

CommonSpirit Prehospital Medical Direction Documents

The “Denver Metro Prehospital Protocols” have been implemented for all levels of EMTs, AEMTs, EMT-Is, and Paramedics. Any reference in the protocols to the medical acts allowed, procedures, or operations at any level is not to be construed as authorization to act beyond the scope of certification of any provider.

These Medical Direction Documents are broken down into Guidelines and Protocols. The Guidelines provide suggestions as to care, while the Protocols are to supplement the Denver Metro Protocols and be followed by all CommonSpirit-based agencies. You will note that a number of the former St. Anthony’s protocols have been deleted as they are already covered in the Denver Metro Prehospital Protocols. We would encourage you to refer to that document first to see if the relevant topic is already covered there.

Medical Directors:
Scott Branney, MD
C. Sam Smith, MD
R. Zach Louderback, MD
Case Newsom, DO

Revised 7/15/2024

TABLE OF CONTENTS

	<u>Page No.</u>
<u>Guidelines</u>	
Reportable Diseases and Conditions	4
Security and Storage of Controlled Drugs	5
Special Events Documentation Requirements	7
Unusual Circumstance Reports (UCR)	8
Helicopters: Guidance for Helicopter Utilization	10
<u>Protocols</u>	
Avalanche Resuscitation	12
Pediatric Fever	13
Diphenhydramine	14
Nitro Paste	15
Ketamine*	17
TXA*	19
Levalbuterol	21

*Note: * denotes Waiver-Specific Protocols.

Guidelines

REPORTABLE DISEASES & CONDITIONS

Reportable Diseases & Conditions	B	IV	A	I	P
	X	X	X	X	X

Scope

This policy applies to Infection Prevention with regard to the process and procedure for follow-up for EMS agencies that transport patients to Common Spirit hospitals in the Mountain North Denver Operating Group. These include: St. Anthony Hospital, St. Anthony North Hospital, St. Anthony North Medical Pavilion, and St. Anthony Summit Medical Center.

Purpose

To Comply with State and Federal laws mandating the reporting of specific communicable diseases or situations, including those involving potential exposure of first responders.

Procedure

A. Respiratory

1. When Infection Prevention is alerted to a respiratory communicable disease in a patient that was transported by an Emergency Medical Services Agency (EMS) (e.g. Flight For Life Colorado, municipal / county / private ambulance service or fire department, etc.), Infection Prevention will notify the Director of PreHospital Services, facility EMS Coordinator, or designee.
2. The Director of PreHospital Services, facility EMS Coordinator or their designee will determine which EMS agency / agencies were involved and make an initial notification to the agency Emergency Services DO. The DO will investigate and proceed with notification and follow-up with their staff per agency policy.

B. Blood and Body Fluids

1. Documented exposure to blood, body fluids, or other potentially infection material (OPIM) will be handled via CommonSpirit policy.
2. EMS providers working under the medical direction of CommonSpirit PreHospital Services will be treated as employee's in the ED.
3. The Charge Nurse or Team Lead to the CommonSpirit facility will obtain an exposure packet and process the EMS provider according to policy.
4. If possible, source blood will also be processed and the patient identifier linked to the EMS provider involved in the exposure.

SECURITY AND STORAGE OF CONTROLLED DRUGS

Security and Storage of Controlled Drugs	B	IV	A	I	P
	X	X	X	X	X

General Principles

EMS agencies that utilize ALS providers are required to have an approved policy regarding security and storage of controlled medications. In the event that an agency does not have an approved internal policy, this one shall be utilized.

ALS providers may be authorized to administer Controlled Substances to include: Morphine Sulfate, Diazepam, Midazolam, Ketamine and Fentanyl only within the established indications of the Medical Director's protocols. The EMS Agency is responsible for the storage and security measures. This is an extension of the Medical Director, because the drugs are stored on ambulances, rescue/fire response vehicles or agency premises rather than at the office of the Medical Director. All controlled drugs must be obtained from an authorized CommonSpirit facility.

