PLATTEVILLE GILCREST
FIRE PROTECTION DISTRICT

MEDICAL PROTOCOLS, PROCEDURES AND TREATMENT GUIDELINES

REVISION March 2024

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The process that has been initiated in the construction of the protocols will remain in place until the next protocol revision. The authors will continue to edit and revise the protocols to reflect the dynamic role of emergency medical services within the medical care community.

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0010 GENERAL GUIDELINES: INTRODUCTION

INTRODUCTION

The following protocols have been developed and approved by the PGFPD Medical Director. These protocols define the standard of care for EMS providers in the Platteville Gilcrest Fire Protection District, and delineate the expected practice, actions, and procedures to be followed.

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

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

In order to keep protocols as uncluttered as possible, and to limit inconsistencies, individual drug dosing has not been included in the algorithms. It is expected the EMTs will be familiar with standard drug doses. Drug dosages are included with the medications section of the protocols as a reference.

If viewing protocol in an electronic version, it will be possible to link directly to a referenced protocol by clicking on the hyperlink, which is underlined.

PROTOCOL KEY

Boxes without any color fill describe actions applicable to all certification levels. Boxes with orange fill are for actions for intermediate level or higher, and blue-filled boxes are for Paramedic level. When applicable, actions requiring **Base Contact** are identified in the protocol.

EMT	AEMT
Intermediate	Paramedic

- Teaching points

Teaching points deemed sufficiently important to be included in the protocol are separated into grey-filled boxes with a double line border.

TRAINING AND EDUCATION

These protocols define the treatments, procedures, and policies adopted from the Denver Metro EMS Physician Group and approved by the PGFPD EMS Medical Director. In Colorado, the scope of practice and acts allowed for EMT, EMT-IV, AEMT, EMT-I and Paramedic certifications are defined by the Colorado Department of Public Health and Environment, Chapter Two - Rules Pertaining to EMS Practice and Medical Director Oversight. These protocols do not supersede Chapter Two allowances, but in some instances may vary from Chapter Two depending on medical directors' preference.

The curriculum for initial EMS provider training may not cover some of the treatments, procedures and medications included in these protocols. Therefore, it is the responsibility of the EMS agency and Medical Director to ensure the initial training, verification, and maintenance of these skills falling outside traditional EMS education with all agency providers. This may be of additional importance when training and orienting newly hired providers prior to independent practice.

0015 GENERAL GUIDELINES: AGE DEFINITIONS

INTRODUCTION

For the purposes of these clinical care protocols, the following age guidelines will be used. These are general guidelines, however individual protocols, including medication dosages, may deviate from these age ranges.

ADULT

Adult patients are considered 12 years of age or older.

GERIATRICS

Geriatric patients will be considered 65 years of age or older. Geriatric specific indications will be indicated by a green box.

PEDIATRICS

Pediatric patients are those less than 12 years of age. Infant is defined as less than 1 year of age. Neonate is defined as less than one month of age. Pediatric specific indications will be noted by a purple box.

0020 GENERAL GUIDELINES: CONFIDENTIALITY

CONFIDENTIALITY

A. The patient-physician relationship, the patient-registered nurse relationship, and the patient-EMT relationship are recognized as privileged. This means that the physician, nurse, or EMT may not testify as to confidential communications unless:

   1. The patient consents
   2. The disclosure is allowable by law (such as Medical Board or Nursing Board proceedings, or criminal or civil litigation in which the patient's medical condition is in issue)

B. The prehospital provider must keep the patient's medical information confidential. The patient likely has an expectation of privacy, and trusts that personal, medical information will not be disclosed by medical personnel to any person not directly involved in the patient's medical treatment.

   1. Exceptions
      i. The patient is not entitled to confidentiality of information that does not pertain to the medical treatment, medical condition, or is unnecessary for diagnosis or treatment.
      ii. The patient is not entitled to confidentiality for disclosures made publicly.
      iii. The patient is not entitled to confidentiality with regard to evidence of a crime.

C. Additional Considerations:

   1. Any disclosure of medical information should not be made unless necessary for the treatment, evaluation or diagnosis of the patient.
   2. Any disclosures made by any person, medical personnel, the patient, or law enforcement should be treated as limited disclosures and not authorizing further disclosures to any other person.
   3. Any discussions of prehospital care by and between the receiving hospital, the crewmembers in attendance, or at in-services or audits which are done strictly for educational or performance improvement purposes, will fall under the “Carol J. Shanaberger Act” Colorado Revised Statutes §25-3.5-901 et seq., provided that all appropriate criteria have been met for the agencies peer protection program. Further disclosures are not authorized.
   4. Radio communications should not include disclosure of patient names.
   5. This procedure does not preclude or supersede your agency’s HIPAA policy and procedures.
   6. Any communication from the prehospital setting to the receiving hospital or other facility or care provider should be kept in compliance with HIPAA including all smart technology, SMS messaging, wireless communication or otherwise. No personal identifier information should be transmitted over non-HIPAA compliant secure means.

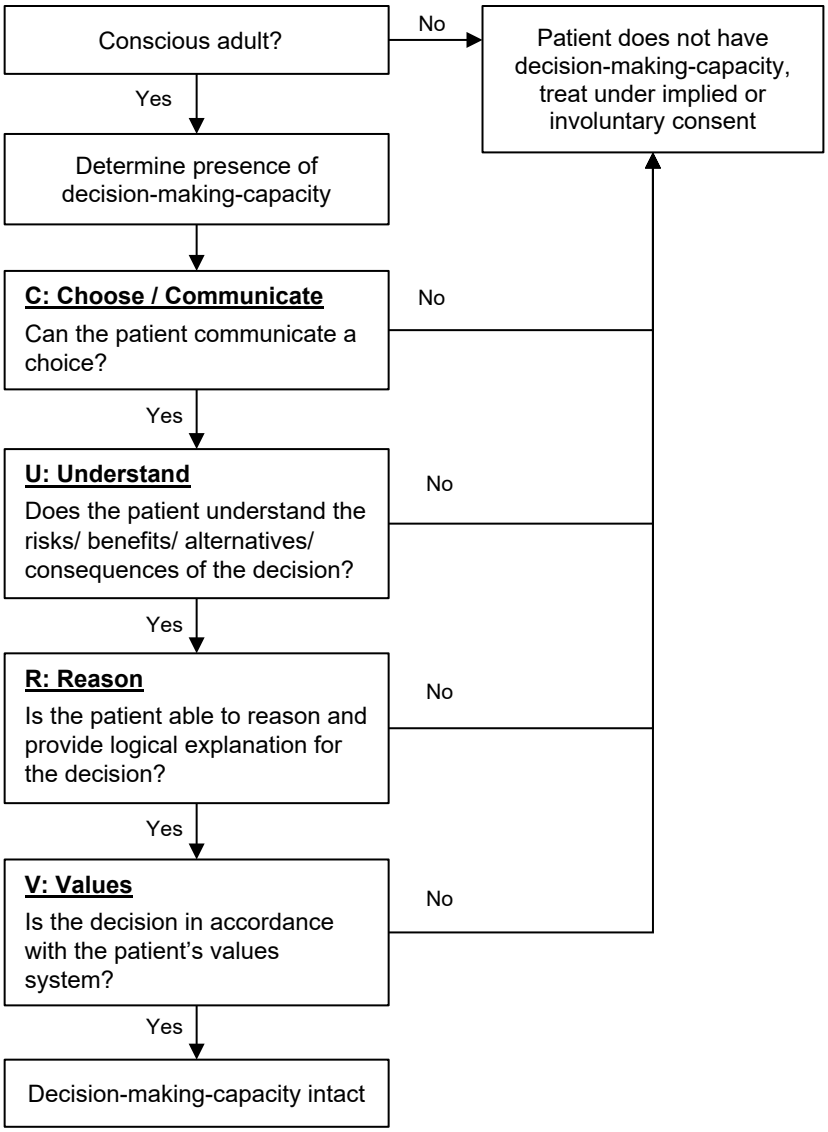
0030 General Guidelines: Consent

General Principles

- An adult in the State of Colorado is 18 years of age or older.
- Every adult is presumed capable of making medical treatment decisions. This includes the right to make "bad" decisions that the prehospital provider believes are not in the best interests of the patient.
- A call to 9-1-1 itself does not prevent a patient from refusing treatment. A patient may refuse medical treatment (IVs, oxygen, medications), but you should try to inform the patient of the need for therapies, offer again, and treat to the extent possible.
- The odor of alcohol on a patient's breath does not, by itself, prevent a patient from refusing treatment.

Values

- Attempt to assess if the patient's decision is in line with how they have approached the other questions they have been asked during assessment
- If possible, obtain collateral from friends or family to determine if the patient's decision is in line with other decisions or conversations
- An example question to assess values: "How did you reach your decision to accept (or reject) care?"



Involuntary Consent

In rare circumstances a person other than the patient may authorize consent. This may include:

- Court order (Guardianship)
- Law enforcement officer may authorize transport of prisoners in custody or detention in order to be evaluated but cannot dictate treatment decisions.
- Persons under a mental health hold or commitment who are a danger to themselves or others or are gravely disabled.
- It is sufficient to assume the patient lacks decision-making-capacity if there is a reasonable concern when any person appears to have a mental illness and, as a result of such mental illness, appears to be an imminent danger to others or to himself or herself or appears to be gravely disabled. Effort should be made to obtain consent for transport from the patient, and to preserve the patient's dignity throughout the process. However, the patient may be transported over his or her objections and treated under involuntary consent if the patient does not comply.

Contact Base if there are any questions or concerns about decision-making-capacity.

Approved by Platteville-Gilcrest FPD EMS Medical Director July 2022.

0030 General Guidelines: Consent

General Principles: Minors

A. A parent, including a parent who is a minor, may consent to medical or emergency treatment of his/her child. There are exceptions:
    1. Neither the child nor the parent may refuse medical treatment on religious grounds if the child is in imminent danger as a result of not receiving medical treatment, or when the child is in a life-threatening situation, or when the condition will result in serious handicap or disability.
    2. Minors may seek treatment for medical care related to the intended live birth of a child; contraception; abortion; prevention, diagnosis, and treatment for sexually transmitted infections/HIV; evaluation and/or treatment after sexual assault; and treatment for addiction to or use of drugs, emergency treatment for intoxication, and treatment for alcoholism without consent of parents.
    3. Minors 15 years or older may seek treatment for mental health without parents' consent.
    4. The consent of a parent is not necessary to authorize hospital or emergency health care when a first responder in good faith relies on a minor's consent, if the minor is at least 15 years or older, and
        a. Is living separate and apart from his or her parents, and managing his or her own financial affairs; or
        b. They have contracted a lawful marriage
B. When in doubt, your actions should be guided by what is in the minor's best interests and **BASE CONTACT**.

Procedure: Minors

A. A parent or legal guardian may provide consent to or refuse treatment in a non- life-threatening situation.
B. When the parent is not present to consent or refuse:
    1. If a minor has an injury or illness, but not a life-threatening medical emergency, you should attempt to contact the parent(s) or legal guardian. If this cannot be done promptly, transport.
    2. If the child does not need transport, they can be left at the scene in the custody of a responsible adult (e.g., teacher, social worker, grandparent). It should only be in very rare circumstances that a child of any age is left at the scene if the parent is not also present.
    3. If the minor has a life-threatening injury or illness, transport and treat per protocols. If the parent objects to treatment, **CONTACT BASE** immediately and treat to the extent allowable, notify law enforcement to respond and assist.

0040 GENERAL GUIDELINES: PHYSICIAN AT THE SCENE/MEDICAL DIRECTION

Purpose

A. To provide guidelines for prehospital personnel who encounter a physician at the scene of an emergency

General Principles

A. The prehospital provider has a duty to respond to an emergency, initiate treatment, and conduct an assessment of the patient to the extent possible.
B. A physician who voluntarily offers or renders medical assistance at an emergency scene is generally considered a "Good Samaritan." However, once a physician initiates treatment, he/she may feel a physician-patient relationship has been established.
C. Good patient care should be the focus of any interaction between prehospital care providers and the physician.

Procedure

A. See algorithm below and sample note to physician at the scene

Special notes

A. Every situation may be different, based on the physician, the scene, and the condition of the patient.
B. **CONTACT BASE** when any question(s) arise.

0040 GENERAL GUIDELINES: PHYSICIAN AT THE SCENE/MEDICAL DIRECTION

NOTE TO PHYSICIANS ON INVOLVEMENT WITH EMS PROVIDERS

THANK YOU FOR OFFERING YOUR ASSISTANCE.

The prehospital personnel at the scene of this emergency operate under standard policies, procedures, and protocols developed by their Medical Director. The drugs carried and procedures allowed are restricted by law and written protocols.
After identifying yourself by name as a physician licensed in the State of Colorado and providing identification, you may be asked to assist in one of the following ways:

1. Offer your assistance or suggestions, but the prehospital care providers will remain under the medical control of their **base** physician, or
2. With the assistance of the prehospital care providers, talk directly to the **base physician** and offer to direct patient care and accompany the patient to the receiving hospital. Prehospital care providers are required to obtain an order directly from the **base physician** for this to occur.

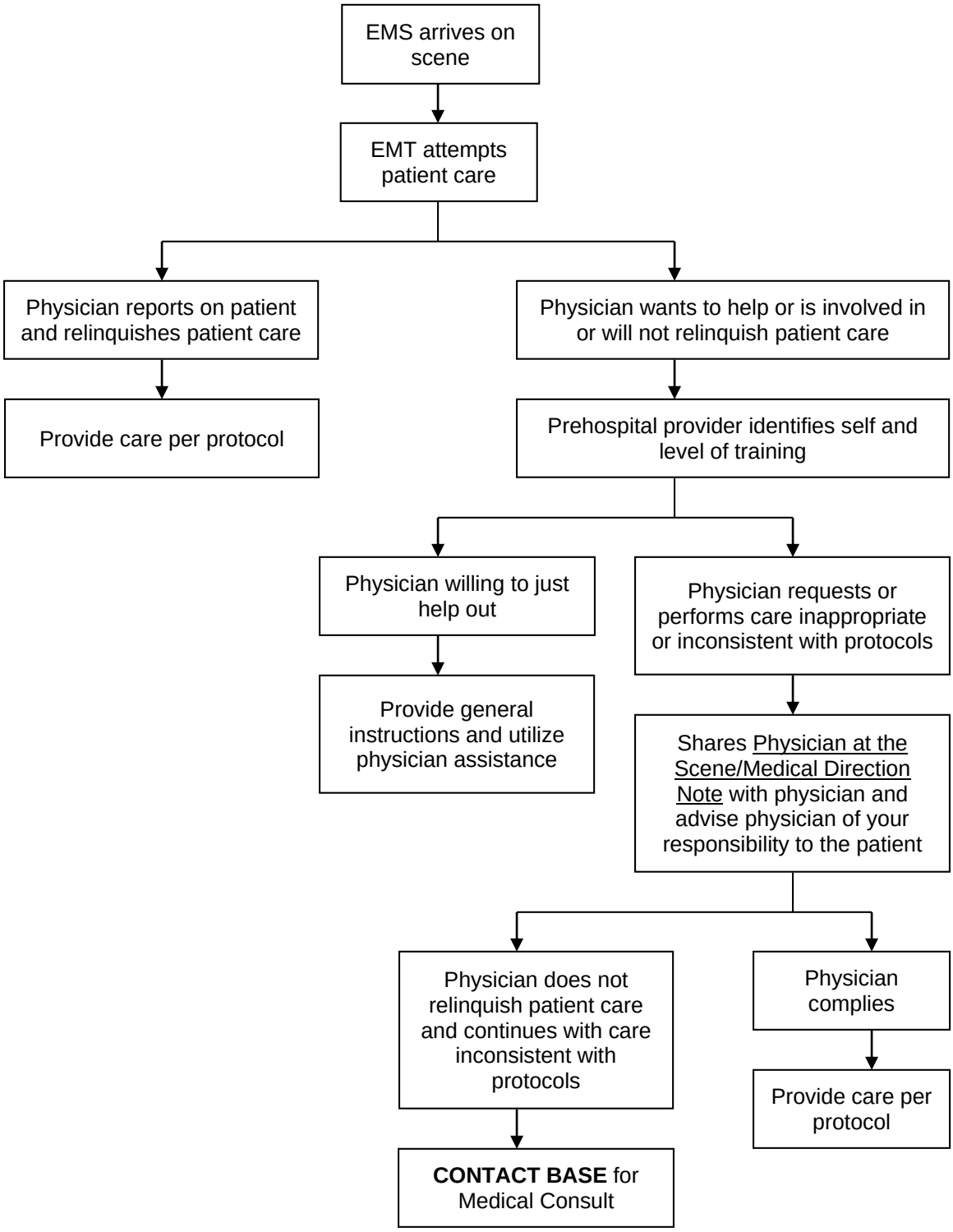
THANK YOU FOR OFFERING YOUR ASSISTANCE DURING THIS EMERGENCY.

Medical Director _____ Agency _____

Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

0040 GENERAL GUIDELINES: PHYSICIAN AT THE SCENE/MEDICAL DIRECTION

PHYSICIAN AT THE SCENE/MEDICAL DIRECTION ALGORITHM



Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

0050 GENERAL GUIDELINES: FIELD PRONOUNCEMENT

Purpose

A. To provide guidelines for resuscitation and field pronouncement of patients in cardiac arrest in the prehospital setting. EMS may transport any patient perceived to be viable, or if scene dynamics or public perception necessitates transport.

General Principles

A. Agency policy determines base contact requirements for patients for whom resuscitation efforts are being withheld.
B. Medical Arrest:
    1. EMS providers should try their best to determine a patient's end-of-life wishes and honor them. Refer to Advanced Medical Directives protocol for discussion of advanced directives and decision making about appropriateness of performing or withholding resuscitation efforts.
        a. Do not attempt resuscitation for patients with a "No CPR" directive based on the patient's wishes or compelling reasons to withhold resuscitation as covered in Advanced Medical Directives protocol.
        b. Do not attempt resuscitation for patients with definite signs of death, such as dependent lividity, rigor mortis, decomposition.
C. Traumatic Arrest:
    1. Do not attempt resuscitation if there is evidence of a non-survivable injury and no sign of life. Examples of non-survivable injuries include decapitation, evidence of massive head, chest, or abdominal trauma, or massive burn with charring.
    2. Blunt trauma: consider field pronouncement if there are no signs of life. Signs of life include spontaneous movement, breathing, presence of a pulse, or reactive pupils.
    3. Penetrating trauma: consider field pronouncement if there are no signs of life, and the arrest duration is suspected to be > 10 minutes.
    4. Exceptions to the above recommendations to consider field pronouncement include arrests with the following mechanisms/scenarios:
        a. Hypothermic arrest
        b. Drowning w/ hypothermia and submersion < 60 min
        c. Lightning strike and electrocution
        d. Avalanche victim
        e. Pregnant patient with estimated gestational age ≥20 weeks

0051 GENERAL GUIDELINES: TERMINATION OF RESUSCIATION FOR MEDICAL PULSELESS ARREST

Purpose

A. To provide guidelines for termination of resuscitation (TOR) for patients in medical pulseless arrest in the prehospital setting. EMS may transport any patient perceived to be viable, or if scene dynamics or public perception necessitates transport.
B. For termination of efforts of newly born after field delivery, refer to the Neonatal Resuscitation protocol.

General Principles

A. Resuscitate according to Universal Pulseless Arrest Algorithm on scene (unless unsafe) until one of the following endpoints is met:
    1. Return of spontaneous circulation (ROSC).
    2. No ROSC despite 30 minutes of ALS care or BLS care with an AED. If shockable rhythm still present, continue resuscitation and transport to closest emergency department.
    3. Contact base for TOR at any point if the effort is considered futile despite adequate CPR with ventilation and no reversible causes have been identified.
B. For BLS-only providers, contact base for TOR when all of the following criteria met:
    1. No AED shock advised
    2. No ROSC
    3. Arrest unwitnessed by either EMS or bystanders
    4. No bystander CPR before EMS arrival
C. The following patients found pulseless and apneic warrant resuscitation efforts beyond 30 minutes and should be transported:
    1. Hypothermic arrest
    2. Drowning w/ hypothermia and submersion < 60 min
    3. Lightning strike and electrocution
    4. Avalanche victim
    5. Pregnant patient with estimated gestational age ≥20 weeks
D. Once the patient is pronounced, they become a potential coroner's case. From that point on the patient should not be moved and no clothing or medical devices (lines, tubes etc.) should be removed or altered pending coroner evaluation.

0060 General Guidelines: Advanced Medical Directives

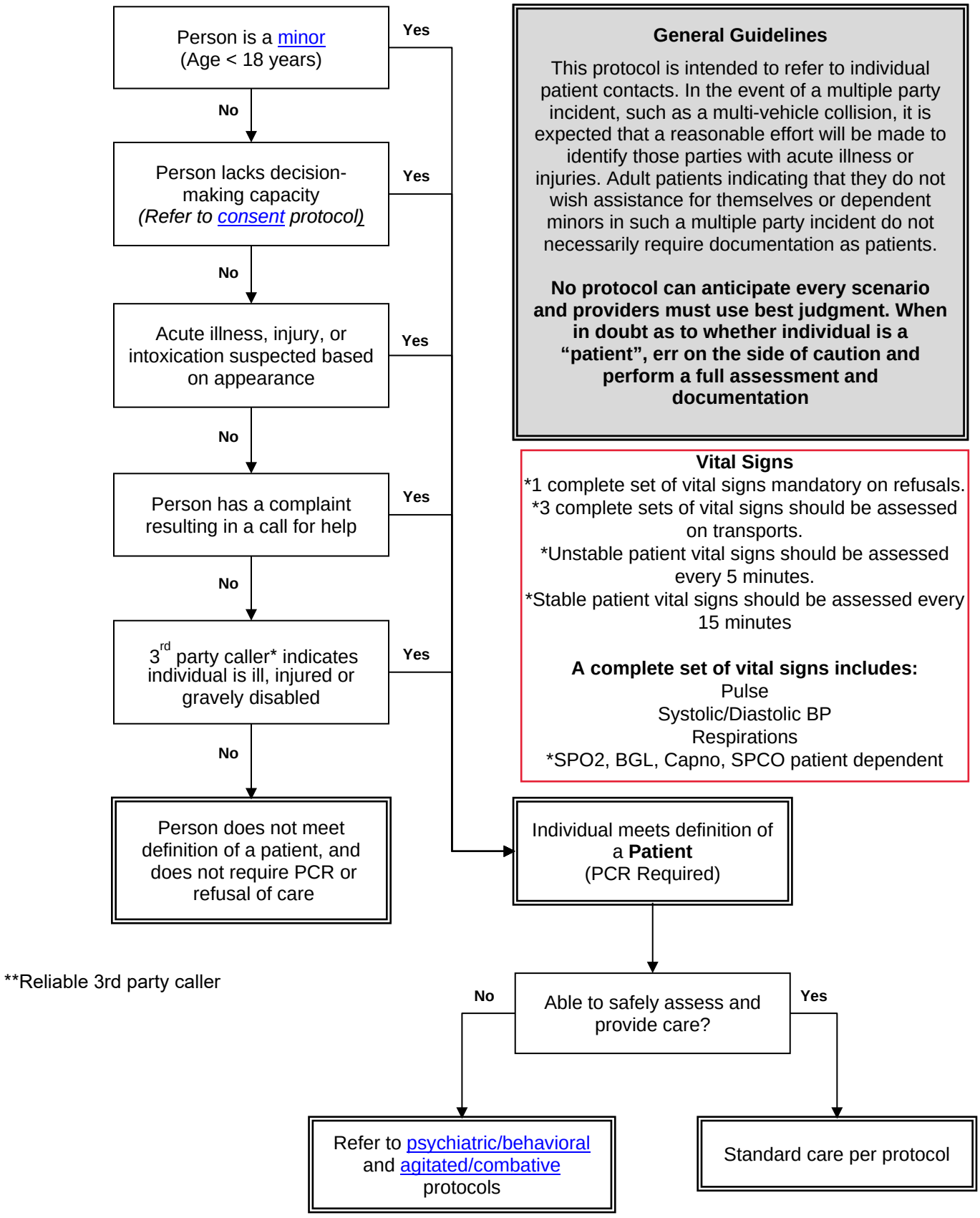
General Principles:

1. These guidelines apply to both adult and pediatric patients.
2. It is the intention of this guideline to protect the welfare of patients and to respect the appropriate exercise of professional judgments made in good faith by EMS personnel. In cases where there is doubt, contact base physician for consult.
3. From Colorado State Statute: *Any EMS personnel who in good faith complies with a CPR directive shall not be subject to civil or criminal liability or regulatory sanction for such compliance pursuant to CRS Section 15-18.6-104*
4. EMS providers should try their best to determine a patient's end-of-life wishes and honor them. These wishes may not be written down or documentation may be unavailable. In cases where no documentation exists, consider if compelling reasons to withhold resuscitation exist. Example of compelling reasons to withhold resuscitation may include when written information is not available, yet the situation suggests that the resuscitation effort will be futile, inappropriate, and inhumane and the family, life partner, caregiver, or healthcare agent indicates that the patient would not wish to be resuscitated.
5. Specific examples where resuscitation efforts should be withheld or stopped include:
    a. A readily available "No CPR" directive based on the patient's wishes:
        i. According to CO State Rules this could include: personally written directive, wallet card, "No CPR" bracelet, Healthcare Agent verbal request, MOST form, or other document or item of information that directs that resuscitation not be attempted. Photocopied, scanned, faxed copies are valid.
    b. The resuscitation may be stopped if after a resuscitation effort has been initiated, the EMS practitioner is provided with a Do Not Resuscitate directive *or* compelling reasons that such an effort should have been withheld.
    c. Suspected suicide does not necessarily invalidate an otherwise valid No CPR directive, DNR order, etc. When in doubt, contact base.
6. "Do Not Resuscitate" does not mean "do not care." A dying patient for whom no resuscitation effort is indicated should still be provided with comfort care which may include the following:
    a. Clearing the airway (including stoma) of secretions.
    b. Provide oxygen using nasal cannula or facemask and other non-invasive measures to alleviate respiratory distress.
    c. Pain management.
    d. Transport to the hospital as needed to manage symptoms with the No CPR directive in place

Additional Considerations

1. Document the presence of the CPR Directive on the incident report. Describe the patient's medical history, presence of an advanced directive (if any), or verbal request to withhold resuscitation.
2. Mass casualty incidents are not covered in detail by these guidelines. (See State Trauma Triage Algorithm).
3. If the situation appears to be a potential crime scene, EMS providers should disturb the scene as little as possible and communicate with law enforcement regarding any items that are moved or removed from the scene.
4. Mechanisms for disposition of bodies by means other than EMS providers and vehicles should be prospectively established in each county or locale.
5. In all cases of unattended deaths occurring outside of a medical facility, the coroner should be contacted immediately.

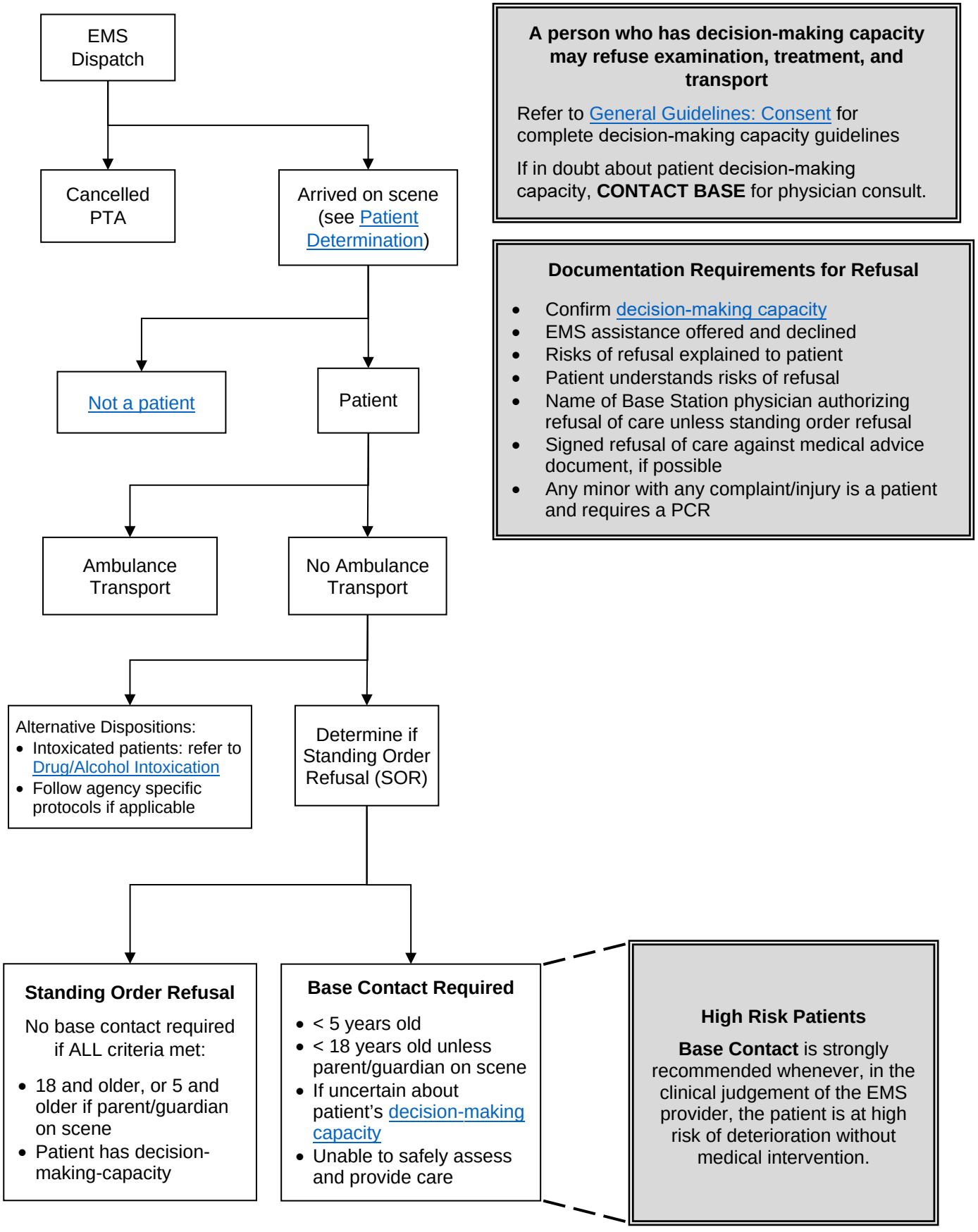
0070 GENERAL GUIDELINES: PATIENT DETERMINATION: "*PATIENT OR NO PATIENT*"



**Reliable 3rd party caller

*Approved by PGFPD Medical Director March, 2024

0080 GENERAL GUIDELINES: PATIENT NON-TRANSPORT OR REFUSAL



Approved by PGFPD Medical Director January 2022

0090 GENERAL GUIDELINES: EMERGENCY DEPARTMENT ED DIVERT & CAPACITY NOTIFICATIONS (OPEN, ADVISORY, CRITICAL, ED DIVERT, CLOSED)

Purpose

A. To provide a standard approach to EMS destination decision making that is practical for field use and maintains equity for patients, EMS, and hospitals.
B. To facilitate unobstructed access to hospital emergency departments (ED) for ambulance patients
C. To allow for optimal destination policies in keeping with general EMS principles and Colorado State Trauma System Rules and Regulations.

General EMS Principles

A. EMResource, an internet-based tracking system, is used to manage diversion in the state of Colorado. The EMResource screen should be routinely monitored for situational awareness of ED capacities to receive patients.
B. The RETAC Prehospital Trauma Triage Algorithm Guidelines should be followed
C. The only time an ambulance can be diverted from a hospital is when that hospital is posted on EMResource as being on official **ED Divert** (**RED**) or **Closed** (**BLACK**) status.
D. The following are appropriate reasons for an EMS provider to **override ED Divert** (**RED**) and, therefore, deliver a patient to an emergency department that is on **ED Divert** status:
    1. All alerts (trauma, cardiac, stroke, sepsis, etc), cardiac arrests, imminent OB or imminent airway emergencies.
    2. Specialty care needs such as pediatric, obstetric, and burn patients
    3. If the patient's condition and/or system constraints do NOT allow transport to a hospital outside of the EMS agency's service area.
    4. EMS providers always have the discretion to override and transport to the closest facility if they determine the patient's condition warrants.
E. There are EMResource notifications that are considered **Advisory** (YELLOW) or **Critical** (ORANGE). These notifications are informational only and are intended to inform field personnel that a hospital on an **Advisory** or **Critical** status may not be able to optimally care for a patient due to a specific resource limitation (such as Psych, ICU) or overall capacity limitation in the availability of staffed ED beds (ED)
F. The following resource limitations may be seen with **Advisory** (YELLOW) or **Critical** (ORANGE) and listed in the Comment section of EMResource:
    1. ICU (Intensive Care Unit)
    2. Psych (Psychiatric)
    3. OB (Obstetrics)
    4. OR (Operating Room)
    5. Trauma, Stroke, STEMI
    6. ED (Emergency Department staffed beds)
G. Prehospital personnel should take into consideration hospital ED capacity notifications, when possible, considering the patient's condition, travel time, weather, and system constraints. Patients with specific problems that fall under a specific resource limitation (such as Psych) should be transported to a hospital not experiencing that resource limitation when feasible.

EMResource Hospital ED Load Leveling Rotation Board Notifications

Open	<80% Staffed ED beds occupied
Advisory	80-100% Staffed ED beds occupied
Critical	>100% of staffed ED beds occupied and >1 ESI2 patient unable to be roomed
Divert	>120% of staffed ED beds occupied and >1 ESI2 patient unable to be roomed and no longer able to safely care for high acuity patients, OR department discretion due to acute incident
Closed	Unable to care for patients due to infrastructure damage, active shooter, etc

0090 GENERAL GUIDELINES: EMERGENCY DEPARTMENT ED DIVERT & CAPACITY NOTIFICATIONS
(OPEN, ADVISORY, CRITICAL, ED DIVERT, CLOSED)

Patient Load Leveling Guideline

A. All hospitals and free-standing emergency departments (FSED) are grouped in EMResource by regions. The regions consists of North, East, West, South, Central, and Boulder regions.
    1. **Regional Saturation** exists when all hospitals within a region are either on **Critical** (**ORANGE**) or **ED Divert** (**RED**) status *excluding* FSED.

B. The following guidelines are to be considered when one region experiences **Regional Saturation.**
    1. All dispatch centers track hospital destinations in the EMResource Hospital ED Load Leveling Rotation Board view to establish a real time rolling count of 911 EMS transports to hospitals over a 24-hour period. This would begin at the time of regional saturation to 08:00 the following day, then repeat at 24-hour time intervals until the **Critical** (**ORANGE**) and/or **ED Divert** (**RED**) regional saturation is resolved.
    2. Dispatch centers may restructure facilities on the EMResource Hospital Load Leveling Rotation Board view to accommodate the distribution of patients to hospitals within their geographic area.
    3. FSED are not included in hospital destination tracking or the hospital ED load leveling rotation board. However, to decrease the burden on hospitals, EMS providers are encouraged to transport appropriate patients per FSED protocol.
    4. The closest appropriate hospital destinations will still apply for patients meeting criteria for overriding **ED Divert** (**RED**) as outlined in this protocol.
    5. Hospital distribution of stable patients not meeting **ED Divert** (**RED**) override criteria are considered in the Hospital ED Load Leveling Board procedure as per EMResource Hospital ED Load Leveling Board Instructions
    6. Patients may be transported out of the primary region at the EMS providers discretion, if it is in the patient's best interest and the EMS system constraints allow. Likewise, EMS providers always have the discretion to override the load leveling board and transport to the closest facility if they determine the patient's condition warrants.
    7. A hospital that experiences a significant infrastructure issue such as loss of power, flooding, etc. preventing the facility from receiving patients, it should be listed as **Closed** (**BLACK**) status in EMResource and be exempt from load leveling until functional again.

EMResource
Hospital ED Load Leveling Board Instructions

Purpose:

The purpose of the EMResource Hospital ED Load Leveling Board is to ensure timely ambulance destination assignments within a region (zone) and avoiding significant travel distance for an EMS service transporting a patient to hospital. This will ONLY be utilized when ALL HOSPITALS are either on **ED Divert (RED)** or **Critical (ORANGE)** within a particular region. Freestanding emergency departments (FSED) will not be used in the rotation nor does this apply to ED advisories and thus will not need to be tracked. Once all hospitals in a region are on **ED Divert** or **Critical**, patient transports by EMS will be distributed in an equitable fashion across facilities as determined through the coordination with local dispatch centers, EMS agencies, and hospitals in a region. When the load leveling procedure is activated, EMS patient transports to hospital emergency departments will be tracked on the EMResource Hospital ED Load Leveling Board.

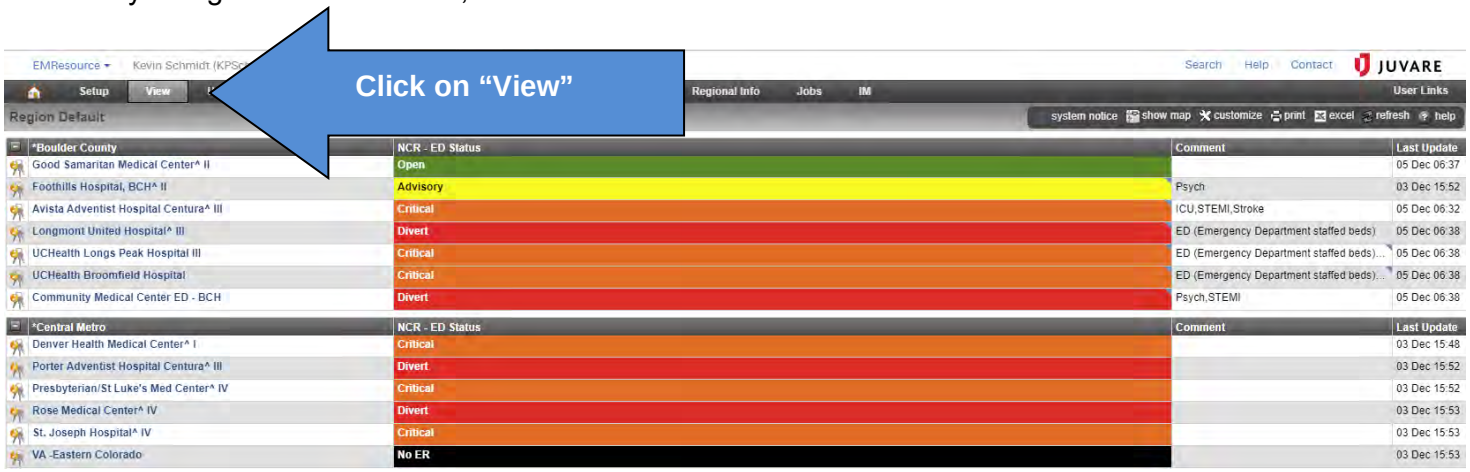
The following situations (which exist under all circumstances) remain intact and override load leveling:

1. All alerts (trauma, cardiac, stroke, sepsis, etc.), cardiac arrests, imminent OB or imminent airway emergencies.
2. Specialty care needs such as pediatric, obstetric, and burn patients
3. If the patient's condition and/or system constraints do NOT allow transport to a hospital outside of the EMS agency's service area.
4. EMS providers always have the discretion to override and transport to the closest facility if they determine the patient's condition warrants.

Free-standing emergency departments (FSED) should be utilized for transport of all appropriate patients as delineated by agency protocols and local medical direction.

After the hospital ED load leveling process is begun, all EMS providers, dispatch centers and Emergency departments should have constant monitoring of the EMResource screen. As per local protocol, the EMS provider may continue to use their current local dispatch centers for communication and patient destination decisions if EMResource is not available on scene. Once **Regional Saturation** is triggered, the dispatch center will open the EMResource screen under the "view" tab. The EMResource Hospital ED Load Leveling Board will continually and automatically sort facilities within a region and list the "next up hospital" on the top of the list for that region.

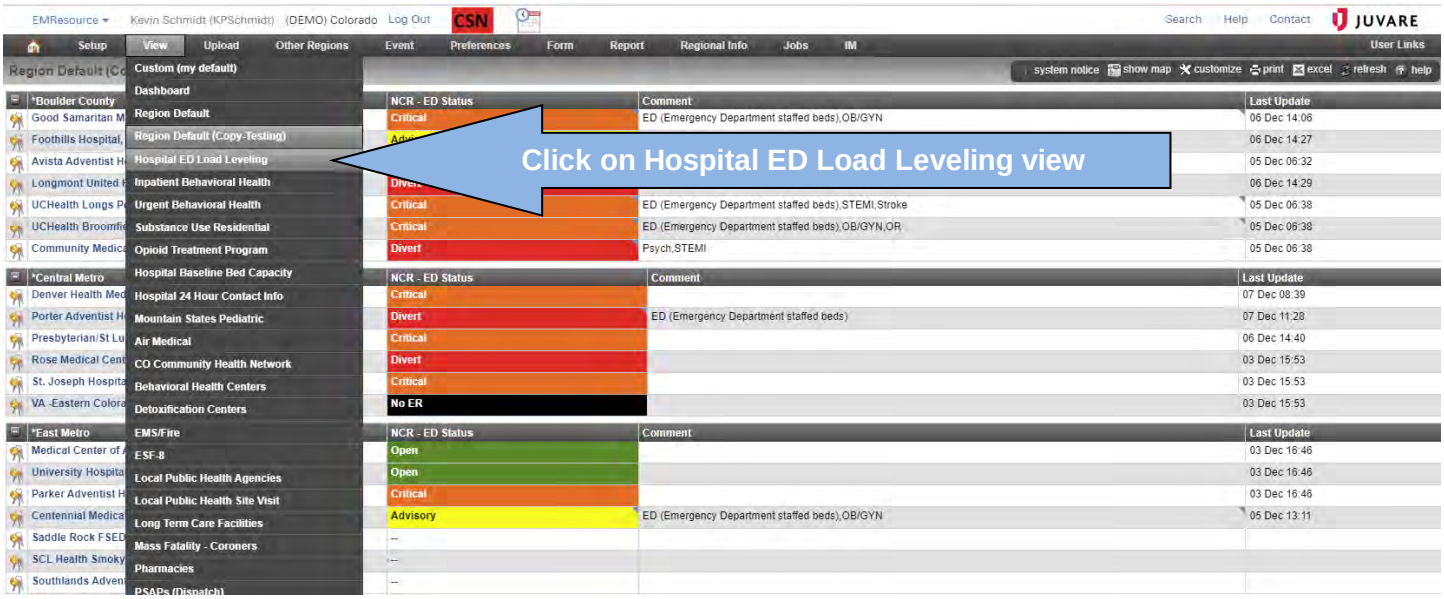
1. Once you log into EMResource, click on "View"



Approved by PGFPD Medical Director March, 2024

EMResource
Hospital ED Load Leveling Board
Instructions

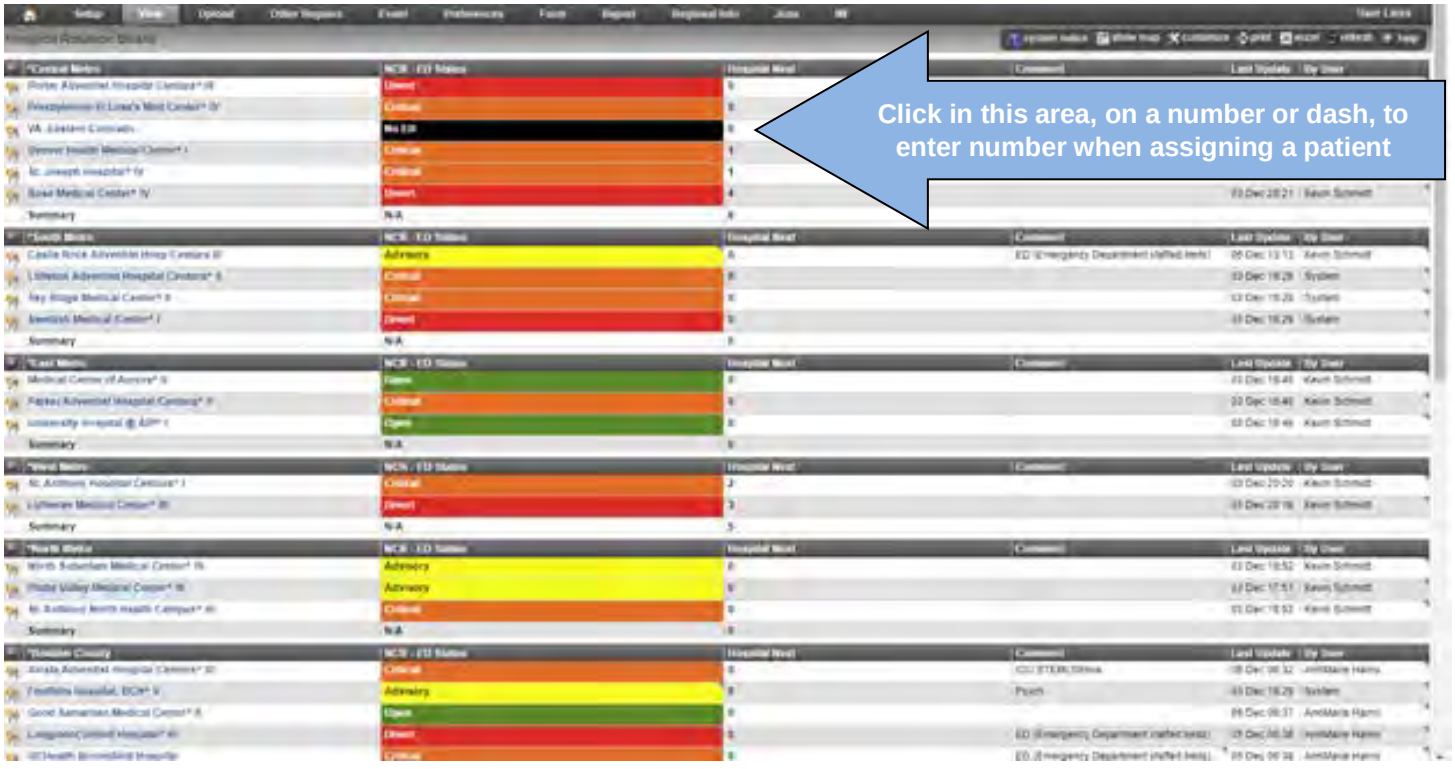
2. Scroll down the list and find the “Hospital ED Load Leveling” and click.



3. Find the region that your ambulance is transporting to. The hospital that is eligible for the next patient will automatically be sorted to the top of the list by the Hospital Rotation Board.

   PSAP/EMS should notify transporting ambulance of “Next Up” status and await ambulance destination decision.

   Click in the area of the “Hospital Next” Column on the dash (--) or number to assign a patient to the next up hospital. This will bring up the popup box for you to enter the number of patients and any comments, which are optional. Click SAVE.



EMResource
Hospital ED Load Leveling Board
Instructions

4. The number you enter should be how many patients that are being transferred by that ambulance. So, if the number was a three and you are transferring one patient enter a four. If the number was a five and you are transferring two patients in the ambulance enter the number 7. Comments are not required. Click SAVE to exit.

5. The facility you just entered a number for will go to the bottom of the list. If it was a higher number than the rest, it will stay out of the rest of the rotation.

*Central Metro	NCR - ED Status	Hospital Next	Comment	Last Update	By User
Porter Adventist Hospital Centura^ III	Divert	0		03 Dec 16:29	System
Presbyterian/St Luke's Med Center^ IV	Critical	0		03 Dec 16:29	System
VA -Eastern Colorado	No ER	0		03 Dec 16:29	System
Denver Health Medical Center^ I	Critical	1		03 Dec 17:11	Kevin Schmidt
St. Joseph Hospital^ IV	Critical	1			
Rose Medical Center^ IV	Divert	4			
Summary	N/A	6			

*South Metro	NCR - ED Status	Hospital Next	Comment	Last Update	By User
Castle Rock Adventist Hosp Centura III	Advisory	0	ED (Emergency Department staffed beds)	05 Dec 13:13	Kevin Schmidt
Littleton Adventist Hospital Centura^ II	Critical	0		03 Dec 16:29	System
Sky Ridge Medical Center^ II	Critical	0		03 Dec 16:29	System
Swedish Medical Center^ I	Divert	0		03 Dec 16:29	System
Summary	N/A	0			

6. Now it's time to move on to the next facility in the rotation and complete steps 1 through 5 again.

MCI Events – In case a MCI Event occurs, hospitals will be requested to input appropriate numbers for **Red**, **Yellow**, and Green patients that they are willing to accept above any Hospital ED Load Leveling in place. Hospitals entering numbers will receive patients. Hospitals may elect to enter zeros (0) depending on their status. After hospitals entering numbers have been exhausted, the ED Load Leveling plan will be utilized for remaining patients

0100 GENERAL GUIDELINES: MANDATORY REPORTING OF ABUSE PATIENTS

Purpose

A. To provide guidelines for the reporting of suspected abuse patients.

Definition of Abuse and Reporting Requirements:

A. Any recent act or failure to act on the part of a parent or caretaker which results in death, serious physical or emotional harm, sexual abuse or exploitation **OR** an act or failure to act which presents an imminent risk of serious harm.
B. An at-risk elder or at-risk adult with intellectual and developmental disability per Colorado Revised Statutes §18-6.5-102, or child who are suspected to be victims of abuse, neglect, or exploitation, as defined in Colorado Revised Statutes §19-3-304, should be reported in a manner consistent with agency guidelines/procedures in a timely manner. Any "suspected" or known incident of abuse, neglect, or exploitation must be reported.

Types of Abuse:

A. Types of maltreatment:
    1. neglect (majority of cases)
    2. physical abuse
    3. sexual abuse
    4. emotional abuse
    5. exploitation (e.g. sex trafficking)

Role of Mandated Reporter:

A. A mandatory reporter has ***reasonable cause*** to know or suspect that someone has been subjected to abuse, neglect, or exploitation. At time of concern, report the information to the department of human services (DHS) where the patient lives and/or if there is concern that the person is at risk in their own home, and to law enforcement where the crime was committed (follow agency specific guidelines).
B. Mandatory reporters that ***do not*** report abuse, neglect, or exploitation can be:
    1. Charged with a class 3 misdemeanor
    2. Liable for damages proximately caused by failing to report

What to report:

A. The name, address, age, sex, and race of the child, at-risk elder, or at-risk adult with intellectual and developmental disability
B. The name(s) and address(es) of the person(s) responsible for the suspected abuse, neglect, or exploitation—if known
C. A description of the concern(s)
D. The nature and extent of any injuries—if known
E. The family composition, including any siblings or others in the household – if known
F. The name, address and/or contact phone number, and occupation of the person making the report
G. Any other information reporting person feels is important.

Additional Information:

A. Protecting patient confidentiality does not legally justify a failure to report.
B. There is established immunity for reporters "acting in good faith".
C. For children, the Colorado Child Abuse and Neglect Hotline is 1-844-CO-4-KIDS (844-264-5437).

Approved by Platteville Gilcrest FPD Medical Director January, 2021

0110 GENERAL GUIDELINES: FREE-STANDING EMERGENCY DEPARTMENTS AS EMS DESTINATION

Purpose

A. A freestanding emergency department (FSED) is a facility that is structurally separate and distinct from a hospital and provides emergency care. There are two types of FSEDs:

1. A hospital outpatient department (HOPD), also referred to as an off-site hospital-based or satellite emergency department (ED), these may be either hospital owned or hospital affiliated.
2. The second type of FSED is the independent freestanding emergency centers (IFECs).

B. The number of FSEDs is increasing rapidly with an ever-changing regulatory and health care environment. These facilities have various capability and capacity and the range of accepting ambulance patient is also variable.

C. For this reason, the appropriate utilization of these facilities as an ambulance destination should be at the discretion of the local agency and agency medical director.

Recommendations

A. **Hemodynamically stable patients** may be ***considered*** for transport to a hospital-affiliated FSED with the following exceptions:

1. No OB patients > 20 weeks estimated gestational age
2. No trauma patients meeting RETAC trauma center destination guidelines.
3. No alerts (e.g. STEMI, Stroke, Sepsis).
4. No post-cardiac arrest patients with ROSC unless uncontrolled airway

B. Give consideration to the fact that elderly patients often require hospitalization for conditions such as falls, generalized weakness, dehydration, syncope. These patients should be targeted for full function hospital to avoid secondary transport

C. A psychiatric patient may exceed the capability of the FSED. The facility may not have security available or be able to provide psychiatric evaluation. These patients should be transported to facilities with the capabilities to meet patient's needs.

D. When time and conditions allow, patients whom pre-hospital providers presume to require inpatient management may be transported to a hospital emergency department to avoid subsequent patient transfers.

Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

0120 GENERAL GUIDELINES: BASE CONTACT FOR PHYSICIAN CONSULTATION

Purpose

A. To explain the PGFPD Medical Director s expectations regarding base physician contact.

General Principles

A. **"BASE CONTACT"** is contact with a physician who is familiar with the protocols.

B. The PGFPD protocols function as standing order treatment guidelines designed to reflect CDPHE Chapter 2 Rules pertaining to EMS practice and Medical Director oversight. Protocols are to be used as guidelines and cannot account for every patient scenario. Deviation from protocol may at times be justified and in the patient's best interest. PGFPD places great faith in the training and expertise of our EMS providers and therefore wide latitude is granted throughout the protocol.

C. Base contact for physician consultation is not the same as emergency department pre-notification of patient arrival and handoff. Base contact may be used in multiple care scenarios including but not limited to forewarning of unstable or complicated patients, patient refusal, and medical consultation and discussion.

D. Throughout the protocol patient "**BASE CONTACT**" is used to signify the need for call in. These algorithm points are set and agreed upon by the PGFPD Medical Director and EMS Chief and reflect critical decision points in care where communication with physician support is expected.

Preferred Base Contact Times.

A. The PGFPD Medical Director feels strongly that access to medical consultation should be readily available at all times and utilized in the following circumstances:

1. Any time "**BASE CONTACT**" is required or recommended per protocol.
2. Unusual presentations or patient care situations not addressed in the protocols and outside an area of familiar care by the individual prehospital provider.
3. Necessary deviation from protocol deemed to be in the best interest of the patient.
4. For selected patient care refusals as indicated by General Guidelines: Patient Non-Transport or Refusal.
5. During the care of critically ill patient who is not responding to protocol/ algorithmic treatment.

Approved by PGFPD Medical Director March, 2024

0130 GENERAL GUIDELINES: TRANSPORTATION OF THE PEDIATRIC PATIENT

General Principles:

For the purpose of the protocols, pediatric patients are defined as <12 years of age. The unique anatomy, physiology and developmental needs of children in this age range affect prehospital care. Several specific differences include:

A. Airways are smaller, softer and easier to obstruct or collapse. Actions such as neck hyperflexion, hyperextension, or cricoid pressure may create an upper airway obstruction in a child
B. Respiratory reserves are small, resulting in the possibility of rapid desaturation in the setting of increased demand. One of the earliest signs of physiologic stress in a child may be an unexplained increase in respiratory rate
C. Infants and young children utilize their abdominal musculature to assist with respirations. Tight, abdominally-placed straps used to secure children to spine boards may result in onset of or worsening respiratory distress
D. Circulatory reserves are small. The loss of as little as one unit of blood can produce severe shock in an infant.
E. Fluid overload is not a concern in children. 20 mL/kg boluses are always considered safe as the initial fluid resuscitation.
F. The developmental stage of a child impacts his/her ability to cooperate. The perception and memory of pain is escalated by anxiety. Discuss or forewarn what will be done with any child over 2 years of age. Infants, especially those under 6 months of age, tolerate painful procedures better if allowed to suck on a pacifier (especially if dipped in D25W) during the procedure. Utilize the parent or familiar guardian whenever possible to distract/comfort (tell a story, sing a song, etc.) for all pediatric patients during painful procedures.
G. Vital signs on pediatric should include a blood pressure regardless of age. Providers should, if possible, make at least one attempt at obtaining a blood pressure on every pediatric patient.

