oximetry, and quantitative waveform capnography monitoring, if available.
7. Documentation in the PCR should include the reason for the use of restraints, the type of restraints used, the time restraints were placed, and a confirmation of Pulse/Motor/Sensation checks during transport.
8. If a patient is restrained by law enforcement personnel with handcuffs or other devices EMS personnel cannot remove, a law enforcement officer should accompany the patient to the hospital in the transporting ambulance. If this is not feasible, the officer MUST follow directly behind the transporting ambulance to the receiving hospital OR the primary care provider must have a key to the securing device.

Prehospital Radio Report

Sample Prehospital Radio Report

1. Identify the receiving facility
2. Give the medic unit designation
3. Give estimated time of arrival
4. Report any life threatening complaints (e.g., Trauma Alert, cardiac arrest)
5. Patient age and sex
6. Patient chief complaint and a brief history
7. Mental status and/or Glascow Coma Scale number
8. Pertinent physical exam findings
9. Baseline vital signs
10. A list of interventions performed and patient response to those interventions
11. Any requested Medical Control orders
12. Major past medical history, including pertinent medications and allergies

Example:

"Truman VA hospital, Medic 4 on State HEAR channel. Truman VA, this is Medic 4 inbound with a 14 minute ETA to your facility. On board a 45 year old female with a chief complaint of abdominal pain. Complaint of abdominal pain has lasted two days with no relief and is currently rated 4/10 on the pain scale. Pain described as crampy in nature, is located in the left lower quadrant and does not radiate to any other location. No pertinent findings upon examination of the abdomen. Vital signs 130/72 blood pressure, heart rate 112, respirations 12 and unlabored with a normal SpO2 value. IV saline lock established in the right AC with labs drawn. Patient has refused pain control. No orders requested, no additional pertinent medical history. If nothing further is required, Medic 4 is now 12 minutes out from your facility."

Prehospital Stroke Screens

Initial Stroke Screen & MEND Exam

Mental Status Check	Mark If Abnormal		
	On Scene	Enroute 1	Enroute 2
Speech Test – "You can't teach an old dog new tricks" Abnormal findings include wrong words, slurred speech, aphasia			
Level of Consciousness (AVPU) Highest level of mental function noted upon stimulation			
Ability to Follow Commands (close/open eyes)			
Ability to Answer Questions (How old are you? AND What month is it?)			

Cranial Nerve Check	Mark If Abnormal					
	On Scene		Enroute 1		Enroute 2	
	L	R	L	R	L	R
Facial Drooping (have the patient smile) An abnormal finding is a lack of symmetry from one side to the other						
Visual Fields (wiggle fingers in each of the four quadrants)						
Horizontal Gaze (side-to-side eye movement w/o moving head)						

Motor/Sensory/Coordination Check	Mark If Abnormal					
	On Scene		Enroute 1		Enroute 2	
	L	R	L	R	L	R
Arm Drift (close eyes and hold out both arms) An abnormal finding is an arm that can't move or that drifts down						
Leg Drift (open eyes and lift each leg separately)						
Sensory – Arm and Leg (close eyes and touch/pinch each extremity)						
Coordination – Arm (have patient extend arm and touch finger to nose) Abnormal findings are an inability to perform the motion or shaking						
Coordination – Leg (heel slide from the knee down to the shin) Abnormal findings are an inability to keep the foot on the shin						

Splinting

Clinical Indications:

- Immobilization of an extremity for transport, either due to suspected fracture, dislocation, sprain, or injury.
- Immobilization of an extremity for transport to secure medically necessary devices such as intravenous catheters.

Procedure:

1. Assess and document pulses, sensation, and motor function prior to placement of the splint.
    - As a general rule, except for joint injuries, extremities should be splinted in their correct anatomical position, unless resistance is met when attempting to do so or pulse, motor, and sensation is lost.
    - Fractures with a loss of pulse, motor, and sensation that is unable to be re-established by realignment should be considered emergent transports.
2. Remove all clothing and jewelry from the extremity.
3. Select a site to secure the splint both proximal and distal to the area of suspected injury, or the area where the medical device will be placed. In the case of suspected fracture the splint should immobilize the joint above and the joint below the injury whenever possible.
4. Do not secure the splint directly over the injury or device.
5. Place the splint and secure with straps or bandage material (e.g., kling, kerlex, cloth bandage, etc.) depending on the splint manufacturer and design.
6. Assess pulses, sensation, and motor function before and after placement of the splint. If there has been deterioration in any of these 3 parameters due to splinting, remove the splint and reassess.
7. Document the time, type of splint, and the pre and post assessment of pulse, sensation, and motor function in the patient care report.

Supraglottic Airway Insertion

Indications:

- A patient requiring a protected, immediate airway with an inability to orally intubate the patient.
- Supraglottic airways are designed for emergency or difficult intubation providing sufficient ventilation whether placed into the esophagus or into the trachea.

Local Fire/EMS agencies carry two supraglottic devices:

King LT-D - The King LT-D is a single-use supraglottic airway that uses two cuffs to create a supraglottic ventilation seal, at the pharynx and esophagus, similar to the Combitube. Unlike the Combitube, though, it has a single ventilation port (15 mm connector) and a single valve and pilot balloon (that goes to both the pharyngeal balloon and the esophageal balloon).

Combitube - The tracheal-esophageal Combitube has two inflatable balloons and two lumens. It is designed to seal the upper airway and isolate the trachea and esophagus. It accomplishes this with one balloon in the esophagus and a second balloon in the pharynx; the ventilation holes between the two balloons are positioned at the laryngeal inlet.

Contraindications:

King LT-D:

1). Patient under 35 inches tall.
2). Responsive patients with an intact gag reflex.
3). Patients who have ingested a caustic substance.
4). Patients with known esophageal disease or cancer.
5). Patient with a stoma.

Combitube:

1). Patient under 5 feet tall (152 cm).
2). Responsive patients with an intact gag reflex.
3). Patient with known esophageal disease or cancer.
4). Patient who has ingested a caustic substance.
5). Patient with a stoma.

Intervention Procedure:

King LT-D:

1). Verify open airway and that patient is being properly ventilated.
2). Choose the proper size device according to patient height (see chart below for recommended size).

Patient Height	Device Color/Size
35 – 45 inches tall	Green – Size 2
41 – 51 inches	Orange – Size 2.5
4 – 5 feet tall	Yellow – Size 3
5 – 6 feet tall	Red – Size 4
Greater than 6 feet tall	Purple – Size 5

3). Check and prepare equipment by inflating the cuff with the proscribed amount of air, testing cuff integrity.
4). Remove all air from the cuff.

(See reverse for continuation of instructions)

Device Size Volume
Size 2 35 mL
Size 2.5 40 mL
Size 3 60 mL
Size 4 80 mL
Size 5 90 mL

5). Apply water-based lubricant to beveled distal tip and posterior aspect of the tube, taking care to avoid introduction of lubricant in or near the ventilator openings.
6). Position the patient's head. The ideal position is the "sniffing position". If this is contraindicated due to suspected spinal injury, the tube can be inserted with the head in a neutral position.
7). Hold the tube at the connector end with the dominant hand. With the non-dominant hand hold mouth open and apply chin lift.
8). With the tube rotated laterally 45-90 degrees, such that the blue orientation line is touching the corner of the mouth, introduce tip into mouth and advance behind the base of tongue.
9). As tube passes under the tongue rotate tube back to midline (blue orientation line faces chin) and, without using excessive force, advance tube until base of the connector is aligned with the teeth or gums.
10). Inflate according to size of device (range 35-90 mL) and test for optimal ventilation while withdrawing device and gently bagging the patient. Once easy ventilation is achieved, check balloon pressure and adjust to approximately 60 cm H20.
11). Confirm tube placement by auscultation of lung sounds, absence of epigastric sounds, chest rise and fall, oxygen saturation by pulse oximeter (SpO2), and verification of appropriate end tidal carbon dioxide (ETCO2) values.
12). Secure tube with a tube tie or tape.
13). Monitor ETCO2, electrocardiogram (EKG), SpO2, and basic vital signs during transport.

Combitube:

1). Verify open airway and that the patient is being properly ventilated.
2). Check and prepare device prior to insertion by inflating each cuff with the prescribed volume of air. Inflate the proximal pharyngeal cuff (blue pilot balloon) with 100 mLs of air. Inflate the white esophageal cuff (white pilot balloon) with 15 mLs of air.
3). Remove all air from the cuff.
4). Lubricate the distal tube tip of device with water soluble lubricant.
5). Remove any oropharyngeal airway and/or any dentures or broken teeth that may tear the balloons during insertion.
6). Perform a tongue-jaw lift with one hand.
7). With the other hand, hold the Combitube so that it curves in the same direction as the natural curvature of the pharynx. Maintain a mid-line position of the Combitube inserting the tip into the mouth, advance in a downward curved movement until the teeth lie between the two printed bands.
8). **DO NOT FORCE THE COMBITUBE**. If the tube does not advance easily, redirect it or withdraw and re-insert.
9). Inflate #1, blue pilot balloon with 100 mLs of air using the 100 mL syringe supplied and remove syringe. The large latex cuff will fill and may cause the Combitube to move slightly from the patient's mouth. This is to be expected.
10). Inflate #2, white pilot balloon with 15 mLs of air using the supplied 20 mL syringe and remove the syringe.
11). Begin ventilation through the longer blue connecting tube labeled #1. If auscultation of breath sound is positive and auscultation of gastric inflation is negative, continue ventilations. Confirm by chest rise and expansion. Under this condition, the second connecting tube may be used for the removal of gastric contents
with a suction catheter.
12). If auscultation of breath sounds is negative, and gastric inflation is positive, immediately begin ventilation through the shorter clear connecting tube labeled #2. Confirm tracheal ventilation by auscultation of breath sounds and absence of gastric inflation.
13). Secure tube with a tube tie or tape.
14). Monitor ETCO2, EKG, SpO2, and basic vital signs during transport.

Removal of Supraglottic Devices:

- If device is no longer tolerated due to the return of protective reflexes, device may be removed.
- Suction oral cavity above the cuff and have suction ready in case patient vomits.
- Fully deflate the cuffs and remove the tube.

Surgical Airway

Indications: Pulmonary insufficiency after shock, trauma, surgery, or serious medical injury AND the inability to successfully secure the airway with standard means in a timely fashion.

Contraindications:
- The ability to establish an airway by any other means.
- Infants and children under the age of 12.

Equipment:
- Bougie
- Alcohol or Betadine swab
- 10 mL syringe
- #10 scalpel
- Cuffed endotracheal tube size 6.0-7.0
- Tape
- Bag-valve mask device

Procedure:
1). Attempt positive pressure ventilation.
2). Consider a supraglottic airway device, nasal intubation, or oral intubation using the McGrath prior to performing a surgical airway.
3). Stand to one side of the patient at the level of the neck. A right-handed practitioner should stand to the patient's right, a left-handed practitioner to the patient's left.
4). Stabilize the larynx with the non-dominate hand. Use the index finger of the non-dominate hand to identify the thyroid cartilage, cricoid membrane and cricothyroid membrane.
5). Using a #10 scalpel in your dominate hand, make a vertical incision over the cricothyroid membrane, or at the estimated position of the cricothyroid membrane if landmarks are difficult to palpate.
6). Use the finger of the non-dominate hand to feel inside the vertical incision to confirm proper identification of landmarks and the position of the cricothyroid membrane.
7). Remove index finger and make a 5 mm transverse incision through the cricothyroid membrane, using caution not to damage the posterior wall of the trachea or surrounding structures of the neck.
8). Place the bougie into the incision and advance until resistance is met, indicating the bougie is likely in the main stem bronchus.
9). Advance a cuffed ET tube over the bougie and into the tracheal lumen. Rotate the ET tube to the right so the numbers face up to ease insertion.
10). Stop advancing the ET tube when the cuff of the tube passes into the trachea.
11). Remove the bougie.
12). Inflate the ET tube cuff.
13). Use the bag-valve device to ventilate.
14). Confirm ET tube placement using auscultation of lung sounds/epigastric sounds, oxygen saturation by pulse oximeter (SpO_2) and end tidal carbon dioxide ($ETCO_2$) values.
15). Secure the ET tube using tape.
16). Continually monitor $ETCO_2$, SpO_2, electrocardiogram (EKG), and vital signs.

TASER Barb Removal

TASER – An electroshock device used by law enforcement as a non-lethal weapon. The TASER fires two dart-like electrodes ("barbs") which are connected to the weapon by conductive wires. The weapon delivers 50,000 volts to an aggressor, overriding the central nervous system and causing uncontrollable contraction of the muscles in the body.

1). Fire/EMS may be requested by law enforcement to provide patient care to individuals who have received a TASER deployment.
2). Assure the scene is secure prior to responding to treat the patient.
3). The patient may report a dazed feeling or vertigo, along with involuntary muscle contractions. These will resolve over several minutes.
4). If the barb is located in an eye, ear, the face, neck, spinal column or genitals transport the patient to a hospital for barb removal; do not remove in the field.
5). Utilize the appropriate personal protective equipment (PPE) while performing the removal procedure.
6). The TASER barb is considered to be a contaminated sharp and personnel should be careful when removing it from a patient.
7). Remove each barb individually. Stabilize the skin surrounding the TASER barb and firmly grasp the barb with your dominant hand or a pair of pliers. With a smooth motion, pull hard straight backwards to remove the barb from the skin.
8). Examine the barb to ensure it is fully intact. Document this in your patient care report.
9). Provide wound care by cleansing the puncture site with antiseptic and covering with an adhesive bandage.
10). Obtain baseline vital signs with electrocardiogram (EKG) monitoring prior to terminating patient contact if the patient is to remain in law enforcement custody.
11). The patient should be transported to a hospital for evaluation if:
    - The barb is lodged in an area mentioned above and is unable to be removed in the field.
    - A barb is unaccounted for and presumed to be in the patient or the barb is not intact upon removal.
    - The patient is of altered mental status or there is evidence of intoxicant ingestion.
    - The patient has received a traumatic injury significant enough to warrant EMS care during the incident.
    - The patient has chest pain or shortness of breath.
    - The patient has any other medical complaints that require evaluation.
12). If the patient is not willing to cooperate with transport or is violent, request law enforcement assist with transport.
13). Consider sedation per protocol.

Thoracostomy

Indications: Signs and symptoms of thoracic trauma including, but not limited to, obvious open or closed thoracic trauma in addition to respiratory compromise. A tension pneumothorax is a clinical diagnosis which should be considered when the following signs and symptoms are present:

- Progressive severe respiratory distress.
- Progressive shock.
- Decreased or absent breath sounds on the involved side.
- Jugular venous distension.
- Hyperresonance to percussion on the involved side.
- Tracheal deviation away from the involved side.
- Narrowing pulse pressure.
- Difficulty ventilating intubated patients.
- Traumatic pulseless arrest.

Intervention Procedure:

1). Utilize proper body substance isolation, including eye protection.
2). Prepare equipment: 10 gauge angiocatheter (or 18 gauge angiocatheter if patient is less than two months of age), Asherman chest seal, and Chloroprep cleaning solution.
3). Expose chest and locate landmarks:
    - Third rib and second intercostal space at mid-clavicular line.
    - Additional site at 5th intercostal space, mid-axillary torso.
4). Cleanse site with Chloroprep solution.
5). Insert the angiocath at the upper margin of the third rib at a 90 degree angle, listening for air escape from needle. Remove needle and dispose of in sharps box.
6). Apply an Asherman Chest Seal over the exposed catheter tip creating a flutter valve.
7). Additional site at 5th intercostal space, mid-axillary torso
8). Consider placing an oral or nasal gastric tube.

Special Considerations:

- Damage to lung, heart or blood vessels.
- Catheter compromise from kinking or displacement. Consider repeating needle thoracostomy if signs and symptoms of pneumothorax return.
- Hemorrhage.
- Infection.

Traction Splint

Indications:
A painful, swollen, deformed mid-thigh injury indicative of a proximal third or mid-shaft femoral fracture.

Local Fire/EMS agencies carry two types of traction splint:
Sager Traction Splint – the Sager is a unipolar device that can be used for unilateral or bilateral fractures.
Hare Traction Splint – the Hare is a bipolar device designed for unilateral fractures.

Contraindications:
- Injury is close to the knee.
- Injury to the knee.
- Injury to the hip.
- Lower leg or ankle injury.
- Injury to the pelvis.
- Partial amputation or avulsion with bone separation or if the distal limb is connected only by marginal tissue.
- Open femur fractures.

Equipment:
Traction splint with ankle hitch(s)

Procedure:
Sager Traction Splint:
1). Explain the procedure to the patient and provide pain management per Pain Management Protocol.
2). Assemble the equipment.
3). Expose the injured lower extremity or extremities and remove footwear, if present.
4). Check for a distal pulse, motor and sensation in the affected limbs. Mark pulse location, if possible.
5). Place the splint beside the patient's uninjured leg and adjust it to the proper length.
6). Open and adjust the four Velcro support straps that should be positioned at the mid-thigh, above the knee, below the knee and above the ankle. **AVOID PLACING VELCRO STRAPS AT THE FRACTURE SITE**. Instead position straps above and below the fracture site.
7). Provider #1 is to manually support and stabilize the injured limb so that no motion will occur at the fracture site while Provider #2 secures the appropriately sized ankle hitch. If two limbs are injured, apply both ankle hitches supplied.
8). Provider #1 is to support the leg at the site of the suspected injury, while Provider #2 simultaneously applies gentle longitudinal traction manually to the ankle hitch(s) and foot/feet. Only enough traction is applied to align the limb so that it will fit to the splint. **DO NOT ATTEMPT TO ALIGN FRACTURE FRAGMENTS ANATOMICALLY.**
9). Provider #1 is to slide the splint into position between the patient's legs, making certain that the padded area is seated well into the groin. Pad the groin and gently apply the ischial strap while avoiding the external genitalia.
10). While traction is maintained, Provider #1 is to connect the loops of the ankle hitch(s) to the end of the splint.
11). While using the handle, apply gentle traction to the connecting strap between the ankle hitch and the splint, just strongly enough to maintain the limb alignment. This equals approximately fifteen pounds of pressure.
12). **DO NOT OVER TIGHTEN THE FOOT STRAP.**
13). Once proper traction has been applied, apply the Velcro support straps to both legs so that the limb is securely held to the splint.
14). Reassess for pulse, motor, sensation in affected limbs.

(See reverse for continuation of instructions)

Traction Splint

Hare Traction Splint:

1. Explain the procedure to the patient and provide pain management per Pain Management Protocol.
2. Assemble the equipment.
3. Expose the injured lower extremity or extremities and remove footwear, if present.
4. Check for a distal pulse, motor and sensation in the affected limbs. Mark pulse location, if possible.
5. Place the splint beside the patient's uninjured leg and adjust it to the proper length.
6. Open and adjust the four Velcro support straps that should be positioned at the mid-thigh, above the knee, below the knee, and above the ankle. **AVOID PLACING VELCRO STRAPS AT THE FRACTURE SITE**. Instead position straps above and below the fracture site.
7. Provider #1 is to manually support and stabilize the injured limb so that no motion will occur at the fracture site while Provider #2 secures the appropriately sized ankle hitch.
8. Provider #1 is to support the leg at the site of the suspected injury, while Provider #2 simultaneously applies gentle longitudinal traction manually to the ankle hitch and foot. Only enough traction is applied to align the limb so that it will fit to the splint. **DO NOT ATTEMPT TO ALIGN FRACTURE FRAGMENTS ANATOMICALLY.**
9. Provider #1 is to slide the splint into position under the patient's limb, making certain that the ring is seated well on the ischial tuberosity. Pad the groin and apply the ischial strap. Avoid external genitalia.
10. While traction is maintained, Provider #1 is to connect the loops of the ankle hitch to the end of the splint.
11. Use the ratchet mechanism to apply gentle traction to the connecting strap between the ankle hitch and the splint, just strongly enough to maintain limb alignment.
12. **DO NOT OVER TIGHTEN THE FOOT STRAP**.
13. Once proper traction has been applied, apply the Velcro support straps to both legs so that the limb is securely held to the splint.
14. Reassess for pulse, motor, sensation in the affected limb.

Special Considerations:

- If at all possible, position the injured limb slightly above the level of the heart to minimize swelling.
- Cold packs may be applied locally to injured areas to help with swelling.
- Consider using a long back board or scoop stretcher to assist with patient movement and help immobilize the hip of the patient.

Transcutaneous Pacing

Indications:
- Symptomatic 2nd degree block, Mobitz type II.
- Symptomatic 3rd degree AV block (complete heart block).
- Symptomatic bradycardia.
- Symptomatic bradycardia unresponsive to non-electrical interventions.

