SOUTH PLAINS EMERGENCY MEDICAL SERVICES

PRE-HOSPITAL TREATMENT PROTOCOLS for EMT-PARAMEDIC

APPROVED FOR USE

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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.

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TREATMENT PROTOCOLS

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 i.e.: SQ injections. 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.

2. Be currently certified in Health Care Provider BLS.

3. Be currently certified in ACLS.

4. 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.

5. Have passed the protocol examination within the past year. A copy of the protocol exam must be forwarded to the SPEMS office. The Medical Director may require additional formal training in the protocols at any time.

6. 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.

7. Leave a copy of **ALL** EMS run reports at the receiving hospital within 24 hours of the call. A patient contact form, list of medications given, and procedures preformed will be given to the patients nurse prior to leaving the receiving facility. Use the approved standard run report form, and by the 10th of each month send a copy of all run reports to the SPEMS Medical Director through the SPEMS office.

8. 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 preformed adult EZ IO placements, and 3 properly preformed pediatric EZ IO placements 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, and pediatric placement of the EZ IO 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, and pediatric placement of the EZ IO to the satisfaction of the Medical Director.

   (*Skills may be checked off by a TDSHS Instructor, SPEMS Peer Reviewer, Associate Medical Director, or the SPEMS Medical Director.)

   AND

   - Participating once per year in a formal laboratory evaluation of pleural decompression, surgical cricothyrotomy, and needle cricothyrotomy conducted by a TDSHS Instructor, SPEMS Peer Reviewer, SPEMS Medical Director, or the Associate Medical Director.

9. These protocols shall only 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 outside of the SPEMS/TSA-B area when off duty and not responding with any emergency service agency (i.e. EMS, Police, or Fire Dept.). In the event that you are outside of the SPEMS/TSA-B area and assist an EMS service, online medical direction must be obtained prior to performing any advanced procedures.

10. 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.

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

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 submit 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**: which 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 life style.

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 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

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 EMT- Intermediate or 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** 50%, 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. 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

6. 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

7. 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.

8. 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.

9. 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.

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

11. 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.

12. 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.

13. "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 preformed. 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.

13. REQUEST ASSISTANCE FROM RECEIVING AREA'S ALS SERVICE:
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. 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. The Medical Control physician may direct a backup response whenever he believes this would be in the patient's best interest. 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.

Patients who could potentially benefit by air transport include, but are not limited to:
- Multiple systems injury (Revised Trauma Score of ≤11).
- Patients whose injuries require care at Level I or Level II Trauma Center.
- Major injuries when prolonged extrication times are anticipated.
- Respiratory insufficiency, or labored at a rate <10 or >35 per minute.
- Hypotension with systolic BP <90mmHg.
- Coma or decreased level of consciousness.
- Patients who are potential candidates for thrombolytic therapy.
- Severe chest pain.
- Obstetric complications.
- Any patient who, in the opinion of the EMS technician, needs rapid transport to a facility where specialized treatment is available.

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 and have determined that rapid transport to the hospital will be needed.

14. 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.

15. 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 1attempt by the secondary paramedic/intermediate. 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)

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), “purple top” (CBC), and “green top” (BMP/CMP). The tubes listed above 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. 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).

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

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 from, pulmonary edema, CHF,COPD and pneumonia. In patients with CHF, CPAP improves hemodynamics by reducing left ventricular preload and afterload.

I. INDICATIONS

a. Any patient who is in respiratory distress with signs and symptoms consistent with pulmonary edema, CHF, COPD or pneumonia **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 Albuterol, Lasix, Morphine, and sublingual Nitroglycerine)
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 non-visualized 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 non-visualized 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 preformed 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.

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.

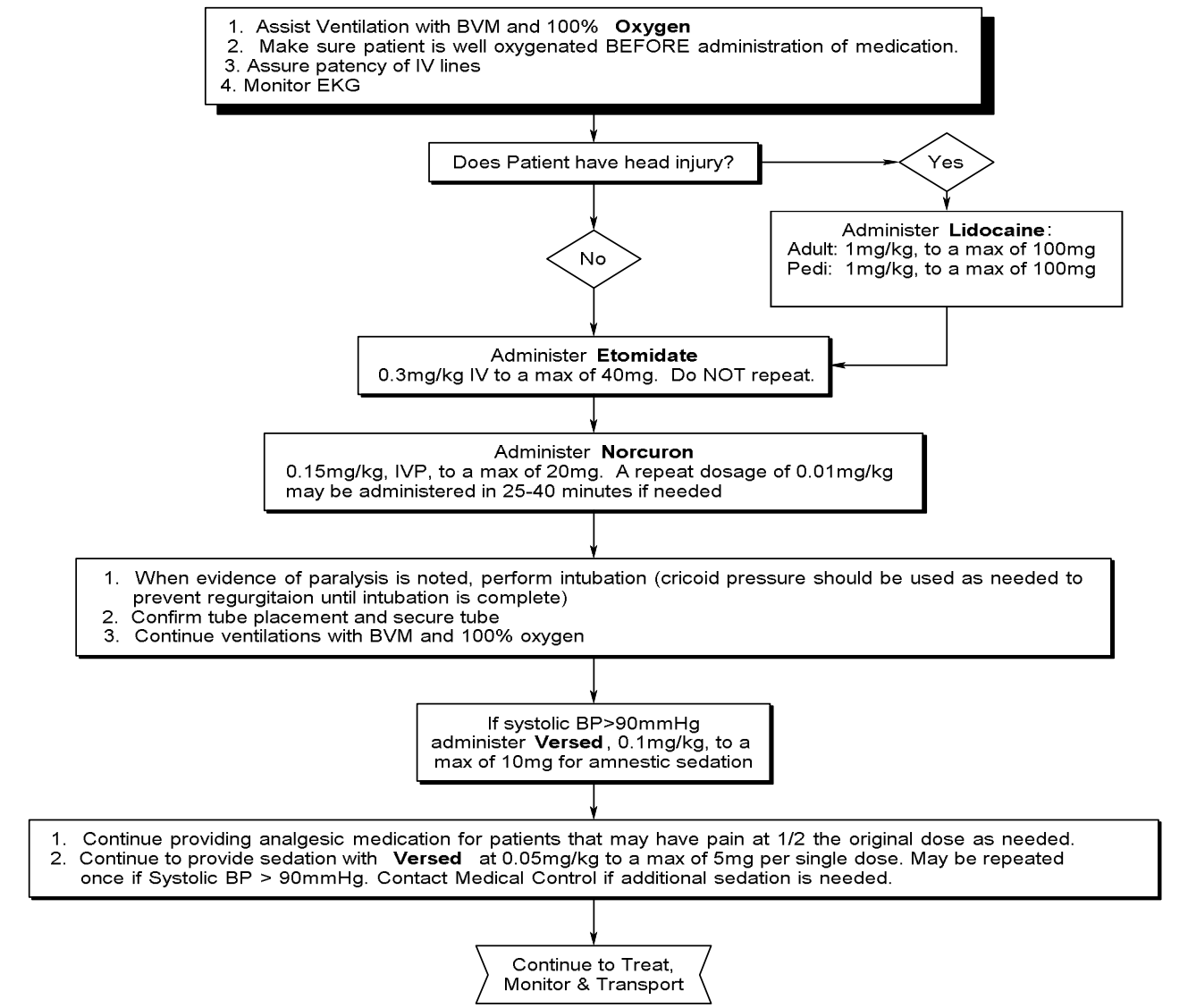
The Medical Director or his designee MUST review ALL cases of paralytic usage.

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/intermediate. 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)

USE OF PHARMACOLOGIC AGENTS TO FACILITATE INTUBATION
USING NORCURON



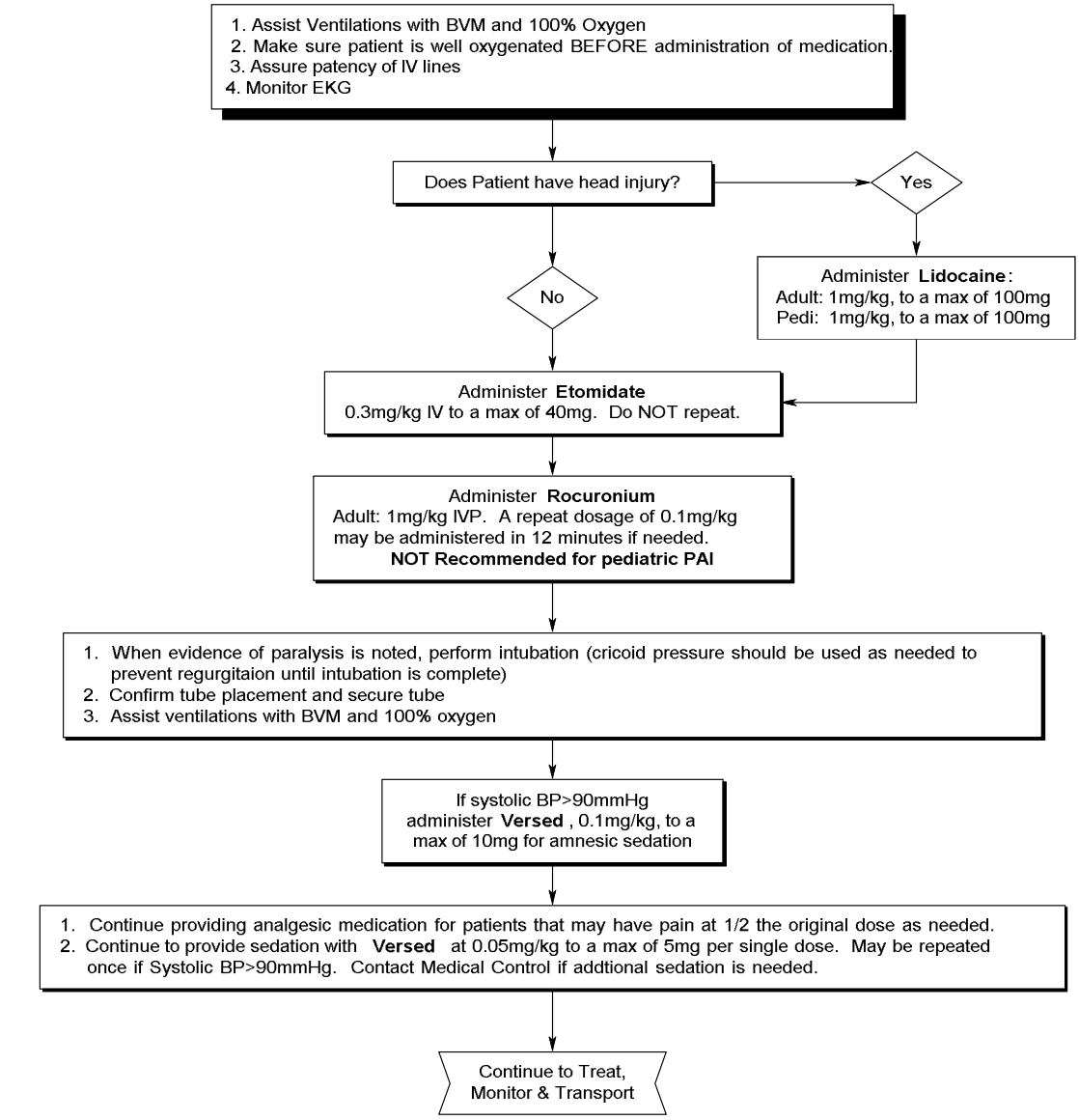
Watch for signs of decreased sedation or increased pain (increase in pulse rate indicates increase in pain). Use continued paralyzation with caution in patients who are at risk for active seizures .

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. 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) This is rarely necessary, but the required equipment for Cricothyrotomy should always be at hand when neuromuscular blocking agents are used.

