SOUTH PLAINS EMERGENCY MEDICAL SERVICES

PRE-HOSPITAL TREATMENT PROTOCOLS for EMT-PARAMEDIC

APPROVED FOR USE

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Medical Director
South Plains EMS

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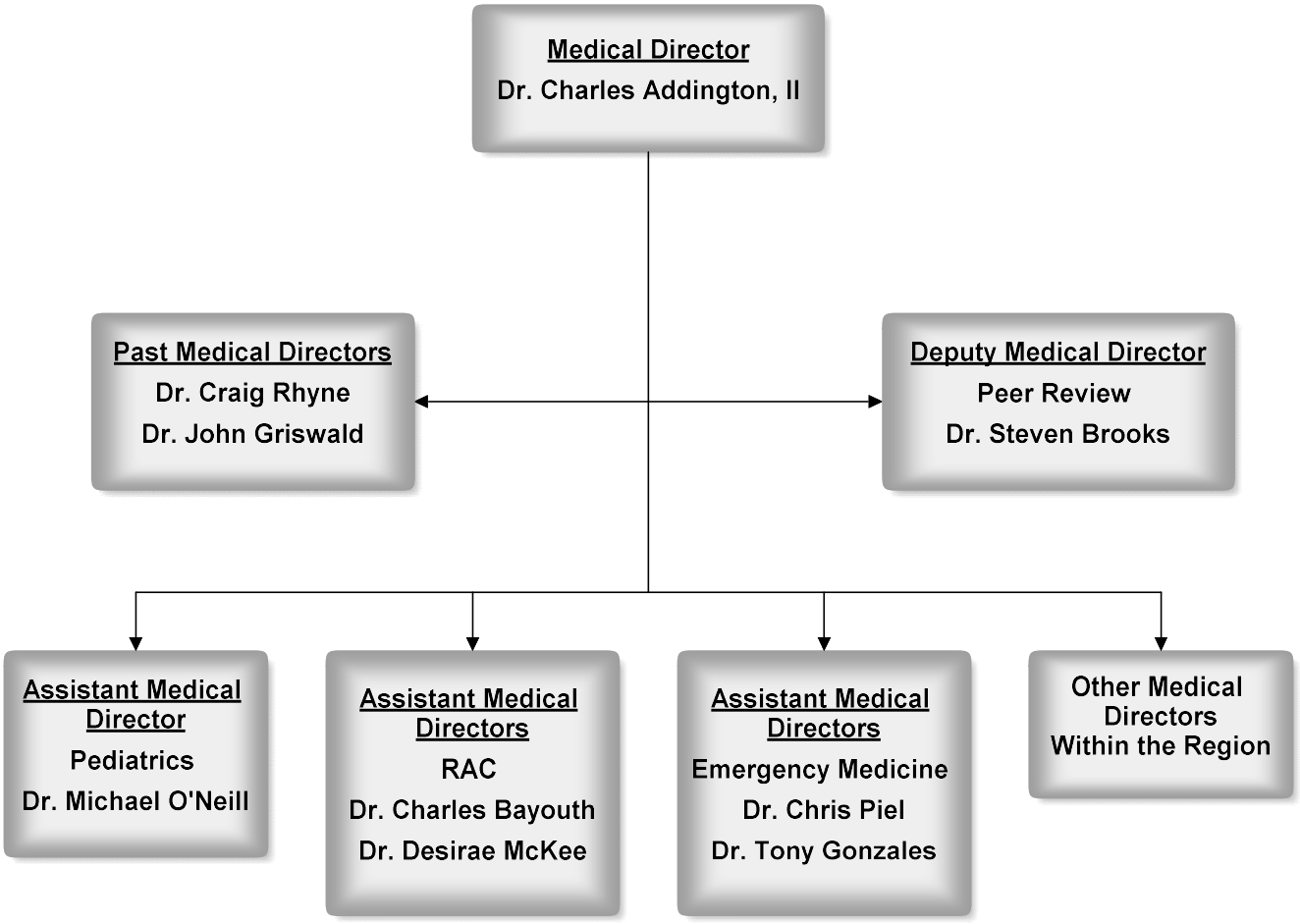
SPEMS Medical Direction Committee
Organizational Chart



The following SPEMS organizations are authorized to utilize these Protocols under the SPEMS Medical Director:

- Amherst EMS
- Associated Ambulance Authority
- Bailey County EMS
- Castro County EMS
- City of Littlefield EMS
- Cochran County EMS
- Crosbyton Clinic Hospital EMS
- Dickens County Ambulance Service
- Earth EMS
- Farwell EMS
- Floydada EMS
- Groom EMS
- Hale Center EMS Association
- Kent County EMS
- King County EMS
- Lazbuddie EMS
- Lubbock Aid Ambulance
- Lynn County Hospital District EMS
- Motley County Ambulance Service
- Northeast Midland County Volunteer Fire Department
- Olton Volunteer Ambulance Association
- Paducah Ambulance Service
- Paducah Volunteer Fire Department
- Panhandle EMS
- Petersburg EMS
- Plainview Fire Department
- Post-Garza County EMS
- Ralls Volunteer Ambulance Service
- Seagraves Loop EMS
- Seminole EMS
- Seminole Volunteer EMT Association
- Silverton EMS
- Springlake Volunteer Fire Department First Responder
- Stinnett EMS
- Sudan Fire Department/EMS
- Wellington EMS
- White Deer EMS
- Wolfforth EMS

PREFACE

These Protocols, originally developed by Francis C. Jackson, M.D., have been revised by the Protocol Committee of South Plains EMS, Inc. The patient care procedures are intended to reflect current recommendations from organizations including, but not limited to, the American Heart Association, The National Association of Emergency Medical Technicians, and the Committee on Trauma of the American College of Surgeons. They are not intended to restrict or substitute for the use of informed professional judgment by the Medical Control Physicians.

To the best of our knowledge, drug dosages are consistent with national standards. Neither the Protocol Committee, the Medical Direction Committee, South Plains EMS, Inc., nor the Medical Directors shall be held liable for readers' errors, omissions, or misunderstanding of the text.

DISCLAIMER

The original version of these protocols are located in the SPEMS office, any changes whatsoever are strictly prohibited without the express written permission of the SPEMS's Medical Director.

On occasion a variance, addendum, or other change may be needed to the current SPEMS protocols. In this event the request MUST be facilitated through the SPEMS office. The request will then be submitted to the SPEMS Medical Director for approval.

TABLE OF CONTENTS

GENERAL GUIDELINES

The algorithms in this manual consist of treatment protocols, which may be implemented by EMS technicians at the appropriate level of certification, they establish guidelines based on established standards of care to assist physicians in providing on-line medical control.

Only EMT-Paramedic personnel certified by the Texas Department of State Health Services (TDSHS), who also have current medical control authorization from the South Plains Emergency Medical Services (SPEMS) Medical Director, may manage patients under these treatment protocols.

EMT-Paramedics who do not have current medical control authorization from the SPEMS Medical Director are prohibited from operating under these treatment protocols.

Execution of treatment protocols without medical control authorization will constitute the unauthorized practice of medicine and may result in action being initiated to revoke the offender's EMS certification.

EMT-Paramedics should contact medical control whenever they believe that circumstances may indicate deviation from protocol, or whenever a situation does not appear to be clearly governed by a specific protocol. In the event that the physician at the receiving hospital cannot be contacted, the medical control physician at University Medical Center shall be contacted immediately. While treatment procedures can be performed without on-line medical control, it is always available when needed. When in doubt, contact on-line medical control.

Radio orders may be communicated through a registered nurse if the physician is physically present in the emergency department but is unable to come to the radio. If all efforts to establish voice contact fail, the authorized EMT-Paramedic should execute the appropriate protocols and transport. Attempts to establish voice contact with the receiving facility or University Medical Center should continue at least every 5 minutes throughout transport.

Use of these treatment protocols when attempts to make voice contact with the physician have failed, must be communicated to the physician at the receiving facility on arrival, or when contact is made, and must be fully documented by the EMT-Paramedic on the run report. All such instances will be followed by a complete case review.

These treatment protocols are also intended to serve as guidelines to medical control physicians regarding the current standard for pre-hospital emergency care. These protocols will also provide a basis for auditing the quality of pre-hospital care delivered in the South Plains EMS System. These treatment protocols are not intended to restrict or substitute for the use of informed professional judgment by medical control physicians.

This manual is the result of a review and compilation by the South Plains EMS System Protocol Committee of current, nationally accepted standards for pre-hospital care. The Medical Director of the South Plains EMS System has approved these treatment protocols for use.

This document will be reviewed annually by the Protocol Committee and the Medical Director. Appropriate changes will be distributed following the annual review. If no changes are made, a letter to that effect will be circulated.

These treatment protocols will remain in effect for the duration of the provider license issued by the Texas Department of State Health Services, unless revoked by the SPEMS Medical Director.

MEDICAL CONTROL AUTHORIZATION

Pursuant to the provisions of the Medical Practice Act, the Medical Director of South Plains EMS, Inc. and the SPEMS Medical Direction Committee have determined that the following requirements must be met by EMT-Paramedics who wish to operate under the treatment protocols in this manual.

Furthermore, these requirements must also be satisfied by any EMT-Paramedic who wishes to practice in the SPEMS system under the supervision of the SPEMS Medical Director. This requirement, established pursuant to 22 TAC, Sec. 197.3(b)(1), states that the medical director shall approve the level of pre-hospital care which may be rendered locally by each of the EMS personnel employed by and/or volunteering with the EMS under the Medical Director's supervision, regardless of the level of state certification, before the certificant is permitted to provide pre-hospital care to the public.

It is the responsibility of the individual's EMS Service Provider to keep records of individual EMS certifications, immunization records, protocol exams, case review participation, skills exams and any specialized training required by the medical director. These records are subject to examination at anytime, by the SPEMS Medical Director or his/her designate.

Each EMT-Paramedic must:

1. Provide documentation of current certification as an EMT-Paramedic by the Texas Department of State Health Services. ***(A current National Registry card can NOT be used in the place of a current TDSHS certification)***
2. Be currently certified in Health Care Provider BLS.
3. Be currently certified in ACLS.
4. Be currently certified in PALS.
5. Demonstrate approval of local hospital and/or the local medical director by providing a letter which:
   a) States understanding that the EMT-Paramedic will be using the SPEMS protocols.
   b) Acknowledges that the EMT-Paramedic will be using University Medical Center for on-line medical control under specific circumstances, and
   c) States the circumstances under which this medical control will be used.
6. Have passed the protocol examination within the past year with a grade of 90% or higher. All initial testing will be done via the internet. A copy of the official protocol exam results email must be forwarded to all EMS directors in which the EMT-P is on the roster. Each EMT-P shall be allowed to take the test twice. Failure of the Protocol exam twice will require the EMT-P to contact the SPEMS office for additional testing and remediation. The Medical Director may require additional formal training in the protocols at any time.
   NOTE: The Protocol exam is open book and each EMT-P is encouraged to utilize the Protocols to complete the exam.
7. Participate in case review at least four times per year. Two of which are recommended by the end of the first half of the year and the remaining two by the end of the second half of the year. The SPEMS Medical Director, or his designee, shall attend all case reviews. A written record will be kept of all case reviews. This record will consist of at least a summary of the cases presented and recommendations made for changes in procedure.
8. Documentation is a critical component of pre-hospital care. All documentation must be complete, accurate and done in a timely manner.

   A patient contact form, list of medications given, and procedures performed will be given to the patient's nurse prior to leaving the receiving facility.

   The full patient care report (PCR) must contain information that is accurate and must completely describe the patient's condition; treatment provided, response to treatment, and any other information that is pertinent to patient care. The full PCR must be completed within one business day of the delivery of the patient and submitted to the receiving facility per rule §157.11.

   All SPEMS providers must use an approved standard run report form/software, with copies of all reports submitted, manually or electronically to the SPEMS Medical Director, through the SPEMS office, by the 10th of each month.

9. EMT-Paramedics must demonstrate proficiency of the following advanced skills at least twice per year between the period of January 1st through June 30th and July 1st through December 31st by:

   - Performing 6 successful IVs, 3 successful endotracheal intubations, 3 successful King airway intubations , 2 properly performed defibrillations, 3 properly performed adult EZ IO placements, 3 properly performed pediatric EZ IO placements, 2 pleural decompressions, 1 needle cricothyrotomy, and 1 surgical cricothyrotomy during actual patient care as documented by an observer* approved by the Medical Director.

   OR

   - Participating in at least one formal laboratory evaluation of IV, endotracheal intubation, King airway intubations, defibrillation skills, adult EZ IO placement, pediatric placement of the EZ IO, pleural decompression, needle cricothyrotomy, and surgical cricothyrotomy as approved by the Medical Director or an approved designee.*

   OR

   - Participating in a combination of these options which adequately demonstrates maintenance of proficiency in IV, endotracheal intubation, King Airway, intubation, defibrillation skills, adult EZ IO placement, pediatric placement of the EZ IO, pleural decompression, needle cricothyrotomy, and surgical cricothyrotomy to the satisfaction of the Medical Director.

   (*Skills may be checked off by a SPEMS Peer Reviewer, Associate Medical Director, SPEMS Medical Director, or by a person approved by the SPEMS Medical Director. To be approved, a person must submit to the SPEMS Medical Director a list of qualifications and must receive an endorsement from the Peer Reviewer that performs peer review for that service. All skills will be verified according to the standards listed on the SPEMS website.)

   AND

   - Participating once per year in a formal laboratory evaluation of pleural decompression conducted by a SPEMS Peer Reviewer, Associate Medical Director, SPEMS Medical Director, or by a person approved by the SPEMS Medical Director

10. These protocols shall be utilized under medical direction of the SPEMS Medical Director in the SPEMS/TSA-B area or during routine transfers from one service area to another.

    These protocols may also be followed in the performance of **GOOD SAMARITAN** duties when **OFF DUTY** and not responding with any emergency service agency (i.e. EMS, Police, or Fire Dept.). However, in the event that you are **OFF DUTY** and assisting an EMS service that is not under SPEMS medical direction, their online medical direction must be contacted for approval prior to performing any advanced procedures.

11. All MICU capable services that administer narcotics will keep detailed and accurate records on SPEMS approved forms and will forward a copy of those records to the SPEMS office by the 10th of each month.

12. The intent of these protocols is for the EMS professionals to treat patients as they would want a member of their family treated.

EMS DIRECTOR'S RESPONSIBILITIES

Each EMS Director has the responsibility to assure that each EMT-P on their service meets all of the SPEMS Protocol requirements. Specifically, each EMS Director is required to:

- To assure all personnel meet all SPEMS requirements
- To complete and submit the SPEMS Compliance Check List to the SPEMS office by January 31 for the previous calendar year. This check list is available on the SPEMS website
- To maintain records of successful completion of all SPEMS Protocol requirements including skills proficiencies, case reviews, training, testing, etc.
- To remove from active duty any EMT-P that fails to meet the requirements as set forth by the SPEMS Protocols.
- To submit copies of any documentation of SPEMS requirements if requested by the SPEMS office or by the Medical Director

PROCEDURAL GUIDELINES FOR MEDICAL CONTROL AUTHORIZATION

Documentation of continuing education, skills proficiency, and case review attendance will be maintained by the EMS technician's training officer. Failure to maintain appropriate documentation may result in the EMS technician's medical control authorization being suspended.

Suspension means that the technician may not practice until completion of all medical control authorization requirements are documented. Suspension may only be removed by the Medical Director, immediately following documentation of all requirements. The fact that an EMS technician's medical control has been suspended does not relieve the technician of the responsibility for meeting all requirements for the subsequent reporting period.

The individual's EMS service director will determine the administrative consequences of suspension of medical control authorization.

Use of the treatment protocols, or practice as an EMT-Paramedic without current medical control authorization will constitute the unauthorized practice of medicine and may result in action being initiated to revoke the offender's EMS certification.

Upon suspension of medical control authorization, the concerned individual will be notified by a personal letter from the SPEMS Medical Director.

INFECTION CONTROL

GENERAL:

1. Each EMS organization participating in SPEMS will designate an individual to act as its Infection Control Officer. The Infection Control Officer will be responsible to the administrative director of the EMS organization and to the Medical Director of SPEMS for ensuring compliance with these procedures.

2. Each EMS organization participating in SPEMS should demonstrate compliance with the OSHA Blood Borne Pathogen Rule, "29 CFR, Part 1910,0130," as fully as possible. All EMS personnel should receive formal initial training on the Blood Borne Pathogen Rule. All personnel should complete refresher training annually.

3. EMS personnel are strongly encouraged to document immunity to the following diseases by immunization or, when applicable, by history of prior infection:
   - Rubella (German Measles)
   - Red Measles
   - Mumps
   - Hepatitis B
   - Tetanus-Diphtheria
   - Influenza (yearly)

4. EMS personnel should be tested annually for tuberculosis unless contraindicated. Positive reactors should be referred to the public health authorities for appropriate follow-up.

5. In the unpredictable and uncontrollable pre-hospital environment, it is safest to follow body substance isolation practices, which consider all body substances to be potentially infectious (i.e. "If it's wet, it's bad!"). The following should be considered as potentially infectious:

   - Amniotic fluid
   - Blood
   - Body fluids with visible blood
   - Cerebrospinal fluid (CSF)
   - Feces
   - Nasal secretions
   - Pericardial fluid
   - Peritoneal fluid
   - Semen
   - Sputum
   - Sweat
   - Synovial Fluid
   - Tears
   - Teeth
   - Tissues
   - Urine
   - Vaginal secretions
   - Vomitus

6. The routine utilization of exposure control procedures and appropriate Personal Protective Equipment (PPE) by the individual EMS employee/volunteer is essential to the safety of all involved personnel. Its use can help ensure protection from infectious materials to the EMS employee/volunteer, that individual's family members, other members of the EMS department, subsequent patients and the general public.

7. The selection and utilization of appropriate Personal Protective Equipment (PPE) should be based upon its ability to provide an impervious barrier between any potentially contaminating body fluids and the EMS employee/volunteer. Each participating SPEMS department is responsible for the supply, repair, cleaning, replacement, and safe disposal of all exposure control-related Personal Protective Equipment. All required PPE should be supplied to that department's personnel and subsequently maintained by the individual department at no expense to the employee/volunteer.

ROUTINE VEHICLE CLEANING:

1. All exposed surfaces in the patient compartment will be kept clean with a 1:10 solution of household bleach in water, or a NIOSH-approved hospital germicide that also has tuberculocidal properties. Gloves will be worn during cleaning.

2. All reusable hard equipment, spine boards, cervical immobilization devices and cervical collars will be cleaned after each use with hot soapy water, rinsed, disinfected with a germicidal agent and dried. Spine boards and other wooden equipment with exposed splinters should be discarded or sanded and resealed. Gloves will be worn during cleaning.

3. Stock items and medications will be checked at shift change (or as otherwise specified by local policy & procedure) for expiration dates. Materials with the shortest time to expiration should be used first. Expired materials will not be used and will be removed from the vehicle and disposed of properly.

   Proper disposal of medications should be made when (1) the container is cracked, (2) the contents are obviously contaminated, (3) the medication has not been stored in accordance with the directions on the label or package insert, or (4) the date has expired.

4. Disposable equipment will be used whenever possible. Used disposable equipment that has been contaminated with body fluids will be placed in a sealed and appropriately labeled “Biohazard” container until it can be incinerated.

5. Following each use, non-disposable equipment will be washed with hot soapy water, rinsed, disinfected with a tuberculocidal/germicidal agent and dried. Gloves will be worn during cleaning. If non-disposable equipment cannot be cleaned immediately, it should be placed in a sealed and appropriately labeled “Biohazard” container until it can be properly cleaned.

6. After patient contact, priority will be given to spills of blood or other body fluids. All contaminated areas should be cleaned with an appropriate germicidal agent. Gloves will be worn during cleaning.

7. After patient contact, stretcher linens will be changed. Used linens will be placed in an impermeable bag or will be double-bagged until they can be removed from the ambulance. Used linens will be removed from the ambulance at the earliest possible time for laundering. Gloves will be worn when handling linens obviously contaminated with body fluids. Bags containing contaminated linens should be labeled “Biohazard.”

8. Sharp objects will be immediately placed in a puncture-resistant container. Needles will not be recapped, cut, bent, or removed from the syringe. The entire needle-syringe unit should be discarded. When filled, the container will be discarded in accordance with the local medical facility’s “Biohazard Waste” policies.

PATIENT CARE PRECAUTIONS:

1. Gloves should be worn on every ambulance call and should be applied before patient contact is made. However, the driver of the emergency vehicle should put on his gloves either before he departs for the emergency or immediately upon arrival. He should not attempt to put on gloves while driving. Latex gloves do not provide puncture protection. At an accident scene, leather gloves should be worn over latex gloves.

2. Eye protection should be worn when there is a risk of splattering with body fluids. Eyeglasses with plain glass lenses may be used if industrial safety glasses or face shields are unavailable or impractical, but safety glasses/shields with side panels are preferred due to their added protection.

3. Mouth-to-mouth breathing should NOT be performed. The pocket mask with one-way valve or a bag-valve mask should be used for ventilating patients.

4. Clothing soiled with blood or body fluids should be changed as soon as practical. It is recommended that a change of clothing, a jump suit or a surgical scrub suit be available on the ambulance for each crewmember. If the crewmember’s skin has been contaminated, he should be allowed to remove contaminated clothing and, if needed, shower as quickly as possible.

5. Patients should wear a mask if a pathogenic organism could be present in their respiratory secretions. If the patient will not tolerate the mask, or must receive continuous respiratory care precluding a mask, the ambulance crew should wear a mask. Also, the ambulance exhaust fan should be utilized and, weather permitting, the windows opened to increase the exchange of air out of the vehicle. High-risk conditions indicating the wearing of masks are known cases of mumps; measles; chicken pox; active tuberculosis; or meningitis; or fever accompanied by rash, stiff neck, or productive cough.

6. Known AIDS patients should wear a mask to protect them from infection. If the patient will not tolerate the mask, or must receive continuous respiratory care precluding a mask, the ambulance crew should wear a mask. They should notify the patient that this is being done to protect the patient from possible infectious organisms.

7. Pregnant EMS technicians should avoid providing direct care to known AIDS patients, since many of the patients excrete cytomegalovirus. CMV is known to cause birth defects.

8. EMS technicians with known or suspected infectious diseases should avoid providing direct care until a physician determines that there is no risk of transmitting infection to immunocompromised patients.

HAND WASHING/HAND CARE:

1. Vigorous scrubbing of the hands with a germicidal soap under running water for 30 seconds will remove or kill most pathogens. Hands should be washed at the beginning and on completion of duty and immediately following each call as soon as gloves are removed. Wearing gloves does not eliminate the need to wash hands.

2. Lotion should be applied following hand washing to avoid chapping of the skin, but some lotions can affect the integrity of latex gloves.

3. Cuts or other open lesions on the hands or other exposed skin should be covered with a fluid resistant bandage. Bandaging open lesions does not eliminate the need to glove.

EXPOSURE PROCEDURES:

1. With routine utilization of appropriate precautions, the risk of needle stick injuries can be significantly reduced. However, in the event that a needle stick does occur, the site should be encouraged to bleed. The site should be cleaned immediately with an alcohol foam and the hands washed thoroughly as soon as possible.

2. All cases of possible disease exposure, including a needle stick, should be reported immediately to the personnel at the receiving hospital and to the appropriate supervisor with the EMS technician's organization. The incident should be thoroughly documented on the EMS Agency's or receiving hospital's applicable incident report form.

3. The infection control practitioner at each hospital will follow up all cases of exposure of EMS technicians and will advise on appropriate procedures. State law requires this notification.

DEFINITIONS

1. ACUTE CORONARY SYNDROME:
The clinical presentation associated with ACS may be placed into 1 of 3 general categories.

- **Classic angina**: This refers to the traditional presentation of chest pain (dull, crushing, substernal, etc.).
- **Atypical presentation**: Chest pain which falls short of the typical features is called atypical chest pain. Examples include pain that is sharp, intermittent, in the teeth, neck, shoulder, arm or abdomen etc. Atypical chest pain mostly encompasses females, diabetics, and the elderly.
- **Anginal equivalents**: consider in higher risk patients: dyspnea, palpations, syncope or near syncope, generalized weakness with no history of a GI bleed or recent fever, and DKA. Anginal equivalents are symptoms not usually associated with classic angina, but are common "atypical symptoms". They are called "equivalents" because they often are the only symptoms the patient manifests during an ischemic cardiac event. An example would be a diabetic with only vomiting and no chest discomfort.
  Risk factors include: smoking, hypertension, age, family history of CAD, obesity, stress, and sedentary lifestyle

The key to forming an accurate impression of chest pain remains in the clinical history. In order to make this impression, one must look at the patient's physical presentation, listen to their story, and be able to compile and interpret all collected information. If the patient's story/presentation, risk factors, 12 lead and vitals signs point to ACS, then EMS personnel should consider the patient a candidate for the Chest Pain/Possible MI Protocol until proven otherwise.

2. ADEQUATE PERFUSION:
Patient alert and oriented
Skin warm and dry
Palpable radial pulses
Capillary refill < 2 seconds

3. ADULT REFUSAL OF TRANSPORT
An adult, capable of **Informed consent**, that is competent and medically capable, may refuse treatment and/or transport. In such a case, the patient **MUST** be informed of the potential risk (including death) of such refusal and must sign a patient refusal form. If the patient refuses to sign, you should document the refusal to sign on the paperwork and have a witness sign the refusal. Witnesses in order of preference may include Police Department, Family Member, Bystander or EMS Crew.

Adults who are **NOT** capable of Informed Consent **MUST** be treated and transported. Local Law Enforcement and/or Medical Control may be contacted for assistance.

In all cases, a SPEMS run report must be completed

4. APPROPRIATE LEVEL OF CARE:
Following a complete assessment of the patient, the EMT-Paramedic should treat the patient at the EMT-Paramedic protocol level unless impractical or unobtainable. In that event, the EMT-Paramedic may treat the patient at the Advanced EMT or EMT-Basic protocol level. An example of this might be: A very close (< 3 minutes) proximity to the receiving hospital where initiating ALS treatment would not affect patient care. Another example: **Oral Glucose** could be administered as oppose to IV **Dextrose 10%**, in the event that an IV is unobtainable. The EMT-Paramedic should document these occurrences and justifications in the report narrative. **All incidences mentioned above must be peer reviewed.**

5. ASEPTIC TECHNIQUE:
Aseptic techniques include practices performed just before, during, and/or after any procedure. It is used to reduce the risk of post-procedure infections and to minimize the exposure of the health care providers to potentially infectious microorganisms. The use of aseptic technique is for all procedures, particularly invasive procedures that may break the skin or mucous membrane. This technique includes, but not limited to:

- Antiseptic hand hygiene and proper use of PPE
- Use of appropriate antiseptics to cleanse the area of the patients body that is in jeopardy of infection/contamination
- Avoid contamination of equipment and medication
- Skin should not be touched after skin antisepsis. If this happens repeat the aseptic technique for that area
- After the insertion of any device through the patients skin the insertion site shall be covered with the appropriate dressing to prevent infection

6. CENTRAL NERVOUS SYSTEM SIGNS (observe for the following):
   - Level of consciousness
   - Ability to speak
   - Reaction to painful stimuli
   - Pupil size/reaction to light
   - Ability to move extremities
   - Seizures/abnormal posturing

7. CLASSIFICATION OF CARDIAC RHYTHMS

Class I: Not Treated
Sinus Rhythm

Class II: Not routinely treated in pre-hospital setting by Paramedics
Sinus Tachycardia
Wandering Pacemaker
Premature Atrial Complex
Atrial Flutter (Ventricular rate <150)
Atrial Fibrillation (Ventricular rate <150)
Premature Ventricular Complex (<10 per minute)
Premature Junctional Complex
Junctional Rhythm
Accelerated Junctional Rhythm
Junctional Tachycardia (Ventricular rate <150)
1° AV Block
2° AV Block, Type I (Wenckebach) (Ventricular rate >60)

Class III: Treated in pre-hospital setting to help prevent rhythm becoming Class IV Rhythm
Bradycardia (<60 per minute)
Supraventricular Tachycardia (Ventricular rate >150)
2° AV Block, Type II (Classical)
3° AV Block
Premature Ventricular Complexes, if:
- Runs of Ventricular Tachycardia
- R-on-T Phenomenon
- Multiformed PVCs or for PVCs $\geq$ 10/min with chest pain, hypotention, or shortness of breath

Class IV: Must be treated in pre-hospital setting, or death will result
Ventricular Fibrillation
Ventricular Tachycardia
Pulseless Electrical Activity
Asystole

8. CONTACT MEDICAL CONTROL:
The receiving physician at the destination hospital or central medical control physician. Notify regarding patient's condition using the following format:

Medical Patients:
- Identify hospital being called, ambulance unit number, name of service, and Med channel
- Age and sex of patient
- Chief complaint
- Vital signs/GCS (including pulse, blood pressure, respirations, pulse ox and level of consciousness)
- Treatment
- Transport Signal, Code and ETA

Trauma Patients:
- Identify hospital being called, ambulance unit number, name of service, and Med channel
- Age and sex of patient
- Mechanism of injury
- Major injuries
- Trauma modifiers
- Vital signs/GCS/RTS (including pulse, blood pressure, respirations, pulse ox and level of consciousness)
- Treatment
- Transport Signal, Code and ETA

9. CONTINUE TO TREAT MONITOR AND TRANSPORT:
   Continue treatment and assessment of vital signs during transport to hospital, including initial vital signs and the vital signs at time of patient transfer.

10. CROUP:
    Characterized by inspiratory and expiratory stridor and a seal-bark like cough, it is most common amongst children < 3 years of age. Croup is often preceded by an upper respiratory infection. Respiratory distress, tachypnea, and retractions are also commonly associated with Croup. One of the most distinctive characteristics of croup is the abrupt or sudden onset of the symptoms noted above.

11. DUTY STATUS/GEOGRAPHICAL AREA/GOOD SAMARITAN
    These protocols shall be utilized under medical direction of the SPEMS Medical Director in the SPEMS/TSA-B area or during routine transfers from one service area to another.

    These protocols may also be followed in the performance of **GOOD SAMARITAN** duties when **OFF DUTY** and not responding with any emergency service agency (i.e. EMS, Police, or Fire Dept.). However, in the event that you are **OFF DUTY** and assisting an EMS service that is not under SPEMS medical direction, their online medical direction must be contacted for approval prior to performing any advanced procedures.

12. ERRORS/DEVIATIONS
    All medication errors, and other inadvertent deviations from SPEMS's protocols, require a written Incident Report. These must be reviewed by the Peer Reviewer at the service's next case review.

13. HIGH CONCENTRATION OXYGEN:
    Oxygen delivered either by simple face mask or non-rebreather mask at 10-15 liters per minute. If using bag-valve-mask, supplemental oxygen should be delivered at 15 liters per minute. A demand valve may also be used to deliver high concentration oxygen. A nasal cannula should generally be avoided on patients with significant illness or injury because it does not provide high concentrations of oxygen.

14. INADEQUATE RESPIRATIONS:
    SHALLOW respirations <10, or >35 per minute.

15. LEVEL I OR II TRAUMA CENTER:
    Hospitals with formal designation as a Level I or Level II Trauma Center by the Texas Department of State Health Services and The American College of Surgeons.

16. MEDICATION CONCENTRATIONS/STORAGE
    From time to time, the medications included in these protocols may be supplied in concentrations or amounts other than those indicated. Regardless of the particular manner in which medications are supplied, equivalent total amounts must be present, and it is the EMS technician's responsibility to be certain that correct dosages are administered to patients.

    Unless specified otherwise, generic and trade name products are considered interchangeable.

    It is the responsibility of the individual EMS provider to make sure that all the stocked drugs are stored as per manufacturer's specification. Documentation as to how drugs are stored may be requested by DSHS.

17. MEDICATION STORAGE AND ACOUNTABILITY
    All EMS services which utilize SPEMS Medical Direction and/or Protocols will maintain and store all pharmaceuticals as per the manufactures recommendation. Medications should be arranged in an orderly and organized fashion (i.e. drug bag/box or ambulance compartment) to facilitate quick access as well as limit medication errors. Medications should be stored in an area of the ambulance which limits access to unauthorized individuals. Ambulances licensed at the ALS/MICU level that are operating at the BLS level, as allowed by rule, should have all ALS/MICU medications secured by no less than a numbered zip tie locking system to assure accountability. Narcotics, if carried, should be stored within a locked cabinet.

    An EMS service that utilizes narcotics/controlled medications must follow all DEA and SPEMS reporting and tracking requirements. All medications stocked/stored by an EMS provider should be accounted for by utilizing the individual EMS provider's inventory control procedures and/or policies.

18. MULTIPLE PARALLEL PROTOCOLS:
It is understandable that patients may present with multiple problems that require simultaneous treatment. Examples are the patient with CHF and COPD exacerbation; or chest pain and respiratory distress. In the past there has been a reluctance to implement more than one protocol during a patient encounter.

Crews may simultaneously employ multiple protocols when appropriate. However, they must always be cognizant of cumulative and contradicting medications. All considerations cannot be presented here, and the occurrence of this necessity should be infrequent. Questions or clarifications should be referred to the service director, peer reviewer, or medical director.

19. NARCOTICS/PARALYTICS
A report detailing administration of narcotics will be submitted to the SPEMS office on a monthly basis. The Peer Reviewer is required to review all patient care reports where paralytics have been administered at the Service's next case review.

20. NON-ACCIDENTAL TRAUMA:
Non Accidental Trauma (NAT) or Abuse should always be considered in patients in which the patient's condition is inconsistent with the mechanism of injury or history provided. This applies to all age groups; but especially with pediatrics. In the pediatric patient this should be suspected if the patient is exhibiting head trauma symptoms (decreased LOC, seizures, posturing, unequal pupils, vomiting without fever or diarrhea, bradycardia, cardiac arrest or CPR reportedly done). The EMS provider should maintain a high level of suspicion and situational awareness in these cases. The receiving facility should be notified as soon as possible. Notification should be via radio if possible and advise you suspect trauma, and at the receiving facility upon patient delivery.

21. NON-EMS LICENSED/CERTIFIED PERSONNEL
On occasion, licensed or certified healthcare providers (nurses, respiratory therapists, physician assistants, etc.) may accompany the EMS crew in the back of an ambulance if it has been determined by the crew or by the transferring/receiving facility that patient care would be enhanced. The healthcare provider must obtain prior medical direction in event that care is to be rendered.

Physicians may provide patient care as described in the protocols under "unknown physician on scene" (P-15) or "patient's physician on scene". (P-14)

Students may engage in patient care while under the direct supervision of an approved preceptor.

22. NO TRANSPORT CODES
Classification of calls in the SPEMS Region resulting in a patient not being transported should be noted on dispatch records as follows and documented in the patient care report:

1. N-1: Unfounded call / False call.
2. N-2: Duplicate call.
3. N-3: Injury noted, but patient refused transport.
4. N-4: Patient accepted treatment but refused transport.
5. N-5: EMS refused transport.
6. N-6: No injuries.
7. N-7: Transported by other means; should **only** be used if the patient left **prior** to EMS arrival or is in the custody of PD and is going to jail.
8. N-8: Dead On Scene

ALL CALLS REQUIRE A WRITTEN REPORT. ALL N-3, N-4, AND N-5 CALLS REQUIRE THAT THE SERVICE DIRECTOR OR (DESIGNEE) REVIEW THE WRITTEN REPORT.

23. "OPTIONAL" OR "RECOMMENDED":
The word "optional" or "recommended" will occasionally be seen throughout the protocols in relation to a piece of equipment, specific treatment, or protocol. When "optional" follows a piece of equipment or specific treatment/protocol it is at the discretion of the individual service as to whether or not that equipment will be stocked or treatment performed. When "recommended" follows a piece of equipment or specific treatment/protocol it remains optional but is highly recommended by the medical director and will become mandatory with the next protocol year update.

24. PATIENT'S PHYSICIAN ON SCENE

1. Confirm that the physician present is, in fact, the patient's personal physician. Inform the physician that medical control policy requires him to produce verification of his identity and training.
2. Inquire as to whether the physician is willing to assume responsibility for the patient's treatment and is willing to physically accompany the patient to the hospital.
3. Before initiating any invasive treatment, establish radio contact with MEDICAL CONTROL; and, after advising the medical control physician of the usual information, advise that the patient's physician is present; identify the physician; and have the physician and MEDICAL CONTROL discuss appropriate means of treatment of the patient while you monitor the conversation.
4. In the event of any conflict between orders given by the medical control physician and orders given by the physician on the scene, EMS technicians shall permit the patient's physician to personally perform procedures or treatments which conflict with the orders of MEDICAL CONTROL. EMS technicians shall neither participate in nor administer any treatment to the patient under these circumstances, except as ordered by MEDICAL CONTROL.
5. Thoroughly document all occurrences.

25. REQUESTING ASSISTANCE AND/OR HIGHER LEVEL OF CARE

If a patient's condition is unstable or deteriorates during transport and the patient would reasonably benefit from the presence of additional personnel, the regional EMS Communications Center or local dispatch should be contacted to coordinate the response of the closest available ALS unit or MICU.

If an EMS Provider **OR** First Responder Organization operating under SPEMS Medical Direction has been requested for assistance **AND/OR** higher level of care by another EMS Provider that is **NOT** under SPEMS Medical Direction, then that SPEMS Provider or Organization may utilize the SPEMS protocols while transporting in the requesting "Non-SPEMS" EMS Provider's ambulance, with prior approval in place. If prior approval is not in place, then the SPEMS provider should contact the "Non-SPEMS" Medical Direction for approval. Be mindful to take any equipment or pharmaceuticals that may not be stocked on the transporting unit. If conflict arises, (i.e. lack of appropriate equipment, disagreement amongst EMS staff, etc) then the requesting "Non-SPEMS" EMS Provider's Medical Direction must be contacted.

If an EMS Provider operating under SPEMS Medical Direction requests assistance **AND/OR** higher level of care from another EMS Provider **OR** First Responder Organization that does **NOT** operate under SPEMS Medical Direction, then the requested "Non-SPEMS" Provider or Organization may utilize their protocols and Medical Direction while transporting in the SPEMS EMS Provider's ambulance. If conflict arises, (i.e. lack of appropriate equipment, disagreement amongst EMS staff, etc) then SPEMS Medical Direction must be contacted.

Air transport should be considered whenever the patient is possibly critically ill or injured and transport by air would expedite the patient's arrival at the hospital. When air transport is requested, the request should be made as soon as the EMS technicians on the scene have performed the primary patient assessment.

The purpose of this section of protocol is to ensure that the best and most efficient patient care is provided.

26. TRANSPORTATION GUIDELINES

If transporting a patient to a receiving hospital out of your coverage area, you should do the following:

1. Bring a transfer form completed by the sending hospital.
2. Know the name of the receiving physician.
3. Request assistance from the receiving area's Advanced Life Support service if the patient's condition is unstable or his/her condition deteriorates while en route. EMS providers will develop written mutual aid agreements with neighboring communities to facilitate coordination of backup responses. Copies of these agreements will be sent to the Regional EMS Communications Center through the SPEMS office.
4. Contact Receiving Hospital **as soon as possible prior to arrival**, and re-establish contact any time patient's condition changes. Monitor patient's overall condition and vital signs every 5 to 10 minutes.
5. Notify Lubbock EMS dispatch on Med Channel 9 if transporting a patient into the City of Lubbock Code 3. Include sending hospital, city of origin, destination hospital, route traveling, patient severity, transport code, and estimated time of arrival.

