



EMERGENCY MEDICAL SERVICES



**PATIENT CARE  
TREATMENT  
PROTOCOLS  
2014 - 2015**



# **ROBERTSON COUNTY EMERGENCY MEDICAL SERVICES**

## **PATIENT CARE TREATMENT PROTOCOLS**

### **INTRODUCTION**

In order to effectively operate Robertson County EMS and care for the citizens in and travelling through Robertson County, the patient care treatment guidelines contained herein have been adopted. The Protocols contained herein are based on the DOT National Standard EMT & Paramedic Curriculum and State and Local Considerations & Guidelines.

It is recognized that future changes in medical practices, standards, and other policies may necessitate amending or modifying these guidelines occasionally, however EMS personnel shall be notified of such changes through proper channels, in a timely manner.

Therefore, all members of the Emergency Medical Services are hereby ordered and directed to comply fully with these protocols. Understanding that there may be deviations made by the provider that may benefit the patient's outcome. These deviations can only be made after direct approval from Medical Control or the receiving medical facility for which the patient is being transported to. Both the Medical Director and EMS Director(s) are charged with the responsibility of enforcing compliance. Deviations from these guidelines will be handled on a case-by-case basis and disciplinary procedures will be carried out if determined necessary.

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11/01/2014

Revised & Adopted on

ROBERTSON COUNTY EMS PATIENT CARE TREATMENT PROTOCOLS

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**ALL BP'S WILL BE OBTAINED  
MANUALLY BEFORE AND  
AFTER MEDICATION  
ADMINISTRATION**

## EXPLANATION OF PATIENT CARE TREATMENT PROTOCOLS

The intent of this section is to summarize and/or define some of the key points relating to the protocols.

1. To expedite the patient care process the several protocols are written in a flow-chart style.
  - a. Treatments written in plain text and not in bold print can be performed by EMT's and Paramedics.

EMT'S and Paramedics can perform w/o medical control approval

- b. Treatments in bold print and shaded can only be performed by Paramedic without prior Medical Control approval.

Only Paramedic's can perform w/o medical control approval

- c. Treatments in bold print, underlined, and shaded can only be performed after approval from medical Control and/or the receiving facility.

Paramedic skill but only with prior Medical Control approval

2. ABC'S:
  - a. Assess the patients Mental Status, airway patency, respiratory rate and tidal volume, peripheral pulse rate and quality, and SaO<sub>2</sub>.
  - b. SaO<sub>2</sub> monitoring
  - c. Establishment of IV access for volume replacement or medication administration.
  - d. Glucose checks as deemed necessary by the care provider.
  - e. ECG for all patients presenting with signs & symptoms of chest pain or cardiac related emergencies, hypoxia, altered mental status, strokes, and/or extreme medical or traumatic emergencies that may precipitate the need for cardiac monitoring.
3. 12 Lead ECG Interpretation:
  - a. Any patient complaining of cardiac related chest pain, respiratory distress, Stroke/CVA, or altered mental status will have a 12 lead ECG obtained and a copy will be given to the receiving medical facility, an electronic copy/image shall be attached to the report.
  - b. 12 Lead ECG's will not be used to delay transport and should be obtained in a minimal amount of time.
  - c. **All 12 lead's from chest pain or cardiac related complaints MUST be sent to the receiving ER from iPads**
4. Intravenous Fluid Administration
  - a. IV attempts will be limited to no more than 3 for each provider without medical control approval.
  - b. Only EMT-Paramedics can attempt External Jugular Venous Access
  - c. All Cardiac Arrest patients will receive IV fluids at a wide-open rate. Preferable 2 IV's should be established if possible.
  - d. All IV piggyback drugs shall be mixed in 100cc D5W with 60 gtt tubing with the exception of Dopamine and Epinephrine drips. 60 gtt tubing should still be used, however the on-hand fluid volume may differ.
  - e. Only patients in need of medication administration or fluid resuscitation will have IV access established.
  - f. Primary lines in trauma patients will be blood tubing w/ 1000 cc NS
  - g. EMT-IV's EMT-A's may ride with **isolated** hypoglycemia calls where D50 has been given, **if patient is stable.**
  - h. EMTP's and EMTA's may establish I.O. Access using the EZ-IO device, only if the EMTA licensure bridge has been met before 2015. This can be done on Adult and Pediatric patients since RCEMS has elected to in-service and train on both age groups. IO's can be used as immediate access in patients requiring resuscitation, otherwise it is reserved as a route in the patient requiring fluids or medications when 3 peripheral attempts were unsuccessful. Note that a visualization alone counts as an attempt in the critical patient with limited peripheral venous access.
  - i. EMTIV's and EMTA's can be the primary attendant when transporting a patient who has antibiotics being infused. The same is true if an IV is in place for fluids using an IV pump. If any ALS level maintenance of the infusions are required, it shall be an ALS level attendant riding with the patient.