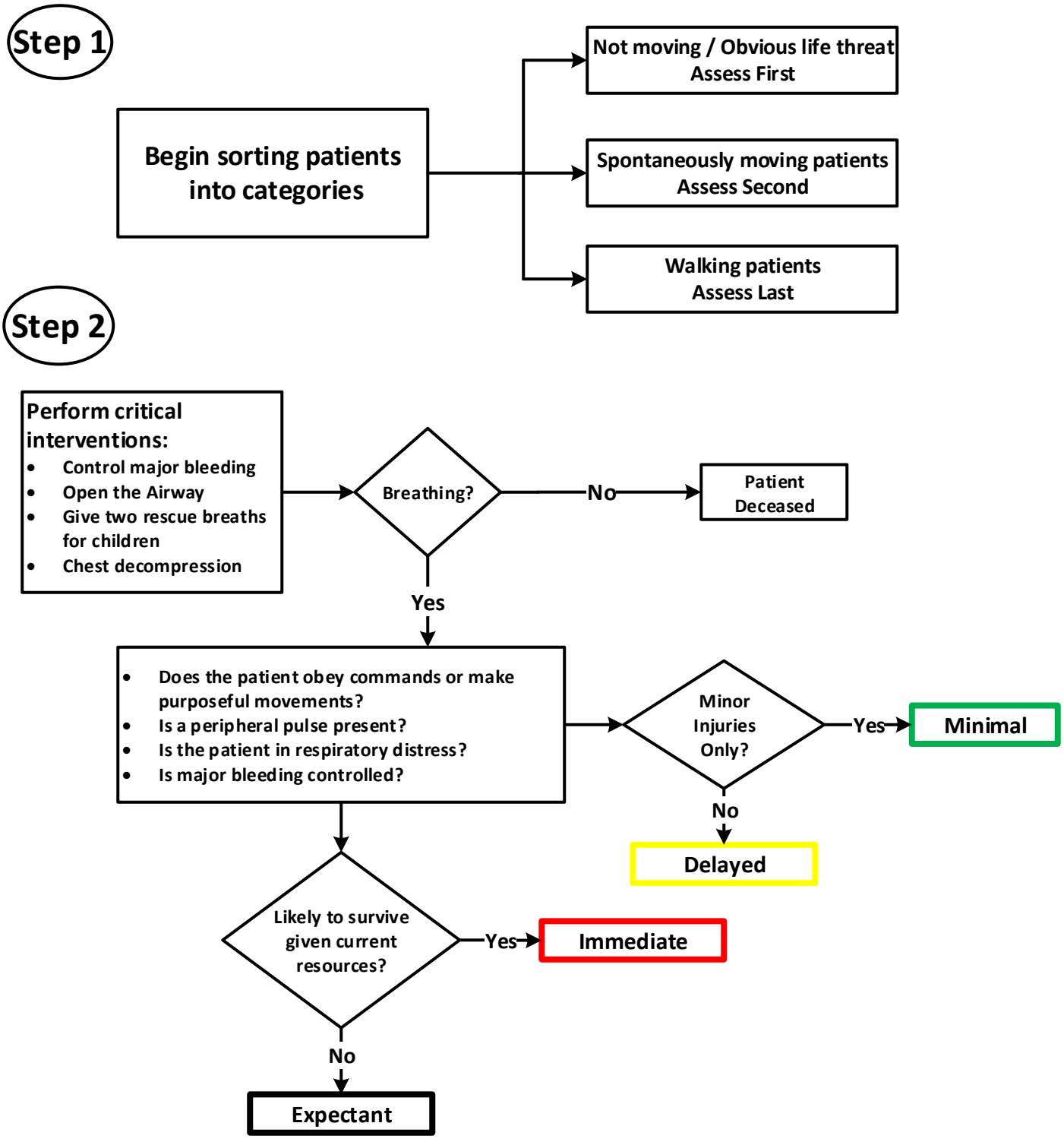
Contraindications:
- Asymptomatic bradycardias.
- Attempting to pace a patient with a pulse and in a sinus rhythm.
- Attempting to pace a hypothermic patient.

Equipment:
- Zoll X-series cardiac monitor
- Multi-function cardiac pads

Procedure:
1). If the patient is conscious, educate the patient and family regarding the procedure.
2). Consider sedation per the Pain Management protocol, if time and patient condition allow.
3). Turn power on to unit.
4). Remove all clothing covering the patient's chest. Dry chest if necessary. If the patient has excessive chest hair, clip it to ensure proper adhesion of the electrodes.
5). Place multifunction pads on the patient's chest anterior/posterior.
6). Place the four lead EKG electrodes on the patient.
7). Press the **PACER** button on the front panel of the unit. The Pacer Settings window will display.
8). Use the arrow keys to navigate to Mode, press the Select button, and then use the arrow keys and the Select button to set the Pacer Mode to Demand.
9). Use the arrow keys to navigate to Rate, press the Select button, and then use the arrow keys and the Select button to set the Pacer Rate to a value 10-20 ppm higher than the patient's intrinsic heart rate. If no intrinsic rate exists, use 100 ppm. You can increase or decrease the pacer rate by a value of 5 ppm for rates below 100, and by 10 ppm for rates above 100.
10). Use the arrow keys to navigate to Start Pacer, then press the Select button to select it. The Pacing window displays behind the Pacer Settings window.
11). In the Pacer Settings window, use the arrow keys and the Select button to adjust the pacer output. The pacer output is adjustable in 10 mA increments when increasing the output, and in 5 mA increments when decreasing the output. Observe the ECG for evidence of electrical capture. Select the lowest output current that achieves both electrical and mechanical capture.
12). Electrical capture is determined by the presence of a widened QRS complex, the loss of any underlying intrinsic rhythm, and the appearance of an extended, and sometimes enlarged, T-wave. Ventricular response is normally characterized by suppression of the intrinsic QRS complex.
13). In the conscious patient, use the lowest possible setting to achieve capture.

Triage

	Scene Size-Up	
• Scene Safety • Look for Hazardous Materials	• Scene Safety / Situational Awareness • PPE (consider splash, droplet, airborne)	• Determine the Number of Patients • Determine Need for Additional Resources



Ventricular Assist Devices

Clinical Indications:

A confirmed patient with a Ventricular Assist Device (VAD).

Overview of the VAD:

The Ventricular Assist Device is a mechanical device that takes over some or all of the pumping function of one or both of the heart's ventricles. Patients of any age or gender with advanced heart failure may receive this device. Some VAD patients will have a VAD while they are waiting for a heart transplant, while other VAD patients, who are not eligible for a heart transplant for some reason, will live with the device for the rest of their lives.

Assessment & Treatment of the VAD-dependent Patient:

1. VAD patients will have a power source and control unit outside their body in a bag or on a belt.
2. Determine if an VAD problem is the chief complaint, or if another illness and/or injury is the issue.
3. If the VAD device is the issue, check the control unit for alarm status. Each individual VAD should have a handbook to troubleshoot any alarms.
4. Assess the patient:
    - GCS – Mental status is the best indicator of patient status. Remember to check for common causes of altered mental status (e.g., low blood sugar, sepsis or stroke).
    - Pulse – Pulses will not be present due to the lack of pulsatile flow through the device.
    - Heart tones – The device should be audible as a low hum at the implant location.
    - Blood pressure – considered to be unreliable. MAP readings may give a better indication of clinical status.
    - Skin condition – baseline should be normal temperature and color.
    - SpO2 – Baseline should show normal values.
    - ETCO2 – Baseline should show normal values.
    - Temperature – These patients are prone to infection/sepsis due to the indwelling nature of their device.
5. Treatment Guidelines:
    - Make early contact with the VAD resource hospital for guidance.
    - Electrical therapy (pacing or defibrillation) is unchanged for VAD patients.
    - ACLS protocols and guidelines apply for VAD patients.
    - When dealing with traumatic injury, remember VAD-dependent patients are on anticoagulant therapy.
    - CPR is not indicated for these patients, UNLESS the device has been confirmed to be non-functional and unable to be restarted; the patient has no signs of life; and the patient does not have a valid Missouri DNR on hand.
    - If the VAD device is still functioning appropriately, patients should not be pronounced deceased in the field without contact with the VAD resource hospital and/or a local attending physician, UNLESS signs of obvious death are present.

Transport of the VAD-dependent Patient:

- Patients should be transported to the closest area hospital of choice for evaluation. Eventually these patients may be transported to their VAD resource hospital for continued specialized care.
- Always bring the patient's resource bag and power base unit with you. The resource bag should have spare batteries, parts for the control unit, and a handbook to help troubleshoot equipment and system alarms.
- Use your patient and their family as a resource. Family may have undergone special training to help care for their loved one and can help you provide patient care.

Additional Resources:

- https://www.mylvad.com/ems/field_guides/emergency-medical-services-field-guides-full-document

Medication Section

- Acetaminophen
- Adenosine
- Albuterol
- Amiodarone
- Aspirin
- Atropine Sulfate
- Calcium Chloride
- Dextrose
- Diltiazem
- Diphenhydramine
- Dopamine
- DuoNeb
- Epinephrine
- Fentanyl
- Haloperidol
- Hydralazine
- Ibuprofen
- Ipratropium Bromide
- Ketamine
- Labetalol
- Levophed
- Lidocaine
- Magnesium Sulfate
- Midazolam
- Narcan
- Nitroglycerin
- Oxygen
- Oxytocin
- Racemic Epinephrine
- Sodium Bicarbonate
- Sodium Chloride 0.9%
- Solu-Medrol
- Toradol
- Tranexamic Acid (TXA)
- Zofran

Acetaminophen

Generic Name: Acetaminophen, APAP

Trade Name: Tylenol

Class: Non-narcotic analgesic; antipyretic

Mechanism of Action: The method of action is unknown, however, is thought to be the inhibition of cyclooxygenase (COX). Recent findings suggest that it is highly selective for COX-2.

Indications:
- Used for fevers > 100.2 F (38.0 C) to prevent increase of fever and to lower body temperature.
- Can be used post-febrile seizure as long as patient is responsive.

Contraindications/Warnings:
- Hypersensitivity
- Aspiration risk: Use with caution by mouth if patient has altered mental status or is lethargic
- Use with caution in patients with liver dysfunction

Route of Administration: PO (suspension)

Onset/Duration: Onset within 30 minutes, with a duration of 5 hours. Peak effect achieved within 1.5 hours

Side Effects/Adverse Reactions: Diarrhea, increased sweating, loss of appetite, nausea or vomiting,

Drug Interactions: Taking certain other medicines together with acetaminophen may increase the chance of unwanted effects. The risk will depend on how much of each medicine the patient takes every day and on how long they will take the medicines together.

Adenosine

Generic Name: Adenosine

Trade Name: Adenocard

Class: Antiarrhythmic, endogenous nucleoside.

Mechanism of Action:

- Adenosine is an endogenous nucleoside that slows conduction through the AV node , may interrupt reentry pathways through the AV node and can restore sinus rhythm in episodes of paroxysmal supraventricular tachycardia (PSVT).
- Slows sinus rate.
- Larger doses decrease blood pressure by decreasing peripheral resistance.

Indication(s):

- A stable, narrow complex regular tachycardia at a rate exceeding 150 beats per minute (bpm).
- A stable, undifferentiated regular monomorphic wide-complex tachycardia.

Contraindications/Warnings: Adenosine is contraindicated in patients with second or third degree AV block (except for patients with an artificial pacemaker), sinus node disease (such as sick sinus syndrome) or a known hypersensitivity.

Routes of Administration: Rapid IVP through a large bore peripheral IV placed in the AC or higher.

Onset/Duration: Onset of adenosine is within 30 seconds; its duration is 10 seconds due to rapid metabolism in the body.

Side Effects/Adverse Reactions: Adenosine may result in facial flushing, diaphoresis, headache, chest pain, palpitations, hypotension, shortness of breath, lightheadedness, paresthesia or nausea. Rarely cardiac arrest.

Drug Interactions:

- Adenosine should be used with caution in the presence of digoxin or verapamil due to the potential for additive or synergistic effects.
- Methylxanthines such as caffeine and theophylline antagonize the action of adenosine and may require higher doses to obtain therapeutic effect.
- Carbamazepine (Tegretol) may increase the degree of heart block following adenosine administration.

Precautions/Special Considerations:

- Dysrhythmias may recur (short half-life).
- Dysrhythmias appear in 55% of patients at conversion, lasting for a few seconds and do not usually require intervention.
- Second dose must be prepared and available.
- Check for crystallization in cold climates.

Albuterol

Generic Name: Albuterol Sulfate.

Trade Name(s): Proventil, Ventolin.

Class: Sympathomimetic, bronchodilator.

Mechanism of Action: Beta (B) agonist (primarily B2); relaxes bronchial smooth muscle, resulting in bronchodilation; also relaxes vascular and uterine smooth muscle; decreases airway resistance.

Indication: Albuterol sulfate is indicated for the relief of bronchospasm.

Contraindications/Warnings: Albuterol sulfate is contraindicated in patients with tachycardia dysrhythmias or a known hypersensitivity to albuterol or any of its components.

Routes of Administration:
- Nebulized, mouth piece or in-line via mask
- Inhaler, patients own
- Endotrachial/nasotrachial (ET/NT) in-line

Onset/Duration: Onset of 5-15 minutes with duration of 3-4 hours. Peak effect achieved within 30 minutes to 2 hours.

Side Effects/Adverse Reactions: Side effects of albuterol administration may include tremors, dizziness, headache, nausea, nasal congestion, tachycardia, arrhythmias, hypertension, bronchospasm, and cough.

Drug Interactions: Tricyclic antidepressants (TCA's) and monoamine oxidase (MOA) inhibitors can potentiate the action of albuterol sulfate.

Amiodarone

Generic Name: Amiodarone

Trade Name: Cordarone, Nexterone

Class: Antiarryhthmic agent

Mechanism of Action: Amiodarone blocks sodium channels, lengthens action potential and is a potassium channel blocker that slows conduction and prolongs the refractory period. Amiodarone also decreases cardiac workload and myocardial oxygen consumption through vasodilation.

Indications:
- Treatment of: Ventricular fibrillation (VF)/pulseless Ventricular tachycardia (VT), polymorphic VT, and wide complex tachycardia of uncertain origin.
- Control hemodynamically stable ventricular tachycardia when cardioversion unsuccessful.
- Adjunct to cardioversion of Supraventricular tachycardia (SVT) and Paroxysmal supraventricular tachycardia (PSVT).
- Rate control in Wolff-Parkinson-White.

Contraindications/Warnings:
- Amiodarone is contraindicated in patients with cardiogenic shock, marked sinus bradycardia, and second- or third-degree AV block (unless a pacemaker is available).
- Hypersensitivity
- Do not give Intravenous push (IVP) in a patient with pulse.

Routes of Administration: IV/IO bolus, IV/IO infusion

Onset/Duration: Onset of amiodarone is within minutes, with duration lasting 30 to 45 minutes. The half-life of the drug is over 50 days.

Side Effects/Adverse Reactions: Diarrhea, increased sweating, loss of appetite, nausea or vomiting.

Drug Interactions: Amiodarone may react with Warfarin, Digoxin, Procainamide, Quinidine and Phenytoin.

Aspirin

Generic Name: Acetylsalicylic Acid, Aspirin, ASA

Class: Analgesic, antipyretic, anti-inflammatory

Mechanism of Action: In small doses aspirin blocks thromboxane Alpha (A)2, a potent platelet aggregate and vasoconstrictor, causing decreased platelet aggregation. This property has led to its use managing the acute phase of myocardial infarction.

Indication: Chest pain or other signs/symptoms suggestive of acute myocardial infarction.

Contraindications/Warnings:
- Bleeding ulcer, hemorrhagic states, hemophilia.
- Known hypersensitivity to salicylates or other non-steroidal anti-inflammatories that has led to hypertension and/or bronchospasm.
- Children and adolescents, due to risk of Reyes Syndrome.

Routes of Administration:
- Oral Route.

Onset/Duration: Aspirin has an onset of 20-30 minutes and duration of 4-6 hours. Peak effect is achieved after 2 hours.

Side Effects/Adverse Reactions: Use with caution in the patients with history of asthma. Anaphylactic reactions in sensitive patients have occurred.

Precautions/Special Considerations: Baby ASA is heat and light sensitive. The odor of acetic acid (vinegar-like smell) indicates degradation of product.

Atropine

Generic Name: Atropine Sulfate

Class: Anticholinergic agent, organophosphate antidote, antispasmodic agent, antiarrhythmic.

Mechanism of Action: Blocks the action of acetylcholine as a competitive antagonist at muscarinic receptors sites in smooth muscle, secretory glands, and the Central Nervous System (CNS). It works by blocking parasympathetic response and allowing sympathetic response to take over, resulting in an increase in cardiac output and the drying of lung secretions.

Clinical signs/symptoms:
- Increased heart rate (positive chronotropic effect), increased conduction velocity; increased force of contraction (slight); increased cardiac output.
- Decreased mucus production; increased bronchial smooth muscle relaxation (bronchodilation).
- Decreased Gastrointestinal (GI) secretion and motility; decreased urinary bladder tone.
- Mydriasis (pupillary dilation).
- Decreased sweat production.

Indication:
- Symptomatic bradycardia.
- Acetylcholinesterase inhibitor poisoning (organophosphate, carbamate cholinergic poisoning).

Contraindications/Warnings:
- Hypersensitivity to Belladonna alkaloids
- Mobitz II and 3rd degree heart blocks
- Tachycardia
- Myocardial ischemia

Routes of Administration: IV/IO bolus.

Onset/Duration: Onset is rapid; duration is 2-6 hours.

Side Effects/Adverse Reactions: Excessive doses of atropine can cause delirium, tachycardia, coma, flushed and hot skin, ataxia and blurred vision. Paradoxical bradycardia may result from doses less than 0.5 mg. Side effects may include palpitations, dysrhythmias, headache, dizziness, nausea and vomiting.

Drug Interactions: Use with other anticholinergic may increase effects of vagal blockade. Atropine may be enhanced by antihistamines and procainamide

Calcium Chloride

Generic Name: Calcium Chloride.

Class: Electrolyte.

Mechanism of Action: Calcium is an electrolyte essential for neuromuscular function, cardiac contractility, and blood coagulation. When administered, calcium increases the cardiac contractile state and is useful in reversing cardiac arrhythmias due to hyperkalemia (often associated with renal dialysis patients).

Indication: Calcium is indicated for hyperkalemia, hypocalcemia, and calcium channel blocker overdose. Also to be administered for unwitnessed arrest or cardiac arrest involving dialysis or chronic renal failure patients.

Contraindications/Warnings: Calcium is contraindicated in ventricular fibrillation, digitalis toxicity, and hypercalcemia.

Routes of Administration:
- IV/IO bolus
- IV/IO infusion

Onset/Duration: Onset occurs within 5 – 15 minutes; duration is related to dose (may be up to 4 hours).

Side Effects/Adverse Reactions: Calcium is a vascular irritant and is necrotic with extravasation.

Drug Interactions: All drugs – flush line before and after administration.

Precautions/Special Considerations: Rapid injection may result in bradycardia.

Dextrose

Generic name: Dextrose

Class: Carbohydrate, hyperglycemic

Mechanism of Action: Dextrose is a carbohydrate, d-glucose, a six-carbon sugar. Reverses CNS effects of hypoglycemia by rapidly increasing serum glucose levels.

Indication(s): Signs and symptoms of hypoglycemia with confirmed blood glucose level less than 60 mg/dl.

Contraindications/Warnings: Dextrose is contraindicated in intracranial hemorrhage, increased intracranial pressure, and known or suspected cerebral vascular accident in the absence of hypoglycemia.

Routes of Administration:
- $D_{10}W$, D_{25}, D_{50} – IV/IO.
- Glucose paste – PO.

Onset/Duration: The onset of dextrose is less than one minute with duration dependent on the degree of hypoglycemia.

Side Effects/Adverse Reactions: Adverse reactions may include warmth, pain, burning, or phlebitis secondary to injection.

Precautions/Special Considerations:
- Extravasation may result in tissue necrosis.
- Dextrose may worsen hyperglycemia and may induce acute thiamine deficiency (Wernicke-Korsakoff syndrome) in malnourished patients and chronic alcoholics.

Diltiazem

Generic Name: Diltiazem Hydrochloride

Trade Name: Cardizem

Class: Calcium channel blocker

Mechanism of Action: Inhibits calcium ion influx across cell membranes during cardiac depolarization, decreases Sinoatrial (SA) and Atrioventricular (AV) node conduction and dilates coronary and peripheral arteries and arterioles. Because of its effect on vascular smooth muscle, Diltiazem decreases peripheral vascular resistance and blood pressure.

Contraindications/Warnings:
- Hypotension (less than 90 mmHg Systolic).
- Acute myocardial infarction.
- Cardiogenic shock.
- Ventricular tachycardia (VT) or wide-complex VT of unknown origin.
- Second or third-degree AV block.
- Wolff-Parkinson-White (WPW) syndrome.
- Sick sinus syndrome.
- Beta blocker use.

Routes of Administration:
- IV/IO bolus
- IV/IO infusion.

Onset/Duration: Onset is within 2 to 5 minutes; duration is approximately 3 hours.

Side Effects/Adverse Reactions: Hypotension, bradycardia, heart block, chest pain, asystole, nausea and vomiting, headache, fatigue, drowsiness.

Diphenhydramine

Generic Name: Diphenhydramine HCL

Trade Name: Benadryl

Class: antihistamine; anticholinergic

Mechanism of Action: Blocks cellular histamine receptors, but does not prevent histamine release; results in decreased capillary permeability and decreased vasodilation, as well as prevention of bronchospasm. Also has an anticholinergic effect.

Indication: Any patient showing signs and symptoms of an allergic reaction.

Contraindications/Warnings:
- Known hypersensitivity to diphenhydramine or drugs of similar chemical structure.
- Newborn or premature infants; nursing mothers.

Routes of Administration: IV/IO/IM.

Onset/Duration: Onset within 5-10 minutes; duration 3-6 hours. Peak effect achieved within an hour.

Side Effects/Adverse Reactions: Adverse reactions may include drowsiness, thickening of bronchial secretions, hypotension, tachycardia, bradycardia, and dry mouth.

Drug Interactions: Monoamine Oxidase **(**MOA) inhibitors may prolong and potentiate diphenhydramine.

Dopamine

Generic Name: Dopamine

Trade Name: Intropin

Class: Sympathomimetic

Mechanism of Action: Dopamine acts on alpha 1 and beta 1 adrenergic receptors dose-dependently. At low does, dopamine has a dopaminergic effect that results in renal, mesenteric, and cerebral vasodilation. At moderate doses, alpha and beta 1 effects result in increased cardiac contractility, cardiac output, and blood pressure. At high doses, dopamine has pure alpha effects, exhibited by peripheral vasoconstriction.