6. During interfacility transfers SPEMS personnel should operate under the orders of the transferring physician, except were State statute or regulation dictate otherwise such as a physician written DNR. An attempt should be made to contact the transferring or receiving physician to dictate treatment if a decrease in the patient's condition occurs or at the onset of new complications which need to be immediately addressed. If contact is not possible, SPEMS personnel are authorized to operate under the existing SPEMS protocols. Personnel may also contact Medical Control at anytime. Include in your verbal as well as written report any changes in patient condition, orders received or treatment provided. Interfacility transfers include but are not limited to: Hospital to Hospital, Hospital to Specialized care centers and Hospitals to extended care facilities.

27. TRANSPORTATION OF MINORS

A minor is anyone under the age of 18 (with exceptions). Minors may not refuse transport. In those instances where the minor is refusing, and there is no parent or guardian present, Medical Control and/or Law Enforcement should be contacted for assistance.

Exceptions:
1. Emancipated from parents.
2. Pregnant
3. Active duty in the armed forces.

28. UNKNOWN PHYSICIAN ON SCENE

1. Inform the physician that medical control policy requires him to produce verification of his identity and training.
2. Inquire as to whether the physician is willing to assume responsibility for the patient's treatment and is willing to physically accompany the patient to the hospital.
3. Before initiating any invasive treatment, establish radio contact with MEDICAL CONTROL; and, after advising the medical control physician of the usual information, advise that a physician is present, identify the physician, and have the physician and MEDICAL CONTROL discuss appropriate means of treatment of the patient while you monitor the conversation.
4. In the event of any conflict between orders given by the medical control physician and orders given by the physician on the scene, the medical control physician shall prevail.
5. Thoroughly document all occurrences.

29. VENTILATION:

Artificial breathing for a patient via mouth-to-mask, bag-valve-mask or demand valve, with high flow oxygen. An Oropharyngeal or Nasopharyngeal Airway should be used.

30. VITAL SIGNS:

- Blood Pressure (BP)
- Pulse (rate, regularity, quality)
- Respirations (rate, regularity, quality)
- Skin (color, temperature, moisture)
- Pupil Status (equal/unequal size, round, reactive to light)
- Level of Consciousness (alert, responds to voice or pain, unresponsive)
- Pulse Oximeter

TREATMENT PROCEDURES

AIRWAY MANAGEMENT:

Patients who are apneic, or who are unable to maintain their own airway due to severely decreased levels of consciousness, should have an oropharyngeal airway inserted.

Patients who will not tolerate an oropharyngeal airway, but who show signs of inability to maintain an airway without assistance, should have a nasopharyngeal airway placed.

Patients requiring intubation should be pre-oxygenated before attempting endotracheal intubation. Attempts should not exceed 30 seconds without resuming ventilations. Intubation attempts will be limited to 2 attempts by the primary paramedic and 1 attempt by the secondary paramedic/Advanced EMT. An ET tube introducer (i.e. Bougie) may be used, if needed, to facilitate endotracheal intubation at any time. In the event that all 3 attempts at endotracheal intubation fail, secondary airway adjuncts shall be utilized. Patients who cannot be intubated with an endotracheal tube should be intubated with the King airway device or lastly a surgical airway. An ET tube introducer (i.e. Bougie) **CANNOT** be passed through a King airway in order to endotracheally intubate a patient. Medical control should be contacted prior to performing a surgical airway. (Proper training should be documented prior to use)

Proper placement of the endotracheal tube must be confirmed and must be documented by:

1. Observing the tube pass through the glottic opening.
2. Observing symmetrical chest rise and auscultating equal breath sounds bilaterally in the lung fields.
3. Auscultating for absence of sound over the epigastrium during ventilations.
4. Use of pulse oximetry and end-tidal carbon dioxide detection or monitoring.

Proper tube placement should be reconfirmed and documented by auscultation of the lung fields and epigastrium, and observation of the end tidal CO_2 detection monitor following any movement of the patient and upon final disposition at the receiving facility. It is recommended that tube placement also be confirmed by a member of the receiving facility (RN, RT, MD, etc…) prior to turning over patient care to that facility. The confirmation as well as the person confirming the placement of the ET tube should be documented in the run report.

If the end tidal CO_2 detection device has the capability, keep monitored levels between 30 and 34mm.

BLOOD DRAW FOR LABS

Due to the importance of rapidly diagnosing Acute Coronary Syndrome and Cerebrovascular Accidents, blood draws will be attempted in the pre-hospital setting. It is required that all units with at least ALS capabilities stock blood tubes to include, but not limited to, “blue top” (PT/PTT INR), “red top (Serology) “purple top” (CBC), and “green top” (BMP/CMP). The tubes listed above (or their equivalent) should be filled appropriately and labeled with the patients first and last name as well as the time the sample was collected. Samples can be drawn on any call as deemed necessary; however, samples should be drawn anytime a CVA or an ACS is in question or when a pt presents with altered mentation. If the IV line is considered to be in jeopardy, then an alternative site should be accessed (i.e. butterfly catheter or Vacu-tainer needle). The order in which the blood tube must be filled is Blue, Red, Green, Purple.

CENTRAL LINES

If IV access is impossible and the patient has an existing external venous catheter, contact medical control for permission to access these catheters.

CHEMICAL SEDATION / RESTRAINT

Chemical Restraint is a last resort for safely calming extremely agitated patients when the potential for harm to self or others exists. Agitation or acute behavioral disorders may manifest differently. **Always suspect an organic cause first.** Life-threatening organic conditions that may present with behavioral agitation are Hypoglycemia, subdural hematoma, intercerebral hemorrhage, meningitis, hypertensive crisis, and drugs (especially atropine and cyclic antidepressants).

BLS

1. Request Law Enforcement assistance on any patient who requires chemical restraint.
2. Assess blood glucose to rule-out hypoglycemia.

ALS

1. Peripheral intravenous access should be accomplished prior to chemical restraint whenever possible. If unable to obtain due to patient agitation, venous access is to be obtained as soon as possible after the chemical restraint has been safely accomplished.
2. Fluid therapy 10-20 ml/kg IV for hypotension (SBP<90mm/Hg). Maintain SBP>90mm/Hg.

MICU

1. **Versed** (Midazolam, 1 to 5mg, IV or IM, if Systolic BP > 90mm/Hg or confirmed radial pulses. May repeat dose of up to 5mg, IV or IM, every 5-10 minutes if systolic BP remains > 90 mmHg or confirmed radial pulses. (For intranasal administration of **Versed (Midazolam)** refer to P-24)

Key Points to Consider

- Onset of action for Midazolam is within 5-15 minutes when administered IM vs. 1-5 minutes when administered IV.
- All justification for the use of chemical restraints will be documented on the patient narrative.
- All chemical restraint cases will be reviewed by Medical Direction.

Note: Continuous ECG, pulse oximetry, and blood pressure monitoring (every 5 minutes) are mandatory during and after administration of Versed (Midazolam).

Excited Delirium Syndrome:
Excited delirium is a medical emergency that has a high risk for increased mortality due to its causes or from the injuries or medical emergencies that may develop secondary to it. Excited delirium needs to be addressed in the prehospital setting, and may involve a combination of psychomotor agitation, anxiety, hallucinations, speech disturbances, disorientation, violent/bizarre behavior, insensitivity to pain, hyperthermia, and increased strength.

The use of physical restraints and/or tasers may increase the severity of the potential life-threatening condition. In the prehospital setting, excited delirium is most commonly seen in male subjects with a history of serious mental illness and/or acute or chronic drug abuse; particularly with stimulant drugs such as cocaine, crack cocaine, methamphetamines, amphetamines, or similar agents. Subjects using synthetic marijuana and/or bath salts may also exhibit excited delirium syndrome. Alcohol withdrawals, severe CNS illness, or head trauma may also contribute to the condition.

Management of Excited Delirium Syndrome:
Just as in normal chemical sedation, treatment should occur when there is a danger to the patient or the EMS crew.

- Administer **Ketamine** 2mg/kg slow IV/IO push (over 1 minute),
  - May be repeated once in 10 minutes if needed, OR
- Administer **Ketamine** IM if IV is unobtainable
  - Adult and children ≥5yoa: 5mg/kg IM in thigh. IM administration may require multiple injections as a maximum of 5ml per injection may be given in the thigh
  - Children <5 yoa: 3mg/kg in thigh
  - May repeat once in 20-25 minutes if needed; but repeat via IV is preferred
- Administer 0.5mg of **Atropine** if significant oral/nasal secretions develop. Pediatric dose is 0.01mg/kg to a max of 0.5mg.

Do NOT administer Ketamine to an infant less than 3 months old

Following management, patient must be monitored closely with special consideration given to heart rate, blood pressure, respirations, and EC

CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP) (OPTIONAL)

CPAP equipment must be approved by the Medical Director

Continuous Positive Airway Pressure has been shown to rapidly improve vital signs, gas exchange, reduce the work of breathing, decrease the sense of dyspnea, and decrease the need for endotracheal intubation in patients who suffer from shortness of breath caused by any condition resulting in pulmonary edema (Rales/Crackles present). In patients with pulmonary edema, CPAP improves hemodynamics by reducing left ventricular preload and afterload.

I. INDICATIONS

Any patient who is in respiratory distress with signs and symptoms consistent with pulmonary edema **and** who is:

i. awake and able to follow commands
ii. over 12 years of age and is able to fit the CPAP mask
iii. has the ability to maintain an open airway
iv. **And** exhibits **two or more** of the following;
   1. a respiratory rate > 25/minute and respiratory distress
   2. SPO2 of less than 92% at any time
   3. use of accessory muscles during respirations or unable to speak in full sentences

II. CONTRAINDICATIONS

a. Patient is in respiratory arrest/apneic
b. Patient is suspected of having a pneumothorax or has suffered trauma to the chest
c. Patient has a tracheostomy
d. Patient who has persistent nausea, actively vomiting or has upper GI bleeding
e. A full beard may interfere with mask sealing. If an adequate seal cannot be achieved, discontinue the CPAP intervention
f. Patient who obviously needs intubation
g. Patient who is unable to cooperate, obtunded or severe decrease in mentation
h. Patient who is unstable or becomes unstable during treatment
i. Systolic B/P <90

III. PROCEDURE

a. EXPLAIN THE PROCEDURE TO THE PATIENT.
b. Ensure adequate oxygen supply to ventilation device.
c. Place the patient on continuous pulse oximetry and End Tidal CO2 capnography with recorded wave form (if available) to monitor patient O2-CO2 exchange.
d. Place the patient on the cardiac monitor (if available) and record rhythm strips with vital signs.
e. Place the delivery device over the mouth and nose.
f. Secure the mask with provided straps or other provided devices.
g. Use 5cm H2O of PEEP valve. Titration between 5 and 10cm H2O may be employed and adjusted by monitoring the patient's clinical response and ETCO2 and SaO2 values.
h. Check for air leaks.
i. Monitor and document the patient's respiratory response to treatment.
j. Check and document vital signs every 5 minutes.
k. Administer appropriate medications as certified as per current protocols. (continuous nebulized **Duo-Neb**, IV **Morphine**)
l. Continue to coach patient to keep mask in place and readjust as needed.
m. If respiratory status deteriorates, remove device and consider intermittent positive pressure ventilation via BVM and/or placement of a King Airway or endotracheal intubation.

IV. REMOVAL PROCEDURE

a. CPAP therapy needs to be continuous and should not be removed unless the patient can not tolerate the mask or experiences respiratory failure or begins to vomit.
b. Intermittent positive pressure ventilation with a BVM, placement of a King Airway and/or endotracheal intubation should be considered if the patient is removed from CPAP therapy.

V. SPECIAL NOTES

a. Advise receiving hospital that CPAP is being used as soon as possible prior to arrival.
b. Do not remove CPAP until hospital therapy is ready to be placed on the patient.
c. Watch patient for gastric distention, which can result in vomiting.
d. Procedure may be performed on a patient with a DNR order.
e. Due to changes in preload and afterload of the heart during CPAP therapy, a complete set of vitals signs must be obtained every 5 minutes.

The Medical Director or his designee MUST review ALL CPAP cases.

CO_2 CONTINUOUS WAVEFORM CAPNOGRAPHY

Continuous CO_2 waveform capnography (if available) provides multiple benefits for patients and multiple monitoring aids for advanced EMS providers. The Current AHA ACLS guidelines recommend use of continuous quantitative CO_2 waveform capnography for all patients with advanced airways. If available, continuous quantitative CO_2 waveform capnography should be used for the following:

- Continuous confirmation of proper intubation tube placement
  - Goal of $ETCO_2$ levels between 30 and 34mmHg for perfusing patients
- Monitoring effectiveness of quality of CPR
  - $ETCO_2$ readings should be maintained at or above 20mmHg at all times
  - $ETCO_2$ readings of less than 10mmHg has been shown to have NO chance of return of spontaneous circulation (ROSC)
  - Readings of less than 20mmHg indicates ineffective CPR
    - If $ETCO_2$ readings are less than 20mmHg: look at rate, hand placement, depth of compressions, ET tube placement, lung sounds, supplemental oxygen supply, etc.
- Patients with dyspnea, head injuries, or any condition in which the Paramedic feels would allow better monitoring and treatment of the patient

CRICOTHYROTOMY:

Cricothyrotomy may be used to allow for ventilation and oxygenation in cases of life-threatening airway obstruction where manual maneuvers to establish an airway, attempts at ventilation, and attempts at endotracheal intubation and King airway have failed.

Medical control should be contacted prior to performing a surgical airway.

Surgical Cricothyrotomy is the ideal maneuver. Needle Cricothyrotomy is an acceptable alternative method to the surgical route, and is preferable for children <12 years old. Needle Cricothyrotomy results in an increase in $PaCO_2$ after 30-45 minutes; therefore, air transport should be considered for these patients.

The Medical Director or his designee MUST review ALL cricothyrotomy cases.

ENDOTRACHEAL INTUBATION: USING PHARMACOLOGIC AGENTS TO FACILITATE INTUBATION:

Use of pharmacologic agents for facilitation of endotracheal intubation is indicated for:

1. Head-injured patients requiring intubation for airway control and assisted ventilation in the presence of combativeness or jaw clenching.
2. Burn patients with signs of inhalation injury or respiratory distress.
3. Patients with prolonged seizure activity that compromises airway, ventilation and oxygenation and does not respond to anticonvulsant therapy.
4. Other conditions where, in the judgment of the Paramedic, intubation is indicated but is impossible without paralysis or sedation.

The Medical Director or his designee MUST review ALL cases of paralytic usage.

The patient should be connected to a cardiac monitor and pulse oximeter. The patient should be monitored for bradycardia or dysrhythmias during the intubation attempt. Oxygen saturation should not be permitted to fall below 90%.

Intravenous administration of a paralytic to infants and children may result in profound bradycardia or asystole. This effect results from vagal stimulation.

Patients requiring intubation should be pre-oxygenated before attempting endotracheal intubation. Attempts should not exceed 30 seconds without resuming ventilations. Intubation attempts will be limited to 2 attempts by the primary paramedic and 1attempt by the secondary paramedic/Advanced EMT. An ET tube introducer (i.e. Bougie) may be used, if needed, to facilitate endotracheal intubation at any time. In the event that all 3 attempts at endotracheal intubation fail, secondary airway adjuncts shall be utilized. Patients who cannot be intubated with an endotracheal tube should be intubated with the King airway device or lastly a surgical airway. Medical control should be contacted prior to performing a surgical airway (Proper training should be documented prior to use). An ET tube introducer (i.e. Bougie) **CANNOT** be passed through a King airway in order to endotracheally intubate.

USE OF PHARMACOLOGIC AGENTS TO FACILITATE INTUBATION
USING NORCURON

1. Assist Ventilation with BVM and 100% **Oxygen**
2. Make sure patient is well oxygenated BEFORE administration of medication.
3. Assure patency of IV lines
4. Monitor EKG

Does Patient have head injury?

Yes

Administer **Lidocaine:**
Adult: 1mg/kg, to a max of 100mg
Pedi: 1mg/kg, to a max of 100mg

No

Administer **Etomidate**
0.3mg/kg IV to a max of 40mg. Do NOT repeat.

Administer **Norcuron**
0.15mg/kg, IVP, to a max of 20mg. A repeat dosage of 0.01mg/kg may be administered in 25-40 minutes if needed

1. When evidence of paralysis is noted, perform intubation (cricoid pressure should be used as needed to prevent regurgitaion until intubation is complete)
2. Confirm tube placement and secure tube
3. Continue ventilations with BVM and 100% oxygen

If systolic BP>90mmHg
administer **Versed**, 0.1mg/kg, to a max of 10mg for amnestic sedation

1. Continue to provide pain management for patients that **MAY** have pain/agitation.
   For Adults: administer **Fentanyl,** 5mcg/kg, IVP, to a max of 100mcg, per single dose. May be repeated once if needed. Contact Medical Control for additional pain management if needed.
   For Pediatrics: administer **Fentanyl,** 2mcg/kg, slow IVP, to a max of 100mcg, per single dose. May be repeated once if needed. Contact Medical Control for additional pain management if needed.

2. Continue to provide sedation with **Versed** at 0.05mg/kg to a max of 5mg per single dose. May be repeated once if Systolic BP > 90mmHg. Contact Medical Control if additional sedation is needed.

Continue to Treat, Monitor & Transport

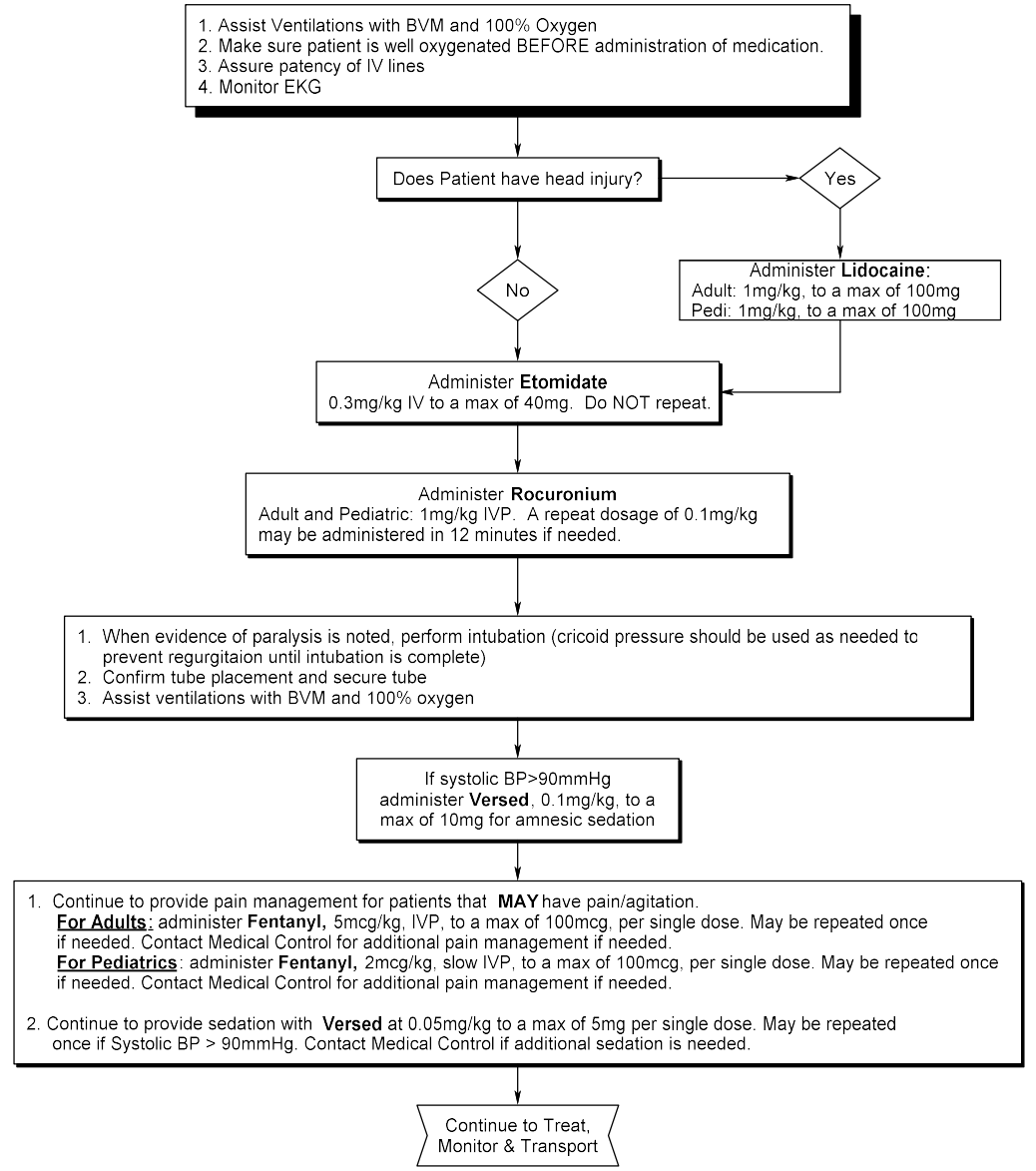
Watch for signs of decreased sedation or increased pain (increase in pulse rate indicates increase in pain). Use continued paralyzation with caution in patients who are at risk for active seizures .

Intubation attempts should not exceed 30 seconds without resuming ventilations. Intubation attempts will be limited to 2 attempts by the primary paramedic and 1attempt by the secondary paramedic/intermediate. An ET tube introducer (i.e. Bougie) may be used, if needed, to facilitate endotracheal intubation at any time. In the event that all 3 attempts at endotracheal intubation fail, secondary airway adjuncts shall be utilized. Patients who cannot be intubated with an endotracheal tube should be intubated with the King airway device(an ET tube introducer (i.e. Bougie) CAN NOT be passed through a King airway in order to endotracheally intubate a patient) or lastly a surgical airway. Medical control should be contacted prior to performing a surgical airway. (Proper training should be documented prior to use)

USE OF PHARMACOLOGIC AGENTS TO FACILITATE INTUBATION

USING ROCURONIUM*

*Preferred Paralytic for Pediatrics



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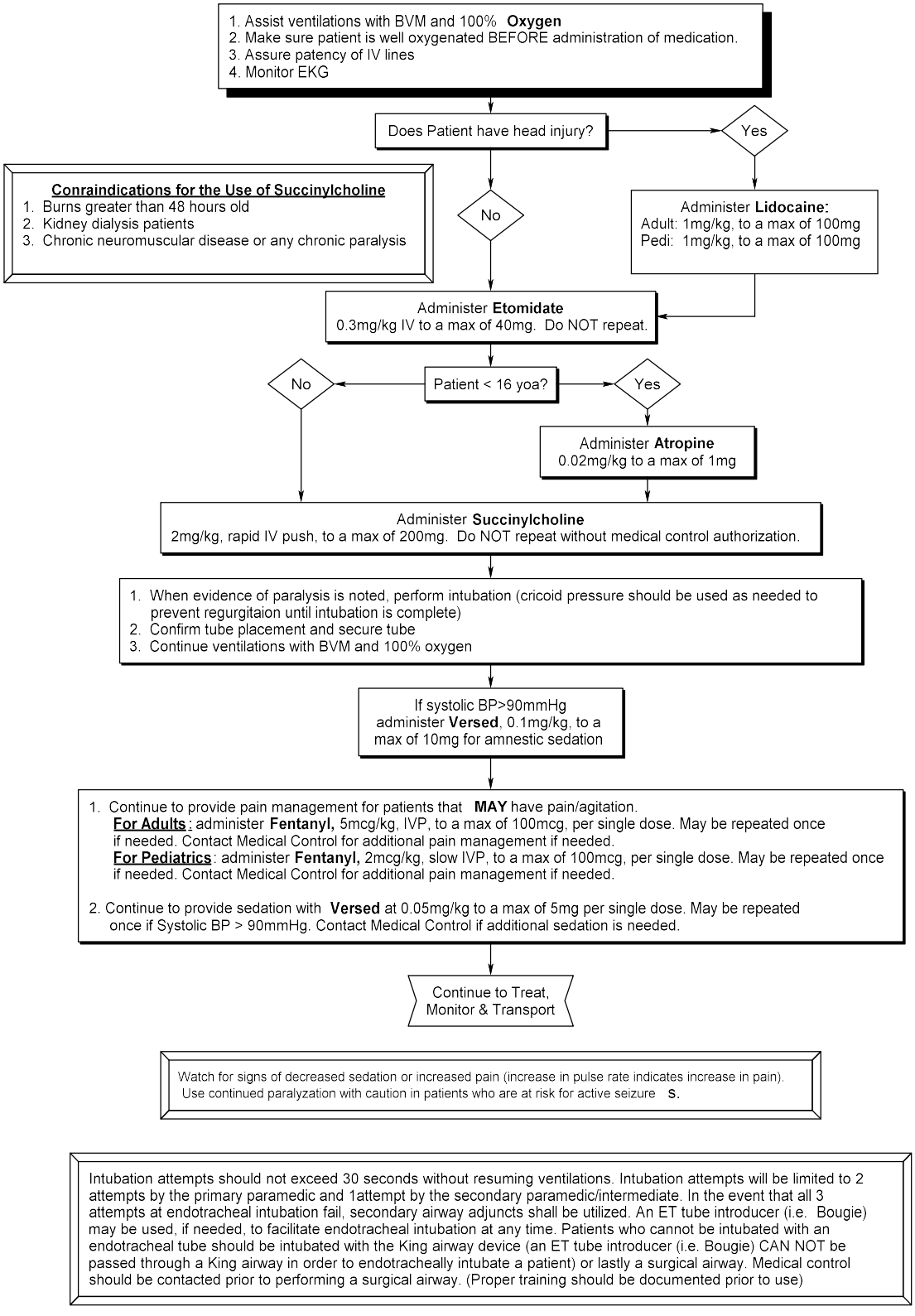
Intubation attempts should not exceed 30 seconds without resuming ventilations. Intubation attempts will be limited to 2 attempts by the primary paramedic and 1attempt by the secondary paramedic/intermediate. In the event that all 3 attempts at endotracheal intubation fail, secondary airway adjuncts shall be utilized. An ET tube introducer (i.e. Bougie) may be used, if needed, to facilitate endotracheal intubation at any time. Patients who cannot be intubated with an endotracheal tube should be intubated with the King airway device (an ET tube introducer (i.e. Bougie) CAN NOT be passed through a King airway in order to endotracheally intubate a patient) or lastly a surgical airway. Medical control should be contacted prior to performing a surgical airway. (Proper training should be documented prior to use)

USE OF PHARMACOLOGIC AGENTS TO FACILITATE INTUBATION
USING SUCCINYLCHOLINE



Intubation attempts should not exceed 30 seconds without resuming ventilations. Intubation attempts will be limited to 2 attempts by the primary paramedic and 1attempt by the secondary paramedic/intermediate. In the event that all 3 attempts at endotracheal intubation fail, secondary airway adjuncts shall be utilized. An ET tube introducer (i.e. Bougie) may be used, if needed, to facilitate endotracheal intubation at any time. Patients who cannot be intubated with an endotracheal tube should be intubated with the King airway device (an ET tube introducer (i.e. Bougie) CAN NOT be passed through a King airway in order to endotracheally intubate a patient) or lastly a surgical airway. Medical control should be contacted prior to performing a surgical airway. (Proper training should be documented prior to use)

EXTERNAL PACING:

Use of external pacing is indicated for Atropine-refractory bradyarrhythmias as indicated in the treatment protocols. This is a temporary measure only and should be followed as soon as possible with a transvenous pacemaker.

Inadequately Perfusing Bradycardia:
The pacer should be set in the **demand** mode. The rate should be set at **60**. Set the current at the **lowest** setting and increase in increments of 10mA until capture is achieved. Once capture is achieved, the rate should be titrated to adequate perfusion.

Consider sedation in a conscious patient prior to pacing.

Mechanical capture should be confirmed by palpating the patient's pulse. It should be documented in the run report.

GASTRIC TUBE INSERTION:

Gastric tube insertion may be performed in circumstances where gastric distension in a comatose patient is interfering with ventilation. Gastric tube insertion of comatose patients must be preceded by endotracheal intubation to protect against possible aspiration.

HYPERGLYCEMIA

If during routine exam, the patient's BGL is found to be > 300mg/dL, an IV of NS is recommended.

- Patients with vague or non-specific complaints; IV of NS, TKO is recommended.
- If the patient presents severely ill and/or is hemodynamically unstable; IV of NS is recommended to be infused at WO rate for a 1-2 liter bolus or until clinic effect is noted. Pediatric fluid bolus; 20cc/kg or until clinical effect is noted

Caution is advised with infusing high-volume crystalloids in patients with CHF or chronic renal failure.

INTRANASAL MEDICATION ADMINISTRATION:

This procedure authorizes the SPEMS Paramedic to administer intranasal (IN) medications using the MAD (Mucosal Atomizer Device). The rich vasculature of the nasal cavity provides a direct route into the bloodstream for medications that easily cross the mucous membranes. Due to this direct absorption into the bloodstream, rate and extent of absorption is relatively comparable to IV administration. This procedure allows for the substitution of approved medication administration via the intranasal route in place of other routes listed in specific protocols. This procedure may be used when it is determined by the Paramedic that a needleless delivery system may be desired because of patient agitation, combativeness, for crew safety, or in consideration of our pediatric population for simple pain control when an IV is not needed or in advance of IV initiation. The SPEMS Paramedic should refer back to the original protocol upon completion of this treatment guideline. Generally, the intravenous route is the preferred method of drug administration and IV therapy should follow as soon as appropriate or practical.

Required education will be provided at the EMS service level with appropriate documentation of education and skill competency on file.

Indications:
(Include but are not limited to):

- Adult and Pediatric Seizures
- Adult and Pediatric Pain Management
- Adult and Pediatric Altered Level of Consciousness with respiratory compromise. Only the full 2mg dose of **Narcan** should be administered IN with the exception of the pediatric patient. If the "low dose" of **Narcan** is warranted it must be administered IV.
- Chemical Sedation

Factors that affect absorption (which are relative contraindications):

- Epistaxis
- Facial Trauma
- Nasal Congestion, Discharge or any recognized nasal abnormality
- Destruction of the nasal mucosa from past surgeries or cocaine abuse

Procedure:

- Prepare equipment (MAD, 1 or 3cc syringe, medication, etc.)
- Draw medication in usual fashion allowing for syringe dead space
- Attach MAD to end of syringe
- Place the patient in supine or recumbent position if possible
- Stabilize the patients head with one hand as needed
- Press the atomizer against the nostril
- Briskly depress the syringe plunger administering ½ of the dose in each nostril
- Administer maximal dose of 1cc per nostril

General Comments:

- Prior to using a nasal medication, inspect the nostril for significant amounts of blood or mucous discharge. Presence of these will limit the medication absorption. Suctioning the nasal passage prior to delivery may be necessary or an alternative delivery method should be explored.
- Always deliver ½ of the medication dose into each nostril. This doubles the available mucosal surface area (over single nostril) for drug absorption and increases rate and amount of absorption.
- Always use the most concentrated form of the drug available-diluted forms are less effective.
- Do not use over ½ to 1cc of medication per nostril (0.2-0.3cc is the idea volume). If a higher volume is required, apply it in two separate doses allowing a few minutes for the former dose to absorb.
- For small volume doses of medication, be aware that most delivery devices have a “dead space” in the applicator tip where some of the medication will remain. Be sure to take that dead space into account when calculating the volume of medication to be administered. Usually the addition of 0.1cc of medication will account for the dead space.
- **Versed** burns for 30-45 seconds-forewarn patients/parents that the child will initially cry but nothing like they will cry from a shot. In rare instances, **Versed**, IN, could be considered for sedation purposes prior to cardioversion/pacing if IV access is delayed.
- **Narcan** IN failures are due to being in a hurry to see the patient wake up. IN **Narcan** takes 3-5 minutes to begin working. The patients often just improve breathing so do not always expect full arousal. (The goal is breathing). In order to prevent Acute Withdrawal Syndrome, patients that are chronically dependant on opiates should receive increments of 0.1mg of **Narcan** via the **intravenous** route (IN **Narcan** should only be administered with the 2mg dose with exception of the pediatric patient).
- **Fentanyl** failure is usually due to under dosing.

Intranasal Dosages:

DECREASED LOC WITH RESPIRATORY COMPROMISE: *Strength*: **Narcan** (Naloxone), 1mg/cc

- **Narcan** (Naloxone) Adult - 2mg, IN, may repeat once in 5 minutes if no increase in respiratory rate or LOC. **Narcan** (Naloxone) Pediatric - 0.1mg/kg, IN, to a max of 2mg, may repeat once in 5 minutes if no increase in respiratory rate or LOC

PAIN MANAGEMENT: *Strength*: **Fentanyl** (Duragesic), 50mcg/cc

- **Fentanyl** (Duragesic)-Adult and Pediatric 2mcg/kg, IN, to a max of 100mcg per dose. May be repeated once in 3-5 minutes if needed. Do not administer to patients < 2 years of age.

SEIZURE ACTIVITY: *Strength*: **Versed** (Midazolam), 5mg/cc

- **Versed** (Midazolam) – Adult and Pediatric 0.2mg/kg, IN, to a max of 5mg. May repeat in 5-10 minutes at 0.1mg/kg, IN, to a max of 2.5mg.

SEDATION: *Strength*: **Versed** (Midazolam), 5mg/cc

- **Versed** (Midazolam) - Adult and Pediatric 0.2-mg/kg, IN, to a max of 5mg. May repeat every 5-10 minutes as needed as long as Systolic BP > 90 mmHg.

MAST:

MAST may be used for splinting of bilateral lower extremity fractures, OR for splinting of unstable pelvic fractures with signs and symptoms of hypovolemia.

NONSPECIFIC COMPLAINT:

If a patient's problem or chief complaint is not addressed by a specific algorithm (e.g. malaise or generalized weakness), the EMT-Paramedic should initiate appropriate Basic Life Support, perform a thorough patient assessment, and communicate the results of the assessment to Medical Control. If appropriate, an IV, NS, TKO, may be established and EKG monitored

If a patient has profound Nausea/Vomiting, consider administering **Zofran** 4mg IVP. Pediatric (2-12 years of age) dose of **Zofran** is 0.1mg/kg to a max of 4mg, IVP. Do not administer **Zofran** to patients < 2 years of age.

OXYGEN THERAPY:

C.O.P.D. patients may be oxygenated using a nasal cannula or a mask at flow rates needed to maintain an **oxygen** saturation of 90-92%. Do not attempt to obtain higher **oxygen** saturations because of the possibility of suppressing the hypoxic drive. Monitor level of consciousness carefully.

To avoid hyperoxia, adult patients with cardiac and/or stroke related problems should be given **oxygen** only if their O2 sats are below 94% or if signs of hypoxia are present. If **oxygen** is required, **oxygen** should be administered, using a non-rebreather, simple face mask or nasal cannula to maintain O2 sats between 94 and 99%. These patients should not be allowed to have a sat of 100%.

All significant trauma patients should receive **oxygen** via non-rebreather or simple face mask to maintain the highest possible **oxygen** saturation.

Except as listed above, all other patients, with an O2 sat below 94%, should receive **oxygen** via non-rebreather or simple face mask. Patient's with an O2 sat of 94% or above; requiring **oxygen** per protocol, may have **oxygen** applied using either a non-rebreather mask, a simple face mask or a nasal cannula.

When a bag-valve-mask is used to ventilate a patient, it should be connected to an **oxygen** reservoir and **oxygen** administered at ≥15 liters per minute.

PAIN MANAGEMENT:

1. **Fentanyl** 5mcg/kg, IV, to a max of 100mcg per single dose for adults. For pediatrics > than 2 years of age, administer 2mcg/kg slow IV/IO push to a max of 100mcg.

   May be repeated X1 if needed in 3-5 minutes at the same dose. Contact medical control for additional doses of **Fentanyl.** Do not administer Fentanyl to patients < 2 years of age. (For intranasal administration of **Fentanyl** refer to P-23 and P-24)

   OR

2. **Morphine** 2-6mg, IV, every 10 minutes as needed. As long as systolic BP is > 90mmHg. Consider ½ dose if patient is over 60 years of age. Pediatric dose is 0.1mg/kg to a max of 3mg per dose.

3. **NOTE:** For patients that have been intubated using pharmacologic agents (PAI) that MAY have pain/agitation, Administer **Fentanyl**, 5mcg/kg, IVP, to a max of 100mcg per single dose. May be repeated once if needed. Contact Medical Control for additional pain management if needed. (See Pages P-20, P-21, P-22)

4. **Zofran** 4mg, IVP, may be given in conjunction with **Fentanyl or Morphine.** Pediatric (2-12 years of age) dose of **Zofran** is 0.1mg/kg to a max of 4mg, IVP. Do not administer **Zofran** to patients < 2 years of age.

5. In the event of long transport times and systolic B/P is > 90mmHg, **Morphine** can be administered for subsequent pain control if Fentanyl was administered first line.

6. All pain should be quantified on a scale of 1 to 10 regardless of the nature of the pain. This should be repeated after each dose of pain control medication.

7. Paramedics must thoroughly document why pain management was administered. The use of pain management will be reviewed by the peer reviewer during case reviews.

8. Cardiac monitoring is required for all patients that receive pain management.

9. For treatment of cardiac chest pain, **Morphine** is the drug of choice. However, if the patient is allergic to **Morphine**, then **Fentanyl** may be utilized at 5mcg/kg, IV, to a max of 100mcg per single dose for all adults. (See Cardiac Chest Pain Algorithm Page 11)

10. Patients with a VAD device should NOT receive **Morphine**. For all necessary pain management for these patients, including cardiac chest pain, utilize **Fentanyl**.

Use of Ketamine for Pain Management:

Ketamine may be administered for pain management ONLY under the following circumstances:

- Severe non-cardiac pain rated at a 9 or 10 by the patient AND accompanying indications of severe pain such as increased heart rate, increased blood pressure, obvious significant injury, etc.

  OR

- Prolonged expected extrication time (> 10 minutes) where the patient is in severe pain due to significant injury

Dosage: 0.5mg/kg to a maximum of 500mg SLOW IV or IO push for all ages. Repeat dose only allowed with medical direction permission

Notes:

- **Ketamine** and Narcotics CANNOT be administered to the same patient without medical control authorization
  - If a patient has received narcotics, **Ketamine** CANNOT be given without contacting medical control for permission
  - If a patient has received **Ketamine**, narcotics CANNOT be given without contacting medical control for permission
- **Ketamine** CANNOT be given IM for pain management; but must be given slow IV or IO push
- Monitor waveform capnography if available
- All uses of **Ketamine** must be reviewed by a peer reviewer

PERIPHERAL VASCULAR ACCESS:

- **INTRAOSSEOUS INFUSION-ADULT:**

Intraosseous infusion is a valuable and safe treatment for the serious or critically ill/injured patient where drug and/or fluid therapy are required for life saving measures. Intraosseous infusion should be considered as a temporary measure during emergencies when other vascular sites are not immediately available. Intraosseous cannulization is not intended for prophylactic use. Only a Paramedic with documentation of prior training can perform an Adult IO. If the patient is 40kg and over, and IV access cannot be obtained after three attempts, or 120 seconds, whichever comes first, an EZ-IO intraosseous cannula should be inserted. The preferred site for the EZ-IO is the anterior surface of the proximal tibia. However, the proximal humerus may be utilized as a secondary site if one or more of the contraindication listed below prevents cannulization into the proximal tibia. The EZ-IO must be used as per manufacturer instructions. The EZ-IO may be secured with an EZ-STABILIZER (Optional) as per manufacturer instructions or by other means such as bulky dressings. Manual hand insertion may be done only if the power driver fails. Simply remove the power driver, grasp the needle set and rotate, pushing the needle into the intraosseous space.