Procedure Requirements for Storage and Security

- A. The ALS provider, as an extension of the Medical Director and the EMS Agency, must provide effective controls to guard against theft or diversion of controlled drugs.
- B. Any ALS provider or Agency which has reasonable cause to believe that any amount of controlled drugs have been diverted, stolen, or that an amount was administered outside the scope of protocols (including standing orders) **must report this to the Medical Director or his designee immediately.** An Unusual Circumstances Report must be completed and submitted within 24 hours. Included in this UCR should be information detailing the date of the loss, the individuals involved in identifying the loss, a police or law enforcement case number if applicable and available, the details surrounding the loss, and measures taken to prevent further loss.
- C. All controlled drugs must be stored in a securely locked, substantially constructed case or cabinet.
- D. Under no circumstances may the controlled drugs be handled by any person who has been convicted of a felony relating to controlled drugs.
- E. It is the policy of the Federal Drug Enforcement Administration (DEA) that employers determine if any employee has been convicted of a crime or unauthorized use of controlled drugs. The DEA also expects that any person, who engages in illicit use of controlled drugs, be investigated by the employer regarding continued employment.

Common Spirit Prehospital Medical Direction Documents
Operational Protocols

- F. The adequacy of storage and security of controlled drugs are determined by the:
1. Location the controlled drugs are stored (ambulance, locked cabinet).
 2. Type of enclosure (substantially constructed: plastic or metal, tamper-proof).
 3. Type of closure, key system, or lock.
 4. Limitation of access to the drugs by non-paramedics (patients, students, others). **The ALS provider on duty is to be the only person to have access.** If individuals handling controlled substances are not ALS providers, prior approval must be made by the medical director or their representative.
- G. Each agency shall establish an electronic tracking system that monitors use/ access, security and available amounts of controlled substances. These systems shall be available for access at anytime by the Medical Director or their representative.
- H. Written documentation is required for **any** controlled drug administered during patient care by the ALS provider. Documentation must, at minimum, included the following information: trip/call number, patient name, amount given, time administered, the administering paramedic's signature, and the name of the physician ordering the drug or if the drug was administered according to standing orders.
- I. Written documentation is required for **any controlled drug that is wasted** and must, at minimum, include the following information: trip/call number, patient name, amount given, amount wasted, time, and **two** signatures. **Wasted amount must be witnessed.**
- J. All documentation, as outlined above, must be retained for a minimum of two (2) years and be made available to the Medical Director or his/her designee at any reasonable time.
- K. The storage and security system implemented by an Agency, including any modifications, must be in writing and approved by the Medical Director.

SPECIAL EVENT DOCUMENTATION REQUIREMENTS

Special Event Document Requirements	B	IV	A	I	P
	X	X	X	X	X

It is the purpose of this protocol to provide guidance and outline documentation and base contact requirements for agencies and personnel that oversee medical coverage for special events.

A. OTC Log: All patient contacts and first aid assists will be entered in the Event Patient Contact Log. This log may be written or electronic.

B. Patient Care Report (PCR)/ Patient Contact Log. PCR's are not required for the following, but agency-specific policies may apply:

1. Isolated Soft tissue injuries in the adult and minor
2. General self-managed complaints including but not limited to: headache, mild allergies, splinters, isolated abrasions, etc.
3. OTC medication administration

C. BASE CONTACT is required for refusals not meeting the Standing Order refusal criteria as defined in the Denver Metro Prehospital Protocols (General Guidelines 0080).

UNUSUAL CIRCUMSTANCE REPORTS (UCR):

UNUSUAL CIRCUMSTANCE REPORT	B	IV	A	I	P
	X	X	X	X	X

Purpose

The purpose of this protocol is to provide a guideline for prehospital providers and field instructors to:

- A. Inform the Medical Director or his/her staff about an unusual incident.
- B. Initiate an inquiry into an event or incident.
- C. Report patient encounters to the Medical Director in which base station contact could not be made as required by protocol.
- D. Any concern relating to the quality of care of a patient in the St. Anthony system. E. Any additional documentation required regarding Medical Director waivers that are in effect for the EMS agency.

The Unusual Circumstance & Field Agency Incident Report is intended to provide a uniform reporting form for the St. Anthony system. It should be used for both positive reporting of commendable conduct as well as problems or difficult encounters because all of these are considered important for quality improvement of the EMS system. Documentation of an unusual circumstance does not equate to a complaint or necessarily reflect a negative criticism of an event (the implications and result of a report are to be determined by the Medical Director). It serves as a means to resolve issues, identify areas for system improvement and commendation, and avoid the ineffectiveness of verbal complaints, statements and compliments.