USE OF PHARMACOLOGIC AGENTS TO FACILITATE INTUBATION

USING ROCURONIUM*

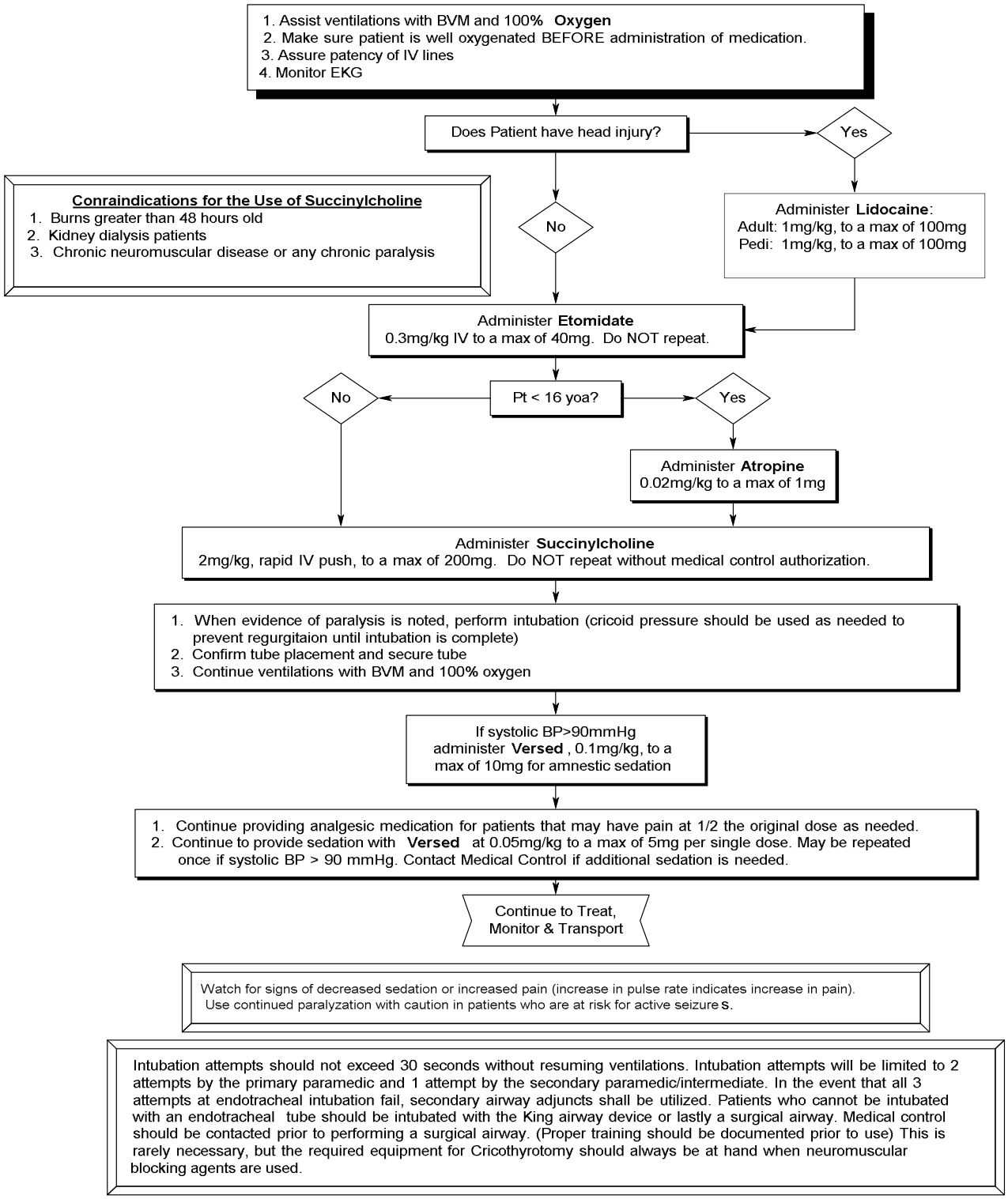
*Adult Use Only



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. 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) This is rarely necessary, but the required equipment for Cricothyrotomy should always be at hand when neuromuscular blocking agents are used.

USE OF PHARMACOLOGIC AGENTS TO FACILITATE INTUBATION
USING SUCCINYLCHOLINE



EXTERNAL PACING:

Paramedics who have access to a transcutaneous cardiac pacemaker, and who have received documented training in the use of the device, may perform cardiac 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.

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.
All other patients needing **oxygen** should receive it via non-rebreather mask. The highest possible oxygen saturation should be maintained. The nasal cannula generally should NOT be used in pre-hospital care.

When a bag-valve-mask is used to ventilate a patient, it should be connected to an oxygen reservoir and **oxygen** administered at > 15 lpm

PAIN MANAGEMENT:

1. **Fentanyl** 5mcg/kg, IV, to a max of 100mcg per single dose for all ages > than 2 years of age. May be repeated X 1 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

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. **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.

4. 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.

5. 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.

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

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 into the anterior surface of the tibia as per manufacturer instructions. Indications listed below.

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 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 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 instruction. Indications listed below.

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 angiocath should be inserted in the mid-clavicular line at the second or third intercostal space. Insert the angiocath 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.

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:

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 should apply the device directly to the ventilation adjunct ie.(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.

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.

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.
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.

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 MANAGED WITH CELOX (optional)

At times, in addition to direct pressure it may be necessary to apply a Hemostatic agent (Celox) to assist in bleeding control. Celox is Chitosan-base and its granules assist in clot formation. It has no identified adverse reaction.

1. Blot excess blood from wound with gauze pad
2. Immediately pour entire contents of pouch directly into the wound
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 package (Celox) to accepting physician

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

PRE-HOSPITAL MEDICATIONS AND INTRAVENOUS FLUIDS

INHALED MEDICATIONS
Oxygen
Albuterol (Ventolin), 2.5mg/3ml (Page 6, 21)
Levalbuterol (Xopenex) 1.25mg/3ml (Page 6)
Racemic Epinephrine (Optional) 2.25% 11.25mg/0.5ml (Page 6)

ORAL MEDICATIONS
Activated Charcoal 50g (P-25)
Aspirin, 325mg tablet (Page 11)
Oral Glucose 15g tube (P-10)
Liquid Children's Motrin 100mg/5ml (Page 30)

SUBLINGUAL MEDICATIONS
Nitroglycerin, 0.4 mg tablet or spray (Page 6, 11)

INTRAMUSCULAR MEDICATIONS
Glucagon 1mg/unit (optional) (Page 23, 30)

INTRAVENOUS FLUIDS
Normal Saline (NS)
Dextrose 5% (D5W) 100cc bag(optional)

SUBCUTANEOUS MEDICATIONS
Epinephrine (1:1,000), 1mg/1cc
(Page 6, 8, 10, 18, 21, 27)

PREMIXED INTRAVENOUS MEDICATIONS
Dopamine (Intropin), 200mg/250cc (Page 9, 12, 13)
Lidocaine, 1g/250cc (Page 13, 15, 17, & 18)

IV MEDICATIONS
Adenosine (Adenocard), 12mg/4cc (Page 16)
Atropine Sulfate, 1mg/10cc (P-18, Page 7, 9, 10, 14, 29)
Amiodarone, 150mg/3cc (P-22, 21)(Page 13, 16, 17, 18, 19, 20)
Dexamethasone (Decadron) 20mg/5cc (Page 6, 21)
Dextrose 50% ($D_{50}W$), 25g/50cc (Page 23, 30)
Diazepam (Valium), 10mg/2cc (Page 30)
Diphenhydramine (Benadryl), 50mg/1cc (Page 21)
Epinephrine (1:10,000), 1mg/10cc
(Page 7, 8, 10, 14, 17, 18, 21, 27)
Etomidate (Amidate) 40mg/20cc (P-16, 17, 18)
Fentanyl 100mcq/2cc (P-20) (Page 1, 3)
Furosemide (Lasix), 40mg/4cc (Page 6)
Labetolol (Normodyne) 20mg/4cc (P-24)
Lidocaine (Xylocaine), 100mg/5cc
(P-16, 17, 18, 20, 21) (Page 13, 15, 17, 18, 20)
Midazolam (Versed), 10mg/2cc (P-16, 17, 18, 43)
(Page 9, 16, 20, 30)
Vecuronium Bromide (Norcuron), 20mg/20cc (P-16)
Morphine Sulfate, 10mg/1cc (P-20)(Page 1, 3, 6, 11)
Naloxone (Narcan), Adult, 2mg/2cc (Page 23)
Rocuronium, 100mg/10cc (P-17)
Sodium Bicarbonate 8.4% (Adult), 50mEq/50cc (P-24)
Succinylcholine (Anectine) 200mg/10cc (P-18)
Zofran 4mg/2cc (P-19, 20) (Page 11)

Services under SPEMS medical direction have the option of stocking three different paralytics, Norcuron, Succinylcholine, and Rocuronium. The service has a choice whether to stock one, two, or all three paralytics. However, Rocuronium MUST be accompanied by one of the others listed above in order to facilitate intubation in pediatric patients.

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.

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) Research studies have not indicated that routine use of sodium bicarbonate in cardiac arrest improves patient outcomes. Sodium bicarbonate may be beneficial if the patient has known pre-existing hyperkalemia, known pre-existing bicarbonate-responsive acidosis, or overdose on tricyclic antidepressants.

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:
1. There is the possibility that the brain is viable.
2. 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)

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 this form is on subsequent pages. The form is considered valid if:

1. All relevant portions have been completed.
2. 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 (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 documente

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)

Page 1 of 2

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 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 TDSHS Out-of-Hospital (OOH) DNR Form: Back Side

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.

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.

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 10 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.

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 II (General) facility may be appropriate if expected transport time to a Level I facility is excessive (>25 minutes).

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

4. 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.

5. 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.

6. 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
  - $2^{nd}/3^{rd}$ 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

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
  - $2^{nd}/3^{rd}$ 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

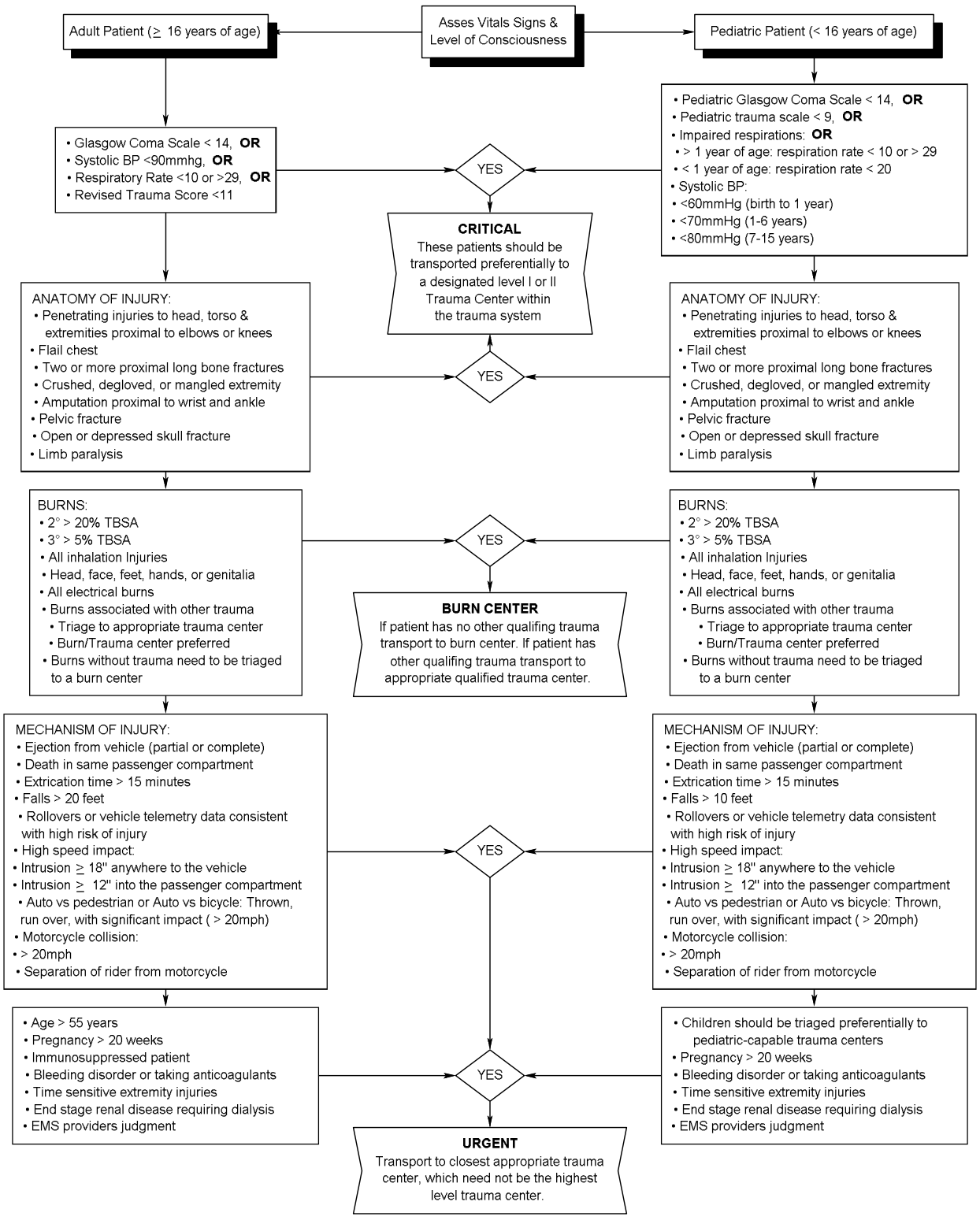
Level II

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

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

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

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.

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, N-5, N-6, AND N-8 CALLS REQUIRE A FULL REPORT (A SPEMS RUN FORM WILL BE A 5 PAGE REPORT). ALL N-3, N-4, AND N-5 CALLS REQUIRE THAT THE SERVICE DIRECTOR OR (DESIGNEE) REVIEW THE WRITTEN REPORT.

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.

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).

Basic Life Support

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

Intermediate Life Support

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.

Advanced Life Support

1. **Midazolam (Versed) 1 to 5mg IV or IM.** (SBP>90mm/Hg or confirmed radial pulses).

   May repeat dose of up to 5mg every 5-10 minutes if blood pressure remains > 90 mmHg systolic or confirmed radial pulses.

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 Midazolam.**

DUTY STATUS-GEOGRAPHICAL AREA

These protocols shall only 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 outside of the SPEMS/TSA-B area when off duty and not responding with any emergency service agency (i.e. EMS, Police, or Fire Dept.). In the event that you are outside of the SPEMS/TSA-B area and assist an EMS service, online medical direction must be obtained prior to performing any advanced procedures.

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.

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 manufacturers specification. Documentation as to how drugs are stored may be requested by DSHS.

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.