Specific Consideration: Transportation safety

Children represent a unique challenge for safe transportation in emergency vehicles. The National Highway Traffic Safety Administration has established guidelines to ensure the safe restraint and positioning of children in emergency vehicles. Children should be restrained during transport. Transport of a child in a restrained adult's arms is not recommended, but may be considered in special circumstances (i.e. severe croup, newborn). Transportation of children on the side bench seat in the rear compartment is also not recommended. The published goals are to prevent forward motion/ejection of the child, secure the torso, and protect the head, neck and spine in each of the following scenarios:

1. **For a child who is not a patient, but requires transport to a facility**
   All reasonable effort should be made to transport children who are not patients in a vehicle other than the ambulance. If transport in a vehicle other than an ambulance is not possible, transport in a size-appropriate child restraint system in the front passenger seat (with air bags off) or rear-facing EMS provider's seat in the ground ambulance
2. **For a child who is injured/ill and whose condition does not require continuous monitoring or interventions**
   Transport child in a size-appropriate child restraint system secured appropriately on a cot (rear-facing) or in an integrated seat in the EMS provider's seat. Do not use a rear-facing child restraint system in a rear-facing EMS provider's seat. If no child restraint system is available, secure the child on the cot using three horizontal restraints across the child's chest, waist and knees and one vertical restraint across each of the child's shoulders. Remove any bulky clothing on child before restraining. Use blankets to maintain warmth.
3. **For a child whose condition requires continuous or intensive monitoring or interventions**
   Transport child in a size-appropriate child restraint secured appropriately on a cot. If no child restraint system is available, secure the child on the cot using three horizontal restraints across the child's chest, waist and knees and one vertical restraint across each of the child's shoulders.
4. **For a child whose condition requires spinal precautions or lying flat**
   Perform spinal immobilization procedure per protocol. Three points of restraint with shoulder straps is the optimal for the patient. Avoid placing any restraints across the abdomen. Secure the patient, not just the immobilization device to the stretcher. We do not recommend utilizing the child restraint

system if spinal immobilization is required, as upright positioning places additional axial load on the patient's neck and emergent airway intervention is not possible.

5. **For a child requiring transport as part of a multiple patient transport (newborn with mother, multiple children, etc.)**
   If possible, transport each as a single patient. When available resources prevent single patient transportation, transport patients using safe, designated space available exercising extreme caution and driving at reduced speeds. For mother and newborn, the newborn should be transported in a rear-facing EMS provider seat using a convertible or integrated child restraint system. Do not use a rear-facing child restraint system in a rear-facing EMS provider's seat.

Transportation of the child with special health care needs:

Treat the child, not the equipment. Starting with the ABCs still applies to medically complicated or medical technology-assisted children.

A. The parent/guardian of a special needs child is the expert on that child and knows the details of that illness, typical responses, and baseline interactions better than anyone. Utilize and trust his/her knowledge and concerns. This may include vital signs, medication responses, or physical positioning (i.e. of contracted limbs) that may not be typical.
B. Medically complicated children are often given healthcare notes describing their unique medical history and emergency healthcare needs. Ask the parent/guardian for an emergency information sheet, emergency healthcare form, or QR code.
C. Ask the parent/guardian for the "go bag" for medical technology-assisted children. This will contain the child's spare equipment and supplies that may be needed on scene, during transport or in the hospital
D. Transport the child to their medical "home" hospital whenever possible

0140: Cancellation Policy

- To establish a policy in order to ensure that Emergency Medical Services are used efficiently and wisely throughout the County.

Policy Statement:

- This policy is to be used when there are no identifiable patients upon arrival on the scene.
- A patient is defined as any person that:
  - Requests medical assistance.
  - Demonstrates behavior indicating any type of injury or illness.
  - Law enforcement calls for a patient evaluation.
- When there are no patients on scene, additional responding units may be cancelled.
- If patients are identified on scene, but are refusing treatment or transport to the hospital, then the Patient Non-trasnport or Refusal Protocol 0080 will apply.
- Under no circumstances will the air medical transport be cancelled by a responding Paramedic unit until an on scene evaluation of the patient by the Paramedic is done and the need for the air medical transport is not indicated.

0150: Radio Report Format

- To establish a policy and procedure and format by which the medical providers of PGFPD will follow when contacting the incoming ALS agency or when contacting the Emergency Department when transporting a patient.

Policy Statement:

The following information should be included in a radio report:

- Response: (emergent or routine)
- Age of the patient.
- Gender of the patient.
- Mechanism of injury or the nature of the illness.
- Chief complaint.
- Level of consciousness.
- Blood pressure.
- Heart rate.
- Respiratory rate.
- Pulse oximetry reading.
- Any procedures performed. (Example: Spinal immobilization. I.V. access. Oxygen administration. Intubation)
- Trauma or medical team activation.
- Estimated time of arrival.

****Note:** **If your patient is being transported by an air medical transport service, every effort should be made to contact the emergency room physician with your report.**

0900 Special Events

Purpose

A. To establish a policy and procedure by which the medical providers of PGFPD will follow whenever they provide emergency care and standby coverage of athletic, social, and community events.

General Principles

A. Personnel staffing the event are representing PGFPD. These personnel should be dressed in their agency uniform with an I.D. badge / name tag in place unless the event requires special attire.

Documentation

A. All patient contacts will be documented appropriately according to PGFPD protocols.

B. Patient contacts that require an EHR to include its own Incident # include:

- All patients that require ALS assessment or intervention.
- All patients that will be transported to the emergency department
- All patients where vital signs are taken
- All patients requiring more that just basic first aid- ie. splinting a fracture
- All other patients may be documented on the Special Events Patient Log

C. Special Event Form is for minor injuries only. If not meeting the special event criteria, and EHR needs to be created and a patient refusal, alcohol clearance, or transport documentation is required.

D. Every patient or party contacted must be advised to follow up with their physician, regardless of acuity, within 24 hours of the incident.

E. Complete documentation should be compiled as follows:

- Original Special Event Report (s) retained by PGFPD. Attach report to event electronic report (EHR)
- Special Event Report must include the following:
    - Date and incident number.
    - Name of the event.
    - Name and certification level of the caregiver.
    - Name of patient or person contacted.
    - Brief description of complaint.
    - Brief description of treatment.
    - Responsible party signature.

F. The following conditions do not require ALS assessment.

- Superficial lacerations or abrasions.
- Minor orthopedic injuries with minimal discomfort without deformity or neurovascular compromise- no sign of fracture.
- First degree burns totaling less than 5% body surface area without respiratory burns.
- Blisters, sunburn, earaches, or rash without dyspnea or chest tightness.
- Minor epistaxis.

0900 Special Event Report

Special Event / Standby Patient Contact Record

Date:	**Incident Number:**	**Agency:**
Location:	**Type of Event:**	

Personnel: (Include Certification Level)

Patient Name	**Address: City, State, Zip**	**Age / Sex**	**Chief Complaint**	**Disposition / Outcome (Patient Signature if refusal)**	**Treatment Administered By:**
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

Signed: _____

0990 QUICK REFERENCE FOR PROCEDURES AND MEDICATIONS ALLOWED BY PROTOCOL

This list does not include Medical Director specific waivers or base contact requirements. It is assumed that not all agencies will necessarily stock all medications.

Abbreviations	S = Standing order	B = Base contact

Airway Procedures	B	BIV	AEMT	I	P
Capnography	S	S	S	S	S
Public health related oral/nasal swab sample collection	S	S	S	S	S
Supraglottic airway	S	S	S	S	S
Continuous positive airway pressure (CPAP)	S	S	S	S	S
Orotracheal intubation				S	S
Nasotracheal intubation					S
Percutaneous cricothyrotomy					S
Bougie assisted surgical cricothyrotomy					S
Pediatric needle cricothyrotomy					S
Needle thoracostomy for tension pneumothorax decompression				S	S
Orogastric tube insertion with advanced airway					S
Tracheobronchial suctioning			S	S	S
Tracheostomy maintenance – Airway management only	S	S	S	S	S
Tracheostomy maintenance – Including replacement					S

Cardiovascular Procedures	B	BIV	AEMT	I	P
Tourniquet	S	S	S	S	S
ECG - Acquire (including 12-lead)	S	S	S	S	S
ECG - Interpretation (including 12-lead)				S	S
Blood glucose monitoring	S	S	S	S	S
IV – Peripheral		S	S	S	S
IV – External jugular			S	S	S
IO					
• Rescue or primary vascular access device when peripheral IV access not obtainable in a patient with critical illness		S	S	S	S
• Utilization of IO access for all other patients			B	B	B
Use of established central line (including PICC) for fluid and medication administration (must have appropriate equipment, e.g., Huber needle, and training to access subcutaneous ports)				S	S
Automated / Semi-automated external defibrillator (AED)	S	S	S	S	S
Defibrillation – Manual				S	S
Valsalva maneuver					S
Synchronized cardioversion					S
Transcutaneous cardiac pacing					
• Adult				S	S
• Pediatric				B	B

Medications	B	BIV	AEMT	I	P
Specialized prescription medications to address an acute crisis given the route of administration is within the scope of the provider	B	B	B	B	B
Acetaminophen (Tylenol)					
• PO	S	S	S	S	S
• Adult – IV			S	S	S
Adenosine (Adenocard)					
• Adult				B	S
• Pediatric				B	B
Albuterol sulfate - MDI and nebulizer	S	S	S	S	S
Amiodarone					
• Pulseless arrest				B	S
• Tachyarrhythmia with poor perfusion					B
Antiemetic					
• Ondansetron (Zofran) ODT	S	S	S	S	S
• Ondansetron (Zofran) IV /IM		S	S	S	S
• Ondansetron (Zofran) IO			S	S	S
• Promethazine (Phenergan)				B	S
• Metoclopramide (Reglan)				B	S
• Droperidol – Adult only				B	S
Aspirin	S	S	S	S	S
Atropine sulfate					
• Hemodynamically unstable bradycardia				B	S
• Organophosphate poisoning				B	S

0990 QUICK REFERENCE FOR PROCEDURES AND MEDICATIONS ALLOWED BY PROTOCOL

Medications	B	BIV	AEMT	I	P
Benzodiazepines (midazolam, diazepam, lorazepam)					
• Seizure – Midazolam IN			S	S	S
• Seizure – All medications and routes in protocol				S	S
• Sedation for transcutaneous pacing or cardioversion				S	S
• Sedation for severely agitated or combative patient – Adult				S	S
• Sedation for severely agitated or combative patient – Pediatric				B	B
• Adjunct agent for treatment of severe pain/muscle spasms				B	B
Calcium					
• Pulseless arrest assumed due to hyperkalemia, hyperkalemia					S
• Calcium channel blocker overdose					B
Crystalloids (D_5W, LR, NS) – Initiation/Maintenance		S	S	S	S
Dextrose IV		S	S	S	S
Diphenhydramine (Benadryl)			S	S	S
					S
Droperidol – Behavioral Management (For nausea/vomiting refer to Antiemetics)					
• Adult				S	S
• Pediatric				B	B
DuoDote™ / Mark I Kits	S	S	S	S	S
Epinephrine					
• Pulseless arrest – IV/IO				S	S
• Pediatric bradycardia – IV/IO				B	B
• Asthma – IM					S
• Anaphylaxis– IM	S	S	S	S	S
• Pediatric severe systemic allergic reaction refractory to IM epinephrine - IV/IO				B	B
• Stridor at rest (alternative to racemic epinephrine)				B	S
• Epinephrine Auto-injector	S	S	S	S	S
• Adult hypotension refractory to fluid resuscitation – IV drip					S
• Adult bradycardia with signs of poor perfusion – IV drip					S
• Adult severe systemic allergic reaction – IV drip					S
Glucagon					
• Hypoglycemia			S	S	S
• Calcium channel blocker and β-blocker overdose			B	B	S
Haloperidol (Haldol)					
• Adult				S	S
• Pediatric				B	B
Hemostatic agents	S	S	S	S	S
Hydroxocobalamin (Cyanokit)				S	S
Ipratropium Bromide (Atrovent) – MDI or nebulizer	S	S	S	S	S
Lidocaine 2% Solution – Anesthetic for IO needle insertion in adults			S	S	S
Magnesium sulfate					
• Torsades de pointes associated with prolonged QT interval					S
• Refractory severe bronchospasm					S
• Eclampsia				S	S
Methylprednisolone (Solu-Medrol)				S	S
Naloxone (Narcan)	S	S	S	S	S
Nitroglycerin (Nitrostat, Nitroquick)					
• Sublingual, patient assisted	B	B	S	S	S
• Sublingual, agency supplied			S	S	S
• Nitroglycerin paste			B	B	S
NSAIDS					
• Ibuprofen	S	S	S	S	S
• Ketorolac (Toradol)					S
Opioids – Administration for cardiac chest pain				S	S
Opioids – Moderate to severe pain due to traumatic and medical conditions (excluding cardiac chest pain)					
• Fentanyl – Adult and pediatric 1 year and older			B	S	S
• Fentanyl – <1 year old			B	B	B
• Morphine – Adult and pediatric 1 year and older			B	S	S
• Morphine – <1 year old			B	B	B
• Hydromorphone – Adult only					S
Oral glucose (Glutose, Insta-glucose)	S	S	S	S	S
Oxygen	S	S	S	S	S

0990 QUICK REFERENCE FOR PROCEDURES AND MEDICATIONS ALLOWED BY PROTOCOL

Medications	B	BIV	AEMT	I	P
Phenylephrine (Intranasal)					
• Epistaxis	S	S	S	S	S
• Prior to nasotracheal intubation					S
Racemic epinephrine (Vaponephrine)				S	S
Sodium bicarbonate					
• Pulseless arrest assumed due to hyperkalemia, hyperkalemia				B	S
• Tricyclic antidepressant overdose					S
Topical ophthalmic anesthetics				S	S

1000 PROCEDURE PROTOCOL: OROTRACHEAL INTUBATION

EMT-I	Paramedic

Indications:

- Respiratory failure
- Absence of protective airway reflexes
- Present or impending complete airway obstruction

Contraindications:

- There are no absolute contraindications. However, in general the primary goals of airway management are adequate oxygenation and ventilation, and these should be achieved in the least invasive manner possible
  - Orotracheal intubation is associated with worse outcomes among pediatric patients and head injured patients when compared to BLS airway maneuvers. Therefore, it is relatively contraindicated in these populations, and BLS airway is preferred unless patient cannot be oxygenated or ventilated by other means.
  - Intubation is associated with interruptions in chest compressions during CPR, which is associated with worse patient outcomes. Additionally, intubation itself has not been shown to improve outcomes in cardiac arrest. Intubation should only be performed during pulseless arrest if it does not cause interruptions in chest compressions.
  - With traumatic brain injury, secondary insult from hypoxia or hypotension have been associated with worse outcomes. Caution should be taken to minimize these potential side effects with intubation.

Technique:

1. Initiate BLS airway sequence and confirm $ETCO_2$ production at this time.
2. Suction airway and pre-oxygenate with BVM ventilations, if possible
3. Check equipment and position patient:
   a. If trauma: have assistant hold in-line spinal motion restriction in neutral position
   b. If no trauma, sniffing position or slight cervical hyperextension is preferred
4. Perform laryngoscopy
   a. To improve laryngeal view, use right hand to manipulate larynx, or have assistant apply backwards, upwards, rightward pressure (BURP)
5. Place ETT. Confirm tracheal location and appropriate depth and secure tube
   a. Correct tube depth may be estimated as 3 times the internal diameter of tube at teeth or gums (e.g., 7.0 ETT is positioned at 21 cm at teeth)
6. Confirm and document tracheal location by:
   a. Continuous waveform capnography
   b. Presence and symmetry of breath sounds
   c. Rising SpO_2
7. Ventilate with BVM. Assess adequacy of ventilations
8. During transport, continually reassess ventilation, oxygenation and tube position with continuous waveform capnography and SpO_2

Precautions:

- Ventilate at age-appropriate rates. Do not hyperventilate
- If the intubated patient deteriorates, think “DOPE”
  - **D**islodgement
  - **O**bstruction
  - **P**neumothorax
  - **E**quipment failure (no oxygen)
- Reconfirm and document correct tube position, preferably with waveform capnography, after moving patient and before disconnecting from monitor in ED
- Unsuccessful intubation does not equal failed airway management. Many patients cannot be intubated without paralytics. Abandon further attempts at intubation and use supraglottic airway or BVM ventilations if 2 attempts at intubation unsuccessful.

1010 PROCEDURE PROTOCOL: NASOTRACHEAL INTUBATION

Paramedic

Indications:

- Age 12 years and older spontaneously breathing patient with indication for intubation who cannot tolerate either supine position or laryngoscopy
- Present or impending airway obstruction
- Lack of protective airway reflexes

Contraindications:

- Apnea
- Severe mid-face trauma

Technique:

1. Initiate BLS airway sequence and confirm $ETCO_2$ production at this time.
2. Suction airway and pre-oxygenate with BVM ventilations, if possible
3. Check equipment, choose correct ETT size (usually 7.0 in adult, limit is size of naris)
4. Position patient with head in midline, neutral position
5. If trauma, cervical collar may be in place, or assistant may hold in-line stabilization in neutral position
6. If no trauma, patient may be sitting upright
7. Administer phenylephrine nasal drops in each nostril
8. Lubricate ETT with lidocaine jelly or other water-soluble lubricant
9. With gentle steady pressure, advance the tube through the nose to the posterior pharynx. Use the largest nostril. Abandon procedure if significant resistance is felt
10. Keeping the curve of the tube exactly in midline, continue advancing slowly
11. There will be slight resistance just before entering trachea. Wait for an inspiratory effort before final passage through cords. Listen for loss of breath sounds
12. Continue advancing tube until air is definitely exchanging through tube, then advance 2 cm more and inflate cuff
13. Note tube depth and tape securely
14. Confirm and document endotracheal location by:
    a. Continuous waveform capnography
    b. Presence and symmetry of breath sounds
    c. Rising SpO_2
15. Ventilate with BVM. Assess adequacy of ventilations
16. During transport, continually reassess ventilation, oxygenation and tube position with continuous waveform capnography and pulse oximetry

Precautions:

- Before performing BNTI, consider if patient can be safely ventilated with non-invasive means such as CPAP or BVM
- Use caution in anticoagulated or bleeding disorders given risk of epistaxis.
- Ventilate at age-appropriate rates. Do not hyperventilate
- If the intubated patient deteriorates, think “DOPE”
    - **D**islodgement
    - **O**bstruction
    - **P**neumothorax
    - **E**quipment failure (no oxygen)
- Reconfirm and document correct tube position with, preferably with waveform capnography after moving patient and before disconnecting from monitor in ED
- Blind nasotracheal intubation is a very gentle technique. The secret to success is perfect positioning and patience.

1030 PROCEDURE PROTOCOL: CRICOTHYROTOMY

Paramedic

Introduction:

- Surgical cricothyrotomy is a difficult and hazardous procedure that is to be used only in extraordinary circumstances as defined below. The reason for performing this procedure must be documented and submitted for review to the EMS Medical Director within 24 hours. Surgical cricothyrotomy is to be performed only by paramedics trained in this procedure.
- An endotracheal tube introducer ("bougie") facilitates this procedure and has the advantage of additional confirmation of tube position and ease of endotracheal tube placement. If no bougie is available, the procedure may be performed without a bougie by introducing endotracheal tube or tracheostomy tube directly into cricothyroid membrane.
- Given the rarity and relative unfamiliarity of this procedure it may be helpful to have a medical consult on the phone during the procedure. Consider contacting base for all cricothyroidotomy procedures. Individual Medical Directors may mandate base contact before initiating the procedure. Individual agency policy and procedures apply and providers are responsible for knowing and following these policies.
- If using a commercially available cricothyrotomy kit, perform cricothyrotomy according to manufacturer's instructions.

Indications:

- A life-threatening condition exists AND advanced airway management is indicated ***AND*** you are unable to establish an airway or ventilate the patient by any other means. ("Cannot intubate/cannot ventilate")

Contraindications:

- Surgical cricothyrotomy is contraindicated in patients less than 12 years of age for anatomic reasons.

Technique:

1. Position the patient supine, with in-line spinal immobilization if indicated. If cervical spine injury not suspected, neck extension will improve anatomic view.
2. Clean skin per agency approved aseptic technique.
3. Stabilize the larynx with the thumb and middle finger of your non dominant hand, and identify the cricothyroid membrane with your index finger, typically 4 fingerbreadths below mandible
4. Using a scalpel, make a 3 cm centimeter vertical incision 0.5 cm deep through the skin and fascia, over the cricothyroid membrane. With finger, dissect the tissue and locate the cricothyroid membrane.
5. Make a horizontal incision through the cricothyroid membrane with the scalpel blade oriented caudal and away from the cords. Remove scalpel blade and insert finger.
6. Insert the bougie curved-tip first through the incision and angled towards the patient's feet guided by the finger.

a. If no bougie available, use tracheal hook instrument to lift caudal edge of incision to facilitate visualization and introduction of ETT directly into trachea and skip to # 9.

7. Advance the bougie into the trachea feeling for "clicks" of tracheal rings and until "hang-up" when it cannot be advanced any further. This confirms tracheal position.
8. Advance a 6-0 endotracheal tube over the bougie and into the trachea. It is very easy to place tube in right mainstem bronchus, so carefully assess for symmetry of breath sounds. Remove bougie while stabilizing ETT ensuring it does not become dislodged
9. Ventilate with BVM and 100% oxygen
10. Confirm and document tracheal tube placement as with all advanced airways: Waveform capnography as well as clinical indicators e.g.: symmetry of breath sounds, rising pulse oximetry, etc.
11. Secure tube with ties.
12. Observe for subcutaneous air, which may indicate tracheal injury or extra- tracheal tube position
13. Continually reassess ventilation, oxygenation and tube placement.

Precautions:

- Success of procedure is dependent on correct identification of cricothyroid membrane
- Bleeding will occur, even with correct technique. Straying from the midline is dangerous and likely to cause hemorrhage.

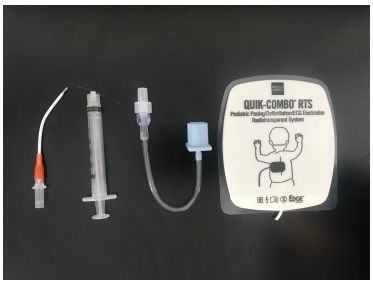
Approved by Platteville Gilcrest FPD Medical Director January 2020

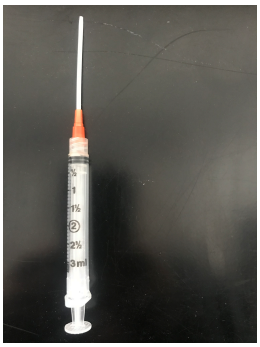
1040 PROCEDURE PROTOCOL: PEDIATRIC NEEDLE CRICOTHYROTOMY

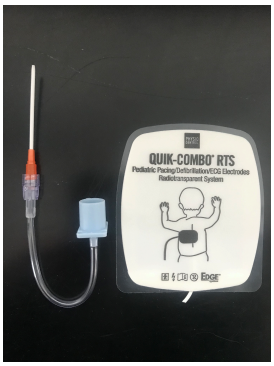
Paramedic

Introduction:

- Needle cricothyrotomy is a difficult and hazardous procedure that is to be used only in extraordinary circumstances as defined below. The rationale for this procedure must be documented in the patient care report and submitted for review to the EMS Medical Director within 24 hours.
- Due to the funnel-shaped nostral, highly compliant larynx of a pediatric patient, cricothyrotomy is an extremely difficult procedure to successfully perform. As such, every effort should be made to effectively oxygenate the patient before attempting needle cricothyrotomy.
- This protocol is considered optional and may not be adopted by all EMS Medical Directors or by all EMS agencies.
- A standardized, pre-prepared kit is available on all PGFPD Ambulances
- Contents offkit:
  - 14 ga. catheter over needle (slight bend or better angling on insertion))
  - 3mL syringe
  - 2.5 ET tube top/15mm endotracheal tube adaptor
  - Extension set
  - Pedi defib padffor securing the needle cric







Indications:

- A life-threatening condition exists ***AND*** adequate oxygenation and ventilation cannot be accomplished by other less invasive means for patients < 12 years old.

Contraindications:

- If patient can be ventilated and oxygenated by less invasive means

Technique:

1. Ensure patent upper airway with placement of an oral airway and nasal airway, unless contraindicated.
2. Open pre-prepared kit, attach angiocath to syringe, and aspirate 1-2 mL of saline into syringe
3. Prepare skin using aseptic solution
4. Insert the IV catheter through the skin and cricothyroid membrane into the trachea. Direct the needle at a 45° angle caudally (toward the feet). When the needle penetrates the trachea a “pop” will be felt.
5. Aspirate with the syringe. If air is retuned easily or bubbles are seen (with saline), the needle is in the trachea.
6. Advance the catheter over the needle while holding the needle in position, then withdraw needle after catheter is advanced flush to skin.
7. Remove the plunger and attach the 3 mL syringe to the catheter hub
8. Attach the 15 mm adaptor to the syringe chamber
9. Oxygenate the patient with bag-valve-mask device using the 15 mm adaptor provide high flow oxygen.
10. Confirm and document catheter placement by:
    a. Waveform capnography
    b. Rising pulse oximetry
11. **Do not let go of catheter and be careful not to kink the catheter**. There is no reliable way to secure it in place, and it is only a temporizing measure until a definitive airway can be established at the hospital
12. Observe for subcutaneous air, which may indicate tracheal injury or extra- tracheal catheter position
13. Continually reassess oxygenation and catheter position.

*Approved by PGFPD EMS Medical Directors January 2022.

1050 PROCEDURE PROTOCOL: SUPRAGLOTTIC AIRWAY

EMT	AEMT
EMT-I	Paramedic

Indications:

- Rescue airway if unable to intubate a patient in need of airway protection
- Primary airway if intubation anticipated to be difficult and rapid airway control is necessary
- Primary airway in pulseless arrest, when attempts at intubation are likely to interrupt CPR
- Designated advanced airway for EMTs
- Preferred advanced airway in the pediatric patient

Contraindications:

- Intact gag reflex
- Caustic ingestion

Technique:

1. Initiate BLS airway sequence
2. Select proper size supraglottic airway based on manufacturer's specifications
3. Assemble equipment, note correct volume for inflation marked on tube itself, test balloon for leaks, lubricate posterior aspect distal tip with water-soluble lubricant
4. Suction airway and maximize oxygenation with BVM ventilations
5. If trauma: have assistant hold in-line spinal immobilization in neutral position
6. If no trauma, sniffing position or slight cervical hyperextension is preferred
7. Place supraglottic airway utilizing device-specific technique
8. Inflate cuff balloon with correct volume of air (marked on device)
9. Confirm tube placement by auscultation, chest movement, and waveform capnography
10. Continuously monitor waveform capnography, SpO_2, vital signs

Precautions:

1. Removal of supraglottic airway by paramedic is allowed in order to intubate and therefore provide patient with a more secure airway. Recommendation from American Heart Association is to place an ET Tube in cases of ROSC.*
2. Correct sizing of supraglottic airways is critical for correct function
3. Supraglottic airways are safe and effective in pediatric patients, provided the correct size tube is selected. The age-range for supraglottic airway use is dependent on the specific device being used. Providers should be trained on and familiar with correct size selection for their device.
4. Use with caution in patients with broken teeth, which may lacerate balloon.
5. Use with caution in patients with known esophageal disease who are at increased risk of esophageal injury.

1060 PROCEDURE PROTOCOL: CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP)

EMT	AEMT
EMT-I	Paramedic

Indications:

- Symptomatic patients with moderate-to-severe respiratory distress as evidenced by at least two (2) of the following:
  - Rales (crackles)
  - Dyspnea with hypoxia (SpO_2 less than 90% despite O_2)
  - Dyspnea with verbal impairment – i.e. cannot speak in full sentences
  - Accessory muscle use
  - Respiratory rate greater than 24/minute despite O_2
  - Diminished tidal volume

Contraindications:

- Respiratory or cardiac arrest
- Systolic BP less than 90mmHg
- Lack of airway protective reflexes
- Significant altered level of consciousness such that unable to follow verbal instructions or signal distress
- Vomiting or active upper GI bleed
- Suspected pneumothorax
- Trauma
- Patient size or anatomy prevents adequate mask seal

Technique:

1. Place patient in a seated position and explain the procedure to him or her
2. Assess vital signs (BP, HR, RR, SpO_2, and $ETCO_2$)
3. Apply the CPAP mask and secure with provided straps, progressively tightening as tolerated to minimize air leak
4. Operate CPAP device according to manufacturer specifications
5. Start with the lowest continuous pressure that appears to be effective. Adjust pressure following manufacturer instructions to achieve the most stable respiratory status utilizing the signs described below as a guide
6. Monitor patient continuously, record vital signs every 5 minutes.
7. Assess patient for improvement as evidenced by the following:
   a. Reduced dyspnea
   b. Reduced verbal impairment, respiratory rate and heart rate
   c. Increased SpO_2
   d. Stabilized blood pressure
   e. Appropriate $ETCO_2$ values and waveforms
   f. Increased tidal volume
8. Observe for signs of deterioration or failure of response to CPAP:
   a. Decrease in level of consciousness
   b. Sustained or increased heart rate, respiratory rate or decreased blood pressure
   c. Sustained low or decreasing SpO_2 readings
   d. Rising $ETCO_2$ levels or other $ETCO_2$ evidence of ventilatory failure
   e. Diminished or no improvement in tidal volume

Precautions:

- Should patient deteriorate on CPAP:
  - Troubleshoot equipment
  - Consider endotracheal intubation
  - Assess need for possible chest decompression due to pneumothorax
  - Assess for possibility of hypotension due to significantly reduced preload from positive pressure ventilation
- In-line nebulized medications may be given during CPAP as indicated and in accordance with manufacturer guidelines
- Some fixed pressure CPAP devices do not have FiO2 adjustment and will only administer up to 30% oxygen. If no improvement in oxygenation with a fixed pressure CPAP device, consider adding supplemental oxygen.

Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

1070 PROCEDURE PROTOCOL: CAPNOGRAPHY

EMT	AEMT	EMT-I	Paramedic

Indications:

A. MANDATORY: To evaluate and confirm placement of ANY advanced airway, and particularly to exclude esophageal intubation in all intubated patients.
B. To identify late endotracheal tube or advanced airway dislodgement.
C. To monitor ventilation and perfusion in any ill or injured patient (respiratory, sepsis, trauma...etc.)
D. To monitor patients being treated with opioid or ketamine pain management.*
E. To monitor patients who are restrained and/or sedated.
F. When a Benzodiazine is given.*.*

Contraindications:

A.None

Technique:

A. In patient with ETT or advanced airway: place $ETCO_2$ detector in-line between airway adaptor and BVM after airway positioned and secured
B. Patients without ETT or advanced airway in place: place $ETCO_2$ cannula on patient. May be placed under CPAP or NRB facemask
C. Assess and document both capnography waveform and $ETCO_2$ value

Precautions:

A. To understand and interpret capnography, remember the 3 determinants of $ETCO_2$:
    1. Alveolar ventilation
    2. Pulmonary perfusion
    3. Metabolism
B. Sudden loss of $ETCO_2$:
    1. Tube dislodged
    2. Circuit disconnected
    3. Cardiac arrest
C. High $ETCO_2$ (> 45)
    1. Hypoventilation/CO_2 retention
    2. Asthma, COPD
D. Low $ETCO_2$ (< 25)
    1. Hyperventilation
    2. Low perfusion: shock, PE, sepsis, CHF
E. Cardiac Arrest:
    1. In low-pulmonary blood flow states, such as cardiac arrest, the primary determinant of $ETCO_2$ is blood flow, so $ETCO_2$ is a good indicator of quality of CPR
    2. If $ETCO_2$ is dropping, change out person doing chest compressions
    3. In cardiac arrest, if $ETCO_2$ not > 10 mmHg after 20 minutes of good CPR, this likely reflects very low CO_2 production and is associated with poor outcome
    4. Sudden rise in $EtCO_2$ may be an indicator of ROSC

*Approved by Platteville Gilcrest FPD Medical Director January 2023.

1080 PROCEDURE PROTOCOL: NEEDLE THORACOSTOMY FOR TENSION PNEUMOTHORAX DECOMPRESSION

EMT-I	Paramedic

Indications:

A. **All** of the following clinical indicators **must** be present:
   1. Severe respiratory distress
   2. Hypotension and signs of shock
   3. Unilateral absent or decreased breath sounds
B. Consider bilateral needle chest decompression in traumatic pulseless arrest if patient is being resuscitated and any trauma to trunk.

Adult/Child Technique:

A. Expose entire chest.
B. Clean skin overlying site with available skin prep
C. Insert angiocath either at 2nd intercostal space at midclavicular line, or 5th intercostal space at midaxillary line.
   1. Either approach is acceptable, generally the site with the least soft tissue overlying ribs is preferred.
D. For adult, use largest, longest available angiocath. For children measuring Red or greater on a length-based tape, use 14g or 16g angio catheter.
E. Notify receiving hospital of needle decompression attempt.

Pediatric specific chest decompression needle size:

- If patient fits on length-based tape (LBT) and measures Red (6 month) or higher: 14g or 16g angiocath
- Gray (preemie) or Pink (4 month) on LBT: 22g angiocath
- Newly born: 24g butterfly needle

Neonatal/Young Infant Technique:

A. Expose entire chest
B. Clean skin overlying site with available skin prep
C. Assemble appropriate needle (see box), 3-way stopcock, 20-30 mL syringe
D. Identify 3rd rib at midclavicular line, keeping index finger of non-dominant hand on rib. Insert assembled needle system into the 2nd intercostal space above.
   a. Alternate approach at 4th or 5th intercostal space at midaxillary line
E. When release of resistance is felt, stop needle insertion.
F. If air is present, there is free withdrawal. Continue withdrawal until resistance is met. If syringe is filled with air, turn stopcock off to patient, remove syringe and expel air to repeat process.
G. Once all air expelled, remove the needle while maintaining suction on the syringe. Cover site with gauze and notify receiving hospital of needle decompression attempt.

Precautions:

A. Angiocath may become occluded with blood or by soft tissue.
B. A simple pneumothorax is NOT an indication for needle decompression.

1090 PROCEDURE PROTOCOL: SYNCHRONIZED CARDIOVERSION

Paramedic

Unstable tachyarrhythmia with a pulse

↓

Check:
- O_2 via NRB facemask
- Functioning IV line
- Suction
- Advanced airway equipment ready

↓

Sedate with benzodiazepine if not contraindicated

↓

Perform Synchronized Cardioversion

Adult	Pediatric
200 Joules biphasic	0.5-1 Joules/kg biphasic

↓

Continue treatment according to Tachycardia with Poor Perfusion

Precautions:
- If rhythm is AV nodal reentrant tachycardia (AVNRT, historically referred to as “PSVT”) it is preferred to attempt a trial of adenosine prior to electrical cardioversion, even if signs of poor perfusion are present, due to rapid action of adenosine
- If defibrillator does not discharge in “synch” mode, then deactivate “synch” and reattempt
- If sinus rhythm achieved, however briefly, then dysrhythmia resumes immediately, repeated attempts at cardioversion at higher energies are unlikely to be helpful. First correct hypoxia, hypovolemia, etc. prior to further attempts at cardioversion
- If pulseless, treat according to Universal Pulseless Arrest Algorithm
- Chronic atrial fibrillation is rarely a cause of hemodynamic instability, especially if rate is < 150 bpm. First correct hypoxia, hypovolemia, before considering cardioversion of chronic atrial fibrillation, which may be difficult, or impossible and poses risk of stroke
- Sinus tachycardia rarely exceeds 150 bpm in adults or 180 bpm in children and does not require or respond to cardioversion. Treat underlying causes.
- Transient dysrhythmias or ectopy are common immediately following cardioversion and rarely require specific treatment other than supportive care

Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

1100 PROCEDURE PROTOCOL: TRANSCUTANEOUS CARDIAC PACING

EMT-I	Paramedic

Indications

1. Symptomatic bradyarrhythmias (includes A-V block) not responsive to medical therapy
2. Pacing is rarely indicated in patients under the age of 12 years. **CONTACT BASE**

Precautions

1. Conscious patient will experience discomfort; consider sedation with benzodiazepine if blood pressure allows.

Contraindications

1. Pacing is contraindicated in pulseless arrest.

Technique

1. Apply electrodes as per manufacturer specifications: (-) left anterior, (+) left posterior.
2. Turn pacer unit on.
3. Set initial current to 80 mAmps.
4. Select pacing rate at 80 beats per minute (BPM)
5. Start pacing unit.
6. Confirm that pacer senses intrinsic cardiac activity by adjusting ECG size.
7. If no initial capture, increase current 10 mAmps every 10-15 seconds until capture or 200 mAmps (usually captures around 100 mAmps).
8. Check for femoral pulse once there is electrical capture.
9. If no capture occurs with maximum output, discontinue pacing and resume ACLS.

Complications

1. Ventricular fibrillation and ventricular tachycardia are rare complications, but follow appropriate protocols if either occur.
2. Muscle tremors may complicate evaluation of pulses; femoral pulse may be more accurate.
3. Pacing may cause diaphragmatic stimulation and apparent hiccups.

Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

1110 PROCEDURE PROTOCOL: INTRAOSSEUS CATHETER PLACEMENT

EMT -IV ONLY	AEMT	EMT-I	Paramedic

Indications:

1. Rescue or primary vascular access device when peripheral IV access not obtainable in a patient with critical illness defined as any of the following:
    A. Cardiopulmonary arrest or impending arrest
    B. Profound shock with severe hypotension and poor perfusion
    C. Hypoglycemia with severe symptoms (e.g. unresponsive) and no venous access
2. Utilization of IO access for all other patients requires base station contact (**NOT** indicated for EMT-IV)

Technique:

1. Site of choice – typically proximal tibia. Other sites such as distal femur or humeral head may be considered based on clinical presentation if authorized by agency Medical Director after completion of appropriate training.
2. Clean skin per agency approved aseptic technique.
3. Place intraosseous needle perpendicular to the bone.
    A. For infants who measure gray or pink on the length-based tape (less than 6 months), insert needle manually. Do not use powered device which increases risk of puncturing through both sides of the bone.
4. Follow manufacturer's guidelines specific to the device being used for insertion.
5. Entrance into the bone marrow is indicated by a sudden loss of resistance.
6. Flush line with 10 mL saline. Do not attempt to aspirate marrow
    A. IO infusion is very painful. If the patient is conscious, administer lidocaine for pain control **before** infusing fluids or medications.
7. Secure line
    A. Even if properly placed, the needle will not be secure. The needle must be secured and the IV tubing taped. The IO needle should be stabilized at all times.
8. Observe for signs of limb swelling, decreased perfusion to distal extremity that would indicate a malpositioned IO catheter or other complication. If limb becomes tense or malperfused, disconnect IO tubing immediately and leave IO in place.
9. A person should be assigned to monitor the IO at the scene and en route to the hospital.
10. Do not make more than one IO placement attempt per bone.
11. Do not remove IO needles in the field.
12. Notify hospital staff of all insertion sites/attempts.

Complications:

1. Fracture
2. Compartment syndrome
3. Infection

Contraindications:

1. Fracture of target bone
2. Cellulitis (skin infection overlying insertion site)
3. Osteogenesis imperfecta (rare condition predisposing to fractures with minimal trauma)
4. Total knee replacement (hardware will prevent placement)

Side Effects and Special Notes:

1. IO placement may be considered prior to peripheral IV attempts in critical patients without identifiable peripheral veins
2. Some authorities recommend aspiration of marrow fluid or tissue to confirm needle location. This is not recommended for field procedures, as it increases the risk of plugging the needle.
3. Expect flow rates to be slower than peripheral IVs. Pressure bags may be needed. Any drug or IV fluid may be infused.
4. Some manufacturers recommend the use of lidocaine for the treatment of pain associated with fluid administration. Check with your manufacturer and Medical Director for further guidance

Approved by Platteville Gilcrest FPD Medical Director January 1, 2023.

1120 PROCEDURE PROTOCOL: TOURNIQUET PROTOCOL

EMT	AEMT
EMT-I	Paramedic

Indications

A. A tourniquet should be used for initial control of life threatening hemorrhage.

Precautions

A. In cases of life-threatening bleeding, benefit of tourniquet use outweighs any theoretical risk of limb ischemia.
B. A commercially made tourniquet is the preferred tourniquet. If none is available, a blood pressure cuff inflated to a pressure sufficient to stop bleeding is an acceptable alternative.

Technique

A. First, attempt to control hemorrhage by using direct pressure over bleeding area.
B. If a discrete bleeding vessel can be identified, point pressure over bleeding vessel is more effective than a large bandage and diffuse pressure.
C. If unable to control hemorrhage using direct pressure, apply tourniquet according to manufacturer specifications and using the steps below:
    1. Cut away any clothing so that the tourniquet will be clearly visible. NEVER obscure a tourniquet with clothing or bandages.
    2. Apply tourniquet proximal to the wound and not across any joints.
    3. Tighten tourniquet until bleeding stops. Applying tourniquet too loosely will only increase blood loss by inhibiting venous return.
    4. If bleeding is not controlled with the application of a single tourniquet, a 2nd can be applied adjacent to the 1st.
    5. Mark the time and date of application on the patient's skin next to the tourniquet.
    6. Keep tourniquet on throughout hospital transport – a correctly applied tourniquet should only be removed by the receiving hospital.
    7. Pain management as needed.

Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

1130 PROCEDURE PROTOCOL: RESTRAINT PROTOCOL

EMT	AEMT
EMT-I	Paramedic

Indications:

A. Physical restraint of patients is permissible and encouraged if the patient poses a danger to him/herself or to others. Only reasonable force is allowable, i.e., the minimum amount of force necessary to control the patient and prevent harm to the patient or others. Try alternative methods first. Verbal de-escalation should be used first if the situation allows.
B. Consider pharmacological sedation for agitated patients that require transport and are behaving in a manner that poses a threat to him/herself or others. See Agitated/Combative Patient Protocol
C. Restraints may be indicated for patients who meet the following criteria:
    1. A patient who is significantly impaired (e.g., intoxication, medical illness, injury, psychiatric condition, etc.) and lacks decision-making capacity regarding his or her own care.
    2. A patient who exhibits violent, combative, or uncooperative behavior who does not respond to verbal de-escalation.
    3. A patient who is suicidal and considered to be a risk for behavior dangerous to his or herself or to healthcare providers.
    4. A patient who is on a mental health hold if there is a concern for elopement.

Precautions:

A. When appropriate involve law enforcement, however, law enforcement never serves as medical control for EMS and cannot tell EMS to restrain a patient for their own purposes.
B. Restraints shall be used only when necessary to prevent a patient from seriously injuring him/herself or others (including the EMS providers), and only if safe transportation and treatment of the patient cannot be accomplished without restraints. They may not be used as punishment, or for the convenience of the crew.
C. Any attempt to restrain a patient involves risk to the patient and the prehospital provider. Efforts to restrain a patient should only be done with adequate assistance present.
D. Be sure to evaluate the patient adequately to determine his or her medical condition, mental status, and decision-making capacity.
E. Do not use hobble restraints and do not restrain the patient in the prone position or any position that impairs the airway or breathing.
F. Search the patient for weapons.
G. Handcuffs are not appropriate medical restraints and should only be placed by law enforcement personnel. See Transport of Handcuffed Patient Protocol.

Technique:

A. Be alert for any medical conditions which may ensue following physical struggle. Refer to Agitated/Combative protocol for appropriate assessment and treatment.
B. Treat the patient with respect. Attempts to verbally reassure or calm the patient should be done prior to the use of restraints. To the extent possible, explain what is being done and why.
C. Have all equipment and personnel ready (restraints, suction, a means to promptly remove restraints).
D. Use assistance such that, if possible, 1 rescuer handles each limb and 1 manages the head or supervises the application of restraints.
E. Apply restraints to the extent necessary to allow treatment of, and prevent injury to, the patient. **Under-restraint may place patient and provider at greater risk**.
F. After application of restraints, check all limbs for circulation. **During the time that a patient is in restraints, continuous attention to the patient's airway, circulation, vital signs, SPO2, ETCO2, and EKG is mandatory**. A restrained patient may never be left unattended.

Documentation

A. Document the following in all cases of restraint:
    1. Description of the facts justifying restraint
    2. Efforts to de-escalate prior to restraint
    3. Type of restraints used
    4. Condition of the patient while restrained, including reevaluations during transport
    5. Condition of the patient at the time of transfer of care to emergency department staff
    6. Any injury to patient or to EMS personnel

Approved by PGFPD Medical Director January 2022

1130 PROCEDURE PROTOCOL: RESTRAINT PROTOCOL

Complications:

A. Aspiration: continually monitor patient's airway
B. Nerve injury: assess neurovascular status of patient's limbs during transport
C. Complications of medical conditions associated with need for restraint
    1. Patients may have underlying trauma, hypoxia, hypoglycemia, hyperthermia, hypothermia, drug ingestion, intoxication, or other medical conditions
    2. Hyperactive delirium with severe agitation

1140 PROCEDURE PROTOCOL: OROGASTRIC TUBE INSERTION WITH ADVANCED AIRWAY

Paramedic

Indications:

- Gastric decompression in the intubated patient
- Gastric decompression with placement of supraglottic airway
- Intended for agencies with prolonged transport times in situations where time and conditions allow gastric decompression without interruption of routine care

Contraindications:

- Known esophageal varices

Technique:

1. Determine length of tube for insertion. Measure from tip of nose, to earlobe, then down to xiphoid process
2. Liberally lubricate the distal end of the orogastric tube
3. Suction airway and pre-oxygenate with BVM ventilations, if possible
4. Insert tube:
    a. For orotracheal and nasotracheal intubation, insert tube into patient's mouth; continue to advance the tube gently until the appropriate distance is reached
    b. For supraglottic airway, insert tube through gastric access lumen and continue to advance tube till appropriate distance is reached.
5. Confirm placement by injecting 30cc of air and auscultate for the swish or bubbling of the air over the stomach. Aspirate gastric contents to confirm proper placement.
6. Secure with tape to inserted airway and attach to low continuous suction if indicated

1150 PROCEDURE PROTOCOL: TASER® PROBE REMOVAL

EMT	AEMT
EMT-I	Paramedic

Indications

- Patient with TASER® probe(s) embedded in skin.

Contraindications

- TASER® probe embedded in the eye or genitals. In such cases, transport patient to an emergency department for removal.

Technique

1. Be alert for any medical conditions which may ensue following physical struggle. Refer to
2. agitate/combative protocol for appropriate assessment and treatment.
3. Confirm the TASER® has been shut off and the barb cartridge has been disconnected. .
4. Using a pair of shears cut the TASER® wires at the base of the probe.
5. Place one hand on the patient in area where the probe is embedded and stabilize the skin surrounding the puncture site. Using the other hand (or use pliers) firmly grasp the probe.
6. In one uninterrupted motion, pull the probe out of the puncture site maintaining a 90° angle to the skin. Avoid twisting or bending the probe.
7. Repeat the process for any additional probes.
8. Once the probes are removed, inspect and assure they have been removed intact. In the event the probe is not removed intact or there is suspicion of a retained probe, the patient must be transported to the emergency department for evaluation.
9. Cleanse the probe site and surrounding skin with betadine and apply sterile dressing.
10. Advise patient to watch for signs of infection including increased pain at the site, redness swelling or fever.

Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

1160: Cardiac Monitor - 4 Lead EKG

Indications:

- Chest or mid - epigastric discomfort / pain.
- Irregular pulse.
- Dyspnea with a history of cardiac disease.
- Weakness / dizziness / diaphoresis.
- Near syncopal episode or actual syncopal episode.

Contraindications

- None listed.

Precautions / Notes:

- Verify correct lead placement.

Lead Placement:

Lead Color	Position to be placed	3 - Lead	4 - Lead	5 - Lead
Black Lead	Left Arm			
White Lead	Right Arm			
Red Lead	Left Leg			
Green Lead	Right Leg			
Brown Lead	4th Intercostal Space Right of Sternum			

Technique / Procedure:

- Application of electrodes.
- Record ECG rhythm strip.
- Interpret the EKG rhythm: **(Intermediates & Paramedics Only)**

Procedure:	FR	EMT B	EMT IV	AEMT	EMT I	EMT P
• Cardiac Monitor: Application & acquisition of 4 lead.	___	SO	SO	SO	SO	SO
• Cardiac Monitor: Interpretation of 4 lead EKG.	___	___	___	___	SO	SO

Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

1170: Cardiac Monitor - 12 Lead EKG

Indications:

- Chest or mid - epigastric discomfort / pain.
- Irregular pulse / dysrhythmia / or some type of block on the 4 lead EKG monitor.
- Complaining of dyspnea with a history of cardiac disease.
- Weakness / dizziness / diaphoresis between the ages of 35 to 80
- Near syncopal episode or actual syncopal episode.
- To be done on patients post cardiac arrest during transport if time allows.

Contraindications:

- None listed.

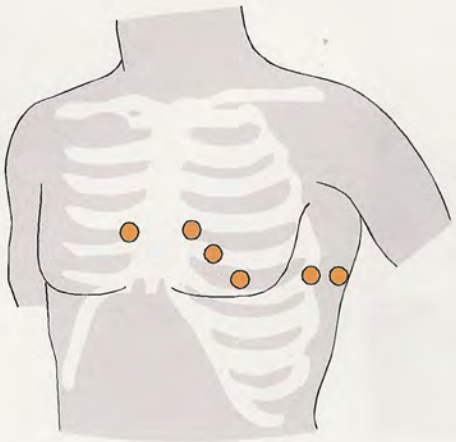
Precautions / Notes:

- Do not delay treatment or transport for 12 lead EKG acquisition.
- Patients experiencing an inferior wall myocardial infarction may also be having a right ventricular wall myocardial infarction. Therefore patients with an inferior wall myocardial infarction should also have a V^4R lead view run in addition to a 12 lead EKG to rule out right ventricular involvement.

Lead Placement:

V1	4th intercostal space @ R sternum edge
V2	4th intercostal space @ L sternum edge
V3	Between V2 & V4
V4	5th intercostals space, midclavicular line
V5	Level with V4, L anterior axillary line
V6	Level with V5, L mid axillary line

I *Lateral*	aVR	V1 *Septal*	V4 *Anterior*
II *Inferior*	AVL *Lateral*	V2 Septal	V5 *Lateral*
III *Inferior*	AVF *Inferior*	V3 *Anterior*	V6 *Lateral*



1190: Pulse Oximetry Monitoring

Indications:

- Any medical complaint or traumatic injury.
- The pulse oximeter may be used in a variety of situations that require monitoring of oxygen status.
  - The pulse oximeter displays a digital percentage readout of a calculated estimate of the patient's hemoglobin that is saturated with oxygen and heart rate.
  - The pulse oximeter can provide an early warning of decreasing arterial oxyhemoglobin saturation prior to the patient exhibiting clinical signs of hypoxia.
  - The pulse oximeter can be used as a guide for determining therapeutic oxygen requirements.
  - The pulse oximeter can be used to monitor the effectiveness of oxygenation and ventilation therapy.

Contraindications:

- None listed.

Precautions / Notes:

- Pulse oximetry equipment must be maintained per the manufacturer and FDA guidelines.
- Pulse oximetry is not a substitute for conducting a thorough assessment of your patient.
- Never withhold oxygen from a patient in distress while waiting for a reading or if the reading indicates above normal.
- Results may be affected by any vascular impairment such as:
  - Elevation of the extremity in relation to the heart.
  - Compression of the finger by the probe or excessive taping.
  - Vasoconstrictors such as cold, fear, hypothermia, and medications.
  - AV fistula decreasing distal flow.
  - Poor peripheral perfusion.
  - Carbon monoxide poisoning.
  - Hypovolemia.
- Potential causes for interference with pulse oximeter readings:
  - Artificial nails.
  - Dark pigmentation.
  - Electrical.
  - Movement.
  - Radiated (bright) light.
  - Edema.
  - Pigments.

Note: Oxygen saturation values are guidelines only. EMS personnel must consider the patient's overall condition!!

1190: Pulse Oximetry Monitoring

Technique / Procedure:

- Press the power button to turn the pulse oximeter on.
- Place the finger probe on the patient's finger, toe, nose, or ear lobe.
- Initial reading will be the patient's oxygen saturation level.

Interpret the pulse oximeter reading:

- In 3 to 6 seconds the pulse rate and oxygen saturation readings are displayed.
- Readings are averaged over 5 to 15 seconds.
- Normal oxygen saturation is considered to range between 97% to 99%.
- Normal levels of oxygen saturation are greater than 93% at our altitude.
- If oxygen saturation is below 92% consider further oxygen therapy and treatment.
- Readings of 90% or less may indicate that the patient needs supplemental oxygen.

Procedure:	FR	EMT B	EMT IV	AEMT	EMT I	EMT P
• Pulse Oximetry Monitoring	**PPA**	**SO**	**SO**	**SO**	**SO**	**SO**

1200: Splinting - Extremity

Indications:

- An extremity fracture site requiring immobilization for transport.
- An extremity sprain sites requiring immobilization for transport.
- Dislocations requiring immobilization for transport.

Contraindications:

- None listed.

Precautions / Notes:

- While grotesque looking, extremity fractures are rarely life threatening. Do not overlook life threatening injuries.
- Multiple extremity fractures are indicative of significant mechanism of injury & possibly other life threatening injuries.
- Be sure to address significant bleeding as per the Hemorrhage Control protocol.
- Generally splint the injury as found with an appropriate method.
- Severe deformities with signs of compromised circulation are allowed one re - alignment in the field.
- Assure PMSC distal to the injury prior to and after the splinting.
- Consider pain management: Refer to Section 1230 for medications addressing pain.

Technique / Procedure: Extremity Splinting

- Expose the fracture site.
- Check for distal pulses, movement, sensation, and circulation.
- Dress and bandage any wounds prior to splinting.
- May need to re - align severely angulated fractures if no distal pulses are present. (One re - alignment in the field)
- Joint injuries should be immobilized in the position found.
- Immobilize the joint above and below the fracture site.
- Pelvic injuries can be stabilized using a sheet tightly wrapped around the patient's pelvis.
- An inverted K.E.D. device may also be used to stabilize the pelvis.
- The type of splint will be dependant on the type and location of the fracture.
- Secure the splint with Kerlix and tape. Secure to immobilize the extremity but not impair circulation.
- After the splint is applied, the patient should be re - evaluated for pulses, movement, sensation, and circulation.

Technique / Procedure: Traction Splints

- Expose the fracture site.
- Check for distal pulses, movement, sensation, and circulation.
- Dress and bandage any wounds prior to splinting.
- Place the ankle hitch on the injured leg and apply gentle traction.
- Position the splint under the leg supporting fracture site. Ischial pad should be placed against the ischial tuberosity.
- Attach the ankle hitch to the splint and carefully increase the amount of traction. Titrate to the patient's comfort.
- Secure the leg straps. Avoid placing the straps over the fracture site or the knee.
- An inverted K.E.D. device may also be used to stabilize the pelvis.
- After the splint is applied, the patient should be re - evaluated for pulses, movement, sensation, and circulation.