Procedure

- A. **INCIDENTS REQUIRING UCR.** The following are instances when an unusual circumstance report is required to be submitted to the Medical Director or his / her designee:
 - **ABSENCE OF BASE CONTACT:** When the prehospital provider has a patient encounter in which base station contact could not be made as required by protocol. In such cases, the run report must accompany the report.
 - Reasonable attempts **MUST** be made to make base station contact with online medical control prior to an EMT, AEMT, EMT-Intermediate or Paramedic administering medication to a patient that requires **BASE CONTACT** per protocol.
 - In the event that online medical control cannot be made, the EMT, AEMT, EMT Intermediate or Paramedic shall provide patient care and medication administration in accordance with the appropriate written protocol and fill out an Unusual Circumstance Report (UCR), to be submitted to the Medical Director or Their representative within 48 hours of the call.

Common Spirit Prehospital Medical Direction Documents

Operational Protocols

- A copy of the patient care report must accompany the UCR
- During transport, as soon as online medical contact can be made, the EMT, AEMT, EMT Intermediate or Paramedic should call report and confirm medication administration.

- **CRICOTHYROTOMY**: In the event a cricothyrotomy is performed a UCR must be submitted, with the run report, to the office of the Medical Director within 48 hours of patient encounter. The Paramedic who performed or attempted to perform the procedure is responsible for completion of the UCR form and reporting.
- **Ketamine** ; For routine Ketamine administration, you do NOT have to submit an Unusual Occurrence Report (UCR). If you have any concerns regarding an encounter with Ketamine administration or there was a protocol violation related to Ketamine administration, submit a UCR for review.
- **TxA**: In the event of a TxA administration, a UCR must be submitted with a run report to the office of the Medical Director within 48 hours of patient encounter. The Paramedic who administered the TxA is responsible for completion of the UCR for and reporting.

B. The UCR should NOT be submitted with the copy of the run report that is left with the Emergency Department when a patient is transported. The only identifier should be the PCR number.

C. This should be submitted on the Common Spirit Unusual Circumstances Report (UCR) form.

D. All UCRs will be reviewed, and where appropriate, the author of the report will be provided feedback from the Medical Director, EMS Coordinator, or the PreHospital staff.

HELICOPTERS - GUIDANCE FOR USE OF HELICOPTERS

Helicopters	B	IV	A	I	P
-------------	---	----	---	---	---

Common Spirit Prehospital Medical Direction Documents

Operational Protocols

	x	x	x	x	x
--	---	---	---	---	---

The use of a medical helicopter should be considered:

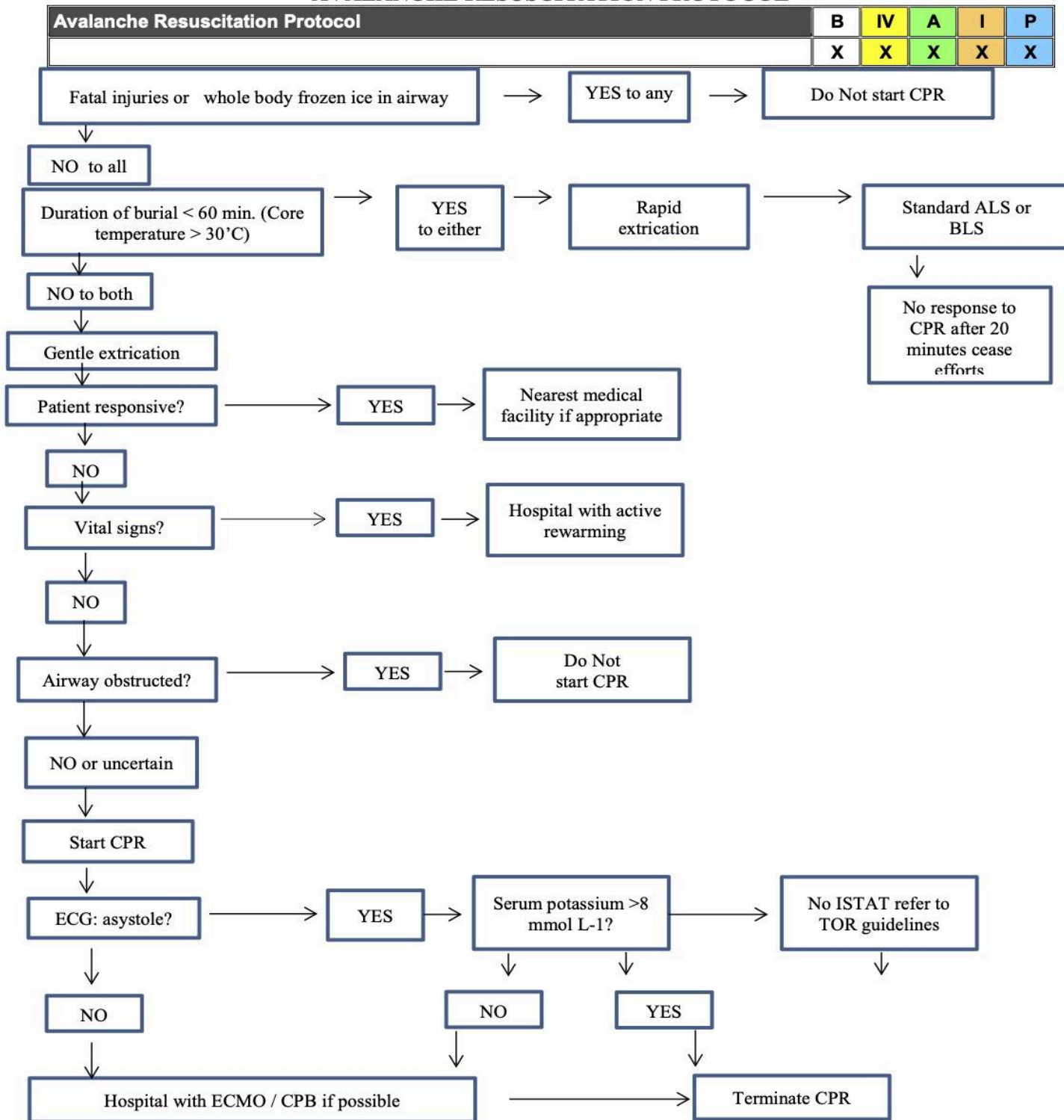
- A. When the helicopter can, in an appropriate time frame, arrive at the scene and provide necessary medical care not already available from the first responding agency.
- B. When the helicopter can transport the patient to the appropriate hospital in less time than a ground ambulance.
- C. To provide additional prehospital care givers to the scene of multiple patients.
- D. For effective dispersal of multiple patients to tertiary care centers.
- E. For prolonged extrication of patients.
- F. When the level of care provided by a flight crew will be the best benefit to the patient.

NOTE: Medical helicopters can be a life-saving resource when utilized properly. The decision to request, or not request, a medical helicopter may be the most important decision made at a scene. Understand your agency, systems and resources, understand the helicopter system, and make the decision that is in the best interests of your patient.

Protocols

Common Spirit Prehospital Medical Direction Documents
Operational Protocols

AVALANCHE RESUSCITATION PROTOCOL



Adopted from the Alaska Cold Injuries Guidelines 2014
Updated with new time, temperature and serum potassium from Truhar et al., 2015

Common Spirit Prehospital Medical Direction Documents
Operational Protocols

PEDIATRIC FEVER

Pediatric Fever	B	IV	A	I	P
	X	X	X	X	X

Indications & Specific Information Required

- A. Age: Patients must be **minimum age 6 months**.
- B. Patient must have the ability to swallow or suckle without assistance and have an age-appropriate mental status.
- C. History: Accurate temperature with fever of 38.3°C (101F) or higher noted with duration of fever, time frame since last dose, accurate weight in kilograms and what, if any, medications were administered prior to EMS arrival.
- D. Past history: previous seizures, current medications, chronic illness specifically liver or renal disease, oncologic diagnosis, history of transplant, ulcers or gastritis, post-operative within two weeks, bleeding, asthma, drug sensitivity or allergy.

Treatment

- A. Consider one of the two medications for patients with fever with no relief from previous administrations of anti-pyretics:
 - 1. Ibuprofen
 - OR**
 - 2. Acetaminophen
- B. Document completely on PCR.
- C. Any deviations require base contact.