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" or "patient's physician on scene". (P-32)

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

SOUTH PLAINS EMS
EQUIPMENT LIST

BLS UNIT

- 1- SAED with defibrillator pads/paddles to accommodate the adult and 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
- 1ea- Bag valve mask (adult, child, infant sizes)
- 1ea- ResQPOD
- 1ea- Nasal airway (adult, child)
- 1ea- Oral airway (adult, child, infant sizes)
- 3- Oxygen delivery devices: Non-rebreather (adult and pediatric), Nasal Cannula, Hand-Held Nebulizer, or Nebulizer mask
- 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- Long spine boards 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-syringes that will accommodate all the appropriate drug volumes stocked
- 3- hypodermic needles appropriate for SQ or IM injections (if stocked)
- 2- Multi trauma dressings
- 1- Celox (optional)
- 24- Sterile gauze pads
- 5- Soft roller adhering bandages
- 2- Rolls of adhesive tape
- 12- Triangular bandages
- 2- Sterile burn sheets

- 1- Bandage shears
- 3- Vaseline Gauze
- 10- Alcohol preps
- 1- Sealed OB kit with non-porous infant insulator
- 1- Pen light
- 1- Multilevel stretcher with at least 2 sets of clean sheets and blankets
- 1- Mast pants (Optional)
- 1ea- King LT-D airway sizes 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
- 2- Medical respiratory protection
- 2- Medical protective gowns or equivalent
- 2- Personal cleansing supplies
- 5- Biohazard bags
- 1- Fire extinguisher
- 1- No smoking signs in the cab and patient compartment

BLS MEDICATIONS

INHALED MEDICATIONS

- Oxygen
- 5- Albuterol (Ventolin) 2.5mg/3ml
- 2- Levalbuterol (Xopenex) 1.25mg/3cc

ORAL MEDICATIONS

- 1- Activated Charcoal, 50g
- 10- Aspirin, 325mg tablets
- 1- Oral Glucose 15g tube
- 1- Liquid Children's Motrin 100mg/5ml

SUBLINGUAL MEDICATIONS

- 1 Bottle- Nitroglycerin, 0.4mg tablet or spray

INTRAMUSCLAR MEDICATIONS

- 1- Epinephrine Auto-Injector (Adult) 0.3mg/unit
- 1- Epinephrine Auto-Injector (Pediatric) 0.15mg/unit
- 1- Glucagon 1mg/unit (optional)

- **SUBCUTANEOUS MEDICATIONS**
- 2- Epinephrine (1:1000) 1mg/1cc (if stocked at the BLS or ALS level, appropriate training required)

Services under SPEMS medical direction may carry Epinephrine Auto-Injectors to accommodate both adult and pediatric patients **AND/OR** Epinephrine (1:1000) 1mg/1cc. However, Epinephrine (1:1,000) can only be carried if all active ECA's, EMT's and Intermediates are appropriately trained on SQ 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 0,1,2,3,4 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, 2.5 thru 9.0)
  - 1- ET tube holder
  - 1ea- Stylette (adult, pediatric sizes)
- 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 (14ga, 16ga, 18ga, 20ga, 22ga, 24ga)
  - 4-1000cc Normal Saline or 500cc equivalent
  - 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)
- 1ea- EZ IO Driver with spare batteries (EZ IO Drivers with the non-replaceable battery need not to have a spare
- 1- EZ IO PD
- 1- Adult EZ-IO
- 1- EZ IO LD (optional)
- 2ea- Purple, Green, and Blue blood specimen tubes (red tube optional)
- 2- Gastric tubes & supplies
- 1- Plural decompression equipment & supplies (2 inch 14ga angio catheters)

ALS MEDICATIONS

INHALED MEDICATIONS

- 1-Racemic Epinephrine 2.25% 11.25mg/0.5ml (optional)

INTRAVENOUS MEDICATIONS

- 1- Dextrose 50% ($D_{50}W$), 25g/50cc
- 2- Naloxone (Narcan) 2mg/2cc
- 1- Diphenhydramine (Benadryl), 50mg/c

INTRAOSSEOUS MEDICATION

- 1- Lidocaine (Xylocaine), 100mg/5c

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 defibrillator pads/paddles to accommodate the adult and 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)
- 1- 100cc D5W (optional)

MICU MEDICATIONS

IV MEDICATIONS

- 2- Adenosine (Adenocard), 12mg/4cc
- 3- Atropine Sulfate, 1mg/10cc
- 3- Amiodarone, 150mg/3cc
- 2- Dexamethasone (Decadron) 20mg/5cc
- 2- Diazepam (Valium), 10mg/2cc
- 2- Epinephrine (1:1,000), 1mg/1cc
- 4- Epinephrine (1:10,000), 1mg/10cc
- 2- Etomidate (Amidate) 40mg/20cc
- 2- Fentanyl 100mcq/2cc
- 2- Furosemide (Lasix), 40mg/4cc
- 1- Labetolol (Normodyne), 20mg/4cc
- 2- Lidocaine (Xylocaine), 100mg/5cc
- 2- Midazolam (Versed), 10mg/2cc
- 2- Morphine Sulfate, 10mg/1cc
- 2- Rocuronium 100mg/10cc
- 1- Sodium Bicarbonate 8.4% (adult), 50mEq/50cc
- 2- Succinylcholine (Anectine), 200mg/10cc
- 2- Vecuronium Bromide (Norcuron), 20mg/20cc
- 2- Zofran 4mg/2cc

Services under SPEMS medical direction have the option of stocking three different paralytics, Norcuron, Succinylcholine, and Rocuronium. The service has a choice whether to stock one, two, or all three paralytics. However, Rocuronium MUST be accompanied by one of the others listed above in order to facilitate intubation in pediatric patients.

PREMIXED IV MEDICATIONS

- 1- Lidocaine 1g/250cc
- 1- Dopamine (Intropin) 200mg/250c

SUBCUTANEOUS MEDICATIONS

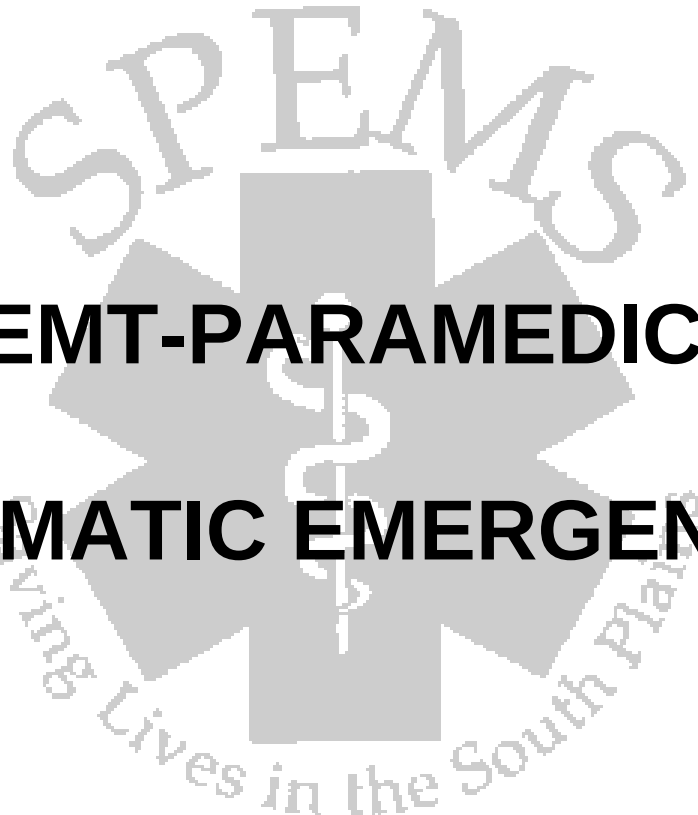
- 2- Epinephrine (1:1000) 1mg/1cc (if not previously stocked)

- 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, Morgan lenses, 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 02/01/2010

Service Director Date 02/01/2010



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-15) if any Evidence or Suspicion of Airway Injury

1. 2 IVs, **NS**
2. Estimate Burn Depth & Percent of Total Body Surface
3. Cover Burn with Dry Sterile Sheets
4. Set IV to Administer 4cc/kg/% Burn, with ½ the Amount Given in the 1st 8 Hours After the Burn.

Moderate to Severe Pain Present?

NO → Continue to Treat, Monitor & Transport

YES

Administer:

- **Fentanyl** 5mcg/kg to a max of 100mcg per single dose (all ages > 2 years of age). May be repeated X1 if needed in 3-5 minutes. Contact medical control for additional doses.

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.

Continue to Treat, Monitor & Transport

CRITICAL BURNS

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

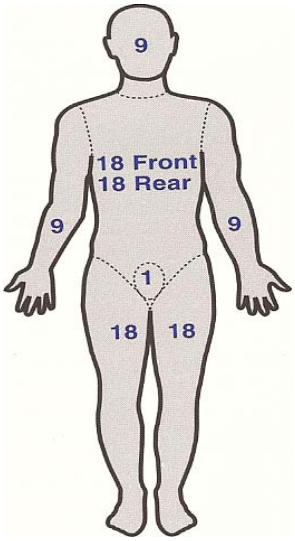
MODERATE

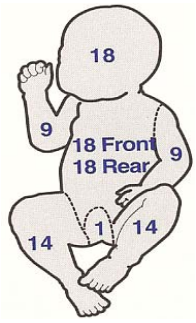
1. All burns not meeting other critical criteria
2. Minor burns in any patient with significant underlying medical conditions

PEDIATRIC DOSE

- **Morphine Sulfate**, 0.1mg\kg, IV to a max of 3mg per single dose.
- **Fentanyl** 5mcg/kg to a max of 100mcg per single dose. Do not administer **Fentanyl** to patients < 2 years of age.

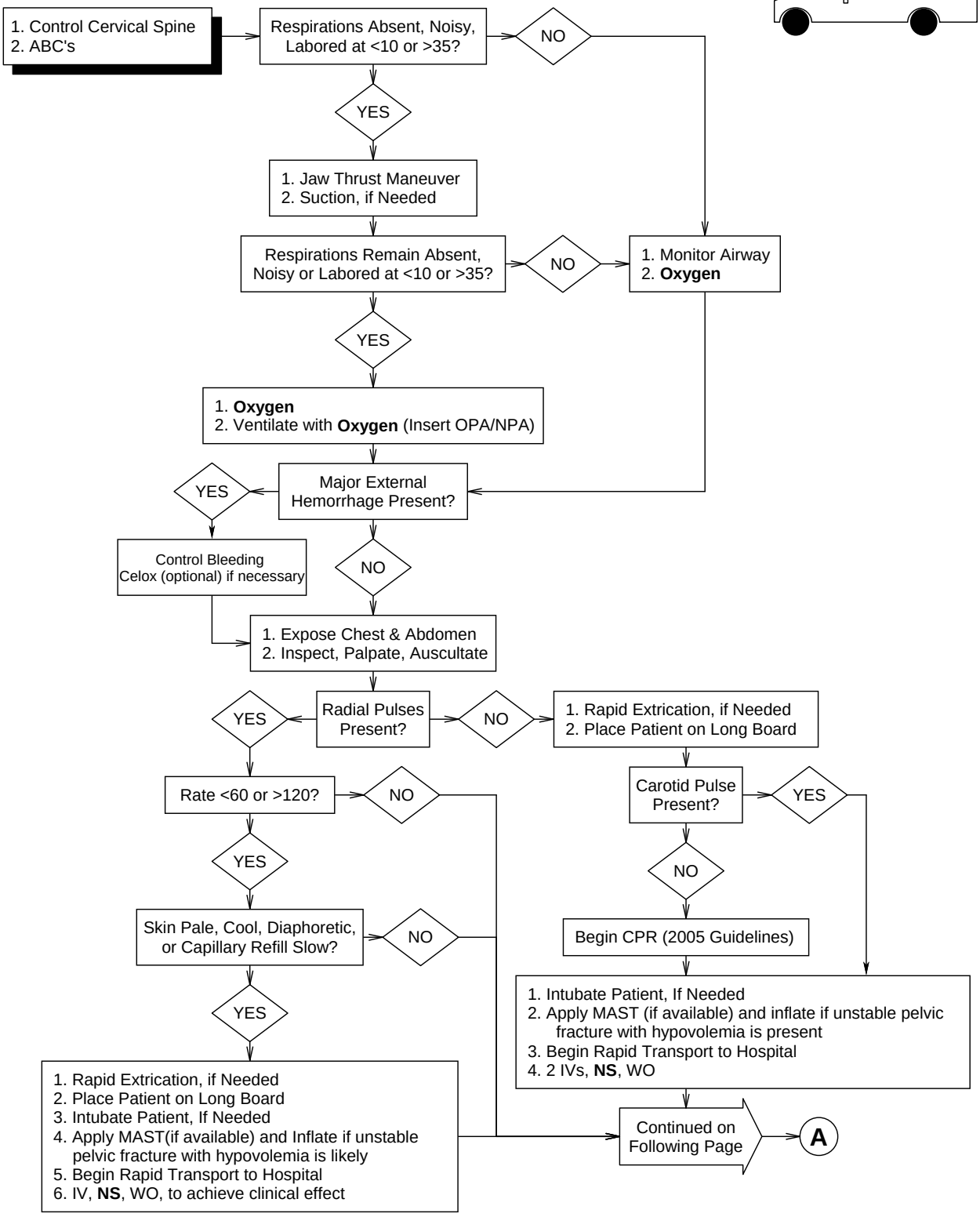
The Rule of 9's
(count only 2º & 3º burns)