Indications:
- Dopamine is indicated for significant hypotension not secondary to hypovolemia, such as cardiogenic shock and septic shock, post fluid challenge.
- Symptomatic bradycardias.

Contraindications: Dopamine is contraindicated in tachydysrhythmias, ventricular fibrillation, hypovolemic shock or pheochromocytoma.

Routes of Administration: Intravenous/Intraosseous (IV/IO) infusion.

Onset/Duration: The onset of dopamine is extremely rapid but the duration is very brief; onset is within 2 to 4 minutes with duration of 10 – 15 minutes.

Side Effects/Adverse Reactions:
- Adverse reactions may include nausea, vomiting, tachycardia, angina pain and hypertension.
- At high doses, dopamine may cause profound vasoconstriction which may compromise blood flow to vital organ or extremities.
- Dopamine may result in increased myocardial oxygen demand and may also promote supraventricular and ventricular arrhythmias.

DuoNeb

Generic Name: Albuterol sulfate and Ipratropium bromide

Trade Name: DuoNeb

Class: Sympathomimetic, bronchodilator, anticholinergic agent

Mechanism of Action: DuoNeb is a combination of two drugs used in the treatment of respiratory distress, Albuterol and Atrovent. Ipratropium bromide (Atrovent) produces preferential dilatation of the larger central airways, in contrast to Albuterol sulfate, which affects the peripheral airways. Ipratropium also dries mucus secretions.

Indications: Bronchial asthma, reversible bronchospasm associated with chronic bronchitis and emphysema.

Contraindications/Warnings:
- Hypersensitivity to Ipratropium bromide or to Atropine and its derivatives.
- Hypersensitivity to Albuterol sulfate.
- Patients with tachycardic dysrhythmias.

Routes of Administration: Nebulized via mouth piece/mask/in-line or patient MDI.

Onset/Duration: Onset 5-15 minutes with duration of 3-4 hours. Peak effects achieved within 30 minutes to 2 hours.

Side Effects/Adverse Reactions: Palpitations, dizziness, anxiety, tremors, headache, nervousness, dry mouth, nasal congestion, tachycardia, arrhythmias, hypertension, bronchospasm, and cough.

Epinephrine

Generic Name: Epinephrine

Class: Sympathomimetic

Mechanism of Action: Epinephrine stimulates alpha and beta adrenergic receptors, causing increases in the systemic vascular resistance, systemic arterial pressure, heart rate, contractile state, myocardial oxygen requirement, and cardiac automaticity.

Indications(s): Epinephrine is contraindicated in known hypersensitivity, hypovolemic shock, and hypertension.

Routes of Administration: IV/IO/IM; IV/IO infusion.

Onset/Duration: The onset is 1-2 minutes via IV and 5-10 minutes IM. The duration is 5-10 minutes.

Side Effects/Adverse Reactions: Adverse reactions may include headache, nausea, tachycardia, restlessness, weakness, dysrhythmias, hypertension, and angina.

Fentanyl

Generic Name: Fentanyl Citrate

Class: Opioid analgesic, Schedule II controlled substance

Mechanism of Action: Fentanyl Citrate acts primarily through interaction with opioid mu-receptors located in the brain, spinal cord and smooth muscle. The primary site of therapeutic action is the central nervous system causing analgesia and euphoria.

Indication(s):
- Management of moderate to severe pain**.**
- Drug assisted intubation.

Contraindications/Warnings: Fentanyl Citrate is contraindicated in known hypersensitivity, hypovolemia, hypotension and head injury.

Routes of Administration: IV/IO/Intranasal.

Onset/Duration: The onset of extremely rapid (within seconds) following intravenous administration. Duration of 30-60 minutes.

Side Effects/Adverse Reactions: Adverse reactions may include bradycardia, restless ness, circulatory depression, respiratory depression, and euphoria.

Drug Interactions: Fentanyl Citrate may be potentiated by central nervous system (CNS) depressants.

Haloperidol

Generic Name: Haloperidol

Trade Name(s): Haldol

Class: Antipsychotic, first-generation

Mechanism of action: The mechanism of action of haloperidol is unknown. Haloperidol is believed to act as a dopamine antagonist, correcting an imbalance of that neurotransmitter in the brain. Haloperidol is used frequently to manage acute psychosis and to control non-psychotic agitation.

Indication(s): Haloperidol is indicated for acute psychosis and combativeness.

Contraindications/Warnings: Seizure disorders

Routes of Administration: IV/IO/IM

Onset/Duration: The onset of action with an IM injection is within 5 minutes; however, peak effectiveness may not be reached until 15-45 minutes. Duration is typically 4 to 8 hours.

Side Effects/Adverse Reactions: Adverse reactions may include physical and mental impairment, dystonic reactions, akathisia, dry mouth, blurred vision and orthostatic hypotension.

Precautions Special Considerations: Haloperidol reduces the convulsion threshold and anticonvulsant medications decrease the effects of haloperidol. Geriatric patients should receive a decreased dose to reduce the possibility of side effects due to decreased liver function.

Hydralazine

Generic Name: Hydralazine

Trade Name(s): Apresoline

Class: Antihypertensive (vasodilator)

Mechanism of Action: is a direct-acting vasodilator that acts primarily on arteries and arterioles, decreasing peripheral resistance. This lowers blood pressure and decreases afterload.

Indication(s): Symptomatic hypertensive patients with a Mean Arterial Pressure (MAP) greater than 120 in which a reduction in blood pressure is required.

Contraindications/Warnings: Hydralazine is contraindicated in-patients who have a known sensitivity to the drug, have coronary artery disease (CAD) or are suffering from a stroke.

Routes of Administration: IV/IO bolus

Onset/Duration: 5-20 minutes onset with peak effect within 30 minutes. Duration of 2-6 hours.

Side Effects/Adverse Reactions: Headache, nausea, vomiting, reflex tachycardia, palpitations, and diarrhea.

Ibuprofen

Generic Name: Ibuprofen

Trade Name: Advil, Motrin, Nurofen

Class: NSAID; non-narcotic analgesic; antipyretic

Mechanism of Action: Like other non-steroidal anti-inflammatory drugs (NSAIDs) it works by inhibiting the synthesis of prostaglandins, which are fat-like molecules that are derived from the omega-6 fatty acid arachidonic acid, which is involved in mediating inflammation (swelling), pain and fever. It achieves this effect on prostaglandin synthesis by inhibiting cyclooxygenase, an enzyme that is present in various tissues of the body.

Indication(s):
- Used for fevers > 100.2 Fahrenheit (38 Celsius) to prevent increase of fever and to lower body temperature.
- Anti-inflammatory agent.

Contraindications/Warnings:
- Sensitivity to aspirin or other NSAIDs
- Active peptic ulcer
- Bleeding abnormalities

Routes of Administration: PO

Onset/Duration: Onset within 30 minutes with duration of 5 hours. Peak effect achieved within 1.5 hours.

Side Effects/Adverse Reactions: Nausea or vomiting, abdominal pain, drowsiness, dizziness, headache, tinnitus and nystagmus.

Drug Interactions: Alcohol use/abuse, heavy NSAID use.

Ipratropium Bromide

Generic Name: Ipratropium Bromide

Trade Name: Atrovent

Class: Anticholinergic, bronchodilator

Mechanism of Action: An anticholinergic (parasympatholytic) agent that causes bronchodilation and dries respiratory tract secretions by antagonizing the action of acetylcholine, the transmitter released from the vagal nerve.

Indications(s): Bronchial asthma, reversible bronchospasm associated with chronic bronchitis and emphysema.

Contraindications/Warnings: Hypersensitivity to Ipratropium Bromide or to atropine and its derivatives.

Dosage: Atrovent is delivered as part of a DuoNeb breathing treatment, along with Albuterol Sulfate (See DuoNeb Drug Profile).

Routes of Administration:
- Nebulized, mouth piece or in-line
- Inhaler (patient's own)

Onset/Duration: Onset of 5-15 minutes with duration of 4-8 hours. Peak effects achieved within 1-2 hours.

Side Effects/Adverse Reactions: Palpitations, dizziness, anxiety, tremors, headache, nervousness, dry mouth.

Ketamine

Generic Name: Ketamine

Trade Name(s): Ketanest, Ketaset, Ketalar

Class: Dissociative anesthetic, hallucinogen, psychotomimetic

Mechanism of Action: Ketamine acts primarily as an antagonist of the N-methyl-D-aspartate (NMDA) receptor, which produces anesthetic, amnesic, dissociative and hallucinogenic effects, while dopamine reuptake inhibition produces euphoria.

Indication(s):
- Combative patient where the safety of patient and/or providers is of substantial concern.
- Drug assisted intubation.

Contraindications/Warnings: Ketamine is contraindicated in those in whom a significant elevation of blood pressure would constitute a serious hazard and in those who have shown hypersensitivity to the drug.

Pediatric: Contact Medical Control for orders.

Routes of Administration: IV/IO/IM bolus

Onset/Duration: Onset is 1-5 minutes after administration. Duration of 10-15 minutes.

Side Effects/Adverse Reactions: Laryngospasm, apnea, nausea and vomiting, nystagmus, enhanced muscle tone that may resemble seizures, transient hypertension.

Labetalol

Generic Name: Labetalol hydrochloride

Trade Name: Normodyne, Trandate

Class: Sympathetic blocker; alpha-adrenergic blocker, beta-adrenergic blocker.

Mechanism of Action: Labetalol combines both selective, competitive alpha 1-adrenerigc blocking and nonselective, competitive beta-adrenergic blocking activity in a single substance. These actions decrease blood pressure without reflex tachycardia and without a significant reduction in heart rate.

Indication: Control of blood pressure in severe hypertension.

Contraindications/Warnings:
- Bronchial asthma
- Overt cardiac failure
- Greater than first degree heart block
- Cardiogenic shock
- Severe bradycardia

Routes of Administration: IV/IO bolus.

Onset/Duration: Onset within 5 minutes, duration of 3-6 hours.

Side Effects/Adverse Reactions: Hypotension, ventricular dysrhythmia, syncope, bradycardia, heart block, dizziness, tingling of the scalp/skin, numbness, vertigo, wheezing, bronchospasm, nausea / vomiting.

Levophed

Generic Name: Norepinephrine Bitartrate

Trade Name: Levophed

Class: Peripheral vasoconstrictor and inotropic agent

Mechanism of Action: Norepinephrine acts on the a_1 and a_2 adrenergic receptors causing peripheral vasoconstriction and an increase in systemic blood pressure. Weak beta stimulation may also increase heart rate and cause mild bronchodilation.

Indication(s):
Acute hypotensive state related to anaphylaxis, sepsis, cardiogenic shock, or neurogenic shock that is refractory to fluid resuscitation.

Contraindications:
- Hypovolemia
- Hypertension

Routes of Administration: IV/IO infusion.

Onset/Duration: Onset of action within 5 minutes after IV/IO infusion initiated. Rapid metabolism, requiring ongoing IV/IO infusion to maintain clinical effects.

Side Effects/Adverse Reactions: At higher doses, side effects may include headache, palpitations, tachycardia, chest pain, and eventual hypertension. Bradycardia can result reflexively from an increase in blood pressure.

Lidocaine

Generic Name: Lidocaine HCL

Class: Antiarrhythmic, local anesthetic

Mechanism of Action: Lidocaine suppresses ventricular ectopy and elevates the ventricular tachycardia (VT) and ventricular fibrillation (VF) threshold by decreasing diastolic depolarization.

Indications:
- Suppression of ventricular arrhythmias and prophylaxis against recurrence after conversion from ventricular tachycardia or ventricular fibrillation in patients who have a known allergy to Amiodarone. **With Medical Control orders only.**
- Pain management after IO insertion in conscious patients.

Contraindications/Warnings:
- Known hypersensitivity/allergy
- Patients with conduction disturbances (second or third degree block)
- Stokes-Adams syndrome

Routes of Administration:
- IV/IO bolus
- IV/IO infusion

Onset/Duration: The onset of lidocaine is extremely rapid (within minutes) following intravenous administration. The duration is 2-4 hours.

Side Effects/Adverse Reactions: Adverse reactions may include lightheadedness, altered mental status, hypotension and bradycardia.

Magnesium Sulfate

Generic Name: Magnesium Sulfate

Class: Electrolyte, tocolytic, central nervous system (CNS) depressant, anticonvulsant.

Mechanism of Action: Magnesium is an important cofactor for enzymatic reactions and plays an important role in neurochemical transmission and muscular excitability. Magnesium prevents or controls convulsions by blocking neuromuscular transmission and decreasing the amount of acetylcholine liberated at the end plate by the motor nerve impulse. Magnesium is said to have a depressant effect on the central nervous system but it does not affect the mother, fetus or neonate when used as directed in eclampsia and pre-eclampsia. Magnesium acts peripherally to produce vasodilation.

Indication: Magnesium sulfate is indicated for seizures associated with eclampsia, as a bronchodilator, for replacement of magnesium in hypomagnesemia and for the treatment of Torsades de Pointes as well as refractory ventricular tachycardia/ventricular fibrillation (VT/VF).

Contraindications/Warnings:
- Hypermagnesemia
- Patients with impaired renal function and pre-existing heart blocks

Routes of Administration:
- IV/IO bolus
- IV/IO infusion

Onset/Duration: The onset of action is 3 to 5 minutes following intravenous administration with duration of 30 minutes.

Side Effects/Adverse Reactions: Flushing, sweating, hypotension, depression of reflexes, flaccid paralysis, hypothermia, circulatory collapse, depression of cardiac function and central nervous system depression. These symptoms can precede fatal paralysis.

Midazolam

Generic Name: Midazolam

Trade Name: Versed

Class: Benzodiazapine; general anesthetic.

Mechanism of Action: Midazolam is a shorter-acting benzodiazepine central nervous system depressant that is useful for sedation, hypnosis, alleviation of anxiety, muscle relaxation and anticonvulsant activity. Has an anterograde amnesia effect.

Indication(s):
- Sedation/pain management
- Drug assisted intubation
- Seizures

Contraindications/Warnings: Midazolam is contraindicated in known hypersensitivity, glaucoma and coma.

Routes of Administration:
- IV/IO bolus
- IN/IM

Onset/Duration: The onset of action is 3 to 5 minutes following intravenous administration and 15 minutes following intramuscular injection with a peak effect ranging from 30 to 60 minutes and duration of 2-6 hours.

Side Effects/Adverse Reactions: Adverse reactions may include respiratory depression, lightheadedness, motor impairment, ataxia, impairment of mental and psychomotor function, confusion slurred speech and amnesia.

Narcan

Generic Name: Naloxone hydrochloride

Trade Name: Narcan

Class: Synthetic opioid antagonist

Mechanism of Action: Naloxone is a competitive narcotic antagonist, which reverses all effects of opioids (i.e. morphine), such as respiratory depression and central and peripheral nervous system effects.

Indication(s): Naloxone is indicated for the complete or partial reversal of opiate narcotic depression and respiratory depression secondary to opiate narcotics or related drugs. Examples of opiate narcotics include:

- Morphine
- Heroin
- Hydromorphone (Dilaudid)
- Codeine
- Dextropropoxyphene (Darvon, Darvocet)
- Meperidine (Demerol)
- Methadone
- Nalbuphone (Nubian)
- Pentazocine (Talwin)
- Fentanyl
- Oxycodone (Percodan, Percocet)
- Lomotil

Contraindications/Warnings:

- Hypersensitivity
- Use with extreme caution in narcotic-dependent patients who may experience withdrawal syndrome (including neonates of narcoticdependent mothers).

Routes of Administration: IV/IO/IN

Onset/Duration: The onset of action is within a few minutes following an intravenous dose. The duration of action is approximately 30-60 minutes.

Side Effects/Adverse Reactions: Adverse reactions may include tachycardia, hypertension, dysrhythmias, nausea, vomiting and diaphoresis.

Nitroglycerin

Generic Name: Nitroglycerin

Class: Vasodilator, nitrate

Mechanism of Action: Nitroglycerin is a direct vasodilator, which acts principally on the venous system, although it also produces direct coronary artery vasodilation as a result. There is a decrease in venous return, which decreases the workload on the heart and thus, decreases myocardial oxygen demand.

Indication: Chest pain or discomfort associated with suspected acute myocardial infarct (AMI) or angina pectoris.

Contraindications/Warnings:
- Patients who have taken medication for erectile dysfunction in the past 24 hours.
- Systolic blood pressure(SBP) <90
- Patients who have taken pulmonary hypertension medications in the past 24 hours.
- Inferior myocardial infarction (MI)
- Significant headache

Routes of Administration: Sublingual

Onset/Duration: Pain relief occurs within one to two minutes and therapeutic effects can last up to 30 minutes.

Side Effects/Adverse Reactions: Headache, dizziness, flushing, nausea and vomiting, hypotension, reflex tachycardia.

Oxygen

Generic Name: Oxygen

Class: Oxygen is a naturally occurring gas.

Mechanism of Action: Oxygen is present in room air at a concentration of approximately 21%. Providing supplemental oxygen elevates oxygen tension and increases oxygen content in the blood, thus improving tissue oxygenation, promoting aerobic metabolism and reversing hypoxemia.

Indication: Oxygen is indicated for carbon monoxide poisoning, suspected hypoxemia of any etiology, cardiopulmonary arrest and trauma.

Contraindications/Warnings: None in a prehospital setting.

Routes of Administration: Nasal cannula, nebulizer, non-rebreather mask or bag-valve mask.

Onset/Duration: The onset of action occurs within seconds and the duration is depended upon constant provision.

Side Effects/Adverse Reactions: Decreased levels of consciousness and respiratory depression may result from administering high levels of oxygen to patients with chronic obstructive pulmonary disease (COPD) and chronic carbon dioxide retention.

Oxytocin

Generic Name: Oxytocin

Trade Name: Pitocin

Class: Pituitary hormone, polypeptide, uterine stimulant

Mechanism of Action: Binds to oxytocin receptor sites on surface of uterine smooth muscles and increases force and frequency of uterine contractions.

Indication: Postpartum hemorrhage due to uterine atony.

Contraindications/Warnings: hypersensitivity

Routes of Administration:
- IM
- IO/IV infusion

Onset/Duration: The onset of action occurs within seconds with a duration of 1 hour after medication is discontinued.

Side Effects/Adverse Reactions: Shock, tachycardia, dysrhythmias, nausea and vomiting. When given prior to delivery can cause uterine rupture, uterine spasm, lacerations and fetal damage.

Racemic Epinephrine

Generic Name: Racemic Epinephrine

Class: Sympathomimetic

Mechanism of Action:
- Alpha receptor stimulation causes vasoconstriction, which results in reduction of mucosal and submucosal edema.
- Beta receptor stimulation bronchodilation, reduction in airway smooth muscle spasm

Indication(s):
- Severe anaphylaxis
- Croup

Contraindications/Warnings:
- Hypersensitivity
- Epiglottitis
- Hypertension

Routes of Administration: Nebulized

Onset/Duration: The onset of action occurs within 5 minutes with a duration of 1 to 3 hours.

Side Effects/Adverse Reactions: Tachycardia, dysrhythmias, headache, nausea, palpitations, angina

Sodium Bicarbonate

Generic Name: Sodium Bicarbonate

Class: Buffer, alkalinizing agent antacid

Mechanism of Action: An alkalizing agent used to buffer acids present in the body during and after severe hypoxia. Bicarbonate combines with excess acids (usually lactic acid) present in the body to form a weak, volatile acid. This acid is broken down into carbon dioxide (CO_2) and water (H_2O). Sodium bicarbonate is effective at alkalization only when administered with adequate ventilation and oxygenation.

Indication:
- Metabolic acidosis due to tricyclic antidepressant overdose.
- Crush injuries

Contraindications/Warnings: Congestive heart failure or alkalotic states.

Routes of Administration: IV/IO bolus

Onset/Duration: The onset is 2-10 minutes with a duration of 30-60 minutes.

Side Effects/Adverse Reactions: Metabolic alkalosis, hypernatremia, cerebral acidosis, sodium and H_2O retention.

Drug Interactions: Sodium bicarbonate may precipitate with calcium, so flush between them with saline. It may also deactivate vasopressors and may increase the half-life of some medications.

Sodium Chloride 0.9%

Generic Name: Sodium chloride 0.9%

Class: Isotonic crystalloid solution

Mechanism of Action: Sodium chloride 0.9% (NaCl) is an isotonic crystalloid solution used for fluid replacement. Normal saline contains 154 mEq/L of sodium ions and 154 mEq/L of chloride ions.

Indication(s):
- Dehydration
- Hypotension

Contraindications/Warnings: Hypersensitivity, fluid overload. Use with caution in congestive heart failure and dialysis patients.

Routes of Administration:
- Intravenous/Intraosseous (IV/IO) bolus
- Nebulized
- IV/IO infusion

Onset/Duration: The onset of action occurs within minutes for IV administration.

Side Effects/Adverse Reactions: Excessive volume replacement may lead to heart failure.

Solu-Medrol

Generic Name: Methylprednisolone

Trade Name: Solu-Medrol

Class: Glucocorticoid, corticosteroid

Mechanism of Action: Methylprednisolone is a potent anti-inflammatory synthetic steroid that suppresses acute and chronic inflammation, potentiates vascular smooth muscle relaxation and may alter airway hyperactivity.

Indication: Methylprednisolone is indicated for control of severe allergic reactions, asthma attacks and acute COPD exacerbation.

Contraindications/Warnings: Hypersensitivity

Routes of Administration: IV/IO bolus

Onset/Duration: The onset of action is 1 to 2 hours following intravenous administration with a peak effect and duration ranging from 8 to 24 hours.