## EXPLANATION OF PATIENT CARE TREATMENT PROTOCOLS

5. Airway Management:
  - a. If time permits and properly trained, all oro/naso intubated patients will also have an 18 Fr Nasogastric tube inserted as well to minimize gastric distention.
  - b. All intubated patients MUST have mainstream ETCO<sub>2</sub> (capnography) detection attached through the monitor. Reference the addendum capnography protocol for specific ranges on specific patients.
  - c. All patients who are intubated will have secondary placement confirmed w/ a Colorimetric CO<sub>2</sub> Detector
  - d. After 2 failed attempts at endotracheal intubation, a supraglottic (King LT) airway will be inserted.
  
6. Pediatric Patients
  - a. Any patient weighing less than 30 kg or 66 lbs in total body weight and or less than 8 yrs of age shall be considered a pediatric when referencing drug dosages.
  - b. Some adult protocols may also have corresponding pediatric drug dosages. To minimize redundancy and to expedite care when necessary these pediatric dosages may be listed on the adult protocol but a notation identifying it as a pediatric dosage.
  - c. **In consideration to drug dosages, the protocols will be adhered to over what is recommended in the Broselow Tape.**
  - d. **The Broselow Tape is to be used as a quick reference for age/size considerations.**
  - e. All pediatric patients with any significant trauma shall be transported to Vanderbilt Children's Hospital, critical medical pediatric patients may go to Vanderbilt or Centennial. If the patient will not require advanced level pediatric care or if the condition of the child requires immediate stabilization, the closest appropriate facility at the time may be used. Reference the destination guidelines/transfer protocol for further.



**ANY ACTION OR INACTION THAT MAY BE DEEMED  
INAPPROPRIATE OR HARMFUL TO PATIENT CARE CAN  
RESULT IN DISCIPLINARY ACTION.**

**ADULT CARDIAC EMERGENCIES**

**CARDIAC CHEST PAIN**

- ♥ **ABC's O2 @ 4 L per NC**
- ♥ **12 Lead EKG <10 min of initial contact**
- ♥ **If ST elevation >1mm of elevation in 2 or more contiguous leads or LBBB not known to be old in a patient with typical symptoms**

**Scene time <15 min. Load and GO! Time is Muscle!!**

**STEMI ALERT**  
 If within radio range notify the receiving ER of the **STEMI ALERT** OR  
 Notify Central dispatch via radio that you have a **STEMI ALERT** with age and sex of patient/actual time of sx onset. Send EKG electronically to ED via IPAD

If chest pain is due to recent Cocaine usage or allergic to Fentanyl: Consider Versed 2 mg IVP or 5 mg IN/IM, consult online medical control for any repeat doses...

**Baby Aspirin 81mg X 4 Chewed and swallowed**

**NTG 0.4mg SL for CHEST PAIN HOLD for SBP <100 & HR <60**  
 \*ONLY ONE DOSE PRIOR TO IV ACCESS  
**Obtain IV access (prefer 18 G LAC)**  
 May continue **NTG 0.4mg SL Q 5 min x 2** more doses

**PVC's presenting >6 /min and/or**  
 R on T phenomenon – Give Amiodarone 150 mg in 100 ml D5W over 10 min. If underlying rhythm is bradycardic – refer to Bradycardia protocol