TRAUMA

EMT-Paramedic

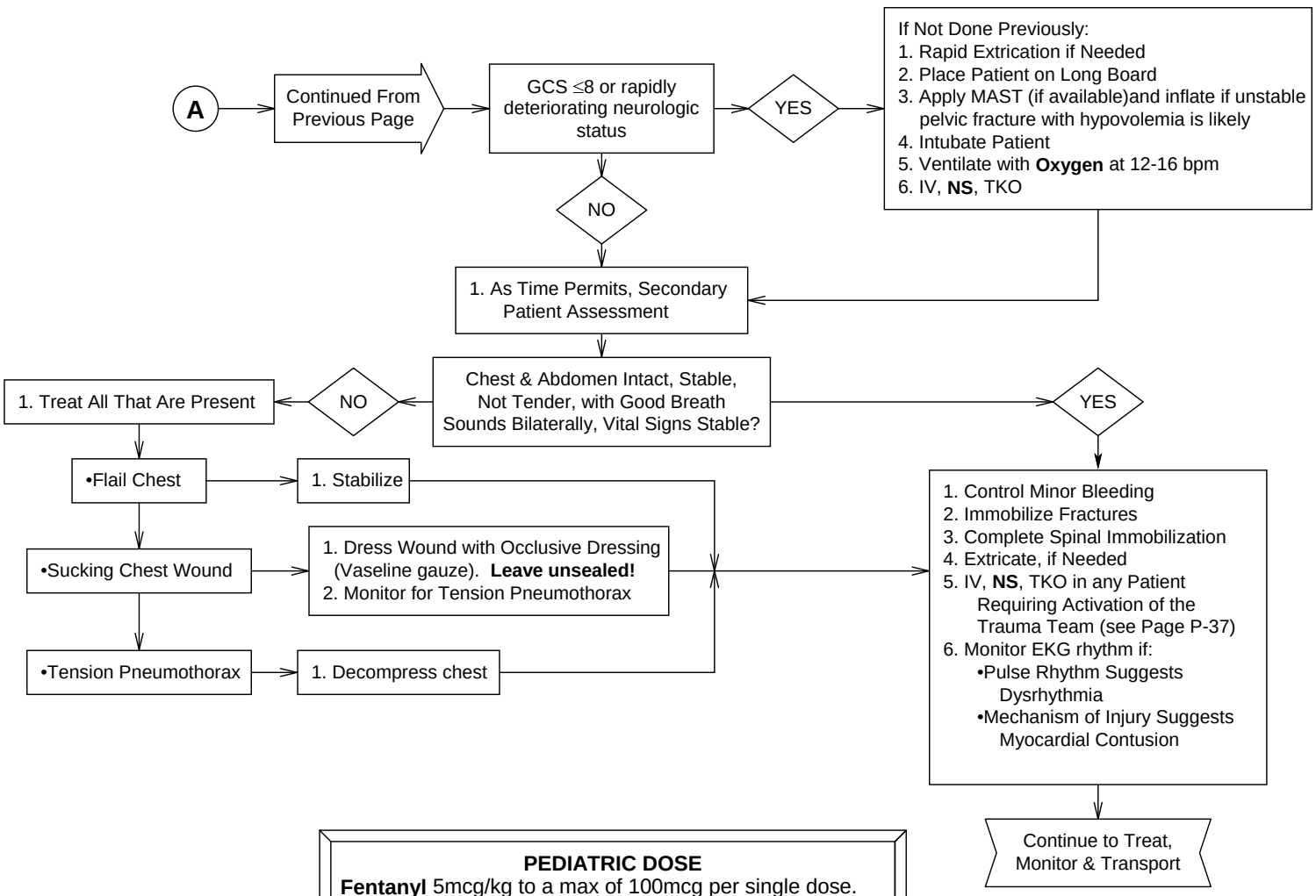


PEDIATRIC

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



PEDIATRIC DOSE

Fentanyl 5mcg/kg to a max of 100mcg per single dose.
Do not administer **Fentanyl** to patients < 2 years of age.
Morphine 0.1mg/kg up to a max of 3mg per single dose.

- 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.

Administer:

- **Fentanyl** 5mcg/kg to a max of 100mcg per single dose (all ages > 2 years of age). May be repeated X1 if needed in 3-5 minutes. Contact medical control for additional doses.

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

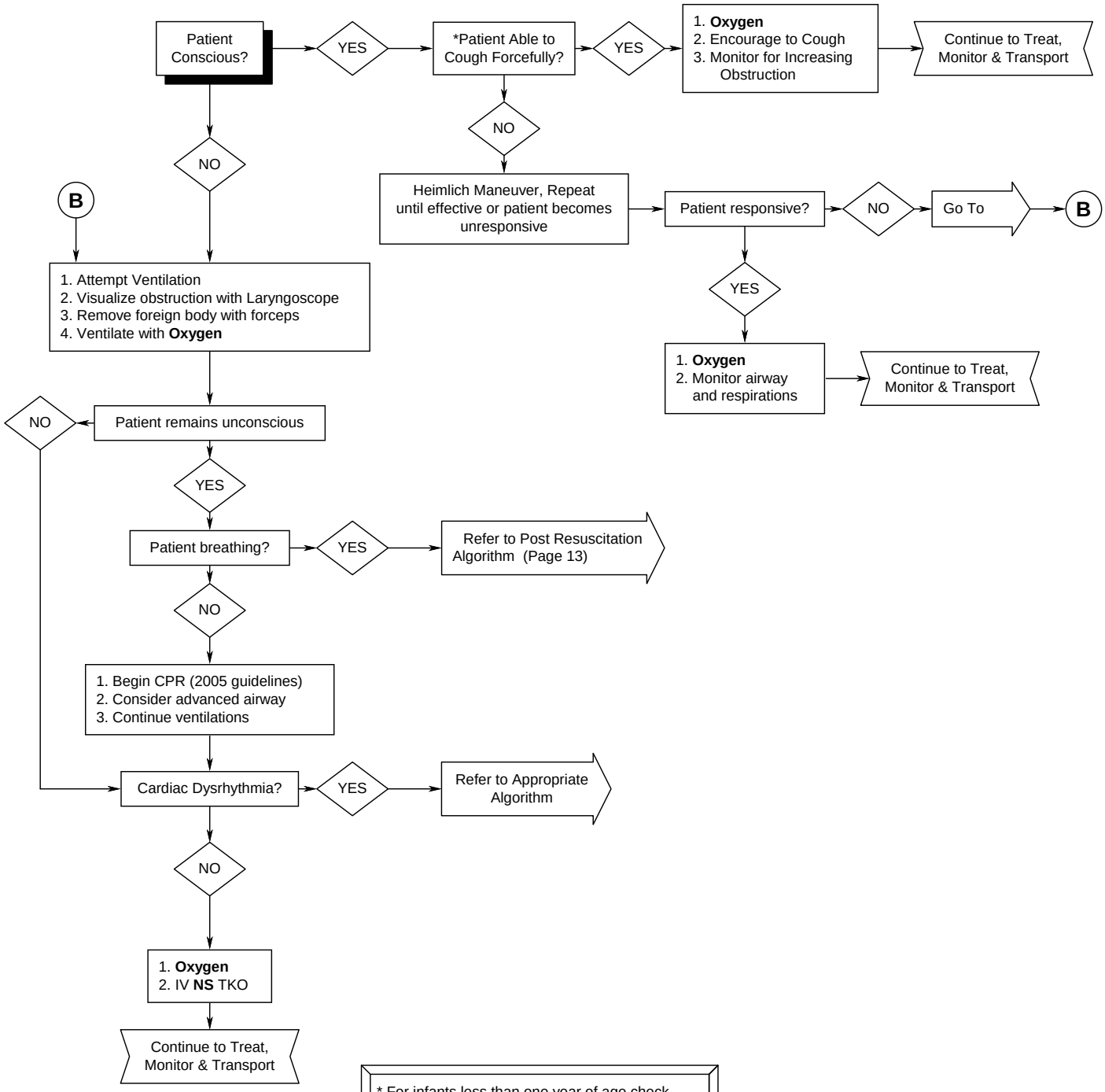
In the event of long transport times and systolic B/P is > 90mmHg, Morphine can be administered for subsequent pain control if Fentanyl was administered first line.

EMT-PARAMEDIC

RESPIRATORY EMERGENCIES

FOREIGN BODY AIRWAY OBSTRUCTION

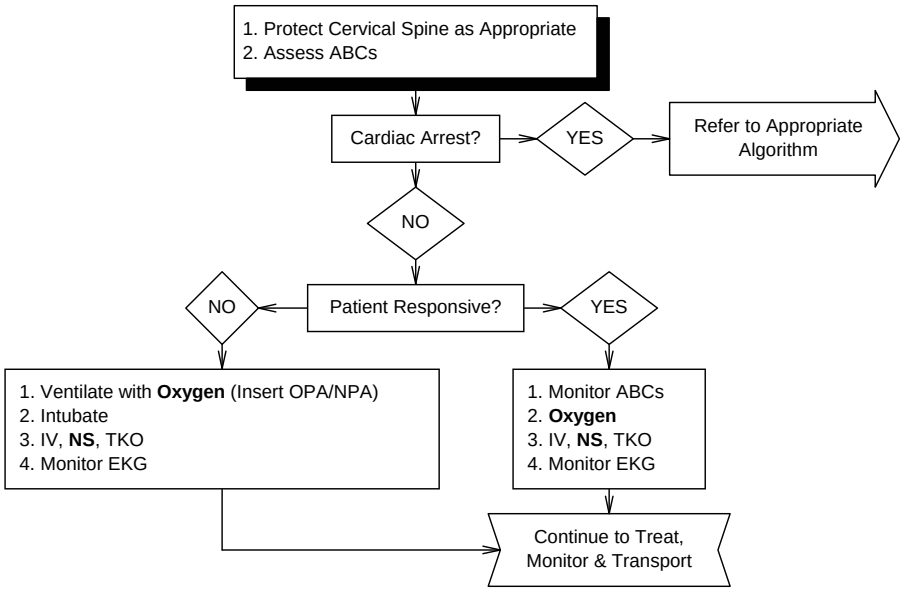
EMT-Paramedic



* 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-13

Use **Xopenex** only in the event that **Albuterol** does not provide relief. Use **Xopenex** as first line drug if patient is already on **Xopenex** or if patient has already received two **Albuterol** tx without relief

If Croup is suspected (P-11) 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.

***Epinephrine** (1:1000) 0.3mg, SQ, May be Administered with **Severe** Respiratory Distress and Wheezing, if no Improvement from a Broncholdilater Either patient or EMS Administered

Foreign Body Airway Obstruction?

YES → Refer to Foreign Body Airway Obstruction Algorithm (Pg. 4)

NO → Allergic Reaction?

YES → Refer to Allergic Reaction Algorithm (Pg. 21)

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-41

NO → Refer to Appropriate Algorithm**

NO

Asthma or Chronic Obstructive Pulmonary Disease?

NO → Pulse Ox <90% or Wheezing Present?

NO → Continue to Treat, Monitor & Transport

YES → ***
1. **Albuterol (Ventolin)**, 2.5mg/3cc NS, by Nebulizer. Repeat x1 if no relief
2. **Decadron** 20mg, SIVP, if Wheezing is Present
3. **Xoponex** 1.25mg by Nebulizer. Repeat X1 if no relief

YES

1. **Nitroglycerin**, 0.4mg, SL, if Systolic BP >90mmHg
2. **Furosemide (Lasix)**, 40mg, IV
3. **Morphine Sulfate**, 2-6mg; may repeat once in 10 minutes, if Systolic BP >90mmHg
4. **Albuterol (Ventolin)**, 2.5mg/3cc, Nebulizer
5. Continue **Albuterol (Ventolin)** until respiratory distress relieved

Respiratory Distress Relieved?

YES → Continue to Treat, Monitor & Transport

NO → Asthma or COPD?