Side Effects/Adverse Reactions: Adverse reactions may include headache, hypertension, sodium and water retention, hypokalemia, alkalosis, gastritis and steroid-induced psychosis.

Toradol

Generic Name: Ketorolac

Trade Name(s): Toradol

Class: Non-steroidal- anti-inflammatory drug (NSAID); analgesic; anti-pyretic

Mechanism of Action: The primary mechanism of action responsible for ketorlac's anti-inflammatory, antipyretic analgesic effects is the inhibition of prostaglandin synthesis by competitive blocking of the enzyme cyclooxygenase (COX). Ketorolac is a non-selective COX inhibitor.

Indication(s): Short-term management of moderate to severe pain caused by kidney stones, non-traumatic back pain or other painful procedures.

Contraindications/Warnings: Toradol is contraindicated in patients who have decreased kidney function, are pregnant, have recent/current gastrointestinal (GI) bleeding, peptic ulcers, are currently taking blood thinners, have shown hypersensitivity to NSAIDS, or are suffering from acute stroke, trauma, or other severe traumatic injuries.

Routes of Administration: IV/IO/IM bolus.

Onset/Duration: Onset of 30 minutes with peak effects achieved after 45-60 minutes. Half-life of the drug 4-6 hours.

Side Effects/Adverse Reactions: Burning or pain at the injection site, edema, nausea, hypertension, rash/ itching, GI distress, drowsiness.

Tranexamic Acid (TXA)

Generic Name: Tranexamic Acid (TXA)

Brand Name: Cyklokapron

Class: Anti-fibrinolytic

Mechanism of Action: Promotes clot formation in the setting of massive hemorrhage. TXA is a synthetic lysine analog that competitively inhibits the activation of plasminogen to plasmin resulting in inhibition of fibrinolysis; it also inhibits the proteolytic activity of plasmin.

Indication:
- Severe uncontrolled bleeding due to acute trauma (less than 3 hours).
- Hypotension (SBP < 90 mmHg) and/or tachycardia (>110), or declining BP and sustained tachycardia with acute traumatic injury (less than 3 hours).

Contraindications/Warnings:
- Acute CVA
- Acute Pulmonary Embolism
- Acute Myocardial Infarction
- Non-acute injury (over 3 hours)

Dosage:
Adult Dosage:
- 1 gram in 100 mL normal saline over 10 minutes.

Pediatric Dosage:
- Not recommended for use in children < 12 years of age.

Routes of Administration:
- IV/IO infusion

Onset/Duration: onset of action 5-15 minutes and a duration of 3 hours.

Side Effects/Adverse Reactions: Hypotension (with rapid IV injection), giddiness, allergic dermatitis, diarrhea, nausea, vomiting, blurred vision.

References:
- Neeki, Michael M. et al. “Efficacy and Safety of Tranexamic Acid in Prehospital Traumatic Hemorrhagic Shock: Outcomes of the Cal-PAT Study.” Western Journal of Emergency Medicine 18.4 (2017): 673–683. PMC. Web. 5 Feb. 2018.

Policies Section

- Ambulance Check and Cleaning
- Ambulance Involved Accident
- Ambulance Service Shift Duties
- Ambulance Service Vehicle Operations
- Body Armor
- Cell Phone Usage
- Communication Utilization and Security
- Controlled Drug Security and Restock
- Correct Destination
- Direct Admit Transports
- EMS Supervisor Uniform
- Incident Scene Times
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- Mass Casualty Incidents
- Medic Unit Response and Return to Service Standards
- Medication Outdate Policy
- Medication Rights
- Non-Discrimination of Patients
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- Report Writing
- Reporting for Duty
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- Schedule
- Staff Uniform
- Stress Identification and Employee Resources
- Students and Observers
- Tobacco Use Policy
- Transfer of Patient Care
- Work Injuries

Title: Ambulance Service -- Operations -- Ambulance Check and Cleaning Policy -- Policy

Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** 05/18/2018
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Policy Statement

a. To ensure all MU Health Care ambulances are detail checked and cleaned on a daily and monthly basis.

II. Definitions

a. **Monthly Detailed Check:** The check performed once a month by staff to assure all items and equipment on a truck are present and in good working order.
b. **Daily Detailed Check:** The check performed once a shift by staff to assure certain high volume items and equipment are present and in good working order. This includes a basic mechanical check.
c. **Detailed Ambulance Checklist**: List of all items and equipment that should be present on an ambulance. Includes item name, number of each item to be present and the location of each item.
d. **Daily Check Log**: List of items that need to be confirmed as checked daily by each oncoming crew at shift change.
e. **Detailed Cleaning:** Thorough cleaning of the inside and outside of the truck, including both the patient care and cab areas. Includes, but is not limited to, cleaning and disinfecting all horizontal and vertical surfaces including shelves, doors, and handles, as well as the ambulance cot.
f. **Medic Unit:** A staffed ambulance as defined by its radio designator, primary base, and primary response area (e.g. Medic 211, Medic 221, etc.).
g. **Truck:** The actual ambulance used by the medic unit to provide service. Trucks are identified by either their license plate number or by their date of purchase number.
h. **Ambulance Station:** Physical location in which a unit is primarily based (Ashland, University Hospital, A.P. Green, etc.).

III. Process/Content

a. **Policy:**

i. All MU Health Care ambulances are to be checked both daily and monthly to assure that all necessary equipment and items are present and in good working order.
ii. Ambulances will be cleaned inside and out daily, as well as when and as needed to maintain cleanliness standards.

b. **Procedure**:

i. Daily Check Procedure

1. Staff members should receive and leave a clean and operationally ready vehicle. To achieve this, a daily check will be performed by both crew members no later than one hour after the start of their assigned shift.
2. Using the detailed truck checklist as a standard, staff members are to complete the check of the vehicle, document any major discrepancies, and fill out the daily vehicle/equipment check log.
3. Any missing items should be replaced as soon as reasonably possible. Unobtainable items should be reported to the on duty EMS supervisor for them to obtain, and if not restocked by the next shift change, should be reported to the oncoming crew.
4. During the daily check, staff members will also perform a basic mechanical check, including tire pressures, oil level, coolant level, and brake fluid level. Staff will also start the ambulance and assure it is functional.
5. Staff members will ensure that each vehicle is fueled. Any vehicle should be refueled when at or below ¾ level as soon as reasonably possible.
6. Vehicles are to be properly shored with power running to any items requiring electrical power, unless weather conditions do not allow it. Supervisory staff will determine when ambulances are not to be shored.
7. Any time the narcotic tags are changed, the change in numbers will be recorded in the daily vehicle/equipment check log.

ii. Ambulance Cleanliness:

1. Exteriors of the ambulances will be washed daily, as well as when or as needed to maintain cleanliness standards. Crews may choose to use either the University Garage wash bay or the cleaning supplies kept at their base.
2. Interiors of the ambulances will be cleaned and disinfected after each call for service. This may include all horizontal and vertical

surfaces including shelves, doors, and handles, as well as the ambulance cot.

3. Prior to shift change the ambulance floor will be swept and mopped as needed.
4. Trashcans will be emptied when full or prior to shift change.
5. Cab sections of ambulances will be emptied of personal items and trash by the off-going crew at shift change.

iii. Monthly Detailed Check Procedure:

1. At either the end or beginning of each month, each ambulance will undergo a detailed check. This check is to assure that all necessary equipment and medications are present and ready for use.
2. Supervisory staff will determine when the monthly detailed check is to be completed.
3. Detailed ambulance checklist forms will be printed out and filled in completely. All stock and medications will be checked to assure they are present and not out of date, including the items in the various equipment bags as well.
4. When the monthly detailed check is completed, the completed forms and any outdated equipment/medications will be given to the on duty supervisor.
5. Any missing items should be replaced as soon as reasonably possible. Unobtainable items should be reported to the on duty EMS supervisor for them to obtain, and if not restocked by the next shift change, should be reported to the oncoming crew.

iv. Discrepancies:

1. If discrepancies are found in vehicle stock or a condition exists that would prevent the oncoming crew from being operationally ready, those discrepancies should be reported. Both members of the oncoming crew should be ready to confirm the missing items.
2. Mechanical discrepancies should be written in the vehicle maintenance log and reported immediately to the on duty supervisor. Issues should be described in detail, and if able, the off-going crew should be consulted to establish the source of the mechanical failure.
3. Staff members will be expected to not be in violation of this policy no more than twice per month, and not more than two

months in a row. Violation equaling three times in a month or four times in two months will be considered habitual.

4. Habitual failure to meet these standards will result in escalating disciplinary action as necessary.

v. **Reasonable Exceptions**:

1. Recognizing the unpredictable nature of EMS, good judgment should be used when applying this policy. Crews that have performed an excessive number of calls for service, a late call for service, or multiple high-acuity calls should be excused or judged by a relaxed standard if possible.
2. Relaxed standards for truck cleanliness should also be used when inclement weather prevents the truck from being cleaned properly.
3. The on duty EMS supervisor will determine what a relaxed standard means and whether it is appropriate to apply it based on each individual situation.

IV. Attachments

a. Not applicable.

V. References, Regulatory References, Related Documents, or Links

a. Not applicable.

Title: Ambulance Service -- Ambulance Involved Accident -- Policy

MU Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** Not Approved Yet
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Policy Statement

a. To clearly define the actions to be taken in the event of a University of Missouri Healthcare (MUHC) Ambulance accident.

II. Definitions

a. **Minor Accident:** Ambulance involved accident without injuries to crew or others and the ambulance is fully operational.
b. **Major Accident:** Ambulance involved accident with or without injuries to crew or others and an ambulance that is not operation worthy.
c. **Injury Accident:** Ambulance involved accident with injuries to the crew or others involved.

III. Process/Content

a. **Policy:**
   i. In the event a MUHC ambulance is involved in an accident, the on duty/on call ambulance supervisor will be notified as soon as reasonably possible.
   ii. A MUHC ambulance accident report form will be filled out in its entirety and in a timely manner. All information must be present including the other involved drivers insurance information. The deadline for this form to be filled out and turned in will be at the completion of the crews shift.

b. **Procedure:**
   i. Immediately following a MUHC Ambulance accident, the crew involved will ascertain if they themselves are injured and then determine if anyone else involved may be injured.
   ii. If an accident should occur during normal driving procedures, Joint Communications will be notified of the accident as soon as possible and a size up should be given. Appropriate resources should be requested at

this time by the crew involved. The crew should stay at the accident scene until advised otherwise. The on duty/on call Ambulance Supervisor should be contacted as soon as possible and advised of the situation.

iii. If responding to a call and a minor accident occurs, the crew may continue their response to the scene and advise Joint Communications of the incident location and a brief description of the involved vehicle or vehicles. The on duty/on call Ambulance Supervisor should be contacted and advised of the situation as soon as possible.

iv. If responding to a call and a major or injury accident occurs, the crew is to advise Joint Communications of the incident location, number of injuries and appropriate resources needed. Joint Communications is also to be advised to dispatch the next due medic unit to the existing call in place of the involved medic unit. The on duty/on call Ambulance Supervisor is to be contacted. In the event a crew member is injured, the crew member is to seek the appropriate medical attention and a Report of Injury Form is to be filled out in its entirety and turned in to the on duty/on call Ambulance Supervisor. This form must be filled out no later than 24 hours after the incident occurs. For all acute injuries, the crew member is to be seen at the MUHC Emergency Room and the **Report of Injury Form** as well as a copy of the discharge instructions and an **Accident Report Form** are to be turned in to the on duty/on call Ambulance Supervisor.

IV. Attachments

a. Not applicable.

V. References, Regulatory References, Related Documents, or Link

a. Not applicable.

Title: Ambulance Service -- Policies -- Ambulance Service Shift Duties -- Policy

MU Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** 05/18/2018
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Policy Statement

a. To ensure all MU Health Care ambulance quarters and crew rooms are kept clean and stocked with needed supplies.

II. Definitions

a. **Ambulance Station**: Physical location in which a medic unit is primarily based (Ashland, University Hospital, A.P. Green, etc.).
b. **Assigned Shift**: Work period assigned to a staff member.

III. Process/Content

a. **Policy**:
   i. Ambulance quarters and crew rooms are to be kept clean and stocked with needed supplies. Each crew will be responsible for cleaning duties during their assigned work shift.
   ii. Failure to keep each station clean using the below guidelines will result in disciplinary action.
   iii. Personal belongings should not be left unattended or at a base past a scheduled shift.
b. **Procedure**:
   i. University Hospital (M211, WC van, M212)
      1. Hospital Facilities custodial staff are responsible for emptying trashcans and mopping/vacuuming floors.
      2. Staff members are responsible for removing any dirty linens and trash from around work stations.
      3. Dirty countertops or surfaces should be cleaned with disinfectant or cleaner.
      4. Full linen hamper bags are to be brought to the University ER soiled linens room for disposal.
      5. Coffee pots and microwave ovens are to be cleaned when dirty.

6. Refrigerators are to be cleaned of perishable food items at the end of each shift. Any such items left can be thrown away as needed by oncoming crews.
7. Dirty patient care items/equipment (Medication pumps, ventilators, etc.) are not to be left in crew quarters without being cleaned first.
8. The decontamination room is to be checked <u>at least</u> twice a shift, both after and prior to shift change.
    a. Backboards, backboard straps, patient movement tarps, and any other miscellaneous equipment all need to be cleaned using disinfectant cleaner and placed to dry.
    b. Full linen hamper bags are to be brought to the University ER soiled linens room for disposal.
    c. Dried and cleaned backboards, backboard straps, patient movement tarps, and other miscellaneous equipment all need to be put in the ER breezeway for pickup by out of county EMS crews.
    d. Full sharps containers are to be taken to the ER soiled linens room for disposal.

ii. A.P. Green (M221, M222)

1. Campus Facilities contracted custodial staff are responsible for supplying paper towels and toilet paper.
2. Staff members are responsible for removing any dirty linens and trash from around work stations and other living quarters.
3. Dirty countertops or surfaces should be cleaned with disinfectant or cleaner.
4. Full linen hamper bags are to be brought to the University ER soiled linens room for disposal.
5. Carpeted floors are to be vacuumed daily as needed.
6. Non-carpeted floors are to be swept and mopped as needed.
7. Food preparation areas are to be kept clean and free of debris.
8. Microwave, coffee pots, and oven units are to be cleaned when dirty.
9. Dishes will be cleaned and left to dry, or put away, before staff members leave at the end of their assigned shift.
10. Refrigerators are to be cleaned of perishable food items at the end of each shift. Any such items left can be thrown away as needed by oncoming crews.

11. Sleeping quarters are to have all used linens, personal belongings, and trash removed from them before staff members leave at the end of their assigned shift.
12. Bathrooms are to be cleaned daily or as needed using disinfectant cleaner. This includes toilets, sinks, or showers.
13. All trashcans are to be emptied into the large trashcan outside the living quarters at the end of every shift.

iii. Woodrail (M231)

1. Staff members are responsible for removing any dirty linens and trash from around work stations.
2. Dirty countertops or surfaces should be cleaned with disinfectant or cleaner.
3. Full linen hamper bags are to be brought to the University ER soiled linens room for disposal.
4. Non-carpeted floors are to be swept and mopped as needed.
5. Dishes will be cleaned and left to dry, or put away, before staff members leave at the end of their assigned shift.
6. Sleeping quarters are to have all used linens, personal belongings, and trash removed from them before staff members leave at the end of their assigned shift.
7. Bathrooms are to be cleaned daily or as needed using disinfectant cleaner. This includes toilets, sinks, or showers.
8. Any linens or towels used are to be removed from bathrooms at the end of every assigned shift.
9. Linens placed in the washer or dryer are not to be left for the next crew to finish or fold.
10. Refrigerators are to be cleaned of perishable food items at the end of each shift. Any such items left can be thrown away as needed by oncoming crews.
11. Garage floors are to be cleaned out by spraying water on them as needed.

iv. Ashland (M241)

1. Staff members are responsible for removing any dirty linens and trash from around work stations.
2. Dirty countertops or surfaces should be cleaned with disinfectant or cleaner.
3. Carpeted floors are to be vacuumed daily as needed.
4. Non-carpeted floors are to be swept and mopped as needed.

5. Food preparation areas are to be kept clean and free of debris.
6. Dishes will be cleaned and left to dry, or put away, before staff members leave at the end of their assigned shift.
7. Refrigerators are to be cleaned of perishable food items at the end of each shift. Any such items left can be thrown away as needed by oncoming crews.
8. Full linen hamper bags are to be brought to the University ER soiled linens room for disposal.
9. Linens placed in the washer or dryer are not to be left for the next crew to finish or fold.
10. Sleeping quarters are to have all used linens, personal belongings, and trash removed from them before staff members leave at the end of their assigned shift.
11. Bathrooms are to be cleaned daily or as needed using disinfectant cleaner. This includes toilets, sinks, or showers.
12. Any linens or towels used are to be removed from bathrooms at the end of every assigned shift.
13. On the assigned trash pickup day, the off-going crew will take the trashcan to the curb to be picked up. After pickup by sanitation workers, the oncoming crew will bring the trashcan back to the station.
14. Garage floors are to be cleaned out by spraying water on them as needed.

v. Women's and Children's Hospital (M251)

1. Hospital Facilities custodial staff are responsible for emptying trashcans and mopping/vacuuming floors.
2. Staff members are responsible for removing any dirty linens and trash from around work stations.
3. Dirty countertops or surfaces should be cleaned with disinfectant or cleaner.
4. Sleeping quarters are to have all used linens, personal belongings, and trash removed from them before staff members leave at the end of their assigned shift.
5. Coffee pots and microwave ovens are to be cleaned when dirty.
6. Refrigerators are to be cleaned of perishable food items at the end of each shift. Any such items left can be thrown away as needed by oncoming crews.

c. **Ordering Supplies**:

i. Each shift is responsible for performing an inventory of cleaning or office supplies during their shift. Needed supply requests are to be emailed or faxed to either the duty supervisor or the Transport Office.
ii. Supplies are to be gathered by the duty supervisor for either delivery or pickup by each crew.
iii. Any defective base equipment or appliances should be reported to the duty supervisor immediately so it may be replaced in a timely manner.

d. **Discrepancies**:
i. Station discrepancies or issues should be reported immediately to the on duty supervisor. Both members of the oncoming crew should be ready to confirm the discrepancy or issue in detail.
ii. Staff members will be expected to not be in violation of this policy no more than twice per month, and not more than two months in a row. Violation equaling three times in a month or four times in two months will be considered habitual.
iii. Habitual failure to meet these standards will result in escalating disciplinary action as necessary.

e. **Reasonable Exceptions**:
i. Recognizing the unpredictable nature of EMS, good judgment should be used when applying this policy. Crews that have performed an excessive number of calls for service, a late call for service, or multiple high-acuity calls should be excused or judged by a relaxed standard if possible.
ii. Relaxed standards for station cleanliness should also be used when inclement weather or a lack of supplies prevents the base from being cleaned properly. These standards may also change as needed based on changes in station location or some unforeseen circumstance.
iii. The on duty EMS supervisor will determine what a relaxed standard means and whether it is appropriate to apply it based on each individual situation.

IV. Attachments

a. Not Applicable.

V. References, Regulatory References, Related Documents, or Links

a. Not Applicable.

Title: Ambulance Service -- Policies -- Ambulance Service Vehicle Operations -- Policy

Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** Not Approved Yet
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Ch Policy Statement

a. It is the policy of the University of Missouri Health Care (MUHC) Ambulance Service that all employees, when operating vehicles under emergency or non-emergency conditions, will do so with due regard for the safety of all persons and property and in accordance with state laws regulating the operation of motor vehicles.
b. Establish the standards for Ambulance Service vehicle operations.
c. Define the manner in which Ambulance staff members will drive during an emergency.
d. Define the manner in which Ambulance staff members will drive during normal and routine operations.
e. Define the process by which Ambulance staff members may request a fire department and/or law enforcement member drive an Ambulance Service vehicle.

II. Definitions

a. Emergency Response – The manner in which a vehicle is operated when driven to intervene in an event that threatens public safety, health or welfare.
b. Non-emergency Response – The manner in which a vehicle is operated when driven during normal or routine events.
c. Due Regard – The manner in which a reasonably careful person performing similar duties under similar circumstances would act.