Indications:

1. Altered mental status (GCS of 8 or less)
2. Hemodynamic instability (Systolic BP of < 90)
3. Respiratory compromise (respiratory rate of <10 or >35 with low O2 sats not relieved with O2 therapy.
4. Profound hypovolemia with altered LOC
5. Patient in need of immediate medications or fluids.
6. Resuscitation efforts/CPR
7. Contact Medical Control with concerns/questions.

Contraindications:

1. Previous orthopedic procedure (previous surgery at or around the insertion site, previous IO within 24 hrs.) or injury, or soft tissue injury to the insertion site.
2. Fractures of the bone selected for IO infusion.
3. Infection at the insertion site.
4. Inability to locate landmarks and/or excessive tissue over the insertion site.

Prior to the infusion of fluids or flushes through the IO catheter in the conscious adult patient you may administer **Lidocaine** 1mg/kg SIVP to a max of 50mg if there are no contraindications (Drug allergies, heart blocks, etc…). This will help alleviate the pain in the IO space created by intramedullary pressure due to fluid infusion. The administration of **Lidocaine** during IO placement for pain control does not contraindicate the administration of **Amiodarone** if indicated by protocol.

The Medical Director or his designee MUST review ALL cases of Intraosseous Cannulization

- **INTRAOSSEOUS INFUSION-PEDIATRIC:**

Intraosseous infusion is a valuable and safe treatment for the serious or critically ill/injured patient where drug and/or fluid therapy are required for life saving measures. Intraosseous infusion should be considered as a temporary measure during emergencies when other vascular sites are not immediately available. Intraosseous cannulization is not intended for prophylactic use. Only a Paramedic with documentation of prior training can perform an IO. If the patient is 3-39kg and IV access cannot be obtained after three attempts, or 120 seconds, whichever comes first, an EZ-IO PD intraosseous cannula should be inserted into the anterior surface of the tibia as per manufacturer instructions. The EZ-IO PD may be secured with an EZ-STABILIZER (Optional) as per manufacturer instructions or by other means such as bulky dressings. Manual hand insertion may be done only if the power driver fails. Simply remove the power driver, grasp the needle set and rotate, pushing the needle into the intraosseous space.

Indications:

1. Altered mental status (GCS of 8 or less)
2. Hemodynamic instability or signs and symptoms of hypoperfusion.
3. Respiratory compromise (respiratory rate of <10 or >35 with low O2 sats not relieved with O2 therapy.
4. Profound hypovolemia with altered LOC
5. Patient in need of immediate medications or fluids.
6. Resuscitation efforts/CPR
7. Contact Medical Control with concerns/questions.

Contraindications:

1. Previous orthopedic procedure (previous surgery of the knee or proximal tibia, previous IO within 24 hrs.) or injury, or soft tissue injury to the insertion site.
2. Fractures of the bone selected for IO infusion.
3. Infection at the insertion site.
4. Inability to locate landmarks and/or excessive tissue over the insertion site.

Prior to the infusion of fluids or flushes through the IO catheter in the conscious pediatric patient you may administer **Lidocaine** 0.5mg/kg SIVP to a max of 50mg if there are no contraindications (Drug allergies, heart blocks, etc…). This will help alleviate the pain in the IO space created by intramedullary pressure due to fluid infusion.

The administration of **Lidocaine** during IO placement for pain control does not contraindicate the administration of **Amiodarone** if indicated by protocol.

The Medical Director or his designee MUST review ALL cases of Intraosseous Cannulization

- **IV THERAPY:**

With the exception of entrapment situations where extrication is required, all IV attempts with unstable trauma patients should take place en route to the hospital. **Two IV attempts** may be performed on non-trauma patients at the scene prior to moving the patient. All other attempts should be made en route to the hospital.

Patients requiring keep open lines may have saline locks placed by personnel trained in this procedure. Precautions should be taken to ensure that the lock and angiocath are flushed with sufficient frequency to maintain patency.

IV fluids should be infused at a wide open rate in all adult cardiac arrest situations to a max of 3000cc.

IV fluids should be infused at 20cc/kg over 10 minutes and be may repeated once in all pediatric arrest situations

PLEURAL DECOMPRESSION:

A 14-gauge X 2 inch or longer IV catheter should be inserted in the mid-clavicular line at the second or third intercostal space. Insert the IV catheter over the superior margin of the rib and withdraw the needle. Stabilize the catheter to avoid kinking. The mid-axillary route should only be used with approval of On-Line Medical Control. When determining the need for a pleural decompression, the EMT-P should rely on early signs/symptoms of a tension pneumothorax; primarily absent lung sounds, and should not rely solely on tracheal deviation as tracheal deviation is a late sign.

REMOVAL OF A FOOTBALL HELMET:

In the event an injured football player must be transported, remove the facemask of the helmet to facilitate and secure a patent airway. If it is imperative that the helmet be removed prior to arrival at the emergency department, the shoulder pads SHOULD be removed simultaneously.

RESQPOD (Optional):

The use of the ResQPOD is for the adult patient in cardiac arrest. An adult patient is defined by AHA as one whom has reached puberty. Paramedics who have been properly trained in the use of the ResQPOD may apply the device directly to the ventilation adjunct (i.e. BVM, ET tube, King Airway etc.). When used with CO2 monitoring the monitor should be placed between the ResQPOD and the ventilation device. If ET medications are indicated the ResQPOD should be removed and the medications placed directly into the ET tube. The ResQPOD is not a ventilation device but provides its therapeutic benefit during chest compressions. Therefore it is necessary to maintain a good seal with the device during the chest compression phase of CPR. In the event that the patient resumes a pulse and/or spontaneous respirations the ResQPOD should be removed.

SPINAL PRECAUTIONS

Spinal precautions now consist of Spinal Motion Restriction (SMR) rather than full immobilization with a LSB and CIDs.

The use of backboards have not shown any benefit for spinal injuries, and may cause harm. The use of full spinal immobilization is no longer considered the standard of care in most cases.

Therefore, rigid spine boards and similar type devices are generally only used for extrication/transfer devices. Under most instances, the patient should be removed from the LSB or similar rigid device, after transition to the stretcher except when ease of transfer and/or patient safety is a concern; such as morbid obesity. Transporting a patient while remaining on a LSB should be of rare and extraordinary circumstances.

Spinal Motion Restriction consists of the application of an appropriately sized cervical collar and placement on the stretcher and secured to the stretcher with at least three straps. The shoulder straps should be criss-crossed if possible or utilized according to the manufacturer's recommendation. Patients should be transported with head elevated 20 to 30 degrees, unless contraindicated.

Inform the patient to avoid moving his/her head and neck.

If spinal precaution is indicated, per the algorithm or at the attendant's discretion, then Spinal Motion Restriction (SMR) is the preferred technique in MOST cases.

Ambulatory patients who meet criteria for SMR should not be allowed to ambulate further than a few steps and then should be carefully guided to the stretcher and secured. They should not be allowed to step into the ambulance.

Infants and small children: If undamaged and conditions permit, use the car seat with additional padding to reduce spinal motion; when practical.

Multiple Patients: if transporting two or more patients requiring spinal precautions, additional patients can be secured to the bench or captain's seat in the upright position with both the lap and shoulder belt while maintaining spinal motion restrictions. Do not have the patient step up into the ambulance; but utilize the stretcher and then assist the patient to the final position on the bench or captain's seat.

Continued on Next Page

Anytime that a patient that is under Spinal Motion Restriction moves or is moved, manual stabilization of the C-spine should be maintained during movement.

If the patient requires transfer to the transport stretcher via LSB it is highly recommended that the patient be moved from the LSB in a manner that limits spinal manipulation (i.e. log roll, sheet, scoop).

A traditional cervical immobilization device (CID) is not indicated when utilizing Spinal Motion Restriction. However, in the rare instances that a LSB is utilized for full body immobilization and transport a CID is still indicated.

Once a LSB is utilized for the purpose of full body immobilization and/or a cervical collar has been placed, they can only be removed by a physician.

SPINAL PRECAUTION PROCEDURE:

The acronym "NSAIDS" should be used to remember the steps for this procedure.

- **N - *Neuro Exam***: Look for any focal deficits such as tingling, reduced strength, or numbness. Verify that there is no language barrier between you and the patient.
- **S - *Significant MOI***: Use judgment; Studies have shown that MOI alone should NOT dictate the need for Spinal Motion Restriction (SMR).
- **A - *Alertness and Age*:** Assess that the patient is conscious, alert, and oriented to person, place, time, and event? Confirm the patient is > 5 years of age.
- **I - *Intoxication*:** Assess for any indicators that the person is intoxicated or under the influence (Illicit or Legal Drugs, Alcohol, etc.)
- **D - *Distracting Injuries***: Look for any other injuries that might distract the patient from spinal pain.
- **S - *Spinal Exam***: Check for point tenderness along the spinous process of the entire spine (log rolling the patient to assess this is appropriate while manual c-spine is held in order to rule out the need for Spinal Motion Restriction (SMR)).

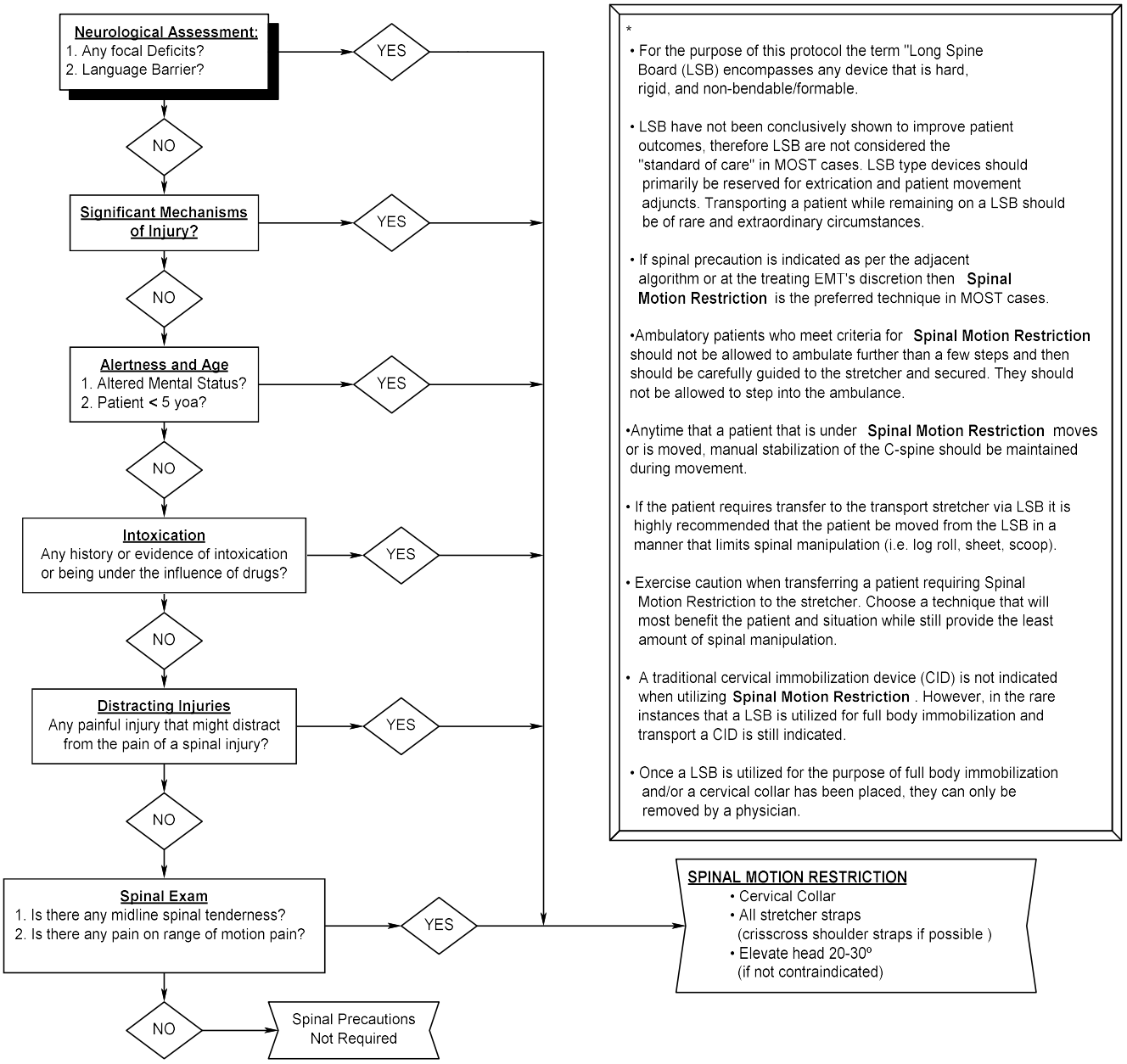
- Assess for painful range of motion only if the patient had no tenderness to spine (patient should be able to touch their chin to their chest, extend their neck by looking upward, and turn their head from side to side without any midline spinal pain). Discontinue at any time if the patient develops pain or tenderness to ANY area of the spine and immediately perform spinal motion restriction (SMR).

- Once a cervical collar has been placed, it **MUST ONLY BE REMOVED BY A PHYSICIAN**.

If in doubt, **ALWAYS** err on the side of spinal precaution

See flowsheet on following page

SPINAL PRECAUTIONS*



*

- For the purpose of this protocol the term "Long Spine Board (LSB) encompasses any device that is hard, rigid, and non-bendable/formable.
- LSB have not been conclusively shown to improve patient outcomes, therefore LSB are not considered the "standard of care" in MOST cases. LSB type devices should primarily be reserved for extrication and patient movement adjuncts. Transporting a patient while remaining on a LSB should be of rare and extraordinary circumstances.
- If spinal precaution is indicated as per the adjacent algorithm or at the treating EMT's discretion then **Spinal Motion Restriction** is the preferred technique in MOST cases.
- Ambulatory patients who meet criteria for **Spinal Motion Restriction** should not be allowed to ambulate further than a few steps and then should be carefully guided to the stretcher and secured. They should not be allowed to step into the ambulance.
- Anytime that a patient that is under **Spinal Motion Restriction** moves or is moved, manual stabilization of the C-spine should be maintained during movement.
- If the patient requires transfer to the transport stretcher via LSB it is highly recommended that the patient be moved from the LSB in a manner that limits spinal manipulation (i.e. log roll, sheet, scoop).
- Exercise caution when transferring a patient requiring Spinal Motion Restriction to the stretcher. Choose a technique that will most benefit the patient and situation while still provide the least amount of spinal manipulation.
- A traditional cervical immobilization device (CID) is not indicated when utilizing **Spinal Motion Restriction** . However, in the rare instances that a LSB is utilized for full body immobilization and transport a CID is still indicated.
- Once a LSB is utilized for the purpose of full body immobilization and/or a cervical collar has been placed, they can only be removed by a physician.

* The acronym "***NSAIDS***" should be used to remember the steps for spinal immobilization clearance.

- ***N*** **- Neuro Exam:** Look for any focal deficits such as tingling, reduced strength, or numbness. Verify that there is no language barrier between you and the patient.
- ***S*** **- Significant MOI:** Use judgement; Studies have shown that MOI alone should **NOT** dictate the need for SMR.
- ***A*** **- Alertness and Age:** Assess that the patient is conscious, alert, and oriented to person, place, time, and event? Confirm the patient meets the age requirements noted above. Use extra caution when assessing possible spinal injuries in patients ≥ 65 yoa. They are a hgher risk patient and may have only minimal symptoms.
- ***I*** **- Intoxication:** Assess for any indicators that the person is intoxicated or under the influence (Illicit or Legal Drugs, Alcohol, etc.)
- ***D*** **- Distracting Injuries:** Look for any other injuries that might distract the patient from spinal pain.
- ***S*** **- Spinal Exam:** Check for point tenderness along the spinous process of the entire spine (log rolling the patient to assess this is appropriate while manual c-spine is held in order to r/o the need for SMR).

- Assess for painful range of motion only if the patient has no tenderness to spine (patient should be able to touch their chin to their chest, extend their neck by looking upward, and turn their head from side to side without any any midline spinal pain). Discontinue at anytime if the patient develops pain or tenderness to ANY area of the spine.
- If in doubt, **ALWAYS** err on the side of spinal precaution

STROKE/TIA (SUSPECTED):

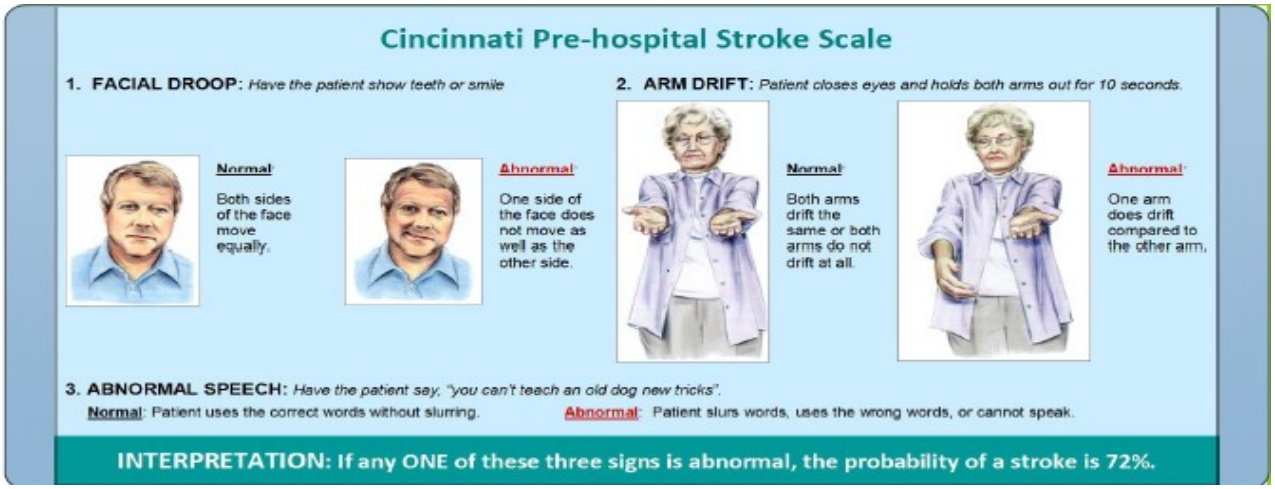
The goal of this protocol is not only to accurately and quickly identify strokes/TIAs in the field, but to identify large vessel occlusions (LVOs) and report findings to receiving facilities immediately. In the event a stroke is suspected, the Cincinnati Stroke Scale (CSS) should be performed. A positive CSS has a 72% probability of being a stroke and of that percentage, approximately 85% are ischemic. All positive CSS findings should be reported to the receiving hospital from the scene. Limit scene time to ≤10 minutes (document reason if not possible) and consider rapid transport to the appropriate facility, (P-50). To further increase the chances for the best possible patient outcome the VAN assessment for large vessel occlusions should be performed if applicable. The VAN assessment is used in conjunction with the CSS to help determine if the stroke is associated with an LVO. Prehospital recognition and hospital alert can start the process of early, appropriate resource acquisition.

The key to forming an accurate impression is in the physical assessment findings and the clinical history. The following history and signs and symptoms should increase the suspicion of a stroke.

- ***History***: CVA/TIA, Cardiac/Vascular surgeries, Deep vein thrombosis (DVT), Diabetes, Hypertension, CAD, Atrial-Fibrillation, Blood thinners
- ***Signs and Symptoms:*** Altered mentation, Weakness/Paralysis, Visual changes, Sensory loss, Aphasia, Dysarthria, Dysphagia, Syncope, Vertigo/Dizziness, Vomiting, Headache, Seizures, Respiratory pattern changes, Hyper/Hypotension, Trouble walking/Unsteady gait

Strokes/TIA can be mimicked by several deferential diagnosis, such as, Seizures/Todd's Paralysis, Hypoglycemia, Tumor, Trauma, Bell's Palsy, Intoxication, Dehydration/Electrolyte imbalances, Infection, Meningitis/Encephalitis.

If possible, inquire about the patients baseline neurological state. Chronic neurological deficits don't necessarily warrant rapid transport to a Stroke Center. Always err on the side of caution if questionable.



Indication:

- The Cincinnati Stroke Scale should be performed on all patients suspected of having a Stroke/TIA including but not limited to, patients with altered level of consciousness and/or neurological deficits.

Contraindications:

- The patient cannot perform the procedure due to a decreased level of consciousness or a life-threatening condition
- The patient has a known language barrier or other deficit that would trigger false-abnormal findings.

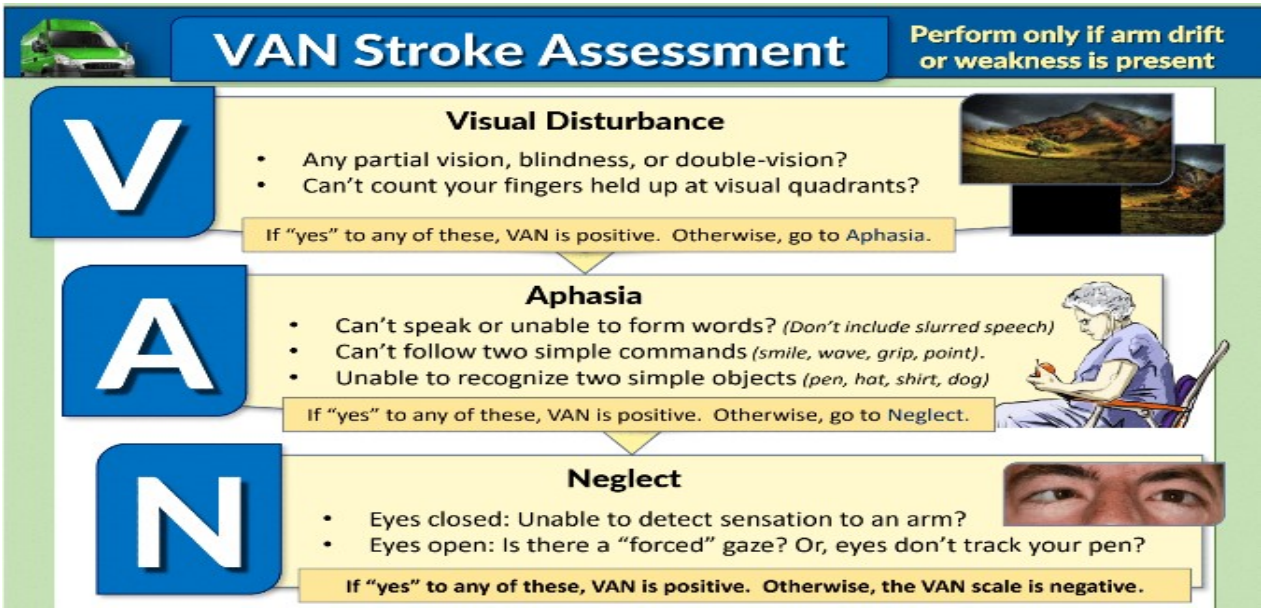
Procedure:

- The Cincinnati Stroke Scale (CSS) is a system used to diagnose a potential stroke in the pre-hospital setting. It tests three signs for abnormal findings which may indicate that the patient is having a stroke. If any one of the three tests show abnormal findings, the patient may be having a stroke and should be transported without delay.
- ***Step 1 Facial Droop:*** have the patient smile or show their teeth
    - Normal: Both sides move equally
    - Abnormal: One side of face does not move as well as the other (or at all) so it appears to droop.

- ***Step 2 Arm drift**:* Ask the patient to raise both arms to eye level with their eyes closed and palms facing upward for 10 seconds.
    - Normal: The patient can hold both arms up without downward drift.
    - Abnormal: The patient is unable to hold both arms up or there is suggestion of new-onset paralysis/weakness.

The VAN Stroke Assessment should be performed on all patients that test positive for arm drift via the Cincinnati Stroke Scale

- ***Step 3 Speech:*** Have the person say, "You can't teach an old dog new tricks," or some other simple, familiar saying.
    - Normal: The patient uses correct words with no slurring.
    - Abnormal: The patient slurs the words, gets some words wrong, or is unable to speak.



Indication:

- Utilize the VAN Stroke Assessment anytime there is positive arm drift or motor control deficit via the CSS.

Contraindications:

- The patient cannot perform the procedure due to a decreased level of consciousness or a life-threatening condition
- The patient has a known language barrier or other deficit that would trigger false-positive VAN findings.

Procedure:

- The VAN Stroke Assessment should be performed on all patients with positive findings of motor deficit /arm drift via the Cincinnati Stroke Scale.
    1. ***Visual Disturbance Assessment:*** Face the patient and have them look directly at your nose. The provider will be testing the four quadrants of periphery vision by holding up their hand with a selected number of fingers. The patient should call out the number of fingers they see raised in each quadrant. The provider will assess the periphery vison fields in the following order; right upper, right lower, left upper, and left lower. Assess for eye tracking during this procedure. Ask the patient if they are experiencing any double vision or partial/full blindness.
        - If the patient cannot accurately assess the number of raised fingers in any of the quadrants or reports visual abnormalities, they are VAN positive. The provider should notify the receiving hospital, per protocol. If negative, move on to the next assessment step.
    2. ***Aphasia Assessment:*** The provider asks the patient to recognize and name two random objects, such as a pen, watch, or button. For the second portion of the assessment, ask the patient to repeat a short sentence, such as, "the early bird gets the worm". The final step in the aphasia assessment asks the patient to follow two simple, separate command, such as "close your eyes", "make a fist", or "wave". This assesses the comprehension/understanding area of the brain.

- If the patient is unable to correctly perform these assessments, they are VAN-positive. The provider should notify the receiving hospital, per protocol. If preformed correctly, move on to the next assessment step.

3. ***Neglect Assessment:*** Assess the patient's eyes for a forced gaze to either side. Do the eyes track evenly if following a pen? To perform the next step of the neglect assessment, ask the patient to close their eyes. With their eyes closed the provider then runs their hand over one of the patient's forearms and asks the patient which arm was touched, followed by the opposite forearm, and then final both forearms simultaneously.
   - If the patient was unable to feel sensation to one of their arms, they are VAN positive. The provider should notify the receiving hospital, per protocol.
   - If the patient was able to recognize sensation to each forearm, then they are VAN negative.

Summary:

"VAN Positive" indicates there is motor control deficit **AND** at least one of the VAN criteria have been met. "VAN-positive" indicates there is an increased probability of a large vessel occlusion. The VAN assessment does not take the place of the CSS. A patient can still have a stroke while remaining "VAN-negative". You must advise the receiving hospital of CSS and VAN findings.

Key Points:

- One of the most important items the pre-hospital provider can obtain is the "time of onset" or "last seen normal time", which forms the basis for all treatment decisions. Be very precise in gathering data to establish the time of onset and report it as an actual time (example: "1347" NOT "about 45 minutes ago"). The patient may not be able to receive thrombolytics or other appropriate therapy at the facility unless this vital information has been obtained by EMS. For patients who "woke up and noticed the stroke", the time the patient was last awake will be the reported time of onset. If possible, obtain contact information of a family member or the reporting party.
- Some types of tissue plasminogen activators (tPA) may be administered within 4.5 hours from time of last seen normal if the risks/benefits are considered acceptable after a neurology consult at the hospital. Clot retrieving advancements have extended this time even further for certain cases. The time frame for prehospital "Stroke Activation" is 6 hours from the "last seen normal" time.
- Try to limit scene time to 10 minutes or less. Do not delay transport for non-life sustaining interventions. Transport to the appropriate stroke facility as documented in the Stroke Triage Scheme. (P-50).
- During transport and as time permits both the CSS and VAN assessments should be repeated with additional findings/changes reported to the receiving facility as well as documented on the PCR.
- Be alert for airway problems (swallowing difficulty, vomiting/aspiration) that may coexist with other stroke symptoms.
- Hypoglycemia can present as a LOCALIZED neurologic deficit, especially in the elderly. Obtain a blood glucose measurement as soon as possible and preferably before stroke activation.
- To accommodate the intravenous contrast for specialized CT scans, the IV catheter should be no smaller than an 18g unless the patient's vasculature prevents large bore access. Due to the importance of rapidly diagnosing Stroke/TIA, blood draws should be attempted in the pre-hospital setting. The order in which the blood tube must be filled is Blue, Red, Green, Purple.
- Drip and Ship; If TPA/Alteplase has been started and/or completed by the transferring facility, the following should be assessed every 10 minutes throughout transfer;
  - Vitals signs and maintain a blood pressure < 180/105mmHg (Contact Online Medical Control for treatment orders if blood pressure exceeds 180/105mmHg).
  - Neurologic assessment (CSS & VAN)
  - Monitor for bleeding, angioedema, severe headache, acute hypertension, nausea/vomiting, or worsening neurological exam, If TPA/Alteplase is being administered during the transfer, stop the infusion immediately. Contact Online Medical Control for direction.
  - Do not attempt venipuncture or NG tubes once TPA/Alteplase has been administered.

Refer to the Stroke/TIA Transport Decision Scheme Page (P-50)

TASER PROBE REMOVAL:

If an individual's EMS department policy grants EMS staff permission to remove taser probes, the EMS individual **MAY** make a single attempt to remove the probes. If the probes appear to be embedded in the bone, in a sensitive area, or it appears that the removal will be difficult, leave in place and treat as an impelled object. To lessen the risk of a needle stick injury some type of gripping device (hemostats or pliers) should be used to facilitate the removal. The site should then be cleaned and bandaged as appropriate.

TRANSMISSION OF 12 LEAD ECGs:

As indicated by protocols, all SPEMS Paramedics shall perform and interpret a 12 Lead ECG. The interpretation of the ECG shall be reported to the receiving facility. If the 12 Lead ECG indicates a STEMI, the Paramedic shall report such finding to the receiving facility as soon as possible. If transmission capabilities are available, the 12 Lead ECG shall be transmitted to the receiving facility as soon as possible.

TRANSPORTATION:

Transportation to the hospital may begin at any time the EMS technician judges it to be appropriate, even though the words "Continue to Treat, Monitor and Transport" do not appear until the end of each algorithm.

With the exception of entrapment situations where extrication is required, the time on the scene with unstable trauma patients should not exceed 10 minutes. If time on scene exceeds 10 minutes, narrative should include justification. Emphasis should be placed on transporting these patients, so they receive definitive hospital care within one hour of the time they were injured.

All patients transported by stretcher must be transported in a DSHS authorized vehicle.

Air transport should be considered whenever its use would expedite a critical patient's arrival at the hospital. The Medical Control physician may order transport of a patient to begin at any time during a treatment procedure.

TRANSPORT TO FREESTANDING EMERGENCY CENTERS:

Under certain circumstances, it may be acceptable for EMS services to transport to a freestanding emergency center. The following guidelines shall be utilized when considering transport to such a facility.

Authorized Freestanding Emergency Center Destinations:
The following freestanding emergency centers have agreed to receive ambulance transport of certain patients. No other standalone emergency center may be utilized.

- Star ER
    - 7007 Indiana Avenue
    - Lubbock, TX 79413
    - Phone: 806-701-4141
- Covenant HOPD
    - 7905 Milwaukee Avenue
    - Lubbock, TX 79424
    - Phone: 806-368-5837
- Covenant HOPD
    - 10205 Quaker Avenue
    - Lubbock, TX 79424
    - Phone: 806-368-8606
- ER Now
    - 5800 S. Coulter St.
    - Amarillo, TX 79119
    - Phone: 806-398-7744
- ER Now
    - 2101 Coulter St.
    - Amarillo, TX 79106
    - Phone: 806-350-7744

Indications for acceptable usage of approved freestanding emergency centers:

- An uncomplicated medical condition with a high likelihood of discharge from the emergency center, such as:
    - Abdominal pain with normal vital signs
    - Uncomplicated nausea, vomiting, and/or diarrhea
    - Flu-like symptoms, sore throat, minor respiratory infection, earache, cough, and/or rash
    - Painful urination
- Uncomplicated musculoskeletal injuries up to and including closed fractures or dislocations (as long as the neurovascular system appears to be intact)
- Lacerations and/or abrasions not requiring surgical interventions
- Patients in which spinal precautions are not indicated
- Trauma activation is not expected

Contraindications for usage of approved freestanding emergency centers:

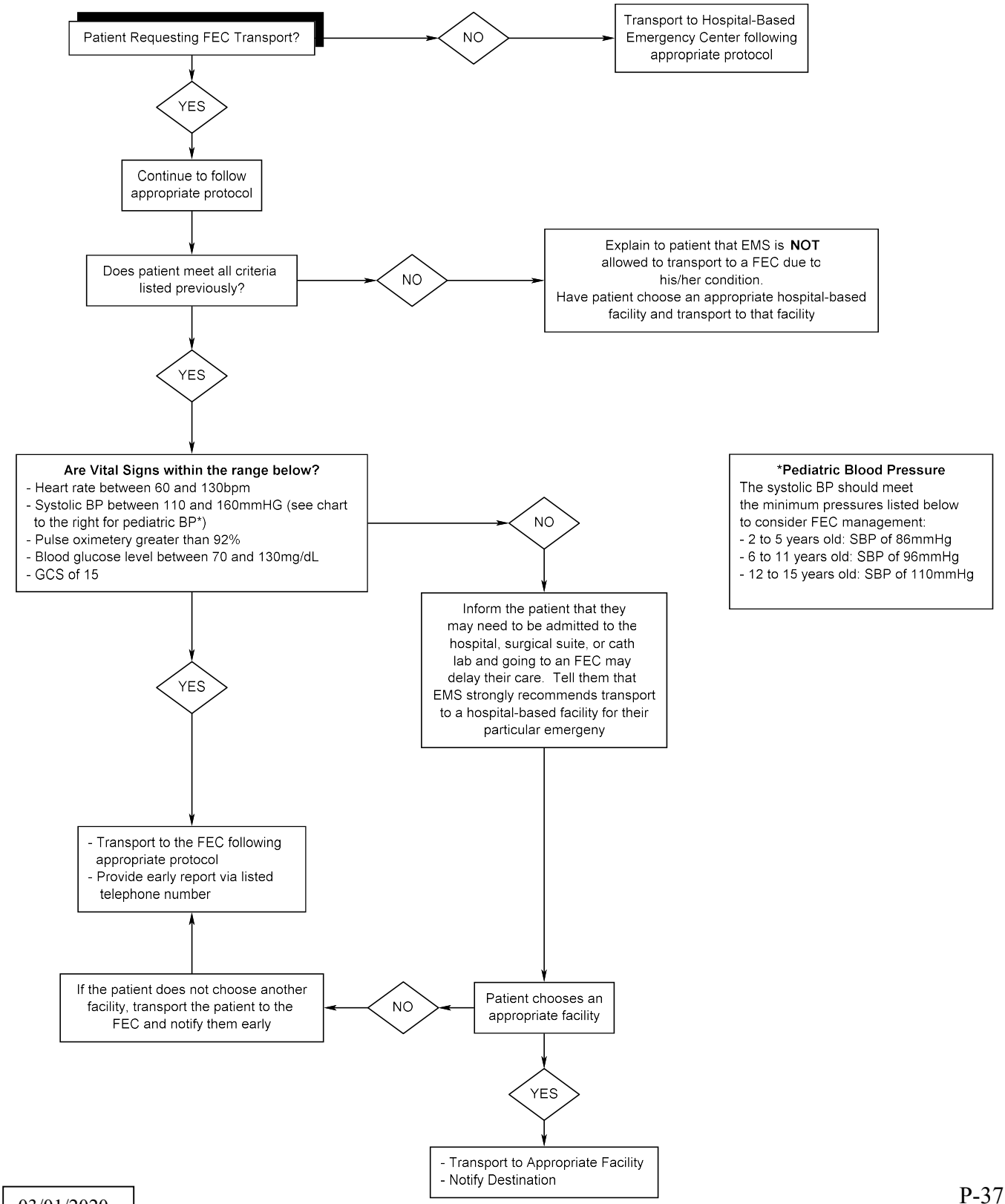
- Age: less than 2 years old or older than 64
- STEMI or high-risk chest pain. Chest pain or possible Acute Coronary Syndrome (ACS) in patients over 40 years old
- Cardiac or traumatic arrest
- Uncontrolled airway or patients receiving ventilatory support
- Patients with advanced airways including CPAP, King Airway, and Intubation
- Suspected stroke or stroke-like symptoms
- Altered mental status
- Pregnancy over 20 weeks gestation
- Potential for neurological involvement
- Hemorrhage with wound packing or tourniquet usage
- Any of the following:
    - Significant penetrating trauma
    - Ischemic extremities
    - Angulated long bone or open fracture; open joint dislocation
    - Spinal motion restriction is indicated
- EMS judgement, need for surgery, or suspected inpatient admission

KEY POINTS:

- Only the above listed FECs can be utilized by this protocol. Transport to any other FEC is NOT allowed.
- If the patient does not meet the indications, with NO contraindications, the patient CANNOT be transported to a FEC. Inform the patient that you cannot meet his/her request and ask that he/she select a hospital-based ED.
- If the patient does meet the above criteria, refer to the algorithm on the next page
- A thorough assessment must be performed prior to considering transport to an approved FEC
- Contact the FEC early on to allow for the possibility of diversion to another facility
- Medicare and Medicaid are NOT accepted by Star ER and ER Now. Covenant HOPD does accept Medicare and Medicaid. When transporting a patient to Star ER or ER Now, the patient should be informed that they do not accept Medicare and Medicaid as to avoid bills in which the patient is solely responsible for.
- All transports to an approved FEC must be thoroughly documented
- All transports to an approved FEC must be reviewed by a peer reviewer

See Flowchart on Next Page

EMS TRANSPORT TO FREESTANDING EMERGENCY CENTERS (FEC)



TREATMENT FOR SHOCK:

- Assure Airway, Breathing, Circulation, and control of Bleeding (ABCs)
- Insert oropharyngeal/nasopharyngeal airway if patient is unconscious and consider intubation
- Administer high flow oxygen
- Maintain patient's body temperature
- Elevate lower extremities
- Give nothing by mouth
- Fluid Resuscitation

TREATMENT FOR SNAKEBITES:

- Cool, Calm environment
- Supportive Measures
- Extremity at heart level
- Zero degree elevation
- No Ice or constricting bands

UNCONTROLLED HEMORRHAGE

At times, direct pressure may fail to control bleeding and it may be necessary to utilize other means to assist in bleeding control.