Procedure:	**FR**	**EMT B**	**EMT IV**	**AEMT**	**EMT I**	**EMT P**
• Traction splinting.	___	**SO**	**SO**	**SO**	**SO**	**SO**

1210: Suctioning - Endotracheal

Indications:

- Endotracheal suctioning should be used to remove excess foreign material that can't be removed by a suction device.

Contraindications:

- None listed.

Precautions / Notes:

- Complications may be caused both by inadequate and overly vigorous suctioning. Technique and choice of equipment are very important. Choose equipment with enough power to suction large amounts rapidly to allow for ventilation.
- Proper airway clearance can make the difference between a patient who survives and one who dies. Airway obstruction is one of the most common treatable causes of pre - hospital death.

Complications:

- Cerebral anoxia may occur as a result of excessive suctioning time without adequate oxygenation between attempts.
- Persistent obstruction due to inadequate tubing for removal of debris.
- Lung injury from aspiration of stomach contents due to inadequate suctioning.
- Asphyxia due to recurrent obstruction if airway is not monitored after initial suctioning.
- Vomiting and aspiration from stimulation of gag reflex.
- Induction of cardio pulmonary arrest from vagal stimulation.

Technique / Procedure

- Advance the catheter tip down the endotracheal tube as far as possible or until resistance is met.
- Apply suction and withdraw catheter slowly not to exceed 10 to 15 seconds.
  Note: Suctioning should only be done with a sterile catheter.
- Rinse catheter tip in sterile water or saline if re - using.
- Continued ventilations between suctioning attempts.

Procedure:	FR	EMT B	EMT IV	AEMT	EMT I	EMT P
• Adult Suctioning: Endotracheal Route.	___	___	___	___	**SO**	**SO**
• Neonatal Suctioning: Endotracheal Route	___	___	___	___	**SO**	**SO**

1220: Suctioning - Pharyngeal

Indications:

- Pharyngeal suctioning should be used to remove excess foreign material that can be removed by a suction device.

Contraindications:

- None listed.

Precautions / Notes:

- Complications may be caused both by inadequate and overly vigorous suctioning. Technique and choice of equipment are very important. Choose equipment with enough power to suction large amounts rapidly to allow for ventilation.
- Proper airway clearance can make the difference between a patient who survives and one who dies. Airway obstruction is one of the most common treatable causes of pre - hospital death.

Complications:

- Cerebral anoxia may occur as a result of excessive suctioning time without adequate oxygenation between attempts.
- Persistent obstruction due to inadequate tubing for removal of debris.
- Lung injury from aspiration of stomach contents due to inadequate suctioning.
- Asphyxia due to recurrent obstruction if airway is not monitored after initial suctioning.
- Conversion of partial to complete obstruction by attempts at airway clearance.
- Trauma to the posterior pharynx from forced use of equipment.
- Vomiting and aspiration from stimulation of gag reflex.
- Induction cardio pulmonary arrest from vagal stimulation.

1220: Suctioning - Pharyngeal

Technique / Procedure:

- Turn patient on side if possible, to facilitate clearance.
- Open airway and inspect for visible foreign material.
- Remove large or obvious foreign matter with gloved hands. Use tongue blade or oropharyngeal airway (do not pry) to keep airway open. Sweep finger across posterior pharynx and clear material out of mouth.

Adult Suctioning of the Oropharynx:

- Attach a tonsil tip. (Use open end for large amounts of debris)
- Insert tip into the oropharynx under direct visualization, with sweeping motion.
- Continue to oxygenate between 10 to 15 seconds.

Suctioning of the Newborn:

- Use neonatal suctioning device. Most common is a bulb syringe.
- As soon as infant's head has delivered, insert the suction tip into the mouth and back to the oropharynx.
- Apply suction while slowly withdrawing catheter from the mouth.
- Insert the catheter tip into each nostril and back to the posterior pharynx.
- Apply suction while slowly withdrawing catheter from each nostril.
- As soon as infant has delivered repeat the process.
- If meconium staining is present be prepared to suction infant via endotracheal route.

1230 PROCEDURE PROTOCOL: PAIN MANAGEMENT

EMT	AEMT
EMT-I	Paramedic

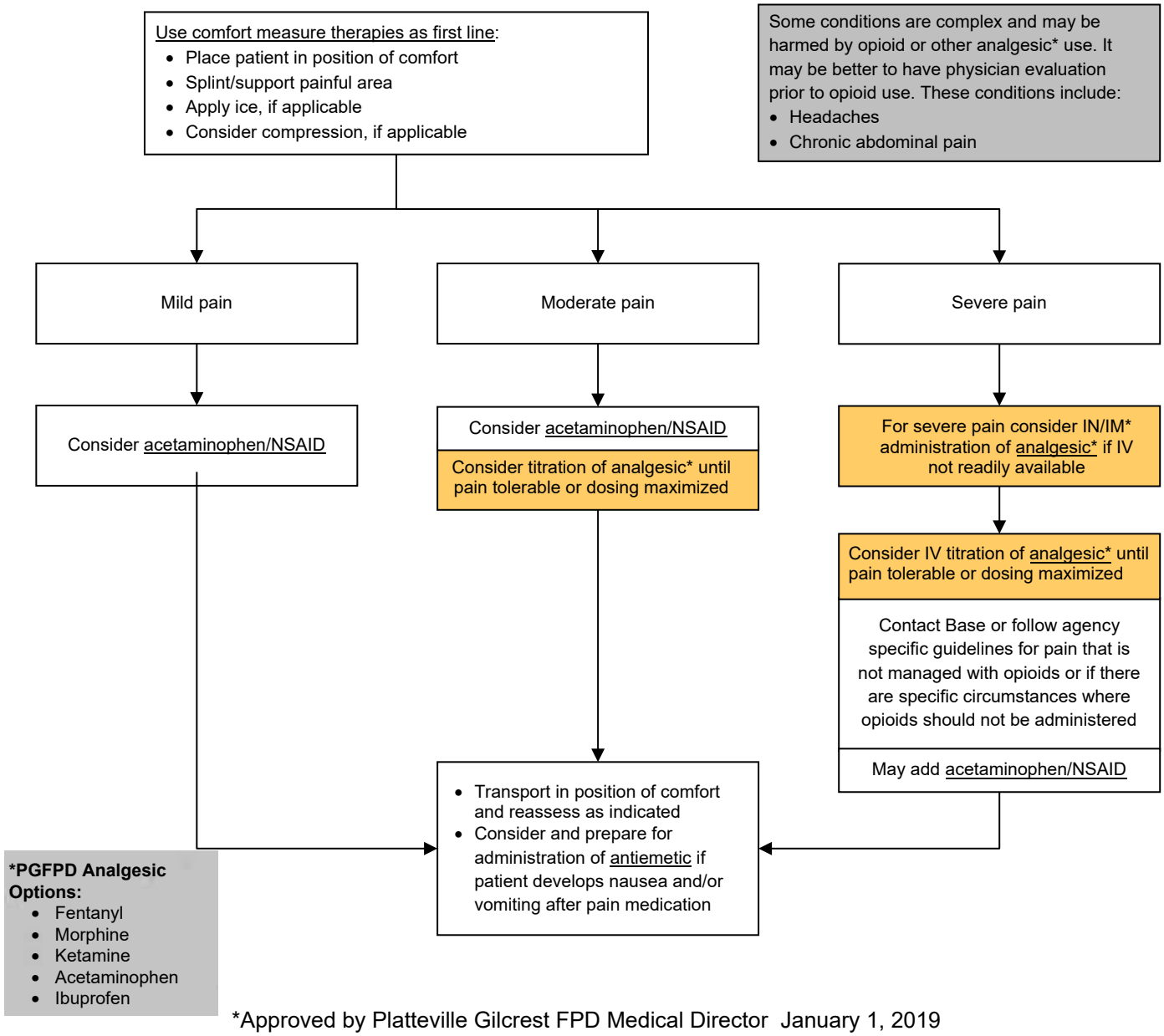
Goal of Pain Management

A. Use comfort measure therapies as first line.
B. If used, medications should be administered to a point where pain is tolerable. This point is not necessarily pain free.

Assessment

A. Determine patient's pain assessment and consider using a pain scale:
   1. Pediatric use observational scale (see Pediatric Pain Scales)
   2. Adult Self-report scale (Numeric Rating Scale [NRS])
B. Categorize the assessment of pain to mild, moderate, or severe.
   1. Overreliance on pain scores may lead to either inadequate pain control in stoic patients, or over sedation in patients reporting high levels of pain. Use subjective and objective findings to evaluate need for and efficacy of pain management.
   2. For pediatric patients, pain scale use is recommended. A pain score of 0-3 is mild pain, scores from 4-6 moderate pain, and 7-10 severe pain.

General Pain Management Technique



*Approved by Platteville Gilcrest FPD Medical Director January 1, 2019

1230 PROCEDURE PROTOCOL: PAIN MANAGEMENT

General Information

A. Document assessment or pain scale before and after administration of pain medications. Reassess pain 5 minutes after IV administration.
B. Strongly consider ½ typical dosing in the elderly or frail patient

Pediatric Pain Scales

Faces, Legs, Activity, Cry, Consolability (FLACC) Behavioral Scale

Appropriate age for use (per guideline): less than 4 years

Categories	Scoring		
	0	1	2
Face	No particular expression or smile	Occasional grimace or frown, withdrawn, disinterested	Frequent to constant frown, clenched jaw, quivering chin
Legs	Normal position or relaxed	Uneasy, restless, tense	Kicking, or legs drawn up
Activity	Lying quietly, normal position, moves easily	Squirming, shifting back and forth, tense	Arched, rigid, or jerking
Cry	No cry (awake or asleep)	Moans or whimpers, occasional complaint	Crying steadily, screams or sobs, frequent complaints
Consolability	Content, relaxed	Reassured by occasional touching, hugging, or being talked to, distractible	Difficult to console or comfort
Each of the five categories (F) Face; (L) Legs; (A) Activity; (C) Cry; (C) Consolability is scored from 0-2, which results in a total score between zero and ten.			

Recommended Pain Scale for Ages 4-12 Years

Faces Pain Scale – Revised (FPS-R)

0 2 4 6 8 10

1240 PROCEDURE PROTOCOL: SAM PELVIC SLING II

Indications:

- Suspected pelvic ring fracture
- Closed Open Book Pelvic fracture

Contraindications:

- Open pelvic fracture
- Suspected femoral neck fracture
- Suspected hip dislocation

Technique

1. Check for distal pulses before and after application
2. Consider pain control
3. Remove clothing or objects in pt's pockets
4. Locate pt's greater trochanters
5. With the black side facing the pt; place the Sam Pelvic sling underneath the pt with the middle of the sling at the level of the greater trochanters
6. Place the black strap through the buckle. Holding the orange strap pull the black strap until you hear and or feel a click. Keeping the strap under tension press the black strap onto the surface of the Sam Pelvic splint

*Approved by Platteville Gilcrest FPD Medical Director August 2019.

1250 Procedure Protocol: Dial A Flow IV Tubing

Indications:

Dial A Flow (DAF) can be used anytime the EMS provider wants to avoid fluid overload, or give a medication at a specific drip rate for the following conditions:

- Cardiogenic shock. Adults only.
- Hypotension with poor perfusion refractory to adequate fluid resuscitation (typically 30mL/kg crystalloid). Adults only
- Bradycardia with signs of poor perfusion. Adults only.
- Sepsis
- Burn patients
- Pediatrics that do not require fluid resuscitation.

Technique:

Dial a Flow can be adjusted from a few ml's per hour up to wide open.

- When used for an epinephrine drip, set dial at 60 mLs an hour which equals out to be 1mcg/min. Adjust dial as needed for desired effect. See graph below.
- When used for the burn pt, set the DAF for the appropriate amount of fluid to be infused per the burn protocol.
- When used for the pediatric pt, set the DAF according to the desired amount of fluid given over an hour.

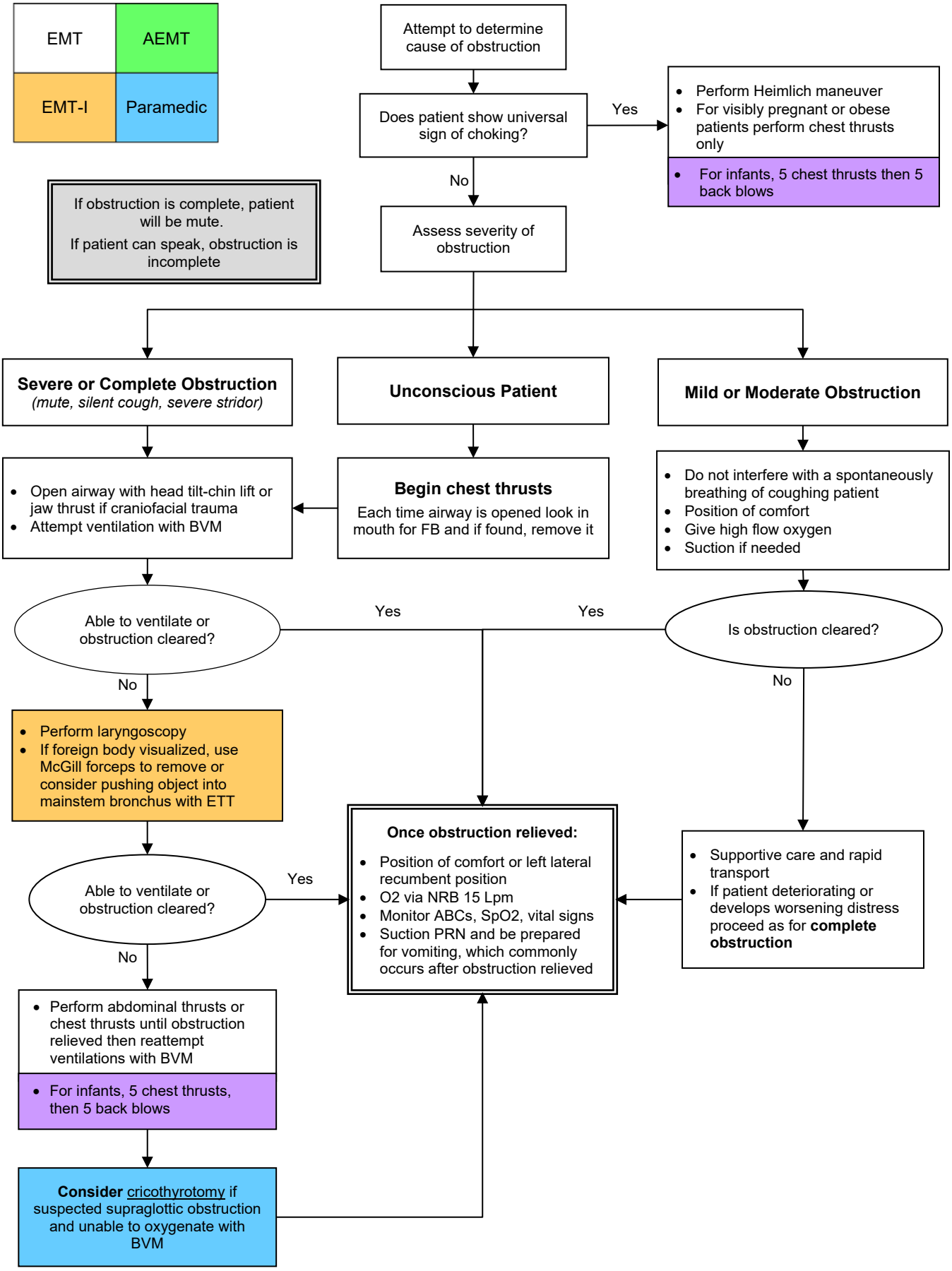
Complications:

1. Extravasation of fluids or medicine with infiltrated or bad IV access.

Epinephrine Drip Infusion (1 mcg/mL)		
Mix 1 mg of Epinephrine in a 1000mL Bag of 0.9% NS		
mcg/min	**gtt/min**	**set dial to mL/hr**
1	60	60
2	120	120
3	180	180
4	240	240
5	300	300

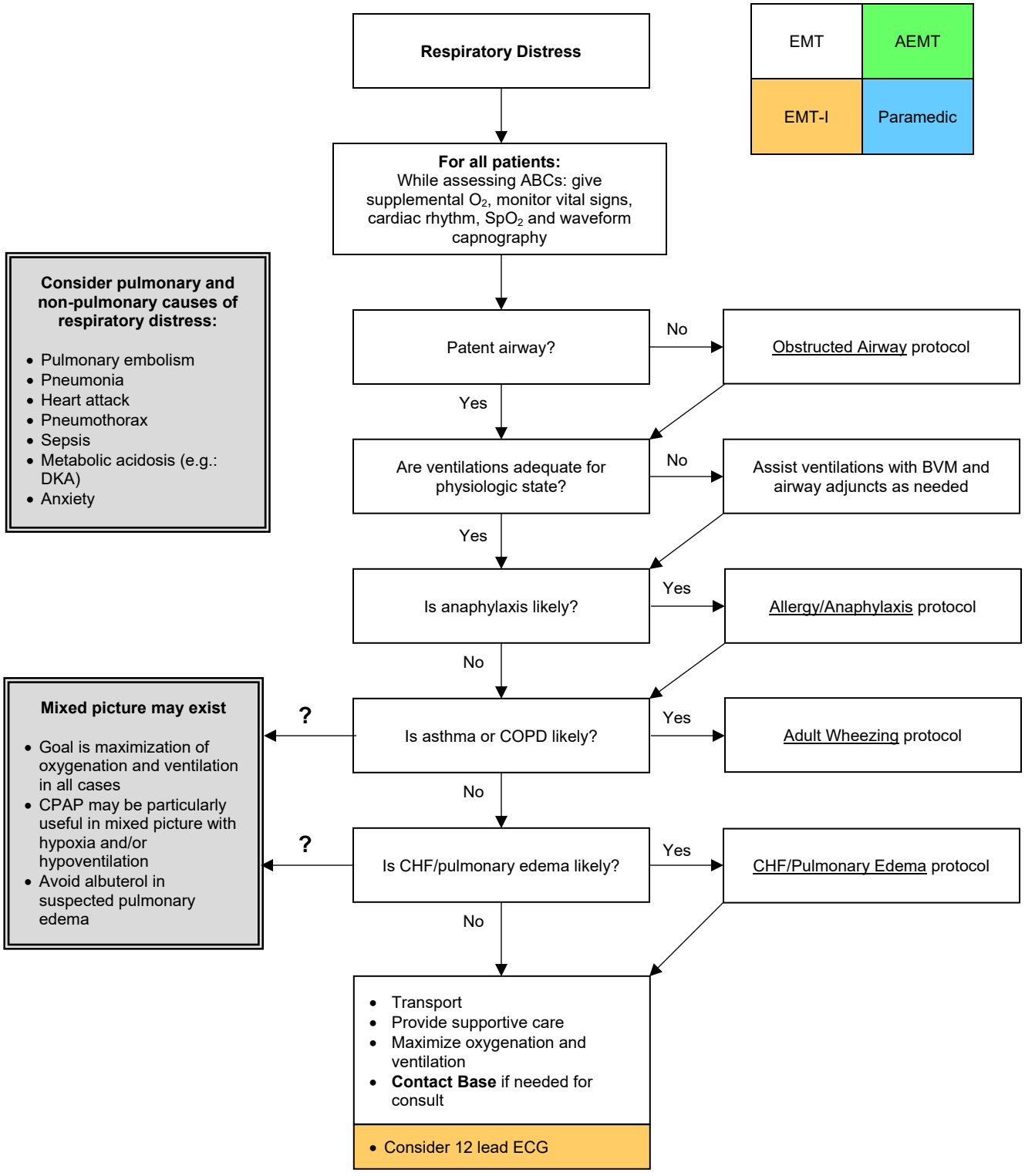
*Approved by Platteville Gilcrest FPD Medical Director January 2023

2000 OBSTRUCTED AIRWAY



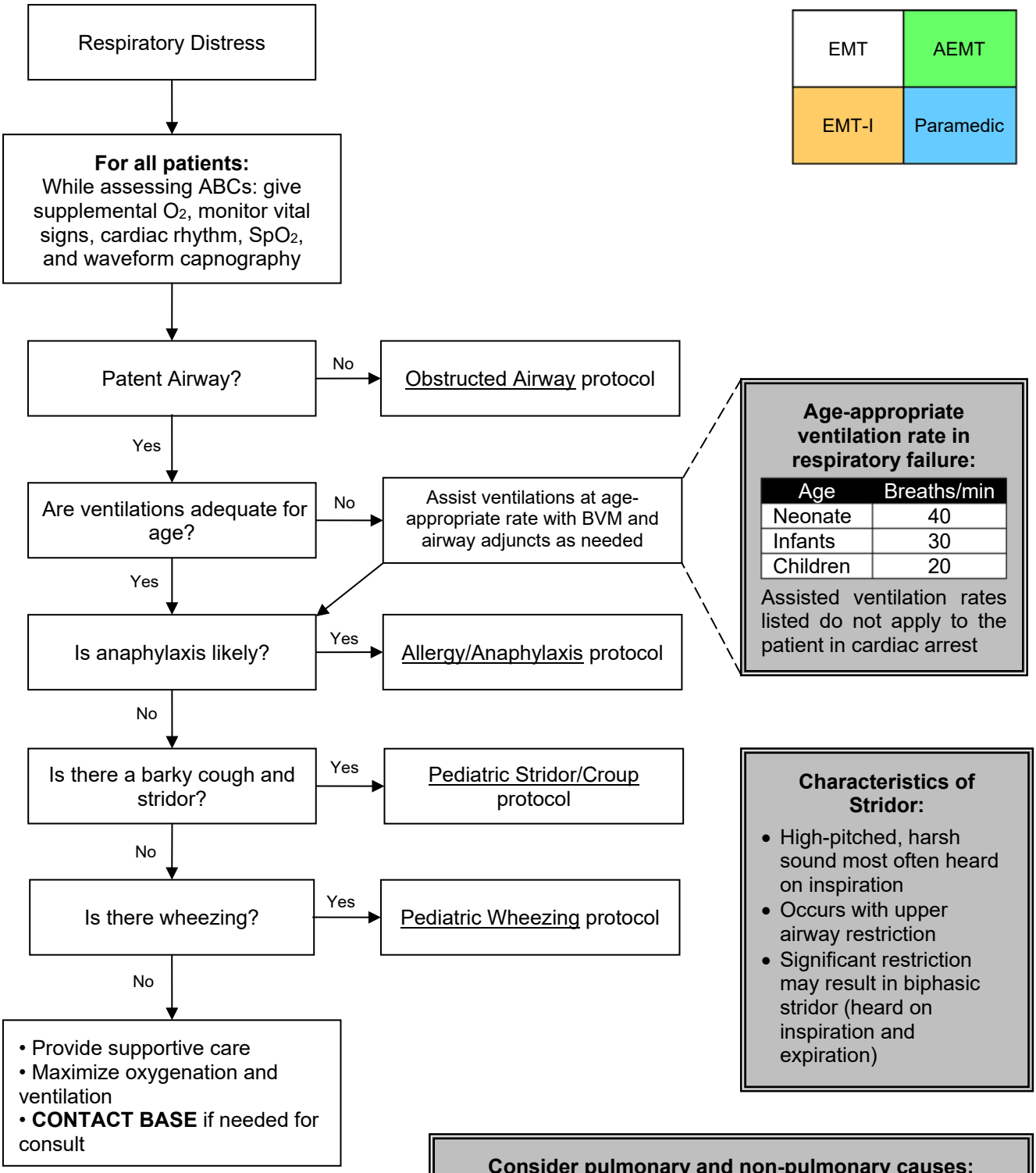
Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

2010 ADULT UNIVERSAL RESPIRATORY DISTRESS



Approved by Platteville Gilcrest FPD Medical Director January 1, 2019

2020 PEDIATRIC UNIVERSAL RESPIRATORY DISTRESS



Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

2030 ADULT WHEEZING

Presentation suggests Bronchospasm: *wheezing, prolonged expiratory phase, decreased breath sounds, accessory muscle use, known hx of asthma/COPD*

→ Adult Respiratory Distress Protocol and prepare for immediate transport

EMT	AEMT
EMT-I	Paramedic

Therapeutic Goals:

- Maximize oxygenation
- Decrease work of breathing
- Identify cardiac ischemia (Obtain 12 lead EKG)
- Identify complications, e.g., pneumothorax

Give oxygen, check SpO_2, waveform capnography, & consider IV for severe respiratory distress

Give nebulized albuterol + ipratropium

May give continuous neb for severe respiratory distress

Consider pulmonary and non-pulmonary causes of respiratory distress:

Examples: pulmonary embolism, pneumonia, pulmonary edema, anaphylaxis, heart attack, pneumothorax, sepsis, metabolic acidosis (e.g.: DKA), Anxiety

Is response to treatment adequate?

Yes → (skip to Continue monitoring)

No →

- Reassess for pneumothorax
- Consider CPAP early, especially in COPD
- If CPAP contraindicated, ventilate with BVM, and consider advanced airway

- IV methylprednisolone
- Obtain ECG: rule out unstable rhythm, ACS

IV **methylprednisolone** will help resolve acute asthma exacerbation over hours, without immediate effect. In severe exacerbations, it may be given prehospital but should not be given for mild attacks responding well to bronchodilators

Is response to treatment adequate?

Yes → (skip to Continue monitoring)

No →

- Consider IM epinephrine*. Indicated **only** if no response to neb, CPAP and for patient in severe distress. Use with caution if any concern for myocardial ischemia or known coronary artery disease.

- Consider IV magnesium

IM **epinephrine** is only indicated for most severe attacks deemed life-threatening and not responding to inhaled bronchodilators. Use extreme caution when administering. Cardiopulmonary monitoring is mandatory

IV **magnesium** may be beneficial in some patients with severe attacks. It should not be given routinely, rather should be reserved for life-threatening asthma attacks not responding to conventional therapy

- Continue monitoring and assessment en-route
- Be prepared to assist ventilations as needed
- Contact base for medical consult as needed

COPD

- **Correct hypoxia**: do not withhold maximum oxygen for fear of CO_2 retention
- Patients with COPD are older and have comorbidities, including heart disease.
- Wheezing may be a presentation of pulmonary edema, "cardiac asthma"
- Common triggers for COPD exacerbations include Infection, dysrhythmia (e.g., atrial fibrillation), myocardial ischemia
- **COPD exacerbations are particularly responsive to CPAP, which may help avoid the need for intubation and should be considered early in treatment**

*Consider Terbutaline in place of Epi in patients over the age of 50 and cardiac concerns exist.

*Approved by PGFPD Medical Director January 2022

2040 PEDIATRIC WHEEZING

- Pediatric Universal Respiratory Distress protocol
- Assess: SpO_2, consider waveform capnography, RR, lung sounds, accessory muscle use and mental status

Consider the cause of wheezing before initiating specific therapy

Initial best indicator is age. If patient 2 years old, bronchiolitis is most likely. Age > 2 reactive airways disease is more likely.

EMT	AEMT
EMT-I	Paramedic

Although bronchiolitis and asthma are the most common causes of wheezing in infants and children, respectively, you should consider pulmonary and non-pulmonary causes of respiratory distress, especially if patient not responding as expected to treatment:
Examples: pneumonia, pulmonary edema, congenital heart disease, anaphylaxis, pneumothorax, sepsis, metabolic acidosis (e.g.: DKA, toxic ingestion), foreign body aspiration, and croup.

Age ≤ 2 years old

Bronchiolitis most common

- Viral illness characterized by fever, copious secretions and respiratory distress typically seen November through April
- Most important interventions are to provide supplemental oxygen and suction secretions adequately
- In children > 12 months of age with a strong family history of asthma, a trial of albuterol may be warranted. If clinically responsive, consider steroids and additional bronchodilators (albuterol + ipratropium)

- Administer oxygen to obtain saturations > 90%
- Nasal suction with 3 mL saline
- Transport in position of comfort
- Monitor SpO2, RR, retractions, mental status

If worsening respiratory distress despite above therapies, re-suction nostrils and assist ventilations with BVM

BLS airway preferred in pediatrics

Age > 2 years old

Asthma most common

Presentation suggests asthma:
wheezing, prolonged expiratory phase, decreased breath sounds, accessory muscle use, known hx of asthma or albuterol use

Give nebulized albuterol + ipratropium
May give continuous neb for severe respiratory distress

Is response to treatment adequate

Yes

No

Nasal Aspirators

- Nasal aspirators are safe and effective.
- Nasal aspiration with saline significantly improves upper respiratory tract symptoms.

Severe exacerbation

- IM epinephrine if no response to neb and severe distress
- Start IV
- IV methylprednisolone
- 20mL/kg NS bolus

Is response to treatment adequate?

Yes

No

- Assess for pneumothorax
- Assist ventilations with BVM

BLS airway preferred in pediatrics

- Continue monitoring and assessment en-route
- Be prepared to assist ventilations as needed
- **Contact Base** for medical consult if deterioration

IV methylprednisolone

Will help resolve acute asthma exacerbation over hours, without immediate effect. In severe exacerbations, it may be given prehospital but should not be given for mild attacks responding well to bronchodilators.

IM epinephrine

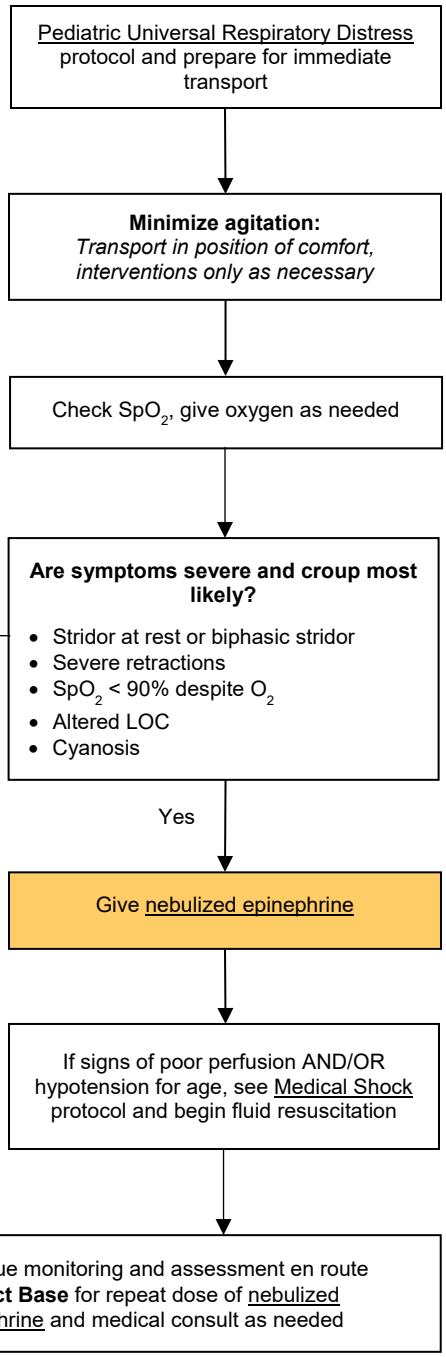
Is indicated for the most severe attacks deemed life-threatening and not responding to inhaled bronchodilators.

Approved by PGFPD Medical Director January 2022

2050 PEDIATRIC STRIDOR/CROUP

Characteristics of Croup:

- Most common cause of stridor in children
- Child will have stridor, barky cough, and URI symptoms of sudden, often nocturnal onset
- Most often seen in children < 9 years old
- Agitation worsens the stridor and respiratory distress



EMT	AEMT
EMT-I	Paramedic

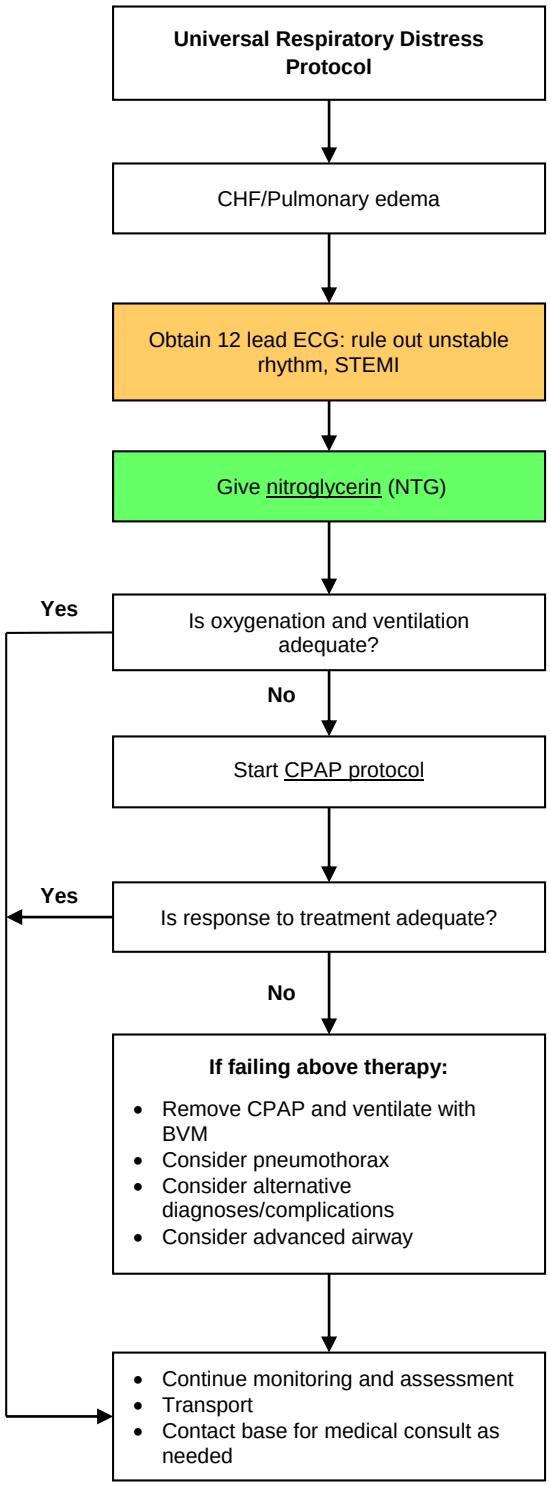
Considerations with Stridor:

- Stridor is a harsh, usually inspiratory sound caused by narrowing or obstruction of the upper airway
- Causes include croup, foreign body aspiration, allergic reactions, trauma, infection, mass
- Epiglottitis is exceedingly rare. May consider in the unimmunized child. Treatment is minimization of agitation. Airway manipulation is best done in the hospital.

Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

2060 CHF/PULMONARY EDEMA

EMT	AEMT
EMT-I	Paramedic



Therapeutic Goals:

- Maximize oxygenation
- Decrease work of breathing
- Identify cardiac ischemia (Obtain 12 lead ECG)

Special Notes:

- In general diuretics have little role in initial treatment of acute pulmonary edema and are no longer considered first line therapy.
- Morphine has been associated with worse outcomes in patients with CHF and is no longer preferred

Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

2090 TRACHEOSTOMY EMERGENCIES

Adult or Pediatric Universal Respiratory Distress Protocol

EMT | AEMT | EMT-I | Paramedic

Tracheostomy in Place

Attempt repositioning and supplemental oxygen

If gurgling, rhonchi, or mucous present:

- Preoxygenate with 3-5 BVM breaths
- If inner cannula present, remove while stabilizing tracheostomy flange
- Measure suction catheter to length of inner cannula (generally 3-6 cm)
- Instill 1-2 mL saline and suction for 10 seconds
- Replace inner cannula if removed
- Begin ventilations with supplemental oxygen through tracheostomy

If patient still has signs of inadequate oxygenation and ventilation:

- Remove tracheostomy, deflating cuff if needed
- If patient has additional tracheostomy tubes readily available, gently insert the same size tracheostomy tube with the obturator in place. Do not force the tube.
- If the tracheostomy tube cannot be inserted easily, withdraw the tube, and attempt to pass a smaller size tracheostomy tube, if available.
- If smaller tracheostomy tube is not available, or cannot be inserted easily, place ETT in stoma if trach is mature (at least 6 weeks old) and advance until balloon is within trachea
- Confirm placement by continuous waveform capnography, presence, and symmetry of breath sounds, and rising SpO_2

Tracheostomy Removed

- Attempt to replace the tracheostomy tube if trach is mature (at least 6 weeks old)
- If the tracheostomy tube cannot be inserted easily, withdraw the tube, and attempt to pass a smaller size tracheostomy tube, if available.
- If smaller tracheostomy tube is not available, or cannot be inserted easily, place ETT in stoma if trach is mature (at least 6 weeks old) and advance until balloon is within trachea
- Confirm placement by continuous waveform capnography, presence, and symmetry of breath sounds, and rising SpO_2

If unable to place tube and patient hypoxic or in respiratory distress, begin BVM over nose and mouth and occlude the stoma with a gloved finger.

If unable to oxygenate or ventilate, attempt to place advanced airway through mouth and occlude stoma with gloved finger.

If oral ETI is performed, advance ETT balloon below level of stoma

- Transport in position of comfort and monitor
- Reassess for signs of deterioration
- Provide oxygen and ventilator support as needed
- Contact Base if patient is not improving with treatment

ETT Recommended Sizes – Length Based

- Color Pink to Blue (Newborn to <7 years): 3.5 cuffed
- Color Orange to Adult (7 years and up): 6.0 cuffed

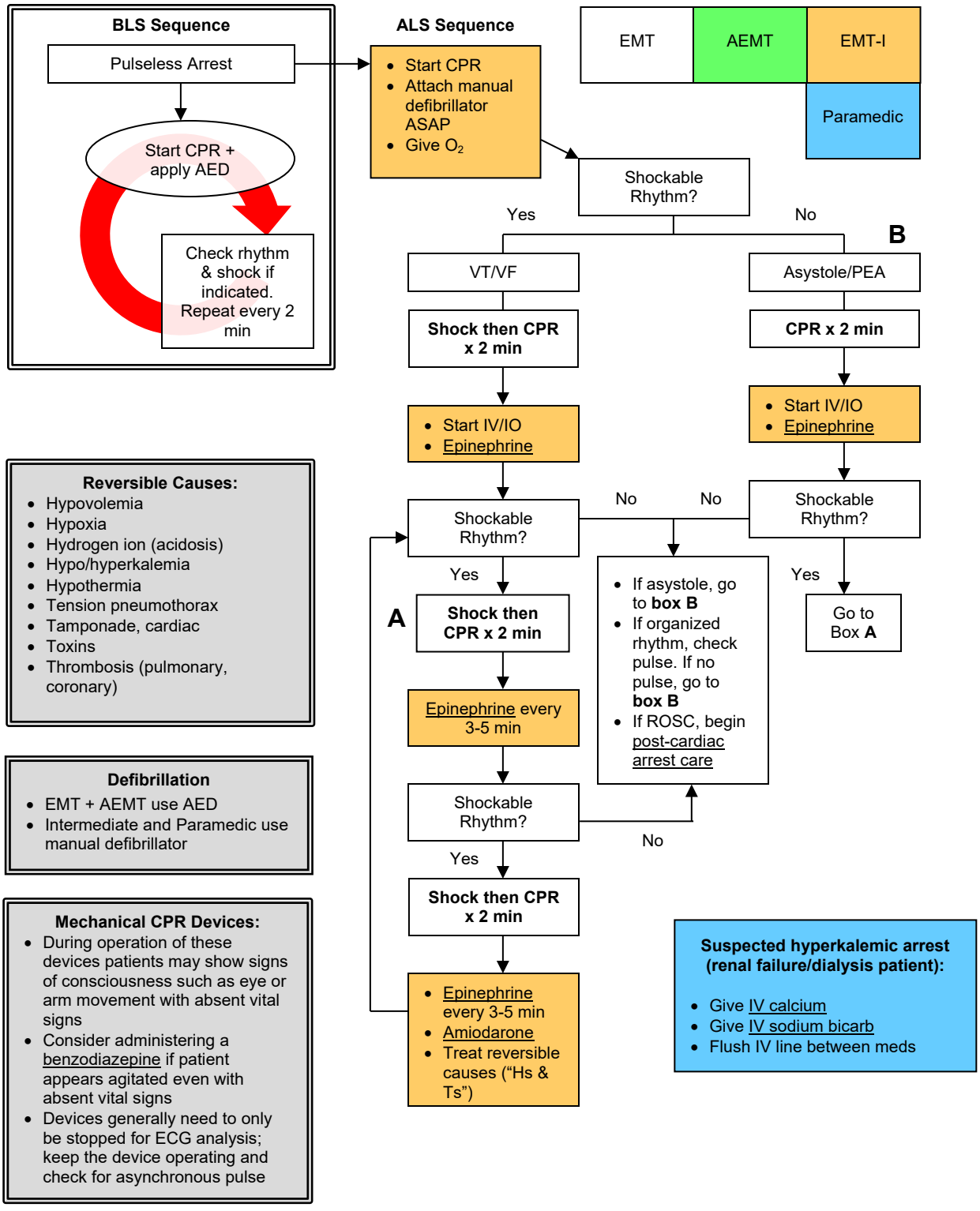
Stomas <6 weeks old

- An established tracheostomy is a tracheostomy that was surgically placed longer than 6 weeks ago. Never replace anything into a stoma that is less than 6 weeks of age.
- For stomas <6 weeks old, if patient has an upper airway, occlude stoma and BVM via traditional method. If patient does not have an upper airway, use neonate mask over stoma site.

- Always utilize family members, both for information and for assistance
- Types of tracheostomies include cuffed, uncuffed, fenestrated (allowing for speech), and unfenestrated
- Ask if family has a suction catheter and use theirs if available to ensure appropriate size. If none available, inquire as to size. If size unknown, estimate by doubling the inner diameter of the tracheostomy tube and rounding down to the available size catheter
- Never force suction catheter. When inserting, allow catheter to gently follow the curvature of the tracheostomy
- If tracheostomy tube is a double lumen tube, the inner cannula must be in place to attach the bag-valve-mask. Remove the inner cannula to suction and then re-insert. If outer flange becomes removed, it requires a Paramedic to replace.
- Apply suction only while withdrawing catheter from the tracheostomy tube, never during insertion and always <100mmHg of suction

Approved by Platteville Gilcrest FPD Medical Director July 2022.

3000 MEDICAL PULSELESS ARREST ALGORITHM



Approved by Platteville Gilcrest FPD Medical Director January 2020.

3010 MEDICAL PULSELESS ARREST CONSIDERATIONS

ADULT PATIENT

Compressions

- Follow current ACLS guidelines for chest compressions.
- Minimize interruptions, resume compressions immediately after shocks, rhythm checks. Check pulses only if organized rhythm.
- Push hard and fast and allow complete chest recoil.
- Assess quality of CPR with continuous waveform capnography.
- If $ETCO_2$ < 10, improve quality of compressions.
- If using automated CPR devices, use manufacturer's specifications.

Defibrillation

- Biphasic: manufacturer recommendation. If unknown, use maximum energy.
- Monophasic: 360 J
- After 3 unsuccessful defibrillation attempts, consider changing the pad vector.

Ventilations

- Open the airway, place NPA/OPA, place NRB facemask with O_2 at 15 L/min for first 4 minutes of chest compressions, unless hypoxic arrest suspected (e.g.: asphyxiation, overdose, status asthmaticus), In which case begin ventilations immediately.
- Do not over ventilate.
- If no advanced airway, 30:2 compressions to ventilation ratio.
- If advanced airway in place ventilate at rate of 10 breaths/min.

Airway

- An advanced airway (supraglottic airway, ETT) may be placed at any time after initial 4 minutes of passive oxygenation, if applicable, or as soon as possible if asphyxial arrest suspected, provided placement does not interrupt compressions.

ROSC

- Pulse and blood pressure.
- Sustained abrupt rise in $ETCO_2$, typically > 40 mmHg.
- Obtain 12-lead ECG after ROSC and before transport to identify cardiac alert.

PEDIATRIC PATIENT

Compressions

- Follow current PALS guidelines for chest compressions.
- Minimize interruptions, resume compressions immediately after shocks, rhythm checks. Check pulses only if organized rhythm.
- Push hard (≥ 1/3 of anteroposterior chest diameter and fast (100-120/min) and allow complete chest recoil.
- Assess quality of CPR with continuous waveform capnography.

Defibrillation:

- 1st shock 2 J/kg, subsequent shocks 4 J/kg
- EMT + AEMT use AED.
- Intermediate and Paramedic use manual defibrillator.

Ventilations

- If no advanced airway, alternate ventilations and compressions in 15:2 ratio.
- If advanced airway in place, ventilate continuously at 10 breaths/minute.
- Do not over ventilate.

Airway

- No intubation for cardiac arrest <12 years old.
- BVM preferred for all pediatric patients.
- An appropriately sized supraglottic airway may be placed as an alternative if BVM ventilations are inadequate.

Medications

- Attempt to administer the initial dose of epinephrine within 5 minutes from the start of chest compressions or after arrival of ALS provider.

ROSC

- Pulse and blood pressure.
- Sustained abrupt rise in $ETCO_2$, typically > 40 mmHg.

Regarding where to work arrest and presence of family members:

- Manual CPR in a moving ambulance or pram is suboptimal.
- In general, work cardiac arrest on scene either to return of spontaneous circulation (ROSC), or to field pronouncement, unless scene unsafe.
- Family presence during resuscitation is preferred by most families, is rarely disruptive, and may help with grieving process for family members. Family presence during resuscitation is recommended, unless disruptive to resuscitation efforts.
- Contact base for consideration of termination of resuscitation.

Pacing

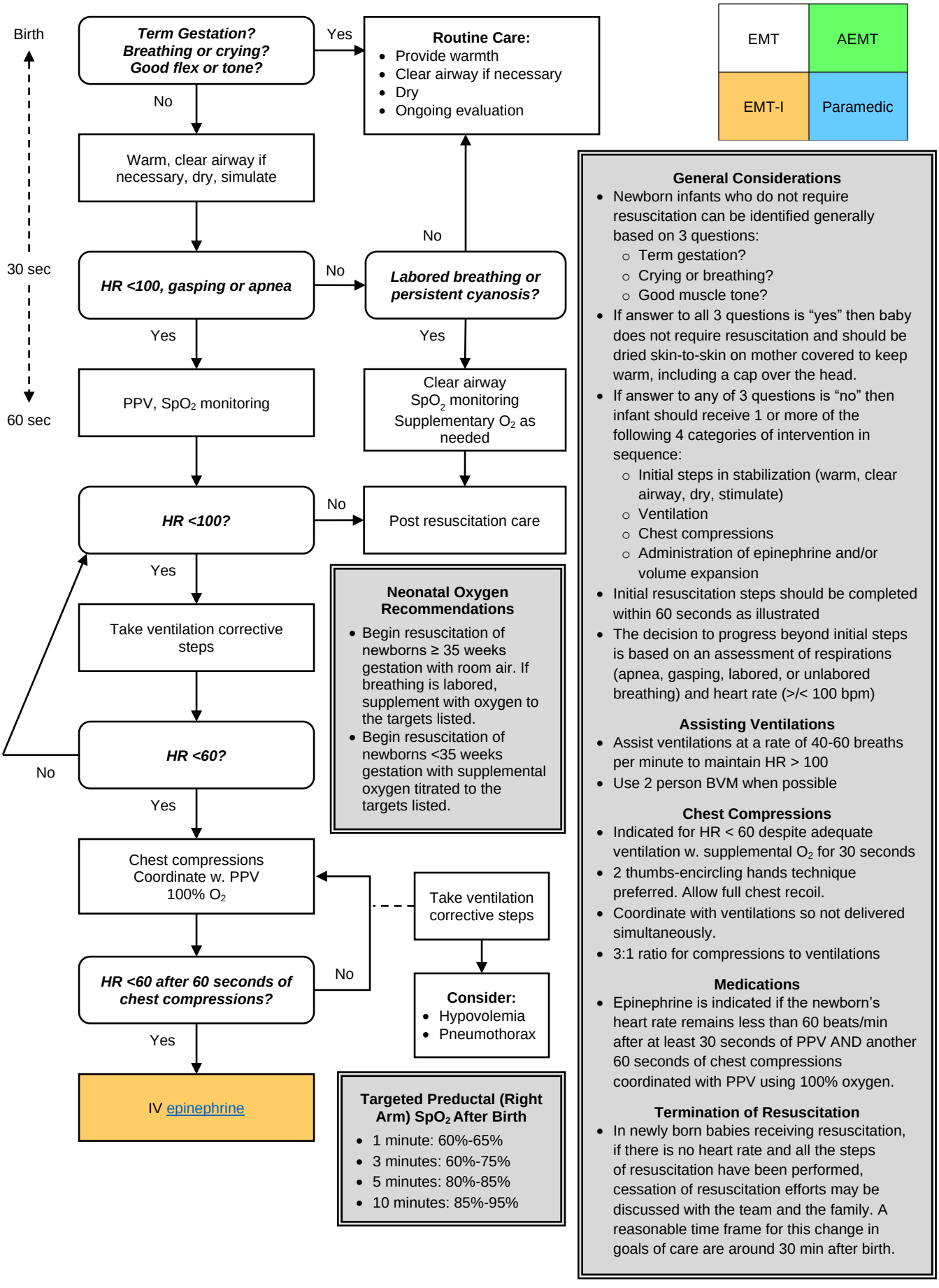
- Pacing is not recommended in cardiac arrest.

ICD/Pacemaker patients

- If cardiac arrest patient has an implantable cardioverter defibrillator (ICD) or pacemaker: place pacer/defib pads at least 1 inch from device. Biaxillary or anterior posterior pad placement may be used.

Approved by PGFPD Medical Director January 2022

3020 NEONATAL RESUSCITATION



Neonatal Oxygen Recommendations

- Begin resuscitation of newborns ≥ 35 weeks gestation with room air. If breathing is labored, supplement with oxygen to the targets listed.
- Begin resuscitation of newborns <35 weeks gestation with supplemental oxygen titrated to the targets listed.

Targeted Preductal (Right Arm) SpO_2 After Birth

- 1 minute: 60%-65%
- 3 minutes: 60%-75%
- 5 minutes: 80%-85%
- 10 minutes: 85%-95%

General Considerations

- Newborn infants who do not require resuscitation can be identified generally based on 3 questions:
  - Term gestation?
  - Crying or breathing?
  - Good muscle tone?
- If answer to all 3 questions is "yes" then baby does not require resuscitation and should be dried skin-to-skin on mother covered to keep warm, including a cap over the head.
- If answer to any of 3 questions is "no" then infant should receive 1 or more of the following 4 categories of intervention in sequence:
  - Initial steps in stabilization (warm, clear airway, dry, stimulate)
  - Ventilation
  - Chest compressions
  - Administration of epinephrine and/or volume expansion
- Initial resuscitation steps should be completed within 60 seconds as illustrated
- The decision to progress beyond initial steps is based on an assessment of respirations (apnea, gasping, labored, or unlabored breathing) and heart rate (>/< 100 bpm)

Assisting Ventilations

- Assist ventilations at a rate of 40-60 breaths per minute to maintain HR > 100
- Use 2 person BVM when possible

Chest Compressions

- Indicated for HR < 60 despite adequate ventilation w. supplemental O_2 for 30 seconds
- 2 thumbs-encircling hands technique preferred. Allow full chest recoil.
- Coordinate with ventilations so not delivered simultaneously.
- 3:1 ratio for compressions to ventilations

Medications

- Epinephrine is indicated if the newborn's heart rate remains less than 60 beats/min after at least 30 seconds of PPV AND another 60 seconds of chest compressions coordinated with PPV using 100% oxygen.

Termination of Resuscitation

- In newly born babies receiving resuscitation, if there is no heart rate and all the steps of resuscitation have been performed, cessation of resuscitation efforts may be discussed with the team and the family. A reasonable time frame for this change in goals of care are around 30 min after birth.

Approved by Platteville Gilcrest FPD Medical Director July 2022.