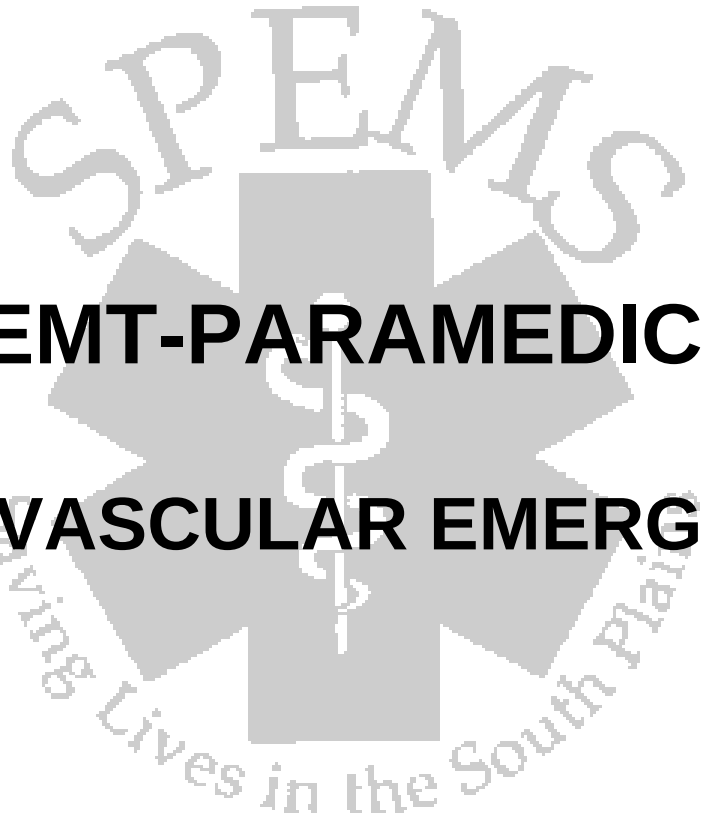
Asthma → **Epinephrine** (1:1000) 0.3mg, SQ, if not Previously Given → Repeat **Xopenex** as needed. 1.25mg via Nebulizer → Continue to Treat, Monitor & Transport

COPD → Repeat **Xopenex** as needed. 1.25mg via Nebulizer

PEDIATRIC DOSE

- **Furosemide (Lasix),** 1mg/kg to a max of 40mg
- **Morphine Sulfate,** 0.1mg/kg to a max of 3mg per single dose
- **Epinephrine,** 1:1,000, 0.01mg/kg, SC, to a max of 0.15mg
- **Decadron,** 0.6mg/kg to a max 20mg. Do not administer to patients < 2 years of age.
- **Albuterol (Ventolin)** 2.5mg/3cc NS by Nebulizer, dose and frequency same as adult
- **Xopenex** 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-11)

02/01/2010



EMT-PARAMEDIC

CARDIOVASCULAR EMERGENCIES

ASYSTOLE - ADULT

EMT-Paramedic

1. ABCs
2. CPR (2005 Guidelines)*
3. Ventilate with **Oxygen** (Insert OPA/NPA)
4. ResQPOD
5. Attach Defibrillator**
6. IV, **NS*****
7. Intubate Patient
8. Resume CPR
9. **Epinephrine (1:10,000)**, 1mg, IV, Every 3-5 Minutes

Rhythm Change? → YES → Refer to Appropriate Algorithm

NO

1. Resume CPR.
2. **Atropine**, 1mg, IV, every 3-5 minutes, to a max of 3mg

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 (D50)
- •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

**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 2005 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. ABCs
2. CPR (2005 Guidelines)*
3. Ventilate with **Oxygen** (Insert OPA/NPA)
4. Use ResQPOD if the patient has reached puberty
5. Attach Defibrillator**
6. IV, **NS*****
7. Intubate Patient
8. Resume CPR

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

Rhythm Change or Pulse Present? → YES

NO

1. Resume CPR
2. **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)

Rhythm Change or Pulse Present? → YES

NO

Resume CPR

Treat Possible Contributing Factors****

Continue to Treat, Monitor & Transport

Refer to Appropriate Algorithm

****

Consider Whether One of the Following may be Involved and Treat Appropriately:

- •Hypovolemia (Infuse Volume)
- •Hypoxia (Ventilate)
- •Hypo/Hyperkalemia
- •Hydrogen Ion (Acidosis)
- •Hypoglycemia (D50)
- •Hypothermia
- •Toxins/OD
- •Tamponade (Cardiac)
- •Tension Pneumothorax (Decompress Chest)
- •Thrombosis (Pulmonary, Coronary)
- •Trauma

**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 2005 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

EMT-Paramedic

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

Patient has any of the Following:
- •Systolic BP <90mmHg
- •Signs/Symptoms of Hypoperfusion
- •Chest Pain
- •Dyspnea
- •Decreased LOC

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

NO → Continue to Treat, Monitor & Transport

NO → 1. **Atropine** 0.5mg, IVP
2.Fluid Challenge of **NS,** 500-1000cc
If Pulmonary Edema not present

Pulse >60 or Signs/Symptoms Resolve? → YES → Continue to Treat, Monitor & Transport

NO → Repeat **Atropine**, 0.5mg, IVP
Every 3-5 Minutes, to a max of 3mg

Pulse >60 or Signs & Symptoms Resolve? → 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. Attempt External Pacing. (P-19)

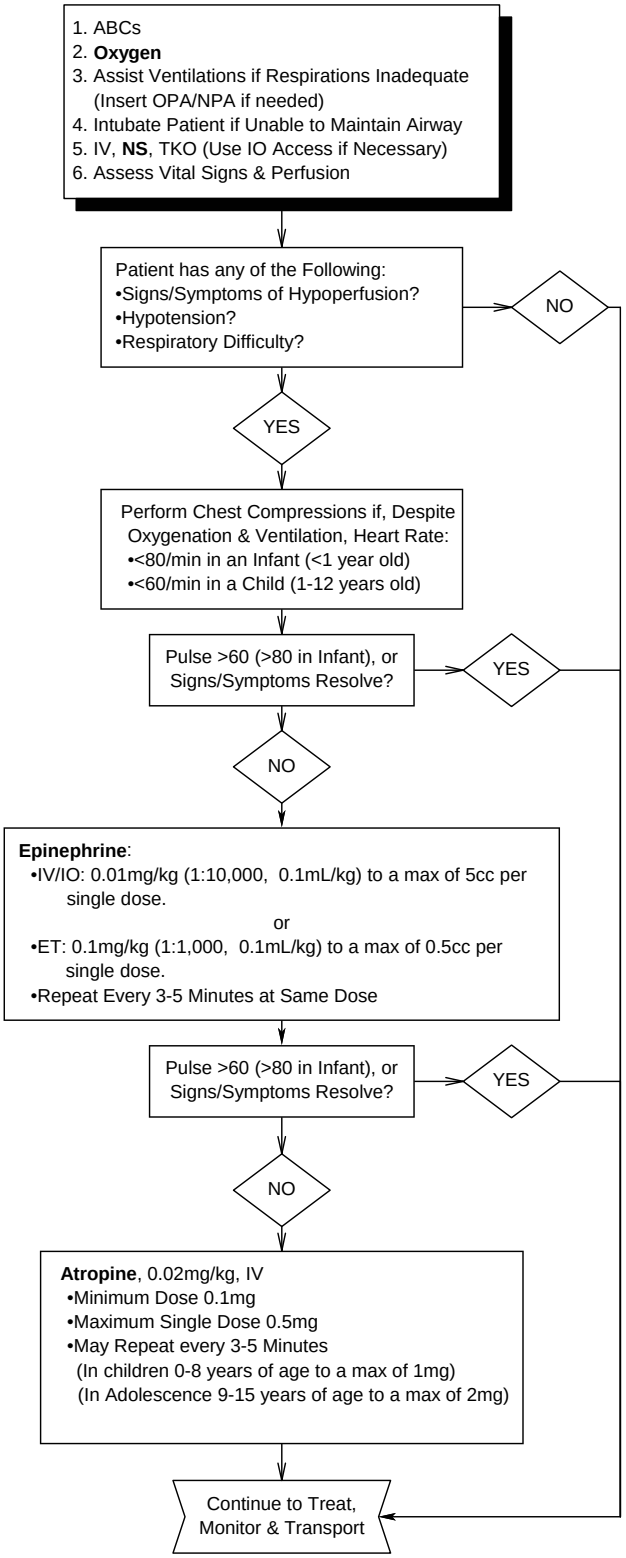
Pacemaker Capture?
- NO → Systolic BP <90mmHg?
  - YES → **Dopamine**, 5mcg/kg/min, IV, Increased by 5mcg/kg/min Every 2 min Until:
    - •Heart Rate 60-100, or
    - •BP >90 Systolic, or
    - •Signs/Symptoms Resolve, or
    - •Infusion at 20mcg/kg/min

    → Continue to Treat, Monitor & Transport
  - NO → 1. Infuse **NS** as Needed to Maintain Systolic BP 90-110mmHg
    2. Reassess Lung Sounds & Adequacy of Ventilations

    → Continue to Treat, Monitor & Transport
- YES → Continue to Treat, Monitor & Transport

BRADYARRHYTHMIA - PEDIATRIC

EMT-Paramedic



CARDIAC CHEST PAIN or SUSPECTED MYOCARDIAL INFARCTION*

EMT-Paramedic

1. **Oxygen**
2. IV, **NS**, TKO
3. Blood draw for labs (P-13)
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)
7. Initiate Transport

**If Chest Pain Continues After Suppression of Underlying Arrhythmias, 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-41)
- YES
- NO → Refer to Appropriate Algorithm**

12 lead EKG Obtained?
- YES → ST elevation in two contiguous leads?
- NO

ST elevation in two contiguous leads?
- YES → Possible right ventricular infarct (RVI)?***
- NO

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

Systolic BP >90mmHg with Adequate Perfusion?
- NO → Refer to Cardiogenic Shock Algorithm (Page 12)
- YES → **Nitroglycerin**, 0.4mg, Sublingual or **Nitrospray**, 1 Spray, Sublingual every 5 minutes until (rule out the use of sexual enhancement drugs):
  - Symptoms relieved
  - Total of 3 given
  - Systolic BP < 90mmHg

1. Immediate rapid transport
2. Notify Emergency Department ASAP

MI Signs and Symptoms* Relieved?
- YES
- NO → Systolic BP >90mmHg?
  - YES → 1. **Morphine Sulfate**,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

Continue to Treat, Monitor & Transport

*** Atypical MI Signs and Symptoms**

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
- NO → Risk factors:
  1. CAD
  2. HTN
  3. Hyperlipidema
  4. Obesity
  5. Stress
  6. Sedentary life style
  7. Smoker

Consider patient a candidate for the Cardiac Chest Pain Protocol see ACS P-10 ← YES

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.

AIR TRANSPORT SHOULD BE CONSIDERED WHEN ITS USE WOULD EXPEDITE AN AMI PATIENT'S ARRIVAL AT THE RECEIVING FACILITY.

CARDIOGENIC SHOCK

EMT-Paramedic

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

Class I or II Cardiac Rhythm? (P-41)

NO → Refer to Appropriate Algorithm*

YES

*If Hypoperfusion persists after correction of Arrhythmias, return to this algorithm.

Fluid Challenge, 500-1000cc, **NS**

BP & Perfusion Improved?

NO

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

YES

1. Infuse **NS** as Needed to Maintain Systolic BP 90-110mmHg, with Adequate Perfusion
2. Reassess Lungs Sounds and Adequacy of Ventilation Frequently

Continue to Treat, Monitor & Transport

PEDIATRIC

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

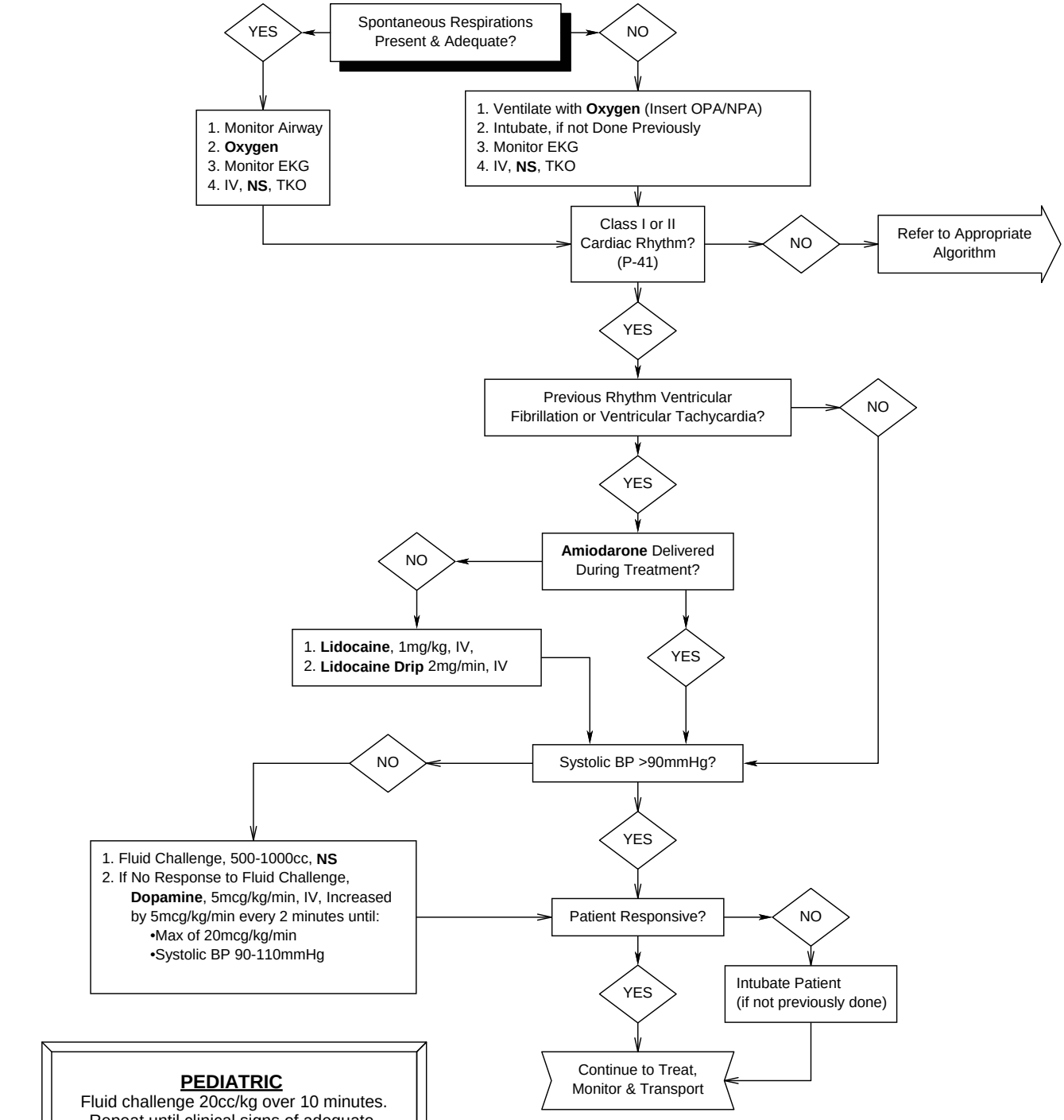
PEDIATRIC DOSE

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

*POST-RESUSCITATION MANAGEMENT

EMT-Paramedic

*Remove ResQPOD if previously used.