- **QUICKCLOT**
  - Must be the heat free formulas
  - Combat Gauze, is a 3in X 4yrd roll of heat free hemostatic gauze
  - ACS+, is a heat free hemostatic sponge

    1. Blot excess blood from wound with gauze pad
    2. Apply Hemostatic agent as directed on package
    3. Apply FIRM direct pressure to wound for 5 minutes. (if bleeding persists, apply direct pressure for an additional 5 minutes
    4. Apply pressure dressing
    5. Deliver empty Hemostatic agent packaging to accepting physician

    Instructions for the use of QuickClot are printed on its package.

- **COMMERCIAL TOURNIQUET DEVICE**

  Tourniquet application may be indicated when life threatening extremity hemorrhage can not be controlled by any other means.

  It is required that a commercial tourniquet is used per manufactures instructions, as improvised tourniquets may not be as effective and/or may cause additional harm. The use of QuickClot in conjunction with a tourniquet application is recommended.

  - The tourniquet should never be covered by clothing or bandages
  - Record the date and time the tourniquet was applied
  - If transport time is extended (> 30 minutes) and absence of amputation or continued hypotension/shock the tourniquet may be LOOSENED to assess for bleeding. DO NOT remove the tourniquet. If bleeding continues re-tighten the tourniquet to loss of distal pulses, if bleeding remains controlled leave the tourniquet in place but assure it is loosened to prevent venous occlusion.

PRE-HOSPITAL MEDICATIONS AND INTRAVENOUS FLUIDS

INHALED MEDICATIONS
Oxygen
Duo-Neb: Consists of 0.5mg Ipratropium Bromide and 3mg of Albuterol Sulfate in 3ml (P-18) (Page 6, 13, 24)
Levalbuterol (Xopenex) (Optional), 1.25mg/3ml (Page 6, 24)
Racemic Epinephrine (Optional) 2.25% 11.25mg/0.5ml (Page 6)

ORAL MEDICATIONS
Acetaminophen, 500mg tablets (Page 27)
Activated Charcoal 50g (P-39)
Aspirin, 325mg tablet (Page 11, 13, 14)
Ibuprofen 200mg tablets (Page 27)
Oral Glucose 15g tube (P-10)
Liquid Children's Motrin 100mg/5ml (Page 27, 33)

SUBLINGUAL MEDICATIONS
Nitroglycerin, 0.4 mg tablet or spray (P-18) (Page 6, 11, 13, 14)

INTRAMUSCULAR MEDICATIONS
Epinephrine (1:1,000), 1mg/1cc (Page 6, 24)
Glucagon 1mg/unit (optional) (Page 26, 33)
Midazolam (Versed), 10mg/2cc (P-17) (Page 33)

INTRANASAL MEDICATION
Fentanyl 100mcq/2cc (P-24, 26) (Page 1, 3, 11)
Midazolam (Versed), 10mg/2cc (P-24, 25) (Page 33)
Naloxone (Narcan) 2mg/2cc (P-24) (Page 13, 26)

INTRAVENOUS FLUIDS
Dextrose 5% (D5W) (Optional)
Lactated Ringers (LR)
Normal Saline (NS)

PREMIXED INTRAVENOUS MEDICATIONS
Dextrose 10% (D10W) 250cc. Services may carry D50W (25g/50cc) and 250cc bags of NS until current supply of D50W is exhausted or expires (Pages 26, 33)
Dopamine (Intropin), 200mg/250cc (Pages 12, 14, 15)
Lidocaine, 1g/250cc (Page 14, 15, 16, 18, 19, 21)

IV MEDICATIONS
Adenosine (Adenocard), 12mg/4cc (Page 13, 17)
Atropine Sulfate, 1mg/10cc (P-17, P-22), (Page 9, 10, 32)
Amiodarone, 150mg/3cc (P-27, P-28) (Page 14, 15, 17, 18, 19, 20, 21)
Calcium Gluconate 10%, 1g/10cc (Page 22)
Dexamethasone (Decadron) 20mg/5cc (Page 6, 24)
Diazepam (Valium), 10mg/2cc (Page 14, 22, 33)
Diphenhydramine (Benadryl), 50mg/1cc (Page 24)
Epinephrine (1:10,000), 1mg/10cc (Page 7, 8, 10, 14, 18, 19, 24, 31)
Epinephrine (1:1,000), 1mg/1cc (Page 6, 9)
Etomidate (Amidate) 40mg/20cc (P-20, 21, 22)
Fentanyl 100mcq/2cc (P-20 ,21, 22, 24, 26) (Page 1, 3, 11, 13)
Ketamine 1,000mg/10cc (P-17, 26) (Page 1, 3, 9, 17, 21)
Labetolol (Normodyne) 20mg/4cc (P-40) (Page 14)
Lidocaine (Xylocaine), 100mg/5cc (P-20, 21, 22, 27, 28) (Page 14, 15, 16, 18, 19, 21)
Magnesium Sulfate 50%, 5g/10cc (Page 14, 22)
Midazolam (Versed), 10mg/2cc (P-17, 20, 21, 22) (Page 9, 14, 17, 21, 33)
Morphine Sulfate, 10mg/1cc (P-18, 26) (Page 1, 3, 6, 11, 13, 14)
Naloxone (Narcan), Adult, 2mg/2cc (Page 13, 26)
Ondansetron (Zofran) 4mg/2cc (P-25, 26) (Page 11, 13)
Rocuronium, 100mg/10cc (P-21)
Sodium Bicarbonate 8.4% (Adult), 50mEq/50cc (P-40)
Succinylcholine (Anectine) 200mg/10cc (P-22)
Vecuronium Bromide (Norcuron), 20mg/20cc (P-20)

Services under SPEMS medical direction have the option of stocking three different paralytics. However, the stocking of Vecuronium Bromide (Norcuron) is mandatory. The stocking of Succinylcholine and Rocuronium are optional. The EMS service has the option to stock Succinylcholine and/or Rocuronium in addition to Vecuronium Bromide (Norcuron).

ENDOTRACHEAL MEDICATIONS (Preferred drug route is IV/IO)
If an endotracheal tube has been placed and venous access delayed, **Epinephrine, Lidocaine, Atropine and Naloxone (Narcan)** may be administered by the endotracheal route.

Endotracheal Medications should be administered at 2 times the recommended IV dose. Medications should be administered in a total volume of 10 cc, diluted with normal saline as needed, and introduced directly into the endotracheal tube or through a suction catheter passed beyond the tip of the endotracheal tube. The medication should be followed by 10 quick ventilations with the bag-valve-mask to aerosolize the medication. Chest compressions should be withheld during these ventilations.

DRUGS NOT SPECIFICALLY INDICATED IN PROTOCOLS:
Although not indicated for routine pre-hospital use, the following drugs are included in the authorized medication list and must be directly requested for use at the discretion of **On-Line Medical Control:**

Sodium Bicarbonate: (Dose 1mEq/kg up to 100mEq. May be repeated at 0.5mEq/kg every 10 minutes up to 50mEq per dose) Sodium Bicarbonate may be beneficial if the patient has known pre-existing hyperkalemia, known pre-existing bicarbonate-responsive acidosis, or overdose on Tricyclic Antidepressants. Although research studies have not indicated that routine use of Sodium Bicarbonate in cardiac arrest improves patient outcomes, in prolonged cardiac arrest (> 20minutes) the Paramedic may administer Sodium Bicarbonate without Online Medical Control.

Labetolol (Normodyne) (Dose 10mg to 20mg IV) Used in the treatment of hypertension. May be administered if ordered by Medical Control.

Activated Charcoal: (Dose 1g/kg up to 50g) Activated Charcoal may be indicated for ingestion of medications or other substances. Activated Charcoal should NOT be used in cases of acid or alkali ingestion, if the patient is unable to swallow or has a decreased level of consciousness.

USE OF INFUSION OR SYRINGE PUMPS:
Use of infusion pumps or syringe pumps for delivery of all medications administered by continuous infusion is strongly encouraged for long transports (≥25 minutes).

DECISION-MAKING IN CARDIOPULMONARY RESUSCITATION

The current standard of care requires that resuscitation be implemented when two conditions are fulfilled:
2. There is the possibility that the brain is viable.
3. There is no medically or legally legitimate reason to withhold resuscitation.

RESUSCITATION EFFORTS SHOULD BE WITHHELD ONLY IF A PATIENT IS APNEIC AND PULSELESS AND ONE OF THE FOLLOWING SITUATIONS EXISTS:

1. The patient is decapitated.
2. Rigor mortis is present.
3. Dependent lividity is present.
4. Evidence of tissue decomposition is present.
5. Massive trauma to the head, neck or thorax, clearly incompatible with life, is present.
6. In a multiple casualty situation there are inadequate numbers of trained personnel to initiate resuscitation while providing life-saving care to other patients.
7. A written Texas Department of State Health Services Out of Hospital DO NOT RESUSCITATE (OOH DNR) is available for immediate inspection by the EMS technicians. (Refer to the Do Not Resuscitate Section)
8. The patient is wearing the state-approved DNR bracelet and/or necklace bearing the official Out-of hospital DNR logo. (Refer to the Do Not Resuscitate Section)
9. Out-of-Hospital DNR Order forms executed in another state or devices authorized by another state as describe in the Do Not Resuscitate Section. (Refer to the Do Not Resuscitate Section)
10. The patient's attending physician is at the scene of the emergency and orders the EMS personnel to withhold resuscitation efforts.
11. If no written TDSH OOH DNR order is available, the decision to withhold resuscitation efforts may be made by the Emergency Department physician if requested by one persons of the following list if available, in the following priority:
    a) The patient's spouse;
    b) A majority of the patient's reasonably available adult children;
    c) The patient's parents; or
    d) The patient's nearest living relative.
12. The Emergency Department Physician at the receiving hospital orders EMS personnel, via radio, not to initiate or to terminate resuscitation efforts.

In cases involving a request by family members to withhold resuscitation efforts, you should also include documentation of the request, and names and relationships of the persons making the request. **ALL** EMS personnel present should sign documentation.

NOTE: The patient's private physician, upon learning of EMS involvement in the resuscitation efforts of one of his/her patient's, should contact the receiving Emergency Department's physician and relay any orders to withhold resuscitation efforts to the Emergency Department physician, since EMS cannot accept these "Do Not Resuscitate" orders directly from the private physician via telephone.

If, at anytime, EMS personnel question the legitimacy of the request to withhold resuscitation efforts, or if there are any indications of unnatural or suspicious circumstances, resuscitation efforts should be initiated, but limited to BLS, until such time as Medical Control is contacted and the Emergency Department physician directs otherwise.

IF ANY DOUBT WHATSOEVER EXISTS, RESUSCITATE!

In the pre-hospital setting, EMS Technicians shall not delegate the decision to initiate or withhold resuscitation to other individuals under any circumstances.

Once initiated, BLS and ACLS shall continue until one of the following occurs:

1. Effective spontaneous circulation and ventilation have been restored.
2. A physician at the receiving medical facility pronounces the patient dead.
3. On-line Medical Control orders termination of resuscitation efforts.
4. Attending physician arrives on scene and orders termination.
5. A legitimate TDSHS Out of Hospital DNR is presented to ambulance personnel. (Refer to the Do Not Resuscitate Section)
6. A legitimate Out-of-Hospital DNR Order forms executed in another state is presented to ambulance personnel. (Refer to the Do Not Resuscitate Section)

EXCEPT AS DESCRIBED ABOVE, UNDER NO OTHER CIRCUMSTANCES WILL THE DECISION TO TERMINATE RESUSCITATION BE MADE BY A NON-PHYSICIAN!

EMS personnel should remember that some patients might appear to be dead and not responsive to resuscitation efforts while actually being potential candidates for successful resuscitation. Therefore, if any doubt exists concerning the patient's potential resuscitation by any of the EMS personnel present, resuscitation efforts should be initiated immediately. The following types of patients should receive special consideration for resuscitation since cases have been documented in which these, and other patients, have been successfully resuscitated following the apparent "death" of the patient:

1. Hypothermia
2. Hypoglycemia
3. Acute drug overdoses
4. Poisonings
5. Pediatric patients
6. Drowning
7. Unwitnessed (by trained medical personnel) cardiac and/or respiratory arrest

DO NOT RESUSCITATE ORDERS

When dealing with Do Not Resuscitate Orders, the following guidelines shall be followed:

ACCEPT ANY ONE OF THE FOLLOWING AS PROOF OF A VALID OOH DNR ORDER:

Texas Out-of-Hospital Do-Not-Resuscitate Order Form (OOH DNR)

Note: There is now a new TDSHS form for DNRs. Either the new or the old form is acceptable. A copy of both forms is on subsequent pages.

The Texas OOH DNR Order form is a single page form with the Texas DNR logo printed at the top in red or black. The original or a photocopy is acceptable. A copy of these forms is on subsequent pages. The form is considered valid if:

1. One of the six sections have been filled out and signed appropriately. **Note**: Electronic signatures are acceptable. (Only one completed section is required)
    a. Section A: Declaration of the adult person
    b. Section B: Declaration by legal guardian, agent or proxy on behalf of the adult person is incompetent or otherwise incapable of communication
    c. Section C: Declaration by a qualified relative of the adult person who is incompetent or otherwise incapable of communication
    d. Section D: Declaration by physician based on directive to physicians by a person now incompetent or otherwise incapable of communication
    e. Section E: Declaration on behalf of the minor person
    f. Section F: Directive by two physicians on behalf of the adult, who is incompetent or unable to communicate and without guardian, agent, proxy or relative. (**Note**: if this section is utilized, no signature of witnesses or notary are required)
2. All relevant portions have been completed.
3. Signatures of two witnesses or notary are present; except when section F is utilized (No witness or notary signature is required for Section F). **Note**: Electronic signatures are acceptable
4. There appears to be no reason to question its authenticity.

Texas OOH DNR Order Bracelet

Two types of OOH DNR Order bracelets are valid:

1. A plastic, hospital-type bracelet that is white in color and has the DNR logo printed in red, as is on the front of the OOH DNR Order form. No other identifying information is printed on this bracelet.
2. A stainless steel bracelet similar to the “Medic Alert” bracelets, containing the same DNR logo as on the front of the OOH DNR Order form, or the words “Texas Do Not Resuscitate – OOH”.

When either bracelet is found around the patient's wrist, honor it as if it were a valid OOH DNR Order Form. Do not honor a bracelet that is not attached to the patient. Do not remove the bracelet from the patient, even when the patient is deceased.

Texas OOH DNR Order Necklace

The OOH DNR Order necklace is made of a stainless steel chain, 16 - 18 inches in length with a one-inch diameter disk attached. The disk has the same DNR logo as is on the front of the DNR Order form. When found around the patient's neck, honor this necklace as if it were a valid paper OOH DNR Order form. Do not honor a necklace that is not attached to the patient. Do not remove the necklace from the patient, even when the patient is deceased.

Out-of-State DNR Orders

Personnel may accept Out-of-Hospital DNR Order forms executed in another state or devices authorized by another state, if:

1. The order appears to be on an official, state-mandated form.
2. The order appears complete (all relevant portions of the form filled in) and valid.
3. There appears to be no reason to question the authenticity of the DNR Order form or device.

Should there be a question regarding an out-of-state DNR Order, initiate resuscitation and contact an on-line medical control physician.

DOCUMENTS THAT MAY *NOT* BE ACCEPTED:

Do Not Accept:

1. Do Not Resuscitate Orders that do not reasonably appear to be on an official, state-mandated form.
2. Advanced Directives, Directives to Physicians, Living Wills, A Physician's DNR Order in any form not noted above (such as one written by a physician, physician's assistant, or a nurse practitioner).

Texas OOH DNR Orders and Out-of-State DNR Orders Should Not be Honored when:

1. A competent patient, including a competent minor, communicates to EMS personnel a desire to revoke an OOH DNR Order.
2. A person having a Durable Power of Attorney for Health Care for the patient or the attending physician, legal guardian, parent (if a minor), or qualified relative, as defined in the TDSHS OOH DNR form, communicates to EMS personnel a desire to revoke an OOH DNR Order.
3. The patient is pregnant.
4. The patient cannot be conclusively identified as the patient named on the OOH DNR Order form.
5. There is an airway obstruction.
6. Unnatural or suspicious circumstances are present; including suicide attempt.

If doubt exists as to whether an OOH DNR Order should be honored, initiate resuscitation until:

1. A valid OOH DNR Order is found. NOTE: If a valid OOH DNR is presented, after resuscitation has been initiated, resuscitation efforts may be discontinued so long as the validity is not in question or one of the 5 preceding conditions are not found.
2. A Medical Control physician orders that resuscitation be stopped, or
3. Patient care is transferred to a higher level.

COMPLIANCE WITH OOH DNR ORDER:

NOTE: OOH DNR applies only ***AFTER*** the cessation of spontaneous respirations or circulation or in the judgment of the pre-hospital provider, the moment of death is at hand.

1. If the patient is found in or develops cardiac and/or respiratory arrest, honor the OOH DNR Order by withholding CPR, placement of advanced airway devices (including ET tube and King Airway), artificial ventilation, placement of the AED, manual defibrillation, and transcutaneous cardiac pacing.
2. If an OOH DNR Order is found or presented after the patient assessment and/or treatment has begun, stop the resuscitative treatment immediately – even if a positive response has occurred.

3. If an OOH DNR Order appears to be valid and the patient is not in cardiac or respiratory arrest, provide care directed toward providing comfort, such as opening the patient's airway, providing oxygen, IV fluids or medications, or any other treatment needed except for advanced airway placement, artificial ventilation, defibrillation, and cardiac pacing. NOTE: Assisting ventilations for a breathing patient with a BVM device is NOT a violation of an OOH DNR and should be performed if needed.
4. The original OOH DNR Order form or a photocopy may be honored.
5. If the patient is transported, the OOH DNR Order form must accompany the patient; the bracelet or necklace must be on the patient.
6. The original or a photocopy of the form should be kept and filed with the pre-hospital patient care report.

DOCUMENTATION:

When a patient in cardiac or respiratory arrest is encountered and an OOH DNR Order form is presented, the following must be documented on the pre-hospital patient care report:

1. An assessment of the patient's condition.
2. Whether or not the OOH DNR Form was honored. If the form was not honored, a full explanation of the reasons and circumstances must be documented
3. The type OOH DNR Order (form, bracelet or necklace) used to confirm the DNR status.
4. Any problems regarding implementing the DNR Order, including on scene revocation.
5. The name of the patient's attending physician from the OOH DNR form.
6. The original or a photocopy of the form should be kept and filed with the pre-hospital patient care report.

SUMMARY

- ONLY the TDSHS OOH DNR or other state (other than Texas) issued DNR may be accepted
- OOH DNR applies to out-of-hospital settings including ERs, Nursing Homes, Physician's offices, clinics, dialysis centers, private residences, etc.
- OOH DNR applies only AFTER the cessation of spontaneous respirations or circulation

  EXCEPT: Airway obstruction

  Suspicious Circumstances

  Suicide, homicide, or other unnatural causes of death

  Pregnant patients

  Patient or guardian state desire not to follow DNR
- Interventions to be withheld are:
  - CPR
  - Advanced Airways (Intubation and King Airway)
  - Artificial ventilation (does not pertain to assisting ventilations on a breathing patient)
  - Defibrillation (includes AED)
  - Transcutaneous cardiac pacing
- If uncertain, err on side of resuscitation until status can be clarified
- The OOH DNR device (form, bracelet, or necklace) should be left attached to and transported with the patient
- Out-of-state DNR may be honored if no reason to question the authenticity of the order or device exists

Figure: 25 TAC §157.25 (h)(2)

STOP DO NOT RESUSCITATE

TEXAS DEPARTMENT OF STATE HEALTH SERVICES
STANDARD OUT-OF-HOSPITAL DO-NOT-RESUSCITATE ORDER

This document becomes effective immediately on the date of execution. It remains in effect until the patient is pronounced dead by authorized medical or legal authority or the document is revoked. Comfort measures will be given as needed.

All persons who sign the form must sign again under number 3.

1. _____ **Date of Birth:** _____ **Male/Female** (Circle One)

Patient's full legal name — printed or typed

2. COMPLETE **ONE** OF THE FOUR BOXES: **A**, **B**, **C**, or **D**. If using Box **A**, **B**, or **C**, Witnesses and Physician's Statement must be completed.

A. **Patient's Statement:** I, the undersigned, am an adult capable of making an informed decision regarding the withholding or withdrawing of CPR, including the treatments listed below, and I direct that none of the following resuscitation measures be initiated or continued: **Cardiopulmonary Resuscitation (CPR), Transcutaneous Cardiac Pacing, Defibrillation, Advanced Airway Management, Artificial Ventilation.**

Signature | Date | Printed or Typed Name

B. **Only use this box if the order is being completed by a person acting on behalf of an adult patient who is incompetent or otherwise unable to make his or her wishes known.**

I am the patient's: ☐ legal guardian; ☐ agent under Medical Power of Attorney; ☐ or Qualified Relative (see back); **AND**:

☐ I attest to issuance of an Out-of-Hospital DNR by the patient by nonwritten means of communication; **OR**
☐ I am acting under the guidance of a prior Directive to Physicians; **OR**
☐ I am acting upon the known values and desires of the patient; **OR**
☐ I am acting in the patient's best interest based upon the guidance given by the patient's physician.

I direct that none of the following resuscitation measures be initiated or continued on behalf of the patient: Cardiopulmonary Resuscitation (CPR), Transcutaneous Cardiac Pacing, Defibrillation, Advanced Airway Management, Artificial Ventilation.

Signature | Date | Printed or Typed Name

C. **Only use this box if the order is being completed by a person acting on behalf of a minor patient who has been diagnosed with a terminal or irreversible condition.**

I am the minor patient's: ☐ Parent; ☐ legal guardian; or ☐ managing conservator.

I direct that none of the following resuscitation measures be initiated or continued on behalf of the patient: Cardiopulmonary Resuscitation (CPR), Transcutaneous Cardiac Pacing, Defibrillation, Advanced Airway Management, Artificial Ventilation.

Signature | **Date** | **Printed or Typed Name**

WITNESSES: (see qualifications on reverse) We have witnessed all of the above signatures.

Witness 1 Signature | Date | Witness Printed or Typed Name

Witness 2 Signature | Date | Witness Printed or Typed Name

PHYSICIAN'S STATEMENT: I, the undersigned, am the attending physician of the patient named above. I have noted the existence of this order in the patient's medical records, and I direct out-of-hospital health care professionals to comply with this order as presented.

Date | Physician's signature | Printed name | License number

D. **Only use this box if the order is being completed by two physicians acting on behalf of an adult who is incompetent or otherwise unable to make his or her wishes known, and who is without a legal guardian, agent, or qualified relative .**

☐ I attest to issuance of an Out-of Hospital DNR by the patient by nonwritten communication; **OR**:
☐ The patient's specific wishes are unknown, but resuscitation measures are, in reasonable medical judgement, considered ineffective in these circumstances or are otherwise not in the best interest of the patient.

I direct that none of the following resuscitation measures be initiated or continued on behalf of the patient: Cardiopulmonary Resuscitation (CPR), Transcutaneous Cardiac Pacing, Defibrillation, Advanced Airway Management, Artificial Ventilation.

Signature | Treating Physician | Date | Printed or Typed Name

Signature Second Physician who is not involved in treating the patient | Date | Printed or Typed Name

3. **ALL PERSONS WHO SIGNED MUST SIGN HERE (Pursuant to H&SC 166.083(b)(13). This document has been properly completed.**

Signature of Patient, Agent or Relative (A, B, or C) | Signature of Second Physician (D) | Signature of Attending Physician

Signature of Witness | Signature of Witness | Date

SHOULD TRANSPORT OCCUR, THIS DOCUMENT OR A COPY MUST ACCOMPANY THE PATIENT.

The Older Version of the TDSHS Out-of-Hospital (OOH) DNR Form: Front Side

Figure: 25 TAC §157.25 (h)(2)

OUT-OF-HOSPITAL DNR INSTRUCTIONS

PURPOSE:
This form was designed to comply with the requirements as set forth in Chapter 166 of the Health and Safety Code (H&SC) relating to the issuance of Out-of-Hospital Do-Not-Resuscitate (DNR) orders for the purpose of instructing Emergency Medical Personnel and other health care professionals to forgo resuscitation attempts and to permit the patient to have a natural death with peace and dignity. This order does NOT affect the provision of other emergency care including comfort care.

APPLICABILITY:
This form applies to all health care professionals operating in any out-of-hospital setting to include hospital outpatient or emergency departments and physician's offices.

IMPLEMENTATION:
A competent adult may execute or issue an Out-of-Hospital DNR Order. The patient's attending physician will document the existence of the directive in the patient's permanent medical record.

If an adult patient is capable of providing informed consent for the order, he/she will sign and date the out-of-hospital DNR order on the front of this sheet in Box A. In the event that an adult patient is unable to provide informed consent, his/her Legal Guardian, agent under Medical Power of Attorney, or Qualified Relative may execute the order by signing and dating the form in Box B. If an adult patient is unable to provide informed consent and none of the persons listed in Box B are available, the treating physician may execute the order using Box D with the consent of a second physician who is not treating the patient and/or is a member of the health care facility ethics committee or other medical committee.

The following persons may execute an out-of-hospital DNR order on behalf of a minor: the minor's parents, the minor's legal guardian or the minor's managing conservator. A person executing a DNR order on behalf of a minor may execute the order by signing and dating the form in Box C. **An out-of-hospital DNR order may not be executed unless the minor has been diagnosed by a physician as suffering from a terminal or irreversible condition.**

The form must be signed and dated by two witnesses except when executed by two physicians only (Box D).

The original standard Texas Out-of-Hospital DNR form must be completed and properly executed. Duplicates may be made by the patient, health care provider organization or attending physician as necessary. **Copies of this completed document may be used for any purpose that the original may be used and shall be honored by responding health care professionals.**

The presence of a Texas DNR identification device on a person is sufficient evidence that the individual has a valid Out-of-Hospital DNR Order. Therefore, either the original standard form, a copy of the completed standard form, or the device is sufficient evidence of the existence of the order.

For information on ordering identification devices or additional forms, contact the Texas Department of State Health Services at (512) 834-6700.

REVOCATION:
The Out-of-Hospital Do-Not-Resuscitate Order may be revoked at ANY time by the patient **OR** the patient's Legal Guardian/Agent/Managing Conservator/Qualified Relative, Parent (if a minor), or physician who executed the order. The revocation may involve the communication of wishes to responding health care professionals, destruction of the form, or removal of all or any Do-Not-Resuscitate identification devices the patient may possess.

AUTOMATIC REVOCATION: This Out-of-Hospital DNR order is automatically revoked if the patient is known to be pregnant or in the case of unnatural or suspicious circumstances.

DEFINITIONS:
Attending Physician: The physician who is selected by or assigned to a patient who has primary responsibility for a person's treatment and care and is licensed by the Texas State Board of Medical Examiners or who is properly credentialed and holds a commission in the uniformed services of the United States and who is serving on active duty in this state. **(H&SC 166.002 (3) & (12))**

Qualified Relatives: Those persons authorized to execute or issue an out-of-hospital DNR order on behalf of a person who is comatose, incompetent, or otherwise mentally or physically incapable of communication under Section 166.088 H&SC Section 166.088 refers to 166.039; "One person, if available, from one of the following categories, in the following priority...: (1) The patient's spouse; (2) the patient's reasonably available adult children; (3) the patient's parents; or (4) the patient's nearest living relative."

Health Care Professional: Means physicians, nurses, physician assistants and emergency medical services personnel, and, unless the context requires otherwise, includes hospital emergency department personnel. (H&SC 166.081 (5))

Witnesses: Two competent adult witnesses must sign the form acknowledging the signature of the patient or the person(s) acting on the patient's behalf (except when signed by two physicians in Section C). Witness One must meet the qualifications listed below. Witness Two may be any competent adult. Witness One (the "qualified" witness) may not be: (1) person designated to make a treatment decision for the patient; (2) related to the patient by blood or marriage; (3) entitled to any part of the estate; (4) be a person who has a claim against the estate of the patient; (5) the attending physician or an employee of the attending physician; (6) an employee of a health care facility in which the patient is being cared for, if he or she is involved in providing direct patient care to the patient; or (7) an officer, director, partner, or business office employee of a health care facility in which the patient is being cared for or any parent organization of the health care facility.

Please report any problems with this form to the Texas Department of State Health Services at (512) 834-6700.

Revised July 19, 2005
Texas Department of State Health Services

 Publications No. EF01-11421

The Older Version of the TDSHS Out-of-Hospital (OOH) DNR Form: Back Side

Figure: 25 TAC §157.25 (h)(2)

OUT-OF-HOSPITAL DO-NOT-RESUSCITATE (OOH-DNR) ORDER

TEXAS DEPARTMENT OF STATE HEALTH SERVICES

Print Form

STOP DO NOT RESUSCITATE

This document becomes effective immediately on the date of execution for health care professionals acting in out-of-hospital settings. It remains in effect until the person is pronounced dead by authorized medical or legal authority or the document is revoked. Comfort care will be given as needed.

Person's full legal name _____ Date of birth _____ ☐ Male ☐ Female

A. Declaration of the adult person: I am competent and at least 18 years of age. **I direct that none of the following resuscitation measures be initiated or continued for me: cardiopulmonary resuscitation (CPR), transcutaneous cardiac pacing, defibrillation, advanced airway management, artificial ventilation.**

Person's signature _____ Date _____ Printed name _____

B. Declaration by legal guardian, agent or proxy on behalf of the adult person who is incompetent or otherwise incapable of communication:

I am the: ☐ legal guardian; ☐ agent in a Medical Power of Attorney; OR ☐ proxy in a directive to physicians of the above-noted person who is incompetent or otherwise mentally or physically incapable of communication.

Based upon the known desires of the person, or a determination of the best interest of the person, **I direct that none of the following resuscitation measures be initiated or continued for the person: cardiopulmonary resuscitation (CPR), transcutaneous cardiac pacing, defibrillation, advanced airway management, artificial ventilation.**

Signature _____ Date _____ Printed name _____

C. Declaration by a qualified relative of the adult person who is incompetent or otherwise incapable of communication: I am the above-noted person's:

☐ spouse, ☐ adult child, ☐ parent, OR ☐ nearest living relative, and I am qualified to make this treatment decision under Health and Safety Code §166.088.

To my knowledge the adult person is incompetent or otherwise mentally or physically incapable of communication and is without a legal guardian, agent or proxy. Based upon the known desires of the person or a determination of the best interests of the person, **I direct that none of the following resuscitation measures be initiated or continued for the person: cardiopulmonary resuscitation (CPR), transcutaneous cardiac pacing, defibrillation, advanced airway management, artificial ventilation.**

Signature _____ Date _____ Printed name _____

D. Declaration by physician based on directive to physicians by a person now incompetent or nonwritten communication to the physician by a competent person: I am the above-noted person's attending physician and have:

☐ seen evidence of his/her previously issued directive to physicians by the adult, now incompetent; OR ☐ observed his/her issuance before two witnesses of an OOH-DNR in a nonwritten manner.

I direct that none of the following resuscitation measures be initiated or continued for the person: cardiopulmonary resuscitation (CPR), transcutaneous cardiac pacing, defibrillation, advanced airway management, artificial ventilation.

Attending physician's signature _____ Date _____ Printed name _____ Lic # _____

E. Declaration on behalf of the minor person: I am the minor's: ☐ parent; ☐ legal guardian; OR ☐ managing conservator.

A physician has diagnosed the minor as suffering from a terminal or irreversible condition. **I direct that none of the following resuscitation measures be initiated or continued for the person: cardiopulmonary resuscitation (CPR), transcutaneous cardiac pacing, defibrillation, advanced airway management, artificial ventilation.**

Signature _____ Date _____

Printed name _____

TWO WITNESSES: (See qualifications on backside.) We have witnessed the above-noted competent adult person or authorized declarant making his/her signature above and, if applicable, the above-noted adult person making an OOH-DNR by nonwritten communication to the attending physician.

Witness 1 signature _____ Date _____ Printed name _____

Witness 2 signature _____ Date _____ Printed name _____

Notary in the State of Texas and County of _____. The above noted person personally appeared before me and signed the above noted declaration on this date: _____.

Signature & seal: _____ Notary's printed name: _____ *Notary Seal*

[Note: Notary cannot acknowledge the witnessing of the person making an OOH-DNR order in a nonwritten manner]

PHYSICIAN'S STATEMENT: I am the attending physician of the above-noted person and have noted the existence of this order in the person's medical records. **I direct health care professionals acting in out-of-hospital settings, including a hospital emergency department, not to initiate or continue for the person: cardiopulmonary resuscitation (CPR), transcutaneous cardiac pacing, defibrillation, advanced airway management, artificial ventilation.**

Physician's signature _____ Date _____

Printed name _____ License # _____

F. Directive by two physicians on behalf of the adult, who is incompetent or unable to communicate and without guardian, agent, proxy or relative: The person's specific wishes are unknown, but resuscitation measures are, in reasonable medical judgment, considered ineffective or are otherwise not in the best interests of the person. **I direct health care professionals acting in out-of-hospital settings, including a hospital emergency department, not to initiate or continue for the person: cardiopulmonary resuscitation (CPR), transcutaneous cardiac pacing, defibrillation, advanced airway management, artificial ventilation.**

Attending physician's signature _____ Date _____ Printed name _____ Lic# _____

Signature of second physician _____ Date _____ Printed name _____ Lic# _____

Physician's electronic or digital signature must meet criteria listed in Health and Safety Code §166.082(c).

All persons who have signed above must sign below, acknowledging that this document has been properly completed.

Person's signature _____ Guardian/Agent/Proxy/Relative signature _____

Attending physician's signature _____ Second physician's signature _____

Witness 1 signature _____ Witness 2 signature _____ Notary's signature _____

This document or a copy thereof must accompany the person during his/her medical transport.

The Newer Version of the TDSHS Out-of-Hospital (OOH) DNR Form: Front Side

INSTRUCTIONS FOR ISSUING AN OOH-DNR ORDER

PURPOSE: The Out-of-Hospital Do-Not-Resuscitate (OOH-DNR) Order on reverse side complies with Health and Safety Code (HSC), Chapter 166 for use by qualified persons or their authorized representatives to direct health care professionals to forgo resuscitation attempts and to permit the person to have a natural death with peace and dignity. This Order does NOT affect the provision of other emergency care, including comfort care.
APPLICABILITY: This OOH-DNR Order applies to health care professionals in out-of-hospital settings, including physicians' offices, hospital clinics and emergency departments.
IMPLEMENTATION: A competent adult person, at least 18 years of age, or the person's authorized representative or qualified relative may execute or issue an OOH-DNR Order. The person's attending physician will document existence of the Order in the person's permanent medical record. The OOH-DNR Order may be executed as follows:
Section A - If an adult person is competent and at least 18 years of age, he/she will sign and date the Order in Section A.
Section B - If an adult person is incompetent or otherwise mentally or physically incapable of communication and has either a legal guardian, agent in a medical power of attorney, or proxy in a directive to physicians, the guardian, agent, or proxy may execute the OOH-DNR Order by signing and dating it in Section B.
Section C - If the adult person is incompetent or otherwise mentally or physically incapable of communication and does not have a guardian, agent, or proxy, then a qualified relative may execute the OOH-DNR Order by signing and dating it in Section C.
Section D - If the person is incompetent and his/her attending physician has seen evidence of the person's previously issued proper directive to physicians or observed the person competently issue an OOH-DNR Order in a nonwritten manner, the physician may execute the Order on behalf of the person by signing and dating it in Section D.
Section E - If the person is a **minor** (less than 18 years of age), **who has been diagnosed by a physician as suffering from a terminal or irreversible condition**, then the minor's parents, legal guardian, or managing conservator may execute the OOH-DNR Order by signing and dating it in Section E.
Section F - If an adult person is incompetent or otherwise mentally or physically incapable of communication and does not have a guardian, agent, proxy, or available qualified relative to act on his/her behalf, then the attending physician may execute the OOH-DNR Order by signing and dating it in Section F with concurrence of a second physician (signing it in Section F) who is not involved in the treatment of the person or who is not a representative of the ethics or medical committee of the health care facility in which the person is a patient.
In addition, the OOH-DNR Order must be signed and dated by two competent adult witnesses, who have witnessed either the competent adult person making his/her signature in section A, or authorized declarant making his/her signature in either sections B, C, or E, and if applicable, have witnessed a competent adult person making an OOH-DNR Order by nonwritten communication to the attending physician, who must sign in Section D and also the physician's statement section. Optionally, a competent adult person or authorized declarant may sign the OOH-DNR Order in the presence of a notary public. However, a notary cannot acknowledge witnessing the issuance of an OOH-DNR in a nonwritten manner, which must be observed and only can be acknowledged by two qualified witnesses. Witness or notary signatures are not required when two physicians execute the OOH-DNR Order in section F. The original or a copy of a fully and properly completed OOH-DNR Order or the presence of an OOH-DNR device on a person is sufficient evidence of the existence of the original OOH-DNR Order and either one shall be honored by responding health care professionals.
REVOCATION: An OOH-DNR Order may be revoked at ANY time by the person, person's authorized representative, or physician who executed the order. Revocation can be by verbal communication to responding health care professionals, destruction of the OOH-DNR Order, or removal of all OOH-DNR identification devices from the person.
AUTOMATIC REVOCATION: An OOH-DNR Order is automatically revoked for a person known to be pregnant or in the case of unnatural or suspicious circumstances.

DEFINITIONS

Attending Physician: A physician, selected by or assigned to a person, with primary responsibility for the person's treatment and care and is licensed by the Texas Medical Board, or is properly credentialed and holds a commission in the uniformed services of the United States and is serving on active duty in this state. [HSC §166.002(12)].
Health Care Professional: Means physicians, nurses, physician assistants and emergency medical services personnel, and, unless the context requires otherwise, includes hospital emergency department personnel. [HSC §166.081(5)]
Qualified Relative: A person meeting requirements of HSC §166.088. It states that an adult relative may execute an OOH-DNR Order on behalf of an adult person who has not executed or issued an OOH-DNR Order and is incompetent or otherwise mentally or physically incapable of communication and is without a legal guardian, agent in a medical power of attorney, or proxy in a directive to physicians, and the relative is available from one of the categories in the following priority: 1) person's spouse; 2) person's reasonably available adult children; 3) the person's parents; or, 4) the person's nearest living relative. Such qualified relative may execute an OOH-DNR Order on such described person's behalf.
Qualified Witnesses: Both witnesses must be competent adults, who have witnessed the competent adult person making his/her signature in section A, or person's authorized representatives making his/her signature in either Sections B, C, or E on the OOH-DNR Order, or if applicable, have witnessed the competent adult person making an OOH-DNR by nonwritten communication to the attending physician, who signs in Section D. Optionally, a competent adult person, guardian, agent, proxy, or qualified relative may sign the OOH-DNR Order in the presence of a notary instead of two qualified witnesses. Witness or notary signatures are not required when two physicians execute the order by signing Section F. One of the witnesses must meet the qualifications in HSC §166.003(2), which requires that at least one of the witnesses not: (1) be designated by the person to make a treatment decision; (2) be related to the person by blood or marriage; (3) be entitled to any part of the person's estate after the person's death either under a will or by law; (4) have a claim at the time of the issuance of the OOH-DNR against any part of the person's estate after the person's death; or, (5) be the attending physician; (6) be an employee of the attending physician or (7) an employee of a health care facility in which the person is a patient if the employee is providing direct patient care to the patient or is an officer, director, partner, or business office employee of the health care facility or any parent organization of the health care facility.
Report problems with this form to the Texas Department of State Health Services (DSHS) or order OOH-DNR Order/forms or identification devices at (512) 834-6700.