3030 POST-CARDIAC ARREST CARE

Post-Cardiac Arrest Care

- Following ROSC, several simultaneous and stepwise interventions must be performed to optimize care and maximize patient outcome
- Survival and neurologic outcome worsen with fever, hypoxia, hypo/hypercapnia, and hypotension. Post-ROSC care should focus on prevention of these elements

Return of spontaneous circulation (ROSC) criteria:

- Pulse and measurable blood pressure
- Increase in ETCO2 on capnography

Document:

- Time of arrest (or time last seen normal)
- Witnessed vs. unwitnessed arrest
- Initial rhythm shockable vs. non-shockable
- Bystander CPR given
- Time of ROSC
- GCS after ROSC
- Initial temperature of patient after ROSC, if possible

Target ROSC Vital Signs

- SpO_2 92%-98%
- $PaCO_2$ 35-45 mmHg
- Systolic pressure >90 mmHg or mean arterial pressure >65 mmHg

ROSC after cardiac arrest

EMT	AEMT
EMT-I	Paramedic

Perform 12 lead EKG

Is STEMI Present? — Yes → Initiate Cardiac Alert

No

- Assess for shock and volume status
- Peripheral access: IO/IV
- Oxygenation/Ventilation
  - Secure advanced airway if indicated
  - Avoid hyperventilation
  - Avoid hyper/hypocapnia ($EtCO_2$)
  - Correct hypoxemia
- Elevate head of bed at 30°

Is there hypotension for age and/or signs of shock? — Yes → Medical Hypotension/Shock protocol

No

Assess for dysrhythmia

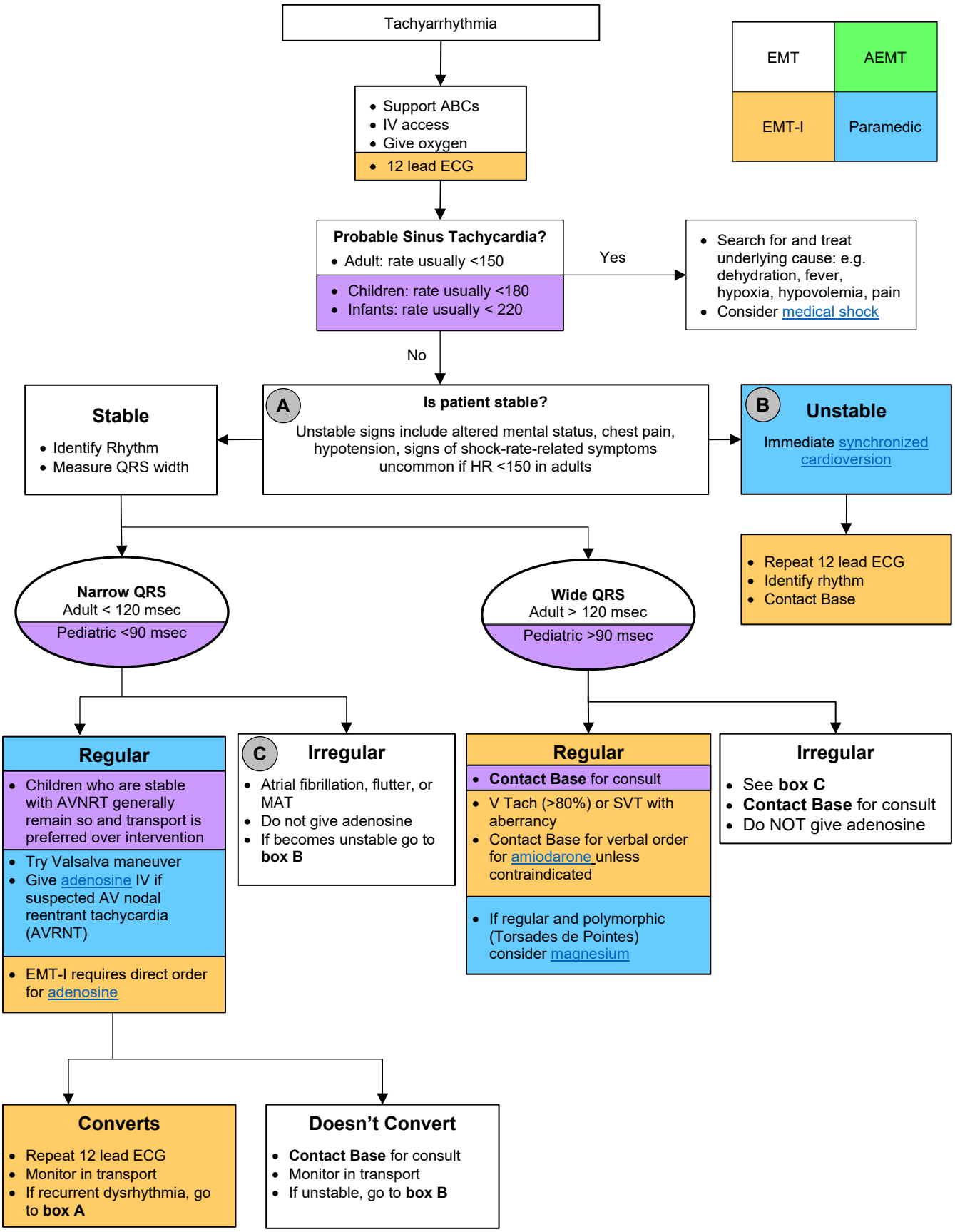
Recurrent dysrhythmia? — Yes → Treat recurrent dysrhythmia per appropriate protocol

No

- Continuous rhythm monitoring and pulse checks
- Focused neuro exam (AVPU/GCS)
- If fever and no purposeful movement provide passive cooling by placing ice packs to neck, axillae, and/or groin
- Transfer to closest appropriate facility

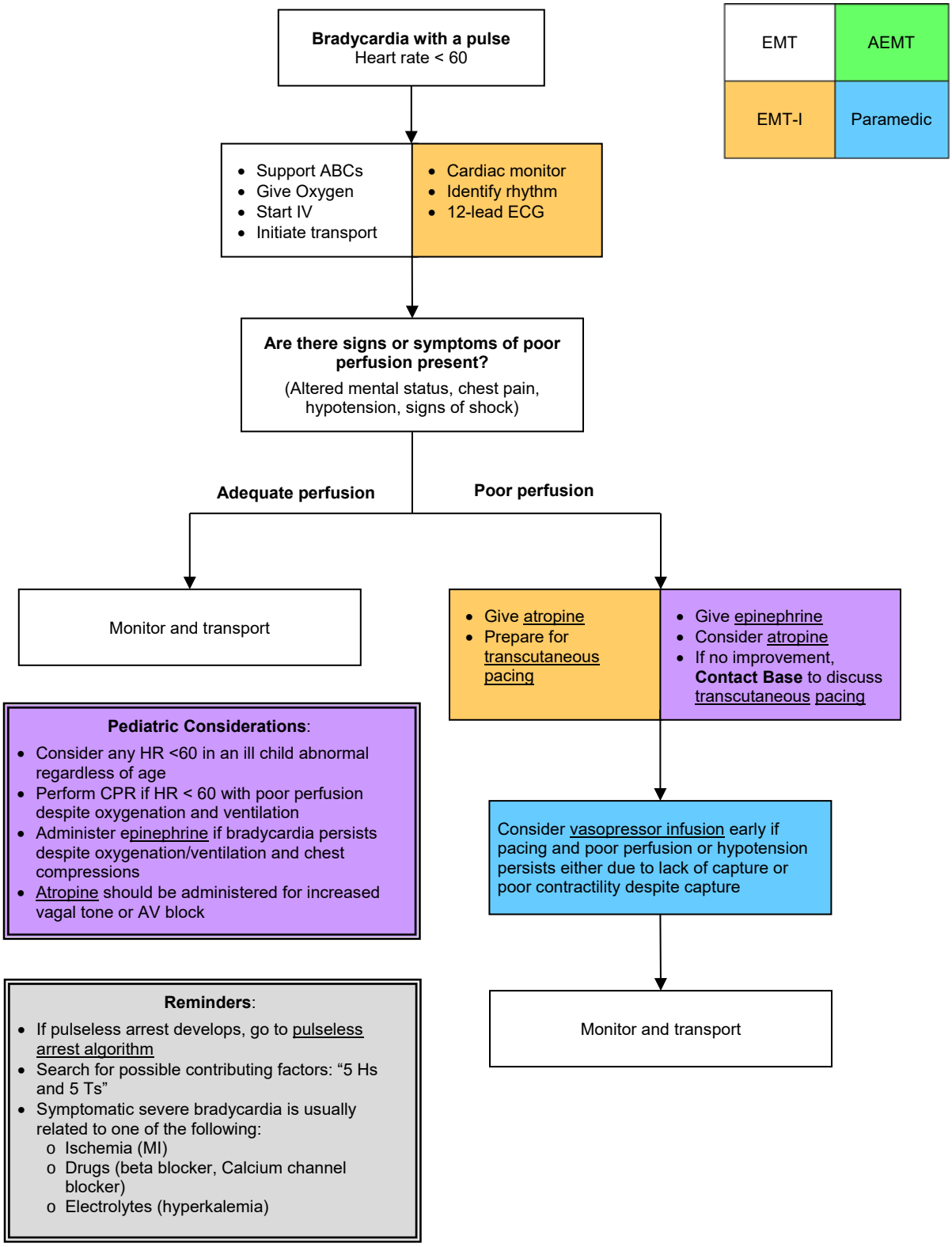
Approved by PGFPD Medical Director January 2022

3040 TACHYARRHYTHMIA WITH POOR PERFUSION



Approved by Platteville Gilcrest FPD Medical Director March, 2024.

3050 BRADYARRHYTHMIA WITH POOR PERFUSION



Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

3060 CHEST PAIN

EMT	AEMT
EMT-I	Paramedic

Consider life threatening causes of chest pain in all patients

- While assessing ABCs titrate oxygen, monitor vital signs, cardiac rhythm, start IV
- Obtain 12-lead ECG
- Administer aspirin if history suggests possible cardiac chest pain

STEMI?

No / Yes

- Notify receiving facility immediately if STEMI Alert criteria met
- Place combination defibrillation/ pacing pads on patient

Give SL nitroglycerin if suspected cardiac chest pain and no contraindication

An **EMT** may administer patient's prescribed nitroglycerin, **Contact Base** for verbal order

For hypotension following nitroglycerin give 250 mL NS bolus, reassess, and repeat bolus as needed. Do not give additional nitroglycerin.

Consider opioid for chest pain refractory to nitroglycerin, if no contraindication

- Consider repeat 12-lead if initial 12-lead non-diagnostic and/or patient's condition changes
- Consider additional 12-lead views such as R sided leads for R ventricular infarct if inferior MI present

Life threatening causes of chest pain:

- Acute coronary syndrome (ACS)
  - Unstable angina
  - NSTEMI
  - STEMI
- Pulmonary embolism
- Thoracic aortic dissection
- Tension pneumothorax

Nitroglycerin Contraindications:

- Suspected right ventricular ST-segment elevation MI (inferior STEMI pattern plus ST elevation in right-sided precordial leads e.g., V4R)
- Hypotension SBP < 100
- Recent use of erectile dysfunction (ED) medication (e.g., Viagra, Cialis)

Causes of Chest Pain in Children:

- Costochondritis
- Pulmonary causes
- Ischemia Is rare but can be seen with a history of Kawasaki's disease with coronary aneurysms
- Cyanotic or congenital heart disease
- Myocarditis
- Pericarditis
- Arrhythmia
- Anxiety
- Abdominal causes

Approved by Platteville Gilcrest FPD Medical Director July 2022.

3070 STEMI ALERT

EMT-I	Paramedic

Goal:

- To identify patients with ST-segment elevation myocardial infarction (STEMI) in the prehospital setting and provide advanced receiving hospital notification in order to minimize door-to-balloon times for percutaneous coronary intervention (PCI)

STEMI Alert Criteria: *note all 4 criteria must be met for field activation*

1. Chest, pain or discomfort, dyspnea or diaphoresis consistent with an acute coronary syndrome (ACS)
2. 12-lead ECG showing ST-segment elevation (STE) at least 1 mm in two or more anatomically contiguous leads
3. Age 35-85 years old
4. No wide complex QRS (paced rhythm, BBB, other)

If patient does not meet all four STEMI alert criteria yet clinical scenario suggestive of STEMI consult the receiving hospital **Emergency Physician** for override

Actions:

- Treat according to chest pain protocol enroute (cardiac monitor, oxygen, aspirin, nitroglycerin, and opioid as needed for pain control).
- Notify receiving hospital ASAP with ETA and request STEMI ALERT. Do not delay hospital notification. If possible, notify ED before leaving scene.
- Start 2 large bore peripheral IVs – avoid the right wrist or hand, if possible, in the field to avoid interfering with cath lab radial access
- Place combination defibrillation/pacing pads on patient
- Rapid transport

Additional Documentation Requirements:

- Time of first patient contact
- Time of first ECG

Approved by Platteville Gilcrest FPD Medical Director July 2022.

3080 HYPERTENSION

AEMT	EMT-I	Paramedic

Intent:

A. Even with extremes of blood pressure, treat the medical emergency **associated** with hypertension ("treat the patient, not the number")
    1. Treat chest pain, pulmonary edema, or stroke according to standard protocols (pain control will usually improve BP significantly)
B. Do not use medication to treat asymptomatic hypertension
C. Do not treat hypertension in acute stroke
D. Obtain 12 lead ECG if patient presentation suggests hypertension as a possible primary cause

Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

3090 VENTRICULAR ASSIST DEVICES

EMT	AEMT
EMT-I	Paramedic

Ventricular Assist Device (VAD)

A Ventricular Assist Device (VAD) is a mechanical device used to support circulation in a patient with significant cardiac ventricular dysfunction. The Left Ventricular Assist Device (LVAD) is commonly used to support the left side of the heart and to provide extra cardiac output to the body. This device can be placed short term to bridge patients until they can receive a heart transplant or long term for people who are not candidates for a transplant. LVAD patients can be identified by an electric driveline cable that comes directly out of their abdomen and connects to an external control pack powered by two external batteries they will be wearing with a bag, harness or vest. The patient still has underlying heart function and rhythm that can be assessed and treated as appropriate per protocols.

Assess the patient

Typically, LVAD patients have no discernible pulse. Blood pressure measurement requires manual BP cuff and Doppler which the patient may have. Utilize other parameters for patient assessment:

- Level of consciousness
- Respiratory rate and work of breathing
- Signs of perfusion: skin color/temperature, capillary refill (HR >100 is hemodynamically unstable)
- Cardiac monitor, SpO_2, blood glucose level

Is the patient stable?

STABLE

- Address any medical problems according to protocol
- Transport to University of Colorado Hospital for further treatment, if practical
- Contact VAD Coordinator

UNSTABLE

- Determine if VAD is running and functioning properly
- Auscultate chest for whirling sounds
- Examine VAD control unit for alarms

Common VAD Complications

- CVA
- TIA
- Arrhythmias
- Infections
- Sepsis
- Obstructions
- Pump Failure

VAD RUNNING

- 250 mL bolus
- Notify destination of VAD patient inbound
- Consider chest compressions if apneic with no clinical evidence of perfusion
- Initiate ACLS (PALS if patient pre-pubescent) and address underlying dysrhythmia or other problems per protocol

VAD NOT RUNNING

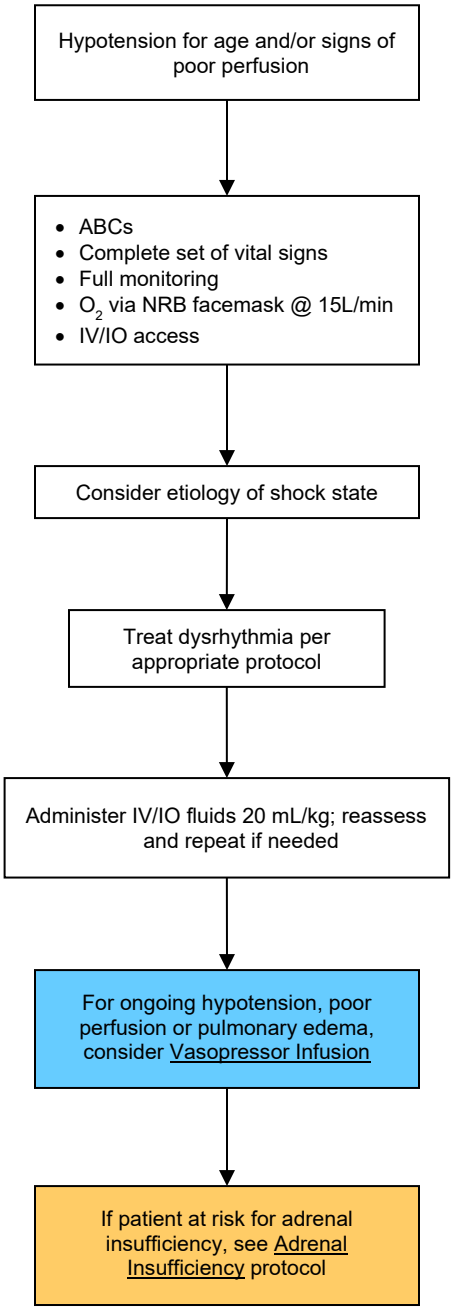
- Consider chest compressions if required
- Address VAD alarms/faults
- Consider defibrillation if required
- Notify destination of VAD patient inbound
- Initiate ACLS (PALS if patient pre-pubescent)

Key Points

- Unstable VAD patients should be transported to the nearest appropriate facility. University of Colorado Hospital is the only facility in the region that definitively treats VAD patients—and is therefore the preferred destination when patient condition is stable and conditions/operational factors allow transport.
- **Contact VAD Coordinator as soon as possible at 24/7 pager # (303) 266-4522. For pediatric patients contact the Children's Hospital Colorado transplant coordinator pager at (303) 890-3503.** Provide patient name, DOB, condition & ETA at destination for consultation and/or if transporting to University of Colorado Hospital. VAD coordinator will call back.
- VAD patient family members are excellent resources to assist with patient history and evaluation/repair of VAD alarms/faults.
- **It is vital to transport the patient's back-up batteries and emergency equipment with the patient.**
- Device specific information for EMS can be found at: https://www.mylvad.com/medical-professionals/ems

Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

4000 MEDICAL SHOCK PROTOCOL



EMT	AEMT	EMT-I	Paramedic

Hypotension for Age

Age	Blood Pressure
<1 year	<70 mmHg
1-10 years	<70 + (2 x age in years)
>10 years	<90 mmHg

Tachycardia for Age

Age	Heart Rate
<1 year	>160 bpm
1-2 years	>150 bpm
2-5 years	>140 bpm
5-12 years	>120 bpm
>12 years	>100 bpm

Etiologies of Shock

- Dysrhythmia, myocardial ischemia
- Sepsis
- Hemorrhage
- Anaphylaxis
- Overdose
- Cyanide or carbon monoxide poisoning
- Other: PE, MI, tension pneumothorax

Pediatric Fluid Administration

- For children <40 kg or not longer than length based tape, hand pull/push fluid with a 60 mL syringe utilizing a 3 way stop cock.
- The treatment of compensated shock requires aggressive fluid replacement of 20 mL/kg up to 3 boluses.
- Goal of therapy is normalization of vital signs within the first hour.
- Hypotension is a late sign in pediatric shock patients.

Pediatric Shock

Signs of Compensated Shock

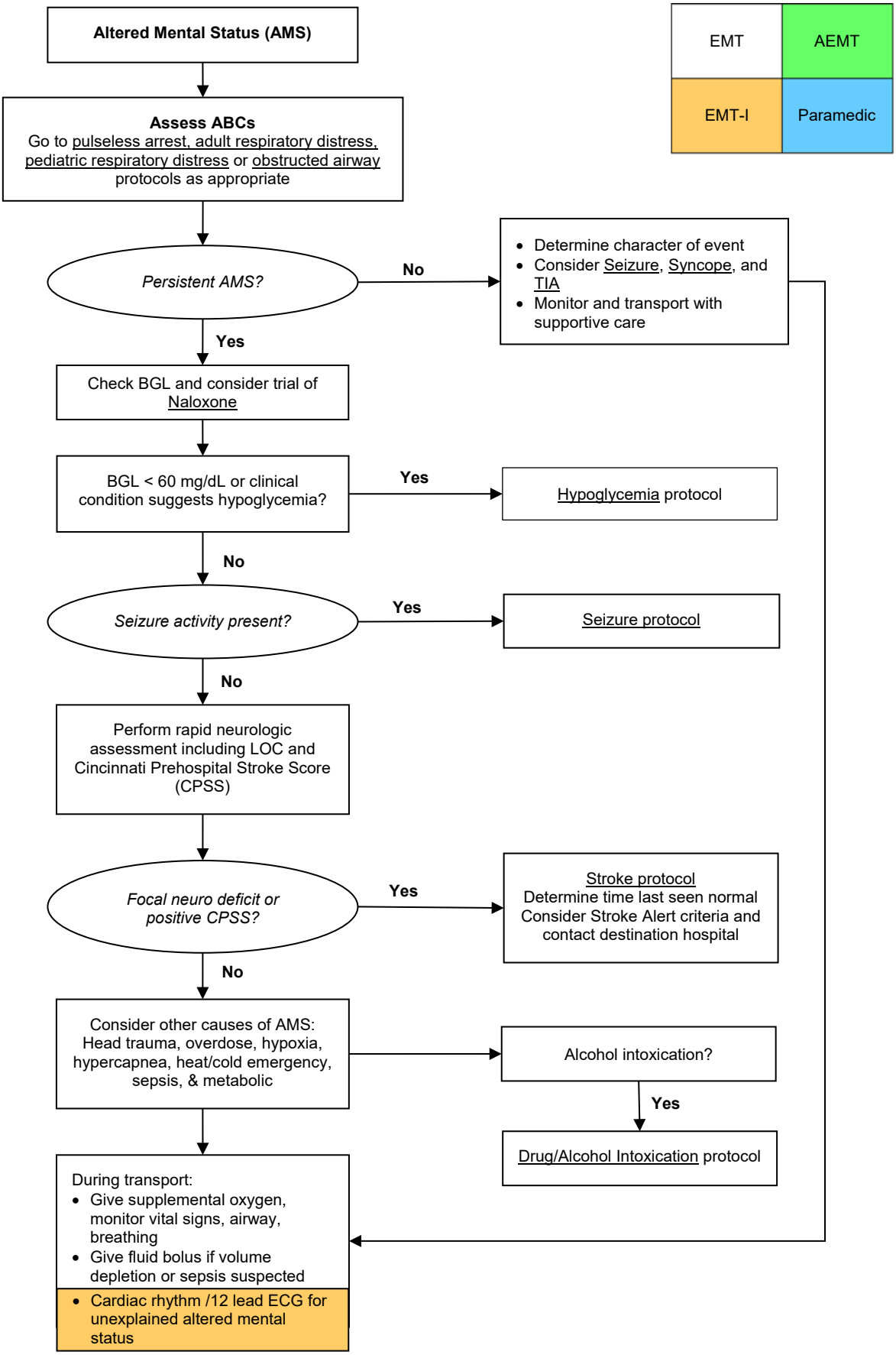
- Normal mental status
- Normal systolic blood pressure
- Tachycardia
- Prolonged (>2 seconds) capillary refill
- Tachypnea
- Cool and pale distal extremities
- Weak peripheral pulse

Signs of Decompensated Shock

- Decrease mental status
- Weak central pulses
- Poor color
- Hypotension for age

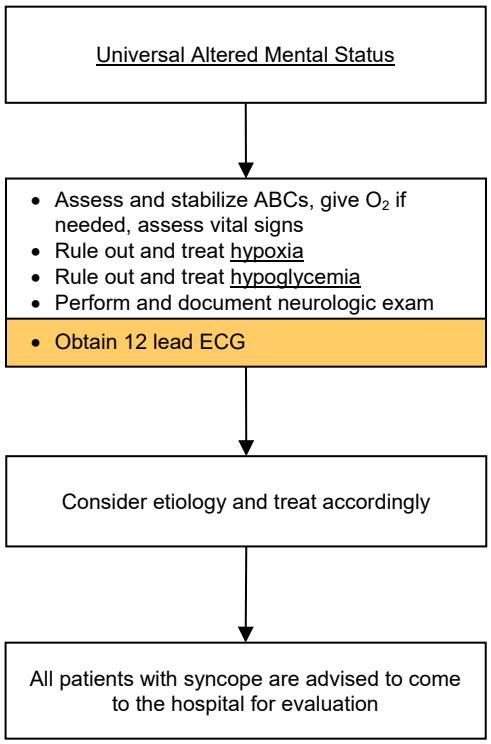
Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

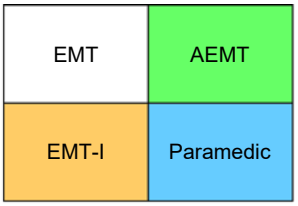
4010 UNIVERSAL ALTERED MENTAL STATUS



Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

4020 SYNCOPE





Causes of Syncope:

- Cardiac
  - Structural heart disease
  - Arrhythmia (Prolonged QT, Brugada, WPW, heart block, etc.)
- Seizure
- Hypovolemia
  - Dehydration
  - Blood loss
  - Pregnancy/ectopic
- Pulmonary Embolism
- Vasovagal

General Information:

- Syncope is defined as transient loss of consciousness accompanied by loss of postural tone.
- A syncopal episode will generally be very brief and have a rapid recovery with no postictal confusion.
- Convulsive movements called myoclonic jerks may occur with syncope. This is often confused with seizures, but should not be accompanied by a post-ictal phase, incontinence or tongue biting.
- Elderly syncope has a high risk of morbidity and mortality

Pediatric Considerations:

- Life-threatening causes of pediatric syncope are usually cardiac in etiology (arrhythmia, cardiomyopathy, myocarditis, or previously unrecognized structural lesions)
- In addition to the causes listed above, consider the following in the pediatric patient:
  - Seizure
  - Breath holding spells
  - Toxins (marijuana, opioids, cocaine, CO, etc.)
  - Heat intolerance
  - BRUE (Brief Resolved Unexplained Events, formerly ALTE)
- Important historical features of pediatric syncope include: color change, seizure activity, incontinence, post-ictal state, and events immediately prior to syncope event

Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

4030 STROKE

EMT	AEMT	EMT-I	Paramedic

POSSIBLE STROKE
Any acute onset neurological deficit not likely due to trauma ***regardless of age***

For possible strokes, think **"BE-FAST"**
(Balance, Eyes, Face, Arm, Speech, Time)

Assess and stabilize ABCs, titrate O_2

Assess Cincinnati Prehospital Stroke Score
(Presence of single sign sufficient)

Cincinnati Prehospital Stroke Scale

Assess Facial Droop

Say: "Smile for me", or "Show me your teeth"

Assess Arm Pronator Drift

Demonstrate, and say: "Put your arms up for me like this and hold them while I count to 10"

Assess Speech

Say: "Repeat after me: you can't teach an old dog new tricks", or "No ifs, ands, or buts"

- If you have a negative CPSS, the patient may still be having a stroke. Stroke signs may be very subtle; therefore, it is important to know other signs of stroke, which include:
  - Impaired balance or coordination, vertigo
  - Blurred or lost vision
  - Headache
  - Confusion or altered mental status
  - Seizure
- The Cincinnati Prehospital Stroke Scale (CPSS) is designed to be very reproducible and identify those strokes most likely to benefit from reperfusion therapy.
- If time permits, consider performing a more sensitive agency approved stroke evaluation during transport.

Rule out or treat hypoglycemia

Determine when last KNOWN to be normal and document **specific** time (e.g., "At 2:15 PM", **not** "1 hour ago")

- Obtain medical history and document medications
- Identify family or friend who may assist with history and decision-making, get contact info and strongly encourage to come to ED as they may be needed for consent for treatments

Consider common stroke mimics/syndromes

Stroke Mimics (for all ages):

- Hypoglycemia
- Post-ictal paralysis (Seizure-Todds paralysis)
- Complex migraine
- Overdose
- Trauma
- Bell's palsy

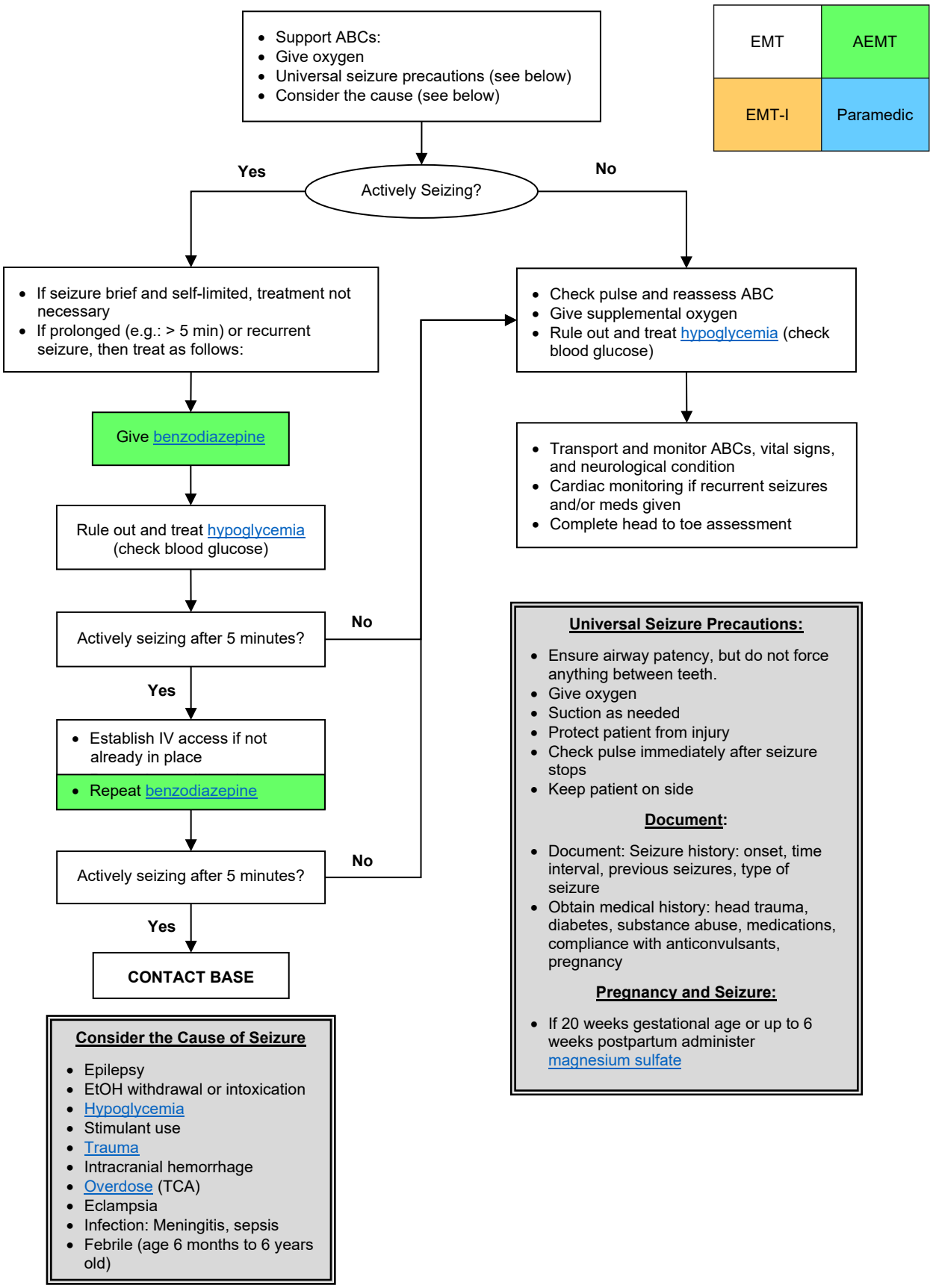
- Start IV and draw blood
- Monitor cardiac rhythm and obtain 12 lead
- Elevate head 30°, if possible

Fully monitor patient and continually reassess:
- Improvement or worsening of deficit
- Adequacy of ventilation and oxygenation
- Cardiovascular stability

- Notify receiving hospital of suspected stroke and time of onset of symptoms in order to provide hospital the opportunity for Stroke Alert
- **It is more important that you know timeline of your patient's symptoms than an individual hospital's Stroke Alert criteria, which may vary**

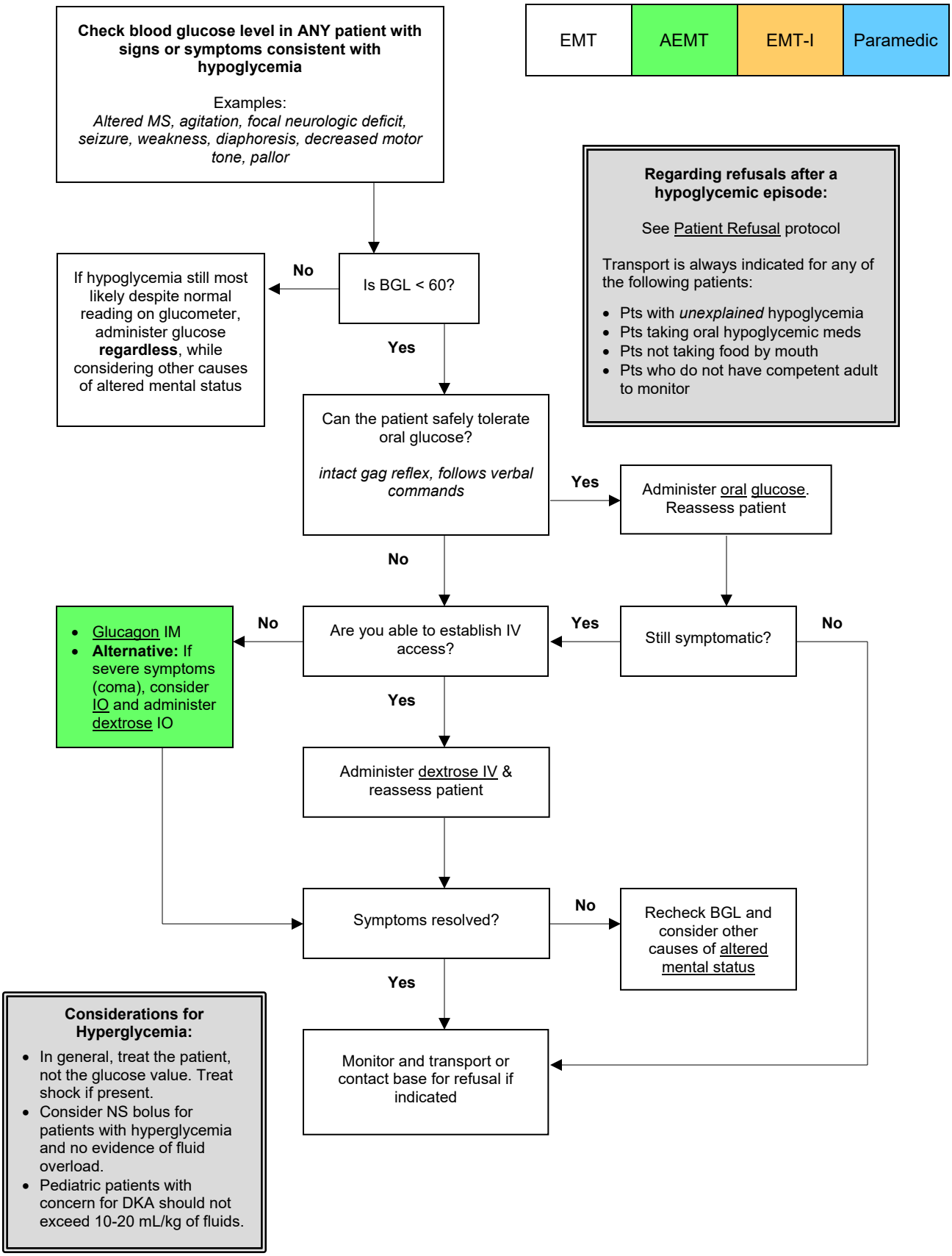
Approved by Platteville Gilcrest FPD Medical Director March 2024.

4040 SEIZURE



Approved by Platteville Gilcrest FPD Medical Director July 2022.

4050 HYPOGLYCEMIA



Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

4060 PEDIATRIC BRIEF RESOLVED UNEXPLAINED EVENTS (BRUE) (FORMERLY ALTE)

EMT	AEMT
EMT-I	Paramedic

DEFINITION:
An infant < 1 year of age with episode frightening to the observer characterized by apnea, choking/gagging, color change or change in muscle tone

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Support ABCs as necessary

↓

Obtain detailed history of event and medical history

↓

Complete head-to-toe assessment

↓

- Any child with an BRUE should be transported to ED for evaluation
- Monitor vital signs en route

Clinical history to obtain from observer of event:

- Document **observer's** impression of the infant's color, respirations and muscle tone
- For example, was the child apneic, or cyanotic or limp during event?
- Was there seizure-like activity noted?
- Was any resuscitation attempted or required, or did event resolve spontaneously?
- How long did the event last?

Past Medical History:

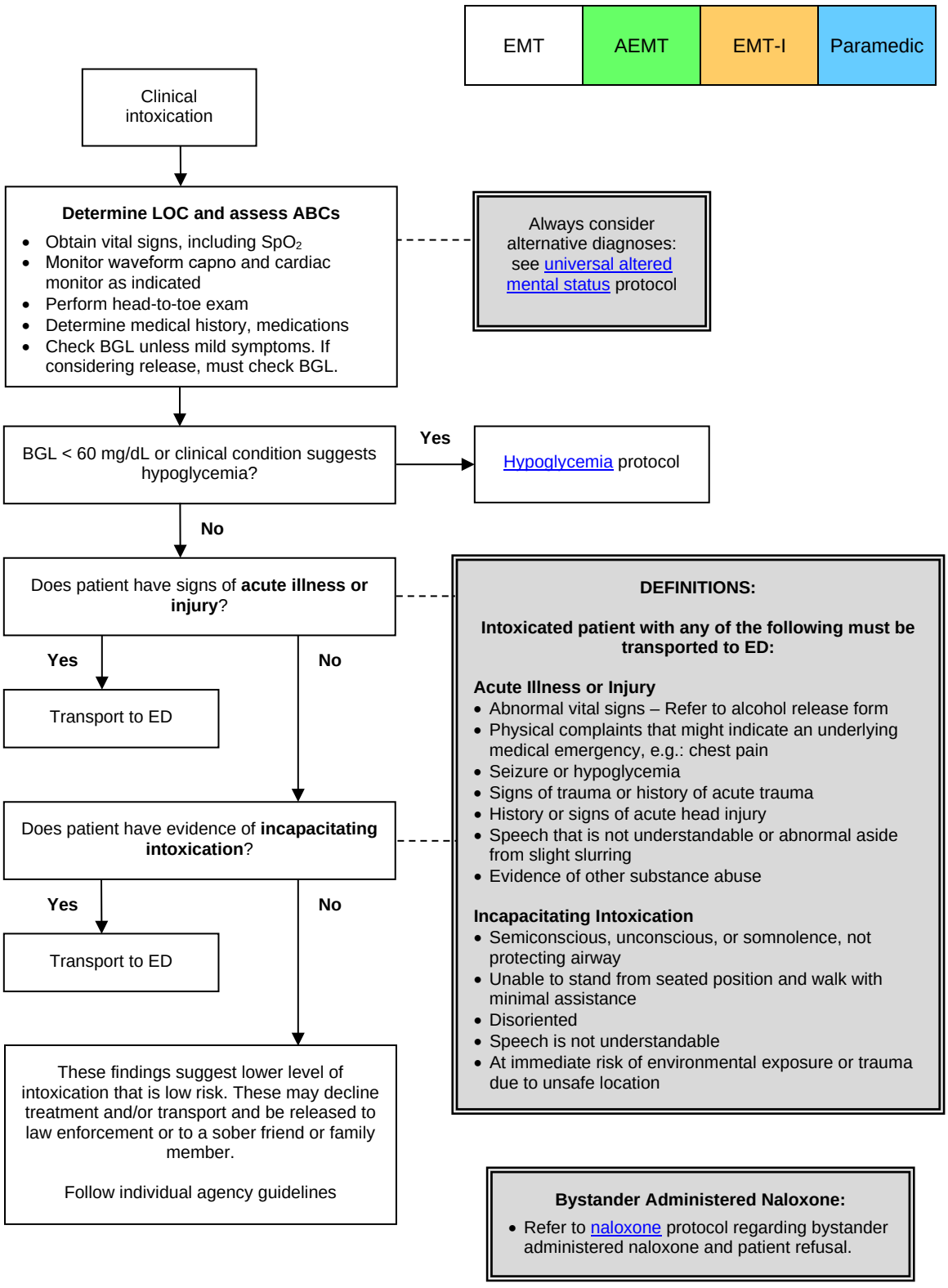
- Recent trauma, infection (e.g. fever, cough)
- History of GERD
- History of Congenital Heart Disease
- History of Seizures
- Medication history

Examination/Assessment

- Head to toe exam for trauma, bruising, or skin lesions
- Check anterior fontanelle: is it bulging, flat or sunken?
- Pupillary exam
- Respiratory exam for rate, pattern, work of breathing and lung sounds
- Cardiovascular exam for murmurs and symmetry of brachial and femoral pulses
- Neuro exam for level of consciousness, responsiveness and any focal weakness

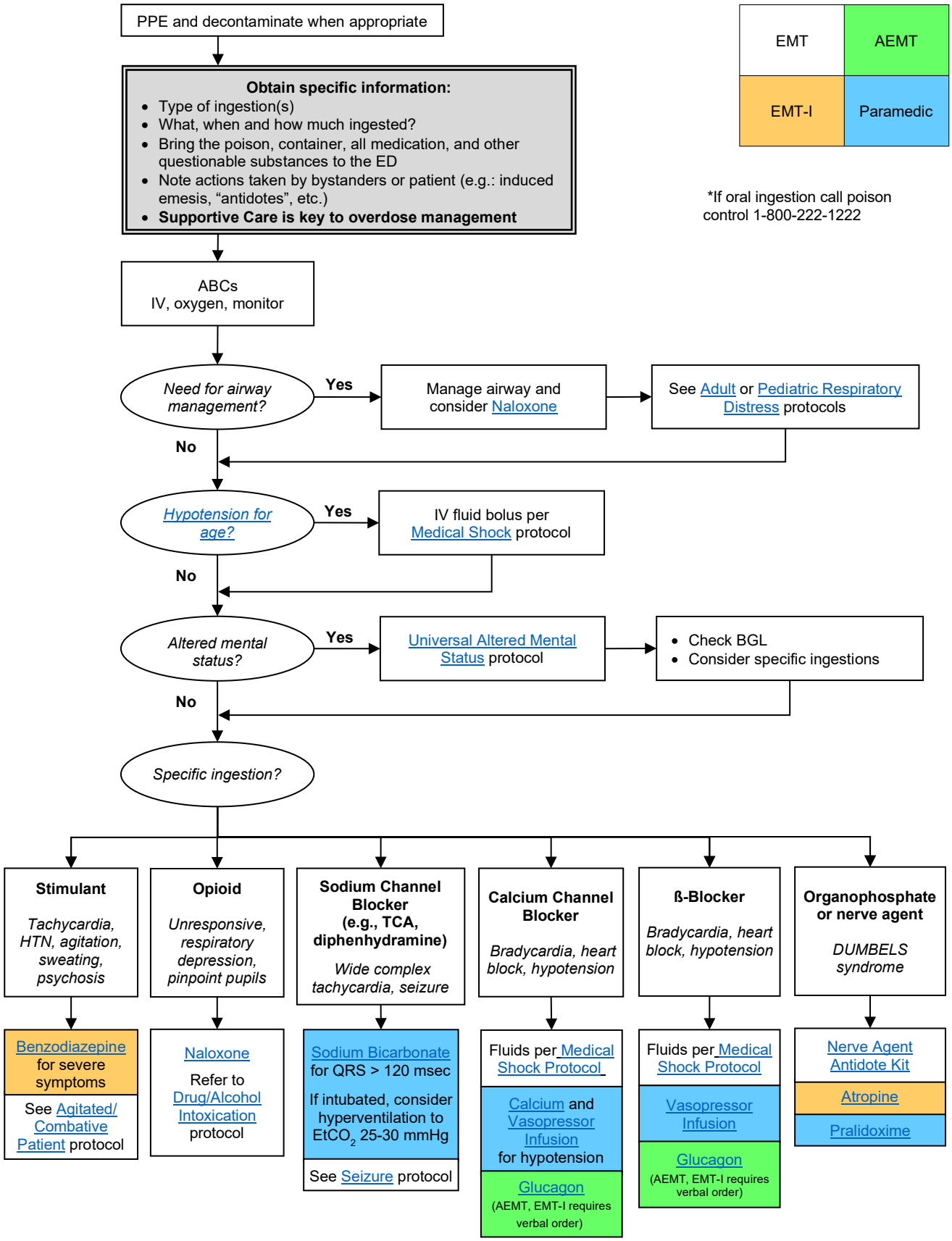
Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

4070 DRUG/ALCOHOL INTOXICATION

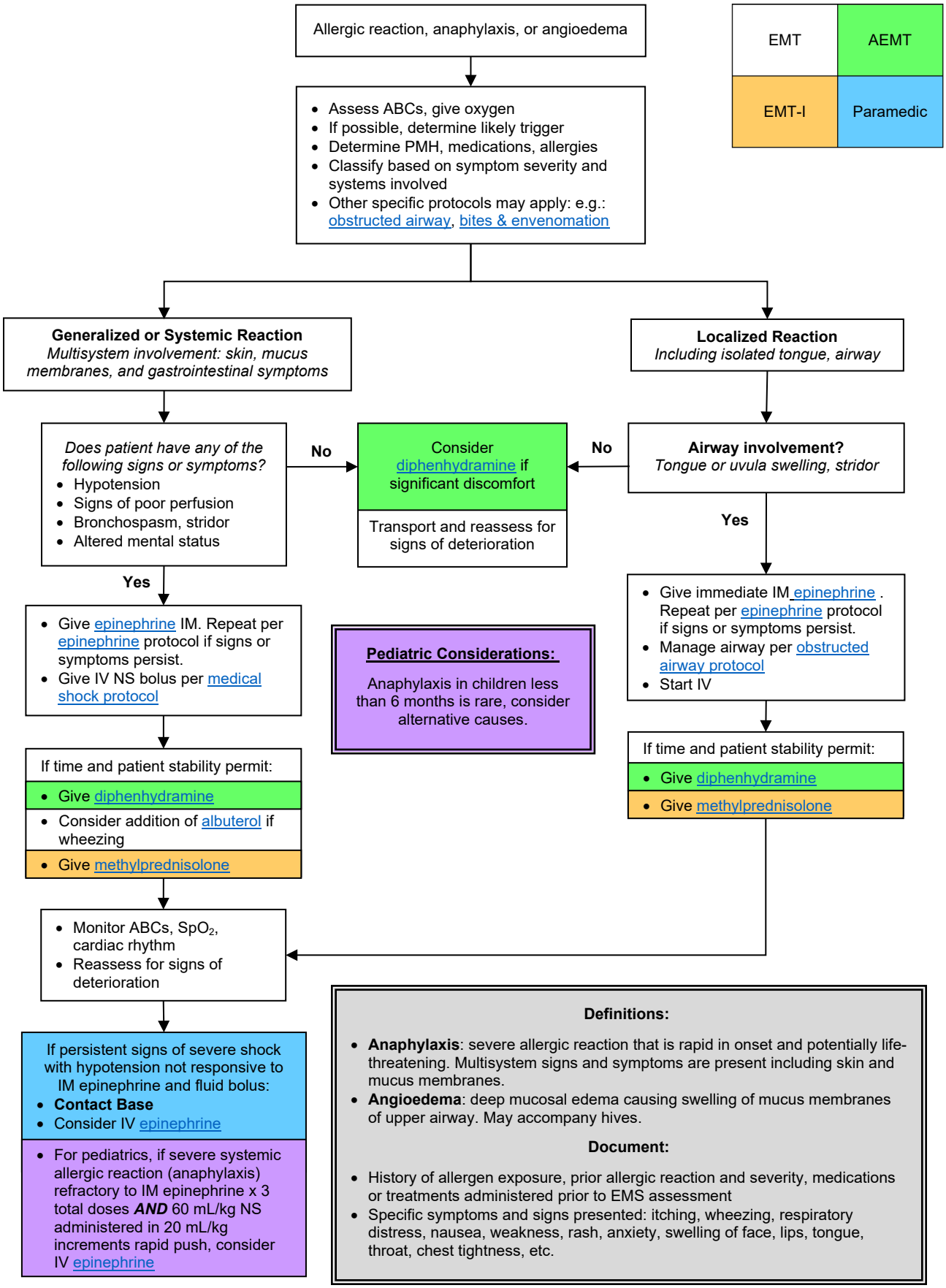


Approved by PGFPD Medical Director January 2022

4080 OVERDOSE AND ACUTE POISONING

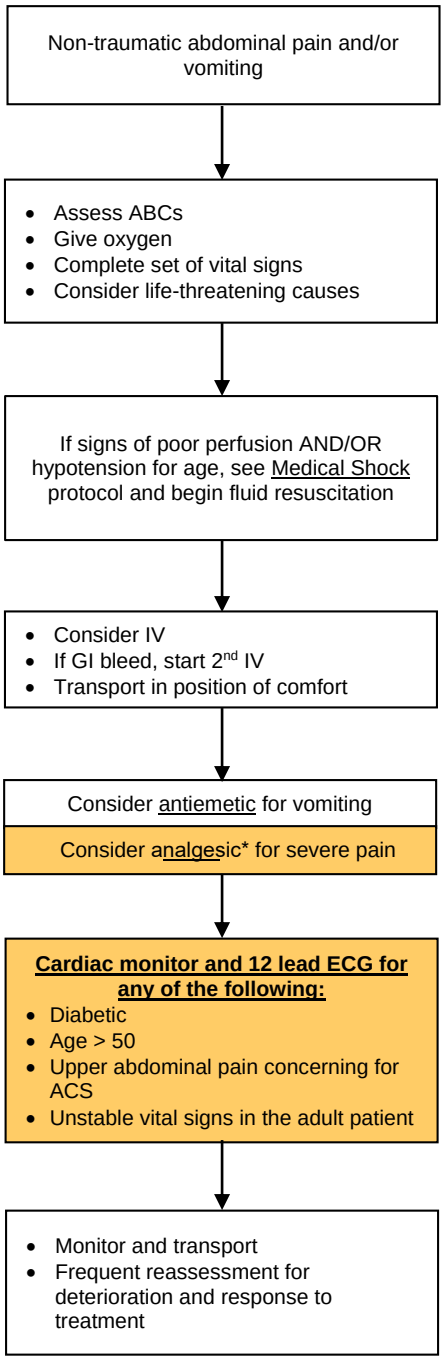


4090 ALLERGY AND ANAPHYLAXIS



Approved PGFPD Medical Director March, 2024

4100 NON-TRAUMATIC ABDOMINAL PAIN/VOMITING



EMT	AEMT	EMT-I	Paramedic

Life-threatening causes:

- Cardiac etiology: MI, ischemia
- Vascular etiology: AAA, dissection
- GI bleed
- Gynecologic etiology: ectopic pregnancy

History:

- Onset, location, duration, radiation of pain
- Associated sx: vomiting, bilious emesis, GU sx, hematemesis, coffee ground emesis, melena, rectal bleeding, vaginal bleeding, known or suspected pregnancy, recent trauma

Pediatric Patients:

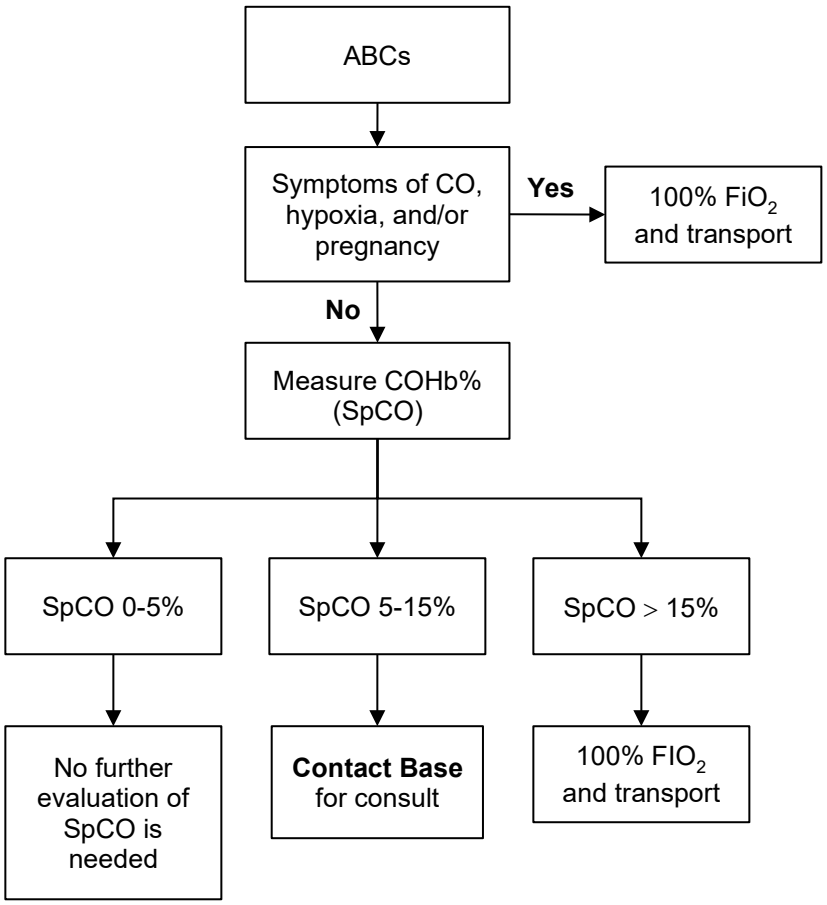
- Life-threatening causes vary by age. Consider occult or non-accidental trauma, toxic ingestion, button battery ingestion, GI bleed, peritonitis
- For most pediatric patients without signs of shock, no IV is required and pharmacologic pain management should be limited

Elderly Patients:

- Much more likely to have life-threatening cause of symptoms
- Shock may be occult, with absent tachycardia in setting of severe hypovolemia

*Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

4110 SUSPECTED CARBON MONOXIDE EXPOSURE



EMT	AEMT
EMT-I	Paramedic

General Guidelines:

- *Signs and Symptoms of CO exposure include:*

  Headache, dizziness, coma, altered mentation, seizures, visual changes, chest pain, tachycardia, arrhythmias, dyspnea, N/V, "flu-like illness"
- The absence or low readings of COHb is not a reliable predictor of toxicity of other fire byproducts
- In smoke inhalation victims, consider cyanide treatment with hydroxocobalamin as per indications
- The fetus of a pregnant woman is at higher risk due to the greater affinity of fetal hemoglobin to CO. With CO exposure, the pregnant woman may be asymptomatic while the fetus may be in distress. In general, pregnant patients exposed to CO should be transported.
- People who smoke may have SpCO of up to 10% baseline

COHb	Severity	Signs and Symptoms
5-20%	Mild	Headache, nausea, vomiting, dizziness, blurred vision
21-40%	Moderate	Confusion, syncope, chest pain, dyspnea, tachycardia, tachypnea, weakness
41-59%	Severe	Dysrhythmias, hypotension, cardiac ischemia, palpitations, respiratory arrest, pulmonary edema, seizures, coma, cardiac arrest
>60%	Fatal	Death

Approved by Platteville Gilcrest FPD Medical Director January 2023.