III. Process/Content

a. Personnel Requirements

i. All personnel will submit upon employment, a valid Missouri Class “E” driver’s license to operate a motor vehicle and will assure that a record of valid licensure is maintained with the offices of Emergency Services

through submission of all renewal licenses prior to the license's expiration date.

ii. All personnel employed by the Ambulance Service will demonstrate initial competency during their orientation to the service by completing a didactic and practical emergency vehicle driver training course approved by the Ambulance manager or supervisor(s).

iii. All personnel employed by the Ambulance Service will demonstrate ongoing competency in emergency vehicle operation on an annual basis.

iv. All personnel employed by the Ambulance Service will comply with all rules and regulations governing emergency vehicle operations, employee performance and all Missouri State Statues which pertain to emergency vehicle operations.

v. Failure to demonstrate competency and/or noncompliance with employee licensure or emergency vehicle rules and regulations will be addressed through the personnel performance evaluation and/or disciplinary process or both.

vi. Personnel must notify the Ambulance Service manager or supervisor(s) immediately upon the following circumstances:

1. A moving violation charge involving operation of any vehicle.
2. Suspension or revocation of their vehicle operator's license.

vii. Any driving infraction, vehicle accident, driver's licensure discrepancy or any other driving related issue may result in the employee retaking the initial emergency driver training course or suspension of driving privileges for a time assigned by the Ambulance Service manager or supervisor(s).

b. General Vehicle Procedures

i. Whenever possible, the vehicle should be driven by the operator who is both trained to current standards and is most familiar with the planned route and road conditions. New drivers who have been trained to current standards may be substituted as an operator for vehicle and response familiarization when deemed appropriate by a senior crew member and at the comfort of the new driver.

ii. Low forces or defensive driving practices, which focuses on gradual acceleration/deceleration and anticipating responses to avoid abrupt maneuvers should be the basis of all vehicle operations. Aggressive or "pursuit" style driving is not permitted.

iii. All personnel, patients and passengers will sit in the seats that are designed for vehicle operations and will have seat belts securely fastened when the vehicle is in motion. An exception will be permitted to

personnel or patients whose restraint will adversely impact the patient care process. These events should be minimized and seat belts replaced as soon as possible.

iv. At the beginning of each shift, operators will perform a complete detailed inspection of the vehicle ensuring all lights, audible devices, chassis, wheels, mechanical components, equipment and compartments are in working order. Any issues must be dealt with prior to vehicle operations according to standard procedures.

v. Prior to moving the vehicle, the operator or crew member will perform a 360 degree abbreviated inspection ensuring that all equipment and compartments are secure and the area is clear of hazards or persons. People and personnel found near the vehicle should be informed of the driver's intentions in moving the vehicle.

vi. Vehicle headlights will be used at all times during vehicle operations.

vii. Tobacco products, including smokeless tobacco, are prohibited in any vehicle owned and operated by the Ambulance Service.

viii. Vehicle operators will be aware of the size, weight and overall clearance of the vehicle and safely operate the vehicle under overhangs, through narrow passages, over bridges and all throughways in which the vehicle is to be maneuvered.

ix. Vehicle operators will adjust the speed of the vehicle to compensate for railroad tracks, dips, gravel roads, adverse weather, construction zones, traffic conditions and other aberrations in the throughways in which the vehicle is to be maneuvered. Adjustments in the speed and handling of the vehicle will be made by the operator in any situation that would alter the maneuverability of the vehicle in throughways including railroad tracks, uneven roads, gravel roads, etc.

x. Vehicle cornering should be made according to road surface and degree of curve with the objective of preventing sway. Posted caution speeds for corners or other roadway changes should be strictly followed.

xi. Cell phones, tablets, Global Positioning System (GPS) devices and Mobile Data Terminals (MDT) are not to be used for any reason or in any way by the driver while operating the vehicle. If the need for operation of one of these items arises and a passenger is not available to operate it, the vehicle must be stopped and placed in "park" in a safe location to allow the driver the ability to operate the item.

xii. Use of the mobile radio and siren controls are inherent to driving an emergency vehicle but use by the driver should be minimized as much as possible.

xiii. Personnel should not allow the nature or details of an incident response or your personal attitude to adversely affect your driving behavior or impair judgment.

xiv. Personnel who are ill, tired or medicated to the extent that their judgment is impaired are prohibited from driving.

xv. Driving is prohibited through or over concrete medians and curbs, grassy medians and construction or traffic barriers unless otherwise directed by emergency personnel already on the scene. If directed into these conditions, a ground guide will be used ahead of the vehicle. Inspect the vehicle for any damage to the tires or undercarriage at the earliest opportunity.

xvi. Riding on the outside of a vehicle that is in motion for any reason is forbidden.

xvii. Extreme caution should be exercised when pulling out of an apparatus bay or returning a vehicle to an apparatus bay.

xviii. Leaving and returning to the apparatus bay should be made in a slow and deliberate manner.

xix. Check the position of the overhead bay door prior to moving the vehicle.

xx. If the door to an apparatus bay were to inadvertently begin to close while the vehicle is under it, stop the vehicle and allow the door to hit the vehicle. DO NOT try to outrun the door.

xxi. Route planning is critical to safe and effective vehicle operations, both emergency and non-emergency. Routes should be determined prior to moving the vehicle. Whenever possible, utilize the most direct route to and from the target location via major arteries for access as often as possible. One-way streets, neighborhoods, construction and school zones should be avoided as much as possible.

c. Non-Emergency Driving Procedures

i. All incidents prioritized with an “Omega”, “Alpha” or “Bravo” acuity level, routine transport, long distance transport or a request to stage will be given a Non-emergency Response. The operator of the vehicle may adjust to an emergency response if it is deemed necessary by dispatch information or at the request of on scene personnel.

ii. Non-emergency driving should be used during transport of patients to their destination who do not meet time critical diagnosis criteria, not in

imminent danger of injury or death, or when emergency driving would hinder patient care. The operator of the vehicle may adjust to an emergency response if it is deemed necessary by the primary patient care provider.

iii. A change in a response from its assigned level should be documented in the incident report with the factors leading to the change.

iv. Vehicle operators will observe all traffic laws during non-emergency driving.

v. Severe weather, adverse traffic conditions and any other hazard should be considered when accepting scheduled transports. The duty supervisor may decline transports based on these variables.

vi. If a crew were to encounter unexpected hazards or unsafe road conditions during a scheduled transport prior to arrival at their destination, the crew may decide to abort the transport, only after contacting the duty supervisor and return the patient to the nearest appropriate facility.

d. Emergency Driving Procedures

i. All incidents prioritized with a “Charlie”, “Delta” or “Echo” acuity level, emergency transports and generic “medical emergency” and “emergency medical service (EMS) response” dispatch codes will be given an emergency response. The operator of the vehicle may adjust to a non-emergency response if it is deemed necessary by dispatch information, weather conditions, traffic hazards, and a request to stage or at the request of on scene personnel.

ii. Emergency driving may be used during transport of patients to their destination who meet time critical diagnosis criteria or in imminent danger of injury or death. The operator of the vehicle may adjust to a non-emergency response if road conditions do not allow for safe emergency driving, emergency driving would hinder patient care, or it is deemed necessary by the primary patient care provider.

iii. A change in a response from its assigned level should be documented in the incident report with the factors leading to the change.

iv. Warning lights and sirens will be used together when driving to an emergency in accordance with Missouri State Statutes.

v. Warning lights may be used on their own as stationary warning lights or while performing a backing maneuver.

vi. Spotlights may be used for locating addresses or illuminating street signs but never for clearing traffic.

vii. During emergency driving, when approaching a school bus or mass transit bus that is loading or unloading, the vehicle will be brought to a complete stop at least 50 feet from the bus and stop audible warning devices. Observe the driver for possible direction. Do not pass if the bus stop sign is activated. When passing a bus, extreme caution will be exercised with a passing speed of no more than 10 miles per hour. Be alert for pedestrians and bicyclists, especially children. Once your vehicle is clear of the bus, normal emergency driving may resume with audible warning devices.

viii. When approaching an uncontrolled railroad crossing, the ambulance shall slow to a speed with the ability to stop and check for the presence of an oncoming train or rail vehicle. Under no circumstance will the ambulance proceed through the railroad crossing if a train is visibly present, unless it is stationary.

ix. When approaching a controlled railroad crossing that indicates the presence of a train (lights and/or bells alerting), the ambulance shall be brought to a complete stop at the entrance to the crossing's approach. Lights and sirens should be stopped while waiting. Under no circumstance will the vehicle proceed through the railroad crossing control gate or through the railroad crossing control lights, unless the train is stationary and the train operator is present providing direction.

x. The vehicle operator will ensure that other vehicles provide the right of way prior to proceeding. Never assume that the emergency vehicle is seen or heard.

xi. The left lane (passing lane) should be used whenever possible while driving to an emergency.

xii. Extreme caution shall be used when approaching blind turns and hills, particularly approaching vehicles that are traveling in the same direction. These vehicles may suddenly stop over the crest of the hill or around the bed of the turn. Pass moving vehicles only on the left unless circumstances necessitate other maneuvers.

xiii. In emergency responses, the vehicle will be driven at a speed that is consistent with safe vehicular operations and with due regard. This is never more than 10 miles per hour over the posted speed limit, or greater than 80 miles per hour.

xiv. The posted speed limits are not to be exceeded while driving emergency through school zones or in inclement weather (heavy rain, snow, ice, fog, etc.).

xv. When approaching an intersection with a stop sign, red or yellow light, the vehicle will be brought to a complete stop at the entrance to the intersection before proceeding through it.

xvi. Extreme caution will be exercised when entering a controlled intersection with multiple lanes against a red light. The vehicle shall stop at each successive lane as they cross the intersection, ensuring that each lane of traffic stops and provides the right of way. Never assume that the emergency vehicle is seen or heard.

xvii. Vehicle operators shall be familiar with and adhere to Missouri statues which pertain to emergency vehicle operation.

xviii. Avoid the use of one-way streets unless that is the only route possible.

xix. Do not allow another driver's action(s) to affect your driving behavior. Remember, the driver that does not yield usually does not see or hear you. Drive defensively.

xx. Siren cadence (pattern) should be changed on approach to and at the entrance of an intersection. Air horns, electronic horns and siren modifiers may also be utilized to gain attention of other vehicles.

xxi. Discontinue the use of audible warning devices at least one block before the address, whenever possible.

e. Backing

i. If you can avoid backing, do not back up.

ii. Whenever possible, use a road intersection, as opposed to a private driveway, to perform a backing maneuver.

iii. Prior to operating a vehicle in reverse, bring the unit to a complete stop.

iv. Identify someone who can assume the role of a "backer" or "ground guide" to monitor the backing process. An ambulance crew member or other public safety member is preferred to fill this role.

v. If no capable person is available to act as a backer, reconsider backing the vehicle.

vi. Before backing up without a backer, walk around the vehicle completely and survey the area for obstructions prior to placing the vehicle in reverse.

vii. The driver's side window will be rolled down to assist in maintaining visual and verbal contact with the backer. The driver and backer must establish and maintain visual contact through the driver's side rear view mirror. Use established standard hand signals to assist in communicating safe maneuvers.

viii. Always back in a slow, consistent speed.

ix. Do not begin backing the vehicle if you are unsure of the terrain or area, or you have lost sight of the backer.
x. Turn on emergency lights prior to placing the vehicle in reverse.
xi. A back-up alarm should be used during all backing maneuvers. The back-up alarm may be cancelled when a backer is present and concerns for hearing safety or scene safety are present.
xii. Back-up cameras are not a substitute for, nor should they take the place of a backer.
xiii. Backer responsibilities:
    1. Survey the right side and rear area for obstacles that would damage the vehicle.
    2. Place yourself eight to ten feet to the driver's side rear of the vehicle.
    3. Have eye contact with the operator at all times through the driver's side rear view mirror and direct the driver with the standardized hand signals.
    4. Ensure that the vehicle's emergency lights and back-up alarm are on.
xiv. There are four standard hand signals used by the backer:
    1. Begin or continue backing – arms outstretched, overhead and straight (touchdown signal).
    2. Begin or continue backing to the right – right arm outstretched at a 90 degree angle from the body and left arm straight over the head.
    3. Begin or continue backing to the left – left arm outstretched at 90 degree angle from body and right arm straight up and over the head.
    4. Stop backing – arms overhead and crossed.

f. Vehicle Placement

i. Appropriate vehicle placement at the scene of an incident or hospital is important to success of overall operations. Vehicles that are poorly placed can cause a safety hazard and/or hamper operations.
ii. Vehicles should park on the same side of the road as the incident whenever possible.
iii. Whenever possible, park off of the general road surface.
iv. Every effort should be made to park the unit so that it will not be necessary to back up upon leaving the scene.
v. When leaving the unit parked in or near the roadway, it should be left with compartment doors closed.
vi. Vehicles with appropriate striping and warning equipment should be placed in a manner as to provide the highest degree of protection and safety for personnel operating on or near the roadway. Ambulances should only be used as an interim blocking vehicle until a more suitable vehicle is available.
vii. If the vehicle is positioned in such a way that it is difficult to see by oncoming traffic, then emergency warning lights or the vehicle's factory emergency flashers will be in operation during the entire time. Otherwise, all warning equipment should be turned off to reduce bystander distraction.
viii. Consider engaging the "high idle" auto throttle feature while the vehicle is parked and running with warning lights on (if so equipped).
ix. Headlights and scene lights should be turned off after arriving on scene if they present a hazard to oncoming motorists. An exception would be if the headlights or scene lights provide or supplement lighting of the incident.
x. When on a highway or roadway incident and appropriate blocking vehicles are in place, the operator should pull past the incident.
xi. A vehicle that is staging in the area of an incident that has poor scene security should be positioned in a manner that does not restrict traffic and reduces visibility of the vehicle in relation to the incident scene and main roadways.
xii. A vehicle that is staging for standby at an event, such as a structure fire, should be positioned in a manner that does not restrict access to the event from incoming responders, or prevent normal traffic unless specified by the Incident Commander. Be mindful of the potential for aerial devices, hose lines, potential fuels (including dry ground cover) or

any other potential element of the incident type that you are involved with to avoid being entrapped inside the incident scene or causing further expansion of the event.

xiii. Parking of the vehicle at the hospital should be relative to your current assignment. Placement nearest the Ambulance entrance doors should be reserved for patient of the highest acuity. The vehicle should be placed in a furthermost position in relation to the Ambulance entrance doors for patients of low acuity or scheduled transfers. Vehicles at the hospital for business unrelated to direct patient care should park outside of the immediate area of the Ambulance entrance doors.

g. Fire Department and Law Enforcement Drivers

i. If the primary patient care provider deems it necessary for them and their partner(s) to be in attendance of the patient during transport they may request, through the Incident Commander, a driver from another public safety member.

ii. Preference shall be given to experienced fire personnel or a public safety member associated with an Ambulance Service as a potential operator. Law enforcement officers are acceptable alternative vehicle operators.

iii. Every effort should be made to utilize the most appropriate vehicle operator. Ambulance personnel should make face-to-face contact with the provided operator to ensure that the operator is clear on the transport plan.

iv. A non-emergency response should be utilized whenever possible while using a non-ambulance employed driver. Consider utilizing the external public safety member as a secondary patient care provider, allowing ambulance personnel to operate the vehicle when an emergency response is necessary.

v.

IV. Attachments

a. N/A

V. References, Regulatory References, Related Documents, or Links

a. Missouri State Statutes

Title: Ambulance Service -- Body Armor -- Policy

MU Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** 03/15/2018
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Policy Statement

a. Policy to guide University of Missouri Health Care (MUHC) Ambulance Service personnel regarding the usage of the MUHC Ambulance Service provided ballistic vests.

II. Definitions

a. Hot Zone – Area where there is a known hazard or direct and immediate life threat.
b. Warm Zone – Area of indirect threat (i.e., an area where law enforcement has either cleared or isolated the threat to a level of minimal or mitigated risk). This area can be considered clear but not secure.
c. Cold Zone – Area where there is little or no threat, due to geographic distance from the threat or the area has been secured by law enforcement (i.e., casualty collection points, the area where fire/Emergency Medical Service (EMS) may stage to triage, treat and transport victims once removed from the warm zone).
d. Ballistic Vest – An item of personal armor in a fabric carrier.
e. Staging Location – A relatively safe location separate from a dispatch location and not visible by potential assailants or patients at the dispatch location.
f. Code Orange – The Boone County fire/EMS code for a hazardous or violent scene with fire/EMS potentially in danger. Giving this code to Boone County Joint Communications will cause a law enforcement "All Call" to be dispatched to the scene emergency.

III. Process/Content

a. **INDICATION:** Any potentially hazardous scene encountered by personnel.
    i. Each University of Missouri Health Care (MUHC) Ambulance Service ambulance has been provided with two ballistic vests for use. Personnel are to assure these vests are present and in good condition during their daily vehicle inspection.

ii. Each vest has a Type III steel ballistic plate front and back. This type of ballistic plate is intended to stop a 7.62 rifle round traveling at a speed of 2750 ft/sec or less aimed at the torso.
iii. **Ballistic vests will not provide protection to your lower extremities and pelvis/groin, upper extremities, neck/head, or protect from a projectile/weapon aimed at the side.**
iv. Each vest is clearly marked "EMS" both front and back in gold lettering with a removable Velcro tag and is able to be adjusted to fit a range of sizes from M-XXL.
v. Observers or students will not be issued ballistic vests. Observers and students will be left in the ambulance patient care compartment, or another safe location (i.e. Cold Zone) as specified by law enforcement.
vi. Personnel are intended to wear a ballistic vest whenever they deem that their safety may be in jeopardy. These types of incidents include, but are not limited to, incidents where firearms or other weapons are reported present, potentially violent patient interactions, or incidents that involve large, uncontrolled crowds (i.e. Warm Zone operations).
vii. **Ballistic vests are not intended to give providers the ability to enter scenes or a Hot Zone area that is unsecured without law enforcement.**
viii. The safety of our providers is the primary concern during these incidents and decisions regarding treatment of potential patients must be made with the safety of responding EMS personnel in mind.
ix. For any dispatched incident that has a high likelihood of violent confrontation personnel will stage at an appropriate location until law enforcement has secured the scene. Personnel are not required to proceed if directed by the general public, police, or any other person unless they feel comfortable that the scene is secure.
x. Personnel should de-commit and leave the scene if violence commences or reoccurs during patient care. A "Code Orange" should be called to Boone County Joint Communications and all personnel should move to a safe location until law enforcement has stabilized the situation.

IV. Attachments

a. Not applicable.

V. References, Regulatory References, Related Documents, or Links

a. Not applicable.

Title: ES-AS-4F-04 Ambulance Service Cellular Phone Usage -- Operations -- Standard - Guidelines--Ambulance Service

MU Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** 12/21/2017
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Purpose Statement

a. To clearly define for the Ambulance Service staff the authorized usage of cellular phones in the ambulances.

II. Definitions

a. Not applicable.

III. Content

a. **Procedure**:

i. Staff will abide by University of Missouri Health Care Healthcare guidelines regarding cell phone usage in vehicles at all times.

ii. Usage of a cell phone to give report of patient condition to the hospital is an acceptable alternative to using the mobile radio, especially where patient report is of a potentially embarrassing nature.

iii. Staff may use the cell phone in any circumstance when contacting Medical Control. Staff members will call directly into the Emergency Room and identify themselves, their medic unit designator and state they need an attending physician for Medical Control.

IV. Attachments

a. Not applicable.

Title: ES-AS-4F-05 Communication Utilization and Security -- Operations -- Standard - Guidelines--Ambulance Service

MU Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** 10/31/2017
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Purpose Statement

a. To define the process that emergency medical technicians and paramedic staff will use and secure issued communications equipment used during their shift.

II. Definitions

a. Not applicable.

III. Content

a. **Guideline Preface**:

i. During their assigned shift the crew will each carry upon their person one portable radio.

ii. Any portable radio not currently assigned will be secured.

b. **Procedure:**

i. At the start of each duty shift, each staff member will take possession of the portable radio assigned to their unit and assure it has a fresh battery/ is operational.

ii. The portable radio will be carried upon their person for the duration of their shift.

iii. Ambulance mobile radios will be left on the Emergency Medical Service (EMS) dispatch frequency and on scan until a response requires changing frequency.

iv. Boone County Joint Communications will simulcast dispatches but each medic unit will respond and remain on the appropriate Fire Jurisdiction frequency for the duration of the call.

v. Once back in service, the radio will be returned to EMS dispatch frequency.

vi. All radios will be left on scan while in use unless excess traffic impedes their ability to monitor EMS or the appropriate fire frequencies.

IV. Attachments/Reference

a. ES-AS-4F-04 Ambulance Service Cellular Phone Usage -- Operations -- Standard - Guidelines--Ambulance Service

Title: ES-AS-4C-03 Controlled Drug Security and Restock -- Compliance -- Policy-Ambulance Service

MU Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** 12/21/2017
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Policy Statement

a. To provide policy for medications stocked on University of Missouri Health Care (MUHC) Ambulances.
b. Policy assures all medications stocked on MUHC ambulances are within their expiration date and provides greater accountability for medications, including controlled substances under the hospital's registration.

II. Definitions

a. **Outdate:** To check medications to ensure they have not expired and replace any medications that have.
b. **Unit:** A staffed ambulance as defined by its radio designator, primary base, and primary response area (e.g. Medic 211, Medic 221, etc.).
c. **Truck:** The actual ambulance used by the unit to provide service. Trucks are identified by either their Missouri State Bureau of Emergency Medical Service (BEMS) license number, or by license plate number.
d. **Station:** Physical location where a unit is primarily based (e.g. AP Green, Ashland, MUHC, etc.)
e. **Narcotics box**: A medication box stocked with controlled substances. Can either be a hard Pelican case that stays with a particular station or a soft case that is removed and returned to the MUHC Pharmacy.

III. Process/Content

a. Policy:
    i. All Advance Life Support (ALS) MUHC ambulances are to have a narcotics box secured within their locked compartment.
    ii. The narcotics box is to be secured with narcotic lock tags, obtained from the medication dispensing station at MUHC Emergency Room. Either one lock (soft case) or two locks (hard Pelican case) will be used to secure the box.

iii. Crews are to assure the narcotics box is present and secured at the beginning of every shift. Narcotic tag numbers are to be written in the Daily Truck Check logbook and checked against the numbers recorded by the previous shift.

iv. Any discrepancies in lock tag numbers will be reported to the duty EMS supervisor immediately.

v. At the end of the month during assigned Monthly Drug Outdates, the narcotics box will be opened and checked for expired medications. Any expired medications will be given to the EMS Supervisor on duty to return to Pharmacy.

vi. Any time a narcotic lock box is unlocked; a full count will be performed to assure all medications are present and accounted for. Two ALS providers (a paramedic, nurse, doctor, or pharmacist) will be needed to both count and sign for the contents. The box will then be re-secured with lock tags.

vii. Any discrepancy involving a secured medication or loss of the associated Bureau of Emergency Medical Services (EMS) paperwork will be reported to the duty EMS Supervisor immediately.

viii. Any questions or concerns will be directed to the duty EMS supervisor.