Declarant's, Witness', Notary's, or Physician's electronic or digital signature must meet criteria outlined in HSC §166.011

Publications No. EF01-11421 - Revised July 1, 2009 by the Texas Department of State Health Services

The Newer Version of the TDSHS Out-of-Hospital (OOH) DNR Form: Back Side

CARDIAC TRIAGE/TRANSPORT DECISION SCHEME

Patients who meet triage criteria for activation of the Regional Cardiac Plan should be transported to the **CLOSEST PCI CAPABLE FACILITY** or the **CLOSEST APPROPRIATE ACUTE CARE FACILITY** according to the plan guidelines with special consideration under the following circumstances:

1. If an adequate airway cannot be established and/or maintained or if the patient goes into cardiac arrest, has malignant cardiac dysrhythmias, or is acutely unstable, the patient should be transported to the **NEAREST ACUTE CARE FACILITY.**

2. Medical Control may order bypass in any situation as appropriate, such as when a facility is unable to meet hospital resource criteria, or when a patient is in need of specialty care.

3. If expected transport time is excessive (>25 minutes) activation of air transport should be considered.

4. If there is a question on whether or not to bypass a facility, on-line medical control should be contacted for the final decision.

Patients who are suspected of ACS or ECG confirmed STEMI patients should be transported to “PCI” Percutaneous Coronary Intervention Capable Facilities (Angioplasty, stent placement, or other intervention performed in the cath. lab) or the Closest Appropriate Acute Care Facility.

An Acute Care Facility may be considered appropriate if all of the following standards of care can be provided.

- A 12-lead ECG can be performed and interpreted within 10 minutes.
- PCI may be performed within 90 minutes or a thrombolytic can be administered within 30 minutes.

PCI is the preferred method of reperfusion if possible.

This plan is based on accepted best practice guidelines, but does allow for patient and physician preference.

A copy of the Regional Cardiac Plan as well as a current list of EMS Providers, Facility Capabilities and Designated Centers may be accessed at www.spems.org

STROKE TRIAGE/TRANSPORT DECISION SCHEME

Patients who meet triage criteria for activation of the SPEMS Suspected Stroke/TIA protocol should be transported to the **CLOSEST HIGHEST DESIGNATED STROKE FACILITY** or the **CLOSEST APPROPRIATE ACUTE CARE FACILITY** according to these protocol guidelines with special consideration under the following circumstances:

1. If an adequate airway cannot be established and/or maintained or if the patient goes into cardiac arrest, has malignant cardiac dysrhythmias, or is acutely unstable, the patient should be transported to the **NEAREST ACUTE CARE FACILITY.**

2. Medical Control may order bypass in any situation as appropriate, such as when a facility is unable to meet hospital resource criteria, or when a patient is in need of specialty care.

3. If expected transport time is excessive (>25 minutes) activation of air transport should be considered.

4. If there is a question on whether or not to bypass a facility, on-line medical control should be contacted for the final decision.

TRANSPORTATION OF SUSPECTED STROKE/TIA PATIENTS SHOULD BE BASED ON THE "TIME OF ONSET" and/or "LAST SEEN NORMAL TIME"

Historically, there has been only a single timeframe or "window of opportunity" that EMS providers followed which allowed for the administration of TPA/Alteplase to those with thrombotic strokes. However, new advancements in stroke treatment have emerged that allows a surgeon to physically retrieve a thrombus from a blocked artery in the brain, also known as a Thrombectomy. The timeframe or "window of opportunity" for a thrombectomy is much greater than that of TPA/Alteplase administration. Prehospital EMS providers should approach this situation differently than before by assessing the Cincinnati Stroke Scale (CSS) followed by the VAN assessment if a motor deficit is detected during the CSS. A positive VAN assessment indicates a Large Vessel Occlusion (LVO) for which a thrombectomy may be needed.

Therefore;

Patients with symptom onset times of < 4.5 hours that test **POSITIVE to CSS** and **NEGATIVE to VAN**, should be taken to the highest designated stroke facility for treatment and evaluation for interventional care.

- *A non-designated facility may be appropriate if all the following standards of care can be provided:*
  - ***Interpreted** computed tomography (CT) imaging scan is available within 45 minutes of patient arrival*
  - *Thrombolytics can be administered within 60 minutes of patient arrival*
  - *Physician is available within 10 minutes of patient arrival*

Patients with symptom onset times of < 24 hours that test **POSITIVE to CSS** and **POSITIVE to VAN** should be taken to the highest designated stroke facility capable of performing a thrombectomy.

- *The EMS provider should be up to date on the current regional designated stroke facilities as well as their capabilities.*

Patients with symptom onset times outside the time frames noted above should be transported to the nearest acute care facility for initial diagnosis and treatment. Similarly, a non-designated facility may be appropriate if the above standards of care can be provided.

This plan is based on accepted best practice guidelines but does allow for patient and physician preference.

PEDIATRIC TRAUMA TRIAGE/TRANSPORT DECISION SCHEME

Physiologic Criteria:

1. Depressed or deteriorating neurologic status (GCS ≤14) with focus on changes in the motor function
2. Respiratory distress or failure
3. Children requiring endotracheal intubation and/or ventilatory support
4. Shock, uncompensated or compensated
5. Injuries requiring any blood transfusion
6. Children requiring any one of the following:
   a. Invasive monitoring (arterial and/or central venous pressure)
   b. Intracranial pressure monitoring
   c. Vasoactive medications

Anatomic Criteria:

1. Fractures and deep penetrating wounds to an extremity complicated by neurovascular or compartment injury
2. Fracture of two or more major long bones (such as femur, humerus)
3. Fracture of the axial skeleton
4. Spinal cord or column injuries
5. Traumatic amputation of an extremity with potential for replantation
6. Head injury when accompanied by any of the following
   a. Cerebrospinal fluid leaks
   b. Open head injuries (excluding simple scalp injuries)
   c. Depressed skull fractures
   d. Sustained decreased level of consciousness (GCS ≤14)
   e. Intracranial hemorrhage
7. Significant penetrating wounds to the head, neck, thorax, abdomen or pelvis including the groin
8. Pelvic fracture
9. Significant blunt injury to the chest, abdomen or neck (e.g. hanging or clothesline MOI's)

Other Criteria:

1. Suspicion for Child Maltreatment as evidenced by:
   a. Injuries sustained with no reported explanation
   b. Injuries sustained that do not match the developmental capability of the patient
   c. History of apparent life threatening event
   d. Upper extremity fractures in a non-ambulatory child

TRIAGE/TRANSPORT GUIDE:

- Critically injured pediatric patients meeting the above criteria should be taken to the closest verified Pediatric Trauma Center and if unavailable the closest appropriate Adult Trauma Center with Pediatric capabilities
- If immediate interventions are required, transport to the closest appropriate acute care facility

The full BRAC Regional Pediatric Plan can be viewed at www.b-rac.org

PEDIATRIC BURN TRIAGE/TRANSPORT DECISION SCHEME

American Burn Association Triage/Transfer Criteria:

A burn center may treat adults, children, or both. Burn injuries that should be referred to a burn center include the following:

1. Partial-thickness burns of greater than 10 percent of the total body surface area.
2. Burns that involve the face, hands, feet, genitalia, perineum, or major joints.
3. Third-degree burns in any age group.
4. Electrical burns, including lightning injury.
5. Chemical burns.
6. Inhalation injury.
7. Burn injury in patients with preexisting medical disorders that could complicate management, prolong recovery, or affect mortality.
8. Physician judgment will be necessary in such situations and should be in concert with the regional medical control plan and triage protocols.
9. Burn injury in patients who will require special social, emotional, or rehabilitative intervention.

TRIAGE/TRANSPORT GUIDE:

Burns in Children:

Children with burns should be transferred to a burn center verified to treat children. In the absence of a regional pediatric burn center, an adult burn center may serve as a second option for the management of pediatric burns.

Burns and Trauma in Children:

Burns and concomitant trauma (such as fractures) when the burn injury poses the greatest risk of morbidity or mortality.

If the trauma poses the greater immediate risk, the patient's condition may be stabilized initially in a Pediatric Trauma Center before transfer to a burn center.

Other Criteria for Transport:

1. Children requiring pediatric intensive care other than for close observation.
2. Any child who may benefit from consultation with, or transport to, a Pediatric Trauma Center or a Pediatric Intensive Care Unit.
3. Children with injuries suspicious of child maltreatment e.g. inflicted burn injury

Reference: *Resources for the Optimal Care of the Injured Patient: 2014*

The full BRAC Regional Pediatric Plan can be viewed at www.b-rac.org

PEDIATRIC NON-TRAUMA TRIAGE/TRANSPORT DECISION SCHEME

Physiologic Criteria

1. Depressed or deteriorating neurologic status (GCS≤14).
2. Severe respiratory distress and/or respiratory failure
3. Children requiring endotracheal intubation and/or ventilatory support.
4. Serious cardiac rhythm disturbances,
5. Status post cardiopulmonary arrest.
6. Heart failure.
7. Shock responding inadequately to fluid resuscitation.
8. Children requiring any one of the following:
    a. Arterial pressure monitoring.
    b. Central venous pressure or pulmonary artery monitoring.
    c. Intracranial pressure monitoring.
    d. Vasoactive medications.
    e. Treatment for severe hypothermia or hyperthermia
    f. Treatment for hepatic failure.
    g. Treatment for renal failure, acute or chronic requiring immediate dialysis.

Other Criteria

1. Near drowning with any history of loss of consciousness, unstable vital signs or respiratory problems.
2. Status epilepticus.
3. Potentially dangerous envenomation. Use of a snakebite protocol is encouraged
4. Potentially life threatening ingestion of, or exposure to, a toxic substance.
5. Severe electrolyte imbalances.
6. Severe metabolic disturbances.
7. Severe dehydration.
8. Potentially life-threatening infections, including sepsis.
9. Children requiring intensive care other than for close observation.
10. Any child who may benefit from consultation with, or transfer to, a Pediatric Intensive Care Unit
11. Suspicion for child maltreatment. e.g. found “down” for no apparent reason
12. Any condition that exceeds the capability of the facility

TRIAGE/TRANSPORT GUIDE:

- Critically ill pediatric patients meeting the above criteria should be taken to the closest Children’s Hospital or hospital with Pediatric Critical Care capabilities
- If immediate interventions are required, transport to the closest appropriate acute care facility

The full BRAC Regional Pediatric Plan can be viewed at www.b-rac.org

TRAUMA TRIAGE CRITERIA FOR EMS FACILITY BYPASS AND TRANSFER

Patients who meet triage criteria for activation of the regional trauma system plan will be transported **DIRECTLY TO AN APPROPRIATE TRAUMA FACILITY**, rather than to the nearest hospital, **EXCEPT** under the following circumstances:

1. If an adequate airway cannot be established and/or maintained, or in cases of traumatic cardiac arrest, the patient should be taken to the **NEAREST ACUTE CARE FACILITY** for stabilization.

2. A Level III (Basic) facility may be appropriate for immediate evaluation and stabilization if the expected transport time to a Level I or Level II facility is excessive (>25 minutes).

3. Medical Control may order bypass in any of the above situations as appropriate, such as when a facility is unable to meet hospital resource criteria, or when the patient is in need of specialty care.

4. If expected transport time is excessive (>25 minutes), or if expected extrication time is lengthy (>15 minutes), activation of air transport resources should be considered.

5. If there is a question on whether or not to bypass a facility, on-line medical control should be consulted for the final decision.

CRITICAL PATIENTS

Should be evaluated at a Level I or Level II Trauma Center. Patients who are physiologically and hemodynamically unstable whose injuries may include:

- Chest:
  - Major chest wall injury
  - Penetrating thoracic wound
- Pelvis:
  - Pelvic ring disruption with shock requiring >5 units transfusion
- Abdomen:
  - Blunt trauma with hypotension
  - Penetrating abdominal wound
- Multiple system trauma:
  - Chest injury with head injury
  - Abdominal or pelvic injury with head injury
- Specialized problems:
  - 2° or 3° burns >10% TBSA or involving airway
  - Barotrauma
  - Uncontrolled hemorrhage
  - 2nd/3rd trimester pregnancy

URGENT PATIENTS

Should be evaluated at a Level I or Level II Trauma Center. Patients who are physiologically and hemodynamically unstable whose injuries may include:

- Central nervous system:
  - Prolonged loss of consciousness, posturing, paralysis or lateralizing sign
  - Spinal injuries with or without deficit
  - Glasgow Coma Score (GCS) <10
  - Open, penetrating or depressed skull fracture
  - CSF leak
  - GCS deterioration ≥2
- Thoracic:
  - Suspected cardiac/great vessel injury
  - Possible requirement for prolonged mechanical ventilation
  - Respiratory distress with rate >35 or <10
- Abdomen:
  - Blunt trauma without hypotension
- Multiple system trauma:
  - Severe facial injury with head injury
- Specialized problems:
  - Carbon monoxide poisoning
  - Severe maxillofacial or neck injuries
  - Revised Trauma Score (RTS) ≤11
  - Open fractures
- Secondary deterioration (Late Sequelae):
  - Patients requiring mechanical ventilation
  - Sepsis
  - Organ system(s) failure
  - Osteomyelitis

Continued on Next Page

TRAUMA TRIAGE CRITERIA FOR EMS FACILITY BYPASS AND TRANSFER (Continued)

CATEGORY III PATIENTS

May be evaluated at a Level III Trauma Center.
Patients who are physiologically and hemodynamically stable whose injuries may include:

- Central nervous system:
  - Transient loss of consciousness
- Chest:
  - Injuries not producing respiratory distress
  - Rib fractures without flail segments
- Abdomen:
  - Blunt trauma without hypotension
- Specialized problems:
  - Closed fractures
  - Soft tissue injuries with controlled hemorrhage
  - 2nd/3rd trimester pregnancy

CATEGORY IV PATIENTS

May be evaluated at an appropriate trauma facility.
Patients who are continually normotensive and/or hemodynamically stable, but whose injuries may include:

- Specialized problems:
  - Closed fractures without neurological deficit
  - Moderate soft tissue injuries

GLASGOW COMA SCORE & REVISED TRAUMA SCORE

To calculate the Revised Trauma Score:

1. Calculate the Glasgow Coma Score
2. Determine score components based on Glasgow Coma Score, Respiratory Rate, and Systolic Blood Pressure.
3. Add score components to determine REVISED TRAUMA SCORE.

GLASGOW COMA SCORE – Adult & Child

MOTOR RESPONSE	VERBAL RESPONSE	EYE RESPONSE
1-No Response	1-No Response	1-No Response
2-Abnormal Extension	2-Incomprehensible Sounds	2-To Pain
3-Abnormal Flexion	3-Inappropraite Words	3-To Verbal Command
4-Withdrawal	4-Confused/Disoriented	4-Spontaneous
5-Localizes Pain	5-Oriented	
6-Obeys Command		

GLASGOW COMA SCORE – Child & Infant

MOTOR RESPONSE	VERBAL RESPONSE	EYE RESPONSE
1-No Response	1-No Response	1-No Response
2-Abnormal Extension	2-Moans, Grunts	2-To Pain
3-Abnormal Flexion	3-Cries to Pain	3-To Speech
4-Withdraws to Pain	4-Irritable Cries	4-Spontaneous
5-Localizes Pain	5-Coos, Babbles	
6-Spontaneous		

REVISED TRAUMA SCORE – Adult & Child

GLASGOW COMA SCORE	RESPIRATORY RATE	SYSTOLIC BLOOD PRESSURE
0=3	0=0	0=0
1=4-5	1=1-5	1=1-49
2=6-8	2=6-9	2=50-75
3=9-12	3=>29	3=76-89
4=13-15	4=10-29	4=>89

Score: 0-12 (decreasing with increasing injury severity) Patients with Revised Trauma Score of 11 or less require care at a Level I or Level II Trauma Center.

REVISED TRAUMA SCORE – Child & Infant

Score	Weight	Airway	BP*	Level of Consciousness	Open Wound	Fractures
+2	>20kg (44lbs)	Normal	>90mmHg	Awake	None	None
+1	10-20kg (22-44lbs)	Maintainable with O_2	50-90mmHg	Obtunded or any LOC	Minor	Closed Fracture
-1	<10kg (22lbs)	Intubated	<50mmHg	Comatose	Major or Penetrating	Open or Multiple

*In the absence of a Blood Pressure reading, the BP may be estimated by the point at which a pulse is palpable as follows: +2 – Brachial, +1 – Groin, -1 – No Pulse Palpable

Score: 0-12 (decreasing with increasing injury severity) Patients with Revised Trauma Score of 11 or less require care at a Level I or Level II Trauma Center.

GUIDELINES FOR TRAUMA TEAM ACTIVATION

Adult Patients (≥16 years of age)

Level I

1. Unstable vital signs:
   - Confirmed Systolic BP <90mmHg at any time
   - Sustained Pulse <50 or >120
2. Respiratory compromise/obstruction and or intubation (pre-hospital)
   - Respiratory rate <10 or >35 per minute
   - Unsecured airway
   - Clinical symptoms of hypoxia
3. Glasgow Coma Scale ≤ 8, with mechanism related to trauma
4. Gun shot wound to abdomen, neck, or chest
5. RTS ≤10 on arrival
6. Severe multi-system trauma
7. Traumatic amputation of limb (with clinical instability or associated injuries)
8. Transfer patients requiring fluid, pressors, or blood to maintain vital signs
9. Burn injuries
   - 50% TBSA 2º & 3º burns (all ages)
   - High voltage electrical burns with cardiac arrhythmias or significant tissue damage,
   - Inhalation injuries with respiratory distress
10. EC physician discretion

Level II

1. Intubated patients transferred from another facility
2. Flail Chest
3. Trauma resulting in an open long bone fracture
4. Pelvic fracture
5. Penetrating injury to extremities and stab wounds to the trunk
6. MVC:
   - Un-restrained rollover
   - Ejection from the vehicle
7. MCC:
   - No Helmet
   - MCC traveling > 20 mph
8. Pedestrians struck by a vehicle moving >20mph
9. Glasgow Coma Scale >8 but <13, with mechanism related to trauma
10. Falls >20 feet
11. Burns:
    - > 10% TBSA 2º or 3º burn <10 or > 50 years of age
    - > 20% but < 50% TBSA 2º (all ages)
    - > 20% TBSA 3º (all ages)
    - All other electrical burns
    - All chemical burns
12. Symptomatic Carbon monoxide (CO) poisoning
13. EC physician discretion

Level III

1. Traumatically injured patients not otherwise defined
2. Clinically stable patients with injuries identified after EC work-up
3. Injured patients requiring subspecialty consult
4. Burns not otherwise defined

GUIDELINES FOR TRAUMA TEAM ACTIVATION (continued)

Pediatric Patients (< 16 years of age)

Level I

1. Unstable vital signs:

Age	Systolic BP	Pulse Rate	Respiratory Rate
Birth – 1 year	Capillary Refill >4 seconds	<80 or >180	>60
1 – 5 years	<70mmHg	<60 or >160	>50
6 – 14 years	<80mmHg	<50 or >140	>50

2. Respiratory compromise/obstruction and or intubation (pre-hospital)
   - Unsecured airway
   - Clinical symptoms of hypoxia
3. Glasgow Coma Scale ≤ 8, with mechanism related to trauma
4. Any Gun shot wound
5. Any penetrating trauma to the torso (chest or abdomen)
6. RTS ≤10 on arrival
7. Severe multi-system trauma
8. Traumatic amputation of limb (with clinical instability or associated injuries)
9. Transfer patients requiring fluid, pressors, or blood to maintain vital signs
10. Burn injuries
    - 50% TBSA 2º & 3º burns (all ages)
    - High voltage electrical burns with cardiac arrhythmias or significant tissue damage,
    - Inhalation injuries with respiratory distress
11. EC physician discretion

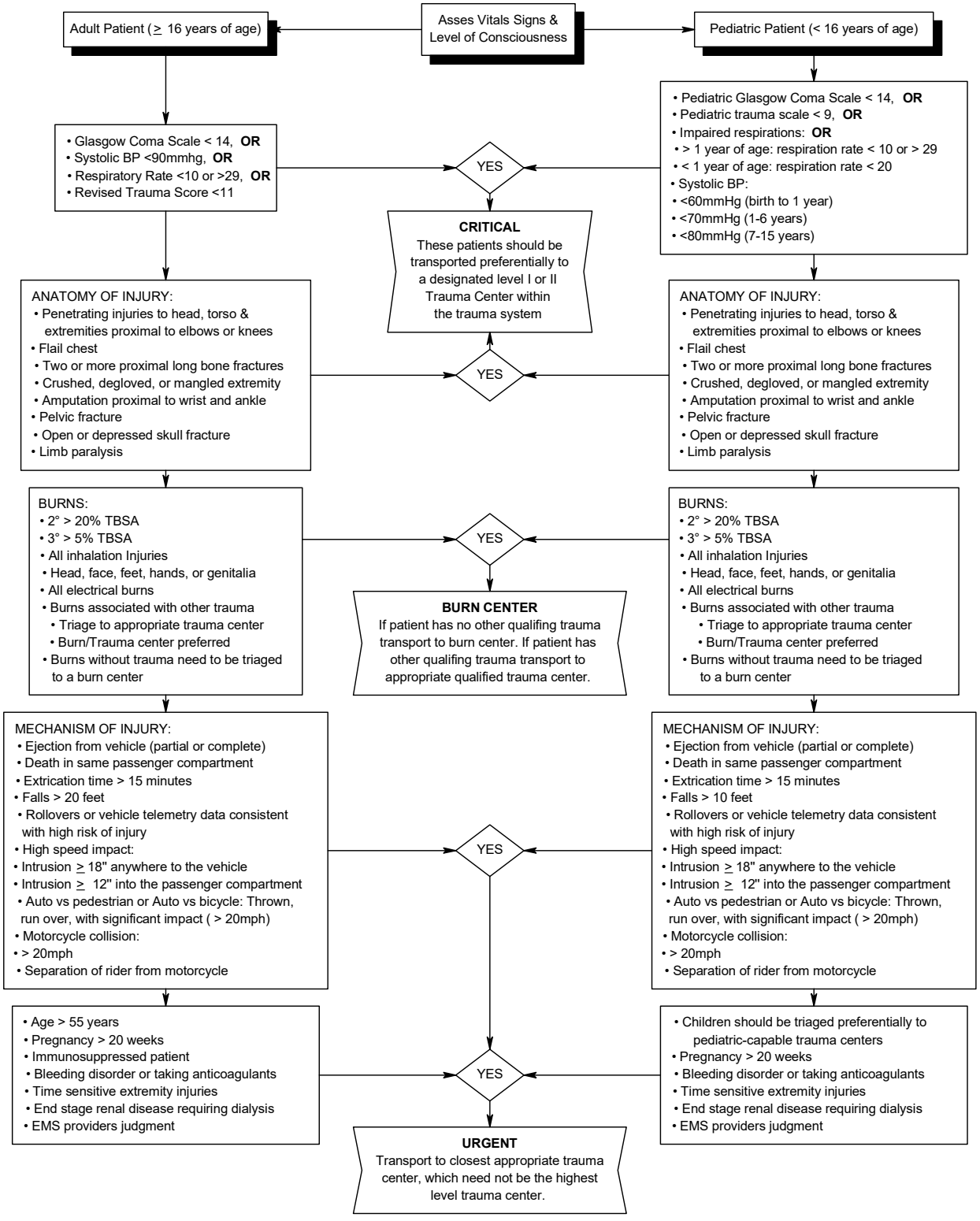
Level II

1. Intubated patients transferred from another facility
2. Flail Chest
4. Trauma resulting in an open long bone fracture
5. Pelvic fracture
6. Penetrating injury to extremities
7. MVC:
   - Un-restrained rollover
   - Ejection from the vehicle
8. MCC:
   - No Helmet
   - MCC traveling > 20 mph
9. Child struck or run over by a motor vehicle or trailer
10. Near drowning
11. Glasgow Coma Scale >8 but <13, with mechanism related to trauma
12. Falls >20 feet
13. Burns:
    - > 10% TBSA 2º or 3º burn <10 or > 50 years of age
    - > 20% but < 50% TBSA 2º (all ages)
    - >20% TBSA 3º (all ages)
    - All other electrical burns
    - All chemical burns
14. Symptomatic Carbon monoxide (CO) poisoning
15. EC physician discretion

Level III

1. Traumatically injured patients not otherwise defined
2. Clinically stable patients with injuries identified after EC work-up
3. Injured patients requiring subspecialty consult
4. Burns not otherwise defined

TRAUMA TRIAGE/TRANSFER DECISION SCHEME PRE-HOSPITAL*



*If the patient does not have a secured airway **and/or** is in cardiac arrest, transport to the nearest facility is justified

- When in doubt the patient should be transported to a trauma center
- Consider use of air transport for all critical & urgent patients

CRITERIA FOR THE CONSIDERATION OF AIR MEDICAL TRANSPORT FOR TRAUMA PATIENTS

- Lengthy extrication of the patient at the scene and the severity of the patient's injuries require delivery of a critical care team to the scene.

- One or more of the following mechanisms of injury with a motor vehicle collision present:
  - There had been structural intrusion into the patient's space in the vehicle;
  - The patient was ejected from the vehicle;
  - Another person in the same vehicle died;
  - The patient was a pedestrian struck by a vehicle traveling more than 20mph;
  - The patient was not wearing a safety belt in a car which was overturned;
  - The patient was thrown from a motorcycle traveling more than 20mph.

- The front bumper of the vehicle was displaced to the rear by more than 30 inches, or the front axle was displaced to the rear.

- The patient fell from a height of greater than 20 feet.

- The patient experienced a penetrating injury between the mid-thigh and the head.

- The patient experienced an amputation, or near amputation, and required timely evaluation for possible reimplantation.

- The patient experienced a scalping or degloving injury.

- The patient experienced a severe hemorrhage. Included are those patients with a systolic blood pressure of less than 90mmHg after initial volume resuscitation and those requiring ongoing blood transfusions to maintain a stable blood pressure.

- The patient experienced 2º/3º degree burns of the skin greater than 15 percent of the body surface, or major burns of the face, hands, feet, or perineum, or associated with an airway or inhalation injury.

- The patient experienced, or had great potential to experience, injury to the spinal cord, spinal column, or neurologic deficit.

- The patient suffered injuries to the face or neck which might result in an unstable or potentially unstable airway and might require invasive procedures (such as endotracheal or nasotracheal intubation, tracheostomy cricothyrotomy) to stabilize the airway.

- The patient had a score from an objective ranking system for trauma (such as the Trauma Score, Revised Trauma Score, CRAMS, Glasgow Coma Scale, etc.) at the scene or at the referring hospital's emergency department which indicated a severe injury.

- The patient is a child less than five years of age with multiple traumatic injuries.

- The patient is greater than 55 years of age and has multiple traumatic injuries, whether with or without preexisting illness, such as diabetes mellitus, coronary artery disease, chronic obstructive lung disease, or chronic renal failure.

- The patient is an adult with respiratory rate of less than 10 or greater than 35 breaths per minute, or a heart rate of less than 60 or greater than 120 beats per minute.

Source: *FLIGHT NURSING: PRACTICE AND PRINCIPLES*, 1991

SOUTH PLAINS EMS
EQUIPMENT LIST

BLS UNIT

- 1- SAED with 2 sets of defibrillator pads/paddles to accommodate adult patients and 2 sets of defibrillator pads/paddles to accommodate pediatric patients. However, if the BLS unit already stocks a monitor/defibrillator/SAED another SAED is not required. (If the SAED stocked does not support pediatric defibrillation a variance must be filled out through the SPEMS office and then pediatric defibrillation pads are not mandatory. The Variance must be signed by the Medical Director and a copy placed in each set of protocols). A charged spare battery must accompany the unit as well as the one powering the unit. However, an alternative power source may take the place of the spare battery. (SAED with sealed 5 year batteries need not to have a spare)
- 1- Portable suction (no foot pump or bulb type) with charged spare battery if the unit is battery powered. However, an alternative power source may take the place of the spare battery.
- 1- Vehicle mounted suction
- 3ea-suction tubing, rigid suction tips, and suction canisters
- 1ea- Bag valve mask (adult and child sizes)
- 1- ResQPOD (Optional)
- 1ea- Oral airway (#2 through #6)
- 1ea- Nasal airway (20fr through 36fr)
- 3ea- Adult nonrebreather masks, pediatric nonrebreather masks, adult handheld nebulizers or nebulizer masks, adult nasal cannulas, and oxygen tubings. **Note**: if nonrebreather masks or nebulizers contain removable oxygen tubing, then the requirement for oxygen tubing is met
- 2- Portable oxygen cylinders
- 1- Portable oxygen regulator
- 1- Piped-in oxygen with regulator (M or H cylinders)
- 1- Pulse Oximeter device with charged spare batteries
- 2ea- C-collars (to accommodate adult, child, and infant)
- 1- Extremity splint for all extremities
- 1ea- Traction splint (adult & child size)
- 2- Full spinal immobilization devices with straps
- 1- Short board or KED-type extrication device (does not have to be a KED brand)
- 1ea- Blood pressure cuffs (adult, child, & infant size)
- 1- Stethoscope
- 1- Glucometer
- 2- Appropriate glucometer test strips
- 2- Lancet/needle
- 3ea-1cc syringes, 3cc syringes, and 10cc syringes
- 1- Nasal-Mucosal Atomization Device (MAD)
- 3- Hypodermic needles (if IM Epinephrine is stocked) (sizes to be determined by EMS provider's needs)
- 2- Multi trauma dressings
- 25- START Triage Tags (START = Simple Triage and Rapid Transport)
- 1- QuickClot (must be heat free formula)
- 1- Commercial Tourniquet Device
- 24- Sterile gauze pads
- 5- Soft roller adhering bandages
- 2- Rolls of adhesive tape
- 2- Triangular bandages
- 2- Sterile burn sheets
- 3- Vaseline Gauze

- 10- Alcohol preps
- 1- Bandage shears
- 1- Pen light
- 1- Multilevel stretcher with all patient securing straps as recommended by the stretcher's manufacturer and at least 2 sets of clean sheets and blankets
- 1- Mast pants (Optional)
- 1ea- King LT-D or LTS-D airway sizes 0, 1, 2, & 2.5
- 1ea- King LTS-D airway sizes 3, 4, & 5
- 1- Puncture resistant sharps container
- 1- Emergency Response Guidebook, most current edition
- 1set- Emergency warning devices (at least 3 emergency triangles)
- 10- Protective, non-porous gloves
- 2- Medical eye protection
- 5- N-95 or greater protective Masks
- 2- Medical protective gowns or equivalent
- 2- Personal cleansing supplies
- 5- Biohazard bags
- 1- Working flashlight
- 1- Fire extinguisher
- 1- No smoking signs in the cab and patient compartment
- 1- Thermometer (may be oral, tympanic, or skin monitoring)

BLS NEONATAL EQUIPMENT

- 1- Sealed OB kit with non-porous infant insulator, umbilical cord clamps and bulb aspirator
- 1-Broselow Pediatric Emergency Tape or equivalent
- 1-Infant Bag valve mask (BVM)
- 1-#1 Oral airway

  Note: much of the other equipment, supplies, and drugs listed in other sections of the Equipment List are also designed to be utilized for neonatal care and this section does not exclude the use of any equipment, supplies, or drugs for neonatal patients as allowed by these treatment Protocols.

BLS MEDICATIONS

- 1- Activated Charcoal, 50g
- 20- Acetaminophen, 500mg tablets
- 10- Aspirin, 325mg tablets
- 5- Duo-Neb: 0.5mg Ipratropium Bromide and 3mg of Albuterol Sulfate in 3ml
- 1- Epinephrine Auto-Injector (Adult) 0.3mg/unit
- 1- Epinephrine Auto-Injector (Pediatric) 0.15mg/unit
- 2- Epinephrine (1:1,000) 1mg/1cc (if stocked at the BLS level, appropriate training required)
- 20- Ibuprofen, 200mg tablets
- 1- Glucagon 1mg/unit (Optional)
- 2- Levalbuterol (Xopenex) 1.25mg/3ml (Optional)
- 1- Liquid Children's Motrin 100mg/5ml
- 2- Naloxone (Narcan) 2mg/2cc
- 1- bottle- Nitroglycerin 0.4mg tablet or spray
- 1- Oral Glucose 15g Tube
- Oxygen

Services under SPEMS medical direction may carry **Epinephrine Auto-Injectors** to accommodate both adult and pediatric patients **AND/OR Epinephrine** (1:1,000) 1mg/1cc. However, **Epinephrine** (1:1,000) can only be carried if all active ECA's, EMT's and Advanced EMTs are appropriately trained on IM injections (and the standing Allergic Reaction Protocol). This training must be documented including location, date, and time. Documentation must be readily accessible upon inspection.

ALS & ALS-CAPABLE UNITS

ALL BLS EQUIPMENT AND:

- Advanced airway equipment including equipment required to perform endotracheal intubation including but not limited to:
  - 1-Laryngoscope handle with appropriate spare batteries
  - 1ea- Laryngoscope blades (Miller 1, 2, 3, 4 and Mac 1, 2, 3, 4)
  - 1ea- Extra laryngoscope bulbs (small and large)(extra bulbs not required for fiber optic laryngoscope sets)
  - 2ea- Endotracheal tubes (adult, pediatric sizes, 4 thru 9.0)
  - 1- ET tube holder
  - 1ea- Stylette (adult, pediatric sizes)
- 1ea- ET tube introducer (i.e. Bougie) (adult and pediatric)
- 2- Soft suction catheters for suctioning of ET tube
- 1- Carbon Dioxide monitor or detector (if a Carbon Dioxide detector (i.e. Easy Cap) is solely utilized an adult and pediatric must be stocked)
- 1ea- Magill forceps (adult and pediatric)
- Equipment & supplies to establish intravenous infusions for adult & pediatric patients to include but not limited to:
  - 5ea- IV catheters (16ga, 18ga, 20ga, 22ga)
  - 4-1000cc Normal Saline or equivalent volume
  - 4-1000cc Lactated Ringers or equivalent volume
  - 4-Macro IV tubing
  - 2-Micro IV tubing
    (If dial-a-flow tubing is used then a total of 6 IV tubes are required)
  - 4-Securing devices (nonporous tape or Veni-guard devices are acceptable)
- 1- EZ IO Driver with spare batteries (EZ IO Drivers with the non-replaceable battery need not to have a spare
- 1- EZ IO PD needle
- 1- Adult EZ-IO needle
- 1- EZ IO LD needle (Optional)
- 1- EZ-STABILIZER (Optional)
- 2ea- Blue, Red, Purple, and Green blood specimen tubes or their equivalent
- 2- 14ga X 2" or longer IV catheters for pleural decompression
- 1- Morgan Lenses (Optional)

ALS NEONATAL EQUIPMENT

In addition to the BLS Neonatal Equipment list, all ALS or ALS Capable units must be equipped with:

- 1- Miller size 0 laryngoscope blade with extra bulb (extra bulb not required for fiber optic laryngoscope blade)
- 2ea- Endotracheal tubes (sizes, 2.5, 3.0, and 3.5)
- 5- 24ga IV catheters

Note: much of the other equipment, supplies, and drugs listed in other sections of the Equipment List are also designed to be utilized for neonatal care and this section does not exclude the use of any equipment, supplies, or drugs for neonatal patients as allowed by these treatment Protocols.

ALS MEDICATIONS

- 2- Dextrose 10% (D10W), 250cc prefilled IV solution
  NOTE: Until current supplies of Dextrose 50% (D50W), 25g/50cc are exhausted or expires, EMS services can meet the requirement for Dextrose 10% by carrying 2-Dextrose 50% (D50W), 25g/50cc AND 2- 250cc bags of NS. D10W can then be achieved by removal of 50cc of the NS and injecting the 50cc of D50W into the IV bag. Once current supplies of D50W are exhausted, EMS services are required to stock the D10W premixed solution in a 250cc bag.
- 1- Diphenhydramine (Benadryl), 50mg/cc
- 4- Epinephrine (1:10,000) 1mg/10cc
- 1- Lidocaine (Xylocaine), 100mg/5cc
- 2- Ondansetron (Zofran) 4mg/2cc
- 1- Racemic Epinephrine 2.25% 11.25mg/0.5ml (optional)

MICU & MICU-CAPABLE UNITS

ALL BLS, ALS EQUIPMENT AND:

- 1- Copy of current, signed SPEMS treatment protocols for EMT-Paramedic
- 1- Cardiac monitor/defibrillator with 2 sets of defibrillator pads/paddles to accommodate adult patients and 2 sets of defibrillator pads/paddles to accommodate pediatric patients (if not already stocked at the ALS or BLS level). A charged spare battery must accompany the unit as well as the one powering the unit. However, an alternative power source may take the place of the spare battery.
- 10- EKG electrodes
- 1- Commercial crycothyrotomy kit **OR** a preassembled crycothyrotomy kit including but not limited to:
  - 1-Scalpel
  - 1-Hemostat
  - 1-Gauze pad
  - 1-Betadine swab
- CPAP supplies/equipment (optional)(CPAP equipment must be approved by Medical Director)
- 4- Cold packs or equivalent
- 1- 100cc or 250cc Normal Saline (For IV mix)
- 1- 100cc D5W (optional)

MICU NEONATAL EQUIPMENT

In addition to the BLS and ALS Neonatal Equipment list, all MICU and MICU Capable units must be equipped with:

- 8- Pediatric ECG Electrodes
  Note: much of the other equipment, supplies, and drugs listed in other sections of the Equipment List are also designed to be utilized for neonatal care and this section does not exclude the use of any equipment, supplies, or drugs for neonatal patients as allowed by these treatment Protocols.