4120 ADRENAL INSUFFICIENCY PROTOCOL

Patient at risk for adrenal insufficiency (Addisonian crisis):

- Identified by family or medical alert bracelet
- Chronic steroid use
- Congenital Adrenal Hyperplasia
- Addison's disease

Assess for signs of acute adrenal crisis:

- Pallor, weakness, lethargy
- Vomiting, abdominal pain
- Hypotension, shock
- Congestive heart failure

All symptomatic patients:

- Check blood glucose and treat hypoglycemia, if present
- Start IV and give oxygen
- If signs of poor perfusion AND/OR hypotension for age, see Medical Shock protocol and begin fluid resuscitation

Give corticosteroid

- Continue to monitor for development of hypoglycemia
- **Contact base** for consult if patient not responding to treatment

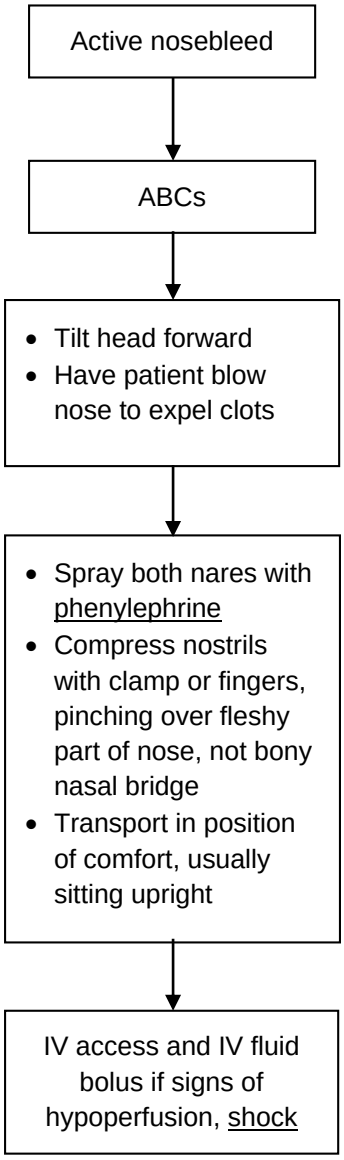
- Monitor 12 lead ECG for signs of hyperkalemia

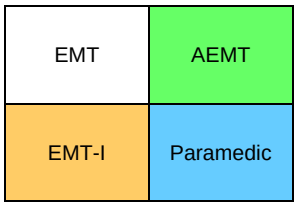
EMT	AEMT
EMT-I	Paramedic

- Chronic corticosteroid use is a common cause for adrenal crisis, carefully assess for steroid use in patients with unexplained shock.
- Administration of steroids are life-saving and necessary for reversing shock or preventing cardiovascular collapse
- Patients at risk for adrenal insufficiency may show signs of shock when under physiologic stress which would not lead to cardiovascular collapse in normal patients. Such triggers may include trauma, dehydration, infection, myocardial ischemia, etc.
- If no corticosteroid is available during transport, notify receiving hospital of need for immediate corticosteroid upon arrival
- Under Chapter 2 Rule: specialized prescription medications to address an acute crisis may be given by all levels with a direct VO, given the route of administration is within the scope of the provider. This applies to giving hydrocortisone for adrenal crisis, for instance, if a patient or family member has this medication available on scene. Contact base for direct verbal order

Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

4130 EPISTAXIS MANAGEMENT



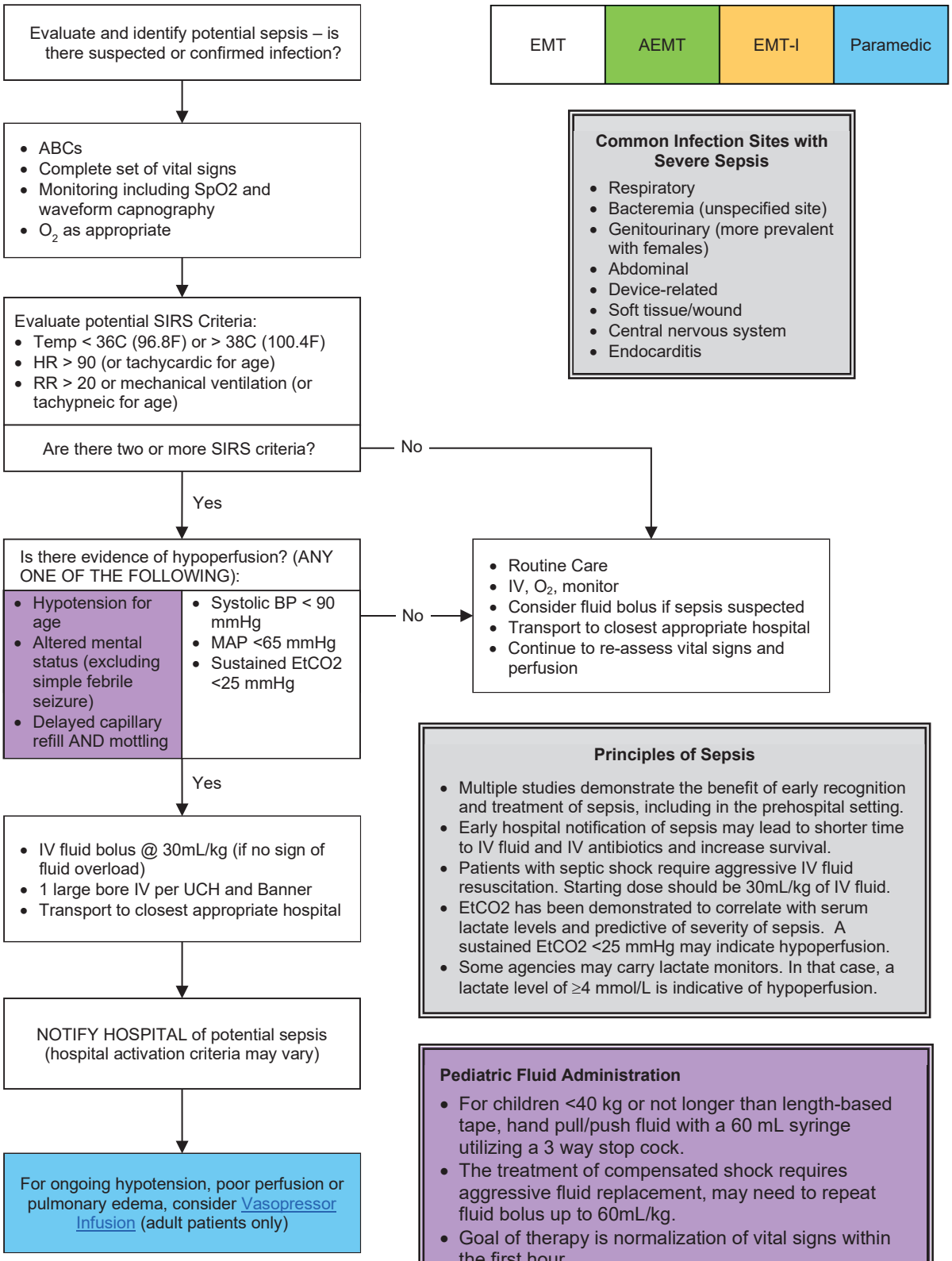


General Guidelines:

- Most nose bleeding is from an anterior source and may be easily controlled, however, may require up to 30 minutes of constant pressure.
- Avoid phenylephrine in pts with known CAD.
- Anticoagulation with aspirin, clopidogrel (Plavix), warfarin (Coumadin) will make epistaxis much harder to control. Note if your patient is taking these, or other, anticoagulant medications.
- Posterior epistaxis is a true emergency and may require advanced ED techniques such as balloon tamponade or interventional radiology. Do not delay transport. Be prepared for potential airway issues.
- For patients on home oxygen via nasal cannula, place the cannula in the patient's mouth while nares are clamped or compressed for nosebleed.

Approved by PGFPD Medical Director July 2023.

4140 SEPSIS PROTOCOL



4150 HYPERKALEMIA

EMT	AEMT	EMT-I	Paramedic

Do not use this protocol for prolonged entrapment; refer to general trauma care protocol for specific treatment

Consider hyperkalemia in the following protocols if the patient has risk factors for hyperkalemia, especially with dialysis patients:
- Universal altered mental status
- Bradycardia
- Ventricular arrhythmia
- Adrenal insufficiency

- Assess and stabilize ABCs, give O_2 if needed, assess vital signs
- Initiate cardiac monitor, consider 12 lead
- Start IV
- If there is high clinical suspicion or documented hyperkalemia and the patient has ECG changes indicative of hyperkalemia:
  - Administer calcium
  - Consider albuterol
  - Consider sodium bicarbonate
- Consider fluids
  - Administer fluids cautiously if severe acute kidney injury; only administer fluids if patient producing urine and does not have contraindications such as end-stage renal failure or congestive heart disease
- Acquire12 lead ECG post-treatment if time permits
- Continue monitoring during transport and **Contact Base** if patient deteriorates

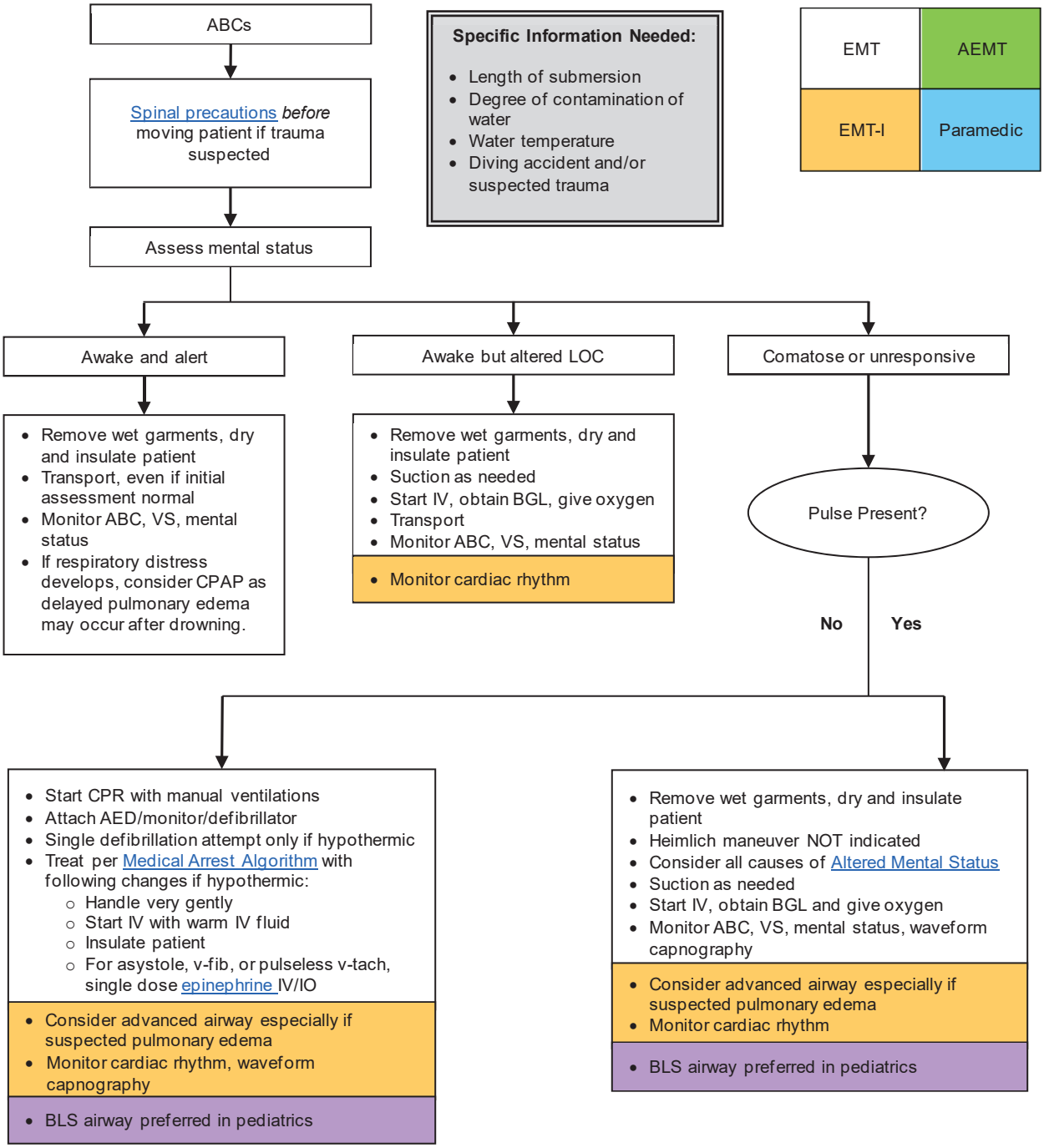
Hyperkalemia Risk Factors:
- Dialysis patient
- Chronic renal failure/insufficiency
- Renal injury
- Rhabdomyolysis
- Burns
- Prolonged entrapment/crush injury/ suspension syndrome
- Potassium supplements
- Potassium sparing diuretics (e.g., spironolactone)
- Digoxin toxicity
- Adrenal insufficiency

ECG Changes Indicative of Hyperkalemia:
- Peaked T waves
- New wide complex rhythm
- Ventricular tachycardia with following characteristics:
  - P waves disappear
  - May see very wide QRS
  - Peaked T waves
  - Heart rate slower than typical VT
- Sine-wave pattern
- Bradycardia with widened PR interval
- Junctional rhythm

General Information:
- Hyperkalemia can be present without ECG changes which may not require prehospital treatment in the stable patient.
- ECG changes may not directly correspond to serum potassium levels.
- Calcium is the only medication that will stabilize the cardiac membrane and is the backbone of treatment in prehospital care.
- Calcium must be given in separate line from IV sodium bicarbonate to prevent precipitation/formation of calcium carbonate.
- In setting of digoxin toxicity, calcium administration may worsen cardiovascular function and is contraindicated.

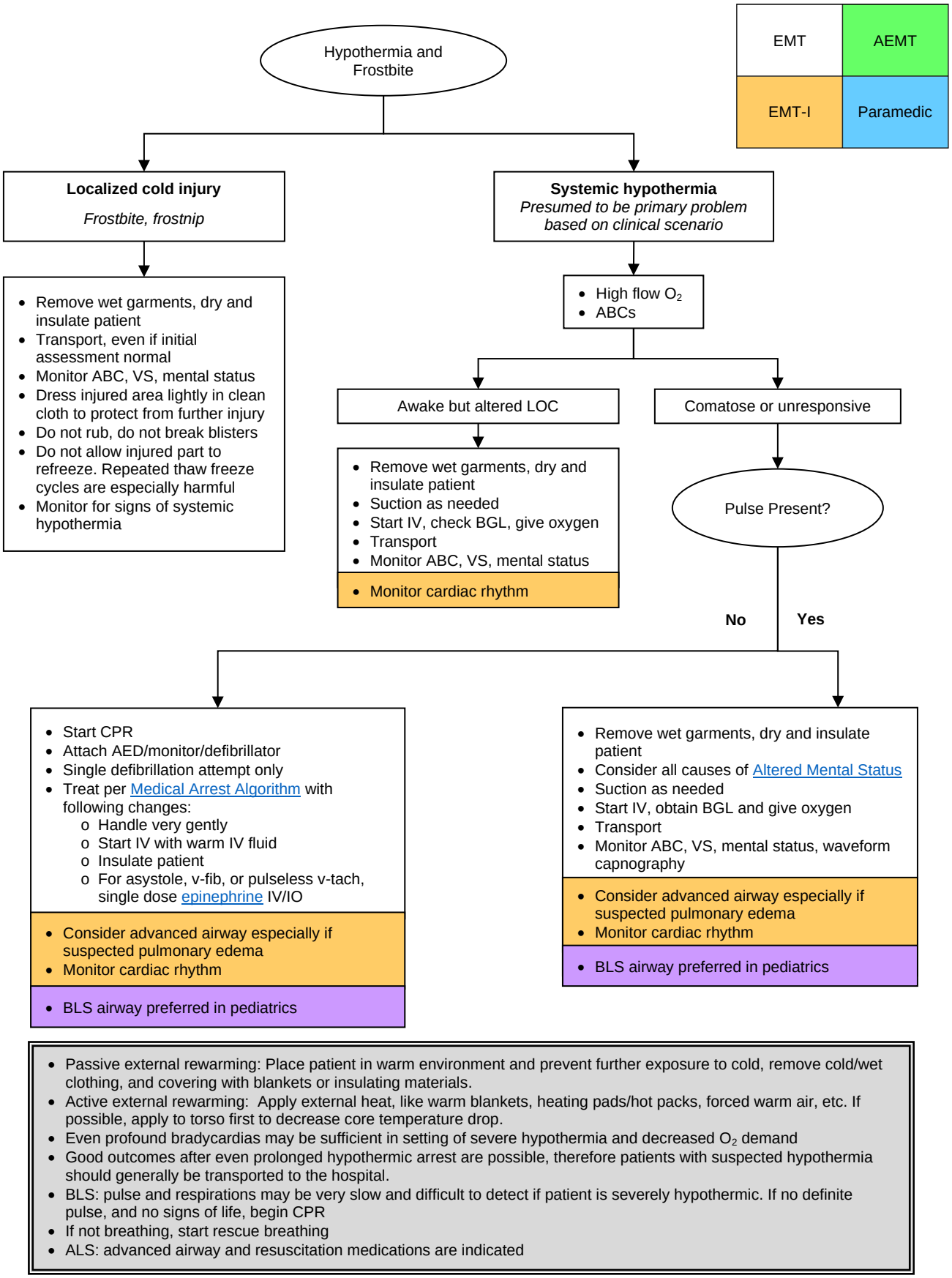
Approved by Platteville Gilcrest FPD Medical Director March 2024

5000 DROWNING



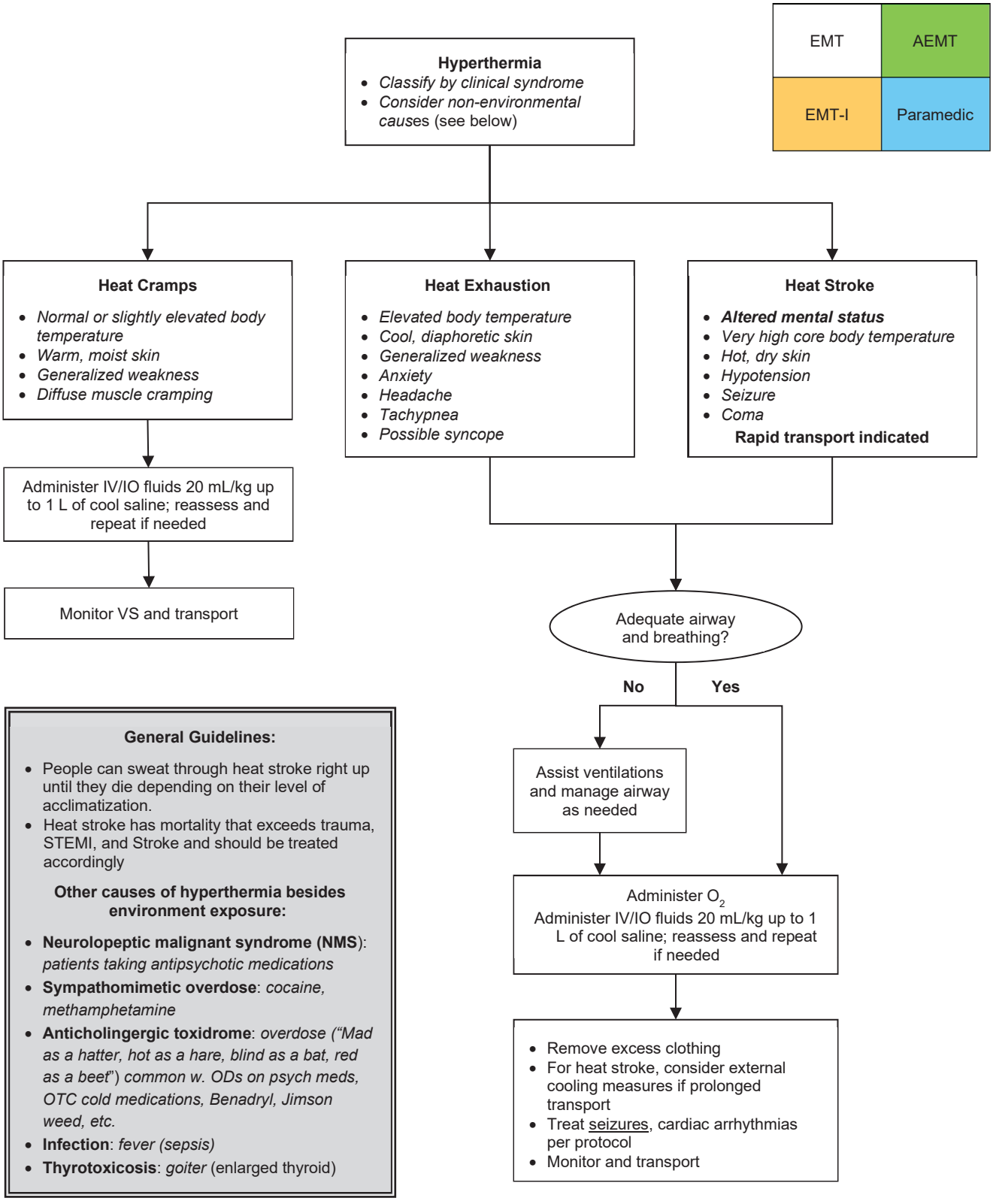
- Drowning/submersion commonly associated with hypothermia.
- Even profound bradycardias may be sufficient in setting of severe hypothermia and decreased O_2 demand
- Good outcomes after even prolonged hypothermic arrest are possible, therefore patients with suspected hypothermia should generally be transported to the hospital.
- BLS: pulse and respirations may be very slow and difficult to detect if patient is severely hypothermic. If no definite pulse, and no signs of life, begin CPR
- If not breathing, start rescue breathing
- ALS: advanced airway and resuscitation medications are indicated

5010 HYPOTHERMIA



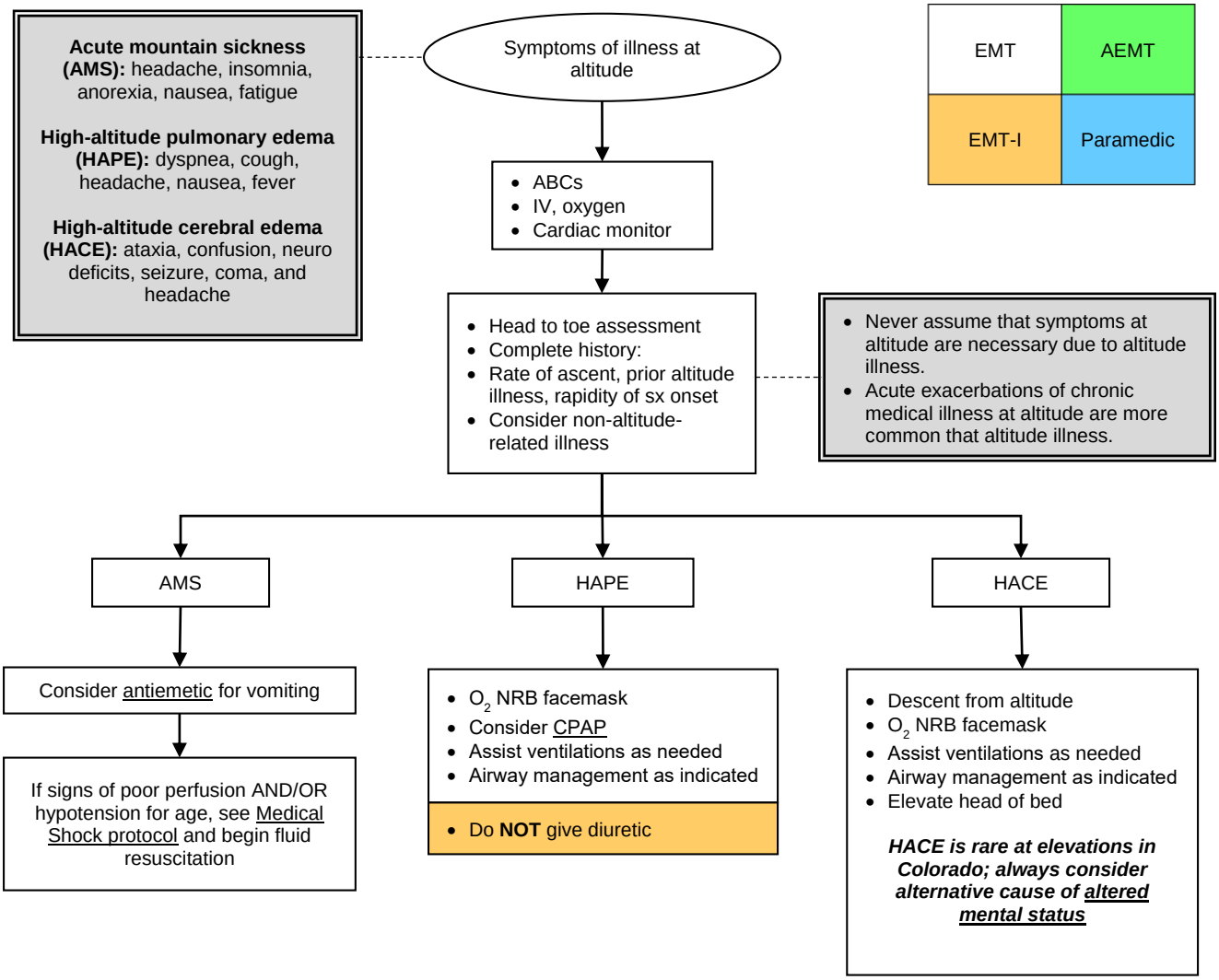
- Passive external rewarming: Place patient in warm environment and prevent further exposure to cold, remove cold/wet clothing, and covering with blankets or insulating materials.
- Active external rewarming: Apply external heat, like warm blankets, heating pads/hot packs, forced warm air, etc. If possible, apply to torso first to decrease core temperature drop.
- Even profound bradycardias may be sufficient in setting of severe hypothermia and decreased O_2 demand
- Good outcomes after even prolonged hypothermic arrest are possible, therefore patients with suspected hypothermia should generally be transported to the hospital.
- BLS: pulse and respirations may be very slow and difficult to detect if patient is severely hypothermic. If no definite pulse, and no signs of life, begin CPR
- If not breathing, start rescue breathing
- ALS: advanced airway and resuscitation medications are indicated

5020 HYPERTHERMIA



Approved by Platteville Gilcrest FPD Medical Director January 2020

5030 HIGH ALTITUDE ILLNESS

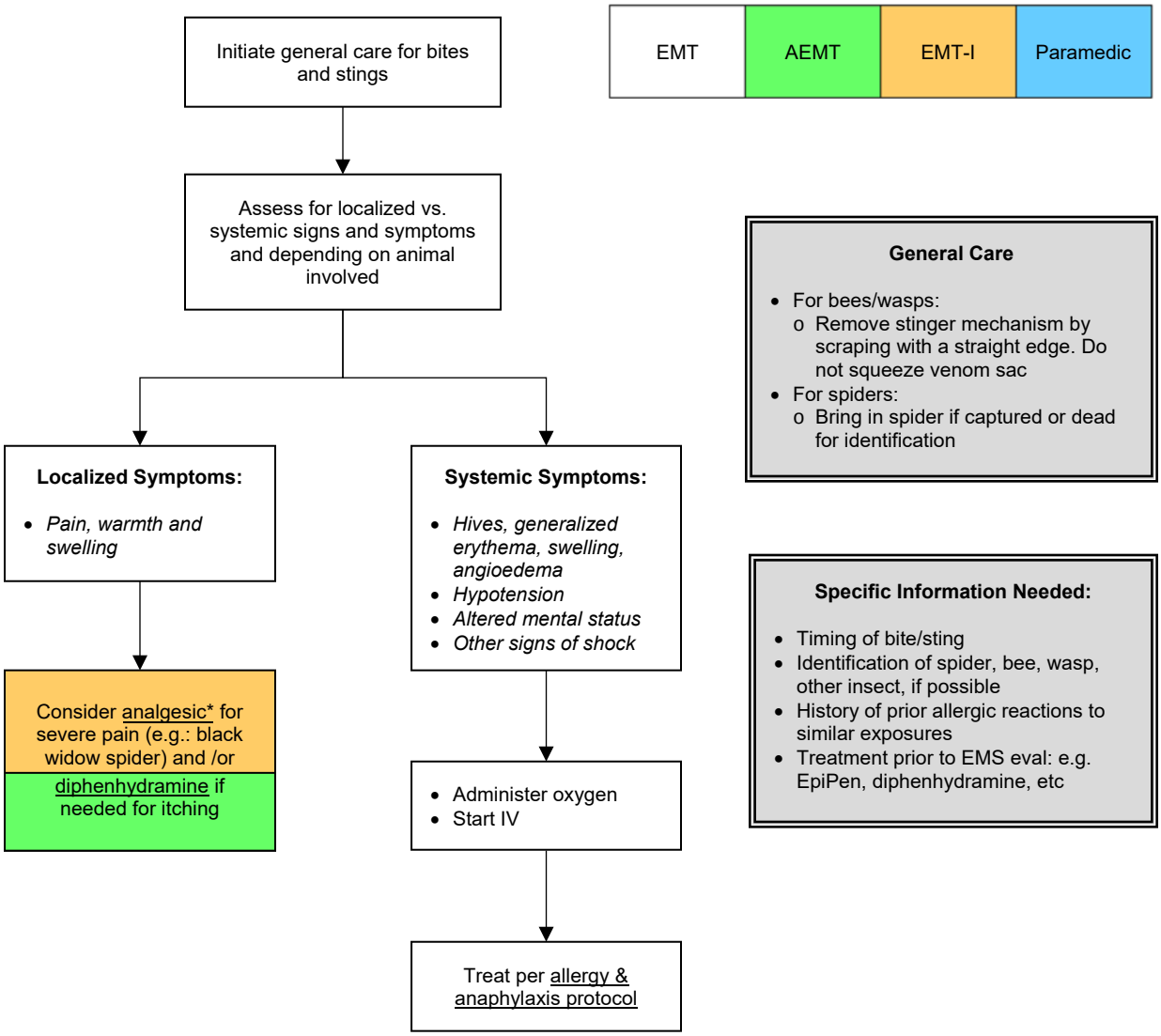


Special Notes:

- There are no specific factors that accurately predict susceptibility to altitude sickness, but symptoms are worsened by exertion, dehydration, and alcohol ingestion.
- Acute Mountain Sickness (AMS) can begin to appear at around 6,500 ft above sea level, although most people will tolerate up to 8000 ft without difficulty. Altitude illness should not be suspected below 6,500 ft. AMS is the most frequent type of altitude sickness encountered. Symptoms often manifest themselves six to ten hours after ascent and generally subside in one to two days, but they occasionally develop into the more serious conditions.
- High altitude pulmonary edema (HAPE) and cerebral edema (HACE) are the most severe forms of high altitude illness. The rate of ascent, altitude attained, exertion, and individual susceptibility are contributing factors to the onset and severity of high-altitude illness
- Mild HAPE may be managed with high-flow oxygen and supportive care, and does not necessarily require descent from altitude.
- More severe forms of HAPE and all forms of HACE require descent

Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

5040 INSECT/ARACHNID STINGS AND BITES PROTOCOL

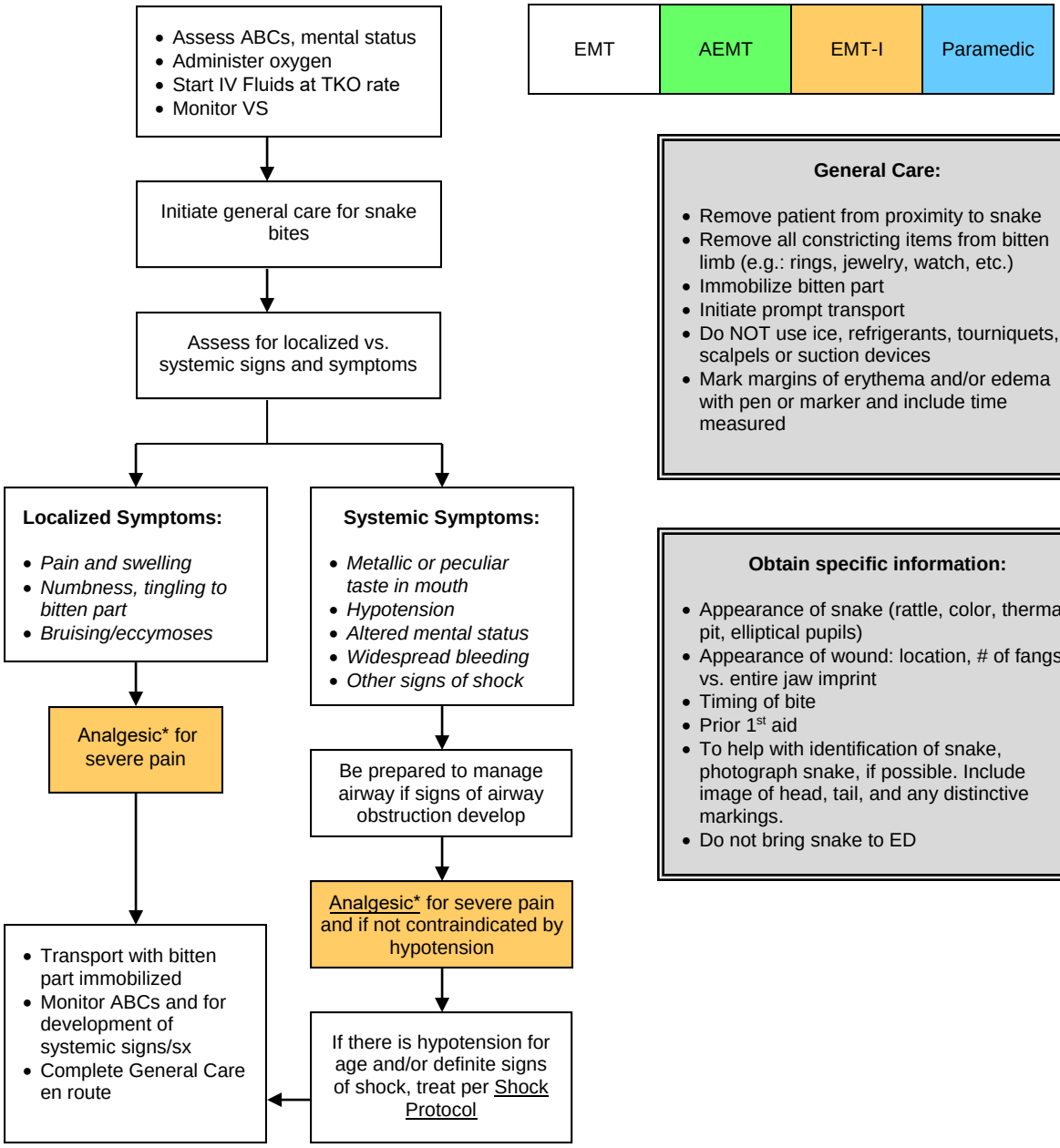


Specific Precautions:

- For all types of bites and stings, the goal of prehospital care is to prevent further envenomation and to treat allergic reactions
- Anaphylactoid reactions may occur upon first exposure to allergen, and do not require prior sensitization
- Anaphylactic reactions typically occur abruptly, and rarely > 60 minutes after exposure

*Approved by Platteville Gilcrest FPD Medical Director January 1, 2019

5050 SNAKE BITE PROTOCOL



Specific Precautions:

- The prairie rattlesnake is native to Denver Metro and northern Colorado region and is most common venomous snake bite in the region.
- Exotic venomous snakes, such as pets or zoo animals, may have different signs and symptoms than those of pit vipers. In case of exotic snake bite, contact base and consult zoo staff or poison center for direction.
- **Take a picture of the snake, including images of head and tail. If an adequate photo can be taken, it is not necessary to bring snake to ED.**
- Never pick up a presumed-to-be-dead snake by hand. Rather, use a shovel or stick. A dead snake may reflexively bite and envenomate.
- > 25% of snake bites are “dry bites”, without envenomations.
- Conversely, initial appearance of bite may be deceiving as to severity of envenomation.
- Fang marks are characteristic of pit viper bites (e.g. rattlesnakes).
- Jaw prints, without fang marks, are more characteristic of non-venomous species.

*Approved by Platteville Gilcrest FPD Medical Director January 2020.

6000 PSYCHIATRIC/BEHAVIORAL PATIENT PROTOCOL

EMT	AEMT
EMT-I	Paramedic

Scene Safety

A. Scene safety should be assured prior to initiating care. Consider police contact if scene safety is a concern.
B. Refer to restraint protocol as needed, especially as it relates to A.

Specific Information Needed

A. Obtain history of current event from patient, bystanders, family and or other first responders; inquire about recent crisis, toxic exposure, drugs, alcohol, emotional trauma, and suicidal or homicidal ideation.
B. Obtain past history; inquire about previous psychiatric and medical problems, medications.

Specific Objective Findings

A. Evaluate general appearance. Be aware that implicit bias may influence and effect your care. All patient regardless of appearance, age, sex, or ethnicity deserve equal and consistent care and compassion.
B. Evaluate vital signs: Is a particular toxidrome suggested, e.g., sympathomimetic?
C. Note medic alert tags, breath odors suggesting intoxication.
D. Consider known predictors of violence: Intoxicated, history of mental illness, seizure disorder, males 15-35 years old, paranoid, aggressive, or threatening behavior.
E. Assess for evidence of delirium
    1. Acute confusional state
        i. Disoriented to person, place, and/or time
        ii. Disorganized thinking, rambling speech, hallucinations, responding to internal stimuli
    2. Unaware or unable to respond to environment/ surroundings
        i. Is the patient aware of your presence and know why you are there?

Treatment

A. If patient agitated or combative, see agitated/combative patient protocol
B. Attempt to establish rapport
C. If agitated, attempt verbal calming and de-escalation techniques
D. Assess ABCs. If unstable vital signs, refer to appropriate treatment protocol.
E. Transport to closest appropriate Emergency Department
F. Be alert for possible elopement, all patient transports should occur with seatbelt in place and visible to provider at all times
G. Consider organic causes of abnormal behavior (trauma, overdose, intoxication, hypoglycemia)
H. If patient restraint considered necessary for patient or EMS safety, refer to restraint protocol.
I. Check blood sugar, vital signs, and assess for signs of toxidrome
J. If altered mental status, refer to universal altered mental status protocol

Transporting Patients Who Have a Behavioral Health Complaint

A. Maintaining patient respect and dignity is important. Attempt to conduct assessment, treatment, and transport in the safest and least restrictive manner possible.
B. Coordination with law enforcement in managing these delicate situations is vital for safety of the patient, scene, and first responders. Authority to make all medical and treatment decisions lies solely with EMS and not law enforcement. Sedation is entirely the responsibility and decision of EMS on scene. There may be certain situations in which a collaborative effort may need to occur between law enforcement and EMS for the safe management of a patient, however, all medical decisions will be made by EMS in these circumstances.
C. If a patient has an isolated mental health complaint (e.g., suicidality), and does not have a medical complaint or need specific medical intervention, then that patient may be appropriately transported by law enforcement according to their protocols or alternative means per agency specific guidelines.
D. If a patient has a psychiatric complaint with associated illness or injury (e.g., overdose, altered mental status, chest pain, etc.), then the patient should be transported by EMS.

E. It is sufficient to assume the patient lacks decision-making capacity if there is a reasonable concern when any person appears to have a mental illness and, as a result of such mental illness, appears to be an imminent danger to others or to himself or herself or appears to be gravely disabled. Effort should be made to obtain consent for transport from the patient, and to preserve the patient's dignity throughout the process. However, the patient may be transported over his or her objections and treated under involuntary consent if the patient does not comply. A patient being transported for psychiatric evaluation may be transported to any appropriate receiving emergency department.
F. The Denver Metropolitan EMS Medical Directors and PGFPD Medical Director feels strongly that the risk of abandonment of a potentially suicidal or otherwise gravely impaired patient far outweighs the likelihood of accusations of patient abduction. Be sure to document your reason for taking the patient over their objections; that you believe that you are acting in the patient's best interests; and be sure to **Contact Base** if there are concerns.
G. Documentation supports your decision making, therefore document thoroughly.

Specific Precautions

A. Patients presenting with acute delirium often have an organic etiology. Rapid and through assessment of the patient is essential to potentially identify reversible causes of delirium. Be suspicious for hypoglycemia, hypoxia, head injury, intoxication, or toxic ingestion.
B. Providers transporting a patient over his or her objections should reassure the patient. The provider should strongly consider whether the patient may need restraint and/or sedation for safety. Beware of weapons. These patients can become combative.

Transporting Patients on a Mental Health Hold

A. By law, patients detained on a mental health hold may not refuse transport. Similarly, by law, patients on a mental health hold are required to be evaluated by a physician or psychologist and must be transported.
B. Although it is commonly believed that the original copy of the mental health hold form is required to accompany the patient, a legible copy of the mental health hold form is also sufficient.
C. The form documenting the mental health hold should be as complete as possible, including the correct date and time that the patient was detained. The narrative portion should be completed. A signature and license or badge number is also required. Assure that the form is complete before departing.
D. The mental health hold does not need to be started on patients who are intoxicated on drugs and/or alcohol. Nor is it required for patients who are physically incapable of eloping from care, such as those who are intubated, or physically unable.
E. The patient rights form does not need to accompany the patient. The receiving facility may complete this form if there are concerns.
F. If possible, seek direction from the sending facility regarding whether the patient may require sedation and restraint. Consider ALS transport if this is the case.
G. Recall that patients who are a danger to self/others or gravely disabled due to mental illness may be transported by EMS without a mental health hold, under involuntary consent.

6010 AGITATED/COMBATIVE PATIENT PROTOCOL

EMT	AEMT
EMT-I	Paramedic

Principles:

While treating patients experiencing agitation, the safety of EMS providers should be maximized while honoring patient dignity and treating the patient's medical condition in a professional manner.

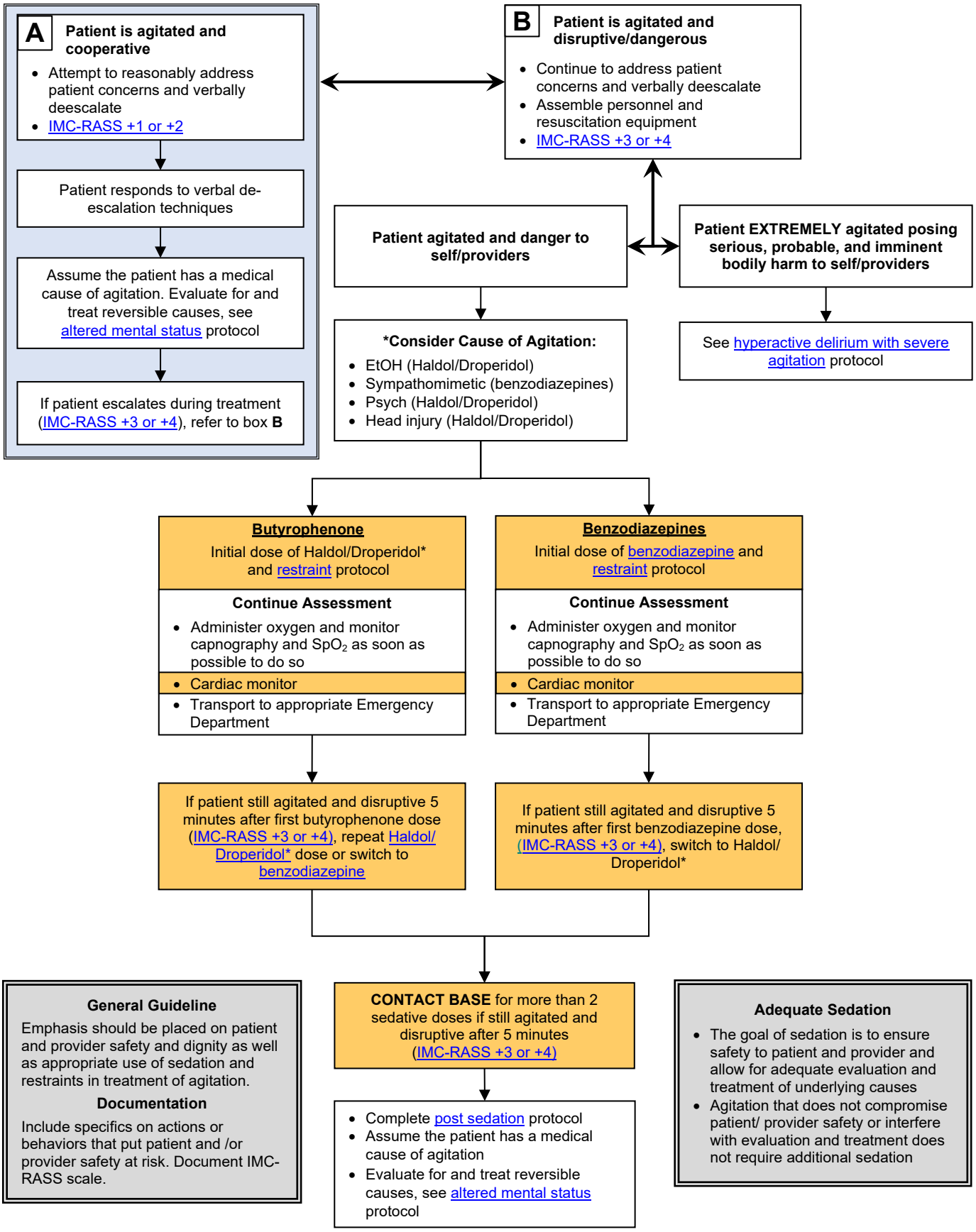
- EMS Safety. The safety of field personnel is paramount. Although EMS personnel have a duty to treat patients experiencing emergency medical conditions, they must not take risks that they are not comfortable with. Risks to personnel or scene safety should be commensurate to the benefit a patient may receive.
- Patient safety. Patient safety and the aid they receive from our care is the reason EMS exists. All treatments should be designed to reduce potential harm and maximize potential benefit.
- Dignity. All patients and providers deserve dignity and respect. Patient encounters for mental health and substance related emergencies are often challenging. It is essential that EMS professionals recognize our own biases. We owe it to our patients, especially those in disenfranchised groups, to provide equitable care. We strive to maximize the dignity of both patients and providers by practicing with clinical expertise and professionalism.

Initial Assessment:

The most critical initial step in managing agitation is the determination of an emergency medical condition.

- Patients assessed as having non-medical agitation do not require emergency medical intervention. EMS should never intervene solely for the support of another 911 function.
- EMS should only intervene in the medical management of agitation when the patient is assessed and suspected to have an emergency medical condition.
- Prior to any physical restraint or medication administration, all patients must first be assessed and suspected to have an emergent medical condition. Depending on the acuity of the situation, some initial assessments must be made in seconds while others may require more time.
- In some situations, it may be appropriate for EMS to stand by in case a person develops a medical emergency.
- Some patients with emergency medical conditions such as trauma or dyspnea may also exhibit agitation. That agitation should only be treated if the paramedic assesses that the patient lacks decision making capacity to care for their illness or injury.
- As soon as safely possible, EMS providers should assess and treat for underlying conditions that may present as agitation.
- EMS safety is paramount. In some uncommon circumstances it may be necessary to separate from an agitated patient in order to protect the patient and personnel on scene.
- When we have tension between the duty to treat and the safety of field personnel, we should apply the principles of EMS safety, patient safety and dignity.

6010 AGITATED/COMBATIVE PATIENT PROTOCOL



*Approved by Platteville Gilcrest FPD Medical Director March 2024.

6010 AGITATED/COMBATIVE PATIENT PROTOCOL

Improved Montgomery County Richmond Agitation Sedation Scale (IMC-RASS)			
Score	Term	Description	EMS Activity
+4	Combative	Overtly combative, violent, immediate danger to staff	Unsafe to care for patient without maximal assistance, require law enforcement assistance
+3	Very agitated	Pulls or removes tubes and catheters, aggressive	Struggles aggressively and forcefully against care. Routine EMS care impossible.
+2	Agitated	Frequent, non-purposeful movements, fights interventions	Resists EMS care, requires gentle physical redirection to allow for routine EMS care
+1	Restless	Anxious but movements are not aggressive or vigorous	Verbally redirectable, follows commands, routine EMS care possible
0	Alert and Calm		
-1	Drowsy	Not fully alert but has sustained awakening and eye contact to voice (>10 seconds)	Awakens to voice
-2	Light sedation	Briefly awakens with eye contact to voice (<10 seconds)	Awakens to bumps/potholes in roadway during transport or application of oxygen via NC or NRB
-3	Moderate Sedation	Movement or eye opening to voice (no eye contact)	Eyes open to physical exam, venous tourniquet application and/or BP cuff inflation
-4	Deep Sedation	No response to voice but movement or eye opening to physical stimulation	Responds to insertion of NPA or IV start
-5	Unarousable	No response to voice or physical stimulation	No response to insertion of OPA/NPA or IV start

6011 HYPERACTIVE DELIRIUM WITH SEVERE AGITATION

Hyperactive Delirium with Severe Agitation

Agitated patients who pose serious probable and imminent bodily harm to self/others. They will have some or all the following symptoms:

paranoia, disorientation, hyper- aggression, hallucination, tachycardia, diaphoresis, increased strength, hyperthermia

↓

Sedate and Restrain

- Administer:
  - o 10 mg midazolam IM
    OR
  - o 10 mg haldol/droperidol IM*
- Goal is rapid tranquilization in order to minimize threat to patient and provider safety
- Restraint protocol

↓

Initiate Resuscitation

- Maintain airway
- High flow oxygen
- Capnography and SpO_2 monitoring
- Start 2 large bore IVs
- Administer 2 L NS bolus
- Check blood glucose
- Cardiac monitoring
- Rapid transport

↓

If still significantly agitated 5 minutes after medication, **Contact Base**

↓

Complete post sedation protocol

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Assume the patient has a medical cause of agitation. Evaluate for and treat reversible causes, see altered mental status protocol

EMT	AEMT	EMT-I	Paramedic

Special Considerations

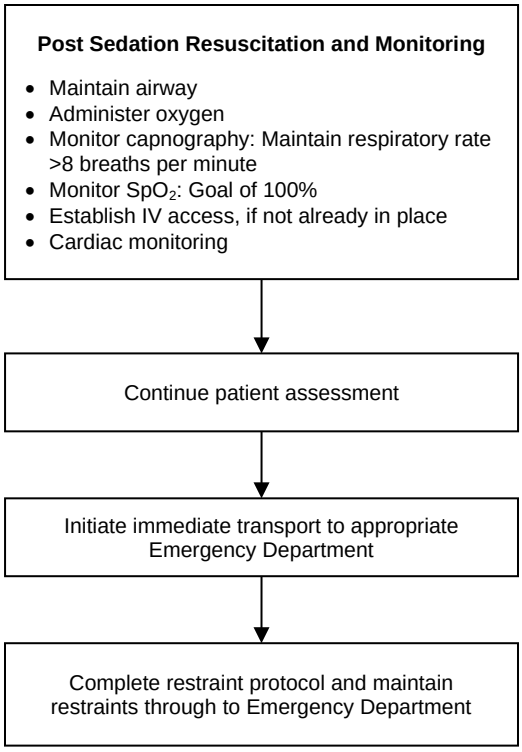
- Give sodium bicarbonate if QRS>120 or cardiac arrest

Adequate Sedation

- The goal of sedation is to ensure safety to patient and provider and allow for adequate evaluation and treatment of underlying causes
- Agitation that does not compromise patient/ provider safety or interfere with evaluation and treatment does not require additional sedation

Approved by PGFPD Medical Director March 2024

6015 POST SEDATION RESUSCITATION AND MONITORING



EMT	AEMT	EMT-I	Paramedic

Adequate Sedation

- The goal of sedation is to ensure safety to patient and provider and allow for adequate evaluation and treatment of underlying causes
- Agitation that does not compromise patient/ provider safety or interfere with evaluation and treatment does not require additional sedation

General Guidelines

- Patients receiving sedative medications have a broad range of responses both from the medication given and the underlying etiology of the agitation. They should be treated as high risk for respiratory or cardiovascular compromise.
- Goal is to initiate resuscitation/monitoring as soon as possible.
- Each individual element of post-sedation resuscitation/monitoring should be initiated as soon as possible to do so.

Approved by PGFPD Medical Director March 2024

6020 TRANSPORT OF THE HANDCUFFED PATIENT

Purpose:

1. Guideline for transport of patients in handcuffs placed by law enforcement

Guideline:

1. Handcuffs are only to be placed by law enforcement. EMS personnel are not permitted to use handcuffs.
2. If the patient was placed in handcuffs by law enforcement due to agitation/ combativeness, altered mental status or a similar process, the patient should be evaluated for an underlying life-threatening emergency.
3. Request that law enforcement remain with the patient in the ambulance, if possible. If not possible, request that police ride behind ambulance so as to be readily available to remove handcuffs if needed in an emergency situation to facilitate medical care of the patient.
4. EMS personnel are not responsible for the law enforcement hold on these patients.
5. Handcuffs should only be removed for a medical emergency. EMS should assess the need for ongoing physical restraint for patient or provider safety.
6. Handcuffed patients will not be placed in the prone position.
7. Handcuffs may be used with spinal motion restriction. Medical priorities should take priority in the positioning of the handcuffs.

7000 CHILDBIRTH PROTOCOL

Overview:

- EMS providers called to a possible prehospital childbirth should determine if there is enough time to transport expectant mother to hospital or if delivery is imminent.
- If imminent, **stay on scene** and immediately prepare to assist with the delivery.

ABCs
O_2 15 liters via NRB
IV access

EMT	AEMT	EMT-I	Paramedic

Obtain obstetrical history (see adjacent)

Specific Information Needed:

- Obstetrical history:
  - Number of pregnancies (gravida)
  - Live births (PARA)
  - Expected delivery date
  - Length of previous labors
  - Narcotic use in past 4 hours

If suspected imminent childbirth:

- Allow patient to remain in position of comfort.
- Visualize perineum.
- Determine if there is time to transport.

Imminent Delivery

Delivery is imminent if there is crowning or bulging of perineum

Delivery not imminent

- Transport in position of comfort, preferably on left side to patient's requested hospital if time and conditions allow.
- Monitor for progression to imminent delivery.

Emergency Childbirth Procedure

- If there is a prolapsed umbilical cord or apparent breech presentation, go to obstetrical complications protocol and initiate immediate transport.
- For otherwise uncomplicated delivery:
- Position mother supine on flat surface, if possible.
- Do not attempt to impair or delay delivery.
- Support and control delivery of head as it emerges.
- Protect perineum with gentle hand pressure.
- Check for cord around neck, gently remove from around neck, if present.
- Suction mouth and nose only if signs of obstruction by secretions.
- If delivery not progressing, baby is "stuck", see obstetrical complications protocol and begin immediate transport.
- As shoulders emerge, gently guide head and neck downward to deliver anterior shoulder. Support and gently lift head and neck to deliver posterior shoulder.
- Rest of infant should deliver with passive participation – get a firm hold on baby.
- Dry baby and place skin-to skin on the mother. Assess breathing, tone, and activity.

Critical Thinking:

- If there is an infant in distress call for additional EMS resources to provide care to 2 patients.
- Normal pregnancy is accompanied by higher heart rates and lower blood pressures.
- Shock will be manifested by signs of poor perfusion.
- Labor can take 8-12 hours, but as little as 5 minutes if high PARA.
- The higher the PARA, the shorter the labor is likely to be.
- High risk factors include: no prenatal care, drug use, teenage pregnancy, DM, htn, cardiac disease, prior breech or C section, preeclampsia, twins.
- Note color of amniotic fluid for meconium staining.

Postpartum Care Infant

- Suction mouth and nose only if signs of obstruction by secretions.
- Respirations should begin within 15 seconds after stimulating reflexes. If not, begin artificial ventilations at 40-60 breaths/min.
- If apneic, cyanotic or HR < 100, begin neonatal resuscitation
- Healthy term babies should be managed skin-to-skin with their mothers. After birth, the baby should be dried and directly placed skin-to-skin with attention to warm coverings and maintenance of normal temperature.
- Clamp the cord after the infant is quickly dried, placed on the mother, and assessed for breathing and activity. Double clamp 6" from infant abdominal wall and cut between clamps with sterile scalpel. If no sterile cutting instrument available, lay infant on mother and do not cut clamped cord.
- Document 1- and 5-minute APGAR scores.
- Keep the baby covered, including cap over the head.

Postpartum Care Mother

- Placenta should deliver in 20-30 minutes. If delivered, collect in plastic bag and bring to hospital. Do not pull cord to facilitate placenta delivery and do not delay transport awaiting placenta delivery.
- If the perineum is torn and bleeding, apply direct pressure with sanitary pads.
- Postpartum hemorrhage – see obstetrical complications protocol.
- Initiate transport once delivery of child is complete and mother can tolerate movement.

Approved by PGFPD Medical Director January 2022

7010 OBSTETRICAL COMPLICATIONS

EMT	AEMT	EMT-I	Paramedic

For All Patients with obstetrical complications

- Do not delay: immediate rapid transport
- Give high-flow oxygen
- Start IV en route if time and conditions allow. Treat signs of shock w. IV fluid boluses per Medical Hypotension/Shock Protocol

Possible actions for specific complications (below)

- The following actions may not be feasible in every case, nor may every obstetrical complication by anticipated or effectively managed in the field. These should be considered "best advice" for rare, difficult scenarios. In every case, initiate immediate transport to definite care at hospital

Prolapsed Umbilical Cord

- Discourage pushing by mother
- Position mother in Trendelenberg or supine with hips elevated
- Place gloved hand in mother's vagina and elevate the presenting fetal part off of cord until relieved by physician
- Feel for cord pulsations
- Keep exposed cord moist and warm

Breech Delivery

- Never attempt to pull infant from vagina by legs
- IF legs are delivered gently elevate trunk and legs to aid delivery of head
- Head should deliver in 30 seconds. If not, reach 2 fingers into vagina to locate infant's mouth. Press vaginal wall away from baby's mouth to access an airway
- Apply gentle abdominal pressure to uterine fundus
- IF infant delivered see childbirth protocol – Postpartum care of infant and mother

Postpartum Hemorrhage

- Massage abdomen (uterine fundus) until firm
- Initiate rapid transport
- Note type and amount of bleeding
- Treat signs of shock with IV fluid boluses

Complications of Late Pregnancy

3rd Trimester Bleeding (6-8 months)

- High flow O_2 via NRB, IV access
- Suspect placental abruption or placenta previa
- Initiate rapid transport
- Position patient on left side
- Note type and amount of bleeding
- IV NS bolus for significant bleeding or shock

Eclampsia/Toxemia

- High flow O_2 via NRB, IV access
- SBP > 140, DBP > 90, peripheral edema, headache, seizure
- Transport position of comfort
- Treat seizures with Magnesium Sulfate
- See seizure protocol

Shoulder Dystocia

- Support baby's head
- Suction oral and nasal passages
- DO NOT pull on head
- May facilitate delivery by placing mother with buttocks just off the end of bed, flex her thighs upward and gentle open hand pressure above the pubic bone
- IF infant delivered see childbirth protocol – Postpartum care of infant and mother

Approved by Platteville Gilcrest FPD Medical Director January 2019.