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

PULSELESS ELECTRICAL ACTIVITY - ADULT

EMT-Paramedic

1. ABCs
2. CPR (2005 Guidelines)*
3. Ventilate with **Oxygen** (Insert OPA/NPA)
4. ResQPOD
5. Attach Defibrillator
6. IV, **NS****
7. Intubate Patient
8. Resume CPR
9. **Epinephrine (1:10,000)**, 1.0mg, IV, Every 3-5 Minutes

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

***
Consider Whether One of the Following may be Involved and Treat Appropriately:
- •Hypovolemia (Infuse Volume)
- •Hypoxia (Ventilate)
- •Hypo/Hyperkalemia
- •Hydrogen Ion (Acidosis)
- •Hypoglycemia (D50)
- •Hypothermia
- •Toxins/OD
- •Tamponade (Cardiac)
- •Tension Pneumothorax (Decompress Chest)
- •Thrombosis (Pulmonary, Coronary)
- •Trauma

Rhythm Change or Pulse Present? — YES

NO

Rate of Monitored Activity <60? — NO

YES

1. Resume CPR
2. **Atropine**, 1mg, IV, every 3-5 minutes to a max of 3mg

Rhythm Change or Pulse Present? — YES

NO

Resume CPR

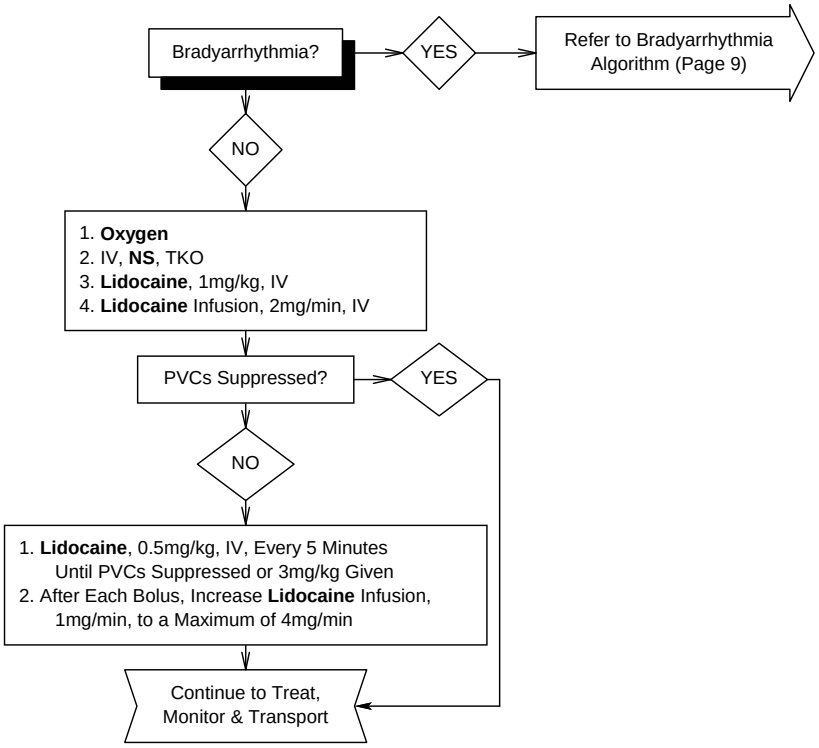
Rhythm Change or Pulse Present? — NO: Resume CPR; YES: Refer to Appropriate Algorithm

Resume CPR → Treat Possible Contributing Factors*** → Continue to Treat, Monitor & Transport

* Ideally chest compressions should be interrupted only for rhythm check. The 2005 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.

SIGNIFICANT PVCs*

EMT-Paramedic

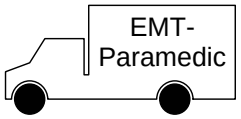


***SIGNIFICANT PVCs**

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)



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

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

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, IV

Rhythm Change?

YES

Refer to Appropriate Algorithm

NO

YES

Refer to Appropriate Algorithm

Adenosine, 12mg, IV

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)

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**)

Rhythm Change?

NO

YES

Continue to Treat, Monitor & Transport

YES

Refer to Appropriate Algorithm

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 to a max of 12mg
- **Versed,** 0.1mg/kg, IV, to a max of 2.5mg
- **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

***** 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

1. ABCs
2. CPR (2005 Guidelines)**
3. Ventilate with **Oxygen** (Insert OPA/NPA)
4. ResQPOD
5. Attach Defibrillator
6. Defibrillate @ 360 Joules, or Biphasic Equivalent
7. Resume CPR

Rhythm Change? → YES

NO

1. Resume CPR
2. IV or IO, **NS** ***
3. Intubate Patient
4. **Epinephrine (1:10,000)**, 1mg, IV, Repeat Every 3-5 Minutes
5. Defibrillate @ 360 Joules, or Biphasic Equivalent
6. Resume CPR

Rhythm Change? → YES

NO

1. Resume CPR
2. **Amiodarone,** 300mg IV, repeat once 150mg IVP in 3 to 5 minutes.****
3. Defibrillate @ 360 Joules, or Biphasic Equivalent
4. Resume CPR

Rhythm Change? → YES → Check Pulse

NO → Continue to Treat, Monitor & Transport

Refer to Appropriate Algorithm

***
- 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 2005 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. ABCs
2. CPR (2005 Guidelines)**
3. Ventilate with **Oxygen** (Insert OPA/NPA)
4. Use ResQPOD if the patient has reached puberty
5. Attach Defibrillator
6. Defibrillate @ 2 Joules/kg or Biphasic Equivalent
7. Resume CPR

Rhythm Change? → YES

NO

***A Fluid Challange of 20cc/kg Should be Administered Over 10 Minutes in All Cardiac Arrest Situations. May Repeat Once.

***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.

1. Resume CPR
2. IV, **NS**, TKO***
3. Intubate Patient
4. **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.
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

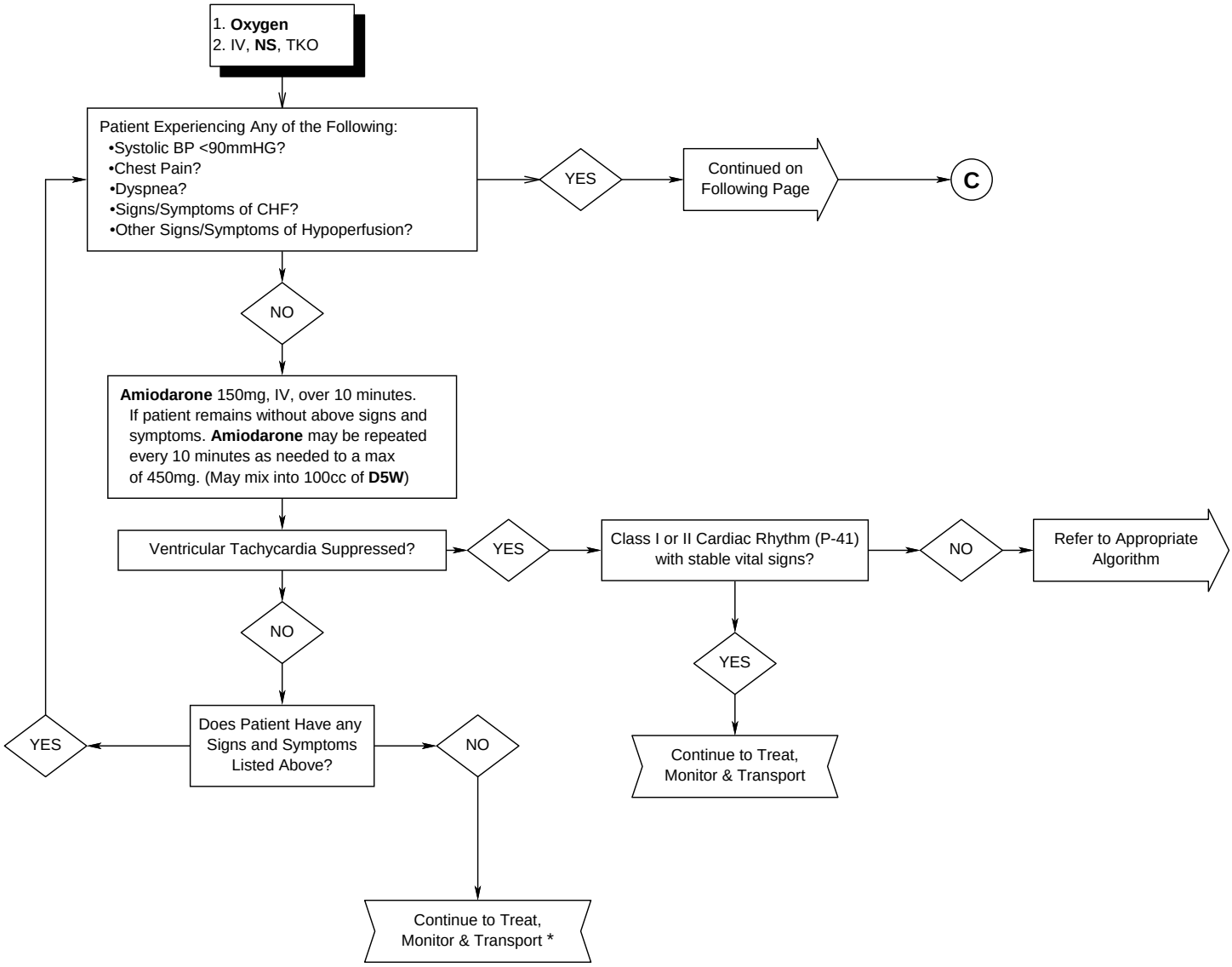
Check Pulse → Refer to Appropriate Algorithm

***
- 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 2005 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



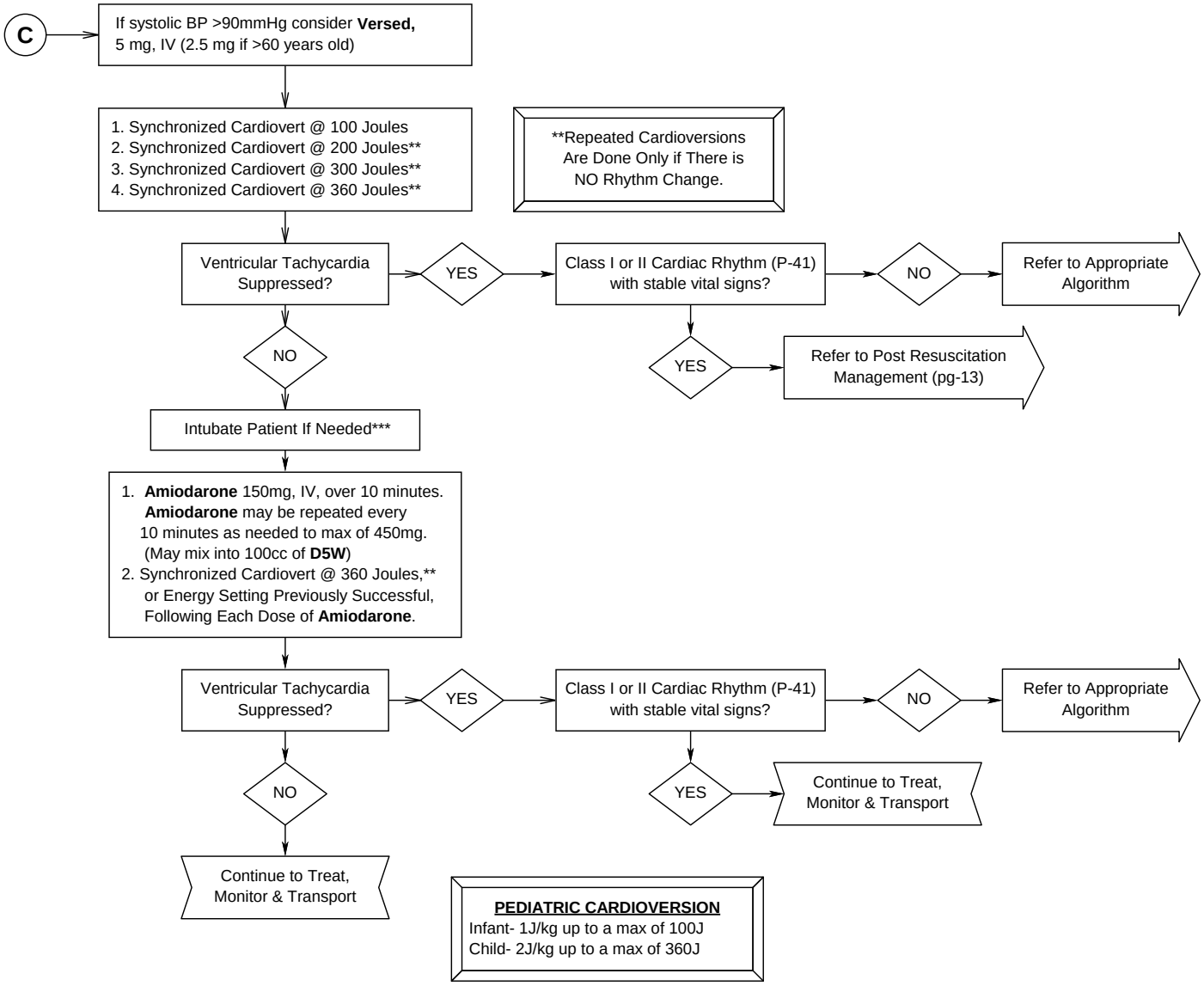
* If at any time the patient starts to experience any of the signs and symptoms noted above, go directly to Cardioversion.(Pg 20)