Specific Precautions

- A. Febrile seizures occur in normal children between 6 months and 6 years. Such seizures are usually short, lasting less than 5 minutes, generalized, and usually do not require anti-seizure drug therapy.
- B. Oncology patients should not receive Ibuprofen or other NSAIDS due to the risk of increased bleeding associated with these medications.
- C. Fever may be the result of a toxic ingestion such as Benadryl and other anticholinergics. Risk of toxic ingestion should be considered in all febrile pediatric patients.

Common Spirit Prehospital Medical Direction Documents
Operational Protocols

DIPHENHYDRAMINE (BENADRYL) OTC

Diphenhydramine (Benadryl ® OTC)	B	IV	A	I	P
			X	X	X

Description

Diphenhydramine blocks action of histamine released from cells during an allergic reaction. Direct CNS effects, which may be stimulant or, more commonly, depressant, depending on individual variation. Also has anticholinergic, antiparkinsonian effects, which is used to treat acute dystonic reactions to antipsychotic drugs (Haldol, Thorazine, Compazine, etc.) These reactions include oculogyric crisis, acute torticollis, and facial grimacing.

Indications

- Moderate allergic reactions
- Second line for anaphylaxis and severe allergic reactions
- Control extrapyramidal effects, Co administration with Inapsine

Precautions

- Lower respiratory diseases such as asthma or COPD
- Narrow-angle glaucoma
- Bladder obstruction

Side effects

- Dose-related drowsiness
- Dilated pupils
- Dry mouth and throat
- Flushing
- May potentiate with alcohol usage

Drug Interactions

- CNS depressants and alcohol may have additive effects.
MAO inhibitors may prolong and intensify anticholinergic effects of antihistamines.

Dosage and Administration

- Adults: 50 mg, By Mouth (2 tablets or capsules), IV bolus, or IM if vascular access has not been obtained
 - When co-administering with inapsine, 50mg IM or IV. Reduce to 25mg IM or IV in patients over 65.
- <8 years: 25mg- By Mouth (1-25 mg tablet or capsule) or oral suspension (2x 12.5mg/5ml), 1-2 mg/kg slow IV bolus/IM (not to exceed 50 mg)
- 1-8 years 1mg/kg oral suspension (12.5mg/5ml)

Protocol

- Allergic Reaction
- Extreme Agitation

Common Spirit Prehospital Medical Direction Documents
Operational Protocols

NITROGLYCERINE PASTE

Nitroglycerine Paste	B	IV	A	I	P
			X	X	X

Description, Pharmacology & Actions

Nitroglycerine (“Nitro”) Paste delivers nitroglycerin in a slower sustained dose. It is meant as follow-up to sublingual nitroglycerin.

Nitro Paste is absorbed through the skin.

- Absorption is much slower than sublingual.
- Delivers a lower dose over a long period of time.
- Onset of action is delayed due to absorption through the skin (20 to 30 minutes).

Cardiovascular effects include:

- Decreases venous tone and venous return to heart; causes blood-pooling in peripheral veins.
- Decreased peripheral resistance.
- Dilatation of coronary arteries (if not already at maximum) and relief of coronary artery spasm.
- Generalized smooth muscle relaxation.

Indications

- Cardiac chest pain; AFTER first dose of sublingual nitroglycerine; when nitro called for in accordance with Denver Metro Prehospital Protocol 3060 ADULT CHEST PAIN

Contraindications

- Patients taking medication for erectile dysfunction should **not** receive any nitrate preparations including nitro paste. Contact base if unsure.
- Systolic BP <100 mm Hg.

Precautions

- Nitro paste is absorbed through the skin. Prevent nitro paste from contacting caregiver’s skin.
- Generalized vasodilatation may cause profound hypotension and reflex tachycardia.
- Use with caution in hypotensive patients.
- Use with caution in patients that have 12-lead evidence of a RV infarct.

Dosage & Administration

- 1st Nitro dose is Sub Lingual (spray or tab). Then apply 1” nitro paste on application paper.
- Place the paper—nitro paste toward patient—on the anterior chest wall of the patient.
- **Contact Base** for use without sublingual nitroglycerin.
- **Contact Base** for direct physician order to increase dosage for larger patients.
- Blood pressure to be checked at least every 15 minutes.
- Remove application paper and wipe the patient’s skin if (a) systolic blood pressure less

Common Spirit Prehospital Medical Direction Documents

Operational Protocols

than 100 mm Hg, (b) signs of hypotension or (c) signs of allergic reaction.