8000 GENERAL TRAUMA CARE

- General impression
- The number one priority is rapid treatment and transport to definitive care
- Trauma expose the patient
- Consider need for additional resources

EMT	AEMT	EMT-I	Paramedic
Extended Care Supplement			

Scene Considerations:

- Identify provider safety concerns
- Triage the scene
  - o Identify number of patients
  - o Request additional resources as needed
  - o Determine ingress / egress
  - o Set-up ambulance

M

Look for massive hemorrhage and stop:

- Tourniquet extremities
- Wound pack junctional wounds
- Seal truncal injuries

A

Address airway and support breathing:

- Emergent BLS airway management
- Assist ventilations as indicated

R

- Needle decompression for tension pneumothorax
- Semi-occlusive dressing for open chest wound
- Provide high flow oxygen

Airway Management Goals:

- Manage with the simplest method that provides adequate ventilation and oxygenation
- Intubation should be done en route unless there is no other option
- Nasal intubation is relative contraindication with suspicion of head injury
- BLS airway preferred in pediatrics

C

Assess circulation:

- If pelvis unstable, place binder.
- During transport, establish vascular access and treat hypotension per traumatic shock protocol

Prolonged Entrapment:

- Crush syndrome can occur after cells have been under pressure from prolonged immobilization or crush injury for >4 hours when skeletal muscles can no longer survive from ischemia
- After release, intracellular potassium can be released into the systemic circulation causing life-threatening hyperkalemia and generating cardiac arrhythmias. 12-lead and continuous ECG monitoring are used to assess for hyperkalemia.
- Consider prior to release placing 1-2 large bore IVs or IOs and initiating a crystalloid fluid bolus.
- Prepare to administer treatment for hyperkalemia if patient develops signs of dysrhythmia or hemodynamic instability. Treatment should include IV calcium and sodium bicarbonate as well as nebulized albuterol

H

Hypothermia / Head Injury:

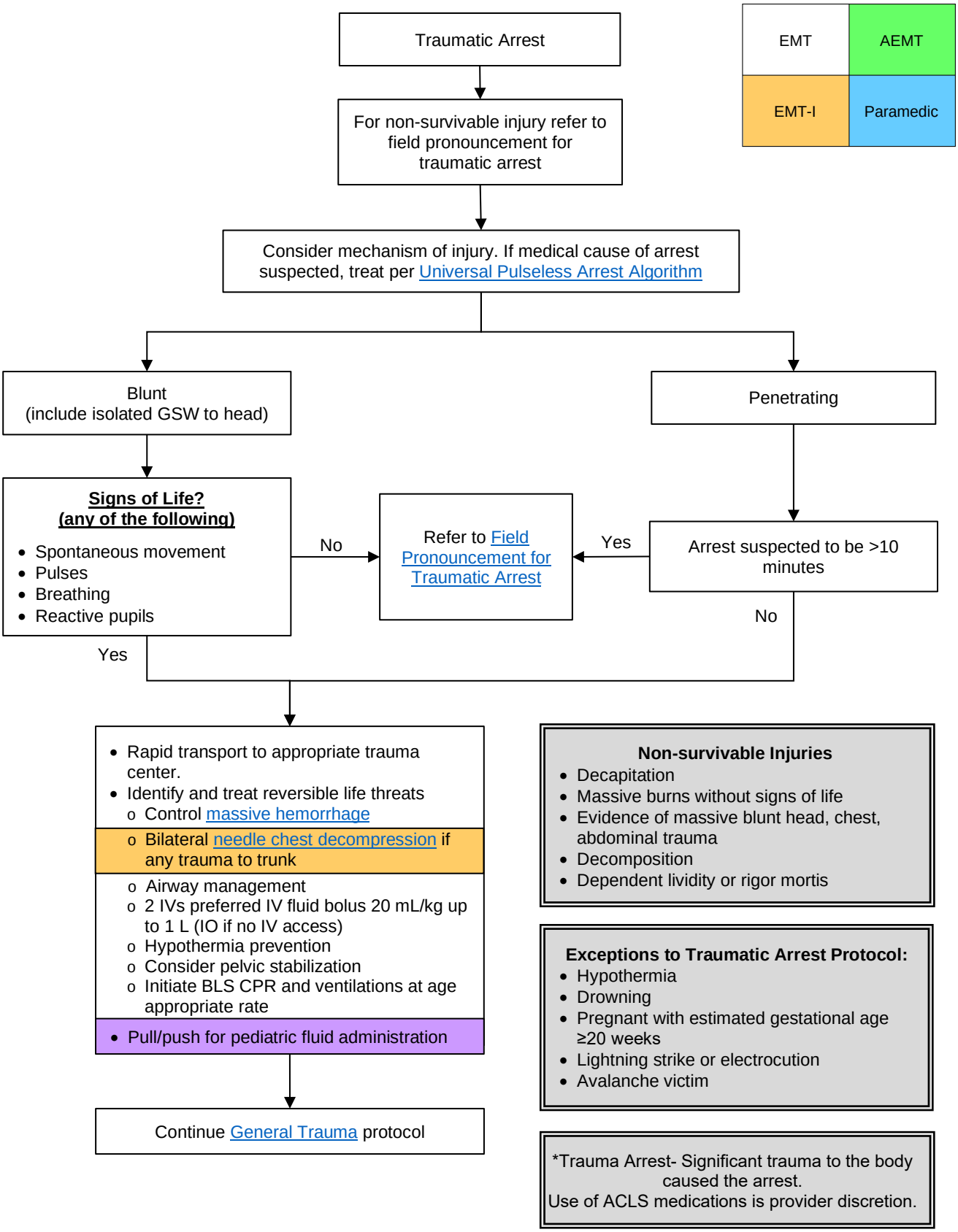
- Prevent and treat hypothermia
- Brief neuro assessment
- Minimize secondary injury, refer to head injury protocol.

- Consider spinal motion restriction
- Assess vital signs
- Consider advanced airway management

- Ongoing assessment, including full head-to-toe
- Complete other care / interventions according to appropriate trauma protocol
  - o Head
  - o Face/Neck
  - o Spinal
  - o Chest
  - o Abdominal/Pelvic
  - o Extremity
- Re-assess for changes in patient condition and treat accordingly
- Prepare patient for transfer of care

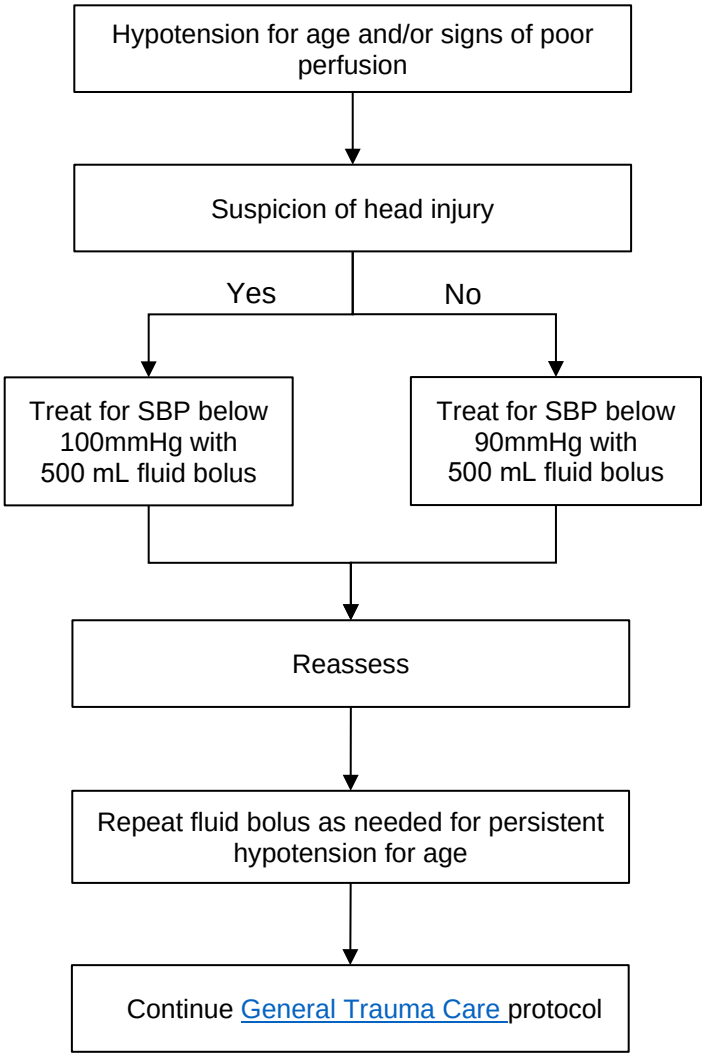
Approved by PGFPD Medical Director July 2023

8010 TRAUMATIC ARREST



*Approved by PGFPD Medical Director March 2024

8020 TRAUMATIC SHOCK



EMT	AEMT	EMT-I	Paramedic

Extended Care Supplement

Consider Non-Hypovolemic Causes of Shock

- Other causes of traumatic shock may include:
  - o Tension Pneumothorax
  - o Pericardial Tamponade
  - o Neurogenic
- Treat other causes as indicated (e.g. needle decompression)
- Rapid treatment and transport to a trauma facility remains priority in all cases of traumatic shock

Hypotension for Age

Age	Blood Pressure
<1 year	<70 mmHg
1-10 years	<70 + (2 x age in years)
>10 years	<90 mmHg
≥65 years	<110 mmHg

Tachycardia for Age

Age	Heart Rate
<1 year	>160 bpm
1-2 years	>150 bpm
2-5 years	>140 bpm
5-12 years	>120 bpm
>12 years	>100 bpm

Pediatric Minimum Blood Pressure with TBI

Age	Minimum SBP (mmHg)
0-23 months	75
2-5 years	80
6-8 years	85
9-12 years	90

Pediatric Fluid Administration

- For children <40 kg or not longer than length-based tape, hand pull/push fluid with a 60 mL syringe utilizing a 3 way stop cock
- Hypotension is a late sign in pediatric shock patients

Pediatric Shock

Signs of Compensated Shock

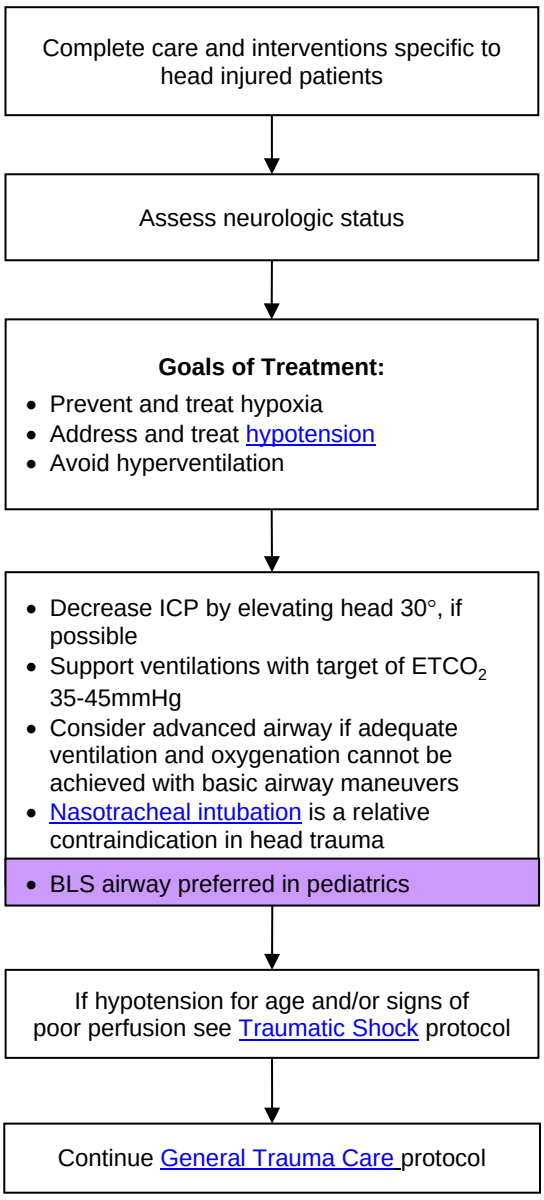
- Normal mental status
- Normal systolic blood pressure
- Tachycardia
- Prolonged (>2 seconds) capillary refill
- Tachypnea
- Cool and pale distal extremities
- Weak peripheral pulse

Signs of Decompensated Shock

- Decrease mental status
- Weak central pulses
- Poor color
- Hypotension for age

Approved by PGFPD Medical Director July 2023

8030 HEAD TRAUMA



EMT	AEMT	EMT-I	Paramedic
Extended Care Supplement			

Approved by PGFPD Medical Director July 2023

8040 FACE AND NECK TRAUMA

Complete care and interventions specific to face and neck trauma

- Clear airway
- Rapid trauma assessment
- Consider spinal motion restriction
- Assess for need for airway management

If laryngeal trauma, avoid intubation if patient can be oxygenated by less invasive means

For severe airway bleeding:

- Use direct pressure if able without obstructing airway
- Consider advanced airway if adequate ventilation and oxygenation cannot be achieved with basic airway maneuvers
- BLS airway preferred in pediatrics

- Complete neuro exam
- Assess for subcutaneous air
- Cover/protect eyes as indicated
- Do not try to block drainage from ears, nose

- Rapid transport to appropriate Trauma Center
- Suction airway as needed

If hypotension for age and/or signs of poor perfusion see Traumatic Shock protocol

Consider pain management

Continue General Trauma Care protocol

EMT	AEMT	EMT-I	Paramedic
Extended Care Supplement			

Facial Injury Considerations:

- Nasotracheal intubation is a relative contraindication in suspected head trauma or grossly unstable mid-face trauma
- Orbital area fractures should be of high concern for serious ocular injury and sequela
- Save avulsed teeth in moist gauze, if possible
- Be attentive to airway and suctioning, as bleeding, avulsed teeth, or other tissue can become an airway obstruction, especially with supine positioning

Eye Injury Considerations:

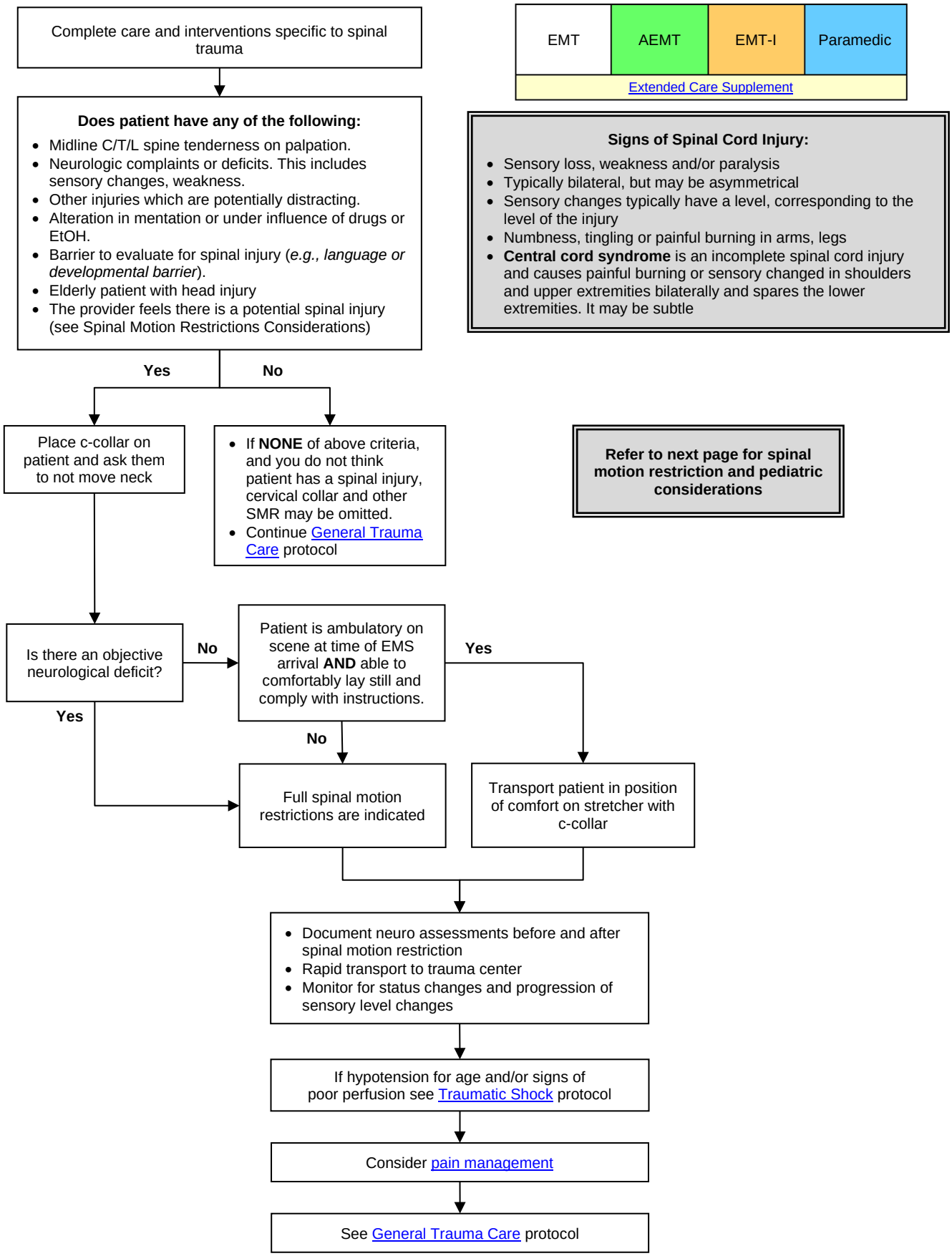
- Cover and protect eyes as indicated by injury type; do not apply pressure to eyes
- Orbital area fractures should be of high concern as they can result in ocular muscle entrapment and ocular compartment syndrome

Neck Injury Considerations:

- Spinal motion restriction is not routinely indicated for penetrating neck injury, but should be placed in the presence of neurologic deficit
- Laryngeal trauma should be suspected with the following:
  - Voice changes and stridor
  - Respiratory distress
  - External signs of bruising, swelling, or bleeding

Approved by PGFPD Medical Director July 2023

8050 SPINAL TRAUMA



Approved by PGFPD Medical Director July 2023

8050 SPINAL TRAUMA

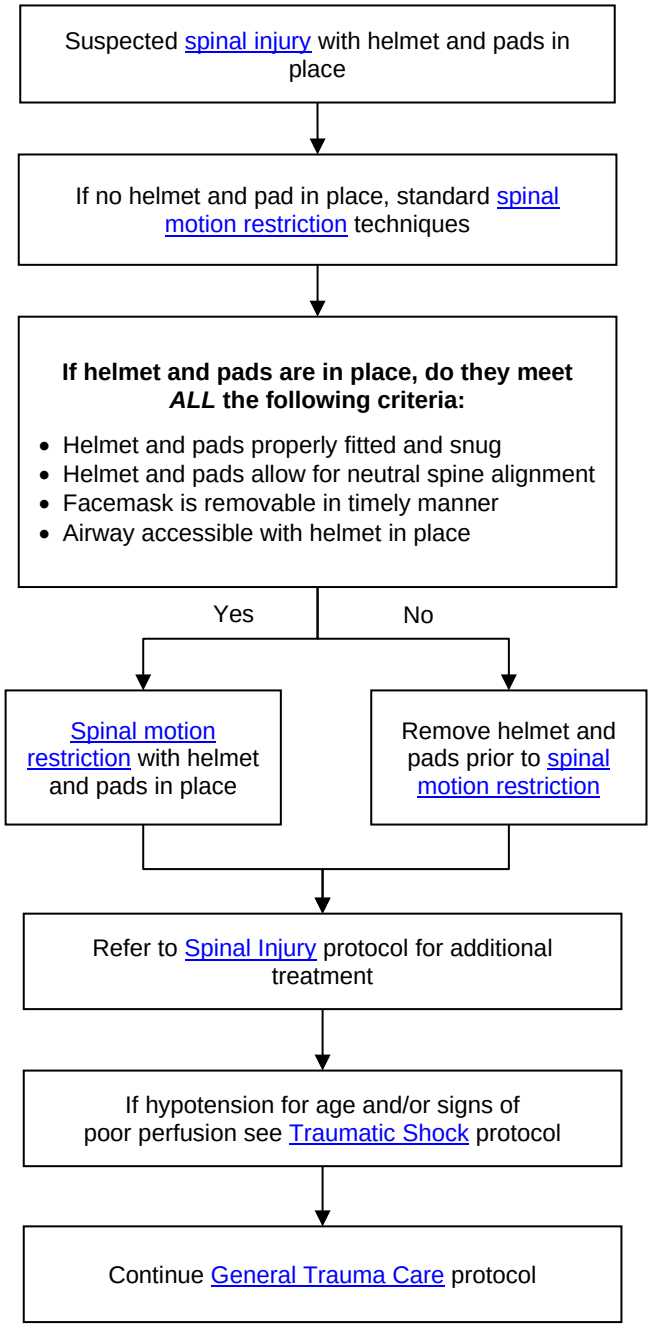
Spinal Motion Restriction Considerations

- If patient in athletic safety equipment, refer to Suspected Spinal Injury with Athletic Equipment protocol
- If for any reason you suspect the patient has a spinal injury, then take measures to prevent inadvertent movement of the spine utilizing spinal motion restriction.
- Patients over the age of 65 are at higher risk of spinal injuries, even from ground-level falls.
- Use caution when assessing for spinal injury in elderly patients, who are at much higher risk and may have minimal or even no symptoms of neck pain despite c-spine injury.
- Consider spinal motion restriction for patients with high-risk mechanism.
- Communicate to receiving facility spinal motion restriction is in place.
- Neurological exam documentation is MANDATORY in ALL patients with potential spinal trauma.
- Cervical collar is not indicated in isolated penetrating neck trauma.
- If a standard cervical collar device cannot be used for some reason, consider use of alternative devices for cervical motion restriction (e.g. foam, towels, etc.)

Pediatric Considerations:

- Age alone should not be a factor in decision-making for prehospital spinal care, both for the young child and the child who can reliably provide a history.
- Spinal motion restriction should be applied if the patient has any of the following in addition to the algorithm:
  - Patient not moving neck
  - Numbness and weakness
  - Torso injury or pelvic instability
  - High impact diving injury
- Additional padding under the shoulders is needed for infants and young children up to age 8 to avoid flexion of the neck.
- A car seat is not acceptable for spinal motion restriction. If spinal motion restriction is deemed necessary, the child should be removed from the car seat and placed supine.

8055 SPINAL TRAUMA WITH ATHLETIC EQUIPMENT



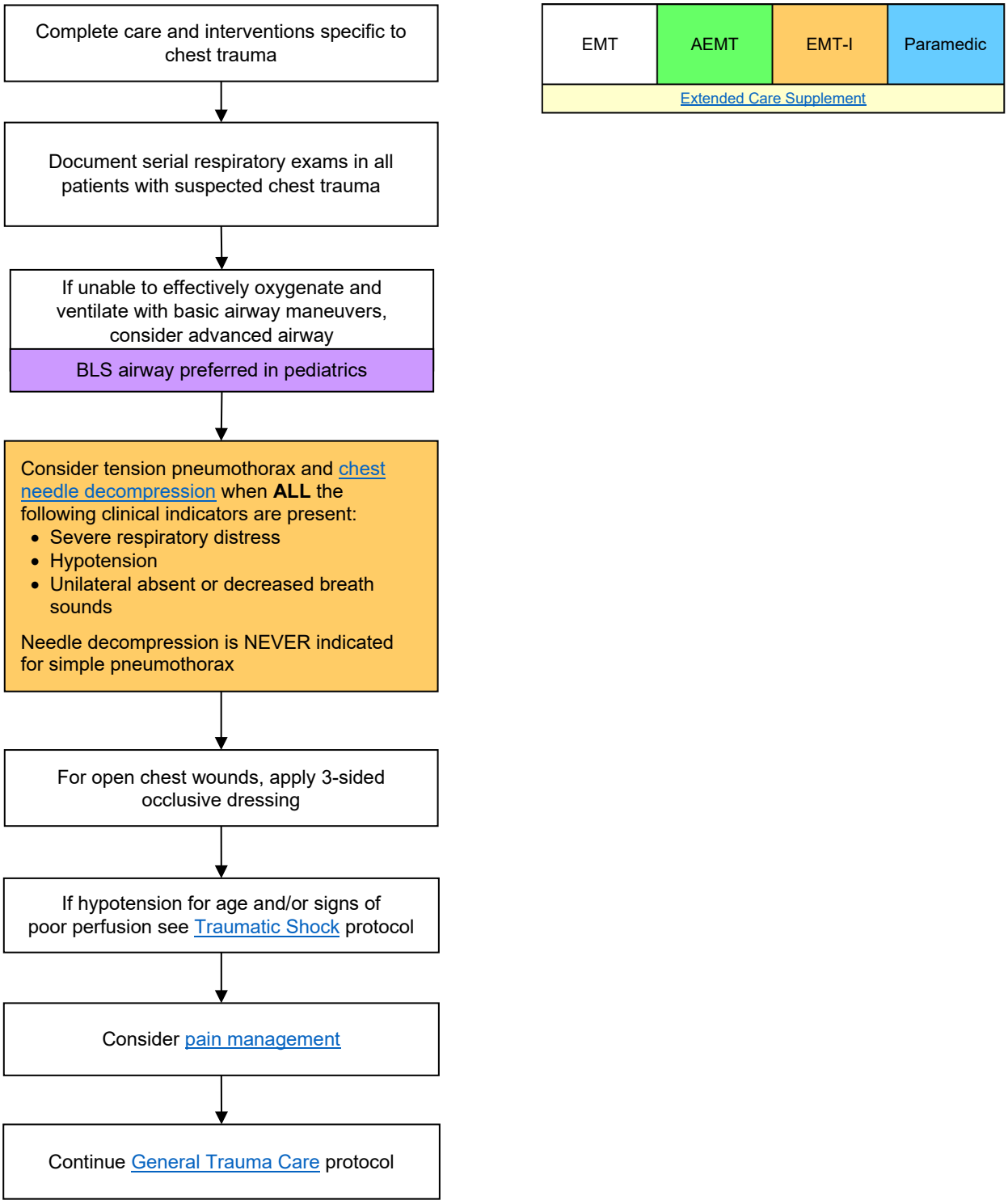
EMT	AEMT	EMT-I	Paramedic

Overview

- Do not remove helmet or shoulder pads prior to EMS transport unless they are interfering with the management of acute life-threatening injuries.
- The helmet and pads should be considered one unit. Therefore, if one is removed, then the other should be removed as well to assure neutral spine alignment.
- All athletic equipment is not the same. Athletic Trainers on scene should be familiar with equipment in use and be able to remove facemask prior to, or immediately upon, EMS arrival.

Approved by PGFPD Medical Director July 2023

8060 CHEST TRAUMA



Approved by Platteville Gilcrest FPD Medical Director March 2024.

8070 ABDOMINAL AND PELVIC TRAUMA

Complete care and interventions specific to abdominal / pelvic trauma

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If concern for blunt pelvic trauma with hypotension apply pelvic binder or wrap

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For penetrating or eviscerating trauma:

- Cover wounds, viscera with saline moistened gauze dressing
- Do not attempt to repack exposed viscera

↓

If hypotension for age and/or signs of poor perfusion see Traumatic Shock protocol

↓

Consider pain management

↓

Continue General Trauma Care protocol

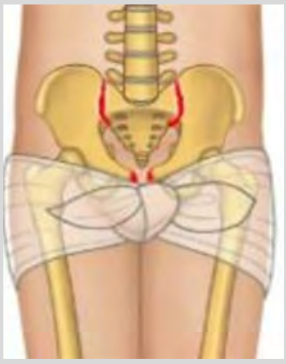
EMT	AEMT	EMT-I	Paramedic
Extended Care Supplement			

Pediatric patients are more vulnerable to blunt abdominal injury due to:

- Relatively compact torsos
- Larger viscera, especially liver and spleen, which extend below the costal margin
- Less overlying fat and weaker abdominal musculature

Pelvic Trauma Considerations:

- Pelvic injuries from high-energy trauma can cause concomitant injuries, such as: hemorrhage, intra-abdominal injury, GI/GU injury, and neurologic injury
- Elderly patients may sustain significant pelvic injury from seemingly low-energy trauma
- Unstable pelvic injuries, such as open book fractures, can be associated with severe retroperitoneal hemorrhage
- Providers should have a low threshold to apply a pelvic binder in hemodynamically stable or unstable blunt trauma patients
- Pelvic binders should be placed around the greater trochanters; over-tightening can worsen injuries



8080 EXTREMITY TRAUMA

EMT	AEMT
EMT-I	Paramedic

Complete care and interventions specific to extremity trauma and appropriate exposure of injury as indicated

Apply tourniquet for life-threatening bleeding

Fracture / Dislocation

Control bleeding with direct pressure to area or vessel

- Splint in position of comfort and best anatomic position
- Assess for circulation and neurologic function before and after splinting

Amputation

Total Amputation

Amputated part:

- Cover with moist, sterile dressing
- Place in sealed plastic bag
- Keep part cool for transport, if possible
- Do not allow freezing of part

Stump:

- Cover with moist, sterile dressing covered by dry dressing

Partial Amputation

- Cover with moist, sterile dressing
- Splint near-amputated part in anatomic position to preserve intact function

Control bleeding with direct pressure to area or vessel

If hypotension for age and/or signs of poor perfusion see Traumatic Shock protocol

Consider pain management

Continue General Trauma Care protocol

Fracture / Dislocation Considerations:

- Vascular compromise is an emergent concern; rapid transport to a trauma center is priority
- Consider potential for internal hemorrhage with any femur fracture
- Apply traction splint to suspected mid-shaft femur fracture when overall patient condition allows for procedure in field
- If open fracture, avoid allowing the bone ends to retract back into the wound during stabilization, splint in place.

Amputation Considerations:

- Limb preservation and reattachment is an emergent concern; rapid transport to a trauma center is priority
- Perform and report neurologic findings for affected limb
- Maintain awareness for associated exposed fractured bone that could compromise hemorrhage control or cause provider injury

Approved by PGFPD Medical Director July 2023

8090 BURNS

Complete care and interventions specific to burns once active burning is stopped

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If airway involvement:
- Administer high flow oxygen
- Manage airway and assist ventilations as indicated

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- Consider carbon monoxide (CO) / cyanide (CN) with closed space involvement
- If patient is unconscious or in pulseless arrest initiate resuscitation and administer hydroxocobalamin

↓

- Evaluate degree and body surface area (BSA) involved
- If determined to be a critical burn:
  - Administer fluids per ABA recommendations
  - Consider transport to burn center

↓

- Remove all clothing and jewelry as soon as possible
- Protect patient from hypothermia
- Dress burns with dry sterile dressings

↓

If hypotension for age and/or signs of poor perfusion see Traumatic Shock protocol

↓

Consider pain management

↓

Continue General Trauma Care protocol

EMT	AEMT	EMT-I	Paramedic
Extended Care Supplement			

Burn Considerations:

Critical Burn:
- 2º > 30% BSA
- 3º > 10% BSA
- Respiratory injury, facial burn
- Associated injuries, electrical or deep chemical burns, underlying PMH (cardiac, DM), age < 10 or > 50 yrs.

Types of Burns:
- Thermal: remove from environment
- Chemical: brush off or dilute chemical. Consider HAZMAT
- Electrical: make sure patient is de-energized and suspect internal injuries

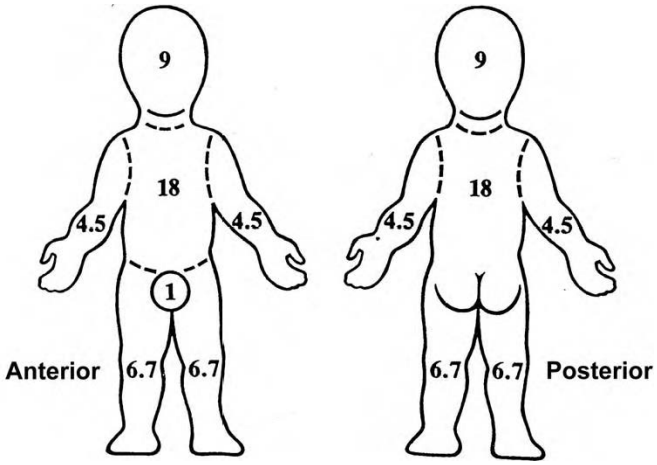
ABA Recommended Prehospital Fluid Therapy

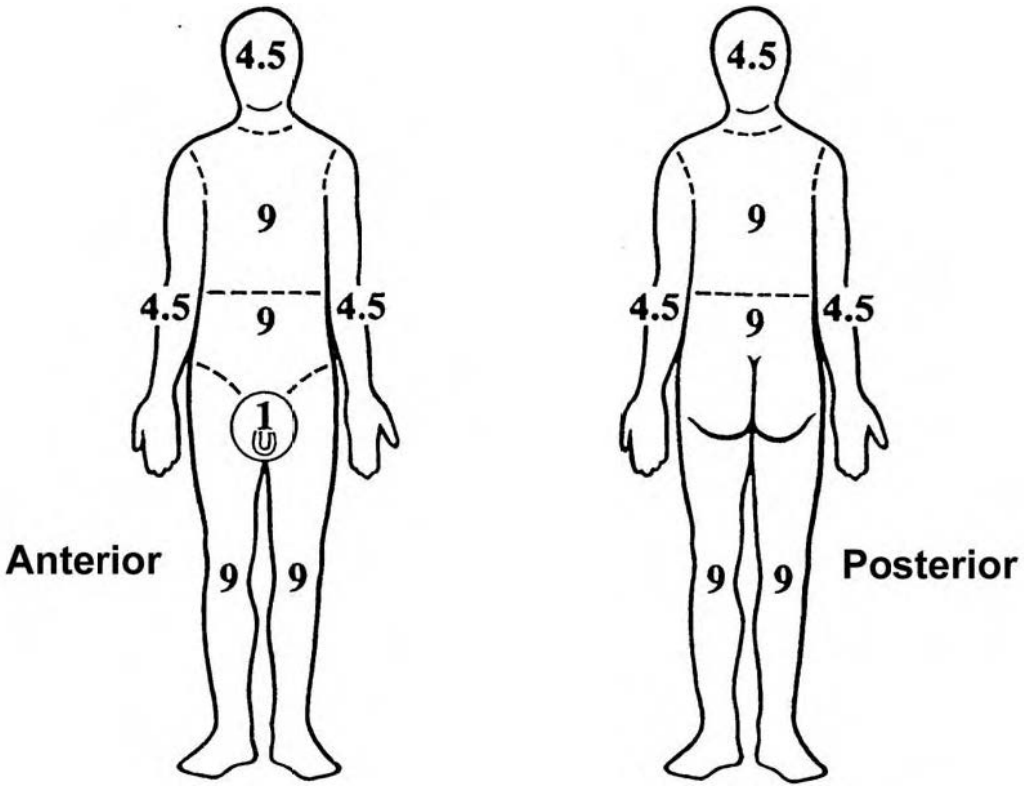
Age	Fluid Amount
14 and older	500 mL/hr NS or LR
5 - 13 years	250 mL/hr NS or LR
Younger than 5	125 mL/hr D5W, NS or LR

If no signs of clinical hypovolemia or shock, large volume of IV fluid not needed.

Burn Transport Considerations:
- If there is a higher concern for trauma, transportation to an appropriate trauma center is the priority
- Consider direct transport of isolated burns to designated burn center if time and condition allows

8095 Rule of Nine's

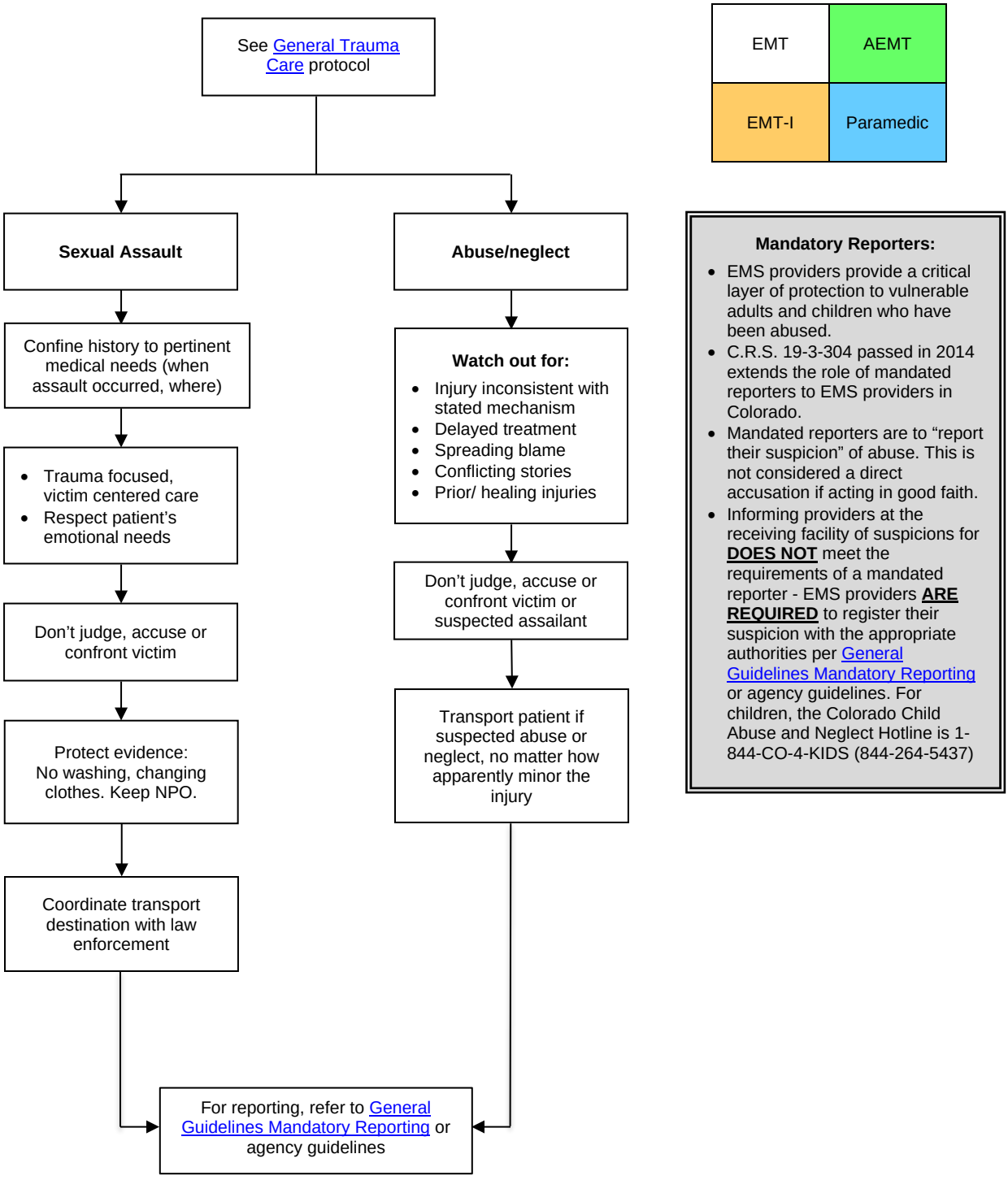




Approved by Platteville Gilcrest FPD Medical Director July, 2020.

8100 SPECIAL TRAUMA SCENARIOS PROTOCOL

Coordinate transport destination with law enforcement



Approved by PGFPD Medical Director July 2023

8110 TRAUMA IN PREGNANCY

- Complete care and interventions specific to trauma in pregnancy
- Treatment priority is the mother
- Transport all patients with any thoracic, abdominal, or pelvic injury / complaint

EMT	AEMT
EMT-I	Paramedic

Extended Care Supplement

Estimated Gestational Age (EGA) < 20 weeks

- Transport in position of comfort or spinal motion restriction as indicated

Estimated Gestational Age (EGA) ≥ 20 weeks

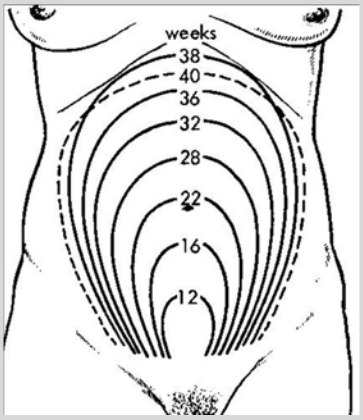
- Avoid supine position:
  - Place in left lateral recumbent position if possible
  - If immobilized tilt backboard 15 to 30 degrees to the left side
- Assure receiving trauma center is aware of pregnancy and EGA
- Non-transport is a high-risk refusal, base contact is strongly recommended even for seemingly minor mechanisms

If hypotension for age and/or signs of poor perfusion see Traumatic Shock protocol

Continue General Trauma Care protocol

Estimated Gestational Age (EGA)

If EGA ≥ 20 weeks, consider two patients: mother and fetus. Estimation of gestational age may be made based on fundal height by palpating for top of uterus:



If uterus is at umbilicus, then EGA > 20 weeks

Estimation by Last Menstrual Period:
Due Date = LMP + 9 months + 7 days
EGA = current date - date of last menstrual period
If available, utilize pregnancy wheel to determine EGA.

Approved by PGFPD Medical Director July 2023

8120: Three Minute Protocol

Indication:

Penetrating Trauma:

- Head, Neck, Chest, Abdomen, Pelvis,

With the above specific findings the following should occur:

- Early notification of the emergency department.
- Emergency transport to the appropriate facility.
- Helicopter utilization with ground transport times that exceed 15 minutes.

Note: Maximum of 3 minutes on scene, unless Documented Extenuating Circumstances

8130: Trauma Team Activation

FULL Trauma Team Criteria

Persons who sustain Injury with any of the following:

PRIMARY SURVEY:

	Adult (15+)	Child (0-14)	
Airway	Unable to adequately ventilate. Intubated or assisted ventilation.	Unable to adequately ventilate. Intubated or assisted ventilation.	
Breathing	Resp. rate < 10 or > 30/min.	Any sign of resp. insufficiency (hypoxia, accessory muscle use, grunting)	
Circulation	Systolic Blood Pressure (BP/SBP) < 90 mmHg or < 110 for age ≥ 65	Any sign of abnormal perfusion (cap refill > 2sec; BP low for age)	
		Age	SBP (mm/Hg)
		< 1 yr. 1 – 10 yrs. > 10 yrs.	< 60 < 70 + 2x < 90
Deficit	GCS Motor Score ≤ 5 OR Total GCS Score ≤ 8	AVPU – Resp. to Pain or Unresponsive	

- ☐ Deterioration of previously stable patient that meets criteria
- ☐ Transfers requiring blood transfusion to maintain vital signs
- ☐ ED physician discretion

SECONDARY SURVEY: ANATOMIC

- Penetrating injuries to the head, neck, torso or extremities proximal to elbow/knee
- Open or depressed skull fracture
- Paralysis or neurological deficit, suspected spinal cord injury
- Flail Chest (chest wall instability or deformity)
- Unstable pelvic fracture
- Amputation proximal to the wrist or ankle
- Two or more proximal long bone fractures (humerus or femur)
- Crushed, degloved, mangled, or pulseless extremity

uchealth

8140: Trauma Team Activation

LIMITED Trauma Team Criteria

Persons who sustain injury within 24 hours with any of the following:

MECHANISM OF INJURY

Falls (adult): > 20 ft.; **or** (child): > 15 ft. or 3x height

High risk auto crash, with:

- ☐ Intrusion of vehicle ≤ 12" in occupant compartment; **or** > 18" other site
- ☐ Ejection (partial or complete) from automobile
- ☐ Death in same passenger compartment

Auto versus pedestrian/cyclist thrown, run over **or** with significant impact

Motorcycle crash > 20 mph

High energy dissipation or rapid decelerating incidents, ie:

- ☐ Ejection from motorcycle, ATV, animal, etc.
- ☐ Striking fixed object with momentum
- ☐ Blast or explosion

High energy electrical injury

Burns > 10% TBSA (2° or 3°) and/or inhalation injury

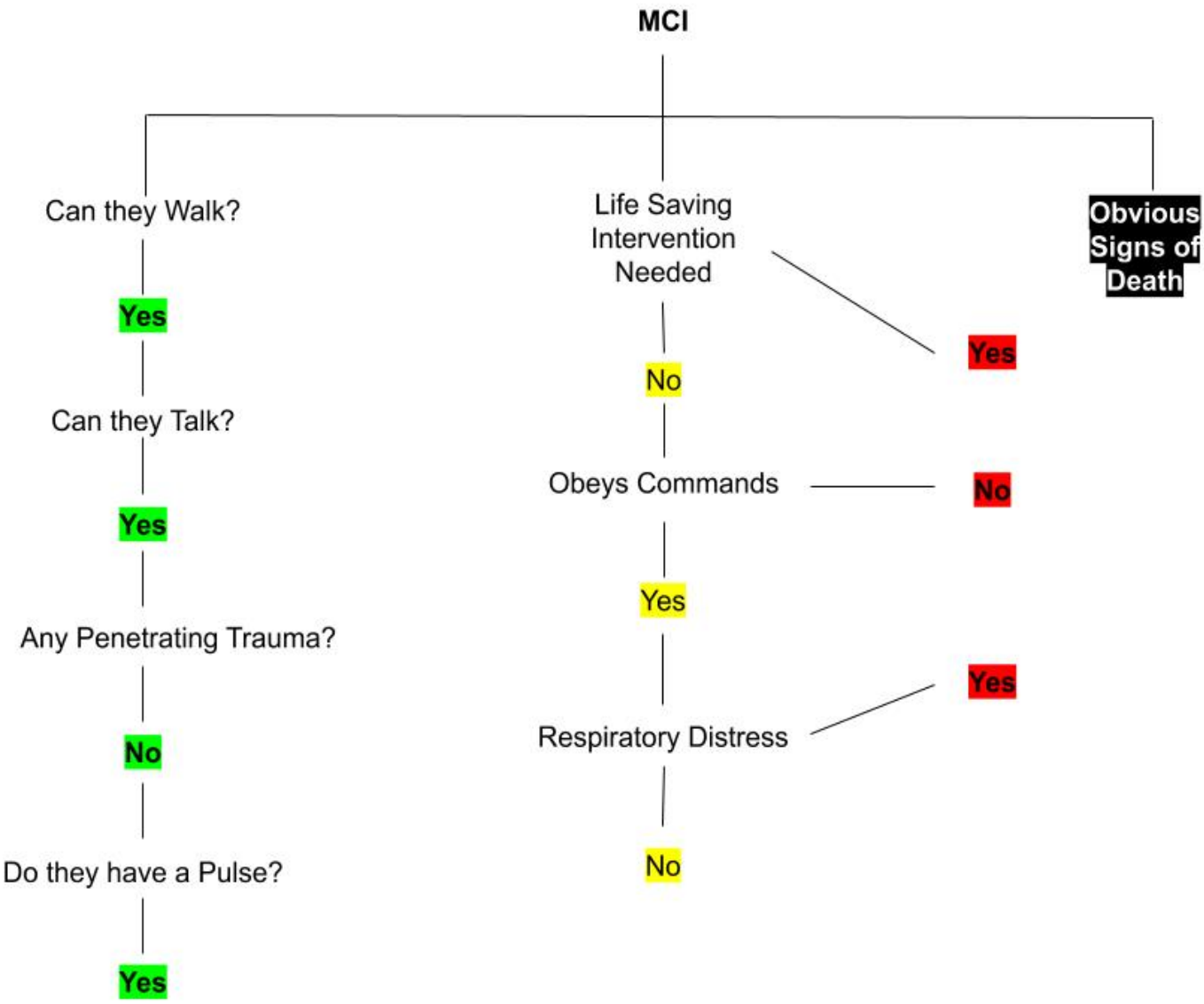
Suspected non-accidental trauma

EMS provider judgment

Version 10.2020

uchealth

8150 Triage Algorithm



Approved by Platteville Gilcrest FPD Medical Director January 2020.

8055 CRUSH INJURIES

General Trauma Care Protocol

EMT, EMT-IV | AEMT | EMT-I | Paramedic

Apply tourniquet to crushed extremity prior to release if entrapment has been > 2 hrs

- Consider 1-2 large bore IVs or IO
- Administer 20 mg/kg bolus Normal Saline

Cardiac Monitor / 12-lead

Provider Safety should be the highest priority.

All interventions should only be performed if safety will not be compromised.

Entrapment greater than 2 hours?

No

- Administer sodium bicarbonate 50mEq IV/IO immediately prior to release
- If cardiac changes present, contact medical control

Yes

- If peaked T waves, widening QRS or Loss of P wave noted
- OR if hemodynamically unstable
- OR Asystole / PEA / VT / VF
  - Administer **Albuterol** 10mg (in 12mL) continuous to a max of 20mg
  - **Calcium Gluconate or Calcium Chloride** 1 gm IV/IO, slow bolus over 2-3 minutes. If arrhythmia or EKG changes still present after 5 minutes, contact medical control for a possible second dose.

- Manage severe pain as needed per protocol
Note: Fentanyl is preferred due to lack of vasodilation properties

- Monitor and transport to appropriate Trauma Center
- Treat other injuries per protocol

Special Considerations

- *Contact medical control early and often*
- Monitor the involved extremities for ischemia using the six P's (Pain, Pallor, Pulselessness, Paralysis, Paresthesia, Poikilothermia [if the limb feels cooler than the temperature of the environment])
- Do ***NOT*** use lactated Ringer's IV solution
- If entrapment is > 2 hours, ensure that pt has received 2 L of normal saline prior to release of entrapment

Approved by Platteville Gilcrest FPD Medical Director August 2019.

9005 MEDICATIONS

ACETAMINOPHEN (TYLENOL)

Description

Acetaminophen elevates the pain threshold and readjusts hypothalamic temperature-regulatory center. *Relieves fever by central action in the hypothalamic heat-regulating center.

Onset & Duration

- Onset oral 215-30 minutes
- Peak effect: 1 hour
- Duration: 3-4 hours

Indications

- Mild pain, moderate, or severe pain.
- *For relief of fever in adult and pediatric patients.

Contraindications

- History of allergy to acetaminophen
- Chronic liver disease
- Therapeutic dose of acetaminophen within past 6 hours or greater than 3 gm in last 24 hours.
- Avoid concomitant administration with other acetaminophen-containing medication, such as many prescription opioids (e.g. Percocet) or OTC cough and cold medications.

Adverse Reactions

- Acetaminophen has a wide therapeutic window. Recommended maximum therapeutic doses are less than half the toxic dose.
  - Single toxic dose in a 70 kg adult is greater than 7 gm.
  - Single toxic dose in a child is greater than 150 mg/kg.
  - Chronic supratherapeutic acetaminophen poisoning is possible as many medications contain acetaminophen.
- Liver injury (hepatotoxicity) can occur from either a single large overdose or repeated supratherapeutic ingestion of acetaminophen. Therefore, it is important to determine if your patient has already taken a therapeutic dose of acetaminophen within past 6 hours before you administer.
- Hypersensitivity and allergic reactions have been reported but are rare.

Dosage and Administration

Adult:

1000 mg PO

Pediatric:

15 mg/kg PO – ***SEE CHART***

Weight	Age	PO Dose (160 mg/5 mL)
n/a	< 6 months	BASE CONTACT
5-8kg	6 months -12 months	2.5ml (80mg)
9-11kg	1-2 years	4ml (128mg)
12-16kg	2-3 years	5ml (160mg)
17-21kg	4-5 years	7.5ml (240mg)
22-27kg	6-8 years	10ml (320mg)
28-33kg	9-10 years	12.5ml (400mg)
34-43kg	11-12 years	15ml (480mg)

Protocol

- Pain management

*Approved by Platteville Gilcrest FPD Medical Director January, 2021

9010 MEDICATIONS

ADENOSINE (ADENOCARD)

Description

Adenosine transiently blocks conduction through the AV node thereby terminating reentrant tachycardias involving the AV node. It is the drug of choice for AV nodal reentrant tachycardia (AVNRT, often referred to as “PSVT”). It will not terminate dysrhythmias that do not involve the AV node as a reentrant limb (e.g. atrial fibrillation).

Onset & Duration

- Onset: almost immediate
- Duration: 10 sec

Indications

- Narrow-complex supraventricular tachyarrhythmia after obtaining 12 lead ECG (This may be the only documented copy of the AVRNT rhythm)
- Pediatric administration requires call in for direct verbal order

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Contraindications

- Any irregular tachycardia. Specifically never administer to an irregular wide-complex tachycardia, which may be lethal
- Heart transplant

Adverse Reactions

- Chest pain
- Shortness of breath
- Diaphoresis
- Palpitations
- Lightheadedness

Drug Interactions

- Methylxanthines (e.g. caffeine) antagonize adenosine, a higher dose may be required
- Dipyridamole (persantine) potentiates the effect of adenosine; reduction of adenosine dose may be required
- Carbamazepine may potentiate the AV-nodal blocking effect of adenosine

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Dosage and Administration

Adult:

12 mg IV bolus, rapidly, followed by a normal saline flush.
Additional dose of 12 mg IV bolus, rapidly, followed by a normal saline flush.
Contact medical control for further considerations

Pediatric:

Children who are stable with AVNRT generally remain so and transport is preferred over intervention.

CONTACT BASE 0.1 mg/kg IV bolus (max 6 mg), rapidly followed by normal saline flush.
Additional dose of 0.2 mg/kg (max 12 mg) rapid IV bolus, followed by normal saline flush.

9010 MEDICATIONS

Protocol

- Tachyarrhythmia with Poor Perfusion

Special Considerations

- Reliably causes short lived but very unpleasant chest discomfort. Always warn your patient of this before giving medication and explain that it will be a very brief sensation
- May produce bronchospasm in patients with asthma
- Transient asystole and AV blocks are common at the time of cardioversion
- Adenosine is not effective in atrial flutter or fibrillation
- Adenosine is safe in patients with a history of Wolff-Parkinson-White syndrome if the rhythm is regular and QRS complex is **narrow**
- A 12-lead EKG should be performed and documented, when available
- Adenosine requires continuous EKG monitoring throughout administration

9020 MEDICATIONS

ALBUTEROL SULFATE (PROVENTIL, VENTOLIN)

Description

- Albuterol is a selective ß-2 adrenergic receptor agonist. It is a bronchodilator and positive chronotrope.
- Because of its ß agonist properties, it causes potassium to move across cell membranes inside cells. This lowers serum potassium concentration and makes albuterol an effective temporizing treatment for unstable patients with hyperkalemia.

Onset & 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 injuries pr suspension injury with peaked T waves, widening QRS or loss of P wave; or hemodynamically unstable*
- Hyperkalemia: Peaked T waves, new wide complex rhythm, (see 4150)

Contraindications

- Severe tachycardia is a relative contraindication

Adverse Reactions

- Tachycardia
- Palpitations
- Dysrhythmias

Drug Interactions

- Sympathomimetics may exacerbate adverse cardiovascular effects.
- ß-blockers may antagonize albuterol.