MICU MEDICATIONS

- 2- Adenosine (Adenocard), 12mg/4cc
- 3- Amiodarone, 150mg/3cc3- Atropine Sulfate, 1mg/10cc
- 1- Calcium Gluconate 10%, 1g/10cc
- 2- Dexamethasone (Decadron) 20mg/5cc
- 2- Diazepam (Valium), 10mg/2cc
- 1- Dopamine (Intropin) 200mg/250cc
- 4- Epinephrine (1:1,000), 1mg/1cc (all levels combined)
- 2- Etomidate (Amidate) 40mg/20cc
- 2- Fentanyl 100mcq/2cc
- 2- Ketamine 1,000mg/10cc
- 1- Labetolol (Normodyne), 20mg/4cc
- 2- Lidocaine (Xylocaine), 100mg/5cc
- 1- Lidocaine (Xylocaine), 1g/250cc
- 2- Magnesium Sulfate 50%, 5g/10cc
- 2- Midazolam (Versed), 10mg/2cc
- 2- Morphine Sulfate, 10mg/1cc
- 2- Rocuronium 100mg/10cc (Optional)
- 2- Sodium Bicarbonate 8.4% (adult), 50mEq/50cc
- 2- Succinylcholine (Anectine), 200mg/10cc (Optional)
- 2- Vecuronium Bromide (Norcuron), 20mg/20cc

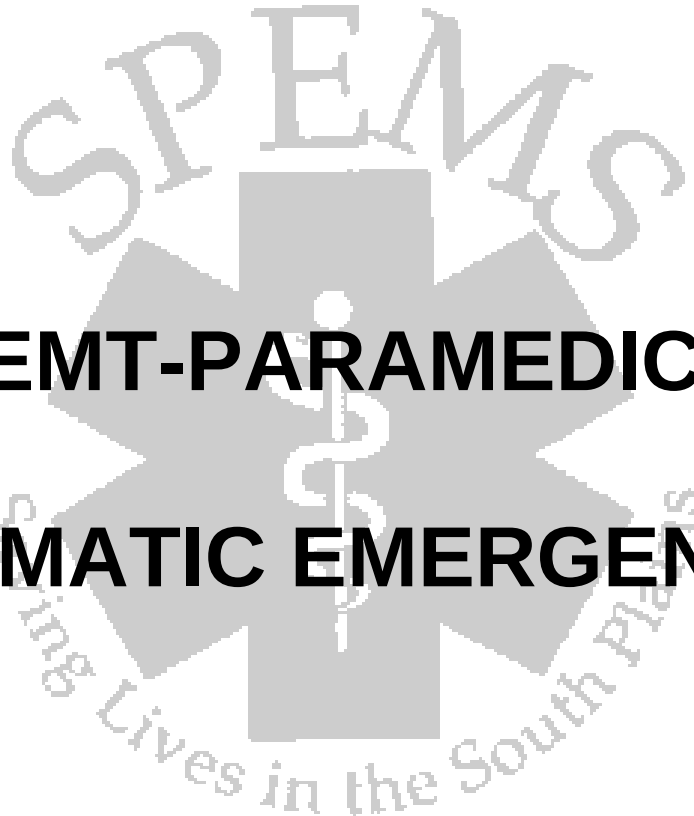
Services under SPEMS medical direction have the option of stocking three different paralytics. However, the stocking of Vecuronium Bromide (Norcuron) is mandatory. The stocking of Succinylcholine and Rocuronium are optional. The EMS service has the option to stock Succinylcholine and/or Rocuronium in addition to Vecuronium Bromide (Norcuron).

- If you have medical direction for any medications or invasive equipment not listed here, you must attach written authorization for the use of such. This document must be signed by the SPEMS Medical Director. However, non-invasive equipment (example: Vacu-Mattress, vein finder, thermometer, etc.) does not require written authorization by medical direction or additions to the equipment list.

- All of the services under my medical direction must carry at least the minimums of all the equipment and medications listed above, and may carry more according to their run demand and patient care needs.

SPEMS Medical Director Date 03/01/2020

Service Director Date 03/01/2020



EMT-PARAMEDIC

TRAUMATIC EMERGENCIES

BURNS (Moderate to Critical)

EMT-Paramedic

1. Stop the Burning Process
2. ABCs

Patient Conscious? → YES → **Oxygen**

NO

1. Ventilate with **Oxygen** (Insert OPA/NPA)
2. Consider Intubation (P-19) if any Evidence or Suspicion of Airway Injury

1. IV, **LR** *
2. Estimate Burn Depth & Percent of Total Body Surface
3. Cover Burn with Dry Sterile Sheets

Moderate to Severe Pain Present?

NO → Continue to Treat, Monitor & Transport

YES

Administer:

- **Fentanyl** 5mcg/kg to a max of 100mcg per single dose (Adults). May be repeated X1 if needed in 3-5 minutes. Contact medical control for additional doses. (For intranasal administration of **Fentanyl** refer to P-23 & 24)

OR

- **Morphine Sulfate** 2-6mg IV. May repeat if needed every 10 minutes as needed for pain or until Systolic BP is < 90 mmHg. Consider 1/2 dose if pt is over 60 years of age

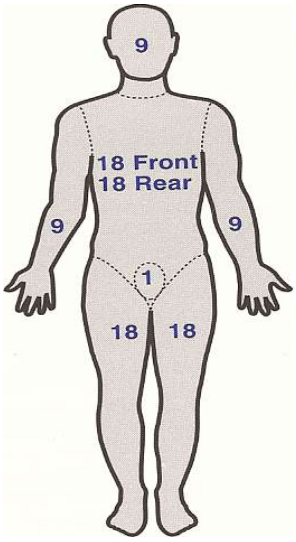
In the event of long transport times and systolic B/P is > 90mmHg, Morphine can be administered for subsequent pain control if Fentanyl was administered first line.

OR

- **Ketamine** 0.5mg/kg Slow IV or IO push to a max of 500mg **IF** the patient rates pain at a "9" or "10" on a 1-10 scale AND significant burn noted (See Page P-26)

Ketamine cannot be repeated without permission of medical control!
KETAMINE AND NARCOTICS CANNOT BE ADMINISTERED TO THE SAME PATIENT WITHOUT MEDICAL CONTROL AUTHORIZATION (See Page P-26)

The Rule of 9's
(count only 2º & 3º burns)



CRITICAL BURNS

1. All inhalation injuries
2. 2º > 20% TBSA
3. 3º > 5% TBSA
4. Head, face, feet, hands or genitalia
5. All electrical injuries
6. Burns associated with other trauma

*FLUID RESUSCITATION FOR BURNS

- < 25% TBSA, **LR**, TKO rate
- > 25% TBSA;
  - ≤ 5yoa, **LR**, 125 ml/hr
  - 6-13 yoa, **LR**, 250 ml/hr
  - ≥ 14yoa, **LR**, 500 ml/hr

For pediatric burns Refer to the Pediatric Burn Triage/Transport Scheme (P-51)

MODERATE BURNS

1. All burns not meeting other critical criteria
2. Minor burns in any patient with significant underlying medical conditions

PEDIATRIC DOSE

- **Morphine Sulfate**, 0.1mg\kg, IV to a max of 3mg per single dose.
- **Fentanyl,** 2mcg/kg, slow IVP, to a max of 100mcg per single dose. Do not administer **Fentanyl** to patients < 2 years of age. (For intranasal administration of **Fentanyl,** Refer to P-23 and P-24)
- **Ketamine** 0.5mg/kg with same criteria as adult. (Refer to P-26) **Do NOT repeat unless directed to by Medical Control** **Do NOT administer Ketamine and narcotics to same patient unless directed to by medical control** (Refer to P-26)

TRAUMA

EMT-Paramedic

1. Control Cervical Spine (if appropriate) (P-29 thru P-31)
2. ABC's

Respirations Absent, Noisy, Labored at <10 or >35?

NO

YES

1. Jaw Thrust Maneuver
2. Suction, if Needed

Respirations Remain Absent, Noisy or Labored at <10 or >35?

NO

1. Monitor Airway
2. **Oxygen**

YES

1. **Oxygen**
2. Ventilate with **Oxygen** (Insert OPA/NPA)

Major External Hemorrhage Present?

YES

Control bleeding with Quick Clot if necessary (P-38)

NO

1. Expose Chest & Abdomen
2. Inspect, Palpate, Auscultate

Radial Pulses Present?

YES

NO

1. Rapid Extrication, if Needed
2. Spinal Motion Restriction as indicated (P-29 thru P-31)

Rate <60 or >120?

NO

YES

Skin Pale, Cool, Diaphoretic, or Capillary Refill Slow?

NO

YES

1. Rapid Extrication, if Needed
2. Spinal Motion Restriction as indicated (P-29 thru P-31)
3. Intubate Patient, If Needed
4. Apply MAST(if available) and Inflate if unstable pelvic fracture with hypovolemia is likely
5. Begin Rapid Transport to Hospital
6. IV, **LR**, WO, to achieve clinical effect

Carotid Pulse Present?

YES

NO

Begin CPR (Current AHA Guidelines)

1. Intubate Patient, If Needed
2. Apply MAST (if available) and inflate if unstable pelvic fracture with hypovolemia is present
3. Begin Rapid Transport to Hospital
4. 2 IVs, **LR**, WO

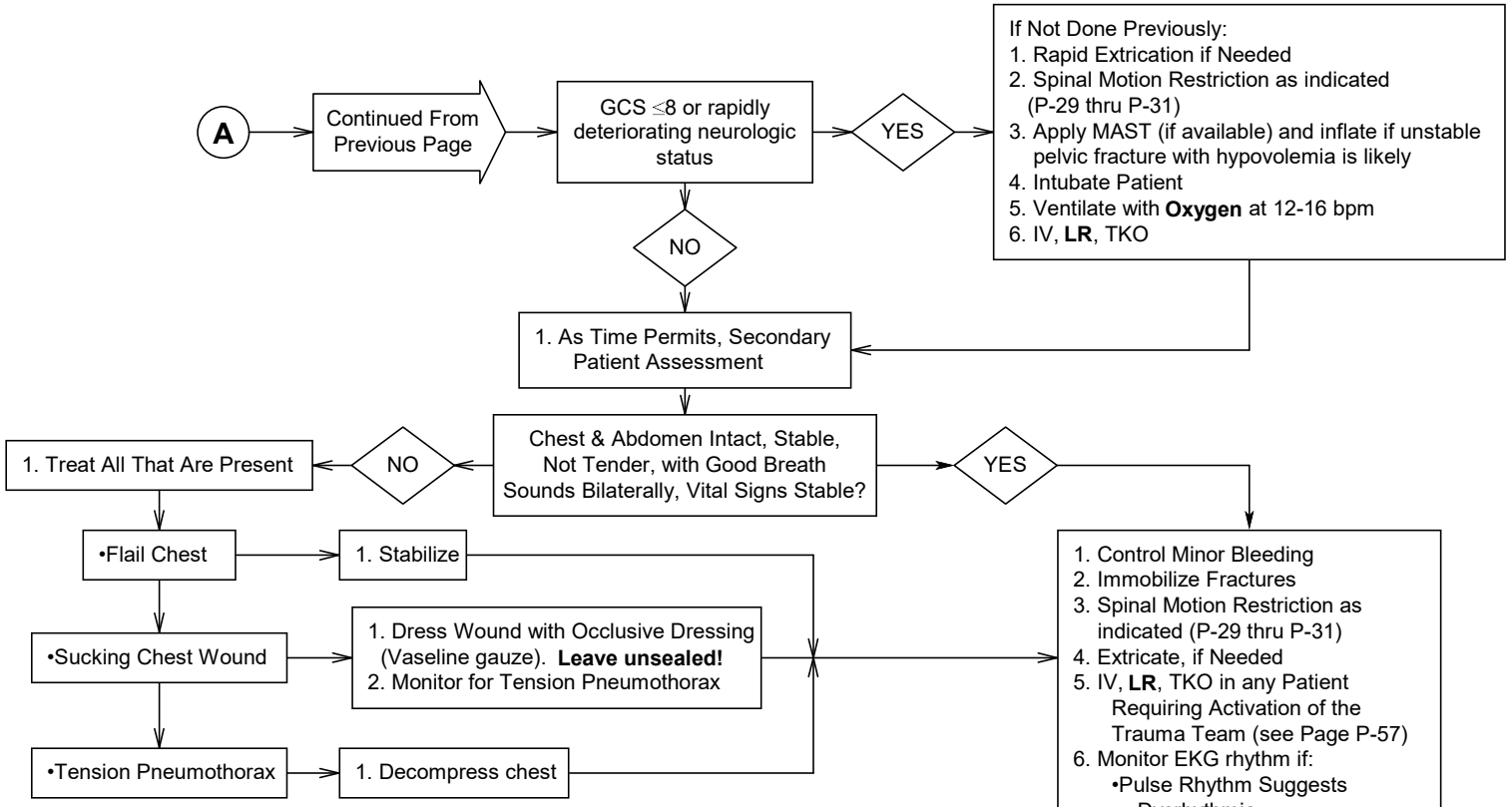
Continued on Following Page A

PEDIATRIC

Fluid challenge 20cc/kg over 10 minutes. Repeat until clinical signs of adequate perfusion are present. Monitor patient for pulmonary edema.

TRAUMA (Continued)

EMT-Paramedic



For Trauma Pain Management, Consider:

•**Fentanyl** 5mcg/kg to a max of 100mcg per single dose (Adults). May be repeated X1 if needed in 3-5 minutes. Contact medical control for additional doses. (For intranasal administration of **Fentanyl** refer to P-23 & P-24)

OR

•**Morphine Sulfate** 2-6mg IV. May repeat if needed every 10 minutes as needed for pain or until Systolic BP is < 90 mmHg. Consider 1/2 dose if pt is over 60 years of age

In the event of long transport times and systolic B/P is > 90mmHg, Morphine can be administered for subsequent pain control if Fentanyl was administered first line.

OR

•**Ketamine** 0.5mg/kg Slow IV or IO push to a max of 500mg **IF**: (See Page P-26)
- •Patient rates pain at a "9" or "10" on a 1-10 scale AND accompanying indications of severe pain such as increased heart rate, increased BP, obvious significant injury, etc., OR
- •Prolonged expected extrication (> 10 minutes) where the patient is in severe pain due to significant injury

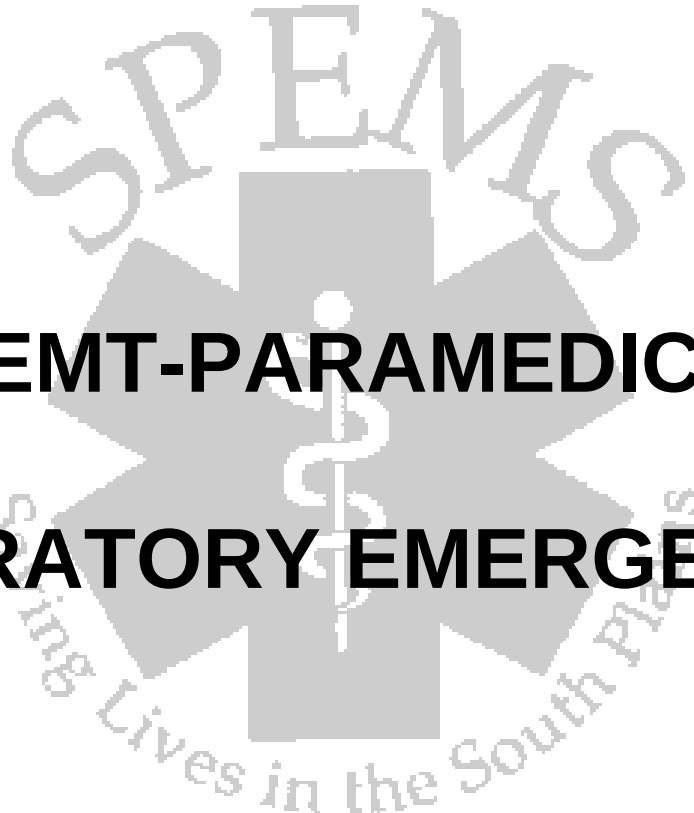
Ketamine cannot be repeated without permission of medical control!
KETAMINE AND NARCOTICS CANNOT BE ADMINISTERED TO THE SAME PATIENT WITHOUT MEDICAL CONTROL AUTHORIZATION (See Page P-26)

- Time on scene with Trauma patients should not exceed 10 minutes unless extrication is required. If time on scene exceeds 10 minutes, reasons for delay should be documented.
- If extrication >15 minutes is required, or if time to definitive care is likely to exceed 25 minutes, consider air transport.

For pediatric trauma Refer to the Pediatric TraumaTriage/Transport Scheme (P-51)

PEDIATRIC DOSE

Fentanyl 2mcg/kg slow IVP to a max of 100mcg per single dose. Do not administer **Fentanyl** to patients < 2 years of age. (For intranasal administration of **Fentanyl** refer to P-23 & P-24)
Morphine 0.1mg/kg up to a max of 3mg per single dose.
Ketamine 0.5mg/kg with same criteria as adult. (Refer to P-26)
Do NOT repeat unless directed to by Medical Control
Do NOT administer Ketamine and narcotics to same patient unless directed to by medical control (Refer to P-26)

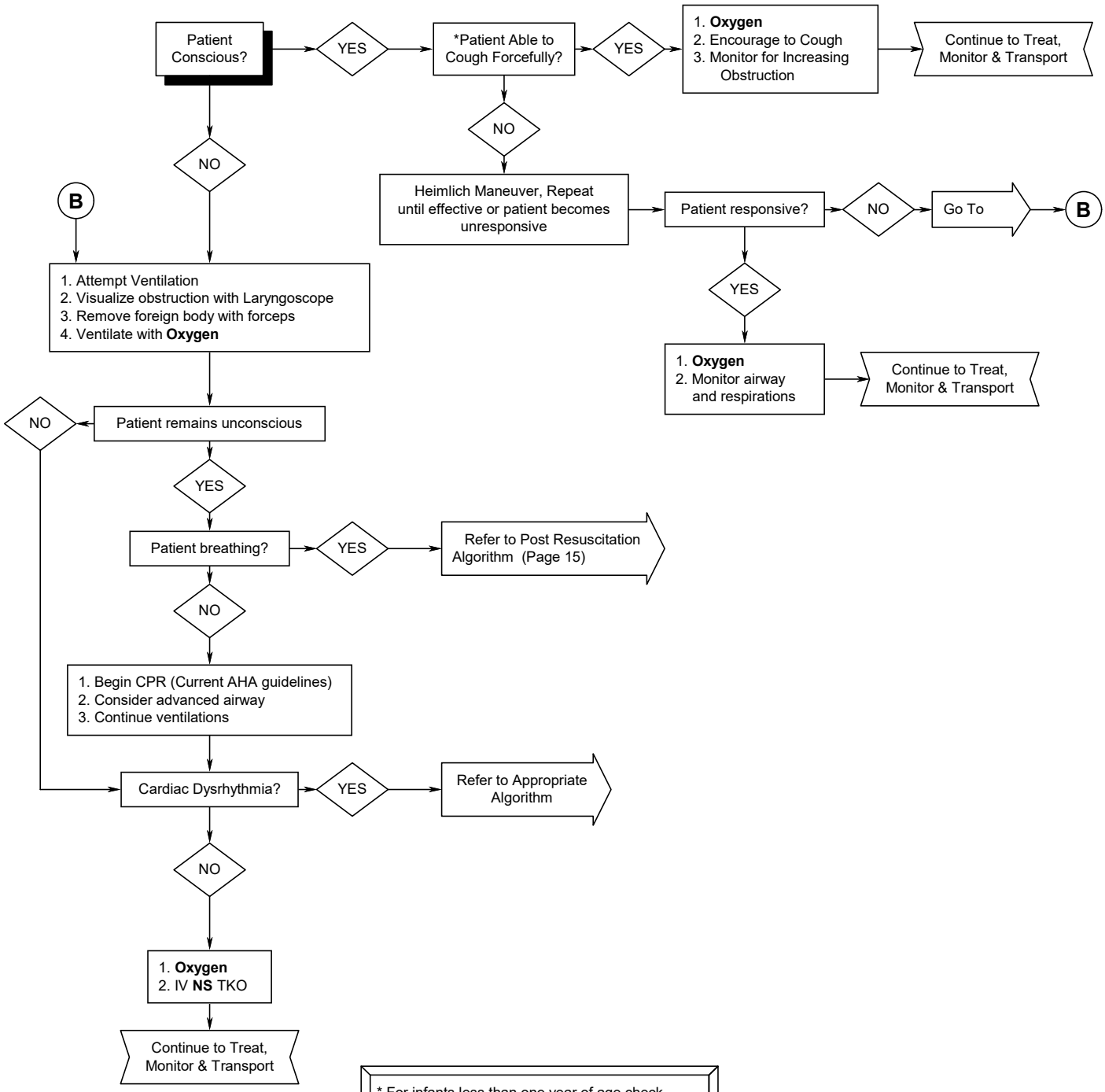


EMT-PARAMEDIC

RESPIRATORY EMERGENCIES

FOREIGN BODY AIRWAY OBSTRUCTION

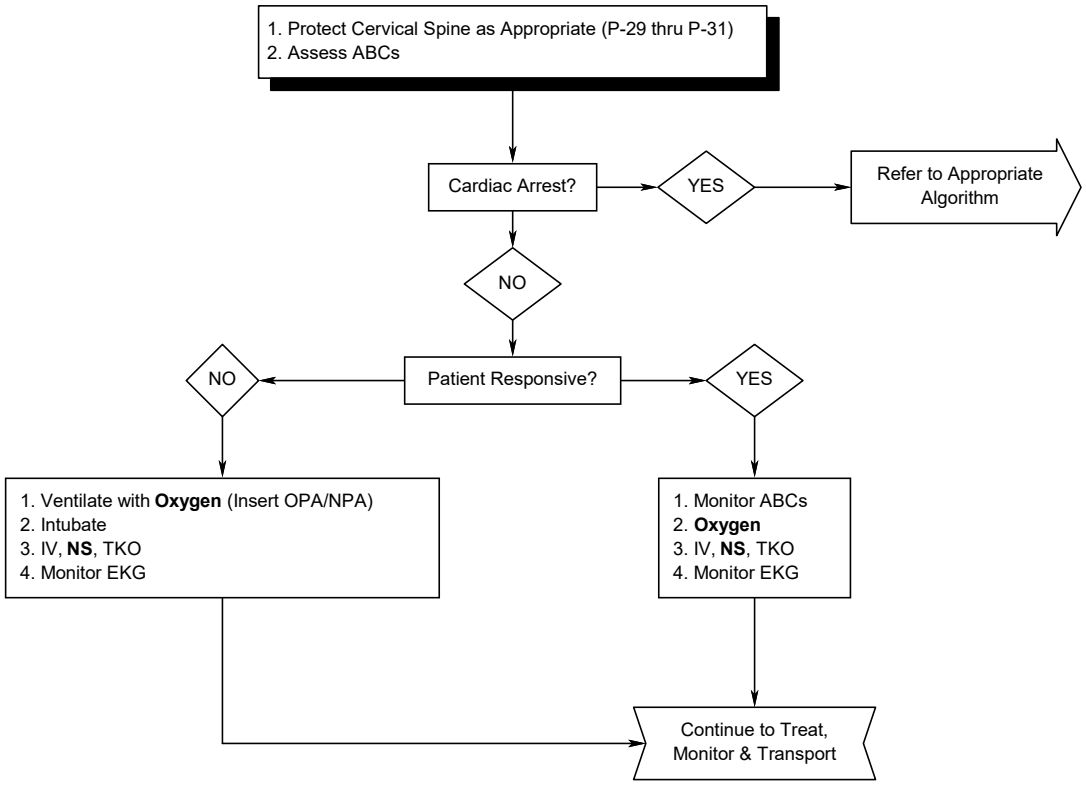
EMT-Paramedic



* For infants less than one year of age check for the severity of the airway obstruction; ineffective or silent cough, weak, or silent cry. Substitute Heimlich maneuver with 5 back blows and 5 chest thrusts.

NEAR DROWNING

EMT-Paramedic



If wheezing noted go to Respiratory Distress Protocol (Page 6)

- Consider spinal cord trauma, air embolism, hypothermia, alcohol or drug ingestion, hypoglycemia, seizures and myocardial infarction as accompanying problems or underlying causes.

- All near drowning patients should be transported for observation & evaluation, no matter how mild the episode appears to be.

- Air Transport should be considered to expedite the patient's arrival at the hospital.

RESPIRATORY DISTRESS (Non-Traumatic)*

EMT-Paramedic

*For services that utilize CPAP reference (P-18)

If Croup is suspected (P-12) in the pediatric patient administer **Racemic Epi** (optional)11.25mg/0.5cc diluted in 3cc NS via nebulizer 1st line. May repeat dose X 1 if needed. If wheezing persists administer Xopenex per protocol.

*** Generally, **Duo-Neb** should be utilized as the first line drug. However, if the patient has had previous success with **Xopenex**, **Xopenex** may be administered, if available, before **Duo-Neb**

• **Epinephrine** (1:1,000) 0.3mg, IM, may be administered with **severe** respiratory distress and wheezing, if no improvement from a bronchodilater either patient or EMS administered

Foreign Body Airway Obstruction? — YES → Refer to Foreign Body Airway Obstruction Algorithm (Page 4)

NO → Allergic Reaction? — YES → Refer to Allergic Reaction Algorithm (Page 24)

NO

1. **Oxygen**
2. Assist Ventilations if Respirations Inadequate (Insert OPA/NPA)
3. Monitor EKG
4. IV, **NS**, TKO

**If Respiratory Distress Continues After Suppression of Underlying Arrhythmias, Return to this Algorithm.

Congestive Heart Failure and/or Pulmonary Edema? — YES → Class I or II Cardiac Rhythm? (P-11) — NO → Refer to Appropriate Algorithm**

NO

YES

1. **Nitroglycerin**, 0.4mg, SL, if systolic BP >90mmHg; may repeat once if systolic BP remains >90mmHg
2. **Morphine Sulfate**, 2-6mg; may repeat once in 10 minutes, if Systolic BP >90mmHg
3. *** **Duo-Neb** (0.5mg Ipratropium Bromide with 3mg Albuterol) via nebulizer. May be repeated as needed if improvement noted.
4. Continue **Duo-Neb** until respiratory distress relieved. If no improvement with **Duo-Neb**, Administer **Xopenex** (optional) if available
5. Consider CPAP (P-18)

Asthma or Chronic Obstructive Pulmonary Disease?

NO → Pulse Ox <90% or Wheezing Present? — NO → Continue to Treat, Monitor & Transport

YES → ***
1. **Duo-Neb** (0.5mg Ipratropium Bromide with 3mg Albuterol) via nebulizer. May be repeated as needed if improvement noted.
2. **Decadron** 20mg, SIVP, if Wheezing is Present

YES

Respiratory Distress Relieved? — YES → Continue to Treat, Monitor & Transport

NO → Asthma or COPD?

Asthma → **Epinephrine** (1:1,000) 0.3mg, IM, if not Previously Given

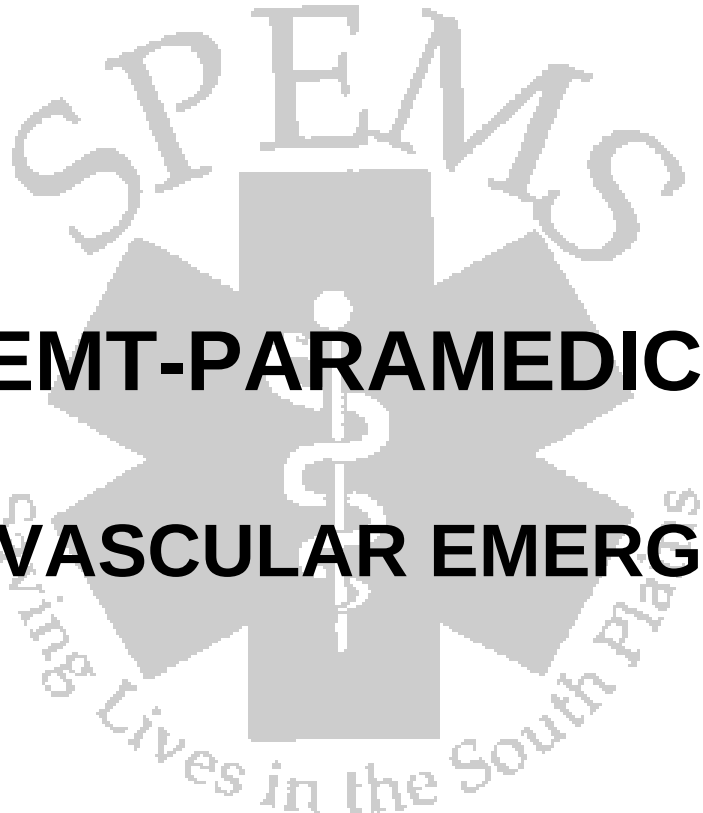
COPD

1. Administer **Xopenex (optional)** if available, 1.25mg/3cc, HHN, repeat as needed.
2. If **Xopenex** not available, repeat **Duo-Neb** (0.5mg Ipratropium Bromide with 3mg Albuterol) via HHN as needed

Continue to Treat, Monitor & Transport

PEDIATRIC DOSE:

- **Morphine Sulfate,** 0.1mg/kg to a max of 3mg per single dose
- **Epinephrine,** 1:1,000, 0.01mg/kg, IM, to a max of 0.15mg
- **Decadron,** 0.6mg/kg to a max 20mg. Do not administer to patients < 2 years of age.
- **Duo-Neb** (0.5mg Ipratropium Bromide with 3mg Albuterol), by nebulizer, dose and frequency same as adult
- **Xopenex (optional)** 1.25mg by Nebulizer, dose and frequency same as adult
- **Racemic Epi 2.25% (optional)** (croup) 11.25mg/0.5cc diluted in 3cc NS by Nebulizer (P-12)



EMT-PARAMEDIC

CARDIOVASCULAR EMERGENCIES

ASYSTOLE or PULSELESS ELECTRICAL ACTIVITY - ADULT

EMT-Paramedic

1. CPR (Current AHA Guidelines)*
2. Ventilate with **Oxygen** (Insert OPA/NPA)
3. ResQPOD (Optional)
4. Attach Defibrillator**
5. IV, **NS*****
6. **Epinephrine (1:10,000)**, 1mg, IV, Every 3-5 Minutes

Intubate the patient if not previously done

Rhythm Change? → YES → Refer to Appropriate Algorithm

NO

Resume CPR

Treat Possible Contributing Factors****

Continue to Treat, Monitor & Transport

****
Consider Whether One of the Following may be Involved and Treat Appropriately:
- •Hypovolemia (Infuse Volume)
- •Hypoxia (Ventilate)
- •Hypo/Hyperkalemia
- •Hydrogen Ion (Acidosis)
- •Hypoglycemia (D10)
- •Hypothermia
- •Toxins/OD
- •Tamponade (Cardiac)
- •Tension Pneumothorax (Decompress Chest)
- •Thrombosis (Pulmonary, Coronary)
- •Trauma

*** IV Fluid Should be Infused at a Wide Open Rate to a Max of 3000cc

Withhold IV medications in patients with core temp < 86°F.

**Asystole should be confirmed in 2 leads. If rhythm is unclear and possibly Ventricular Fibrillation, go to Ventricular Fibrillation Algorithm.

* Ideally chest compressions should be interrupted only for rhythm check. TheCurrent AHA guidelines state that when CPR is indicated the provider should perform 5 cycles (2 minutes) of chest compressions. Continue CPR while drugs are prepared/administered. Providers must organize care to minimize interruption in chest compressions for rhythm checks, advance airway insertion, or vascular access.

ASYSTOLE or PULSELESS ELECTRICAL ACTIVITY - PEDIATRIC

EMT-Paramedic

1. CPR (Current AHA Guidelines)*
2. Ventilate with **Oxygen** (Insert OPA/NPA)
3. Use ResQPOD if the patient has reached puberty (Optional)
4. Attach Defibrillator**
5. IV, **NS*****

***IV Fluids Should be Infused at a Rate to Obtain a Fluid Bolus of 20cc/kg Over 10 Minutes. May Repeat Once if Needed.

Epinephrine: Repeat Every 3 to 5 Minutes
- IV/IO: 0.01mg/kg up to a max of 1mg per single dose. (1:10,000, 0.1mL/kg)

or

- ET: 0.1mg/kg up to a max of 1mg per single dose. (1:1,000, 0.1mL/kg)

Intubate the patient if not previously done

Rhythm Change or Pulse Present?

YES → Refer to Appropriate Algorithm

NO

Resume CPR

Treat Possible Contributing Factors****

Continue to Treat, Monitor & Transport

****
Consider Whether One of the Following may be Involved and Treat Appropriately:
- Hypovolemia (Infuse Volume)
- Hypoxia (Ventilate)
- Hypo/Hyperkalemia
- Hydrogen Ion (Acidosis)
- Hypoglycemia (D10)
- Hypothermia
- Toxins/OD
- Tamponade (Cardiac)
- Tension Pneumothorax (Decompress Chest)
- Thrombosis (Pulmonary, Coronary)
- Trauma

Withhold IV medications in patients with core temp < 86°F.

**Asystole should be confirmed in 2 leads. If rhythm is unclear and possibly Ventricular Fibrillation, go to Ventricular Fibrillation Algorithm.

* Ideally chest compressions should be interrupted only for rhythm check. The Current AHA guidelines state that when CPR is indicated the provider should perform 5 cycles (2 minutes) of chest compressions. Continue CPR while drugs are prepared/administered. Providers must organize care to minimize interruption in chest compressions for rhythm checks, advance airway insertion, or vascular access.

BRADYARRHYTHMIA - ADULT

Heart rate typically < 50 / minute

EMT-Paramedic

1. **Oxygen** if O2 sat is <94% or signs of hypoxia. Maintain O2 sats between 94 and 99%
2. IV, **NS**, TKO
3. EKG

Patient has any of the Following:
- •Systolic BP <90mmHg
- •Signs/Symptoms of Shock
- •Ischemic Chest Pain
- •Acute Heart Failure
- •Acute Decreased LOC

YES → 2° or 3° AV Block ? → YES → Attach External Pacemaker

NO → Continue to Treat, Monitor & Transport

NO →

1. **Atropine** 0.5mg, IVP, Every 3-5 minutes, to a max of 3mg
2. Fluid Challenge of **NS,** 500-1000cc If Pulmonary Edema not present

Signs/Symptoms Resolved? → YES → Continue to Treat, Monitor & Transport

NO →

1. If BP ≥ 90 consider **Versed,** 5mg, IV, (2.5mg if >60 years old) May repeat once.
2. If BP < 90, consider **Ketamine**, 0.5mg/kg slow IV push to a maximum of 500mg. Repeat doses only with medical direction permission.
3. Attempt External Pacing. (P-23)

Pacemaker Capture? → NO → **Epinephrine Drip**, 2-10mcg/min, IV infusion*

Pacemaker Capture? → YES → Signs/Symptoms Resolved? → NO → **Epinephrine Drip**, 2-10mcg/min, IV infusion*

Signs/Symptoms Resolved? → YES → Continue to Treat, Monitor & Transport

Epinephrine Drip, 2-10mcg/min, IV infusion* → Continue to Treat, Monitor & Transport

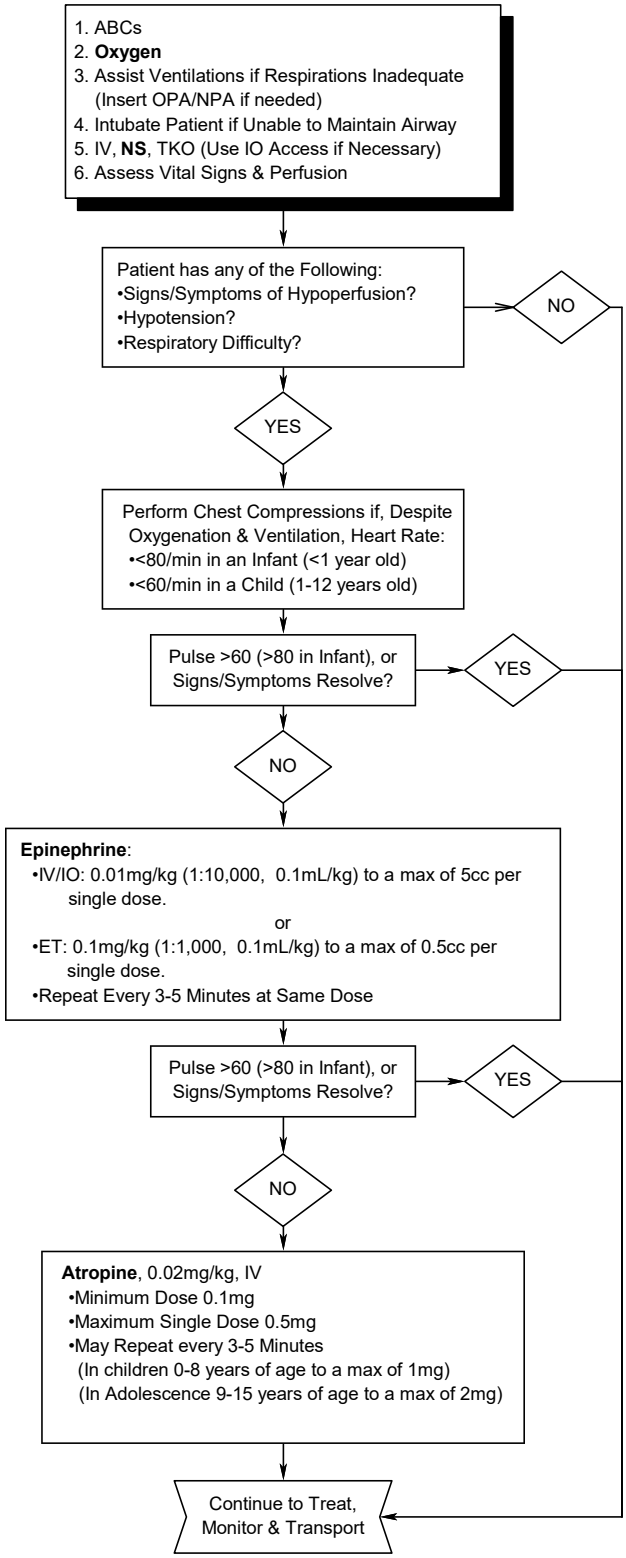
*Epinephrine Drip
2-10mcg/min

For 100cc bag of NS:
- Mix 1mg Epi (1:1,000)
- Run at 12 - 60gtts/min

For 250cc bag of NS
- Mix 1mg Epi (1:1,000)
- Run at 30 - 150gtts/min

BRADYARRHYTHMIA - PEDIATRIC

EMT-Paramedic



CARDIAC CHEST PAIN or SUSPECTED MYOCARDIAL INFARCTION*

EMT-Paramedic

1. **Oxygen,** if O2 sat is <94% or signs of hypoxia. Maintain O2 sats between 94 and 99%
2. IV, **NS**, TKO
3. Blood draw for labs (P-16)
4. **Aspirin**, 325mg, PO (chew and swallow)
5. Monitor EKG (obtain 12 lead if available, Consider serial EKGs if appropriate)
6. Transmit suspect EKGs to the receiving ER (if possible)

**If chest pain continues after the suppression of underlying arrhythmias, or after correcting cardiogenic shock return to this algorithm.

*** Signs of a RVI
1. JVD with clear lung sounds
2. Hypotension
3. ST elevation in leads II, III, aVF
4. If appropriately trained and time permits obtain a Right sided EKG. ST elevation in V4R may further confirm an RVI.

Class I or II Cardiac Rhythm? (P-11)
- YES → 12 lead EKG Obtained?
- NO → Refer to Appropriate Algorithm**

12 lead EKG Obtained?
- YES → ST elevation in two contiguous leads?
- NO → Systolic BP >90mmHg with Adequate Perfusion?

ST elevation in two contiguous leads?
- YES → Possible right ventricular infarct (RVI)?***
- NO → 1. Reference the Cardiac Triage/Transport Scheme (P-49) 2. Immediate rapid transport 3. Notify Emergency Department ASAP

Possible right ventricular infarct (RVI)?***
- YES → 1. 2nd large bore IV 2. Infuse NS at a WO rate to maintain a systolic BP of >90mmHG.
- NO → 1. Reference the Cardiac Triage/Transport Scheme (P-49) 2. Immediate rapid transport 3. Notify Emergency Department ASAP

Systolic BP >90mmHg with Adequate Perfusion?
- YES → ##**Nitroglycerin**, 0.4mg, Sublingual or **Nitrospray**, 1 Spray, Sublingual every 5 minutes until (rule out the use of sexual enhancement drugs):
  - Symptoms relieved
  - Systolic BP < 90mmHg
- NO → Refer to Cardiogenic Shock Algorithm (Page 12)**

If not previously done:
1. Reference the Cardiac Triage/Transport Scheme (P-49)
2. Initiate transport

##Following adminstration of 1 Nitroglycerin, the Paramedic has the discretion to utilize **Nitroglycerine** and/or **Morphine**[a] as outlined in Box A

MI Signs and Symptoms* Relieved?
- YES → Continue to Treat, Monitor & Transport
- NO → Systolic BP >90mmHg?