IV. Attachments

a. Not applicable.

V. References, Regulatory References, Related Documents, or Links

a. Not applicable.

Title: Ambulance Service -- Policies -- Correct Destination -- Guideline

MU Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** 05/18/2018
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Purpose Statement

a. To provide guidelines for verifying the correct patient destination during transports.

II. Definitions

a. Not applicable.

III. Content

a. Guideline: Ambulance staff will ensure that the patient is delivered to the appropriate facility. To achieve this, staff will confirm facility information during the initial assignment of the transport, as well as during patient hand off.

b. Procedure

i. All transports will be assigned by Transport Coordinator staff, with direction from the supervisory staff. Crew members will either pick up the transport sheet at University Hospital upon arrival, or have the transport sheet faxed to their ambulance base.

ii. Upon arrival at the inpatient floor, emergency room (ER), nursing home, skilled nursing unit or referral facility, the ambulance crew will obtain the transfer packet from the nursing staff prior to patient contact.

iii. The crew will verify that the destination on the transfer form matches the preferred destination on the patients face sheet.

iv. Staff members will then proceed to the bedside for a hand off report. The destination of record must match the destination verbally reported by both nursing staff and patient, if patient is competent and able to make their own medical decisions.

v. If there is a discrepancy between these, one member of the ambulance crew will remain with the patient while the other verifies the correct destination. The transport will not be carried out until this is rectified. In the event that patient acuity requires emergency transport, this should be done expediently so that patient care is not delayed.

vi. If needed, contact supervisory staff to assist with determination of the correct destination facility.

IV. Attachments

a. Not applicable.

Title: Ambulance Service -- Policies -- Direct Admit Transports -- Policy

MU Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** 05/18/2018
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Purpose Statement

a. To provide guidance to ambulance service staff members regarding direct admit and interfacility patient transfers.

II. Definitions

a. Not applicable.

III. Content

a. **Guideline:**

i. Transports that originate from facilities and clinics both outside and inside the MU Health system (Boone Hospital, Truman VA Hospital, Landmark Hospital, Women's and Children's Hospital, or University Hospital) may send patients out of their facility for continued care at a higher or lower level.

ii. These patients may bypass the Emergency Room and be admitted directly to a nursing floor or ICU. It is not expected that a patient coming from a scene or private residence would have this designation.

iii. Transports will be scheduled by either the Transport Coordinator staff or supervisor on duty and will be handled based on patient acuity and unit availability. Time Critical Diagnosis (TCD) and pre/post-surgical patients will be given priority over stable patients being admitted for observation.

iv. Transports will not be assigned to an ambulance crew until a room has been assigned and is ready for the patient at the receiving facility, unless a special situation exists.

v. This policy is not intended for patients that are medically unstable or require evaluation and treatment in an Emergency Room.

b. **Procedure**:

i. Transport Coordinators and/or supervisory staff will schedule direct admit patients and dispatch ambulance crews based on patient acuity, room availability and ambulance availability.

ii. The EMS caregiver will obtain the following information from the referring facility/agency prior to making patient contact:
    1. Patient Name
    2. Referring Physician name
    3. Admitting Physician name
    4. Expected location of admission (facility floor and room)
    5. If hand off to the receiving floor has occurred

iii. The EMS caregiver will contact the admitting ER directly either during transport or prior to leaving the sending facility and advise them of an inbound direct admit or interfacility transfer to their ER.

iv. Upon arrival in the ER, the EMS crew will record in the incoming patient log book the required patient information and remain until a bed assignment has been obtained. At no time will a crew go to a floor without either having received the room assignment from the ER staff or received that information from the sending facility.

v. After transporting the patient to the receiving floor, ICU, or ER, ambulance crews will give a bedside report to the caregiver assuming patient care and leave all paperwork and belongings with the patient.

IV. Attachments

a. Not applicable.

Title: Ambulance Service -- Policies -- Emergency Medical Service (EMS) Supervisor Uniform -- Policy

MU Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** 05/18/2018
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Purpose Statement

a. To describe the appropriate uniform for Ambulance Service supervisory staff.

II. Definitions

a. **Uniform Shirt**: White dress uniform shirt with Emergency Medical Technician-Paramedic (EMT-P) patch on the right arm and service patch on the left arm. Collar brass- emergency medical technician-paramedic (EMT-P) or EMS, EMS badge and name tag, optional. Any Ambulance Service employee uniform shirt is also authorized.
b. **Uniform Polo**: White polo shirt with approved service logo on front.
c. **Uniform Pants:** black EMS/battle dress uniform (BDU) pants will be worn at all times for daily duty wear.
d. **Uniform Belt**: Black belt with no logos or oversized buckles.
e. **Uniform Cap**: Black, gold or white ball cap with University of Missouri Healthcare (MUHC) or University of Missouri (MU) logo.
f. **Uniform Coat**: Coat as issued by the Department of Emergency Services. Previously issued extrication gear coats are acceptable.
g. **Uniform Inclement Weather Gear**: Scarves, winter caps, gloves and earmuffs may be worn when appropriate. All should be black with only MUHC or MU logos apparent.
h. **Uniform Footwear**:
    i. Material consists of leather, suede, or leather/suede combination.
    ii. Must extend above the ankle for ankle support
    iii. Predominant color is black.
    iv. Laces are to be black or dark neutral color.
    v. Must be closed at the heel.
    vi. Steel shank is strongly suggested.

Title: Ambulance Service -- Policies -- Emergency Medical Service (EMS) Supervisor Uniform -- Policy

III. Duty Uniform

a. See above items

IV. Special Events: will only be worn while providing Emergency Medical Service coverage at athletic sporting events

a. Normal duty uniform or see below for exceptions.
b. Black or khaki cargo shorts may be worn for outdoor special events only. Shorts must be at or just above the knee.
c. Athletic shoes or hiking boots may be worn for indoor/outdoor special events.

V. Dress Uniform (Optional)

a. White long sleeve button down shirt with MUHC patches sewn on the sleeves.
b. Black tie
c. Uniform pants
d. Duty uniform footwear
e. Collar brass- emergency medical technician-paramedic (EMT-P) or EMS, EMS badge and name tag, optional but recommended.

VI. Content

a. **Guideline Preface**:
    i. All EMS supervisors shall abide by the uniform standards described in this policy.
    ii. EMS supervisors are to present for duty in the uniform items listed above.
    iii. Turtlenecks, insulated shirts and long sleeve shirts worn under uniform shirt must match the color of the shirt worn.
    iv. EMS supervisors are expected to don reflective or protective gear when appropriate as defined by associated policies.
    v. Uniform shirts are to be tucked into the belt at all times on-duty or while present at MUHC.
    vi. Apparel worn by employees should be clean, neat, and well maintained. Any uniform pieces that are dirty, severely faded, torn, damaged or otherwise not in appropriate condition for the workplace must be replaced.
b. **Procedure**:
    i. EMS supervisors are to report to duty in appropriate attire as described above.

VII. Attachments/References

a. Not Applicable.

Title: Ambulance Service -- Policies – Incident Scene Times -- Policy

MU Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** 02/13/2018
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Purpose Statement

a. To define for Ambulance Service staff the appropriate amount of time that should be spent on an incident scene with a patient.

II. Definitions

a. Time Critical Diagnosis - patients requiring time critical diagnosis and treatment for trauma, stroke, sepsis and STEMI per Missouri law. All TCD patients are considered to be Class I patients.
b. Routine Medical/Trauma – any patient that does not require emergent lifesaving ALS interventions.
c. Class I Medical – a patient that requires emergent treatment and transport at an ALS level due to airway instability, hemodynamic compromise or any other life-threatening condition.
d. Trauma Alert – any trauma patient meeting the University Trauma Center Trauma Alert criteria.

III. Content

a. Guideline
    i. Ambulance Service crews shall make every effort to adhere to the scene time guidelines herein.
b. Procedure
    i. Appropriate care shall be rendered to the patient according to current Ambulance Service Protocols.
    ii. Ambulance Service crews shall make every effort to transport Class I patients within 10 minutes of making patient contact. This includes any patient recognized as being a TCD patient.
    iii. Report is to be called to the receiving facility of an inbound Trauma, STEMI, Sepsis, or Stroke Alert patient as soon as the condition is recognized.
    iv. For any other routine medical or trauma call, scene times are to be kept to less than 20 minutes, if at all possible.

v. In the event that transport is delayed for any reason (such as extrication or patient movement), documentation of this shall be made in the patient care record.

IV. Attachments

a. Not applicable.

Title: Ambulance Service -- Policies -- Incident Staging – Policy

MU Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** 05/18/2018
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Policy Statement

a. Policy to guide University of Missouri Health Care (MUHC) Ambulance Service personnel on selection of staging locations and how to proceed during an incident standby.
b. Applies to incidents which are dispatched by Boone County Joint Communications that require a response by MUHC Ambulance Service.

II. Definitions

a. Hot Zone – Area where there is a known hazard or direct and immediate life threat.
b. Warm Zone – Area of indirect threat (i.e., an area where law enforcement has either cleared or isolated the threat to a level of minimal or mitigated risk). This area can be considered clear but not secure.
c. Cold Zone – Area where there is little or no threat, due to geographic distance from the threat or the area has been secured by law enforcement (i.e., casualty collection points, the area where fire/Emergency Medical Service (EMS) may stage to triage, treat and transport victims once removed from the warm zone).
d. Staging Location – A relatively safe location separate from a dispatch location and not visible by potential assailants or patients at the dispatch location.
e. Incident Standby – Dispatched incidents where EMS is acting in a support role for other public safety entities. Examples include: a fire standby for a structure fire or an EMS standby for law enforcement serving high-risk warrants.
f. Code Orange – The Boone County fire/EMS code for a hazardous or violent scene with fire/EMS potentially in danger. Giving this code to Boone County Joint Communications will cause a law enforcement "All Call" to be dispatched to the emergency scene.

III. Process/Content

a. **GENERAL GUIDELINES:**

i. The safety of our providers is the primary concern during potentially violent incidents and decisions regarding treatment of potential patients must be made with the safety of responding EMS personnel in mind.
ii. For any dispatched incident that has a high likelihood of violent confrontation personnel will stage at an appropriate location until law enforcement has secured the scene. Personnel are not required to proceed if directed by the general public, police, or any other person unless they feel comfortable that the scene is secure.
iii. Personnel should de-commit and leave the scene if violence commences or reoccurs during patient care. A "Code Orange" should be called to Boone County Joint communications and all personnel should move to a safe location until law enforcement has stabilized the situation.

b. **PROCESS:**
   i. Dispatched medic units will respond on the initial dispatch with the appropriate fire department response.
   ii. If a medic unit is advised to stage by Boone County Joint Communications, they should proceed in a non-emergency response unless specifically directed otherwise.
   iii. If a medic unit is dispatched to a structure fire response, they should proceed non-emergency unless the following exist:
      1. Confirmed patients on scene.
      2. High life threat or potential for multiple patients (e.g., working fires in a nursing home).
      3. A request to respond emergency by fire units on scene.
   iv. If the determination is made by the responding personnel using information gathered from the dispatcher or law enforcement that this is an incident with a high likelihood of violent confrontation, units will stage in the area and await law enforcement.
   v. Avoid driving past the target address if possible.
   vi. Potential staging locations are areas that are within a ½ mile of the target address but are not within line of sight of the target address. Locations that have several means of ingress/egress are preferred.
   vii. Medic units in staging should advise Boone County Joint communications that they are staging in the area and awaiting law enforcement.
   viii. EMS personnel should maintain a level of situational awareness while in staging. Unless there is a traffic hazard, exterior patient compartment and driving lights should be turned off while staging at night.

ix. When an EMS unit is dispatched as a standby unit for fire or law incidents they will do the following:
    1. Check in on the appropriate tactical radio channel after arrival on scene.
    2. Ensure that EMS personnel, equipment and vehicles are in a safe location with open egress from the scene.
    3. If the incident is a working structure fire or search and rescue operation, establish a triage location for potential patient care.
    4. Relay the triage location to the incident commander.
    5. Personnel are not to leave the scene until they have been released by the incident commander to return to service.

IV. Attachments

a. Not applicable.

V. References, Regulatory References, Related Documents, or Links

a. Not applicable.

Title: Ambulance Service -- Policies -- Mass Casualty Incidents - Provision of Care - -- Protocol

Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** 05/18/2018
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Policy Statement

a. Procedure to guide University of Missouri Health Care (MUHC) Ambulance Service personnel during mass casualty incidents.

II. Definitions

a. Mass Casualty Incident (MCI) – an MCI is defined as any incident, which because of its physical size, the number and critically of its victims, or its complexity, is likely to overwhelm local resources typically available.
   i. Level 1 MCI – an incident with 5-10 victims that requires a first-due fire department response and three ALS ambulances.
   ii. Level 2 MCI – an incident with 11-20 victims that requires a first-due fire department response with an additional squad or command vehicle and six ALS ambulances.
   iii. Level 3 MCI – an incident with 21+ victims that requires a system-wide ALS ambulance dispatch, plus a mutual aid ambulance response.
b. Active Assailant Incident – A specific type of MCI involving an individual, or group of individuals, who intend harm to the public in a specific location.
c. Hot Zone – Area where there is a known hazard or direct and immediate life threat.
d. Warm Zone – Area of indirect threat (i.e., an area where law enforcement has either cleared or isolated the threat to a level of minimal or mitigated risk). This area can be considered clear but not secure.
e. Cold Zone – Area where there is little or no threat, due to geographic distance from the threat or the area has been secured by law enforcement (i.e., casualty collection points, the area where fire/Emergency Medical Service (EMS) may stage to triage, treat and transport victims once removed from the warm zone).
f. Staging Location – A relatively safe location separate from a dispatch location and not visible by potential assailants or patients at the dispatch location.

g. START Triage System – A method of triage used to quickly determine pediatric patient severity during an MCI.
h. JumpSTART Triage System – A method of triage used to quickly determine pediatric patient severity during an MCI.
i. Triage Treatment Area/Casualty Collection Point – A designated area, or multiple areas, where patients can be collected to receive further triage and treatment prior to transport.
j. Code Orange – The Boone County fire/EMS code for a hazardous or violent scene with fire/EMS potentially in danger. Giving this code to Boone County Joint Communications will cause a law enforcement "All Call" to be dispatched to the scene emergency.

III. Process/Content

a. **GENERAL GUIDELINES:**
    i. The safety of our providers is the primary concern during these incidents and decisions regarding treatment of potential patients must be made with the safety of responding EMS personnel in mind.
    ii. For any dispatched incident that has a high likelihood of violent confrontation personnel will stage at an appropriate location until law enforcement has secured the scene. Personnel are not required to proceed if directed by the general public, police, or any other person unless they feel comfortable that the scene is secure.
    iii. Personnel should de-commit and leave the scene if violence commences or reoccurs during patient care. A "Code Orange" should be called to Boone County Joint Communications and all personnel should move to a safe location until law enforcement has stabilized the situation.
    iv. Active assailant incidents are a subset of MCI and fall under the multi-agency Boone County Active Assailant policy.
    v. If an incident is recognized to be an MCI the on duty Ems supervisor will notify the transport coordinator to place all outgoing scheduled transports on hold until instructed otherwise.
    vi. If possible, the EMS supervisor and transport coordinator will work to staff additional ambulances to assist with further 911 dispatches and routine transports.
    vii. Upon arrival on the scene, the EMS supervisor will fill either a patient care, triage leader, or medical command role, depending on which is most needed and appropriate.

viii. Off duty staff members will under no circumstances self-dispatch to the scene to assist with patient care as MUHC EMS staff members.

b. **PROCESS:**

i. Dispatched medic units will respond on the initial dispatch with the appropriate fire department response.

ii. Medic units will not self-initiate to any incident UNLESS they are more than three miles closer to the incident than the dispatched unit.

iii. If the scene is unsecured or incident command requests it, dispatched medic units will stage with responding units until cleared to enter the scene and establish Warm Zone operations.

iv. The first arriving medic unit will assume triage duties and overall medical command of the incident.

v. Personnel will utilize the START and Jump START triage systems to determine patient acuity and the total number of patients.

vi. Once initial triage is complete, a triage treatment area or casualty collection point will be selected and secondary triage/treatment will commence.

vii. Additional resource needs will be communicated to the fire incident commander who will make the request through Boone County Joint Communications.

viii. All additional arriving medic units will call on the scene with Boone County Joint Communications on the appropriate primary radio channel, then, move to the working tactical radio channel for assignment.

ix. Medic units will transport the patient or patients assigned to them by the triage leader to the chosen receiving facility.

x. Medic units will return to service as quickly as possible after handing off their patient to the receiving facility.

IV. Attachments

a. Not applicable.

Title: Ambulance Service -- Policies -- Medic Unit Response and Return to Service Standards -- Policy

MU Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** 05/18/2018
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Policy Statement

a. Policy regarding medic unit response time standards to both emergent and non-emergent interfacility transfer requests.
b. Guidance regarding the procedure for returning back to service after a patient transport.

II. Definitions

a. Emergency transfer (ET) – an interfacility transport request that is considered to be from a lower level of care to a higher level of care for an emergent medical or surgical intervention.
b. Non-emergent transfer (RT/LDT) – an interfacility transport request that is considered to be from a higher level of care to a lower level of care. Generally initiated for a non-emergent need or a return back to a nursing facility or residence. Can be "routine" (within Boone County) or "long distance" (outside of Boone County).
c. Back in Service Time – the time interval beginning with arrival at the destination facility and ending with the time a medic unit checks back into service with Boone County Joint Communications (BCJC).
d. Bedside – defined as either the specific room where a patient is located or the floor/unit/department where the transfer request was initiated.

III. Content

a. Policy:

i. In order to reliably serve the patient population and health care facilities in our coverage areas, it is imperative that:
   1. Staff members be at bedside for emergent, routine, or long distance transfers at the specified time requested by the facility.
   2. Medic units return to service within 25 minutes of arrival at the receiving facility, unless extenuating circumstances exist.

ii. Continued documented failure to report for transports or return to service in a timely manner will result in disciplinary action.

b. **Procedure:**

i. Routine and long distance transports will be assigned by either the Transport Coordinator, EMS supervisor, or Charge Medic as needed based on both current and anticipated future need.

ii. Efforts will be made to give ample time for a medic unit crew to be notified and drive to the discharging facility for patient transport, however this may not always occur due to emergent need.

iii. After notification, medic unit crews may not place themselves out of service early without first consulting the EMS supervisor on duty.

iv. Staff members will be at bedside for routine or long distance transfers at the specified time requested by the facility.

v. After completing a patient transport, the priority upon arrival at the destination facility will be to transfer care of the patient to facility staff as quickly and completely as possible, taking care to not compromise patient safety.

vi. After relinquishing patient care duties to the receiving facility, Back in Service Times should be 25 minutes or less, unless extenuating circumstances exist. During this time period, medic units will be cleaned, disinfected, and restocked by both staff members. Medic unit crews may also place themselves back in service prior to finishing the restock and decontamination process, provided restock of narcotics or another critical medication or piece of equipment does not need to occur.

vii. It is anticipated and understood that cardiac arrest calls, serious traumas, and other high acuity incidents will require additional time to restock and decontaminate. Relaxed standards, as determined by supervisory staff, will be used in these instances.

viii. Supervisory staff will make the ultimate decision of when an ambulance and medic unit crew is fit to return to service.

IV. Attachments

a. Not Applicable.

V. References

a. Not Applicable.

Title: ES-AS-4C-01 Ambulance Medication Outdate Policy -- Compliance -- Policy--Ambulance Service

Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** 12/21/2017
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Policy Statement:

a. To ensure all medications stocked on University of Missouri Health Care Ambulances are present, undamaged, and within their stated expiration date.

II. Definitions

a. Outdate: To check medications to ensure they have not expired and replace any medications that have.
b. Unit: A staffed ambulance as defined by its radio designator, primary base, and primary response area (e.g. Medic 211, Medic 221, etc.).
c. Truck: The actual ambulance used by the unit to provide service. Trucks are identified by either their Missouri State Bureau of Emergency Medical Service (BEMS) license number, or by license plate number.
d. Station: Physical location where a unit is primarily based (e.g. AP Green, Ashland, MUHC, etc.)

III. Process/Content

a. **Policy:**
   i. All ambulances are to have all medications outdated every 30 days at the end of the month. The exact date is left up to the Emergency Medical Services (EMS) supervisor on duty.
   ii. Medications found to be out-of-date will be ordered through the medication dispensing machines located in MUHC and Women's and Children's Emergency Departments.
   iii. An Internal Order Form (IOF) is only to be used by the EMS supervisor on duty, at their discretion.
b. **Procedure**
   i. At the end of the month, the ambulance supervisor on duty will begin coordinating the outdating of all MUHC Ambulance Service trucks.
   ii. The ambulance supervisor will delegate outdating of all trucks by shift or by specific personnel assignments.

iii. Ambulance personnel assigned to outdate a specific truck are to thoroughly check all medications, including narcotics, to ensure they do not expire within 30 days.
iv. Special event or transport crews with narcotic bags that need to be returned to Pharmacy are exempt from a check of their narcotics.
v. All medications that are found to expire within 30 days are to be removed from the truck's stock.
vi. The personnel should then proceed with their truck to MUHC and exchange medications through the ER medication dispensing machine. An IOF is only to be used by the EMS supervisor.
vii. Ambulance Service personnel should stock the newly acquired medications on their truck.
viii. Medications that are out-of-date will be turned in to the EMS supervisor for disposal.
ix. If questions or concerns should arise personnel should contact the EMS supervisor on duty for guidance.

IV. Attachments:

a. Not applicable.