How Supplied

MDI: 90 mcg/metered spray (17-g canister with 200 inhalations)
Pre-diluted nebulized solution: 2.5 mg in 3 ml NS (0.083%)

Dosage and Administration

Adult:

Single Neb dose
Albuterol sulfate solution 0.083% (one unit dose bottle of 3.0 ml), by nebulizer, at a flow rate (6-8 lpm) that will deliver the solution over 5 to 15 minutes. May be repeated twice (total of 3 doses).
Continuous Neb dose
In more severe cases, place 3 premixed containers of albuterol (2.5 mg/3ml) for a total dose of 7.5 mg in 9 ml, into an oxygen-powered nebulizer and run a continuous neb at 6-8 lpm.
Crush Injuries dose
Administer 10 mg (in 12 mL) continuous to a max of 20 mg

Pediatric:

Single Neb dose
Albuterol sulfate 0.083% (one unit dose bottle of 3.0 ml), by nebulizer, at a flow rate (6-8 lpm) that will deliver the solution over 5-15 minutes. May be repeated twice during transport (total of 3 doses).

*Approved by Platteville Gilcrest FPD Medical Director August 2019.

9020 MEDICATIONS

Protocol

- Adult Wheezing
- Pediatric Wheezing
- Allergy and Anaphylaxis
- Crush Injuries

Special Considerations

- 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.

*Approved by Platteville Gilcrest FPD Medical Director August 2019.

9030 MEDICATIONS

AMIODARONE (CORDARONE)

Description

Amiodarone has multiple effects showing Vaughn-Williams Class I, II, III and IV actions with a quick onset. The dominant effect is prolongation of the action potential duration and the refractory period.

Indications

- Pulseless arrest in patients with shock-refractory or recurrent VF/VT
- Wide complex tachycardia not requiring immediate cardioversion due to hemodynamic instability

Precautions

- Wide complex irregular tachycardia
- Sympathomimetic toxidromes, i.e. cocaine or amphetamine overdose
- NOT to be used to treat ventricular escape beats or accelerated idioventricular rhythms

Contraindications

- 2nd or 3rd degree AV block
- Cardiogenic shock

Adverse Reactions

- Hypotension
- Bradycardia

Dosage and Administration

Adult:

- **Pulseless Arrest (Refractory VT/VF):**
  - 300 mg IV bolus.
  - Administer additional 150 mg IV bolus in 3-5 minutes if shock refractory or recurrent VF/VT.
- **Symptomatic VT and undifferentiated wide complex tachycardia with a pulse:**
  - **CONTACT BASE** 150 mg in 100 mL NS IV bolus infusion over 10 minutes.

Pediatric:

- **Pulseless Arrest (Refractory VT/VF):**
  - 5mg/kg IV bolus.
  - **CONTACT BASE** for additional doses.

Protocol

- Universal Pulseless Arrest Algorithm
- Tachycardia with Poor Perfusion

Special Considerations

- A 12-lead EKG should be performed and documented, when available.
- Amiodarone is preferred to adenosine for treatment of undifferentiated WCT with a pulse.

9040 MEDICATIONS

ANTIEMETICS: ONDANSETRON (ZOFRAN), PROMETHAZINE (PHENERGAN), METOCLOPRAMIDE (REGLAN)

Description

- Ondansetron is a selective serotonin 5-HT3 receptor antagonist antiemetic. Ondansetron is the preferred antiemetic, if available.
- Promethazine is a non-selective central and peripheral H-1 type histamine antagonist with anticholinergic properties resulting in antiemetic and sedative effects.
- Metoclopramide is a dopamine antagonist that works by blocking the CNS vomiting chemoreceptor trigger zone (CRT).

Indications

- Nausea and vomiting

Contraindications

- Ondansetron: No absolute contraindication. Should be used with caution in first trimester of pregnancy and should be reserved for only those patient with severe dehydration and intractable vomiting
- Promethazine: age < 2 years, patients with respiratory or CNS depression or allergy to sulfites.
- Metoclopramide: age < 8 years or suspected bowel obstruction.

Adverse Effects:

- Ondansetron: Very low rate of adverse effects, very well tolerated.
- Promethazine: Hypotension, CNS depression, altered mental status, pain on injection, including tissue necrosis with extravasation, extrapyramidal symptoms, urinary retention
- Metoclopramide: Restlessness, agitation, extrapyramidal symptoms, sedation. Increased GI motility – do not use if suspected bowel obstruction.

Dosage and Administration

Ondansetron

Adult:
4 mg IV/IM/PO/ODT. May repeat x 1 dose as needed.

Pediatric ≥ 4 years old:
4 mg IV/PO/ODT

Pediatric 6 months to 4 years old:
2 mg IV/PO/ODT

Pediatric < 6 months:
BASE CONTACT

Promethazine

Adult:
12.5 mg IV. May repeat x 1 dose as needed. Infusion in a 100mL or 500mL IV bag is preferred*..

Metoclopramide

Adult:
10 mg IV/IM.

Pediatric 8-12 years old:
5 mg IV/IM.

Protocol

- Abdominal Pain/Vomiting
- Altitude Illness

Promethazine and Metoclopramide Side effects/Special Notes:

- Drowsiness, dizziness, dry mouth and blurred or double vision are common.
- If hypotension occurs, administer fluid bolus.
- Dystonia and akathisia may occur, and should be treated with Diphenhydramine.
- Elderly may become agitated or disoriented. Consider reducing the dose in elderly patients.
- Due to necrotic nature of Promethazine, an infusion is preferred over IV push.

*Approved by Platteville Gilcrest FPD Medical Director January 2022.

9050 MEDICATIONS

ASPIRIN (ASA)

Description

Aspirin inhibits platelet aggregation and blood clotting and is indicated for treatment of acute coronary syndrome in which platelet aggregation is a major component of the pathophysiology. It is also an analgesic and antipyretic.

Indications

- Suspected acute coronary syndrome

Contraindications

- **Active** gastrointestinal bleeding
- Aspirin allergy
- Less than 16 years old

How Supplied

Chewable tablets 81mg

Dosage and Administration

- 324mg PO

Protocol

- Chest Pain

Special Considerations

- Patients taking vitamin K antagonists (warfarin), heparins (enoxaparin, etc.), direct oral anticoagulants (arelto, Eliquis, etc.) or other anticoagulant medications should still receive aspirin if suspected of having an acute coronary syndrome.

9060 MEDICATIONS

ATROPINE SULFATE

Description

Atropine is a naturally occurring antimuscarinic, anticholinergic substance. It is the prototypical anticholinergic medication with the following effects:

- Increased heart rate and AV node conduction
- Decreased GI motility
- Urinary retention
- Pupillary dilation (mydriasis)
- Decreased sweat, tear and saliva production (dry skin, dry eyes, dry mouth)

Indications

- Symptomatic bradycardia
- 2nd and 3rd degree heart block
- Organophosphate poisoning*

Precautions

- Should not be used without medical control direction for stable bradycardias
- Closed angle glaucoma

Adverse Reactions

- Anticholinergic toxidrome in overdose, think “blind as a bat, mad as a hatter, dry as a bone, red as a beet”

Dosage and Administration

Hemodynamically Unstable Bradycardia
Adult:
1 mg IV/IO bolus.
Repeat if needed at 3-5 minute intervals to a maximum dose of 3 mg. (Stop at ventricular rate which provides adequate mentation and blood pressure)

***Poisoning/Overdose/Organophosphate:** 40kg and up: 2 mg initial dose and 1 mg if frail/elderly. **Base contact for subsequent dosing.(5-10 minutes)**

Pediatric:
0.02 mg/kg IV/IO bolus. Minimum dose is 0.1 mg, maximum single dose 0.5 mg
Under 40kg: 0.02mg/kg IV/IM moderate to severe toxicity. Minimum dose is 0.1 mg. Contact base for additional doses.

CONTACT BASE

Stable Bradycardia and Poisoning/Overdose

Protocol

- Bradycardia with poor perfusion
- Poisoning/Overdose

Special Considerations

- Atropine causes pupil dilation, even in cardiac arrest settings

*Approved by PGFPD Medical Director July 2022.

9070 MEDICATIONS

BENZODIAZEPINES (MIDAZOLAM)

Description

- Benzodiazepines are sedative-hypnotics that act by increasing GABA activity in the brain. GABA is the major inhibitory neurotransmitter, so increased GABA activity *inhibits* cellular excitation. Benzodiazepine effects include anticonvulsant, anxiolytic, sedative, amnestic and muscle relaxant properties. Each individual benzodiazepine has unique pharmacokinetics related to its relative lipid or water solubility.
- Selection of specific agent as preferred benzodiazepine is at individual agency Medical Director discretion.

Onset & Duration

- Any agent given IV will have the fastest onset of action, typical time of onset 2-3 minutes
- Intranasal administration has slower onset and is less predictable compared to IV administration, however, it may still be preferred if an IV cannot be safely or rapidly obtained. Intranasal route has faster onset compared to intramuscular route.
- IM administration has the slowest time of onset.

Indications

- Status epilepticus
- Sedation of the severely agitated/combative patient
- Hyperactive delirium with severe agitation
- Sedation for cardioversion or transcutaneous pacing (TCP)
- Adjunctive agent for treatment of severe pain (e.g. back spasms) in adults that is uncontrolled by maximum opioid or ketamine* dose – **WITH CALL IN ONLY**
- Sedation post intubation when patient is visibly biting at the tube or waking up post ROSC
- Moderate to severe anxiety if oral Ativan is unsuccessful or if oral Ativan will not suffice for proper patient care.

Contraindications

- Hypotension
- Respiratory depression

Adverse Reactions

- Respiratory depression, including apnea
- Hypotension
- Consider ½ dosing in the elderly for all benzodiazepines

Dosage and Administration

Seizure or sedation for cardioversion, transcutaneous pacing or post intubation

***Adult**: **IV/IO route:** 2.5 mg

- Dose may be repeated x 1 after 5 minutes if still seizing. **Contact Base** for more than 2 doses
- 0.05 mg/kg for sedation post intubation. (Contact medical control for further direction if initial dose does not work).

IN/IM route (intranasal preferred): 5 mg

- Dose may be repeated x 1 after 5 minutes if still seizing. **Contact Base** for more than 2 doses

*Approved by Platteville Gilcrest FPD Medical Director March 2024

Pediatric:

IV/IO route 0.1 mg/kg

- Maximum single dose is 2 mg IV. Dose may be repeated x 1 after 5 minutes if still seizing. **Contact Base** for more than 2 doses.

IN/IM route (intranasal preferred): 0.2 mg/kg.

- Maximum single dose is 5 mg IN or IM. Dose may be repeated x 1 after 5 minutes if still seizing. **Contact Base** for more than 2 doses.

***Sedation of severely agitated or combative patient**

Adult:

IV route: 5 mg*
IN/IM route: 5 mg

- If patient still agitated, combative, and disruptive 5 minutes after first benzodiazepine dose, (IMCRASS+3 or +4), switch to Droperidol or Haldol.
- If additional sedation medication needed CONTACT BASESE

Pediatric

- **CONTACT BASE** before any consideration of sedation of severely agitated/combative child

Hyperactive delirium with severe agitation (Adult)

IM Route: 10mg IM.**Contact base** for additional sedation orders.

***Moderate to Severe Anxiety (adult only- contact base for under 16 or 50kg)**

- 1 mg IV or IM. Dose may be repeated in 15 minutes if anxiety does not improve.

Protocol

- Synchronized Cardioversion
- Transcutaneous Pacing
- Seizure
- Poisoning/Overdose
- Agitated/Combative Patient

Special Considerations

- All patients receiving benzodiazepines must have cardiac, pulse oximetry monitoring during transport. Continuous waveform capnography recommended.
- Sedative effects of benzodiazepines are increased in combination with opioids, alcohol, or other CNS depressants.
- Coadministration of opioids and benzodiazepines is discouraged and may only be done with direct physician verbal order.
- In elderly patients > 65 years old or small adults < 50kg, lower doses may be sufficient and effective. Consider ½ dosing in these patients.
- If patient can tolerate oral Ativan it is preferred over IV or IM Midazolam.
- If oral Ativan has been given with no improvement in 15 minutes, only 1 round of Midazolam is allowed.

*Approved by Platteville Gilcrest FPD Medical Director March 2024

9075 MEDICATIONS

BENZODIAZEPINES (DIAZEPAM, LORAZEPAM)- ORAL

Description

- Benzodiazepines are sedative-hypnotics that act by increasing GABA activity in the brain. GABA is the major inhibitory neurotransmitter, so increased GABA activity inhibits cellular excitation. Benzodiazepine effects include anticonvulsant, anxiolytic, sedative, amnestic and muscle relaxant properties. Each individual benzodiazepine has unique pharmacokinetics related to its relative lipid or water solubility.
- Selection of specific agent as preferred benzodiazepine is at individual agency Medical Director discretion.

Onset & Duration

- Any agent given IV will have the fastest onset of action, typical time of onset 2-3 minutes
- Oral administration has slower onset and is less predictable compared to IV administration, however, it may still be preferred if an IV cannot be safely or rapidly obtained or if the patient does not warrant an IV.

Indications

- Severe Anxiety
- Alcohol Withdrawal
- Sedation for Cardioversion or TCP

Contraindications

- Respiratory Depression
- Hypotension

Adverse Reactions

- Respiratory Depression including Apnea
- Hypotension

Dosage and Administration

LORAZEPAM

- ∇ Anxiety: 0.5 mg oral
- ∇ Alcohol withdrawals: 0.5 mg to 1 mg oral

Special Considerations

- All patients receiving benzodiazepines must have pulse oximetry monitoring during transport. Continuous waveform capnography recommended.
- Sedative effects of benzodiazepines are increased in combination with opioids, alcohol, or other CNS depressants.
- Co-administration of opioids and benzodiazepines is discouraged and may only be done with direct physician verbal order.
- In elderly patients > 65 years old or small adults < 50kg, lower doses may be sufficient and effective.

***Approved by Platteville Gilcrest FPD Medical Director March 2024**

Dosage and Administration

LORAZEPAM

- Anxiety: 0.5 mg oral
- Alcohol withdrawals: 0.5mg to 1 mg oral

Special Considerations

- All patients receiving benzodiazepines must have cardiac, pulse oximetry monitoring during transport. Continuous waveform capnography recommended.
- Sedative effects of benzodiazepines are increased in combination with opioids, alcohol, or other CNS depressants.
- Coadministration of opioids and benzodiazepines is discouraged and may only be done with direct physician verbal order.
- In elderly patients > 65 years old or small adults < 50kg, lower doses may be sufficient and effective. Consider 1⁄2 dosing diazepam in these patients. *Max dose is 0.5 mg of Lorazepam for elderly patients.

*Approved by Platteville Gilcrest FPD Medical Director March 2024

9080 MEDICATIONS

CALCIUM

Description

- Cardioprotective agent in hyperkalemia.
- Calcium chloride contains 3 times the amount of elemental calcium contained in the same volume of calcium gluconate. Therefore, 1 g (10 mL) vial of calcium chloride 10% solution contain 273 mg of elemental calcium, whereas 1 g (10 mL) of 10% calcium gluconate contains 90 mg of elemental calcium. For this reason, larger doses of calcium gluconate are required.
- Doses below refer to dose of calcium solution, not elemental calcium.

Indications

- Adult pulseless arrest associated with any of the following clinical conditions:
  - Known hyperkalemia
  - Renal failure with or without hemodialysis history
  - Calcium channel blocker overdose
- **Not indicated for routine treatment of pulseless arrest**
- Calcium channel blocker overdose with hypotension and bradycardia
- Crush or suspension injuries with peaked T waves, widening QRS or loss of P wave; or hemodynamically unstable
- Hyperkalemia: Peaked T waves, new wide complex rhythm, (see 4150)

Contraindications

- Known hypercalcemia
- Suspected digoxin toxicity (i.e. digoxin overdose)

Side Effects/Notes

- Extravasation of calcium chloride solution may cause tissue necrosis.
- Because of the risk of medication error, if calcium chloride is stocked, consider limiting to 1 amp per medication kit to avoid accidental overdose. Calcium gluconate solution will require 3 amp supply for equivalent dose.
- Must give in separate line from IV sodium bicarb to prevent precipitation/formation of calcium carbonate.
- In setting of digoxin toxicity, may worsen cardiovascular function.

Dosage and Administration

Calcium Gluconate 10% Solution

Adult:

- **Pulseless arrest assumed due to hyperkalemia:**
  - 3 g (30 mL) slow IV/IO push
- **Calcium channel blocker overdose with hypotension and bradycardia:**
  - **Contact Base** for order. 3 g (30 mL) slow IV/IO push. Dose may be repeated every 10 minutes for total of 3 doses
- **Crush injuries:**
  - 1 g (10 mL) slow IV/IO push (over 2-3 minutes)
  - **Contact Base** for repeat dose if no EKG change after 5 minutes

Pediatric:

- **Calcium channel blocker overdose with hypotension for age and bradycardia:**
  - **Contact Base** for order. 60 mg/kg (0.6 mL/kg), **not to exceed 3 g** slow IV/IO push not to exceed 2 mL/minute, may repeat every 10 minutes for total of 3 doses

Calcium Chloride 10% Solution

Adult:

- **Pulseless arrest assumed due to hyperkalemia:**
  - 1 g (10 mL) slow IV/IO push
- **Calcium channel blocker overdose with hypotension and bradycardia:**
  - **Contact Base** for order. 1 g (10 mL) slow IV/IO push. Dose may be repeated every 10 minutes for total of 3 doses
- **Crush injuries:**
  - 1 g (10 mL) slow IV/IO push (over 2-3 minutes)
  - **Contact Base** for repeat dose if no EKG change after 5 minutes

Pediatric:

- **Calcium channel blocker overdose with hypotension for age and bradycardia:**
    - **Contact Base** for order. 20 mg/kg (0.2 mL/kg), **not to exceed 1 g** slow IV/IO push not to exceed 1 mL/min, may repeat every 10 minutes for total of 3 doses.

Protocol

- Universal Pulseless Arrest
- Poisoning/Overdose
- Crush Injuries

*Approved by Platteville Gilcrest FPD Medical Director August, 2019.

9090 MEDICATIONS

DEXTROSE

Description

Glucose is the body's basic fuel and is required for cellular metabolism. A sudden drop in blood sugar level will result in disturbances of normal metabolism, manifested clinically as a decrease in mental status, sweating and tachycardia. Further decreases in blood sugar may result in coma, seizures, and cardiac arrhythmias. Serum glucose is regulated by insulin, which stimulates storage of excess glucose from the blood stream, and glucagon, which mobilizes stored glucose into the blood stream.

Indications

- Hypoglycemia
- The unconscious or altered mental status patient with an unknown etiology.

Precautions

- None

Dosage and Administration

Adult:

25 gm (250 mL of a 10% solution) IV/IO infusion
Alternative: 25 gm (50 mL of a 50% solution) IV/IO bolus

Pediatric:

<50 kg administer 5 mL/kg of 10% solution (maximum of 250 mL)

Protocol

- Hypoglycemia
- Universal Altered Mental Status
- Seizures
- Poisoning/Overdose
- Psych/Behavioral

Special Considerations

- The risk to the patient with ongoing hypoglycemia is enormous. With profound hypoglycemia and no IV access consider IO insertion.
- Draw blood sample before administration, if possible.
- Use glucometer before administration, if possible.
- Extravasation may cause tissue necrosis; use a large vein and aspirate occasionally to ensure route patency.
- Dextrose can be irritable to the vein and the vein should be flushed after administration.

9100 MEDICATIONS

DIPHENHYDRAMINE (BENADRYL)

Description

Antihistamine for treating histamine-mediated symptoms of allergic reaction. Also anticholinergic and antiparkinsonian effects used for treating dystonic reactions caused by antipsychotic and antiemetic medications (e.g.: haloperidol, droperidol, reglan, compazine, etc).

Indications

- Allergic reaction
- Dystonic medication reactions or akathisia (agitation or restlessness)
- Used in conjuction with Haldol or Droperidol in a combative patient

Precautions

- Asthma or COPD, thickens bronchial secretions
- Narrow-angle glaucoma
- Patients over 65 years are at greater risk of serious side effects including confusion, urinary
- retention, and dizziness that could lead to fall risk. Half dosing is recommended.

Side effects

- Drowsiness
- Dilated pupils
- Dry mouth and throat
- Flushing

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 IV/IO/IM. Over 65 years 25mg IV/IO/IM
For mild allergic reactions, consider PO administration

Pediatrics:
1 mg/kg slow IV/IO/IM (not to exceed 50 mg)

Protocol

- Allergy/Anaphylaxis

*Approved by Platteville Gilcrest FPD Medical Director January 2022.

DROPERIDOL (INAPSINE) Butyrophenone

Description

- Droperidol is a butyrophenone closely related to haloperidol. Droperidol produces a dopaminergic blockage, a mild alpha-adrenergic blockage, and causes peripheral vasodilation. Its major actions are sedation, tranquilization, and potent anti-emetic effect.

Onset & Duration

- Onset: 3-10 minutes after IM administration.
- Duration: 2-3 hours

Indications

- Primary use for management of agitated/combative patients.
- Second line medication for management of intractable vomiting.
- Combative head injured patients.
- May use in combination with diphenhydramine for sedation of a combative patient.

Contraindications

- Any patient with:
  - Suspected acute myocardial infarction/ACS
  - Systolic blood pressure under 100 mm/Hg, or the absence of a palpable radial pulse
  - Signs of respiratory depression

Side Effects

- Due to the vasodilation effect, droperidol can cause a transient hypotension that is usually self-limiting and can be treated effectively with leg elevated position and IV fluids. Droperidol may cause tachycardia which usually does not require pharmacologic intervention.
- Some patients may experience unpleasant sensations manifested as restlessness, hyperactivity, or anxiety following droperidol administration. This is called akathisia and is treated with diphenhydramine.
- Extra-pyramidal reactions have been noted hours to days after treatment.
- Rare instances of neuroleptic malignant syndrome have been known to occur following treatment using droperidol.

Dosage and Administration

Agitation/Combative

Adult:
IV/IM route: 5 mg slow IV or IM administration. May repeat x1 after 5 minutes to a maximum cumulative dose of 10 mg prior to base contact. **CONTACT BASE** before additional dosing or other medication administration other than diphenhydramine.

Pediatric:
Less than 12 years, **CONTACT BASE**

Hyperactive Delirium with Severe Agitation

IM Route: 10mg IM administration. **Base contact** for additional sedation orders.

Antiemetic:

IV/IM route:
Adult: 1.25 mg slow push.

Pediatric: Not indicated.

Special Considerations

- Due to droperidol's potential effect on QT interval prolongation, all patients receiving droperidol should be placed on the cardiac monitor. Though it is understood that obtaining an ECG on the combative or agitated patient may be difficult, every effort should be made to do so.
- Avoid droperidol in frail or elderly patients due to increased risk of prolonged and over-sedation as well as increased risk of hypotension and prolonged QT. If it must be given, administer ½ typical dose.

Protocol

- Agitated/Combative Patient
- Antiemetics

*Approved by PGFPD Medical Director October 2021

9115 MEDICATIONS

DuoDote™ (NERVE AGENT ANTIDOTE KIT)

Description

Nerve agents can enter the body by inhalation, ingestion, and through skin. These agents are absorbed rapidly and can produce injury or death within minutes. The DuoDote™ Nerve Agent Antidote kit consists of one auto-injector for self and/or buddy administration. One Injector contains 2.1mg atropine and 600mg pralidoxime chloride (2-PAM)

Indications

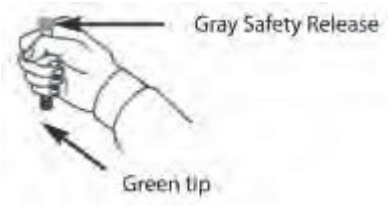
- Suspected nerve agent exposure accompanied with signs and symptoms of nerve agent poisoning

Injection sites

- Outer thigh- mid-lateral thigh (preferred site)
- Buttocks- upper lateral quadrant of buttock (gluteal) in thin individuals

Instructions

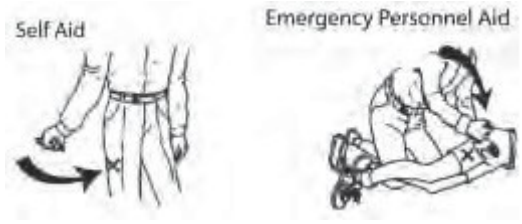
- Place the auto-injector in the dominate hand. Firmly grasp the center of the auto injector with the green tip (needle end) pointing down.



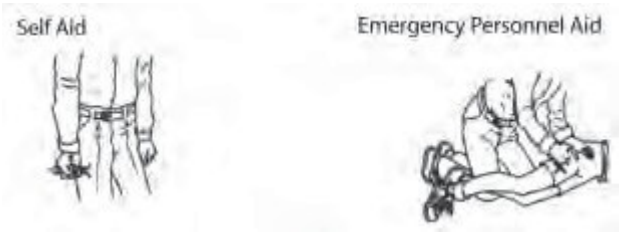
- With the other hand, pull off the gray safety release. The DuoDote™ auto-injector is now ready to be administered.

Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

- The injection site is the mid-outer thigh. The DuoDote™ auto-injector can inject through clothing. However, make sure pockets at the injection site are empty.



- Swing and firmly push the green tip at a 90-degree angle against the mid-outer thigh. Continue to firmly push until you feel the auto injector trigger.



- No more than three (3) sets of antidotes should be administered.

Special Considerations

- Presence of tachycardia is not a reliable indicator of effective treatment due to potential nicotinic effects of nerve agent exposure. The end-point of treatment is clear dry lung sounds.
- Attempt to decontaminate skin and clothing between injections.

Protocol:

- Overdose and Acute Poisoning

Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

9120 MEDICATIONS

EPINEPHRINE (ADRENALIN)

Description

Endogenous catecholamine alpha, beta-1, and beta-2 adrenergic receptor agonist. Causes dose-related increase in heart rate, myocardial contractility and oxygen demand, peripheral vasoconstriction and bronchodilation.

Indications

- Pulseless Arrest
- Anaphylaxis
- Asthma
- Bradycardia with poor perfusion
- Hypotension for age and poor perfusion refractory to fluids or other interventions

Adverse Reactions

- Tachycardia, tachypnea, and tachydysrhythmia
- Hypertension
- Anxiety
- Increased myocardial oxygen demand, monitor for cardiac ischemia

Drug Interactions

- Should not be added to sodium bicarbonate or other alkaloids as epinephrine will be inactivated at higher pH.

Dosage and Administration

Adult:

Pulseless Arrest

1 mg (10 ml of a 1:10,000 solution), IV/IO bolus.
Repeat every 3-5 minutes up to maximum of 3 doses. Additional dose may be considered for recurrent arrest after ROSC or narrow complex PEA.

***Hypotention for age or Bradycardia with hypotension and poor perfusion refractory to other interventions**

Administer push does epinephrine or infuision

Adult Wheezing:

0.3 mg (0.3 ml of a 1:1,000 solution) IM. May repeat dose x 1.

Systemic allergic reaction:

0.3 mg (0.3 ml of a 1:1,000 solution) IM. May repeat dose x 1.

Severe systemic allergic reaction (Anaphylaxis) refractory to IM epinephrine:

Continuous infusion titrated to effect: see Vasopressor infusion

ALTERNATIVE to racemic epinephrine: (for stridor at rest)

5 mL of 1:1,000 epinephrine via nebulizer x 1

Pediatric:

Pulseless arrest:

0.01 mg/kg IV/IO (0.1 ml/kg of 1:10,000 solution).
Subsequent doses repeated every 3-5min: 0.01 mg/kg IV/IO (0.1 ml/kg of 1:10,000 solution)

Bradycardia (CONTACT BASE)

0.01 mg/kg (0.1 ml/kg of 1:10,000 solution) IV/IO

*Approved by Platteville-Gilcrest FPD EMS Medical Director March 2024.

9120 MEDICATIONS

Pediatric Wheezing 1 to 12 years old

0.01 mg/kg (0.01 ml/kg of 1:1,000 solution) IM. May repeat dose x 1 after 20 minutes.
Alternative: 0.15 mg (0.15 mL of 1:1,000) for <25 kg and 0.3 mg (0.3 mL of 1:1,000) for >25 kg. May repeat dose x 1 after 20 minutes.

Moderate to Severe Allergic Reactions

4 months to 12 years

0.01 mg/kg (0.01 ml/kg of 1:1,000 solution) IM. May repeat dose x 1 after 5 minutes.
Alternative: 0.15 mg (0.15 mL of 1:1,000) for <25 kg and 0.3 mg (0.3 mL of 1:1,000) for >25 kg. May repeat dose x 1 after 5 minutes.

Term to <4 months

0.01 mg/kg (0.01 ml/kg of 1:1,000 solution) IM. May repeat dose x 1 after 5 minutes.
Alternative: 0.1 mg (0.1 mL of 1:1,000) May repeat dose x 1 after 5 minutes.

Severe systemic allergic reaction (Anaphylaxis) refractory to IM epinephrine x 3 total doses AND 60 mL/kg NS (administered in 20 mL/kg increments) rapid push (Contact Base):

Dosing error is common. Suggested dosing:

1. Draw up 1 mL of 0.1 mg/mL (1:10,000) epinephrine into a 10 mL syringe
2. Draw up 9 mL of normal saline into the same 10 mL syringe, making a 10 mcg/mL (0.01 mg/mL) solution
3. Administer slow push of 1 mcg/kg (0.1 ml/kg) aliquots as needed

ALTERNATIVE to racemic epinephrine: (for stridor at rest)

5 mL of 1:1,000 epinephrine via nebulizer x 1

Protocol

- Medical Pulseless Arrest Algorithm
- Bradyarrhythmia with poor perfusion
- Neonatal Resuscitation
- Allergy and Anaphylaxis Protocol
- Adult Wheezing
- Pediatric Wheezing
- Vasopressor Infusion

Special Considerations

- May increase myocardial oxygen demand and angina pectoris. Use with caution in patients with known or suspected CAD
- Intramuscular injection into the thigh is preferred route and site of administration. Intramuscular injection of epinephrine in the thigh results in higher concentrations of medication versus intramuscular or subcutaneous injection in the upper arm.

9130 MEDICATIONS

GLUCAGON

Description

Increases blood sugar concentration by converting liver glycogen to glucose. Glucagon also causes relaxation of smooth muscle of the stomach, duodenum, small bowel, and colon.

Onset & Duration

- Onset: variable

Indications

- Altered level of consciousness where hypoglycemia is suspected and IV access is unavailable.
- Hypotension, bradycardia from beta-blocker or calcium channel overdose.

Side Effects

- Tachycardia
- Headache
- Nausea and vomiting

Dosage and Administration

Adult:

Hypoglycemia:

- 1 mg IM

Beta Blocker/Calcium Channel overdose with hypotension and bradycardia:

- 2 mg IV bolus

Pediatric:

Hypoglycemia:

- < 25 kg: 0.5 mg IM.
- > 25 kg: 1 mg IM

Beta Blocker/Calcium Channel overdose with hypotension for age, signs of poor perfusion and bradycardia:

- 0.1 mg/kg IV **Bolus, max initial dose 2 mg IV**

Protocol

- Hypoglycemia
- Poisoning/Overdose

9140 MEDICATIONS

HALOPERIDOL (HALDOL)-BUTYROPHENONE

Description

Haloperidol is a butyrophenone antipsychotic medication. Haloperidol produces a dopaminergic blockade, a mild alpha-adrenergic blockade, and causes peripheral vasodilation. Its major actions are sedation and tranquilization.

Onset & Duration

- Onset: Within 10 minutes after IM administration. Peak effect within 30 minutes
- Duration: 2-4 hours (may be longer in some individuals)

Indications

- Sedation of a severely agitated and/or combative patient. May be used with diphenhydramine.

Contraindications

- Suspected myocardial infarction
- Hypotension
- Respiratory or CNS depression
- Pregnancy

Precautions

- Haldol may cause hypotension, tachycardia, and prolongation of the QT interval. Use with caution in severe cardiovascular disease.
- Cardiac monitor and establish an IV as soon as possible with all administrations.
- Some patients may experience unpleasant sensations manifested as restlessness, hyperactivity, or anxiety following haloperidol administration.
- Rare instances of neuroleptic malignant syndrome (very high fever, muscular rigidity) have been known to occur after the use of haloperidol.

Dosage and Administration

Adults:
5 mg IM. May repeat x1 after 5 minutes to a maximum cumulative dose of 10 mg prior to base contact. **CONTACT BASE** before additional dosing or other medication administration.

Pediatrics (not for use in children <6 years):
BASE CONTACT
Ages 6-12: 2 mg IM

BASE CONTACT must be made for additional doses (consider if no effects within 10 minutes)

Special Considerations

- Extra-pyramidal reactions have been noted hours to days after treatment, usually presenting as spasm of the muscles of the tongue, face, neck, and back. This may be treated with diphenhydramine.
- Hypotension and tachycardia secondary to haloperidol are usually self-limiting and should be treated with IV fluid bolus.
- Use one half dose in patients age ≥ 65 who are at increased risk of complications.
- Due to butyrophenone s potential effect on T interval prolongation, all patients receiving them should be placed on the cardiac monitor. Though it is understood that obtaining an ECG on the combative or agitated patient may be difficult, every effort should be made to do so.

Protocol

- Agitated/Combative Patient

Approved by the Platteville Gilcrest FPD Medical Director March 2024

9150 MEDICATIONS

HEMOSTATIC AGENT (QuickClot, Celox, Bloodstop, Actcel, HemCon, ChitoGauze)

Description

QuickClot Combat Gauze is a standard roller or Z-fold gauze impregnated with a clotting agent such as kaolin (a clay containing the active ingredient aluminum silicate) which works on contact with blood to initiate the clotting process (intrinsic pathway) by activating factor XII. This reaction leads to the transformation of factor XII to its' activated form XIIa, which triggers the clotting cascade.

Mucoadhesive agents such as HemCon, ChitoGauze and Celox utilize a granular chitosan salt derived from the shells of marine arthropods (which are positively charged) to react with and bind to negatively charged red blood cells rapidly forming a cross-linked barrier clot to seal the injured vessels.

Used in conjunction with direct pressure and wound packing these products lead to hemostasis.

Onset and Duration

- Onset of action is 3-5 minutes after wound exposure and clotting action remains unless the dressing and/or the clot is disturbed.

Indications

- Active bleeding from open wounds with that cannot be controlled with direct pressure. Most often involving wounds to the scalp, face, neck, axilla, groin or buttocks.

Contraindications

- Not to be used to treat internal bleeding such as intra-abdominal, intra-thoracic or vaginal bleeding.
- Not to be used for minor bleeding that can be controlled by direct pressure.

Precautions

- Bleeding control is achieved via combination of direct pressure and hemostatic gauze packing for a minimum of 3-5 minutes.
- Stabilize patient per General Trauma Care Protocol.
- If a tourniquet is indicated (refer to Tourniquet Protocol), it should be applied first, before application of hemostatic agent.
- **DO NOT USE LOOSE GRANULAR OR POWDERED HEMOSTATIC AGENTS**. These are out date and will produce exothermic reactions that may cause burns and additional tissue damage.

Procedure

1. Manufacturers may have different recommendations on application of their products. Follow specific manufacturer guidelines for the particular product carried.

9160 MEDICATIONS

HYDROXOCOBALAMIN (CYANOKIT®)

Description

- Cyanide inhibits cytochrome oxidase, thereby arresting cellular respiration and forcing anaerobic metabolism, which leads to lactate production and acidosis and ultimately death. Hydroxocobalamin binds cyanide ions to form cyanocobalamin which is excreted in urine.

Indications

- Adult or pediatric patient with suspected cyanide poisoning from any route, including smoke inhalation in an enclosed space, with any of the following clinical signs:
  - Pulseless arrest
  - Coma/unresponsiveness
  - Signs of shock

Precautions

- Administer only after basic life support measures have been initiated and always in conjunction with other supportive treatment modalities.
- When possible, obtain dedicated line for hydroxocobalamin administration, as compatibility with other drugs is unknown. If this is not possible, flush line with 3-5ml NS flush before and after dose administered.

Adverse Reactions

- Hypertension
- Allergic reaction/anaphylaxis

Dosage and Administration

- Dosing
  - **Adult** dose is 5 gm IV/IO
  - **Pediatric** dose is 70 mg/kg up to 5 gm IV/IO

Average Weight by Group	Grey 4 kg	Pink 6.5 kg	Red 8.5 kg	Purple 10.5 kg	Yellow 13 kg	White 16.5 kg	Blue 21 kg	Orange 26.5 kg	Green 33 kg	Adult
Dose	275mg	450 mg	600 mg	725 mg	900 mg	1150 mg	1475 mg	1850 mg	2300 mg	5 gm
Volume	11 mL	18 mL	24 mL	29 mL	36 mL	46 mL	59 mL	74 mL	92 mL	200 mL
Continuous Infusion Rate - Values are drops (gtt.) /min										
10 gtt./mL	7	12	16	19	24	31	39	49	61	133
15 gtt./mL	11	18	24	29	36	46	59	74	92	200
20 gtt./mL	15	24	32	39	48	61	79	99	123	267
Aliquot Administrations - Administer each dose every 3 minutes										
1st Dose	4 mL	6 mL	8 mL	10 mL	12 mL	16 mL	20 mL	25 mL	32 mL	
2nd Dose	3 mL	6 mL	8 mL	10 mL	12 ml	15 mL	20 mL	25 mL	30 mL	
3rd Dose	3 mL	6 mL	8 mL	9 mL	12 mL	15 mL	19 mL	24 mL	30 mL	

9170 MEDICATIONS

IPRATROPIUM BROMIDE (ATROVENT)

Description

Ipratropium is an anticholinergic bronchodilator chemically related to atropine.

Onset & Duration

- Onset: 5-15 minutes.
- Duration: 6-8 hours.

Indications

- Bronchospasm

Contraindications

- Soy or peanut allergy is a contraindication to the use of Atrovent metered dose inhaler, not the nebulized solution, which does not have the allergen contained in propellant.

Adverse Reactions

- Palpitations
- Tremors
- Dry mouth

How Supplied

Premixed Container: 0.5 mg in 2.5ml NS

Dosage and Administration

Adult
Bronchospasm:

Ipratropium (0.5 mg/2.5 ml) along with albuterol in a nebulizer.

Child (2 yrs – 12 yrs)
Moderate and Severe Bronchospasm

Ipratropium (0.5 mg/2.5 ml) along with albuterol in a nebulizer. **Not indicated for repetitive dose or continuous neb use**

Child (<2 yrs)
Moderate and Severe Bronchospasm

Ipratropium (0.25 mg/2.5 ml) along with albuterol in a nebulizer
Not indicated for repetitive dose or continuous neb use

Protocol

- Adult Wheezing
- Pediatric Wheezing

9175 Medications

KETAMINE

Description

Ketamine is a non-competitive NMDA receptor antagonist which produces complex neuroinhibition resulting in dissociative amnestic and analgesic effects.

Onset & Duration

- Onset: IV – Immediate, 1-5 minutes after IM administration.
- Duration: 10-15 minutes

Indications

- Analgesia adjunct and alternative to opioid administration, intended to be second line therapy in situations where extreme pain has been unrelieved with appropriate opioid treatment or first line when an opioid treatment is not preferred.

Contraindications

- Relatively contraindicated in penetrating eye trauma

Side Effects

- Laryngospasm: this very rare adverse reaction presents with stridor and respiratory distress. After every administration of ketamine:
    a. Prepare to provide respiratory support including bag-valve-mask ventilation and suction which are generally sufficient in rare cases of laryngospasm.
    b. Institute cardiac monitoring, pulse oximetry and continuous waveform capnography
    c. Establish IV or IO access, check blood glucose
    d. Establish and maintain physical restraint.
- Emergence reaction: presents as anxiety, agitation, dysphoria, apparent hallucinations or nightmares as ketamine is wearing off. For severe reactions, consider benzodiazepine.
- Nausea and Vomiting: always have suction available after ketamine administration. Administer antiemetic as needed.
- Hypersalivation: Suction usually sufficient.

9175 Medications

Dosage and Administration

Analgesia

Adults:

- IV Infusion of 0.25 mg/kg
- 0.5 mg/kg IN/IM
- Contact base for additional doses

Pediatric 2 years and older:

- IV Infusion of 0.25 mg/kg
- 0.5 mg/kg IN/IM
- Contact base for additional doses

Special Considerations

- Ketamine is provided for administration in vials of 200 mg/20 mL concentration (10 mg / 1 mL).
- For infusion mix in 100mL NS bag with a macro drip set. Set drip rate to a moderate TKO rate to infuse over a 2-3 minute time period. (18g IV with a WO drip set will deliver fluid in approximately 1 minute)
- Not to be used in critically ill patients
- All cases of ketamine use will be reviewed by the Medical Director and EMS Chief.

Protocol

Analgesia

- Extremity Injuries
- Abdominal Pain
- Amputations
- Burns
- Bites/Stings/Snake Bites
- Face and Neck Trauma
- Chest Trauma
- Abdominal Trauma
- Spinal Trauma

Ketamine for Pain			
LBs	**Kgs Rounded**	**0.25mg/kgDose Rounded**	**CCs**
60	27	7 mg	0.7 cc
70	32	8 mg	0.8 cc
80	36	9 mg	0.9 cc
90	41	10 mg	1 cc
100	45	11 mg	1.1 cc
110	50	13 mg	1.3 cc
120	54	14 mg	1.4 cc
130	59	15 mg	1.5 cc
140	64	16 mg	1.6 cc
150	68	17 mg	1.7 cc
160	73	18 mg	1.8 cc
170	77	19 mg	1.9 cc
180	82	21 mg	2.1 cc
190	86	22 mg	2.2 cc
200	91	23 mg	2.3 cc
210	95	24 mg	2.4 cc
220	100	25 mg	2.5 cc
230	105	26 mg	2.6 cc
240	109	27 mg	2.7 cc
250	114	29 mg	2.9 cc
260	118	30 mg	3 cc
270	123	31 mg	3.1 cc
280	127	32 mg	3.2 cc
290	132	33 mg	3.3 cc
300	136	34 mg	3.4 cc

9180 MEDICATIONS

LIDOCAINE 2% SOLUTION

Description

Local anesthetic for relief of pain during intraosseous fluid administration.

Indications

- Analgesic for intraosseous infusion

Side Effects

- Seizures
- Drowsiness
- Tachycardia
- Bradycardia
- Confusion
- Hypotension

Precautions

- Lidocaine is metabolized in the liver. Elderly patients and those with liver disease or poor liver perfusion secondary to shock or congestive heart failure are more likely to experience side effects

Dosage and Administration

Adult and Pediatric:

- 0.5 mg/kg IO bolus, slowly, maximum dose is 50 mg

Protocol

Intraosseous Procedure

Special Notes

- Seizure from lidocaine toxicity likely to be brief and self-limited. If prolonged, or status epilepticus, treat per seizure protocol
- Treat dysrhythmias according to specific protocol

Lidocaine Jelly 2%:

- Indication – Anesthetic lubricant for nasotracheal intubation
- Contraindication – Known history of hypersensitivity to local anesthetics
- Dosage and Administration
  - Apply a moderate amount of jelly to the endotracheal tube shortly before use.
  - Avoid introducing the jelly into the lumen of the tube
  - If jelly has dried before insertion, reapply

9190 MEDICATIONS

MAGNESIUM SULFATE

Description

Magnesium sulfate reduces striated muscle contractions and blocks peripheral neuromuscular transmission by reducing acetylcholine release at the myoneural junction. In cardiac patients, it stabilizes the potassium pump, correcting repolarization. It also shortens the Q-T interval in the presence of ventricular arrhythmias due to drug toxicity or electrolyte imbalance. In respiratory patients, it may act as a bronchodilator in acute bronchospasm due to asthma or other bronchospastic diseases. In patients suffering from eclampsia, it controls seizures by blocking neuromuscular transmission and lowers blood pressure as well as decreases cerebral vasospasm.

Indications

Antiarrhythmic

- Torsade de pointes associated with prolonged QT interval

Respiratory

- Severe bronchospasm unresponsive to continuous albuterol, ipratropium, and IM epinephrine.

Obstetrics

- Eclampsia: Pregnancy ≥20 weeks gestational age or up to 6 weeks post-partum with seizures

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Precautions

- Bradycardia
- Hypotension
- Respiratory depression

Adverse Reactions

- Bradycardia
- Hypotension
- Respiratory depression

Dosage and Administration

- **Torsades de Pointes suspected caused by prolonged QT interval:**
  - 2 gm, IV/IO bolus.
- **Refractory Severe Bronchospasm:**
  - Adult
    - 2 gm, IV bolus, over 3-4 minutes. Preferred infused in 100mL over 3-4 min.
  - Pediatric
    - 40 mg/kg, maximum dose of 2 gm, infusion in 100mL bag over 15 minutes
- **Eclampsia:**
  - 2 gm IV/IO over 2 minutes, then mix 4 gm diluted in 100 ml of normal saline (0.9 NS), IV/IO drip over 15 minutes

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Protocol

- Medical Arrest Algorithm
- Adult Wheezing
- Pediatric Wheezing
- Obstetric Complications

*Approved by Platteville Gilcrest FPD Medical Director January, 2022.

9200 MEDICATIONS

METHYLPREDNISOLONE (SOLU-MEDROL)

Description

Methylprednisolone is a synthetic steroid that suppresses acute and chronic inflammation and may alter the immune response. In addition, it potentiates vascular smooth muscle relaxation by beta-adrenergic agonists and may alter airway hyperactivity.

Indications

- Anaphylaxis
- Severe asthma
- COPD
- Suspected Addisonian crisis (cardiovascular collapse in patient at risk for adrenal insufficiency)

Contraindications

- Evidence of active GI bleed

Adverse Reactions

Most adverse reactions are a result of long-term therapy and include:

- Gastrointestinal bleeding
- Hypertension
- Hyperglycemia

Dosage and Administration

Adult:

125 mg, IV/IO bolus, slowly, over 2 minutes

Pediatric:

2 mg/kg, IV/IO bolus, slowly, over 2 minutes to max dose of 125 mg

Protocol

- Adult Wheezing
- Pediatric Wheezing
- Allergy and Anaphylaxis
- Medical Hypotension/shock
- Adrenal Insufficiency

Special Considerations

- Must be reconstituted and used immediately
- The effect of methylprednisolone is generally delayed for several hours.
- Methylprednisolone is not considered a first line drug. Be sure to attend to the patient's primary treatment priorities (i.e. airway, ventilation, beta-agonist nebulization) first. If primary treatment priorities have been completed and there is time while in route to the hospital, then methylprednisolone can be administered. Do not delay transport to administer this drug

9210 MEDICATIONS

NALOXONE (NARCAN)

Description

Naloxone is a competitive opioid receptor antagonist

Onset & Duration

Onset: Within 5 minutes
Duration: 1-4 hours

Indications

- For reversal of suspected opioid-inducted CNS and respiratory depression
- Coma of unknown origin with impaired airway reflexes or respiratory depression

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Adverse Reactions

- Tachycardia
- Nausea and vomiting
- Pulmonary Edema

Dosage and Administration

Adult:

0.5 mg IV/IO/IM/IN and titrate to desired effect, up to 2 mg total
In cases of severe respiratory compromise or arrest, 2 mg bolus IV/IO/IM/IN is appropriate, otherwise drug should be titrated.

With some newer synthetic opioid formulations, higher doses of naloxone may be required. In rare cases of confirmed or strongly suspected opioid overdose with insufficient response to 2mg, higher doses may be used, titrate to effect. Routine use of high dose naloxone should be avoided.

Pediatrics:

0.5 mg IV/IO/IM/IN and titrate to desired effect, up to 2 mg total

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Protocol

- Universal Altered Mental Status
- Drug/Alcohol Intoxication
- Poisoning/Overdose

Special Considerations

- Not intended for use unless respiratory depression or impaired airway reflexes are present. Reversal of suspected mild-moderate opioid toxicity is not indicated in the field as it may greatly complicate treatment and transport as narcotic-dependent patients may experience violent withdrawal symptoms
- Patients receiving EMS administered naloxone **should** be transported to a hospital.
- In the State of Colorado, bystanders, law enforcement, and other first responders can administer naloxone if they feel a person is experiencing an opiate-related drug overdose event (Colorado Revised Statutes §12-36-117.7).

(**continued next page**)

9210 MEDICATIONS

- There are significant concomitant inherent risks in patients who have received naloxone, including:
    - Recurrent respiratory/CNS depression given short half-life of naloxone
    - Co-existing intoxication from alcohol or other recreational or prescription drugs
    - Acetaminophen toxicity from combination opioid/acetaminophen prescriptions
    - Non-cardiogenic pulmonary edema associated with naloxone use
    - Acute psychiatric decompensation, overdose, SI/HI or psychosis requiring ED evaluation
    - Sudden abrupt violent withdrawal symptoms which may limit decision making capacity
- Given the above risks, it is strongly preferred that patients who have received naloxone be transported and evaluated by a physician. However, if the patient clearly has decision-making capacity he/she does have the right to refuse transport. If adamantly refusing, patients must be warned of the multiple risks of refusing transport.
- If the patient is refusing transport contact base. If any concerns or doubts about decision-making capacity exist, err on the side of transport.

Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

9220 MEDICATIONS

NITROGLYCERIN (NITROSTAT, NITROQUICK, etc)

Description

Short-acting peripheral venodilator decreasing cardiac preload and afterload

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Onset & Duration

Onset: 1-3 min.
Duration: 20-30 min.

Indications

- Pain or discomfort due to suspected Acute Coronary Syndrome
- Pulmonary edema due to congestive heart failure

Contraindications

- Suspected right ventricular ST-segment elevation MI (Inferior STEMI pattern plus ST elevation in right sided-precordial leads)
- Hypotension SBP < 100
- Recent use of erectile dysfunction (ED) medication (e.g. Viagra, Cialis)

Adverse Reactions

- Hypotension
- Headache
- Syncope

Dosage and Administration

- **Chest Pain:** 0.4 mg (1/150 gr) sublingually, every 5 minutes
  PRN up to a total of 3 doses for persistent CP
- **Pulmonary Edema:** 0.4 mg (1/150 gr) sublingually, every 5 minutes PRN titrated to symptoms and blood pressure
- **Nitropaste:** system specific protocol

Protocol

- Chest Pain
- CHF/Pulmonary Edema

9225 MEDICATIONS

NONSTEROIDAL ANTI-INFLAMMATORY DRUGS: IBUPROFEN (ADVIL, MOTRIN), KETOROLAC (TORADOL)

Description

NSAIDs decrease pain and inflammation by several mechanisms. Their primary action is to inhibit the family of cyclooxygenase (COX) enzymes resulting in blockade of prostaglandin synthesis. COX inhibition also impacts renal blood flow and stomach acid secretion. NSAIDs may also inhibit chemotaxis, alter lymphocyte activity, decrease proinflammatory cytokine activity, and inhibit neutrophil aggregation; further contributing to anti-inflammatory activity.

Onset & Duration

- Onset of analgesia: oral 30-60 minutes, IV within 5 minutes
- Peak effect: 1 hour
- Duration: 4 hours

Indications

- Acute treatment of mild, moderate, or severe pain. Consider IV ketorolac for moderate to severe pain.
- Pain due to suspected kidney stones, acute exacerbations of chronic pain, musculoskeletal pain
- Fever (>38.3 Degrees C/ 101 Degrees F (Ibuprofen only)

Contraindications

- Allergy to NSAIDs including aspirin and naproxen (Naprosyn, Aleve)
- Pregnancy or breast feeding
- History of GI bleeding or active stomach ulcer
- History of chronic kidney disease or kidney transplant
- Anticoagulation (patient taking blood thinners) or history of a blood clotting disorder
- Acute head trauma or suspected intracranial bleed
- Ketorolac is contraindicated for ages less than 12-years-old and over 65-years-old
- Severe dehydration

Adverse Reactions

- Allergic reactions: anaphylaxis, urticaria, angioedema, bronchospasm, rash, hypotension, etc.
- Nausea and vomiting
- GI bleeding with chronic use
- Acute kidney injury

Drug Interactions

- Avoid concomitant administration with other NSAIDS or anticoagulant medications such as apixaban (Eliquis), dabigatran (Pradaxa), enoxaparin (Lovenox), heparin, rivaroxaban (Xarelto), warfarin (Coumadin).

Dosage and Administration

Ibuprofen

Adult:

600 mg PO

Pediatric:

10 mg/kg PO – ***SEE CHART***

Ketorolac

Adult:

15mg IV or IM

Pediatric

Not indicated

Ibuprofen Dosing Chart

Weight	Age	Dose (160 mg/5 mL)
n/a	< 6 months	BASE CONTACT
5-8kg	6 months - 12 months	3 ml (60mg)
9-11kg	1-2 years	4 ml (80mg)
12-16kg	2-3 years	5 ml (100mg)
17-21kg	4-5 years	7.5 ml (150mg)
22-27kg	6-8 years	10 ml (200mg)
28-33kg	9-10 years	15 ml (300mg)
34-43kg	11-12 years	20 ml (400mg)

Protocol

- Pain management

Approved by Platteville Gilcrest FPD Medical Director January, 2021

9230 MEDICATIONS

OPIOIDS (FENTANYL, MORPHINE, HYDROMORPHONE)

Description

Opioid analgesics with desired effects of analgesia, euphoria and sedation as well as undesired effects of respiratory depression and hypotension. A synthetic opioid, fentanyl is 100 times more potent than morphine, and is less likely to cause histamine release.

Indications

- Treatment of hemodynamically stable patients with moderate to severe pain due to traumatic or medical conditions.

Contraindications

- Fentanyl - Hemodynamic instability or shock
- Morphine and hydromorphone – Hypotension, hemodynamic instability, or shock
- Respiratory depression

Caution/Comments:

- Opioids should only be given to hemodynamically stable patients and titrated slowly to effect.
- The objective of pain management is not the removal of all pain, but rather, to make the patient's pain tolerable enough to allow for adequate assessment, treatment and transport
- Respiratory depression, including apnea, may occur suddenly and without warning, and is more common in children and the elderly. **Start with ½ traditional dose in the elderly.**
- Coadministration of opioids and benzodiazepines is discouraged and may only be done with direct physician verbal order.
- Chest wall rigidity has been reported with rapid administration of fentanyl

---

Dosage and Administration

FENTANYL:

- **Adult doses may be rounded to nearest 25 mcg increment**
- **Initial dose in adults typically 100 mcg**
- **Strongly consider ½ typical dosing in elderly or frail patient**

Adult:

IV/IO/IM route: 1-2 mcg/kg.

- Dose may be repeated after 5 minutes and titrated to clinical effect to a maximum cumulative dose of 3 mcg/kg
- Additional dosing requires **BASE CONTACT**

IN route: 1-2 mcg/kg.

- Administer a **maximum of 1 ml of fluid** per nostril
- Dose may be repeated after 10 minutes after initial IN dose to a maximum cumulative dose of 4 mcg/kg. IV route is preferred for repeat dosing.
- Additional dosing requires **BASE CONTACT**

Pediatric (1-12 years):

IV/IO/IM route: 1-2 mcg/kg.

- Dose may be repeated after 5 minutes and titrated to clinical effect to a maximum cumulative dose of 3 mcg/kg.
- Additional dosing requires **BASE CONTACT**

IN route: 2 mcg/kg.
- Administer a **maximum of 1 ml of fluid** per nostril
- Dose may be repeated after 10 minutes after initial IN dose to a maximum cumulative dose of 4 mcg/kg. IV route is preferred for repeat dosing.