Side effects and special notes

- Since absorption is through the skin, effects of the drug may continue for 20 to 30 minutes following removal of the application paper.
- Sublingual nitroglycerin may be used to augment nitro paste. This may be necessary during the first 30 minutes of application.
- Common side effects are the same as sublingual nitroglycerin. They include headache, orthostatic hypotension, flushing, dizziness, and syncope.
- The patient's skin may react to nitro paste with rash or pruritus. Remove nitro paste if necessary. • May be used with patients using disks or oral long-acting nitrate preparations.

Common Spirit Prehospital Medical Direction Documents
Operational Protocols

KETAMINE (KETALAR)

Ketamine (Ketalar)	B	IV	A	I	P
					X

Description

Ketamine is a non-competitive NMDA receptor antagonist with analgesic, dissociative amnestic, and anesthetic effects.

Onset and Duration

- Onset of action is 1-5 minutes after IV or IM administration.
- Duration: 10-15 minutes after IV administration; effects after IM administration may persist up to an hour or longer.

Indications

- Analgesia for moderate to severe pain, to be used as a first-line agent or as an adjunct in situations where extreme pain has been unrelieved by other therapies.

Contraindications:

- Penetrating eye trauma
- Patient less than 1 year of age

Side Effects:

- Laryngospasm: this very rare adverse reaction presents with stridor and respiratory distress.
 - Prepare to provide respiratory support including airway repositioning, bag-valve-mask ventilation with 100% O₂, and suction, which are generally sufficient in cases of ketamine-induced laryngospasm.
- Emergence reaction: presents as anxiety, agitation, apparent hallucinations or nightmares as ketamine is wearing off.
 - For severe reactions, consider benzodiazepine per protocol.
 - Consider physical restraint if indicated.
- Nausea and vomiting:
 - Give antiemetic as needed per protocol.
- Hypersalivation:
 - Suction usually sufficient. If profound hypersalivation causing airway difficulty, administer atropine 0.5 mg IV.

Common Spirit Prehospital Medical Direction Documents

Operational Protocols

Dosage and Administration:

- Institute cardiac monitoring, pulse oximetry, and continuous waveform capnography prior to administration of ketamine if possible.

Adult

- 0.25 mg/kg dosed mixed into a 50ml, 100 mL, or 250mL bag of crystalloid administered as a slow IV infusion, titrated to effect
- 0.5 mg/kg IM split into 2 doses
- Dose may be repeated after 10 minutes for a total of two doses. Contact base after 2 doses to discuss most appropriate subsequent analgesia. If operating under Extended Transport Guidelines, up to three doses are permitted prior to base contact, with 10 minutes between doses.

Pediatric (between 1 and 13 years old)

- 0.25 mg/kg dosed mixed into a 50ml, 100 mL, or 250mL bag of crystalloid administered as a slow IV infusion, titrated to effect
- 0.5 mg/kg IM split into 2 doses
- Dose may be repeated after 10 minutes for a total of two doses. Contact base after 2 doses to discuss most appropriate subsequent analgesia. If operating under prolonged transport protocols, up to three doses are permitted prior to base contact, with 10 minutes between doses.

Precautions and Notes:

- For routine ketamine administration, you do NOT have to submit an Unusual Occurrence Report (UCR). If you have any concerns regarding an encounter with ketamine administration or there was a protocol violation related to ketamine administration, submit a UCR for review.

Common Spirit Prehospital Medical Direction Documents
Operational Protocols

TRANEXAMIC ACID (TXA) - (LYSTEDA, CYKLOKARRON)

Tranexamic Acid (TXA) - (Lysteda, Cyklokarron)	B	IV	A	I	P
					X

Description

Tranexamic Acid (TXA) is a synthetic derivative of the amino acid lysine. It is an antifibrinolytic that competitively inhibits the activation of the plasminogen to plasmin, a molecule responsible for the degradation of fibrin which is a protein that forms the framework of blood clots.

Onset and Duration

- Onset of action is 5-15 minutes after IV administration.
- Duration: Antifibrinolytic concentration of TXA persists in various tissues for roughly 17 hours and up to 7-8 hours in the serum.