V. References, Regulatory References, Related Documents, or Links:

a. Not applicable.

Title: Ambulance Service – Policies – Medication Rights -- Policy

MU Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** Not Approved Yet
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Policy Statement

a. Policy outlining the medication rights and their proper application.
b. Applies to all calls for service that personnel respond to and have contact with a potential patient, whether or not treatment and/or transport is required.
    i. EMT
    ii. Paramedic
        1. Paramedic
        2. Critical Care Paramedic
        3. Flight Paramedic
        4. Community Paramedic
    iii. Physician
    iv. Registered Nurse
        1. Registered Nurse
        2. Critical Care Nurse
        3. Flight Nurse
    v. Respiratory Therapist

II. Definitions

a. Medication – A substance intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease.

III. Process/Content

a. The Eight Medication Rights:
    i. **Right Patient**:
        1. Assure that you are treating the correct patient.
        2. In multiple patient or mass casualty situations, use two patient identifiers (e.g. birthday, hospital patient number, or full patient name).
    ii. **Right Medication**:
        1. Check the medication label. Confirm the concentration and medication name are correct.
        2. Check expiration date.
        3. Ask the patient about any allergies to the medication.

iii. **Right Dose**:
   1. Confirm the dose against current protocols and, if possible, have another provider confirm it.

iv. **Right Reason**:
   1. Confirm the reason for administering the medication is correct.
   2. Any patient of normal mentation has a right to refuse medication administration.

v. **Right Route**:
   1. Confirm the medication route is correct.
   2. Confirm the dose is correct for the route.

vi. **Right Timing**:
   1. Confirm you are giving the medication when the patient needs it
   2. Confirm you are giving the medication over the correct time period.

vii. **Right Response**:
   1. Confirm the medication achieved the desired response.
   2. Monitor the patient for any allergic or adverse reactions.

viii. **Right Documentation**:
   1. Report the medication, time administered, route, dose, and response, as well as any other pertinent information, during patient report and charting.

b. Protocol Application:
   i. In the flowchart protocols that have medication administration as an option, a symbol will be present in the upper right side of the document reminding providers of the Eight Medication Rights.

IV. Attachments

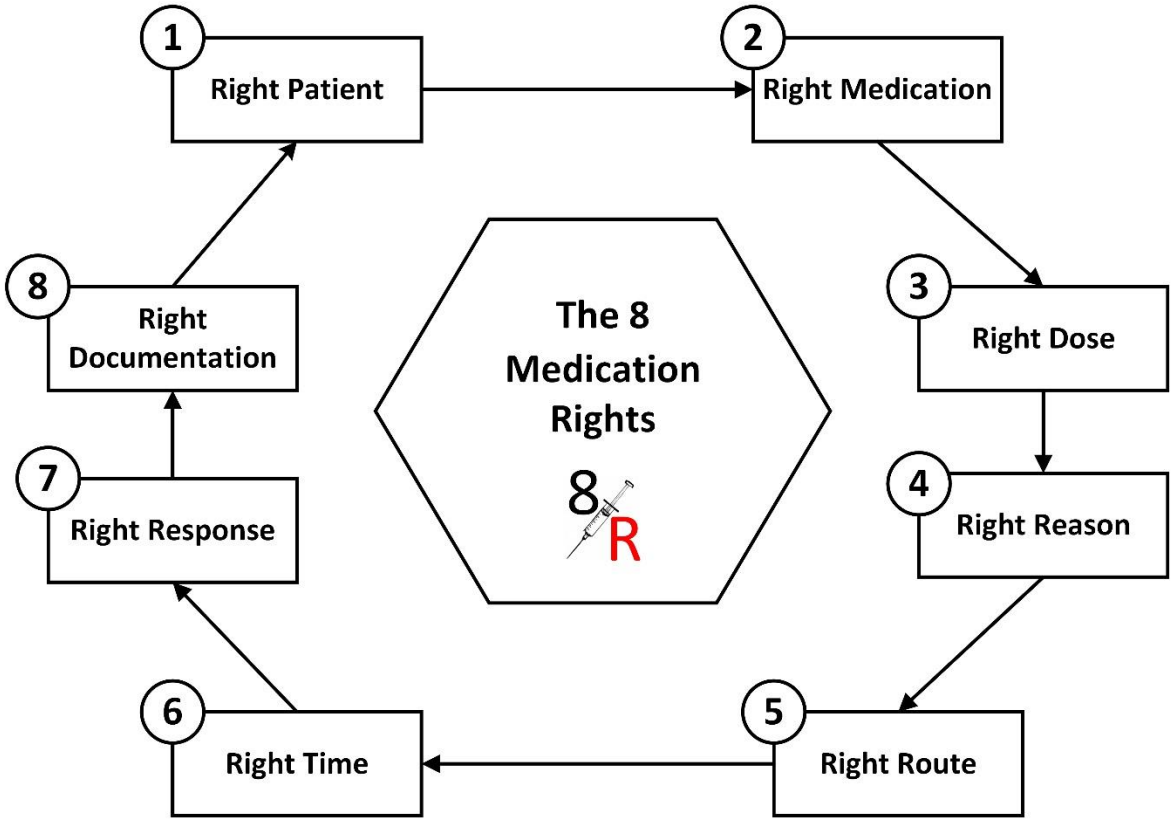
a. Not applicable

V. References, Regulatory References, Related Documents, or Links

a. Not applicable

The 8 Medication Rights

1. **Right Patient** – Make sure you are treating the right patient. Use two patient identifiers if possible.
2. **Right Medication** – Check the medication label and confirm the concentration and medication name. Check expiration date and ask the patient if any allergies are present.
3. **Right Dose** – Confirm the dose against current protocols and have another provider confirm it is correct.
4. **Right Reason** – Confirm the reason for administering the medication is correct. Remember, a patient has the right to refuse any medication.
5. **Right Route** – Confirm the medication route is correct and that the dose is right for the route.
6. **Right Timing** – Confirm you are giving the medication over the correct time period and at the time the patient needs it.
7. **Right Response** – Confirm the medication administered led to the desired effect. Check for any allergic or abnormal patient responses.
8. **Right Documentation** – Report the time, route, dose and response, as well as any other pertinent information, during the patient hand-off and during charting.



Title: ES-AS-4C-07 Non-Discrimination of Patients -- Compliance -- Policy--Ambulance

Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** 09/25/2017
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Policy Statement

a. To clearly define for Ambulance Service personnel their responsibilities when in contact with patients and to assure personnel follow guidelines set forth regarding non-discrimination of patients.

II. Definitions

a. Not applicable.

III. Process/Content

a. Policy:
   i. No patient will be denied care or transport on the basis of color, race, sex, nationality or ability to pay for the services.
   ii. The Ambulance Service is a provider of emergency care within the University of Missouri Health Care (MUHC) system and as such is subject to Emergency Medical Treatment and Active Labor Act (EMTALA) regulations.

b. Procedure:
   i. Upon contact with the patient, medical care as set forth in the Ambulance Service guidelines/procedures/protocols will be followed.
   ii. No patient will be refused transport to their desired facility unless:
      a. Transport will be past a higher level of care or protocol dictates a particular hospital must be utilized.
      b. A crew determines their safety is in jeopardy if patient is transported. In these cases, both law enforcement and the duty Emergency Medical Service (EMS) Supervisor will be consulted.

IV. Attachments:

a. Not applicable.

V. References, Regulatory References, Related Documents, or Links

a. Not applicable.

Title: Ambulance Service -- Policies -- Non-Emergent Transport Communications -- Policy

MU Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** 02/13/2018
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Purpose Statement

a. To provide guidance to staff members regarding official communication with Boone County Joint Communications (BCJC).

II. Definitions

a. Code Orange – radio code used to warn incoming responders, law enforcement, and BCJC of an unstable scene with a potential for violence.
b. Caution Five Indicator – radio code used to warn incoming responders and hospitals of a potential Ebola or infectious disease patient.

III. Content

a. Guideline:
    i. Ambulance personnel are to, at all times, conduct operations with BCJC in a professional and courteous manner.
    i. Any change in status or availability should be immediately reported to BCJC.
    ii. 10 codes are not to be used during communications with BCJC.
    iii. Information that could be used to identify a patient or complainant will not be delivered over any open radio channel.
b. Procedure:
    ii. Ambulance personnel are to follow the following standardized procedure when contacting Boone County Joint Communications:
        1. University Medic traffic - “Boone County, Medic -----”.
        2. BCJC traffic – “Medic -----, Boone County”.
        3. University Medic traffic – “Medic unit change in status or other pertinent information”.
        4. BCJC traffic – “Receipt of message”.
        5. University Medic traffic – “Acknowledgement”, if necessary.
    iii. Radio traffic is to be kept to the minimum needed to convey the information to dispatch. Extended information should be given to BCJC by either ring down phone at University ER or by cell phone contact.

iv. When contacting BCJC to initiate a routine or long-distance transport ambulance personnel are to understand that emergency calls take priority over routine operations.

v. Routine or long-distance transport communication is to be either initiated by Mobile Data Terminal (MDT) or transmitted on the EMS dispatch frequency.

iv. If the EMS/Fire dispatcher is busy consider contacting BCJC by telephone to relay the transport information.

IV. Attachments

a. Not applicable.

Title: Ambulance Service -- Policies -- Personal Safety and Reflective Gear -- Policy

MU Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** 05/18/2018
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I.Policy Statement

a. To define when University of Missouri Health Care (MUHC) Ambulance Service personnel are expected to don reflective safety vests and standard reflective safety gear for personal safety.

II.Definitions

a. Reflective Safety Gear: The reflective uniform shirt, reflective jacket or technical rescue coat issued to a staff member by the Ambulance Service. Also includes the reflective safety vests that are located in each ambulance.
b. Incident Command: The incident commander of an incident responsible for Emergency Medical Services (EMS) or fire department operations during an incident. This includes but is not limited to: EMS/medical branch leaders, safety officers, officers in charge of technical rescue or extrication operations.
c. EMS Supervisor: An EMS Supervisor from either MUHC or Boone Hospital Ambulance Service.

III.Process/Content

a. Policy:
    i. In order to ensure visibility of personnel working during low visibility situations, staff members will wear reflective safety vests or gear.
b. Procedure:
    i. MUHC Ambulance personnel will wear reflective safety vests in any situation where they are working near or on a city, state, or county roadway.
    ii. MUHC Ambulance personnel will wear their reflective safety vests and/or gear if Incident Command or a designee as defined above requests it.
    iii. Ambulance staff members will wear reflective safety vests and/or gear at the request of an EMS Supervisor as defined above.

IV.Attachments

a. Not applicable.

V.References, Regulatory References, Related Documents, or Links

a. Not applicable.

Title: Ambulance Service - Policies - Refusal of Transport - Policy

MU Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** 01/19/2018
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Purpose Statement:

a. Policy guiding patient refusal of treatment and/or transport.

II. Applies to:

a. All calls for service that personnel respond to and have contact with a potential patient, whether or not treatment and/or transport is required.

III. Who can perform under this protocol

a. EMT
b. Paramedic
    i. Paramedic
    ii. Critical Care Paramedic
    iii. Flight Paramedic
    iv. Community Paramedic
c. Physician
d. Registered Nurse
    i. Registered Nurse
    ii. Critical Care Nurse
    iii. Flight Nurse
e. Respiratory Therapist

IV. **Definitions:**

a. Informed Consent – informed consent is based on an individual's understanding on their condition, treatment options, and consequences of refusing care.
b. Implied Consent – in situations where an individual is unable to give informed consent, it is implied that individual would wish treatment if they were able to consent to it.
c. Substituted Consent – an individual with legal care or guardianship over a patient may consent or refuse treatment on their behalf. This may also be called involuntary consent.

V. Protocol Content:

a. **INDICATION**:

i. Prehospital emergency care operates on the different types of consent a patient, or patient guardian may give (informed vs. implied vs. substituted).
ii. An individual who is alert, oriented, and has the ability to understand the circumstances surrounding his/her illness or impairment, as well as the possible risks associated with refusing treatment and/or transport, has the right to refuse said treatment and/or transport.
iii. A person having legal guardianship of a person, or written authorization from someone who does, and who has the ability to understand the circumstances surrounding the illness or impairment of the patient, may also refuse treatment and/or transport for the patient.
iv. Any patient fitting into the above categories should have written documentation of the circumstances around their injury/illness, treatment (if any) and refusal of continued care and/or transport.

b. **REFUSAL CRITERIA**: The following criteria should be met when allowing a patient to refuse treatment and/or transport:
   i. The patient must be fully alert and oriented to their baseline.
   ii. The patient must be 18 years of age or older.
   iii. Minors must have a parent/legal guardian present, or that parent/legal guardian must have direct verbal communication with EMS personnel, with the following considerations:
      A. Pregnant minors can make decisions for the overall healthcare of their fetus. Law enforcement and medical control should be consulted if the legal guardian of a pregnant minor is requesting treatment, transport or refusal that conflicts with the wishes of the patient.
      B. Legal guardians can be a: parent, grandparent, adult-aged sibling, adult-aged aunt/uncle, or representative of a daycare or educational institution with written authorization from a parent to assent to/refuse medical treatment.
      C. The treatment request is for a venereal disease or drug/substance abuse.
   iv. The minor is emancipated. In Missouri this is allowed by court order if:
      A. The parents waive parental rights
      B. If the minor lives apart from parents and supports themselves
      C. If the minor is married or is enlisted in the military

iv. The patient is aware of the risks associated with their condition and the potential for deterioration in their present condition, up to and including death.

v. The patient must be unimpaired by drugs and alcohol. If patient has consumed these substances, crew should use their best judgment to determine if the patient is competent to refuse. In situations where they are incompetent, or where it is hard to determine, contact Medical Control or law enforcement to assist.

vi. Individuals who have attempted suicide or who have stated suicidal intent should not be regarded as having decision-making capacity and may not decline transport. In these cases, contact law enforcement to assist.

vii. The risks of refusal and benefits of transport have been discussed at length with patient and the patient has the ability to re-contact 911, if necessary.

viii. All medical care initiated on patients that refuse treatment and/or transport should be discontinued prior to terminating patient care.

c. **REFUSAL DOCUMENTATION**:

i. Document vital signs for the patient (pulse, blood pressure, respiratory rate and Glasgow coma scale). Additional vital signs when indicated should include blood glucose, oxygen saturation by pulse oximeter and electrocardiogram. If crew is unable to obtain vital signs, documentation must be made describing why they could not be obtained.

ii. Any treatments refused by the patient, including transport to definitive care. A patient may refuse a specific treatment and that refusal should be documented in detail.

iii. A detailed account of the care provided to the patient, if any, and a detailed account of the proposed treatment plan that patient is refusing.

iv. Reason for refusing treatment and/or transport. Also, any alternative plans of care, whether that be transport by personal vehicle or no continued treatment whatsoever.

v. Description of the individuals that will be remaining with patient, if any.

vi. Signatures should be obtained from refusing patient, a witness if available and EMS personnel. If patient refuses to sign, that refusal should be documented in detail.

VI. Reference Documents or Attachments:

a. National Association of State EMS Officials. National Model EMS Clinical Guidelines. http://www.nasemso.org/documents/National-Model-EMS-Clinical-Guidelines-2017-Distribution-Version-05Oct2017.pdf.

Title: ES-AS-4F-03 Report Writing -- Operations -- Policy-- Ambulance Service

Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** 10/31/2017
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Policy Statement

a. To clearly define for ambulance personnel their responsibilities in documenting patient care provided on the ambulance.

II. Definitions

a. **Boone County Joint Communications (BCJC):** The dispatching entity for Boone County, MO.
b. **CAD:** Computer-aided Dispatching system.
c. **Response Time:** Whenever an official time of response is documented by Boone County Joint Communications in the CAD system.
d. **Patient:** Any person who is in obvious need of medical assessment, or specifically requests a medical assessment, or specifically requests other aid or services.
e. **Patient Refusal:** Paperwork documenting a non-transported patient. A patient refusal will be obtained and a full patient care report will be written for any patient that refuses further medical attention after an assessment has been performed or treatment has been provided.
f. **Patient Care Report (PCR):** An electronic record of patient care that has been completed. Requires attachment of a First Care Form and Patient Signature Form.
g. **Cancelled Run:** A shortened run template that is to be filled out when a medic unit responds to a call, but does not make patient contact. This run template is also appropriate for special events.
h. **First Care Form:** The form filled out by the crew member providing patient care during transport. Contains key patient demographics and pertinent assessment details and is used to complete an online PCR.

i. **Special Event First Care Form:** The form filled out by crew members providing patient care during a special event. Contains key patient demographics and pertinent assessment details and is used to track patient contacts during special events.

j. **Patient Signature Form:** The Assignment of Benefits and Receipt of Privacy Practices Notice. This form must be signed by the patient or their legal representative, crew member responsible for patient care and the receiving Registered Nurse (RN) at the time of hand off.

k. **Patient Face Sheet:** A one-page summary of important information about a patient. It includes patient identification, past medical history, medications, allergies, upcoming appointments, insurance status, or other pertinent information. Required if a patient is transported to a non-MUHC facility.

III. Process/Content

a. **Policy:**

i. Any time an ambulance responds to a call, documentation will be completed regardless of whether the ambulance arrives at the scene of the call or not.

ii. First Care Forms must be filled out with all pertinent patient care information (all vital signs, assessment, care rendered, medications administered, chief complaint and any changes during transport) and a copy must be left with the receiving facility RN or designated staff member at the time of patient hand off.

iii. Ambulance personnel who fail to complete reports may receive disciplinary action. A report is not considered complete unless all documentation of patient care is completed and all necessary documents are uploaded and attached in the electronic record of patient care.

iv. Unless permission is received from the duty EMS Supervisor, all documentation will be completed in full prior to the end of an assigned shift.

b. **Procedure:**

i. If an ambulance response is made and patient is contacted, a full report will be written (see section c. *Patient Care Report*).

ii. Contact made with patients who request lifting assistance and receive an assessment by crew members but who are not transported will require a full *Patient Refusal* report to be written.

iii. Patients who request lifting assistance but refuse assessment will require a *Cancelled Run* report be written.

iv. If an ambulance response is made and no patients are contacted a *Cancelled Run* report will be written.
v. If an ambulance transports a patient, responsibility for the report will rest on the crew member who provided patient care during transport.
vi. Both members of a given ambulance crew will be considered responsible for ensuring all documentation for cancelled runs or other "no transports" has been completed by the end of their shift.
vii. If a report needs to be changed to correct or add to existing data, an addendum must be completed (see section d. *Patient Care Report Addendum*).

c. **Patient Care Report (PCR)**
   i. A detailed description of the patient's condition at the time of the transport must be documented in the PCR. Services are only considered reimbursable if the PCR contains a sufficient description of the patient's condition at the time of transfer, to reasonably determine that other means of transportation are contraindicated.
      1. The PCR must "paint a picture" of the patient's condition and must be consistent with documentation found in other supporting medical record documentation, including the physician's certification. The PCR must include the following:
         a. A concise explanation of symptoms reported by the patient and/or other observers and details of the patient's physical assessments that clearly demonstrate that the patient requires ambulance transportation and cannot be safely transported by an alternate mode.
         b. An objective description of the patient's physical condition in sufficient detail to demonstrate that the patient's condition or functional status at the time of transport meets reimbursable coverage requirements.
         c. Description of the traumatic event when trauma is the basis for suspected injuries.
         d. A detailed description of existing safety issues.
         e. A detailed description of special precautions taken (if any) and explanation of the need for such precautions.
         f. A description of specific monitoring and treatments required, ordered and performed or administered. Treatments, such as oxygen or cardiac monitoring for example, without a sufficient description of the patient's

condition to demonstrate that the treatment and/or monitoring was medically necessary is inadequate on its own merit. For example, when oxygen is supplied as a basis for ambulance transportation the patient's pretreatment capillary blood oxygen saturation and clinical respiratory description must be recorded. The two must be consistent with a need for supplemental oxygen.

g. Statements such as the following that do not have supporting information noted above *are insufficient.* They cannot stand alone; they must be supported by evidence on the patient's medical assessment.
    i. *Patient complained of shortness of breath*
    ii. *History of stroke*
    iii. *Past history of knee replacement*
    iv. *Hypertension*
    v. *Chest pain*
    vi. *Generalized weakness*
    vii. *Is bed-confined*

ii. Signatures, including credentials, from the provider(s) who render the services must be documented.
    1. Services provided/ordered must be authenticated by the author.
    2. Providers should not add late signatures to the documentation.

iii. Point of pick up/destination must be documented in detail, identifying place and complete address.

iv. A facility Patient Face Sheet is required for any non-MUHC facility. This includes, but is not limited to, Boone Hospital Center, Truman VA Hospital, Audrain Medical Center, St Mary's Hospital, or Capital Regional Medical Center.

v. Every page of the record must include appropriate patient identification information (i.e. complete name and date of service).

vi. For hospital-to-hospital transports, the trip record must clearly indicate the precise treatment, procedure or medical specialist that is available only at the receiving hospital. Non-specific or vague statements such as "*needs cardiac care"* or *"needs higher level of care"* are insufficient.

vii. Any additional available documentation that supports medical necessity of ambulance transport (i.e., Emergency Room (ER) Report, skilled nursing facility (SNF) record, end stage renal disease (ESRD) facility record, hospital record) should be attached.

viii. Appropriate documentation of loaded miles billed originating from measuring equipment for mileage on the ambulance: odometer, trip odometer or other on-board device (no "zone" or "grid" mileage charts).

d. **Patient Care Report (PCR) Addendum**

i. Patient Care Reports (PCRs) can be changed to correct erroneous information such as name, address, insurance information, etc. or to add information that may have inadvertently been missed at the time the initial report was written. Reports will be locked following completion of the electronic PCR and an "Addendum" must be completed for any changes to the existing report.*

***Changing a PCR, if done to falsify or misrepresent information for any reason, particularly for billing or reimbursement purposes, is improper as well as illegal.**

ii. **Addendum Requirements:**

1. Only the original author of the PCR should make modifications and the addendum must be electronically signed and dated.
2. The addendum should not delete data but instead clearly identify all original content as well as define modified content.
3. Addendums must be completed **as soon as possible** following the lock on the existing report.