Pediatric < 1 year: BASE CONTACT

MORPHINE:

Adult:

IV/IO/IM routes: 5-10 mg.
- Dose may be repeated after 10 minutes and titrated to clinical effect to a maximum cumulative dose of 10 mg.
- Additional cumulative dosing > 10 mg requires BASE CONTACT.
- **Morphine may not be given IN as it is poorly absorbed**

Pediatric (1-12 years):

IV/IO/IM routes: 0.1 mg/kg. Maximum single dose is 6 mg
- Dose may be repeated after 10 minutes and titrated to clinical effect up to maximum cumulative dose of 0.2 mg/kg or 10 mg.
- Additional cumulative dosing requires BASE CONTACT.
- **Morphine may not be given IN as it is poorly absorbed**

Pediatric:

Not indicated for pediatric patients

NOTE: IV route is preferred for all opioid administration because of more accurate titration and maximal clinical effect. IO/IM for all listed opioids and additionally IN for fentanyl are acceptable alternatives when IV access is not readily available. Repeat doses of IN Fentanyl can be given if IV access cannot be established. However greater volumes and repeat IN administration are associated with greater drug run off and may therefore be less effective. Continuous pulse oximetry monitoring is mandatory. Frequent evaluation of the patient's vital signs is also indicated. Emergency resuscitation equipment and naloxone must be immediately available.

Protocol

Extremity Injuries
Chest Pain
Post Resuscitation Care with ROSC
Abdominal Pain
Amputations
Burns
Bites/Stings
Snake Bites
Face and Neck Trauma
Chest Trauma
Abdominal Trauma
Spinal Trauma

9240 MEDICATIONS

ORAL GLUCOSE (GLUTOSE, INSTA-GLUCOSE)

Description

Glucose is the body's basic fuel and is required for cellular metabolism

Indications

- Known or suspected hypoglycemia and able to take PO

Contraindications

- Inability to swallow or protect airway
- Unable to take PO meds for another reason

Administration

All ages: One full tube 15 g buccal.

Protocol

- Universal Altered Mental Status
- Hypoglycemia

Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

9250 MEDICATIONS

OXYGEN

Description

Oxygen added to the inspired air increases the amount of oxygen in the blood, and thereby increases the amount delivered to the tissue. Tissue hypoxia causes cell damage and death. Conversely, hyperoxia has been linked with worsened outcomes in acute coronary syndromes and stroke. Therefore, oxygen should not be viewed as a harmless drug where more is better. EMS personnel should add additional oxygen when hypoxia, shock or respiratory distress are present titrating to a normal pulse oximetry reading above 90%.

Indications

- Hypoxemia or respiratory distress
- Hypotension/shock states
- Suspected carbon monoxide poisoning
- Obstetrical complications, childbirth
- Pre-intubation oxygenation

Precautions

- If the patient is not breathing adequately, the treatment of choice is assisted ventilation, not just oxygen.
- Do not withhold oxygen from any patient in respiratory distress, including COPD patients.

Administration

- Use the appropriate oxygen delivery method and flow rate to achieve SpO2 of 90-96% when oxygen therapy is indicated.

Special Notes

- Do not use permanently mounted humidifiers. If the patient warrants humidified oxygen, use a single patient use device.
- Adequate oxygenation is assessed clinically and with the SpO_2 while adequate ventilation is assessed clinically and with waveform capnography.

9260 MEDICATIONS

PHENYLEPHRINE (INTRANASAL)

Description

- Phenylephrine is an alpha adrenergic agonist. When administered intranasally, it causes vasoconstriction in the nasal mucosa and subsequently decreased bleeding and nasal decongestion.

Indications

- Prior to nasotracheal intubation to induce vasoconstriction of the nasal mucosa
- Nosebleed (epistaxis).

Precautions

- Avoid administration into the eyes, which will dilate pupil.

Dosage and Administration

- Instill two drops of 1% solution, or 2 sprays, in the nostril prior to attempting nasotracheal intubation.
- For patients with active nosebleed, first have patient blow nose to expel clots. Then, administer 2 sprays into affected naris(es).

Protocol

- Nasotracheal intubation
- Epistaxis

9270 MEDICATIONS

RACEMIC EPINEPHRINE

Description

Racemic epinephrine 2.25% is an aqueous solution that delivers 11.25 mg of racemic epinephrine per 0.5mL for use by **inhalation only**. Inhalation causes local effects on the upper airway as well as systemic effects from absorption. Vasoconstriction may reduce swelling in the upper airway, and ß effects on bronchial smooth muscle may relieve bronchospasm.

Onset & Duration

- Onset: 1-5 minutes
- Duration: 1-3 hours

Indications

- Stridor at rest

Side Effects

- Tachycardia
- Palpitations
- Muscle tremors

Dosage and Administration

0.5 ml racemic epinephrine (acceptable dose for all ages) mixed in 3 mL saline, via nebulizer at 6-8 LPM to create a fine mist and administer over 15 minutes.

Protocol

- Pediatric Stridor/Croup

Special Considerations

- Racemic epi is heat and photo-sensitive
- Once removed from the refrigerator, the unopened package is stable at room temperature until the expiration date stated on the package.
- Do not confuse the side effects with respiratory failure or imminent respiratory arrest.
- If no racemic epinephrine is available, consider 5 mL of 1:1,000 epinephrine x 1 via nebulizer at 6-8 LPM to create a fine mist and administer over 15 minutes.

9280 MEDICATIONS

SODIUM BICARBONATE

Description

Sodium bicarbonate is an alkalinizing solution used to treat metabolic acidosis, sodium channel poisoning and hyperkalemia. Sodium bicarb is no longer recommended for routine use in prolonged cardiac arrest.

Indications

- Sodium bicarbonate therapy is indicated in patients with tricyclic antidepressant (TCA) poisoning who develop widening of the QRS interval >120 msec, hypotension due to the TCA poisoning, or a ventricular arrhythmia.
- Suspected hyperkalemic pulseless arrest: consider in patients with known renal failure/dialysis.
- Hyperactive delirium with severe agitation that develops widening of QRS interval >120 msec or pulseless arrest
- Crush or suspension injury immediatley prior to release with known or suspected hyperkalemia
- Hyperkalemia: Peaked T waves, new wide complex rhythm, (see 4150)

Contraindications

- Metabolic and respiratory alkalosis
- Hypocalcemia
- Hypokalemia

Adverse Reactions

- Metabolic alkalosis
- Paradoxical cerebral intracellular acidosis
- Sodium bolus can lead to volume overload

Drug Interactions

- May precipitate in calcium solutions.
- Alkalization of urine may increase half-lives of certain drugs.
- Vasopressors may be deactivated.

Dosage and Administration: 8.4% sodium bicarbonate solution

Adult and Pediatric:

- **Pulseless arrest suspected due to hyperkalemia** (e.g., typically patient with dialysis, end-stage renal disease, hyperactive delirium with severe agitation)
  - 1 mEq/kg slow IV push. Repeat if needed x 2 every 5 minutes.

- **TCA poisoning with wide QRS >120 msec or ventricular arrhythmia Hyperactive delirium with severe agitation that develops wide QRS >120 msec Crush or suspension injury with known or suspected hyperkalemia**
  - **1 mEq/kg slow IV push. Repeat if needed x 2 every 5 minutes or until QRS is narrowed.**

- **Crush Injury**
  - 50mEq IV/IO immediately prior to release

Protocol

- Medical Pulseless Arrest
- Poisoning/Overdose
- Hyperactive Delirium with Severe Agitation

*Approved by PGFPD EMS Medical Director January 2022

9285 Medications

TERBUTALINE (BRETHINE)

Description

Terbutaline stimulates beta-2 adrenergic receptors, relaxing airway smooth muscle. Relieves acute bronchospasm in both acute and chronic COPD.

Onset and Duration

- Onset: 5-10 minutes
- Duration: 3-4 hours

Indications

- Acute bronchospasm secondary to: Asthma, Bronchitis, Emphysema
  Note: Terbutaline should be considered for use in patients over the age of 50 ***(cardiac concerns)*** when the use of Epinephrine is not advisable.

Contraindications

- Known or suspected hypersensitivity
- Age 12 or younger

Adverse Reactions

- Use caution in the following conditions: Diabetes. Hypertensive patients. Hyperthyroidism Cardiac patients. Especially those with arrhythmias.
- Increased heart rate, palpitations, hypertension
- Nervousness, anxiety, tremors
- Hyperglycemia
- Dizziness
- Muscle cramps
- Headache
- Nausea, vomiting

Dosage and administration

- **General Dose:** 0.25 mg IM

Repeat Dose: 1 time repeat dose of 0.25 mg IM. May be administered after 15 to 30 minutes if improvement does not occur. Do not exceed total dose of 0.5mg within a four-hour period.

Protocols

- Adult Universal Respiratory Distress
- Adult Wheezing

Special Considerations

- Use of Terbutaline with other sympathomimetic medications is not recommended.
- Solution is light and heat sensitive, discard if discolored
- Side effects are usually transient in nature and do not require treatment.

9290 MEDICATIONS

TOPICAL OPHTHALMIC ANESTHETICS

Description

Proparacaine and tetracaine are local anesthetics approved for ocular administration for relief of eye pain caused by corneal abrasion or chemical injury.

Indications

- Pain secondary to eye injuries and corneal abrasions.
- Topical anesthetic to facilitate eye irrigation.

Contraindications

- Known allergy to local anesthetics.
- Globe lacerations or rupture.

Precautions

- Transient burning/stinging when initially applied.

Dosage and Administration

- Instill 2 drops into affected eye. **Contact Base** for repeat dosing.

Special Considerations

- This is single patient use. Unused portions should be discarded and only new bottles may be used.
- Do not administer until patient consents to transport and transport has begun.
- Topical ophthalmic anesthetics should never be given to a patient for self-administration.

EPINEPHRINE DRIP or Push Dose: ADULT PATIENTS ONLY

Description:

Epinephrine: Preferred vasopressor for all indications.

- Endogenous catecholamine alpha, beta-1, and beta-2 adrenergic receptor agonist. Causes dose-related increase in heart rate, myocardial contractility and oxygen demand, peripheral vasoconstriction and bronchodilation

Indications:

Epinephrine:

- Severe Allergic Reaction/Anaphylaxis
- Hypotension with poor perfusion refractory to adequate fluid resuscitation (typically 30 mL/kg crystalloid)
- Bradycardia with signs of poor perfusion

Contraindications:

- **Do not use vasopressor infusion in PEDIATRIC patients (age less than 12 years)**

Adverse Reactions

- Dysrhythmia
- Hypertension
- Anxiety
- Angina

Drug Interactions

- Do not add to sodium bicarbonate or other alkaloids as epinephrine will be inactivated at higher pH.

Protocol

- Post-Resuscitation Care with ROSC
- Bradycardia with Poor Perfusion
- Allergy and Anaphylaxis
- Medical Hypotension/Shock
- Overdose and Acute Poisoning

Special Considerations

- May increase myocardial oxygen demand and angina pectoris. Use with caution in patients with known or suspected CAD

9300 MEDICATIONS EPI DRIP DOSING CHART

Dosage and Administration:

Epinephrine:

- **Mix**: inject 1 mg epinephrine into 1000 mL Normal Saline bag to achieve 1mcg/mL concentration (This means 1 mL of 1:1000 or 10 mL of 1:10,000 – either way 1 mg of drug). Invert the bag twice to mix the medicine with the NaCl.
- Choose one of the two delivery options below to administer the drip.

Option 1: Dial A Flow

- Spike the mixed bag with a macro drip and attach the Dial A flow (DAF) to the end of the macro drip set. (The DOF may be in the open position.)
- Attach the DAF to the IV catheter.
- Turn the dial to 60 mLs an hour which equals out to be 1mcg/min.
- Check vital signs every 3-5 minutes. After 3-5 minutes, if desired blood pressure has not been achieved, turn dial to increase rate to 120 ml s for 2mcg/min rate. See graph below.

Option 2: Controlled Epi Drip

- Spike the mixed bag using a macro drip set.
- **Adult IV/IO**: Begin IV/IO infusion by dripping 1 drop every second.
- **Typical volumes are less than 100 mL of total fluid**, as typical doses are expected to be < 100 mcg.
- Titrate to desired hemodynamic effect with goal BP of > 90 mmHg systolic, improved respiratory status (bronchodilation), and improved perfusion/mentation.

Epinephrine Drip Infusion (1 mcg/mL)		
Mix 1 mg of Epinephrine in a 1000mL Bag of 0.9% NS		
mcg/min	**gtt/min**	**set dial to mL/hr**
1	60	60
2	120	120
3	180	180
4	240	240
5	300	300

*Approved by Platteville Gilcrest FPD Medical Director March 2024

9300 MEDICATIONS EPI DRIP DOSING CHART

Alternative NS Bag options and drip sets

1. **Mix:** Inject amount of epinephrine into normal saline size bag per table below to achieve 1mcg/mL concentration. Use macro drip set for infusion.

Normal Saline Volume	Epinephrine Amount	Epinephrine 1mg/mL [1:1,000] Concentration Amount	Epinephrine 0.1mg/mL [1:10,000] Concentration Amount
1000 mL	1 mg	1 mL	10 mL
500 mL	0.5 mg	0.5 mL	5 mL
250 mL	0.25 mg	0.25 mL	2.5 mL

2. **Adult IV/IO:**
   a. 0.01-1 mcg/kg/min
   b. Begin IV/IO infusion wide open to gravity to give small aliquots of fluid. Typical volumes are less than 100 mL of total fluid, as typical doses are expected to be < 100 mcg. Titrate to desired hemodynamic effect with goal BP of > 90 mmHg systolic, improved respiratory status (bronchodilation), and improved perfusion/mentation.
3. **Pediatric IV/IO:** 0.01-1 mcg/kg/min

Drip Rate Chart (1 mcg/mL)		
Dose (mcg/min)	10 gtt/mL Drip Set	15 gtt/mL Drip Set
2	20 gtt/min	30 gtt/min
3	30 gtt/min	45 gtt/min
4	40 gtt/min	60 gtt/min
5	50 gtt/min	75 gtt/min
6	60 gtt/min	90 gtt/min
7	70 gtt/min	105 gtt/min
8	80 gtt/min	120 gtt/min
9	90 gtt/min	135 gtt/min
10	100 gtt/min	150 gtt/min

9300 Epinepherine Push Dose

Adult Push Dose:

Using a Pre-Filled 10 mL Flush Syringe

1. Using a 10 mL flush, empty 1 mL out of the flush
2. Draw up 1 mL of 0.1 mg/1mL (1:10,000) epinephrine into the 10 mL flush syringe
3. Makes concentration of epinephrine for 10 mcg/1mL
4. Administer slow push of 50 mcg (5 mL) aliquots every 5 minutes as needed
5. Apply label to syringe noting epinephrine 10 mcg/mL

OR

Using a empty 10 mL Syringe

1. Draw up 1 mL of 0.1 mg/1mL (1:10,000) epinephrine into a 10 mL syringe
2. Draw up 9 mL of normal saline into the same 10 mL syringe, making a 10 mcg/mL (0.01 mg/mL) solution
3. Makes concentration of epinephrine for 10 mcg/1mL
4. Administer slow push of 50 mcg (5 mL) aliquots every 5 minutes as needed
5. Apply label to syringe noting epinephrine 10 mcg/mL

*Approved by Platteville Gilcrest FPD Medical Director March 2024

Appendix: A PGFPD Cardiac Arrest Management Goals

This document sets the goals for cardiac arrest management and is not an absolute. Each cardiac arrest will have its own challenges which may or may not fit into the exact round goal.

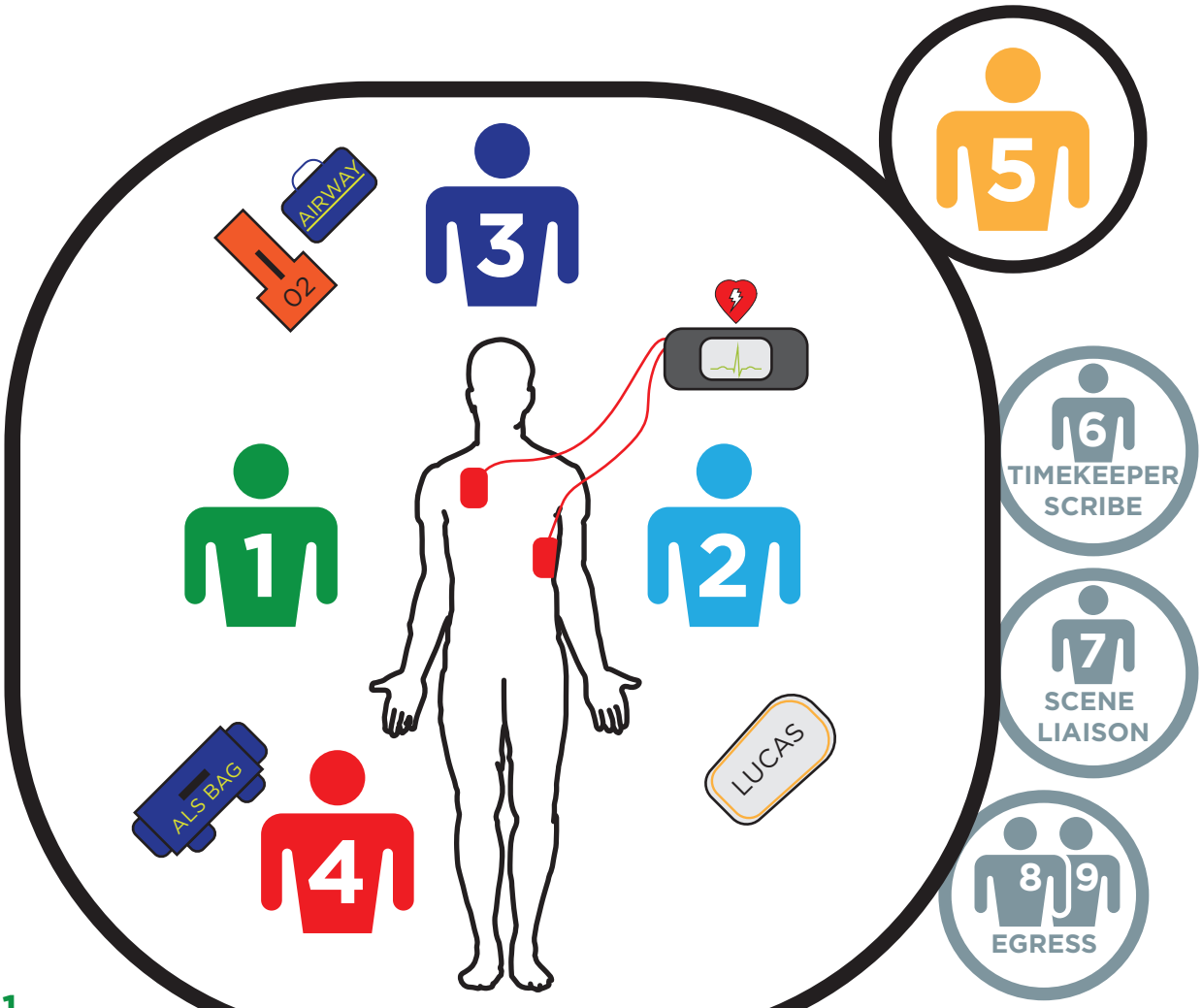
Round 1 Check DNR status and assess viability. See Protocol 0050	• Continuous Compressions (Unless hypoxic arrest) • Assign or start a timer • Passive 02 (Unless hypoxic arrest suspected) • Place pads, switch cardiac monitor to Paddles • Place SpO2 & EtCO2 • Pre-charge • Pulse/rhythm Check • Defibrillate or Cancel Charge • Soiled airway? Suction • ***If time Permits Grab IV/IO access kit and prepare for RD 2. • Monitor compression effectiveness change if needed
Round 2	• Switch compressor and resume continuous compressions • Pre-charge monitor: Pulse/rhythm check (Defibrillate or cancel charge) • Gain IV or IO access and administer Epi 1:10,000 • Establish I-Gel, begin ventilations monitoring ETCo2 • Prepare for intubation if necessary • Monitor compression effectiveness change if needed
Round 3	• Pulse/rhythm check routine (Q6 seconds if I-Gel establish) • Intubate if necessary • Establish OG tube • Administer 300 mg Amiodarone if warranted
Round 4	• Pulse/rhythm check routine • Administer 1:10,000 Epi • Consider reversible causes • Consider a second source of vascular access
Round 5	• Pulse/rhythm check routine • Administer Amiodarone if warranted • Defibrillate or cancel charge
Round 6	• Pulse/rhythm check routine • Administer Epi 1:10,000 • Determine resuscitation viability

Round 7	• Pulse rhythm check routine • Defibrillate or cancel charge
Round 8 - End	• Continue resuscitation efforts (pulse/rhythm checks) • Treat any reversible causes. Terminate according to protocol.

Notes

1. Check the airway anytime a patient has been moved.
2. Adult CPR- 30:2 only when BVM with a mask, otherwise continuous Q6 seconds.
3. Pediatric CPR- 15:2 when BVM with a mask, otherwise continuous Q6 seconds.
4. Neonatal CPR- 3:1 when BVM with a mask, otherwise continuous Q6 seconds.
5. Prior to movement and/or transport place Lucas with minimal chest compression delays (no more than 10 seconds).
6. Consider down time in asystolic arrest with viability of patient- contact medical control to discuss termination.
7. Consult Protocol 0050 for termination/pronouncement vs. transport and timeframes for termination.
8. Consider egress options in a timely fashion if ROSC obtained.
9. Pulse/Rhythm Check Routine= Switch compressor and resume continuous compressions, Pre-charge monitor, perform pulse/rhythm check and defibrillate or cancel charge.

PIT CREW CPR (5 RESPONDERS)



POSITION 1

- -Initial Pt. assessment
- -Move Pt. to workable area
- -Perform uniterrupted compressions for 2 min
- -Assist position 2 while off compressions

POSITION 2

- -Apply monitor pads
- -Defibrillate
- -Cycle with Position 1 every 2 min
- -Place Lucas with Position 1

POSITION 3

- -Manage Airway passive oxygenation
- -Prepare I-gel or intubation

POSITION 4

- -IV/IO acccess
- -Administer medication

POSITION 5

- -Team lead
- -Timekeeping

2ND DUE

- -Scribe/Timekeeper
- -Scene Liaison
- -Egress

PLATTEVILLE GILCREST FIRE PROTECTION DISTRICT

CARDIAC ALERT CHECKLIST

INCIDENT #_____ PCR#_____

Patient Name _____ **DOB:** _____

Baseline Vitals BP: _____ **Pulse:** _____ **Respiration:** _____ **SpO_2:** _____

Dispatch Time: _____ **Contact:** _____

Transport: _____ **Activation:** _____ **ED Arrival:** _____

1. Patient with active chest pain or discomfort, dyspnea or diaphoresis consistent with an acute coronary syndrome (Less than 12 hours)..... ☐

AND

2. 1mm ST segment elevation is present in at least two (2) anatomically contiguous leads (Attach 12 Lead) ☐

3. No wide complex QRS (Paced Ryythm, LBBB, other)..... ☐

4. Patient is 35-85 years old ..... ☐

All of the above criteria must be checked in order to activate a "Cardiac Alert" from the field!!
If unsure of cardiac alert, call and discuss with receiving facility.

Information that MUST be communicated to ED physician and Cardiologist.

5. Patient **is currently** on an anticoagulant (ex. Coumadin, Xarelto, Eliquis, Pradaxa)..... ☐

6. Patient does, or does not have an allergy to contrast dye..... ☐

*****Cardiac Monitor Transmitted to Cardiac Catheterization Lab of Destination by Paramedic #_____*****

Approved by Platteville Gilcrest FPD Medical Director January 1, 2019.

Platteville Gilcrest Fire Protection District
Stroke Alert Checklist

Patient Name: ______________________________ **Date of Birth:** ______________

Information / History From: ______________________________ **Phone:** ______________

***Bring contact person to the hospital with patient if possible** **Time Stroke alert activated:** ______________

CHECK IF ABNORMAL

Facial Droop: (Have Patient Smile)

Normal: Both sides of face move equally ☐

Abnormal: One side of the face does not move as well

Arm Drift: (Have Patient Hold Arms Out For 10 Seconds)

Normal: Both arms move equally or not at all ☐

Abnormal: One arm drifts compared to the other or not at all

Speech: (Have Patient Speak a Simple Sentence)

Normal: Patient uses correct words with no slurring ☐

Abnormal: Slurred or inappropriate words or mute

Dizziness plus at least one of the following: ☐

Diplopia (double vision/vision changes)
Dysarthria (difficulty speaking)
Dysphagia (difficulty swallowing)
Dystaxia (difficulty controlling voluntary movements)

Time: (Last Known Time Patient Was at Baseline or Deficit Free) Less Than 24 Hours Time: ______________

Date: ______________

- **Activate "Stroke Alert" from [illegible] criteria is met AND time is less than 24 hours from last seen normal!**

	Patient Information for ED Physician	Yes	No
1.	Blood Glucose is between 50 mg / dL and 400 mg / dL: ________ mg / dL	☐	☐
2.	Hypertension: (Systolic is > 185. Diastolic is > 110): ______ /______	☐	☐
3.	Seizure at onset of stroke:	☐	☐
4.	Anticoagulant medication(s) ______________________________	☐	☐
	Antiplatelet medication(s) ______________________________	☐	☐
5.	Neurosurgery (Head / Spine), head trauma, A.M.I. within last 3 months.	☐	☐
6.	Major Surgery or GI Bleed within the last 3 weeks.	☐	☐

Revised January 2022

Adult Sepsis Alert Criteria Checklist

STEP 1 - BOTH OF THESE:

___ Age > 16

___ An identified or suspected source of infection or risk factors:

- ___ Cough and/or Dyspnea
- ___ UTI symptoms
- ___ Nausea, vomiting, and/or diarrhea
- ___ Wound Infection (with or without drainage)
- ___ Fever and/or chills

STEP 2 - AND AT LEAST ONE OF THESE:

___ SBP < 100 and/or MAP<65 (or significant decrease if normally HTN)

___ $ETCO_2$ < 25 mmHg

___ Two or more of the following criteria:

- ___ Temp >100.4° F (38° C) or <96.8° F (36° C)
- ___ HR >90
- ___ RR >20
- ___ AMS from baseline
- ___ New onset oxygen dependence to maintain SpO_2 greater than 90%

If a check is present in BOTH BOXES of STEP 1 and AT LEAST ONE BOX of STEP 2 (Age at least 16 yr, identified or suspected infection, and one or more infection, and one or more physiologic criteria are met) activate a SEPSIS ALERT at the receiving facility.

Revised 1/2022

Platteville Gilcrest Fire Protection District
Alcohol Checklist

Use this form as a guide in releasing an isolated intoxicated or suspected intoxicated party.

If not isolated (trauma involved or if called for a medical complaint), party meets patient criteria and the EHR process should be followed)

It is required to still complete an EHR documenting that the following criteria has been met and the party has full decision making capacity.

Is the Party:

_____ Able to walk without assistance

_____ Over the age of 21

_____ Cooperative and willing to participate in screening exam

_____ No evidence of recent trauma

_____ No acute medical problems or medical complaints

_____ Not incontinent of stool

_____ Did not consume large quantities of alcohol within the last hour

_____ Not taking blood thinners (aspirin ok)

_____ Sober adult is present to release with (family, friend, law enforcement)

_____ Medical judgment- this party will be safe without being evaluated in the E.D.

Vital sign limits:

_____ Systolic BP between 100 and 200

_____ Pulse rate between 55 and 120

_____ Blood Sugar between 60 and 300

*Refer to protocols 0030, 0080, 4070, transport the patient to ED or Detox (if criteria is met), or contact medical direction if any of the above cannot be checked off.

**Checklist can be scanned into the EHR or checklist details documented in EHR.

Platteville Gilcrest Fire Protection District
Mental Health and Detox Checklist

Complete form if transporting directly to a mental health or detox facility and attach this form to the EHR.

Contact North Range Behavioral Health Crisis Center Prior to beginning transport: 970-347-1350. Address: 928 12th Street, Greeley.

Detox: 970-347-2120. Address: 1140 M Street, Greeley.

Date_____ Incident #_____

Patient Name_____ DOB_____

NRBH Phone Contact Name:_____Title:_____

**Patient received oral Ativan: Yes No Dose:_____ Time:_____

Is the Patient:

_____ Cooperative

_____ Able to ambulate

_____ Able to stay awake

_____ No suicide attempt

_____ No suspicion of ingesting, injecting, inhaling a substance(s)

_____ No medical complaints (including vomiting or signs of severe intoxication)

Vital sign limits:

_____ Systolic BP less than 200 or greater than 100

_____ Diastolic BP less than 110 or greater than 50

_____ Temp less than or equal to 100.4 or greater than or equal to 95

_____ Pulse rate greater than 60 or less than 110

_____ Respiratory Rate greater than 10 or less than 26

_____ Blood Sugar greater than 60 or less than 250

_____ O2 sat greater than 88% while awake after being on room air for 30 minutes or after prescribed O2 dose for 30 minutes. Individuals with supplemental oxygen may be admitted with use of oxygen compressors. Oxygen tanks are not permitted.

Police: (if intoxicated and PD is onscene to check)
_____ BAL less than .300

Appendix C – EMS Response, Treatment, Transport, and Delivery to Hospital of Highly Infectious Patients

Purpose

Provide guidance to protect the health and safety of EMS and first responders while providing appropriate medical treatment for patients with suspected or confirmed Ebola or other highly infectious diseases including transport to an appropriate medical facility for assessment and medical treatment.

Goal

To develop a general guideline for EMS response to a patient under investigation (PUI)/confirmed Ebola or highly infectious disease patient during a(n):

- 9-1-1 request for service with signs or symptoms of Ebola
- Local Public Health Agency (LPHA)request for PUI/confirmed Ebola patient transport
- Interfacility transport request for PUI/confirmed Ebola patient

Partners

On all PUI or confirmed Ebola or other highly infectious disease cases EMS works in partnership with the following agencies:

- CDPHE
  - Disease Control and Environmental Epidemiology Division (DCEED)
  - Health Facilities and EMS Division (HFEMSD)
  - Office of Emergency Preparedness and Response (OEPR)
  - Local Public Health Agencies (LPHA)
  - State-agreed Ebola EMS transport agencies

PGFPD should collaborate with Weld County Public Health, emergency management and health care coalition to develop response and transport plans according to current CDC guidelines http://www.cdc.gov/vhf/ebola/healthcare-us/emergency-services/ems-systems.html for PUI/confirmed Ebola patients.

Plan

Ebola and other highly infectious diseases pose a high risk to public health and can place EMS providers at risk for exposure especially during the late stages of the disease. To limit the possibility of Ebola transmission, it is important that any agency responding to, treating, or transporting a suspected or confirmed Ebola patient develop specific Ebola policies, procedures, protocols, and actively train to maintain proficiency. Responding to and transporting a suspected or confirmed Ebola patient is labor and equipment intensive and should only be performed by qualified and trained responders. If a 9-1-1 response indicates a potential highly infectious disease patient and PGFPD is unable to appropriately care for or transport the patient and provide proper PPE http://www.cdc.gov/vhf/ebola/healthcare-us/ppe/guidance.html and resources for the EMS crew, PGFPD should request state-agreed EMS assets through the CDPHE.

9-1-1 Response

Despite diligent monitoring by the LPHA, CDPHE, and CDC, a person who has had contact with a highly infectious and traveled to the United States might circumvent the screening system and end up dialing 9-1-1 once ill. It is important that all Public Safety Answering Points (PSAPs) along with EMS agencies properly screen callers and patients with recent travel to a country currently being monitored for Ebola or other highly infectious disease who exhibit one or more of the following signs and symptoms:

- Fever
- Severe headache
- Muscle pain
- Vomiting
- Diarrhea
- Abdominal pain
- Unexplained hemorrhage

Note: Not all monitored travelers who access 9-1-1 for an emergency should be considered suspected of having Ebola if the complaint is ***not*** consistent with Ebola or other highly infectious disease signs and symptoms.

It is crucial that EMS responding crews practice scene safety, scene size-up, and proper use of PPE http://www.cdc.gov/vhf/ebola/healthcare-us/ppe/guidance.html on all responses. If an EMS crew encounters a situation where signs and symptoms indicate potential Ebola or other highly infectious disease and a patient has traveled from a country with widespread transmission of the disease or has had contact with an infectious disease patient within 21 days of experiencing symptoms:

- Maintain a safe distance until proper PPE is donned- (at least three feet) http://www.cdc.gov/vhf/ebola/healthcare-us/ppe/guidance.html
- Provide appropriate medical treatment for the patient consistent with patient presentation
- Contact EMS Chief to determine plan - ready appropriate vehicle or transfer care to one of the state-agreed EMS Ebola/highly infectious disease transport agencies
- Contact CDPHE to collaborate on appropriate care and determine patient disposition

  303-692-2700 during working hours

  or

  Afterhours 303-370-9395
- Transport the patient to the most appropriate facility according to CDC guidelines http://www.cdc.gov/vhf/ebola/healthcare-us/emergency-services/ems-systems.html

Public Safety Answering Points

Public Safety Answering Points (PSAP) are the cornerstone of public protection when 9-1-1 is activated. The safety of the EMS providers responding to an emergency call depends on information provided by the PSAP dispatcher. PSAPs should follow the CDC Guidelines http://www.cdc.gov/vhf/ebola/healthcare-us/emergency-services/ems-systems.html for *DISPATCH/9-1-1 PSAPS* which include asking about recent travel to an Ebola monitored country.

Considerations in developing local EMS response for calls received through a PSAP:

- Has the PSAP for the EMS agency implemented the CDC guidelines http://www.cdc.gov/vhf/ebola/healthcare-us/emergency-services/ems-systems.html regarding Ebola?

- Is the PSAP screening for symptoms and travel?

- Is the PSAP relaying pertinent call information to the responders?

- Is there a secure communication mode in place for dispatching a potential Ebola response?

- Are there confidential radio codes in place that only the PSAP and agencies know to refer to an Ebola or other highly infectious disease patient and response to prevent unintentional media release?

- Does the PSAP have a protocol in place to contact the local public health agency, EMS agency management, the appropriate response unit and other essential agency personnel necessary for an Ebola or other highly infectious disease response?

Response

- If contacted by Weld County Public Health for a PUI, non-emergent response is recommended.
- If unknown, respond per discretion of dispatch or BC
- Contact EMS Chief for possible response and/or coordination with Weld County Public Health /CDPHE

Treatment

Due to the highly infectious properties of Ebola and other highly infectious diseases, EMS treatment should be limited to only necessary care depending upon the situation, per CDC Guidelines *(Interim Guidance for Emergency Medical Services (EMS) Systems and 9-1-1 Public Safety Answering Points (PSAPs) for Management of Patients Under Investigation (PUIs) for Ebola Virus Disease (EVD) in the United States and medical direction* http://www.cdc.gov/vhf/ebola/healthcare-us/emergency-services/ems-systems.html.

- If PPE has not been donned prior to patient contact, maintain at least a three-foot buffer between the EMS provider and the patient.
- Ensure all EMS providers have appropriate PPE donned if they will have any patient contact which includes moving the patient to and from the gurney.
- IV insertion only if patient condition requires it for specific treatment
- **Base Contact** suggested for specified treatment based on patient condition
    - Antiemetic
    - Benzo for anxiety
    - Pain Management
    - Other supportive care required

Transport

Ebola or other highly infectious disease patients late in the disease stage can lose a significant amount of fluids both orally and rectally. EMS crews should avoid performing unnecessary interventions during transport to reduce the potential risk of Ebola transmission.

- Properly wrap the patient compartment area with the decon tarps
- Notify Weld County Public Health/CDPHE early in the response to determine the most appropriate facility- Most likely transport facility will be either Denver Health or UC Health Aurora (AIP)
- Consider requesting Banner Health or Denver Health for transport if staffing and vehicles are limited
- **DO NOT** call for helicopter transport
- Provide only supportive measures- suction, antiemetic, sedation/pain control- DO NOT use needles or attempt intubation while actively moving
- **Base Contact** for life saving measures

Delivery to hospital and decontamination

During any response and transport of a PUI or confirmed Ebola patient, EMS agencies must work in collaboration with the Weld County Public Health and CDPHE to determine the proper receiving facility for the patient. Considerations when delivering an Ebola or other highly infectious disease patient:

Once the patient is transferred to the facility, EMS will need to properly:

- Doff PPE according to CDC guidelines http://www.cdc.gov/vhf/ebola/healthcare-us/ppe/guidance.html in a designated doffing location

- Decontaminate the ambulance and gurney according to CDC guidelines http://www.cdc.gov/vhf/ebola/healthcare-us/emergency-services/ems-systems.html

- Determine steps for crew monitoring if needed- consult LPHA

LPHA Request for EMS Transport of Monitored Patient

If a person being monitored by a LPHA starts showing signs and symptoms of illness, the LPHA will call CDPHE to discuss the situation as described in the Traveler Monitoring Protocol. The protocol “Disease Control Steps for Responding to a Person under Investigation (PUI) for Ebola” details the steps public health will follow to respond to a PUI. If it is determined that a PUI needs to be transported by EMS, public health will consider the following, relying on the LPHA to provide information about local EMS systems:

- Can local EMS safely handle the response and transport?

- Does the local EMS agency have proper PPE http://www.cdc.gov/vhf/ebola/healthcare-us/ppe/guidance.html for an Ebola patient, trained on donning and doffing of PPE and have adequate personnel and vehicles to perform the transport?

- Is it more appropriate to use a state-agreed asset to provide the response or transport?

If the local EMS agency is not able to handle the transport, the LPHA will contact CDPHE to arrange for state-agreed EMS assets to provide response and transport consistent with the Emergency Medical Services Ebola Communication Plan. If the local EMS agency is able to handle the suspected or confirmed Ebola patient, the state-agreed EMS transport agencies should be contacted to provide technical assistance to the local EMS agency.
LPHAs have plans in place that take into consideration local factors for EMS transport. These plans should be made in advance of responding to a PUI.

Response, transport and delivery to a designated ETC or EAH should follow the considerations found in the *above Safety, Treatment, Transport and Delivery to Hospital and Decontamination* sections.

Interfacility Transport Request

If a PUI or confirmed Ebola patient needs to be transported from a medical facility to an ETC or EAH, the facility will contact the LPHA and CDPHE to arrange for state-agreed EMS assets to provide response and transport consistent with the *Emergency Medical Services Ebola Communication Plan* **Appendix G.3**

Response, transport and delivery to a designated ETC or EAH should follow the considerations found in the above *Safety, Treatment, Transport and Delivery to Hospital and Decontamination* sections.

COVID-19 SCREENING, TREATMENT, and TRANSPORT

COLORADO
Health Facilities & Emergency Medical Services Division
Department of Public Health & Environment

Dispatch should utilize screening methods to identify patients at risk of COVID-19 which may include but not limited to screening criteria questions, the EMD Emerging Infectious Disease (EID) Surveillance tool, telehealth, or other mechanisms and notify responding services. With widespread community COVID-19 transmission, epidemic/pandemic EMD protocols may be developed for determination of triage and response.

Negative Screen

Do not rely solely on EMD personnel to identify a potential exposure patient:

- EMD may be constrained by time and caller information
- From a distance of at least 6 feet, obtain your own history and assess for clinical signs and symptoms
- Limit the number of providers to only those necessary for care
- High risk patients include history of close contact with a known or suspected COVID 19 infected person or recent travel to an affected geographic region within the last 14 days. However, this **CAN NOT** be used to exclude the possibility of COVID 19 illness given outbreak of cases in Colorado

Screening criteria – Does the patient have?

Fever (subjective or measured)
AND/OR
Symptoms of a Respiratory Illness or Diarrhea
(Cough, sore throat, difficulty breathing, or taste/smell disturbance)

NO → Exit to Appropriate Protocol(s)

YES

Positive Screen

- One provider enters in full PPE and assesses the need for additional resources
- If the patient can self-apply a mask, give him/her one from a distance. Otherwise, place a mask on the patient once provider has full PPE in place

PERSONAL PROTECTIVE EQUIPMENT

Utilize standard, contact, droplet, and airborne precautions:

- Eye protection (goggles or face shield)
- N95 respirator mask or higher alternatives (N100, PAPR, half-mask, etc.)
- Gloves
- Isolation gown
- Maintain at least 6 ft of distance from the patient until above PPE is donned
- Place surgical mask on the patient
- Avoid Aerosol Generating Procedures (AGPs) such as suctioning, CPAP, BVM, advanced airway management, and nebulized medications unless patient presents with respiratory failure. If AGPs are utilized, a face shield or PAPR is recommended
- If supply of N95 or alternative is critically low, agency policy may dictate use of surgical mask unless performing AGPs

TREATMENT AND TRANSPORT DECISION

- Treatment as per standard respiratory protocols with consideration to avoid AGPs as above. Consider IM epinephrine and IV magnesium instead of nebs for treatment of severe asthma exacerbation from COVID19
- Transport decisions will need to be made on a case-by-case basis.
- Agencies may need to consider treatment in place, transport to alternative destinations, or non-transport. These decisions will be at the discretion of the transporting agency's medical director.

RECEIVING FACILITY NOTIFICATION

Notify the receiving facility as soon as possible to allow for room and equipment preparation. Remain in the ambulance bay until escorted to a room by facility staff.

Links for COVID-19 Information

- CDC: https://www.cdc.gov/coronavirus/2019-ncov/index.html
- State of Colorado: https://covid19.colorado.gov
- Colorado EMS Google Drive: https://drive.google.com/drive/folders/1k6ut0mw4rIGf3xr3f433xolmDwtkeqww

Individual agency policy and procedures apply, and providers are responsible for knowing and following those policies. This protocol is not intended to replace any existing agency specific guidelines provided by the EMS agency, Medical Director, or receiving facilities.

Updated 4/14/2020

COLORADO
Health Facilities & Emergency Medical Services Division
Department of Public Health & Environment

COVID-19 NON-TRANSPORT PROTOCOL

Purpose

A. Identify patients that are safe to not transport to a hospital during widespread cases of confirmed COVID-19 patients in order to accomplish the following:
   a. Minimize disease transmission to the community
   b. Protect first responders and healthcare personnel
   c. Preserve healthcare system functioning when the system is overwhelmed.

Individual agency policy and procedures apply, and providers are responsible for knowing and following those policies. This protocol is not intended to replace any existing agency specific guidelines provided by the EMS agency, Medical Director, or receiving facilities.

Indications for Non-Transport

A. EMS agency Medical Direction has decided to enact non-transport guidelines based on local indications that the healthcare system infrastructure is overwhelmed. This may include, but is not limited to, one of the following circumstances:
   a. Hospitals are exceeding maximum census
   b. Hospitals and facilities are experiencing significant overcrowding
   c. Hospitals and first response agencies have enacted surge plans
   d. Healthcare providers are unable to obtain required personal protective equipment (PPE) to prevent transmission of disease.

Assessment Algorithm for Non-Transport

Initial Assessment:
- Refer to COVID-19 screening protocol for initial encounter guidance
- Initial assessment should begin from a distance of at least 6 feet from the patient and be limited to one EMS provider if possible.

↓

Inclusion Criteria for Non-Transport:
- Age < 60 years old
- History of fever with symptoms of viral syndrome illness (cough, nasal/chest congestion, sore throat, body aches)
- **Vital signs:** (or normal for age for pediatric patients)
  - Respiratory Rate > 8 or < 20
  - O2 Saturation > 90%
  - Heart Rate < 100 bpm
  - Systolic BP at least 100
  - GCS 15
- **Absence of** shortness of breath with activity, respiratory distress, syncope, cyanosis, diaphoresis, and chest pain other than mild pain with coughing
- Patient has intact decision-making capacity

No → Proceed with standard medical treatment protocols

Yes to all ↓

Non-Transport Disposition:
- The patient has a support system
- EMS provides notice to local public health authorities in a timely manner
- Patient should be followed up by local public health authorities, pre-hospital/out-of hospital services, or other health care services
- Contact medical control if patient refuses non-transport

Patient guidance for EMS return precautions depending on system's ability to respond:

Severe shortness of breath, confusion or alteration of mental status, syncope, moderate to severe chest pain, inability to tolerate food or liquids, skin cyanosis

Updated 3/16/2020

Appendix D: Approved Abbreviations

The following is a list of approved medical abbreviations. In general, the use of abbreviations should be limited to this list.

A&O x0-4 → Alert and Oriented

ABC → Airway, Breathing, Circulation

abd → abdomen

A-Fib → atrial fibrillation

AKA → above knee amputation

AAA → abdominal aortic aneurysm

AC → antecubital

ACLS → Advanced Cardiac Life Support

AED → Automated External Defibrillator

ALS → Advanced Life Support

aloc → altered level of consciousness

AMA → against medical advice

AMI → Acute Myocardial Infarction

AMS → altered mental status

ASA → acetyl salicylic acid (Aspirin)

BBB → Bundle Branch Block

BBS → bilateral breath sounds

BGL / BG → blood glucose

BKA → below knee amputation

BLS → Basic Life Support

BP → blood pressure

BS → breath sounds

BVM → Bag Valve Mask

C/O → complaining of

CA → Cancer

CABG → Coronary Artery Bypass Graft

CAD → Coronary Artery Disease

C/C → Chief Complaint

CHF → Congestive Heart Failure

CNS → central nervous system

CO → Carbon Monoxide

COPD → Chronic Obstructive Pulmonary Disease

CP → Chest Pain

CPR → Cardiopulmonary Resuscitation

CSF → cerebrospinal fluid

CTL → cervical, thoracic, lumbar

CVA → Cerebral Vascular Accident

D5W → 5% Dextrose in water

D10 → 10% Dextrose

D50 → 50% Dextrose

DKA → diabetic ketoacidosis

DNR → Do Not Resuscitate

DOA → Dead on Arrival

DT → Delirium Tremens

DVT → deep vein thrombosis

ECG → Electrocardiogram

ED / ER → Emergency Department

EJ → external jugular

EKG → Electrocardiogram

EPI → Epinephrine

ETT → Endotracheal Tube

ETOH → ethyl alcohol

Fx → fracture

g → gauge

GCS → Glasgow Coma Scale

GI → gastrointestinal

GSW → gunshot wound

gtts → drops

GYN → gynecology (gynecological)

Hg → Mercury

HPI → history of present illness

HR → Heart Rate

HTN → hypertension

Hx → history

ICP → intracranial pressure

IM → intramuscular

IO → Intraosseous

IV → intravenous

JVD → jugular vein distention

kg → kilogram

K → Potassium

KVO → Keep Vein Open

Lb / lbs → pound(s)

LLQ → left lower quadrant

LMP → last menstrual period

LPM → liters per minute

LOC → level of consciousness

LR → lactated ringers

LS → lung sounds

LUQ → left upper quadrant

LVH → Left Ventricular Hypertrophy

MAE → moves all extremities

MAP → mean arterial pressure

mg → milligram(s)

mcg → microgram

MCI → mass casualty incident

MDI → metered dose inhaler

mEq → milliequivalent

MI → Myocardial Infarction

mL → milliliter

mmHg → millimeters of mercury

MVA / MVC → motor vehicle accident

NC → Nasal Cannula

Neb → Nebulizer

NG → nasogastric

NKA → No Known Allergies

NKDA → No Known Drug Allergies

NPA → nasopharyngeal airway

NRB → non-rebreather mask

NS / NSS → normal saline

NSR → normal sinus rhythm

NT → non-tender

NTG → Nitroglycerine

N/V → nausea/vomiting

N/V/D → nausea/vomiting/diarrhea

O2 → Oxygen

OB / OBGYN → obstetrics/gynecology

OPA → oropharyngeal airway

P → Pulse

PAC → Premature Atrial Contractions

PALP → palpation

PALS → Pediatric Advanced Life Support

PCN → Penicillin

PE → Pulmonary Edema or Pulmonary Embolism

PEA → Pulseless Electrical Activity

PEEP → positive end-expiratory pressure

PERRL → pupils equal, round, and reactive to light

PMHX → past medical history

PO → by mouth

POV → privately owned vehicle

PSVT → paroxysmal supraventricular tachycardia

Pt → patient

PTA → prior to arrival

PRN → as needed

PVC → Premature Ventricular Contraction

RLQ → right lower quadrant

ROSC → return of spontaneous circulation

RR → respiratory rate

RUQ → right upper quadrant

SaO2 → systemic arterial oxygen saturation

SpO2 → oxygen saturation by pulse oximeter

SpCO → carbon monoxide saturation by pulse oximeter

SL NTG → sublingual Nitroglycerin

SNF → skilled nursing facility

SNT → soft non-tender

SOB → shortness of breath

SQ → Subcutaneous

SR → Sinus Rhythm

STEMI → ST elevated myocardial infarction

ST → Sinus Tachycardia

SVT → Supraventricular Tachycardia

SZ → Seizure

TCP → transcutaneous pacing

TIA → Transient Ischemic Attack

TKO → to keep open

Tx → treatment, transport

URI - upper respiratory infection

UTI → Urinary Tract Infection

V-fib / VF → Ventricular Fibrillation

VS → vital signs

V-tach / VT → Ventricular Tachycardia

Yo / y/o / YOA → years old (years of age)

M → Male

F→ Female

+ → positive

- → negative

= → equal

< → less than

> → greater than

L → left

R → right

Appendix E: Onscene Rehabilitation (Rehab)

This process should be implemented at all working fires, greater alarm emergencies, or hazardous materials incident while working in full PPE or SCBAs, during extended operations, or in fire training exercises lasting longer than 45 minutes of strenuous firefighting or extrication drills.

A large scale, long duration or extreme weather incident will require the establishment of a formal rehabilitation group.

A. Location
    1. The rehabilitation group should be near the command post.
    2. Primary considerations are:
        a. Sufficient space to accommodate the number of personnel expected.
        b. Sufficient space for a separate area to remove personal protective equipment (PPE).
        c. Accessibility for EMS and ambulance(s).
        d. Away from hazardous atmospheres including apparatus exhaust.
        e. Uphill and upwind from any gross decontamination area.
        f. Shaded in the summer and protected from inclement weather (cold/rain/snow).
        g. Accessible to a water supply for hydration and cooling.
        h. Away from spectators and media whenever possible.
B. Personnel (Rehabilitation Team)
    1. The rehabilitation team should have sufficient personnel to staff these functions:
        a. Rehabilitation Officer (Paramedic) to manage the group.
        b. Accountability Officer to obtain passports from all members involved with incident, maintain accountability board, assist IC with crew accountability, and monitor recycle and rehab check in/ check out.
        c. Rehabilitation Officer and Accountability Officer may be same person and may also serve as Rehab Group Superintendent.
        d. Provision of hydration and nourishment and warming or cooling aids as required.
        e. EMS personnel for vital sign monitoring.
        f. Critical Incident Stress Team (if required).
        g. The Rehab Officer should request through the incident commander the pick-up of food, fluids, and rehab apparatus to be brought to the scene.

C. Entry Point
    1. When practicable, company officers should direct crews to rehab together.
    2. Make an initial medical screening assessment for general signs and symptoms requiring treatment and an initial assessment of vital signs.
    3. Remove PPE and provide clean-up/decontamination resources. Gross decontamination techniques should be employed before coming in contact with gear and equipment that has not been involved in suppression operations or a hazardous materials response hot zone.
    4. If no further medical attention is required, direct crew members to hydration, replenishment and warming or cooling resources.
D. Hydration and Replenishment
    1. In cold weather, water and sports drinks should be at room temperature.
    2. Members in rehab should:
        - Drink at least 8 ounces of fluid every 15 minutes.
        - Eat easily digested foods such as plain sandwiches, stew, fruits and snack bars.
        - Avoid fried foods or high fat foods.
        - Avoid carbonated or caffeinated drinks.
        - Cool down/warm up as determined by the elements.

C. Medical Treatment and Transport
    1. EMS members assigned to rehab should:
        a. Provide a medical screening assessment and take vital signs including:
            1. Temperature
            2. Blood pressure
            3. Heart rate
            4. Respiratory rate
            5. Pulse oximetry
            6. CO levels
        b. Treat members exhibiting signs or symptoms requiring further assessment, vital signs exceeding EMS protocols and/or symptoms of heat/cold stress.
        c. Treat minor injuries.
        d. Arrange for patient transfer to other EMS crews for medical transport as needed.
        e. Reassess each member's vital signs before return to duty.

D. Return to Duty and Reassignment
    1. The Safety Officer and Company Officer is responsible to make sure members and crews are properly hydrated, receive medical treatment if required, rest and medical clearance before return to duty or reassignment.
    2. Rest periods should be a minimum of ten minutes and a maximum of 20 minutes under any conditions when using up to two 45-minute self-contained breathing apparatus (SCBA) cylinders, after moderate to heavy workload, or as the personnel needs rehab time. The Rehab time can be extended as needed. After 30 minutes of Rehab, consideration should be made for transporting the firefighter to an appropriate medical facility.
    3. Prior to leaving the scene, personnel that have either had one visit to Rehab, or it has been 45 minutes or greater of moderate to heavy work time, will be cleared by the Rehab Officer. A second or third set of vital signs should be recorded.
    4. The rehabilitation officer shall be permitted to adjust the time frames depending on work or environmental conditions. Consideration should be given to maintaining an equal work/rest time ratio. A record of all members passing through rehabilitation should be maintained. The record should include:

        A. Unit number.
        B. Member name.
        C. Two sets of vital signs to include:
            1. Blood Pressure
            2. Pulse, Respiration
            3. SpO2
            4. CO levels and temperature
        D. In order to exit rehab, return to the scene, or to duty:
            1. A blood pressure will be less than 140/90 with a systolic reading greater than 100
            2. The heart rate will be between 60 and 104 bpm
            3. The respiratory rate will be between 12 and 24 bpm
            4. The SpO2 reading will be greater than 94% at room air
            5. CO levels will be less than 9%
                a. CO Levels between 10% and 19% can be observed on scene with oxygen being administered
                b. Readings at or above 20% will be transported to an appropriate facility
            6. A body temperature must be less than 100.4 degrees

        E. Rehabilitation paperwork shall be attached to the EHR under the responding units call sign with the disposition of "Fire Standby."

Platteville-Gilcrest Fire Protection District
Firefighter Rehab Form

Vital Signs for Release
BP: <140/90
Hrt Rt: 60-104
Reps: 12-24
SPO2: >94
CO: <9
Temp: <100.44

Note time firefighter enters/exits rehab. Minimum 2 sets of vitals prior to release.

Incident #		Date	/ /	Unit	

Name							Bottle(s): 1 / 2 / 3	Time In	:	Time Out	:
Time	B/P	Pulse	Resp	SpO2	CO	Skin	Temp	Cap Refill	Lung Sounds	Outcome: (check)	
:	/			%	%					Released	
:	/			%	%					Light duty	
:	/			%	%					Transport	

Notes:

Name							Bottle(s): 1 / 2 / 3	Time In	:	Time Out	:
Time	B/P	Pulse	RR	SpO2	CO	Skin	Temp	Cap Refill	Lung Sounds	Outcome: (check)	
:	/			%	%					Released	
:	/			%	%					Light duty	
:	/			%	%					Transport	

Notes:

Name							Bottle(s): 1 / 2 / 3	Time In	:	Time Out	:
Time	B/P	Pulse	RR	SpO2	CO	Skin	Temp	Cap Refill	Lung Sounds	Outcome: (check)	
:	/			%	%					Released	
:	/			%	%					Light duty	
:	/			%	%					Transport	

Notes:

Name							Bottle(s): 1 / 2 / 3	Time In	:	Time Out	:
Time	B/P	Pulse	RR	SpO2	CO	Skin	Temp	Cap Refill	Lung Sounds	Outcome: (check)	
:	/			%	%					Released	
:	/			%	%					Light duty	
:	/			%	%					Transport	

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