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



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
- **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

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. **Albuterol** 2.5mg/3cc, HHN
2. **Decadron** 20mg, IV **

Continue to Treat, Monitor & Transport

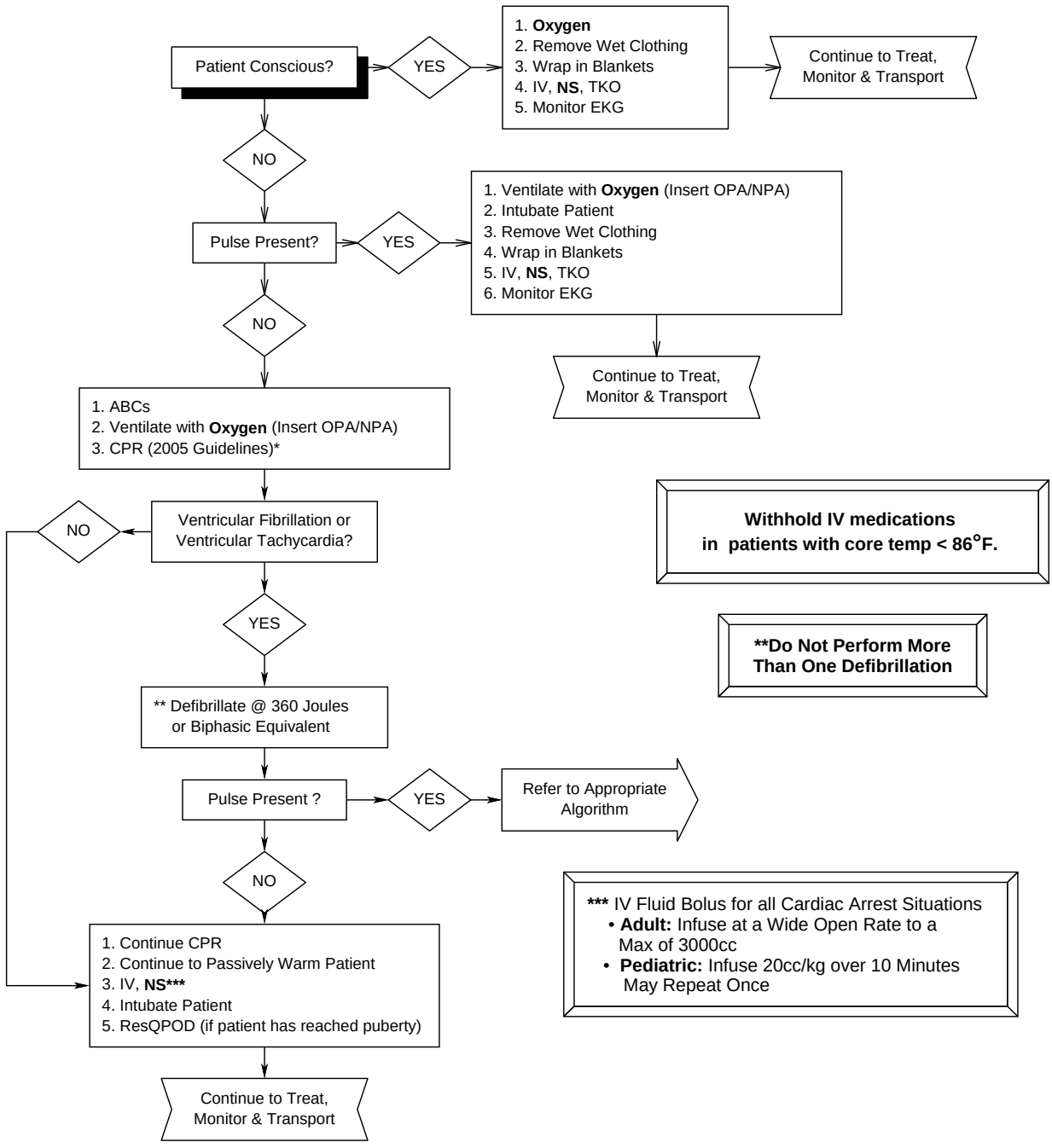
If dyspnea not relieved contact medical control for use of **Epinephrine(1:1,000) 0.3mg (0.3cc), IM or SC

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), SC
- **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.
- **Albuterol** 2.5mg/3cc, HHN

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

EMT-Paramedic



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

****Do Not Perform More Than One Defibrillation**

*** IV Fluid Bolus for all Cardiac Arrest Situations
- **Adult:** Infuse at a Wide Open Rate to a Max of 3000cc
- **Pediatric:** Infuse 20cc/kg over 10 Minutes May Repeat Once

* Ideally chest compressions should be interrupted only for rhythm checks and actual defibrillations. The 2005 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.

- Suspect Hypothermia in any Patient with An Altered Level of Consciousness in a Cool Environment
- Move ALL Patients Gently, to Avoid Serious Dysrhythmias
- 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 or NEUROLOGIC SYMPTOMS* (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-13)
7. Determine Blood Glucose

Blood Glucose >70?

NO → ****Dextrose 50% ($D_{50}W$)**, 25g (50cc), IV

YES

Mental Status Improved? → YES

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

Mental Status Improved? → YES → Access Cincinnati Stroke Scale*****

NO

Intubate Patient, if Needed

Class I or II Rhythm? (P-41) → NO → Refer to Appropriate Algorithm

YES

1. Repeat **Dextrose 50% ($D_{50}W$)** if previously given, 25g (50cc), IV, if No Improvement in Mental Status
2. Repeat **Naloxone (Narcan)**, 2mg, IV, if No Improvement in Mental Status

Mental Status Improved? → YES

NO → Eliminate other possibilities**** → If possible access Cincinnati Stroke Scale ***** → Continue to Treat, Monitor & Transport

Continue to Treat, Monitor & Transport

***NEUROLOGIC SYMPTOMS**
1. Any Motor or Sensory Deficit
2. Any Altered Level of Consciousness

** If peripheral access (IV-IO) (P-20) is unobtainable administer **Glucagon,** 1mg/unit, IM (Optional)

*** To Prevent Florid Withdrawal in Patients on Chronic or High Dose Narcotics. Administer **Narcan** in Increments of 0.1mg Every 2-3 Minutes Until Clinical Effect Noted.

*******CINCINNATI STROKE SCALE**

Facial Droop
- Ask patient to show teeth or smile
- Abnormal if asymmetrical

Arm Drift
- Ask patient to close eyes for 10 seconds and hold both arms out with palms up
- Abnormal if arms do not move equally

Speech
- Ask patient to say "the sky is blue in Texas"
- Abnormal if words are slurred or confused

• If any of the above is abnormal consider:
  - **rapid transport**
  - elevating the patient's head 30° if not contraindicated
• Report all positive findings to receiving hospital from the scene if possible, if not report ASAP. Document all findings in the narrative.

****
Other considerations for decreased LOC:
1. Cold Exposure (Page 22)
2. Heat exposure (Page 25)
3. Hypovalemia (Page 26)

PEDIATRIC DOSE
- **Dextrose 25% ($D_{25}W$)**, 2cc/kg, IV to a max of 100cc (**$D_{50}W$** may be diluted 1 to 1 with **NS** to achieve **$D_{25}W$**)
- **Naloxone (Narcan)**, 0.05mg/kg, IV, to a max of 2mg
- **Glucagon**, 0.5mg, IM (Optional)

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

1. **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

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

Class I or II Rhythm? (P-41)

YES

Continue to Treat, Monitor & Transport

NO

Refer to Appropriate Algorithm

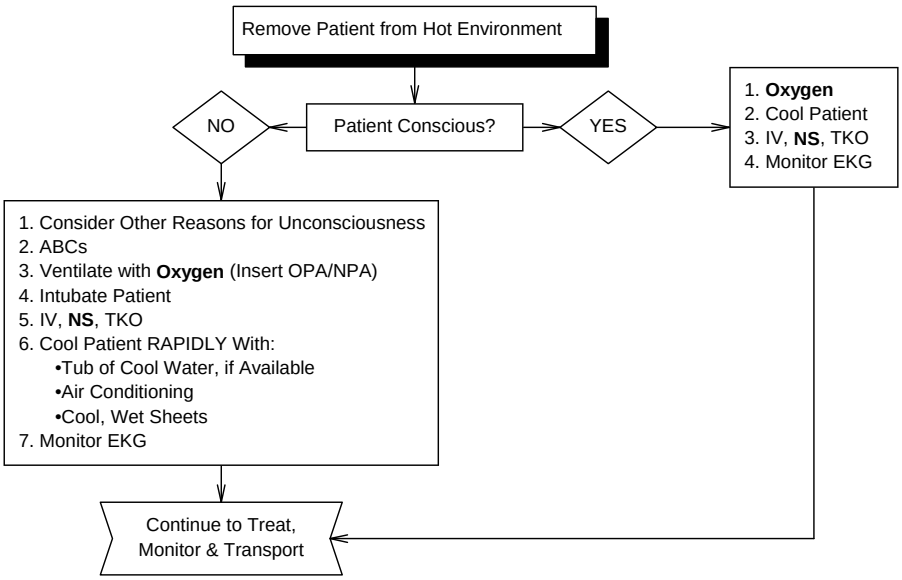
*** <u>HAZMAT PRECAUTIONS</u>**

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)

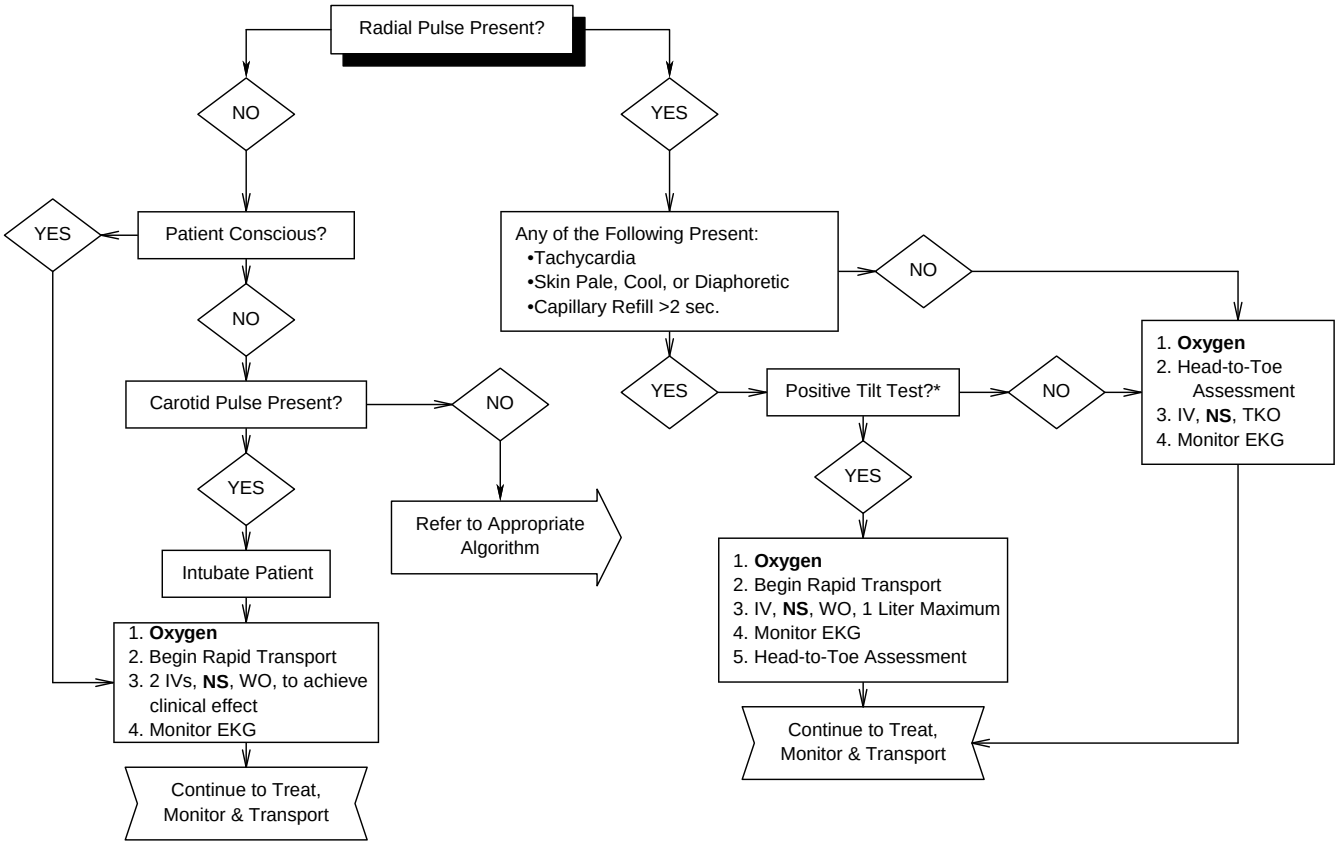
EMT-Paramedic



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

HYPOVOLEMIA (NON-TRAUMATIC)