Systolic BP >90mmHg?
- YES → A → 1. **Morphine Sulfate**[a],2-6mg, IV (Repeat as needed every 10 Minutes until signs and symptoms relieved or Systolic BP <90mmHg) 2. Continue **Nitroglycerin** every 5 minutes until signs and symptoms relieved or Systolic BP <90mmHg
- NO → 250cc Fluid Bolus

*** Atypical MI Signs & Symptoms** (Reference Acute Coronary Syndrome, P-10)

Atypical Pain:
1. "Sharp" chest pain
2. Intermittent chest pain
3. Pain in ABD, jaw, teeth, neck, shoulder, or arm

Anginal Equivalents consider in higher risk patients
1. Resp. Distress/Dyspnea
2. Weakness/Fatigue without history of GI bleed or recent fever
3. Palpitations
4. Near Syncope/Syncope
5. Nausea/Vomiting
6. DKA

Female, Elderly, or Diabetic?
- YES → **Consider** patient a candidate for the Cardiac Chest Pain Protocol see ACS (P-10)
- NO → Risk factors:
  1. CAD
  2. HTN
  3. Hyperlipidema
  4. Obesity
  5. Stress
  6. Sedentary life style
  7. Smoker

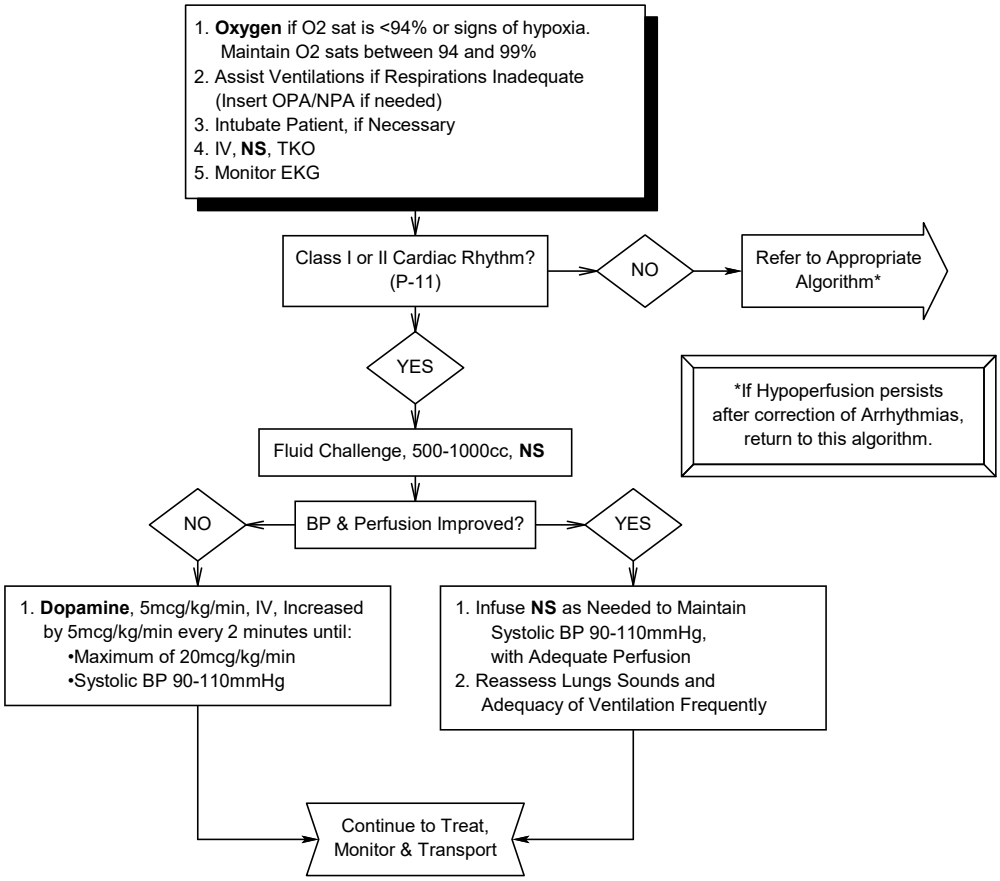
[a] If patient is allergic to Morphine, administer **Fentanyl,**5mcg/kg, IV to a max of 100mcg. (Repeat as needed every 10 minutes until signs and symptoms relieved or systolic BP < 90mmHg)

For interfacility transfers, if the patient has a Nitroglycerin drip in place and symptoms develop or become worse, you may administer sublingual Nitro in addition to the drip or increase the Nitro drip in increments of 5mcg/min until:
1. Symptoms relieved
2. Systolic BP <90mmHg
3. Max of 40mcg/min is reached

Consider **Zofran**, 4mg, IVP, in a patient with profound nausea and/or vomiting.

CARDIOGENIC SHOCK

EMT-Paramedic



PEDIATRIC

Fluid challenge 20cc/kg over 10 minutes. Repeat until clinical signs of adequate perfusion are present. Monitor patient for pulmonary edema.

PEDIATRIC DOSE

•**Dopamine**, 5mcg/kg/min, IV; If perfusion is not adequate after 2 minutes, Increase to max of 10mcg/kg/min

LVAD

EMT-Paramedic

History
- -Late stage heart failure
- -Patient has surgically-implanted pump that assists the action of one or both ventricles
- -Patient may or may not be on a heart transplant list

Signs and Symptoms
- -The flow through most LVADs is not pulsatile, therefore, THE PATIENT MAY NOT HAVE A PULSE AT BASELINE. For this reason, pulse oximetry readings may also be inaccurate
- -Altered mental status may be the only indicator of a problem
- -Consider both LVAD-related and non-LVAD problems.

Differential Diagnosis
- -Stroke
- -Cardiac Arrest
- -Dysrhythmia different from patient's baseline
- -Infection
- -Bleeding (VAD patients will be on anti-coagulants)
- -Dehydration
- -Cardiac tamponade
- -Device problem such as low battery or a disconnected cable

ALWAYS talk to the family/caregiver since they will have specialized training and knowledge about the device. An appropriate knowledgeable/ trained family member should accompany the patient to the hospital. CALL THE VAD COORDINATOR EARLY per patient/family instructions or as listed on the device. The VAD coordinators are available 24/7 and should be an intregal part of the treatment

1. Auscultate the left upper abdominal quadrant with a stethoscope. If there is a humming sound, the pump is functioning. *
2. **Oxygen**
3. Assist Ventilations if respirations are inadequate (Insert OPA/NPA if needed)
4. Monitor $ETCO_2$ with nasal capnography sensor (if available)
5. IV, **NS** TKO

***If the LVAD pump is not functioning, refer to the caregiver and operation book.**

Spare battery should be on-site

Perform Chest Compressions ONLY if LVAD is NOT humming and the patient is unresponsive

****Limit compression depth to no greater than 2 inches to prevent LVAD dislodgement**

Notify the LVAD Coordinator

Is the patient conscious?

YES

IV/IO Fluid Bolus 250 to 500mLfluid bolus of **NS** if indicated

1. Cardiac Monitor and 12 Lead EKG
2. Obtain Blood Glucose reading. If < 70mg/dL, refer to Decreased LOC protocol

Treat According to Presentation and Complaint

Pain Management:
Fentanyl 2mcg/kg IV/IO/IM/IN to a maximum of 100mcg per dose. May be repeated every 10 minutes to a total dose of 300mcg

Respiratory (if wheezing present)
DuoNeb via HHN. Maximum of one dose

Chest Pain:
Fluid bolus only. Do NOT administer **Aspirin**, **Morphine** or **Nitroglycerin**.

Nausea:
Zofran (Ondansetron) 4mg SIVP/IM

SVT (heart rate > 150bpm):
Adenosine 12mg rapid IVP. May repeat once. Do NOT administer **Amiodarone** or **Diltiazam** (**Cardizem**)

Other Chief Complaints:
Follow appropriate protocol(s) as indicated. **Any medications that reduce cardiac preload, vasoconstrict, vasodilate, or otherwise will cause a drop in systolic blood pressure must be avoided in the non-cardiac arrest patient.**
See notes (on following page) and consult Medical Control, as needed

NO

IV/IO Fluid Bolus 250 to 500mLfluid bolus of **NS** if indicated

1. Cardiac Monitor and 12 Lead EKG
2. Obtain Blood Glucose reading. If < 70mg/dL, refer to Decreased LOC protocol

Respirations 8 or above?

YES

1. Follow protocols as indicated. **Any medications that reduce cardiac preload, vasoconstrict, vasodilate, or otherwise will cause a drop in systolic blood pressure must be avoided in the non-cardiac arrest patient.** **See notes (on following page) and consult Medical Control, as needed.**
2. Initiate emergent transport with early ED notification

NO

1. Assist ventilations (Insert OPA/NPA, ETT, or King Airway if needed)
2. **Narcan 2mg** IV/IO/IN
3. Do NOT perform Chest Compressions unless pump is not humming**
4. If pump is humming follow appropriate cardiac arrest protocol, as indicated, **WITHOUT** chest compressions
5. Administer appropriate cardiac arrest drugs at appropriate intervals
6. Defibrillate every 2 minutes if in V-Fib or V-Tach.
7. Initiate emergent transport with early ED notification

Continue to Treat, Monitor & Transport

See Additional Information on Next Page

LVAD stands for Left Ventricular Assist Device. It is an electromechanical device for assisting cardiac circulation that is designed to assist a failing heart. Patients may or may not be on a heart transplant list. These patients will most likely have an internal pacemaker and an internal defibrillation device.

The LVAD is implanted into the left upper abdominal quadrant and produces a humming sound when functioning. It is critical that the pump be auscultated to assure proper functioning. In the event of arrest, the LVAD device should produce sufficient blood flow without the performance of chest compressions. Chest compressions can cause dislodgement of the device and could result in death from blood loss.

Key Notes for caring for LVAD Patients:

- Always talk to family/caregivers since they will have specialized training and knowledge about the device. An appropriate knowledgeable/trained family member should accompany the patient to the hospital.
- CALL THE VAD COORDINATOR EARLY per patient/family instructions or as listed on the device. The VAD coordinators are available 24/7 and should be an integral part of the treatment plan.
- Questions to ask: Does the patient have a DNR? Can the patient be cardioverted or defibrillated if needed?
- Chest compressions should NOT be given unless the pump has stopped working (not humming).
- Common complication in LVAD patients include stroke and TIA (incidence up to 25%), bleeding, dysrhythmias, and infection.
- The cardiac monitor and 12-Lead ECG are not affected by the LVAD and will provide important information.
- LVAD patients are pre-load dependent. Consider that a FLUID BOLUS can often reverse hypoperfusion.
- Transport patients with ALL device equipment including any instructions, hand pumps, backup batteries, primary and secondary controllers, as well as knowledgeable family members or caregivers. Most patients will have a "Go Bag" available. A charged spare battery should be part of the "Go Bag".
- Remember that it is unlikely an auscultated or palpated blood pressure can be measured. Pulse oximetry may be inaccurate.
- If patient is unconscious with no respiratory effort and the ECG shows V-Fib or V-Tach, defibrillation is necessary
- CPAP CANNOT be used on patients with LVAD

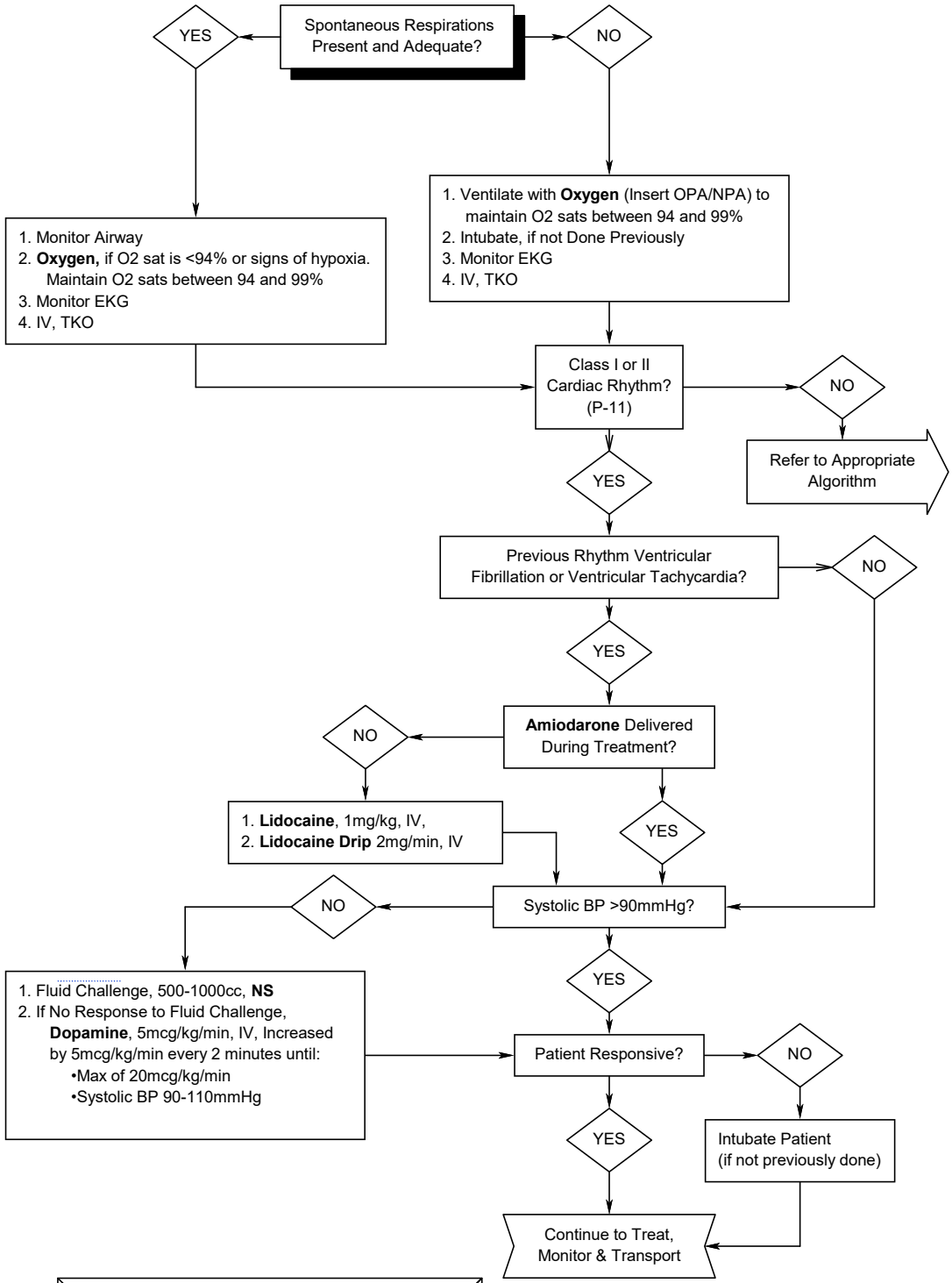
Prehospital Medications to Avoid with LVAD Patients:

Anti-arrhythmics May be used only if patient is in cardiac arrest	
Amiodarone	Amiodarone and Lidocaine may be used in cardiac arrest. Calcium channel blockers should not be administered due to the negative inotropic affect and potential to develop hypotension.
Diltiazem (Cardizem) and other calcium channel blockers	
Lidocaine	
Anti-Coagulants/ Anti-platelet properties	
Aspirin	Patient is already on anti-coagulants and adding aspirin may increase bleeding risks or delay healing
Anti-hypertensives	
Labetalol (Normodyne)	Peripheral vasodilation or significant reduction in blood pressure may decrease preload. The LVAD patient is dependent on preload for optimal pump function.
Benzodiazepines	
Diazepam (Valium)	May result in peripheral vasodilation that can reduce preload to the heart. For continuous seizures, use lowest effective dose.
Lorazepam (Ativan)	
Midazolam (Versed)	
Elementals	
Magnesium Sulfate	Risk for developing hypotension and dysrhythmias
Sympathomimetic Medications May be used only if patient is in cardiac arrest	
Epinephrine 1:10,000*	Drugs that stimulate the sympathetic response may increase myocardial oxygen demand Increases myocardial oxygen demands. *Epinephrine 1:10,000 is acceptable to administer for severe allergic reactions as allowed on Page 24
Dopamine	
Repeated doses of nebulized beta-agonists	
Vasodilatory Medications	
Nitroglycerin	Peripheral vasodilation will decrease preload. The LVAD patient is dependent on preload
Morphine	

*POST-RESUSCITATION MANAGEMENT

*Remove ResQPOD if previously used

EMT-Paramedic



PEDIATRIC

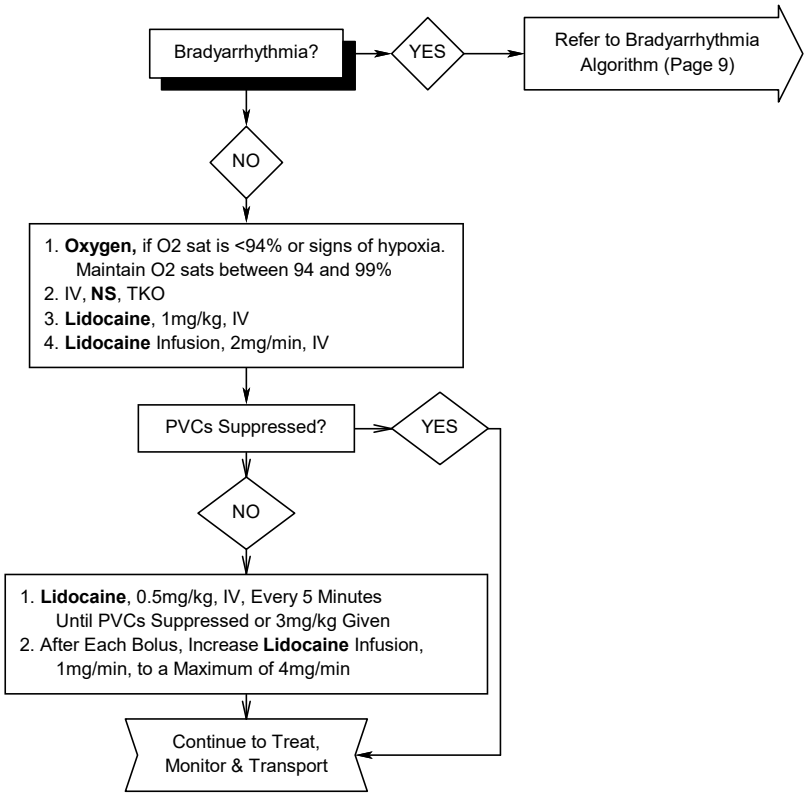
Fluid challenge 20cc/kg over 10 minutes. Repeat until clinical signs of adequate perfusion are present. Monitor patient for pulmonary edema.

PEDIATRIC DOSE

- **Dopamine**, 5mcg/kg/min, IV; If perfusion not adequate after 2 minutes, Increase to max of 10mcg/kg/min
- **Lidocaine**, 1mg/kg, IV
- **Lidocaine** Drip 30mcg/Kg/min, IV

SIGNIFICANT PVCs*

EMT-Paramedic



***SIGNIFICANT PVCs**

1. Runs of Ventricular Tachycardia
2. R on T Phenomenon
3. Multiformed PVCs or PVCs > 10/min w/ Chest Pain, Hypotension, or Shortness of Breath

Stable Bigeminy, Trigeminy & Quadrigeminy should NOT be treated.

SUPRAVENTRICULAR TACHYCARDIA (>150)

EMT-Paramedic

1. **Oxygen,** if O2 sat is <94% or signs of hypoxia. Maintain O2 sats between 94 and 99%
2. IV, **NS**, TKO

*Repeated Cardioversions Are Done Only if There is NO Rhythm Change.

Patient Conscious?

NO

1. Synchronized Cardiovert @ 100 Joules
2. Synchronized Cardiovert @ 200 Joules*
3. Synchronized Cardiovert @ 300 Joules*
4. Synchronized Cardiovert @ 360 Joules*

Rhythm Change?

YES

Refer to Appropriate Algorithm

NO

YES

Valsalva Maneuver

Rhythm Change?

NO

Adenosine, 12mg Rapid IV push followed by 20cc rapid fluid bolus

Rhythm Change?

YES

Refer to Appropriate Algorithm

NO

YES

Refer to Appropriate Algorithm

Adenosine, 12mg Rapid IV push followed by 20cc rapid fluid bolus

Rhythm Change?

YES

Refer to Appropriate Algorithm

NO

Altered Mental Status, Chest Pain, Hypotension, or Other Signs of Shock

NO

Continue to Treat, Monitor & Transport

YES

- If Systolic BP >90mmHg and patient is conscious, give **Versed,** 5mg, IVP (2.5mg if > 60 years old)
- If Systolic BP < 90mmHg and patient is conscious, give **Ketamine** 0.5mg/kg slow IV push to a maximum of 500mg

1. Synchronized Cardiovert @ 100 Joules
2. Synchronized Cardiovert @ 200 Joules*
3. Synchronized Cardiovert @ 300 Joules*
4. Synchronized Cardiovert @ 360 Joules*

Rhythm Change?

NO

****Amiodarone,** 150mg IV Over 10 minutes. May Repeat Once if Needed. (may mix into 100cc of **D5W**)

YES

Refer to Appropriate Algorithm

Rhythm Change?

NO

Continue to Treat, Monitor & Transport

YES

Refer to Appropriate Algorithm

PEDIATRIC DOSES

- Sync. Cardiovert @ 1Joule/kg to a max of 100 J
  Sync. Cardiovert @ 2Joules/kg to a max of 360 J*
- **Adenosine**, 0.1mg/kg Rapid IV Push to a max of 12mg followed by 5-20cc rapid fluid bolus
- **Versed,** 0.1mg/kg, IV, to a max of 2.5mg
- **Ketamine**, 0.5mg/kg slow IV push to a max of 500mg
- **Amiodarone** 5mg/kg, IV, over 20 minutes, to a max single dose of 150mg. May be repeated X 2 (Do not mix into 100cc of **D5W**)

PEDIATRIC SVT RATES
In Infants Heart rate > 220
In Children Heart Rate > 180

** The Administration of **Lidocaine** during IO placement for pain control **ONLY** does not contraindicate the administration of **Amiodarone** if indicated

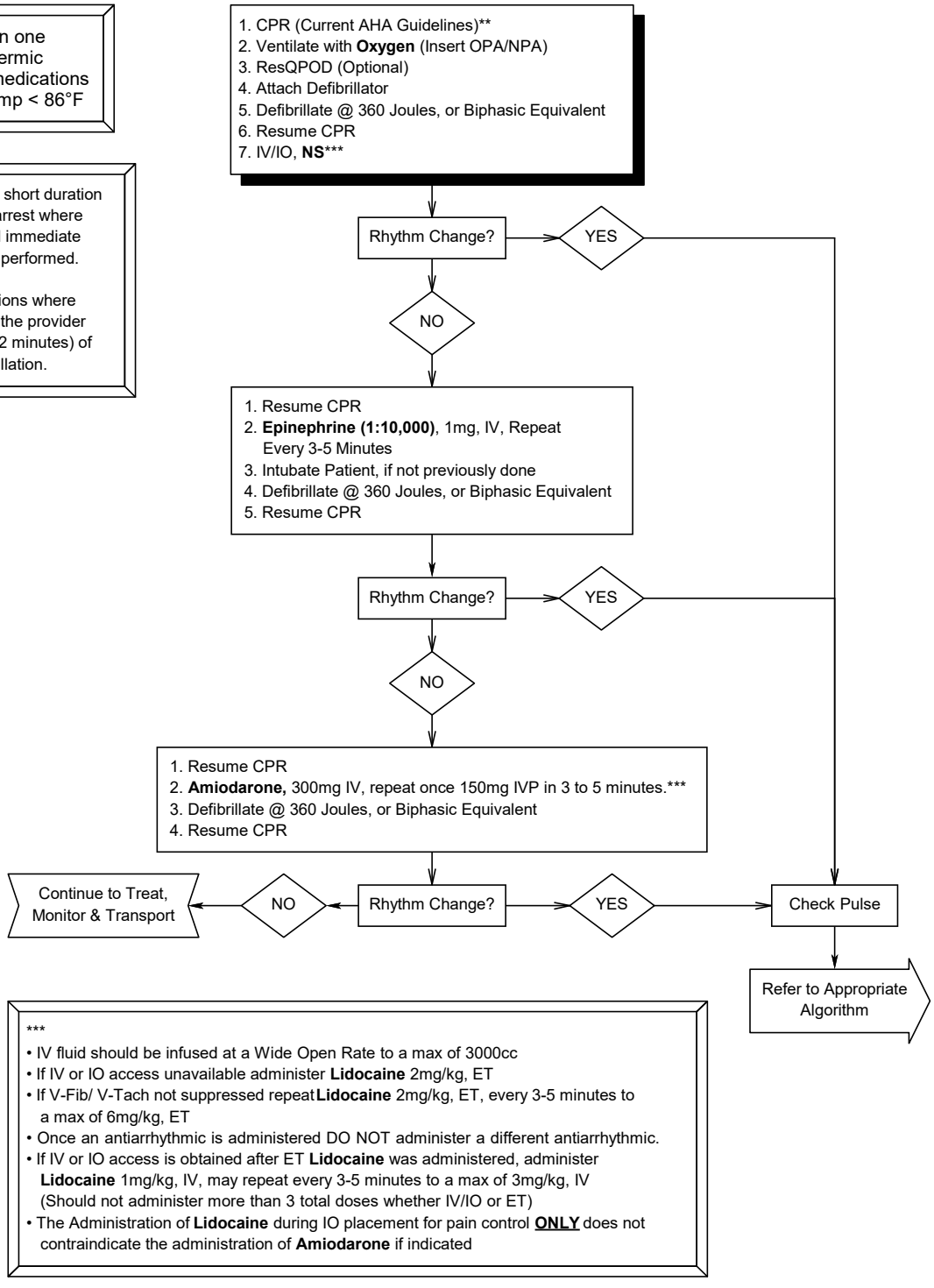
VENTRICULAR FIBRILLATION, or PULSELESS VENTRICULAR TACHYCARDIA* - ADULT

EMT-Paramedic

Do not perform more than one defibrillation on a hypothermic patient and withhold IV medications in patients with a core temp < 86°F

* In all witnessed or known short duration (<4-5 minutes) cardiac arrest where defibrillation is indicated immediate defibrillation should be performed.

In all other arrest situations where defibrillation is indicated the provider should perform 5 cycles (2 minutes) of CPR prior to defibrillation.



***
- IV fluid should be infused at a Wide Open Rate to a max of 3000cc
- If IV or IO access unavailable administer **Lidocaine** 2mg/kg, ET
- If V-Fib/ V-Tach not suppressed repeat **Lidocaine** 2mg/kg, ET, every 3-5 minutes to a max of 6mg/kg, ET
- Once an antiarrhythmic is administered DO NOT administer a different antiarrhythmic.
- If IV or IO access is obtained after ET **Lidocaine** was administered, administer **Lidocaine** 1mg/kg, IV, may repeat every 3-5 minutes to a max of 3mg/kg, IV (Should not administer more than 3 total doses whether IV/IO or ET)
- The Administration of **Lidocaine** during IO placement for pain control **ONLY** does not contraindicate the administration of **Amiodarone** if indicated

** Ideally chest compressions should be interrupted only for rhythm checks and actual defibrillations. The Current AHA guidelines state that when CPR is indicated the provider should perform 5 cycles (2 Minutes) of chest compressions. Continue CPR while drugs are prepared/administered and the defibrillator is charging. Providers must organize care to ensure that chest compressions, initial and subsequent defibrillations are not delayed in order to administer drugs, place advanced airways or obtain vascular access.

VENTRICULAR FIBRILLATION, or PULSELESS VENTRICULAR TACHYCARDIA* - PEDIATRIC

EMT-Paramedic

1. CPR (Current AHA Guidelines)**
2. Ventilate with **Oxygen** (Insert OPA/NPA)
3. Use ResQPOD if the patient has reached puberty (Optional)
4. Attach Defibrillator
5. Defibrillate @ 2 Joules/kg or Biphasic Equivalent
6. Resume CPR
7. IV / IO, **NS*****

Do not perform more than one defibrillation on a hypothermic patient and withhold IV medications in patients with a core temp < 86°F

***Patients ≥ 1 YOA**
In all witnessed or known short duration (<4-5 minutes) cardiac arrest where defibrillation is indicated immediate defibrillation should be performed.

In all other arrest situations where defibrillation is indicated the provider should perform 5 cycles (2 minutes) of CPR prior to defibrillation.

Rhythm Change? → YES

NO

1. Resume CPR
2. **Epinephrine**: Repeat Every 3 to 5 Minutes
   - •IV/IO: 0.01mg/kg to a max of 1mg per single dose(1:10,000, 0.1mL/kg)
   - •ET: 0.1mg/kg (1:1,000, 0.1mL/kg) to a max of 1mg per single dose.
3. Intubate Patient, if not previously done
5. Defibrillate @ 4 Joules/kg, to a max of 360 Joules or Biphasic Equivalent
6. Resume CPR

Rhythm Change? → YES

NO

1. Resume CPR
2. **Amiodarone,** 5mg/kg to a max of 300mg. May repeat once in 3-5 minutes at 2.5mg/kg to a max of 150mg.***
3. Defibrillate @ 4 Joules/kg, to a max of 360 Joules or Biphasic Equivalent
4. Resume CPR

Rhythm Change? → YES → Check Pulse

Rhythm Change? → NO → Continue to Treat, Monitor & Transport

Check Pulse → Refer to Appropriate Algorithm

***
- A fluid challange of 20cc/kg should be administered over 10 minutes in all cardiac arrest situations. May repeat once
- If IV or IO access unavailable administer **Lidocaine** 2mg/kg, ET
- If V-Tach not suppressed repeat **Lidocaine** 2mg/kg, ET, every 3-5 minutes to a max of 6mg/kg, ET
- Once an antiarrhythmic is administered DO NOT administer a different antiarrhythmic
- If IV or IO access is obtained after ET **Lidocaine** was administered, administer **Lidocaine** 1mg/kg, IV, may repeat every 3-5 minutes to a max of 3mg/kg, IV (Should not administer more than 3 total doses whether IV/IO or ET)
- The Administration of **Lidocaine** during IO placement for pain control **ONLY** does not contraindicate the administration of **Amiodarone** if indicated

** Ideally chest compressions should be interrupted only for rhythm checks and actual defibrillations. The Current AHA guidelines state that when CPR is indicated the provider should perform 5 cycles (2 Minutes) of chest compressions. Continue CPR while drugs are prepared/administered and the defibrillator is charging. Providers must organize care to ensure that chest compressions, initial and subsequent defibrillations are not delayed in order to administer drugs, place advanced airways or obtain vascular access.

VENTRICULAR TACHYCARDIA WITH A PULSE

EMT-Paramedic

1. **Oxygen,** if O2 sat is <94% or signs of hypoxia. Maintain O2 sats between 94 and 99%
2. IV, **NS**, TKO

Patient Experiencing Any of the Following:
- •Systolic BP <90mmHG?
- •Chest Pain?
- •Dyspnea?
- •Signs/Symptoms of CHF?
- •Other Signs/Symptoms of Hypoperfusion?

YES → Continued on Following Page → C

NO

Amiodarone 150mg, IV, over 10 minutes. If patient remains without above signs and symptoms. **Amiodarone** may be repeated every 10 minutes as needed to a max of 450mg. (May mix into 100cc of **D5W**)

Ventricular Tachycardia Suppressed?

YES → Class I or II Cardiac Rhythm (P-11) with stable vital signs?

NO → Refer to Appropriate Algorithm

YES → Continue to Treat, Monitor & Transport

NO → Does Patient Have any Signs and Symptoms Listed Above?

YES → (back to Patient Experiencing Any of the Following)

NO → Continue to Treat, Monitor & Transport *

* If at any time the patient starts to experience any of the signs and symptoms noted above, go directly to Synchronized Cardioversion (Page 21).

PEDIATRIC DOSE

•**Amiodarone** 5mg/kg, IV, over 20 minutes, to a max single dose of 150mg. May be repeated X 2 (Do not mix into 100cc of **D5W**)

VENTRICULAR TACHYCARDIA WITH A PULSE (CONTINUED)

EMT-Paramedic

C

- If systolic BP >90mmHg consider **Versed,** 5 mg, IV (2.5 mg if >60 years old)
- If systolic BP <90mmHg, consider **Ketamine** 0.5mg/kg slow IV push to a maximum of 500mg

1. Synchronized Cardiovert @ 100 Joules
2. Synchronized Cardiovert @ 200 Joules**
3. Synchronized Cardiovert @ 300 Joules**
4. Synchronized Cardiovert @ 360 Joules**

**Repeated Cardioversions Are Done Only if There is NO Rhythm Change.

Ventricular Tachycardia Suppressed? → YES → Class I or II Cardiac Rhythm (P-11) with stable vital signs? → NO → Refer to Appropriate Algorithm

Class I or II Cardiac Rhythm (P-11) with stable vital signs? → YES → Refer to Post Resuscitation Management (Page 15)

Ventricular Tachycardia Suppressed? → NO → Intubate Patient If Needed***

1. **Amiodarone** 150mg, IV, over 10 minutes. **Amiodarone** may be repeated every 10 minutes as needed to max of 450mg. (May mix into 100cc of **D5W**)
2. Synchronized Cardiovert @ 360 Joules,** or Energy Setting Previously Successful, Following Each Dose of **Amiodarone**.

Ventricular Tachycardia Suppressed? → YES → Class I or II Cardiac Rhythm (P-11) with stable vital signs? → NO → Refer to Appropriate Algorithm

Class I or II Cardiac Rhythm (P-11) with stable vital signs? → YES → Continue to Treat, Monitor & Transport

Ventricular Tachycardia Suppressed? → NO → Continue to Treat, Monitor & Transport

PEDIATRIC CARDIOVERSION
Infant- 1J/kg up to a max of 100J
Child- 2J/kg up to a max of 360J

***
- If IV or IO access unavailable administer **Lidocaine** 2mg/kg, ET.
- If V-Tach not suppressed repeat **Lidocaine** 2mg/kg, ET, every 3-5 minutes to a max of 6mg/kg, ET
- Once an antiarrhythmic is administered DO NOT administer a different antiarrhythmic.
- If IV or IO access is obtained after ET **Lidocaine** was administered, administer **Lidocaine** 1mg/kg, IV, may repeat every 3-5 minutes to a max of 3mg/kg, IV (Should not administer more than 3 total doses whether IV/IO or ET)
- The Administration of **Lidocaine** during IO placement for pain control **ONLY** does not contraindicate the administration of **Amiodarone** if indicated

PEDIATRIC DOSE
- **Amiodarone** 5mg/kg, IV, over 20 minutes, to a max single dose of 150mg. May be repeated X 2 (Do not mix into 100cc of **D5W**)
- **Versed,** 0.1mg/kg, IV, to a max of 2.5mg
- **Ketamine**, 0.5mg/kg slow IV push to a max of 500mg
- **Lidocaine** 2mg/kg, ET, every 3-5 minutes, to max of 6mg/kg.
- If IV or IO access is obtained after ET **Lidocaine** was administered, administer **Lidocaine** 1mg/kg, IV, may repeat every 3-5 minutes to a max of 3mg/kg, IV (Should not administer more than 3 total doses whether IV/IO or ET)
- Once an antiarrhythmic is administered DO NOT administer a different antiarrhythmic.

EMT-PARAMEDIC

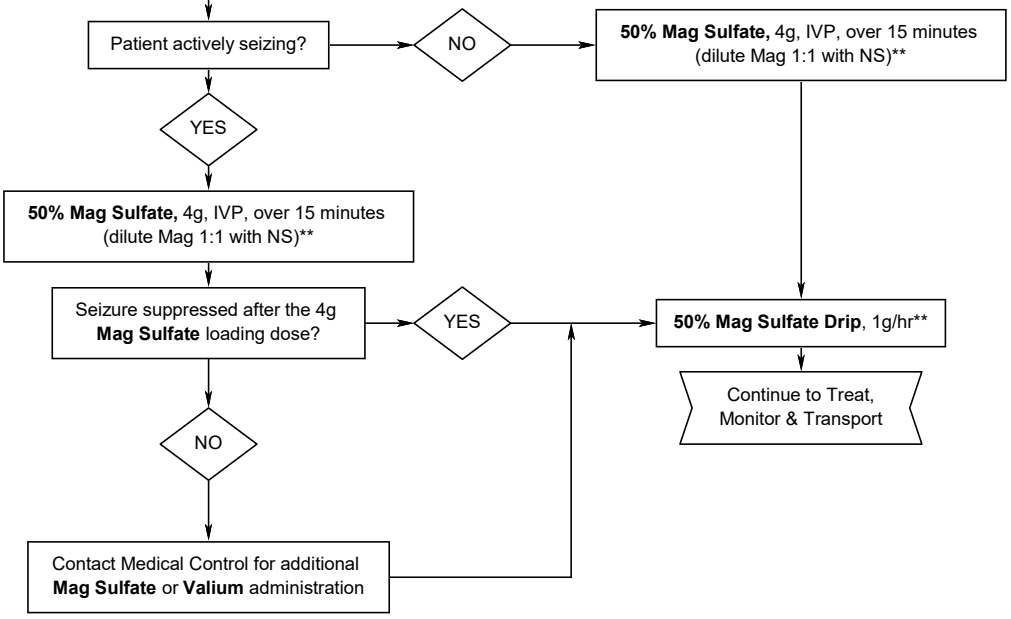
OBSTETRIC EMERGENCIES

ECLAMPSIA*

EMT-Paramedic

1. If actively seizing remove the patient from potentially harmful enviroment; Do Not forcefully restrain the patient
2. Secure Airway
3. **Oxygen**
5. If possible place in left lateral recumbent postion
6. Assist Ventilations if Respirations Inadequate (Insert OPA/NPA)
7. Monitor EKG
8. IV, **NS**, TKO

* Eclampsia is defined as a presentation of an unexplained seizure or convulsion in the setting of the signs and symptoms of Pre-Eclampsia. Not all patients will be clinically diagnosed with Pre-Eclampsia. It is considered a complication of severe Pre-Eclampsia. It typically occurs during or after the 20th week of gestation or in the postpartum period.



** Signs & Symptoms of Mag Toxicity:

- Muscle weakness
- Decreased LOC
- Depressed respiratons < 10/min
- Hypotension SBP < 90mmHg
- Hyporeflexia

If any of these symptoms occur discontinue **Mag Sulfate** and administer **10% Calcium Gluconate**, 1g, SIVP

Mag Sulfate Drip (1g/hr):
5g in 250cc of NS. Run at 50gtt/min, or
5g in 500cc on NS. Run at 100gtt/min.