Indications

- Uncompensated hemorrhagic shock in the adult patient due to trauma or post-partum hemorrhage less than 3 hours old as evidenced by:
 - Sustained HR > 110 OR
 - SBP < 90 OR
 - Shock index > 1
- Compensated hemorrhagic shock in the adult patient due to trauma or post-partum hemorrhage less than 3 hours old as evidenced by:
 - Obvious or suspected external or internal hemorrhage with clinical indicators of poor perfusion not yet meeting VS criteria for uncompensated shock
- Epistaxis

Contraindications:

- Patient less than 13 years of age
- Greater than 3 hours post injury or bleeding onset
- Known hypersensitivity to TXA

Side Effects:

- Hypotension may occur if IV administration is too rapid (< 1 minute).
- Other potential reported side effects include severe allergic reaction, headache, blurred vision, giddiness, muscle pain, abdominal pain, nausea, vomiting, diarrhea, thrombotic events, dermatitis.

Common Spirit Prehospital Medical Direction Documents
Operational Protocols

Dosage and Administration:

Hemorrhagic Shock

Adult

- **Dose:** 2 gm **slow** IV/IO push (over 1 minute)

Pediatric (<13 years old)

- NOT PERMITTED

Epistaxis

Adult

- 500 mg applied to cotton ball or nasal packing device prior to insertion in nose.

Pediatric (<13 years old)

- NOT PERMITTED

Precautions and Notes:

- Document administration appropriately; time of onset of bleeding **MUST BE** documented accurately.
- Ensure receiving facility has been notified of TXA administration.
- Do not administer in the same IV line as blood products or in an IV line used for rFVIIa or penicillin.
- Submit an Unusual Circumstance Report within 48 hours.

Common Spirit Prehospital Medical Direction Documents
Operational Protocols

Levalbuterol

Levalbuterol - (Xopenex)	B	IV	A	I	P
	X	X	X	X	X

LEVALBUTEROL TARTRATE - (XOPENEX)

Description

- Levalbuterol is a selective β -2 adrenergic receptor agonist. It is a bronchodilator and positive chronotrope.
- Because of its β -agonist properties, it causes potassium to move across cell membranes inside cells. This lowers serum potassium concentration and makes levalbuterol an effective temporizing treatment for unstable patients with hyperkalemia.
- Levalbuterol contains only the active (R) enantiomer, while typical albuterol is a racemic mixture of both (R) and (S) enantiomers. Theoretically, levalbuterol should be better tolerated without as many adverse reactions. In practice, the medications have been found to have no significant difference in effect.

Onset and Duration

- Onset: 5-15 minutes after inhalation.
- Duration: 3-4 hours after inhalation.

Indications

- Bronchospasm
- Known or suspected hyperkalemia with ECG changes (i.e., peaked T-waves, QRS widening)
- Crush or suspension injury with suspected hyperkalemia

Contraindications:

- Severe tachycardia is a relative contraindication

Adverse Reactions:

- Tachycardia
- Palpitations
- Dysrhythmias

Drug Interactions:

- Use of other sympathomimetics may exacerbate adverse cardiovascular effects
- β -blockers may antagonize levalbuterol

Formulations:

- MDI: 45 mcg/metered spray (15 g canister with 200 inhalations)
- Pre-diluted nebulized solutions: Most commonly either 0.63 mg or 1.25 mg in 3 mL NS

Dosage and Administration:

Adult and Pediatric

- **MDI:** 2 inhalations (90 mcg) per package instructions. May be repeated once (total of 4 inhalations).
 - **Single Nebulizer Dose:** One unit dose bottle (3 mL, should contain either 0.63 or 1.25 mg of levalbuterol) by nebulizer, at a flow rate that will deliver the solution over 5-15 minutes (6-8 LPM). May be repeated twice (total of 3 doses).
 - **Continuous Nebulizer Dose:** In more severe cases, place 3 premixed levalbuterol containers (9 mL, should contain either 1.89 or 3.75 mg total of levalbuterol) into the nebulizer and run continuously at 6-8 LPM. Do not exceed 10 mg total levalbuterol per hour.
-

Precautions and Notes:

- Consider inline nebs for patients requiring endotracheal intubation or CPAP
- May precipitate angina pectoris and dysrhythmias
- Should be used with caution in patients with suspected or known coronary disease, diabetes mellitus, hyperthyroidism, prostatic hypertrophy, or seizure disorder
- Wheezing associated with anaphylaxis should first be treated with epinephrine IM