EMT-Paramedic



PEDIATRIC

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

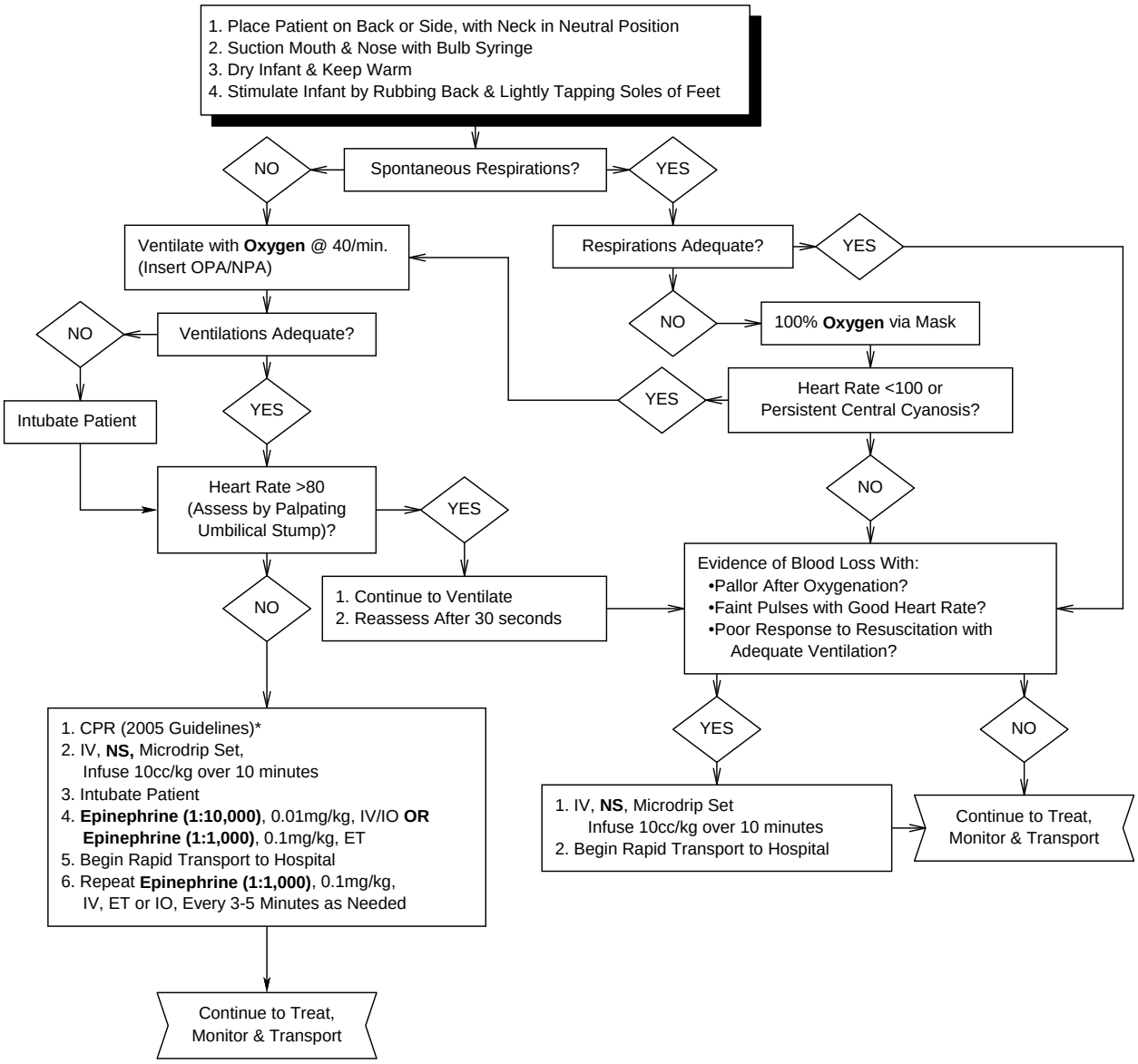
*** Ideally chest compressions should be interrupted only for rhythm checks and actual defibrillations. The 2005 guidelines state that when CPR is indicated the provider should perform 5 cycles (2 Minutes) of chest compressions. Continue CPR while drugs are prepared/administered and the defibrillator 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.

***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

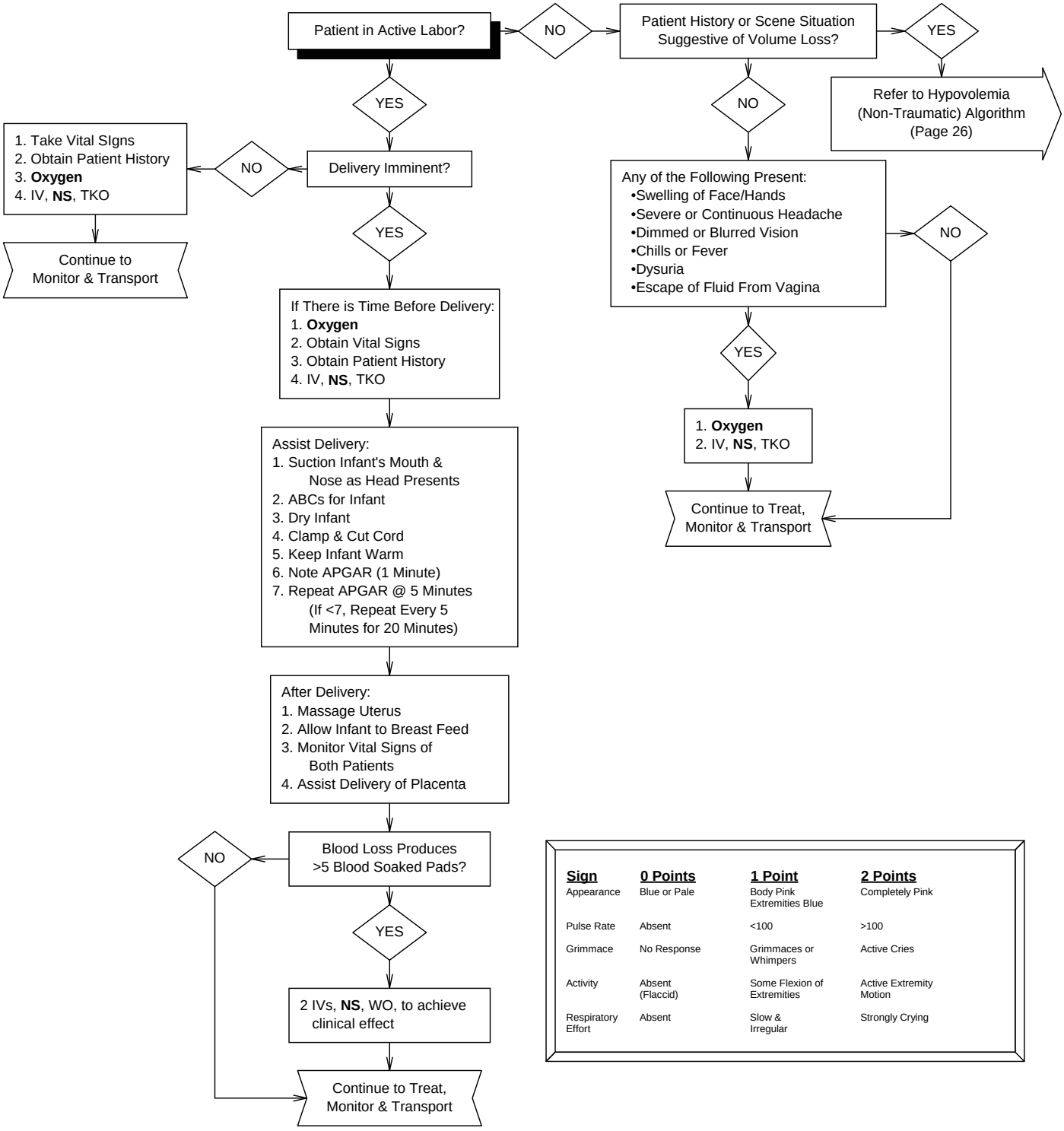
EMT-Paramedic



* Ideally chest compressions should be interrupted only for rhythm checks and actual defibrillations. The 2005 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.

OBSTETRIC EMERGENCY

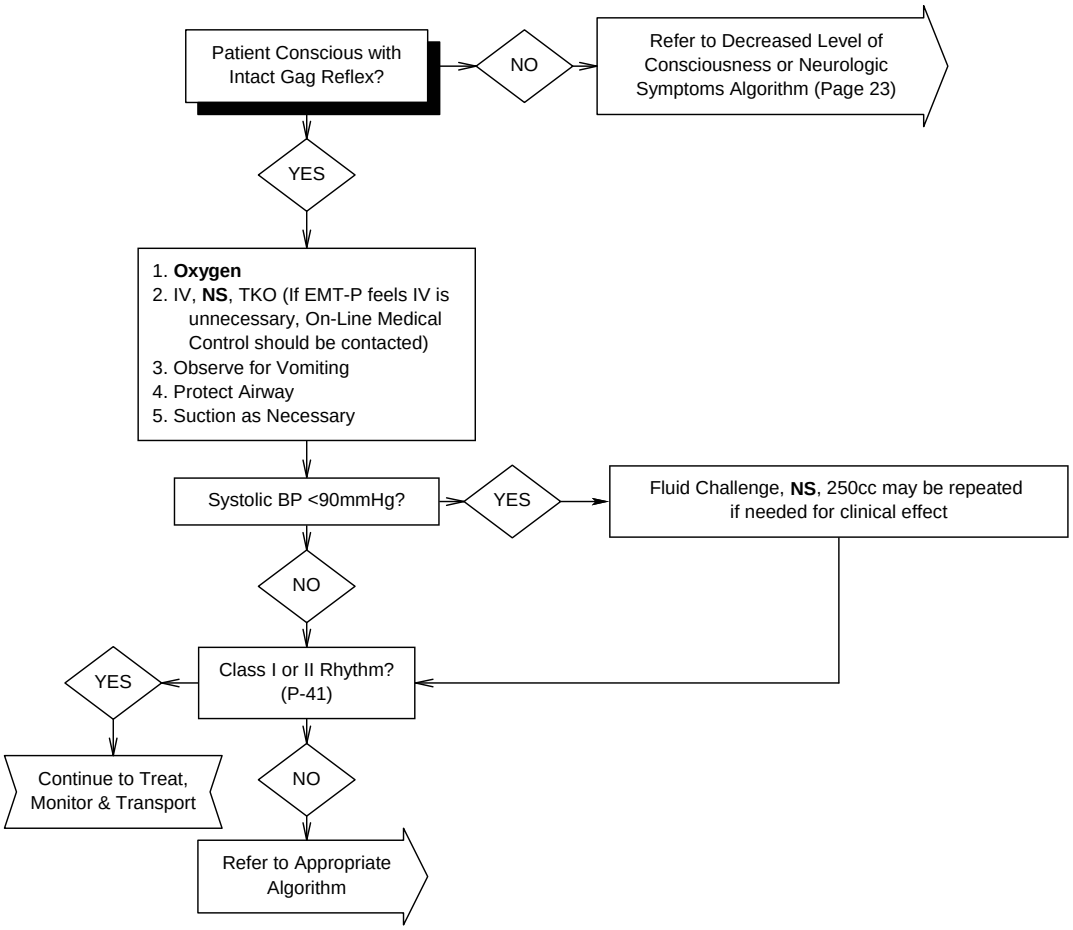
EMT-Paramedic



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

POISONING/OVERDOSE

EMT-Paramedic



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

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

Paraquat Posioning
Do Not Give Supplemental **Oxygen**

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

Blood Glucose >70mg/dL? — YES

NO

****Dextrose 50% ($D_{50}W$)**, 25g (50cc), IV

Seizures Suppresed? — YES

NO

1. **Diazepam (Valium)**, 5mg, IV***
2. Monitor Vital Signs
3. If Seizures Not Suppressed,
   Repeat **Diazepam (Valium)**, 5mg, IV
   Every 5 minutes as needed to control seizure activity.
   (Be Prepared to Intubate Patient)

Class I or II Rhythm? (P-41) — YES → Continue to Treat, Monitor & Transport

NO

Refer to Appropriate Algorithm

** If a peripheral access (IV/IO)(P-20) is unobtainable administer **Glucagon,** 1mg/unit, IM (Optional)

***If IV access is delayed, or impossible
1. **Midazolam (Versed)** 5mg, IM, may repeat 2.5mg every 10 minutes as needed.
2. **Diazepam (Valium)**, Rectally, 10mg per dose, administer proximal to the rectal sphincher.

PEDIATRIC DOSE

- **Dextrose 25% ($D_{25}W$)**, 2cc/kg, IV to a max of 100cc
  (**$D_{50}W$** may be diluted 1 to 1 with **NS** to achieve **$D_{25}W$)**
- **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, 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 per single dose, Post seizures with temperature > 100.4 and adequate LOC.
- **Glucagon**, 0.5mg, IM (Optional)