***Exception: Data changes that do not impact billing determinations may be made on the existing report and are not required to be reported in an Addendum (i.e., demographic data).*

IV. Attachments:

a. Not applicable.

V. References, Regulatory References, Related Documents, or Links:

a. Not applicable

Title: ES-AS-4C-05 Reporting for Duty -- Compliance -- Standard - Guidelines--Ambulance Service

MU Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** 06/05/2017
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Purpose Statement

a. Guidelines for Ambulance Service staff members regarding responsibilities in reporting for duty, shift trades, and call outs/sick days.

b. Repeated violations of the guidelines within this policy will result in escalating disciplinary action.

II. Definitions

a. Not applicable.

III. Content

a. **Procedure:**

i. Assigned Shift Guidelines:

1. Staff members will check the online schedule and assure that they are able to be present for all assigned shifts.
2. Staff members will be present prior to the scheduled start of their assigned shift, in the prescribed uniform, and be ready to begin their assigned responsibilities.
3. Staff are to be present at the assigned shift change time, unless arrangements have been made with supervisory staff.
4. Staff will use the paper Kronos edit log for time keeping when a shift deviates from a normal work schedule. Examples include: call shifts, vacation days, scheduled training events, and early/late punches. The Kronos edit log must be filled out the day of the assigned shift and cannot be for future shifts.
5. Special event shifts will be logged on the *Special Event* forms located in the Transport Office at University ER.
6. Staff members will clock out promptly at the end of their assigned shifts, once all duties have been completed. Staff are not to leave without supervisor permission if any duties are left uncompleted.

ii. Shift Trade Guidelines:

1. Assigned shifts that are unable to be worked are the responsibility of the staff member to find coverage for.
2. Staff members wanting to drop/trade shifts will fill out the proper shift trade paperwork in full and send it to the duty supervisor for approval prior to the requested shift trade date.

iii. Sick Days/Call Out Guidelines:

1. Supervisory staff must be notified by staff members for any call outs or sick days no less than two hours prior to that shift starting.
2. Staff must call the on duty supervisor to notify of a call out/sick day. Text messages or any other form of communication are not allowed.
3. Excessive call outs or sick days will be dealt with per the appropriate MU Health Care policy.

iv. Special Considerations:

1. Any special event shift or scheduled training event, whether assigned or volunteered for, is counted as any other duty shift and is subject to this policy.

IV. Attachments

a. Not applicable.

Title: ES-AS-4D-01 Required Certifications -- Education and Requirements -- Policy--Ambulance Service

MU Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** 12/21/2017
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Policy Statement

a. Certification and licensure required for Emergency Medical Technicians (EMT) and Paramedics.

II. Definitions

a. Emergency Medical Technician (EMT) – Basic life support licensure.
b. Emergency Medical Technician-Paramedic (Paramedic) – Advanced Life Support (ALS) licensure.
c. Bureau of Emergency Medical Services (BEMS) – The Missouri Department of Health and Human Services Bureau responsible for Emergency Medical Services licensure.
d. Missouri Class E Driver's License
e. Basic Life Support (BLS)
f. Advanced Cardiovascular Life Support (ACLS)
g. Pediatric Advanced Life Support (PALS)
h. Prehospital Trauma Life Support (PHTLS)

III. Process/Content

a. **Policy:**
   i. All EMT and paramedic staff members are required to hold an active Missouri Bureau of EMS issued EMT or Paramedic license.
   ii. All staff will be required to maintain an active Missouri Class E Driver's License (or higher license level).
   iii. All EMT staff will be required to maintain BLS and PHTLS certifications.
   iv. All paramedic staff will be required to maintain BLS, ACLS, PALS and PHTLS certifications.
   v. All staff members are to complete any other training/certifications as designated by the Emergency Services Department and/or University of Missouri Health Care policy.
   vi. Any MUHC ambulance staff member that allows their certification to lapse will be suspended until the certification can be updated.

b. **Procedure:**
    i. All staff members are required to maintain the above licenses and certifications.
    ii. All staff members are required to report all changes to their licensure and certification status including revocation, expiration or suspension.

IV. Attachments

a. Not applicable.

V. References, Regulatory References, Related Documents, or Links

a. Not applicable.

Title: ES-AS-4F-06 Response Time for Emergency Requests -- Operations -- Standard - Guidelines--Ambulance Service

MU Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** 07/15/2016
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Purpose Statement

a. To clearly define for the Ambulance staff response time parameters for dispatched emergency calls.

II. Definitions

a. Not applicable.

III. Content

a. **Guideline Preface:** Each ambulance will respond within three (3) minutes of the time they are notified of a call by Boone County Joint Communications (BCJC).

b. **Procedure:**

i. Ambulance staff will proceed immediately to their ambulance upon notification of a call.

ii. Staff will notify Boone County Joint Communications that they are responding either via radio (mobile or portable) or Mobile Date Terminal (MDT).

iii. Frequent occurrences where units are re-toned will result in disciplinary action as the duty EMS supervisor sees fit.

IV. Attachments

a. Not applicable.

Title: Ambulance Service - Schedule - Policy

MU Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** 03/08/2018
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Policy Statement

a. Establishment of guidelines regarding the creation of the schedule to allow for operational efficiency and appropriate staffing levels.

II. Definitions

a. Weekend: extends from Friday night at 1900 through Monday at 0700.

III. Process/Content

a. Vacation and Request Off
   i. Time off request must be submitted to and approved by Pre-Hospital Services Clinical Manager or Designee.
   ii. They can be submitted up to a year in advance. Once approved, they will be reflected on the schedule template.
   iii. Requests off for a schedule period must be submitted no later than six weeks prior to the first day of the schedule period.

b. Holiday Schedules
   i. The holiday schedule will be determined using a 1-6 rating system, with a 1 indicating the holiday most desired off and a 6 indicating the least. A survey will be sent to all full-time staff members, who will rate their preferences for scheduling purposes. Attempts will be made to accommodate every staff member's first holiday request off, however operational needs take precedence. In the event that it is not possible to accommodate a first request, the decision will be made based on which holidays were worked the previous year.

c. Full time staff members must work at least one 24 hour period on a weekend during a schedule period. This can either be a 24 hour shift or two 12 hour shifts.

d. Full time staff must work 3 MU Football games and 3 Show Me State Game events annually, unless they are already scheduled to work during those special events.

e. Part time staff must submit 4 days of availability during the schedule period. Part time staff must work at least one shift during a schedule period unless prior arrangements have been made with their team leader and clinical manager or designee.
f. The schedule period will be six week long and will be opened to staff to submit shift requests six weeks prior to the start of the schedule period. Once the schedule has been opened for shift requests, time off requests will not be approved until the schedule has been balanced and will only be approved if adequate coverage is available.
g. 24 Hour Shifts
    i. 24 hour shifts will be available on the following trucks: 231, 241, and 251.
    ii. Reverse 24 hour shifts (1900-1900) will not be routinely scheduled and will only be allowed on a case-by-case basis at the discretion of the on duty supervisor.
h. Set bases will not be guaranteed on the schedule. All staff members have the potential to be scheduled at all of the bases, according to the shift hours they have requested.
i. Once a schedule has been finalized, it is the responsibility of the staff member to be aware of their schedule and to obtain coverage for requests off, trades, etc.

IV. Attachments

a. N/A

V. References, Regulatory References, Related Documents, or Links

a. N/A

Title: Ambulance Service -- Operations -- Staff Uniform -- Guideline

MU Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** Not Approved Yet
	Content Expert: Jay Hamner	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Purpose Statement

a. To describe the duty uniform components for Ambulance Service staff.
b. To describe special event and dress uniform for Ambulance Service staff.

II. Definitions

a. Uniform Shirt: Uniform shirt as issued by the Department of Emergency Services/Ambulance Service to an employee.
b. Uniform T-Shirts: Black T-Shirt issued by the Department of Emergency Services/Ambulance Service to an employee. See below for specific information on T-shirts.
c. Uniform Pants: Black Emergency Medical Services (EMS)/Battle Dress Uniform (BDU) pants will be worn at all times for daily duty wear.
d. Uniform Belt: Black belt with no logos or oversized buckles.
e. Uniform Cap: Black, white or gold ball cap with University of Missouri Healthcare (MU Health Care) or University of Missouri (MU Tigers) logo.
f. Uniform Coat: Coat as issued by the Department of Emergency Services, also includes extrication gear coat.
g. Uniform Inclement Weather Gear: Scarves, winter caps, gloves and earmuffs may be worn when appropriate. All should be black with only MU Health Care or MU logos apparent.
h. Uniform Footwear:
    i. Material consists of leather, suede, or leather/suede combination.
    ii. Soles of footwear must be treaded, petroleum resistant is recommended.
    iii. Must extend above the ankle for ankle support.
    iv. Predominant color is black or as approved by the Ambulance Supervisor.
    v. Laces are to be black or dark neutral color.
    vi. Must be closed at the heel.
    vii. Steel shank is strongly suggested.

Title: Ambulance Service -- Operations -- Staff Uniform -- Guideline

III. Duty Uniform

a. See above items

IV. Special Events- will only be worn while providing Emergency Medical Service coverage at athletic sporting events

a. Normal duty uniform or see below for exceptions
b. Black or khaki cargo shorts may be worn for outdoor special events only. Shorts must be at or just above the knee.
c. Athletic shoes or hiking boots may be worn for indoor/outdoor special events.

V. Dress Uniform (Optional)

a. White long sleeve button down shirt with MU Patches sewn on the sleeves.
b. Black tie
c. Uniform pants
d. Duty uniform footwear
e. Collar brass (emergency medical technician (EMT), emergency medical technician-paramedic (EMT-P), or EMS), EMS badge and name tag, optional but recommended.

VI. Content

a. Guideline Preface:
    i. All staff shall abide by the uniform standards described in this policy.
    ii. New employees will wear uniform approved by the Ambulance supervisors while acquiring needed uniform items.
    iii. Staff members are to present for duty in the uniform items listed above.
    iv. Issued reflective vests and body armor will be worn over the uniform when needed for safety as outlined in other policies.
    v. Turtlenecks, insulated shirts and long sleeve shirts worn, under uniform shirt must be black in color.
    vi. Uniform T-Shirts may only be worn from Memorial Day to Labor Day. This date may be adjusted each year. Additional days or time frames may be added. Staff will be notified of these times via university email. During these dates the uniform polos may also be worn
    vii. All uniform shirts including t-shirts are to be tucked in at all times on-duty or while present at MU Health Care.
    viii. Apparel worn by employees should be clean, neat and well maintained.
b. **Procedure**:

i. Staff members are to report to duty in appropriate attire as described above.
ii. If a staff member feels that they are unable to comply with the uniform policy prior to or during their shift they are to contact the EMS supervisor.
iii. If a staff member is unsure if an item falls within the uniform standards, they should contact the supervisor for approval of that item prior to reporting for duty.
iv. Staff members that report to duty without the appropriate or adequate uniform may be sent home from their shift and entered into the progressive discipline process.
v. The supervisor may ask an employee to replace any uniform item that is dirty, severely faded, torn, damaged or otherwise not in appropriate condition for the workplace.

VII. Attachments/References

a. ES-AS-4C-04 Emergency Medical Service (EMS) Supervisor Uniform -- Compliance -- Standard - Guidelines--Ambulance

Title: Ambulance Service -- Stress Identification and Employee Resources -- Policy

Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** Not Approved Yet
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Policy Statement

a. To establish guidelines for stress identification and ambulance supervisor recognition of events for which emotional support of staff members may be necessary.
b. Provide staff with guidance to emotional support resources for Ambulance Service.

II. Definitions

a. Not applicable.

III. Process/Content

a. When a crew is involved in any of the identified high stress incidents listed in the table below, an ambulance supervisor will make contact with them as soon as possible.
b. When a high stress incident occurs and a charge paramedic is on duty, the supervisor on-call should be notified. The charge paramedic and supervisor on-call should determine who will make contact with the crew.
c. The ambulance supervisor or charge paramedic should review the outlined talking points as applicable (see table below) and offer an opportunity to discuss the event.
d. The ambulance supervisor or charge paramedic should take careful consideration in modifying the employee's responsibilities for the remainder of their shift when necessary.
e. The involved crew should select a peer supporter from an approved list that will make contact or charge paramedic should use their best judgment in selecting a peer supporter for the crew.
f. Within 24 hours, a peer supporter will make contact with crew to again offer resources and an opportunity to discuss the event.

g. Supervisors should notify each other of any contact made regarding high stress incidents in an effort to maintain greater observation of stress management by crew.
h. Coworkers aware of the high stress incident should remain vigilant for any indication of poor stress management by the crew.
i. Students involved in high stress incidents are inclusive within this policy and contact should be made with University of Missouri Health Care Emergency Medicine Service (EMS) Education or Boone County Fire Protection District.

IV. Attachments

a. Not applicable.

V. References, Regulatory References, Related Documents, or Links

a. Not applicable.

HIGH STRESS INCIDENTS:	**TALKING POINTS:**

• Patient
  ○ Patient death
  ○ Dead on Arrival (J4)
  ○ Critical pediatric patient
• Provider
  ○ Serious injury or death of their child
  ○ Close relationship with a victim
• Co-worker
  ○ Line of duty serious injury or death of a co-worker
  ○ Suicide of a coworker
• Event
  ○ Mass casualty incidents
  ○ Intense media attention to an incident
  ○ High threat incident
  ○ Prolonged operations
  ○ Overwhelming events (disasters)
	• Availability of Resources
	  ○ ForYOU Team – 573-884-2373
	  ○ Peer Supporters – Expect contact within 24 hours
	• Short Term Stress Relief
	  ○ Modification of responsibilities
	  ○ Maintain normal routine
	  ○ Take care of yourself
	  ○ Discuss your feelings and accept help
	  ○ Avoid news about the event
	• Long Term Stress Relief
	  ○ Establish limits
	  ○ Take time away
	  ○ Relax during down time
	  ○ Talk to a friend or a supervisor

Title: Ambulance Service -- Policies -- Students and Observers -- Policy

MU Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** 05/18/2018
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Purpose Statement

a. To define for the Ambulance Service staff their role and responsibilities when students and observers are on the ambulance.

II. Definitions

a. Not applicable.

III. Content

a. Guideline Preface:
   i. At all times patient confidentiality will be maintained.
   ii. At no point will observers be allowed to render or impede patient care.
   iii. Students will only render care under the direct supervision of their designated preceptor.
      1. Basic Life Support (BLS) level providers can have both Basic and Advanced level providers as preceptors.
      2. Advanced Life Support (ALS) level providers that are providing ALS level interventions to a patient can only have an Advanced level preceptor for the duration of that patient care interaction.
   iv. Students/observers will dress and behave in an appropriate manner becoming University of Missouri Healthcare (MUHC) and the MUHC Ambulance Service.
   v. All students and observers will follow all safety procedures and utilize safety gear as directed by their preceptor/ambulance crew and as specified by Ambulance Service policy.
   vi. Only one observer, orienteer, or student may be assigned to a medic unit at a time unless otherwise approved by a supervisor.

b. Procedure:
   i. Only observers that have scheduled ride time through supervisors and the EMS Education Coordinator will be allowed on the ambulance.

ii. If more than one observer, orienteer, or student reports to a unit to ride, the on duty supervisor should be contacted so the extra person can be re-assigned or rescheduled to ride on a different day.

iii. Any observer who attempts to render or impede patient care will be immediately removed from the ambulance and both the on duty supervisor and EMS Education Coordinator will be notified.

iv. All students who schedule clinical time on a MUHC ambulance will do so through the EMS Training Coordinator.

v. If a student or observer is not dressed in an appropriate manner or behaves in a manner unbecoming of MUHC and MUHC Ambulance the supervisor may dismiss the student or observer from that shift. The duty supervisor should then contact the EMS Training Coordinator.

vi. The student/observer shall wear their seat belt at all times during ambulance operation. Failure to abide by this policy will result in dismissal of the student/observer from that shift.

vii. If students performing clinical time on a MUHC ambulance consistently refuse to follow the direction of their preceptors, MUHC and/or Ambulance Service policy/procedures/protocols, the supervisory staff may permanently ban that student from further clinical time on MUHC ambulances.

IV. Attachments

a. Not applicable.

Title: ES-AS-4C-06 Tobacco Use Policy -- Compliance -- Standard - Guideline--Ambulance Service

Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** 09/25/2017
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Policy Statement

a. To provide policy regarding tobacco use for Ambulance Service staff members.
b. To assist in maintaining a tobacco and smoke-free environment in Ambulance Service vehicles and facilities in a manner consistent with University of Missouri Health Care policies, patient safety and comfort and as directed by Missouri State Statues.

II. Definitions

a. Not applicable.

III. Process/Content

a. Policy:
    i. Ambulance Service employees are not to at any time use tobacco or smoking products inside any MUHC facility or vehicle.
    ii. Any person(s) including, but not limited to, students, ride-a-longs, patients, patient acquaintances and other agency personnel are prohibited from using tobacco or smoking products inside MUHC facilities or vehicles.
    iii. Tobacco and smoking products include but are not limited to cigarettes (tobacco, clove or otherwise), cigars, smokeless tobacco, pipes and any other smoking device. Devices specifically excluded are gum and patches utilized for smoking cessation.
    iv. Ambulance Service employees are not at any time to smoke or use tobacco products on scenes, at referring facilities, or during patient care/interaction/transport.
b. Procedure:
    i. Employees are to enforce this policy while on duty. If non-employees refuse to comply, the duty Emergency Medical Service (EMS) Supervisor, and/or MUHC Security may be contacted as needed.

ii. Any employee found violating this policy will be disciplined in accordance with the Department of Emergency Services and MUHC Human Resources policies.

IV. Attachments

a. Not applicable.

V. References, Regulatory References, Related Documents, or Links

a. Not applicable.

Title: Ambulance Service -- Policies -- Transfer of Patient Care -- Policy

MU Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** 02/13/2018
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Purpose Statement

a. To establish standards for the assumption and transfer of patient care responsibilities.

II. Definitions

a. Not applicable.

III. Content

a. Guideline:
   i. The initiation of patient care at an incident scene includes the assumption of responsibility and accountability for patient care unless and until this responsibility and accountability is transferred to a clinician with both a higher license level and the right to practice at that level in Missouri.
   ii. The paramedic responsible for patient care may relinquish care to the following only:
      1. Another paramedic from an Advanced Life Support (ALS) ambulance service.
      2. A flight team (flight nurse or flight paramedic).
      3. The staff of a receiving facility (registered nurse or physician).

b. Procedure:
   i. When an ALS ambulance is dispatched to an emergency call, the crew, if comprised of two paramedics, will decide prior to arrival on the scene which paramedic will be responsible for overall patient care. If no agreement can be reached, the paramedic with the most seniority at University of Missouri Health Care will be responsible.
   ii. When the ALS unit responds to an emergency call and crew is comprised of a paramedic and an emergency medicine technician (EMT), the paramedic is responsible for overall patient care.

iii. The paramedic may assign patient care activities to the EMT where appropriate and consistent with the EMT license level. The paramedic will still retain overall responsibility for patient care.

iv. During transport, if patient condition deteriorates, the paramedic will reassume primary patient care and provide interventions per protocol as needed.

v. The jurisdictional fire department will be considered to be functioning at the Basic Life Support (BLS) level while in their first-responder role and will relinquish patient care responsibility to a University paramedic upon arrival of the ALS unit.

vi. First responder agencies that have agreements with University of Missouri Health Care to function at a higher license level may do so at the discretion of the ALS crew providing patient care.

vii. The transfer of responsibility for patient care occurs primarily in the following situations:

1. The transfer of patient care responsibilities routinely takes place in a receiving facility between ambulance crews and nursing staff. After a bedside report, the facility assumes responsibility for further patient care.
2. In a multiple patient incident, it may be necessary to transfer the responsibility for patient care of one patient to the jurisdictional fire department or another ALS ambulance crew to transport a higher acuity patient. After a patient report responsibility for further care is given to the jurisdictional fire department or ALS ambulance crew.
3. In situations where aeromedical transport is indicated, the responsibility for patient care will be transferred to the flight nurse and/or flight medic upon their arrival.

IV. Attachments

a. Not applicable.

Title: Ambulance Service -- Policies -- Work Injuries -- Policy

Health University of Missouri	**Document Owner:** Janisha Eubanks	**Last Approved Date:** 05/18/2018
	Content Expert: Jacob Waller	

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

I. Policy Statement

a. To define for Ambulance Service staff members the process to follow when an injury occurs while on duty.

II. Definitions

a. Not applicable.

III. Process/Content

a. **Policy:**
   i. Any time an Ambulance Service staff member is injured while working, the on duty supervisor will be notified.
   ii. All required paperwork will be filled out and processed in a timely manner.

b. Procedure:
   i. Any time a staff member is injured while working, the on duty supervisor will be notified as soon as possible.
   ii. If necessary, the staff member will seek medical attention at their hospital of choice.
   iii. If the staff member is unable to continue working, the duty supervisor will find coverage for the remainder of the shift.
   iv. The duty supervisor will begin filling out the required Report of Injury Form. When completed it will be faxed to the Workers Compensation Office.

IV. Attachments:

a. Not applicable

V. References, Regulatory References, Related Documents, or Links

a. Not applicable.