OBSTETRIC EMERGENCY

EMT-Paramedic

Patient in Active Labor?

NO

Patient History or Scene Situation Suggestive of Volume Loss?

YES

Refer to Hypovolemia (Non-Traumatic) Algorithm (Page 30)

NO

Any of the Following Present:
- •Swelling of Face/Hands
- •Severe or Continuous Headache
- •Dimmed or Blurred Vision
- •Chills or Fever
- •Dysuria
- •Escape of Fluid From Vagina

NO

YES

1. **Oxygen**
2. IV, **NS**, TKO

Continue to Treat, Monitor & Transport

YES

Delivery Imminent?

NO

1. Take Vital SIgns
2. Obtain Patient History
3. **Oxygen**
4. IV, **NS**, TKO

Continue to Monitor & Transport

YES

If There is Time Before Delivery:
1. **Oxygen**
2. Obtain Vital Signs
3. Obtain Patient History
4. IV, **NS**, TKO

Assist Delivery:
1. Suction Infant's Mouth & Nose as Head Presents
2. ABCs for Infant
3. Dry Infant
4. Clamp & Cut Cord
5. Keep Infant Warm
6. Note APGAR (1 Minute)
7. Repeat APGAR @ 5 Minutes (If <7, Repeat Every 5 Minutes for 20 Minutes)

After Delivery:
1. Massage Uterus
2. Allow Infant to Breast Feed
3. Monitor Vital Signs of Both Patients
4. Assist Delivery of Placenta

Blood Loss Produces >5 Blood Soaked Pads?

NO

YES

2 IVs, **NS**, WO, to achieve clinical effect

Continue to Treat, Monitor & Transport

Sign	0 Points	1 Point	2 Points
Appearance	Blue or Pale	Body Pink Extremities Blue	Completely Pink
Pulse Rate	Absent	<100	>100
Grimmace	No Response	Grimmaces or Whimpers	Active Cries
Activity	Absent (Flaccid)	Some Flexion of Extremities	Active Extremity Motion
Respiratory Effort	Absent	Slow & Irregular	Strongly Crying

EMT-PARAMEDIC

OTHER MEDICAL EMERGENCIES

ALLERGIC REACTION*

EMT-Paramedic

* Administer **Decadron** 20mg, IV, to a Patients with Bee Stings

1. ABCs
2. **Oxygen**
3. Assist Ventilations if Respirations Inadequate (Insert OPA/NPA if needed)
4. Monitor EKG
5. IV, **NS**, TKO

Systolic BP >90mmHg with Adequate Perfusion?

NO

1. Run IV to Obtain Systolic BP >90mmHg
2. **Benadryl**, 50mg, IV

Patient Conscious?

YES

Epinephrine (1:10,000), 0.2mg, IV; Repeat Dose x1 in 3-5 Minutes if Needed

NO

Epinephrine (1:10,000), 0.5mg, IV

YES

Benadryl 50mg, IV

Dyspnea Present?

NO

Continue to Treat, Monitor & Transport

YES

** 1. **Duo-Neb** (0.5mg Ipratropium Bromide with 3mg Albuterol) via nebulizer. May be repeated as needed if improvement noted.
2. **Decadron** 20mg, IV ***

Signs & Symptoms Relieved?

NO

1. **Xopenex** (optional), if available 1.25mg/3cc, HHN, repeat as needed
2. If **Xopenex** not available, repeat **Duo-Neb** (0.5mg Ipratropium Bromide with 3mg Albuterol) via HHN as needed

YES

Continue to Treat, Monitor & Transport

** Generally, **Duo-Neb** should be utilized as the first line drug. However, if the patient has had previous success with **Xopenex**, **Xopenex** may be administered, if available, before **Duo-Neb**

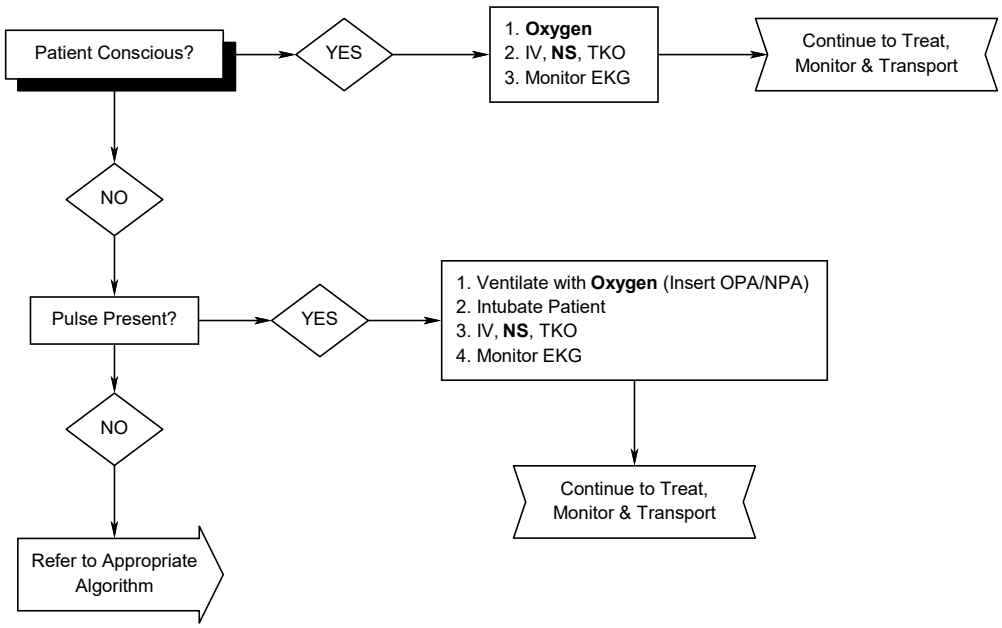
*** If dyspnea not relieved contact medical control for use of **Epinephrine(1:1,000)** 0.3mg (0.3cc), IM

PEDIATRIC DOSE

- **Epinephrine (1:10,000)**, 0.01mg/kg, IV to a max of 0.5mg(5cc) **(Administer only if evidence of Shock is present)**
- **Epinephrine (1:1,000)**, 0.01mg/kg, to a max of 0.15mg (0.15cc), IM
- **Benadryl** 1mg/kg, IV to a max of 50mg
- **Decadron** 0.6mg/kg to a max of 20mg, Do not administer **Decadron** to patients < 2 years of age.
- **Duo-Neb** (0.5mg Ipratropium Bromide with 3mg Albuterol), by nebulizer, dose and frequency same as adult
- **Xopenex (optional)**, 1.25mg via nebulizer, same dose and frequency as adult

COLD EXPOSURE (SYSTEMIC HYPOTHERMIA)
(Estimated Core Temp. < 86°F)

EMT-Paramedic



- Suspect Hypothermia in any Patient with An Altered Level of Consciousness in a Cool Environment
- Move ALL Patients Gently, to Avoid Serious Dysrhythmias
- Remove all Wet Clothing
- Wrap patient in blankets
- Do Not Actively Rewarm Patient in Prehospital Environment
- Avoid Extensive Advanced Life Support in Prehospital Environment
- Resuscitate ALL Cardiac Arrest Patients who are Hypothermic

*DECREASED LEVEL OF CONSCIOUSNESS (NON-TRAUMATIC)

EMT-Paramedic

1. ABCs
2. **Oxygen**
3. Assist Ventilations if Respirations Inadequate (Insert OPA/NPA if needed)
4. Monitor EKG
5. IV, **NS**, TKO
6. Blood draw for labs (P-16)
7. Determine Blood Glucose

Blood Glucose >70 mg/dL?

NO → **Dextrose 10% 25g/250cc, IV, Wide Open, 10gtts set

Mental Status Improved?

YES → Continue to Treat, Monitor & Transport

NO → Does the patient present with any accompanying motor or sensory deficits?

YES → Does the patient present with any accompanying motor or sensory deficits?

Does the patient present with any accompanying motor or sensory deficits?

YES → Refer to Stroke/TIA Algorithm (Page 34)

NO → Is patient taking any of the following?

- **MS Contin**
- **Oxycontin**
- **Diluadid**
- **Fentanyl/Duragesic Patch**
- **Stadol**

YES → To prevent acute withdrawal syndrome administer **Narcan** in Increments of 0.1mg every 2-3 minutes until clinical effect noted.

NO/UNKNOWN → ***Naloxone (Narcan)**, 2mg, IV

Mental Status Improved?

YES → Continue to Treat, Monitor & Transport

NO → Class I or II Rhythm? (P-11)

YES → 1. **Repeat **Dextrose 10%,** 25g/250cc, if indicated and BGL remains < 70mg/dL
2. ****Repeat **Naloxone (Narcan)**, 2mg, IV, if No improvement in mental status

Mental Status Improved?

NO → Intubate Patient, if Needed

Eliminate other possibilities*****

YES → Continue to Treat, Monitor & Transport

NO → Refer to Appropriate Algorithm

* If the patient presents agitated/combative and is deemed a threat to the crew or themselves refer to Chemical Sedation (P-17)

**

- **Dextrose 10%, 25g/250cc,** should be infused at a wide-open rate until the patient becomes responsive. Once responsive obtain BGL. If BGL ≥ 90mg/dL slow **D10** infusion to a TKO rate and monitor to maintain desired effect.
- If venous access is unobtainable administer **Glucagon,** 1mg/unit, IM (Optional). Appropriate training and testing must be documented prior to administration of **Glucagon** via IM injection. Do Not establish EZ-IO unless BGL is < 50 mg/dL and/or pt condition warrants

*** If patient is respiratory compromised and a needleless delivery system is desired, administer, **Naloxone (Narcan)**, 2mg, IN, repeat once in 5 minutes if necessary (P-24)

**** When administering high dose **Narcan** to an opiate dependent patient the benefit must out way the risk (i.e. resp <10/min, SBP <90mmHg, patient unable to control airway etc.).

***** **Other considerations for decreased LOC:**
1. Cold Exposure (Page 25)
2. Heat Exposure (Page 29)
3. Hypovolemia (Page 30)

PEDIATRIC DOSE

- **Dextrose 10%** (25g/250cc), Wide-open with a 60gtts IV set until patient becomes responsive. Once responsive obtain a BGL. If BGL is ≥ 90mg/dL slow D10 infusion to a TKO rate and monitor to maintain desired effect. Monitor Lung sounds closely
- **Naloxone (Narcan)**, 0.1mg/kg, IV, to a max of 2mg
- **Naloxone (Narcan)**, 0.1mg/kg, IN, to a max of 2mg
- **Glucagon**, 0.5mg, IM (Optional)

FEVER / SEPSIS

EMT-Paramedic

Pediatric SIRS (Systemic Inflammatory Response Syndrome) Criteria:
-Temperature (refer to chart)
--Increased Heart Rate (refer to chart)
-Increased Respiratory Rate (refer to chart)
-Hypotension (refer to chart)
-$ETCO_2$ reading below 25mmHg

Age	Heart Rate	Resp. Rate	Systolic BP	Temp. (°F)
0d – 1m	> 205	> 60	< 60	< 96.8 or > 100.4
≥ 1m – 3 m	> 205	> 60	< 70	< 96.8 or > 100.4
≥ 3m – 1 y	> 190	> 60	< 70	< 96.8 or > 101.3
≥ 1y – 2y	> 190	> 40	< 72-74	< 96.8 or > 101.3
≥ 2y – 4y	> 140	> 40	< 74-78	< 96.8 or > 101.3
≥ 4y – 6y	> 140	> 34	< 78-82	< 96.8 or > 101.3
≥ 6y – 10y	> 140	> 30	< 82-90	< 96.8 or > 101.3
≥ 10y – 13y	> 100	> 30	< 90	< 96.8 or > 101.3
≥ 13y	> 100	> 16	< 90	< 96.8 or > 101.3

If two or more criteria have been met AND the patient has a suspected infection, notify the ED of "**Code Sepsis**"

1. **Oxygen** if O2 sat is <94% or signs of hypoxia or shock. Maintain O2 sats between 94 and 99%
2. Assist Ventilations if Respirations Inadequate (Insert OPA/NPA if needed)
3. Intubate Patient, if Necessary
4. IV, **NS**, TKO
5. Monitor EKG
6. Monitor $ETCO_2$ if capable

Adult SIRS (Systemic Inflammatory Response Syndrome) Criteria:
-Temperature < 93.6° F. or > 100.4° F.
-Heart rate > 90 per minute
-Respiratory rate > 20 per minute
-WBC > 12,000 mm^3mm
-$ETCO_2$ reading below 25mmHg
If two or more criteria have been met AND the patient has a suspected infection, notify the ED of "**Code Sepsis**"

Class I or II Cardiac Rhythm? (P-11)
NO → Refer to Appropriate Algorithm as Indicated
YES

Fever of 100.4 F. or Greater?
NO → Continue to Treat, Monitor & Transport
YES

Sign/Symptoms:
Warm
Flushed
Diaphoretic
Chills
Hypotension
Tachycardia

Administer **Ibuprofen*** 10mg/kg up to 800mg PO
or
Administer **Acetaminophen**** 10mg/kg up to 1,000mg PO

Signs/Symptoms of Dehydration or Shock?
NO
YES

IV of NS WO to 500mL to 1 Liter

SBP < 90mmHG?
NO → Continue to Treat, Monitor & Transport
YES

Dopamine, 5mcg/kg/min, IV, Increased by 5mcg/kg/min every 2 minutes until:
•Maximum of 20mcg/kg/min
•Systolic BP 90-110mmHg

Continue to Treat, Monitor & Transport

*__Ibuprofen__ should **NOT** be used if the patient is pregnant or has received Ibuprofen within the last 4 hours.
If there are no contraindications, Ibuprofen can be administered after 90 minutes of a dose of Acetaminophen.
Ibuprofen dosages should be rounded to the nearest 200mg increment

__Acetaminophen__ should **NOT be used for the patient with liver disease or has received Acetaminophen within the last 4 hours.
If there are no contraindications, Acetaminophen can be administered after 90 minutes of a dose of Ibuprofen.
Acetaminophen dosages should be rounded to the nearest 500mg increment

PEDIATRIC DOSE

- Utilize **Liquid Children's Motrin** for pediatric fever management.
- **Liquid Children's Motrin** (**Ibuprofen**): 10mg/kg to a max of 800mg if patient has not received Ibuprofen in the last 4 hours.
- **Fluid challenge**: NS 20cc/kg over 10 minutes. Repeat until clinical signs of adequate perfusion are present. Monitor patient for pulmonary edema
- **Dopamine:** 5mcg/kg/min, IV; If perfusion is not adequate after 2 minutes, Increase to max of 10mcg/kg/min

HAZARDOUS/TOXIC MATERIAL EXPOSURE

EMT-Paramedic

1. Observe Hazmat Precautions*
2. Do Not Enter Incident Area Without Appropriate Protective Clothing/Respiratory Equipment
3. Evacuate Patients From Exposure Without Risking EMS Personnel Safety
4. In Cooperation With Police/Fire Authorities, Evacuate/Isolate Scene
5. Attempt to Identify Nature of Hazardous Material as Soon as Possible

Patient Conscious?

NO

1. ABCs
2. Ventilate with **Oxygen** (Insert OPA/NPA)
3. Intubate Patient

YES

Oxygen

1. Remove/Isolate Contaminated Clothing at Site, if Appropriate
2. Flush Eyes/Skin With **NS** if Appropriate (Brush Off Dry Chemicals First)
3. Wrap Patient in Blanket to Reduce Spread of Contaminant, if Appropriate
4. Consider Need to Use Second EMS Unit to Transport
5. Obtain Expert Advice for Personnel/ Equipment Decontamination

Paraquat Poisoning
Do Not Give Supplemental **Oxygen**

IV, **NS**, TKO (if needed)

Class I or II Rhythm? (P-11)

YES

Continue to Treat, Monitor & Transport

NO

Refer to Appropriate Algorithm

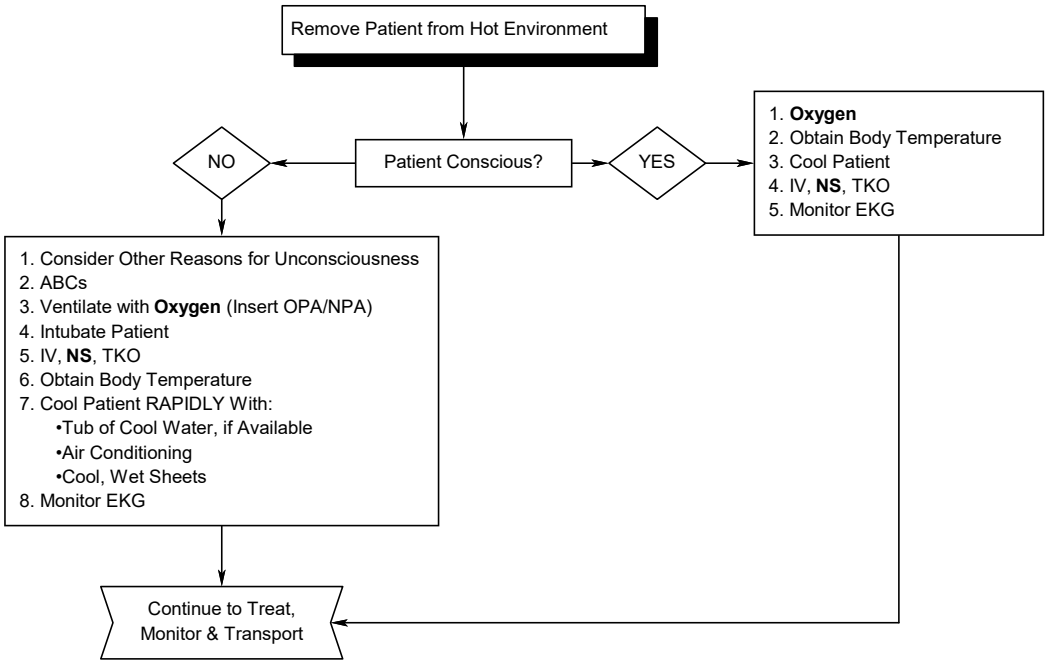
*** <u>HAZMAT PRECAUTIONS</u>**

1. Assume ALL Chemicals Hazardous Until Proven Otherwise
2. Approach From Upwind
3. Stay Out of Low-Lying Areas; Stay Uphill if Possible
4. Do Not Walk Into or Touch Spilled Chemicals; Wear Gloves When Touching Contaminated Patients
5. Avoid Smoke, Gasses, Fumes, Vapors
6. Keep Combustibles Away
7. Keep Ignition Sources Away

- In Multiple Patient Incidents, Use Triage to Determine Which Patients Receive IVs
- All Patients Should Be Transported for Observation, Regardless of how Mild the Episode Seems to be
- Rescue Attempts, Scene Management, & Patient Care Should be Based on Best Information Available about the Material
- Coordinate with Fire Authorities & Regional EMS Communications Center to Obtain Information
- Air transport should be avoided

HEAT EXPOSURE (HEAT STROKE)

EMT-Paramedic

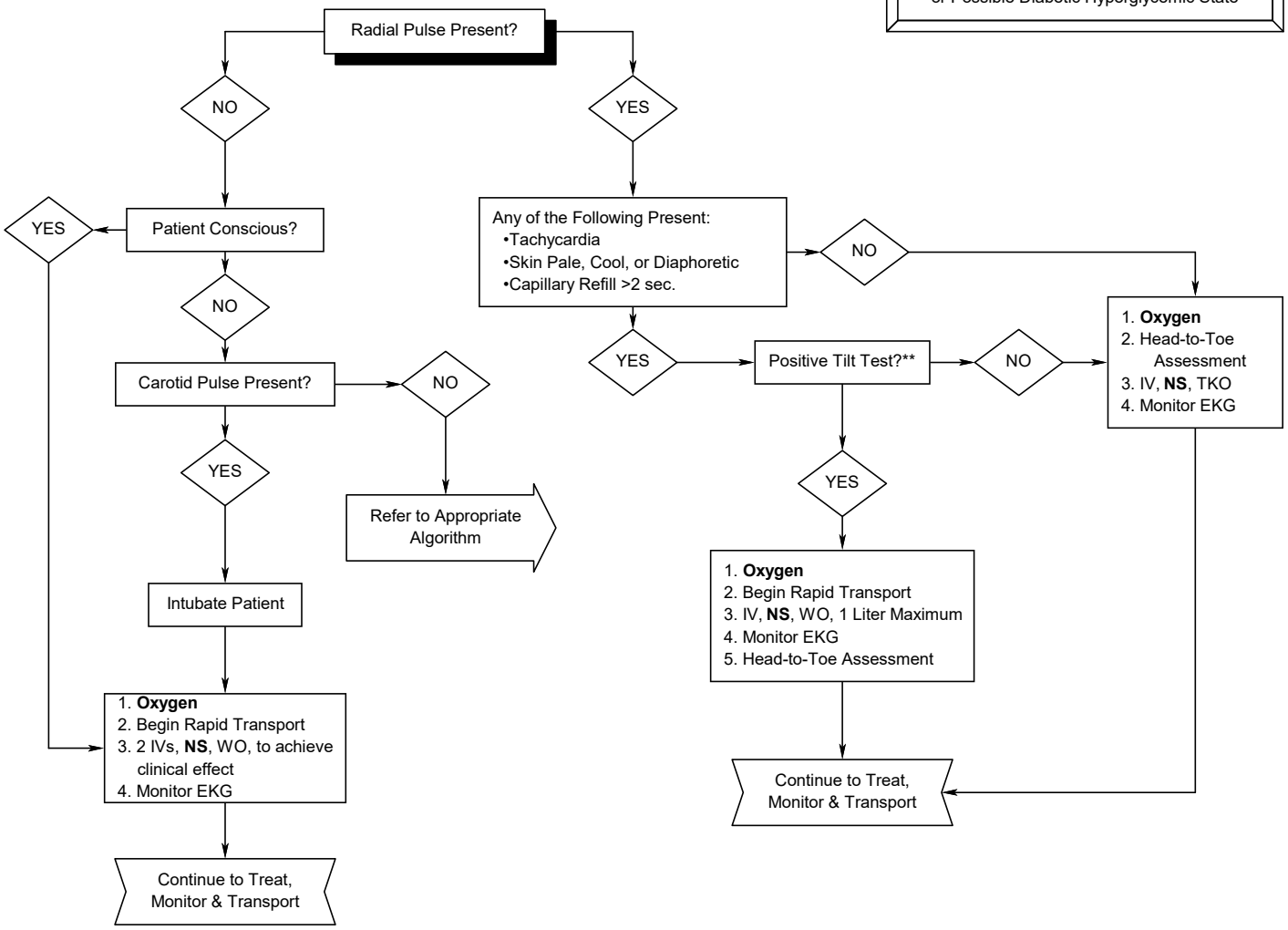


Suspect Heat Stroke in any Patient with an Altered Level of Consciousness in a Hot Environment

HYPOVOLEMIA* (NON-TRAUMATIC)

EMT-Paramedic

*Possible Causes Could Include Vomiting, Diarrhea, Bloody/Dark Stool, Abdominal Pain, or Possible Diabetic Hyperglycemic State



PEDIATRIC

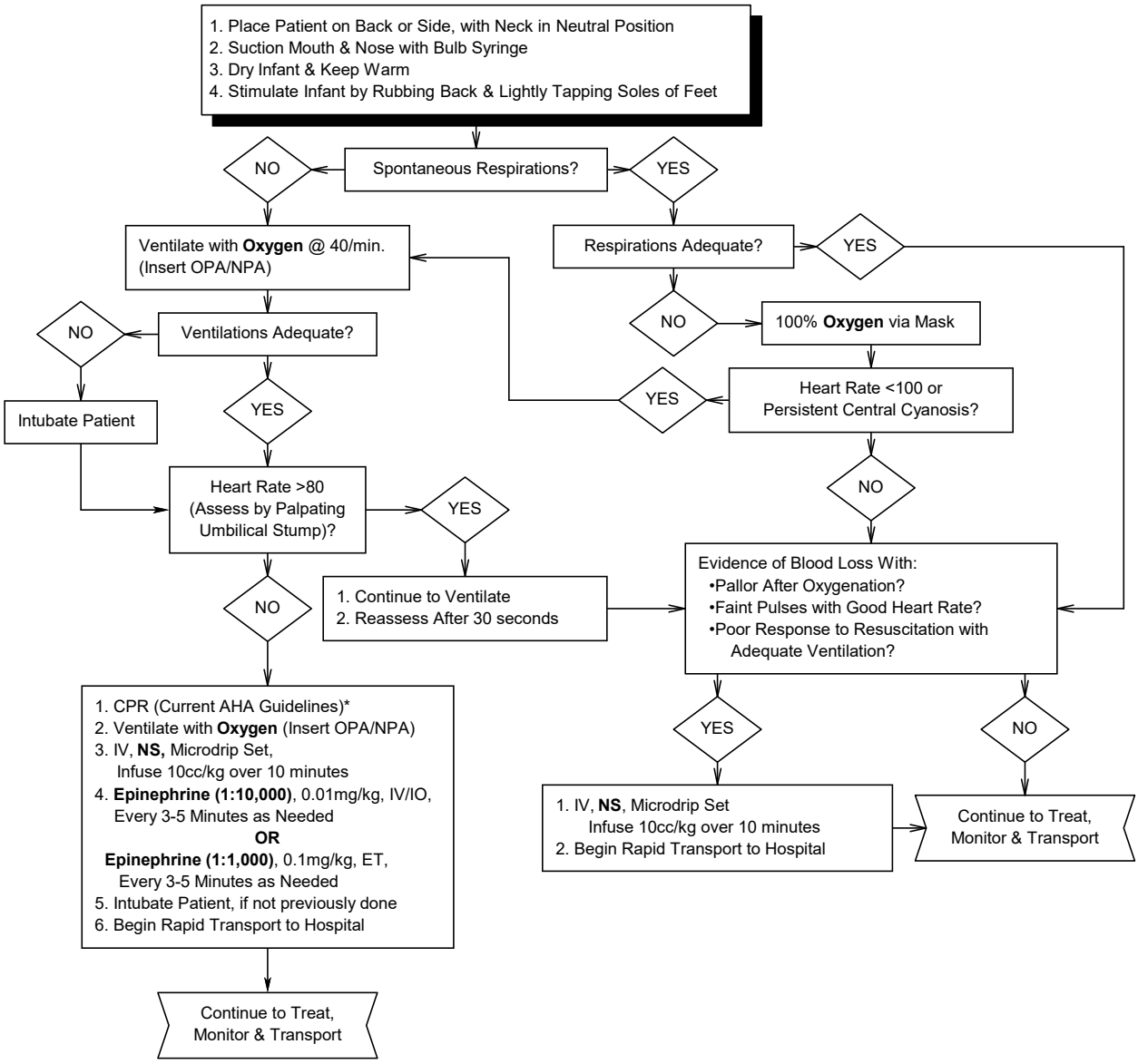
Fluid challenge 20cc/kg over 10 minutes. Repeat until clinical signs of adequate perfusion are present. Monitor patient for pulmonary edema.

****POSITIVE TILT TEST**

Pulse Rate Increases by 20, Systolic BP Decreases by 20mmHg, or Diastolic BP Decreases by 10mmHg when Patient is Raised from Supine to Sitting position **OR** Patient will Not Tolerate Being Raised From Supine to Sitting Position Because of Weakness, Dizziness, Presyncope, or Syncope.

NEONATAL RESUSCITATION

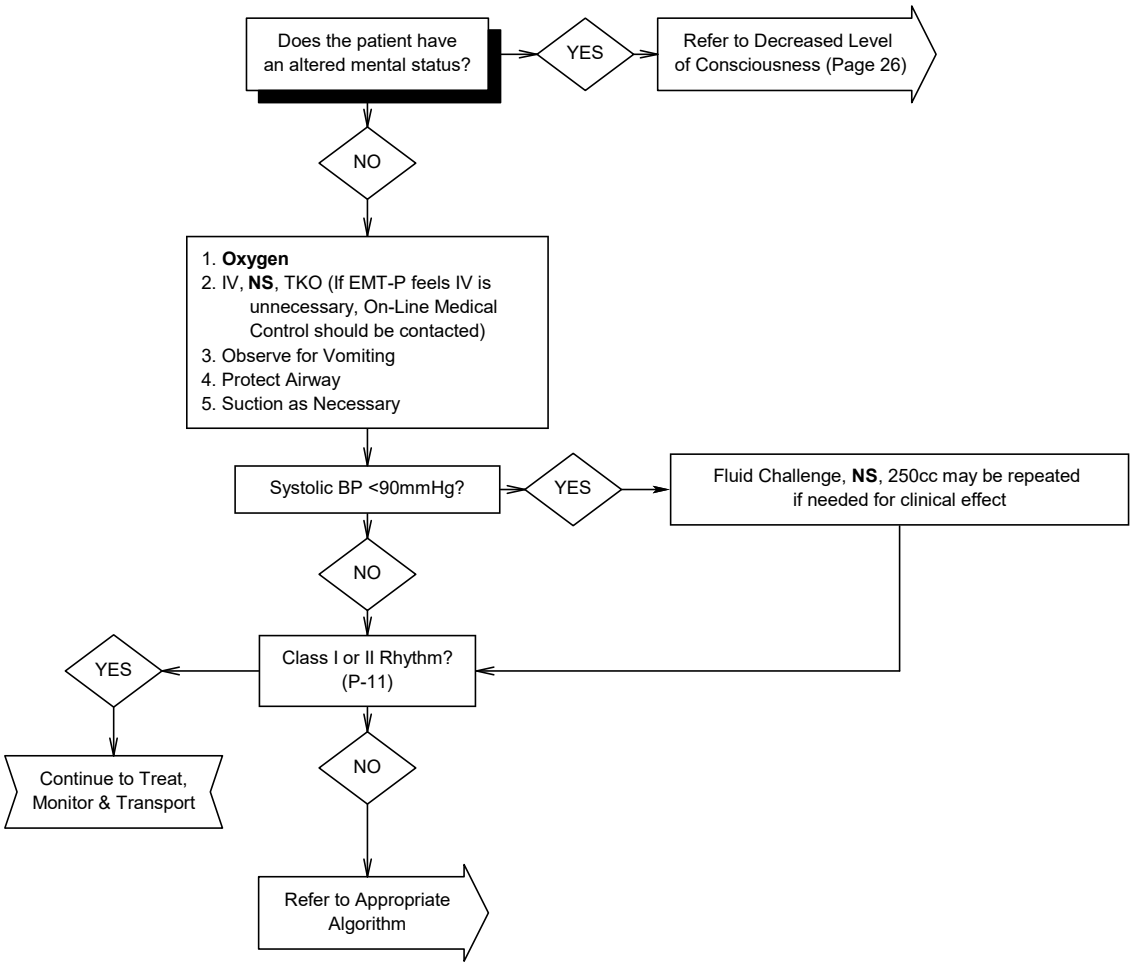
EMT-Paramedic



* Ideally chest compressions should be interrupted only for rhythm checks and actual defibrillations. The Current AHA guidelines state that when CPR is indicated the provider should perform 5 cycles (2 Minutes) of chest compressions. Continue CPR while drugs are prepared/administered and the defibrillator is charging. Providers must organize care to ensure that chest compressions, initial and subsequent defibrillations are not delayed in order to administer drugs, place advanced airways or obtain vascular access.

POISONING/OVERDOSE

EMT-Paramedic



Paraquat Poisoning
Do Not Give Supplemental **Oxygen**

ORGANO PHOSPHATE POISONING
Atropine 2mg IV push every 5 min until lungs clear and BP > 90 systolic, and pulse > 60

Bring ALL Potential Agent Containers and, Samples of Agents to the Emergency Department if possible

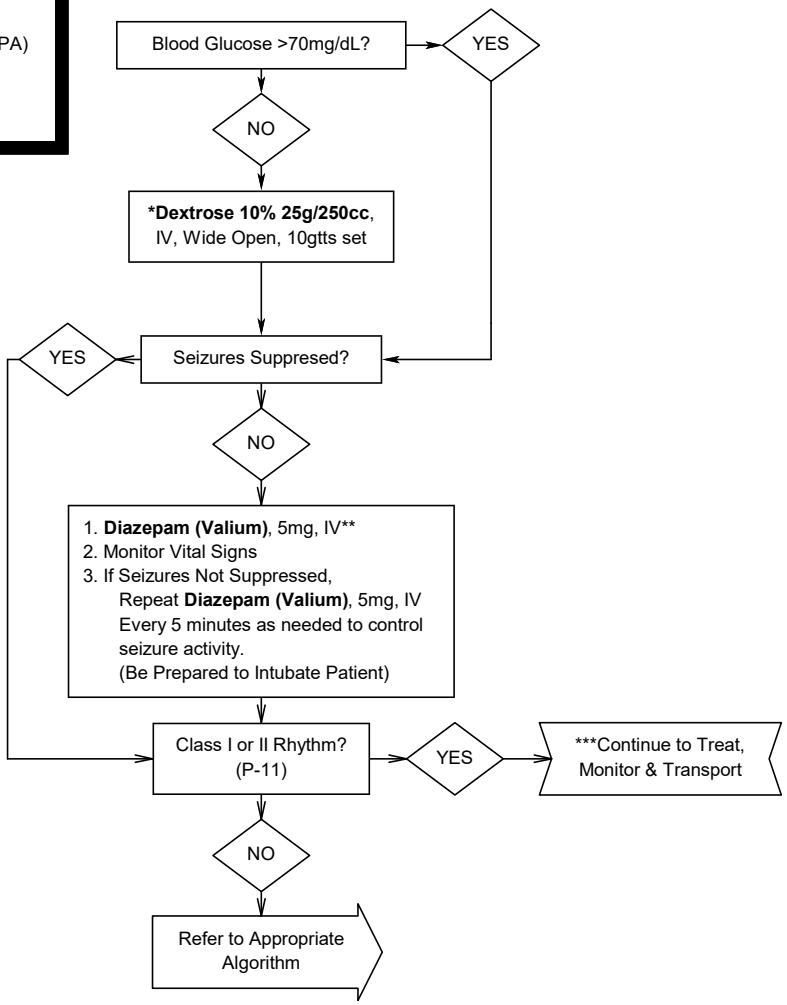
PEDIATRIC DOSE
Atropine 0.05mg/kg to a max of 2mg per dose every 10-15 minutes until lungs clear and BP > 90 Systolic and Pulse > 60 (Minimum Dose of 0.1mg)

PEDIATRIC
Fluid challenge 20cc/kg over 10 minutes. Repeat until clinical signs of adequate perfusion are present. Monitor patient for pulmonary edema.

SEIZURES

EMT-Paramedic

1. Remove Patient From Potentially Harmful Environment;
   Do NOT Forcefully Restrain Patient
2. Secure Airway
3. **Oxygen**
4. Assist Ventilations if Respirations Inadequate (Insert OPA/NPA)
5. Monitor EKG
6. IV, **NS**, TKO
7. Determine Blood Glucose



*

- **Dextrose 10%, 25g/250cc,** should be infused at a wide-open rate until the patient becomes responsive. Once responsive obtain BGL. If BGL ≥ 90mg/dL slow **D10** infusion to a TKO rate and monitor to maintain desired effect.

- If venous access is unobtainable administer **Glucagon,** 1mg/unit, IM (Optional). Appropriate training and testing must be documented prior to administration of **Glucagon** via IM injection. Do Not establish EZ-IO unless BGL is < 50 mg/dL and/or pt condition warrants

If IV access is delayed, or impossible, **Midazolam (Versed) 0.2mg/kg, IN, to a max of 5mg, may repeat in 5-10 minutes at 0.1mg/kg, IN, to a max of 2.5mg per dose. (P-24), or **Midazolam (Versed)** 5mg, IM, may repeat 2.5mg every 10 minutes as needed, or **Diazepam (Valium)**, Rectally, 10mg per dose, administer proximal to the rectal sphincher.

PEDIATRIC DOSE

- **Dextrose 10%** (25g/250cc), Wide-open with a 60gtts IV set until pateint becomes responsive. Once responsive obtain a BGL. If BGL is ≥ 90mg/dL slow D10 infusion to a TKO rate and monitor to maintain desired effect. Monitor Lung sounds closely
- **Diazepam (Valium**), 0.1mg/kg, IV, to a max of 5mg per dose
- **Diazepam (Valium)**, 0.5mg/kg, Rectal to a max of 10mg per dose
- **Midazolam (Versed)** 0.2mg/kg, IN, to a max of 5mg, may repeat in 5-10 minutes at 0.1mg/kg, IN, to a max of 2.5mg per dose.
- **Midazolam (Versed),** 0.2mg/kg, IM, to max of 5mg, may repeat 0.1mg/kg every 10minutes as needed.
- ***Liquid Motrin (Ibuprofen),** 10mg/kg, PO, to a max of 800mg, for post seizures with temperature > 100.4 and adequate LOC.
- **Glucagon**, 0.5mg, IM (Optional)

STROKE / TIA or NEUROLOGICAL DEFICIT*

EMT-Paramedic

1. ABCs
2. **Oxygen,** if O2 sat is <94% or signs of hypoxia. Maintain O2 sats between 94 and 99%
3. Assist Ventilations if Respirations Inadequate (Insert OPA/NPA if needed)
4. Monitor EKG
5. IV, **NS**, TKO (Establish ≥18g if possible)
6. Blood draw for labs (P-16 & P-34)
7. Determine Blood Glucose

Blood Glucose > 70 mg/dL?

NO → Refer to **Decreased LOC** algorithm (Page 26) Return to this algorithm if necessary

YES

Perform Cincinnati Stroke Scale, (P-32)

Positive finding(s) on Cincinnati Stroke Scale? (P-32)

NO → Consider other possibilities
- •Drug overdose (Page 32)
- •Seizure (Page 33)

YES

If Motor Control Deficit is Present Perform VAN Assessment (P-33)

Reference the Stroke Triage Scheme (P-50)

- • Limit scene time to ≤ 10 minutes and consider **rapid transport** to the appropriate receiving facility
- • Elevate the patients head 30° if not contraindicated
- • Report all positive findings to receiving hospital from the scene if possible, if not report ASAP.
- • Repeat stroke assessments enroute & report findings to receiving hospital

Continue to Treat, Monitor & Transport

***NEUROLOGICAL DEFICIT**
1. Any Sudden Motor or Sensory Deficit
2. Sudden confusion, trouble speaking or understanding
3. Sudden difficulty seeing in one or both eyes
4. Sudden trouble walking, coordination, or focal weakness

If possible inquire about the patients baseline neurological state. Chronic neurological deficits do not warrant rapid transport to a Stroke Center. ALWAYS err on the side of caution if questionable.

Obtain the "time of onset" or "last seen normal time" as this forms the basis for all treatment desicions and should be reported and documented as the exact time (i.e. 1347, NOT about 45 minutes ago)

Patients with the following history and S/S should have an increased suspicion of a Stroke/TIA.
- • Hx: CVA/TIA, Cardiac/Vascular surgeries, DVT, Diabetes, HTN, CAD, A-Fib, Blood thinners.
- • S/S: Altered mentation, Weakness/Paralysis, Visual changes, Sensory loss, Aphasia, Dysathria, Dysphagia, Syncope, Vertigo/Dizziness, Vomiting, Headache, SZ, Respiratory pattern changes, Hyper/Hypotension, Trouble walking/unsteady gait