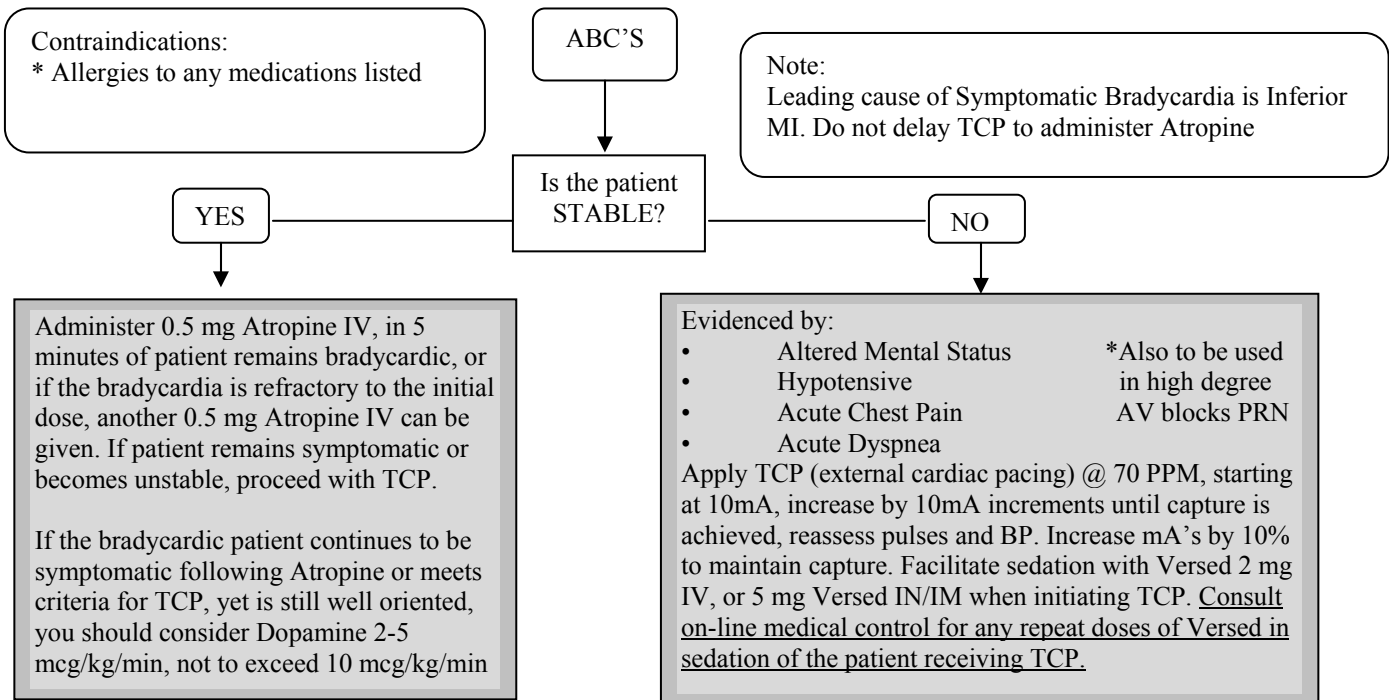
Consider **Fentanyl**  
 50-100 mcg Slow IVP Titrate for Pain After 3<sup>rd</sup> NTG  
 If allergic to Fentanyl – Refer to Med Control for orders.  
**Zofran 4 mg IVP/IM** if Nausea after Fentanyl administration.

**Contraindications:**

- ♥ **DO NOT** administer NTG to any patient who has taken **Viagra** or **Levitra** within the past 24 hours or **Cialis** within the last 48 hours or any performance enhancing medication.
- ♥ Hypersensitivity to any medications listed.
- ♥ **Do NOT** administer NTG to any patients who may be currently prescribed **Retavio** for Pulmonary Hypertension secondary to CHF
- ♥ **Do NOT** administer any medication if the patients **SBP <100** or **DBP <60**.

**ADULT CARDIAC EMERGENCIES**

**SYMPTOMATIC BRADYCARDIA**



Instructions for TCP:

- Apply electrodes and pacing pads
- Turn Monitor dial to Pacer:
- Set milliamps (mA) at 0 and rate at 70
- Observe for visible pacing markers (spikes)
- Slowly increase mA until caption is obtained as evident by one or all of the following:
  - Pulse is palpable and consistent with rate set
  - Every spike is visible with each QRS complex
- Once caption is obtained, increase mA and rate by 10% to hold

DOPAMINE QUICK REFERENCE CHART Patient Weight in KG												
Ug/kg/min	2.5	5	10	20	30	40	50	60	70	80	90	100
<b>2 ug</b>	*	*	*	1.5	2	3	4	5	5	6	7	8
<b>5 ug</b>	*	1	2	4	6	8	9	11	13	15	17	19
<b>10 ug</b>	1	2	4	8	11	15	19	23	26	30	34	38
<b>15 ug</b>	1.4	3	6	11	17	23	28	34	39	45	51	56
<b>20 ug</b>	2	4	8	15	23	30	38	45	53	60	68	75

Epinephrine Drip										
Ug/min	1	2	3	4	5	6	7	8	9	10
<b>Udrops</b>	15	30	45	60	75	90	105	120	135	150



**PULSELESS ELECTRICAL ACTIVITY/ASYSTOLE**

ABC'S

ETT, NG TUBE if time permits, also use ETCO<sub>2</sub> to monitor ETT placement and monitor for quality of CPR. Maintain ETCO<sub>2</sub> at ≥ 10 mmHg if possible.

Establish vascular access via IV/IO procedure, proximal peripheral sites preferred for IV...  
 Administer 1 mg Epinephrine 1:10,000 every 3-5 minutes, no max dose... OR... Vasopressin 40 units. Note that Vasopressin is a one-time dose only. It can replace either the first or second dose of Epi in cardiac arrest.

Note that **Atropine** in Cardiac Arrest is **no longer recommended** per the American Heart Association 2010 ECC

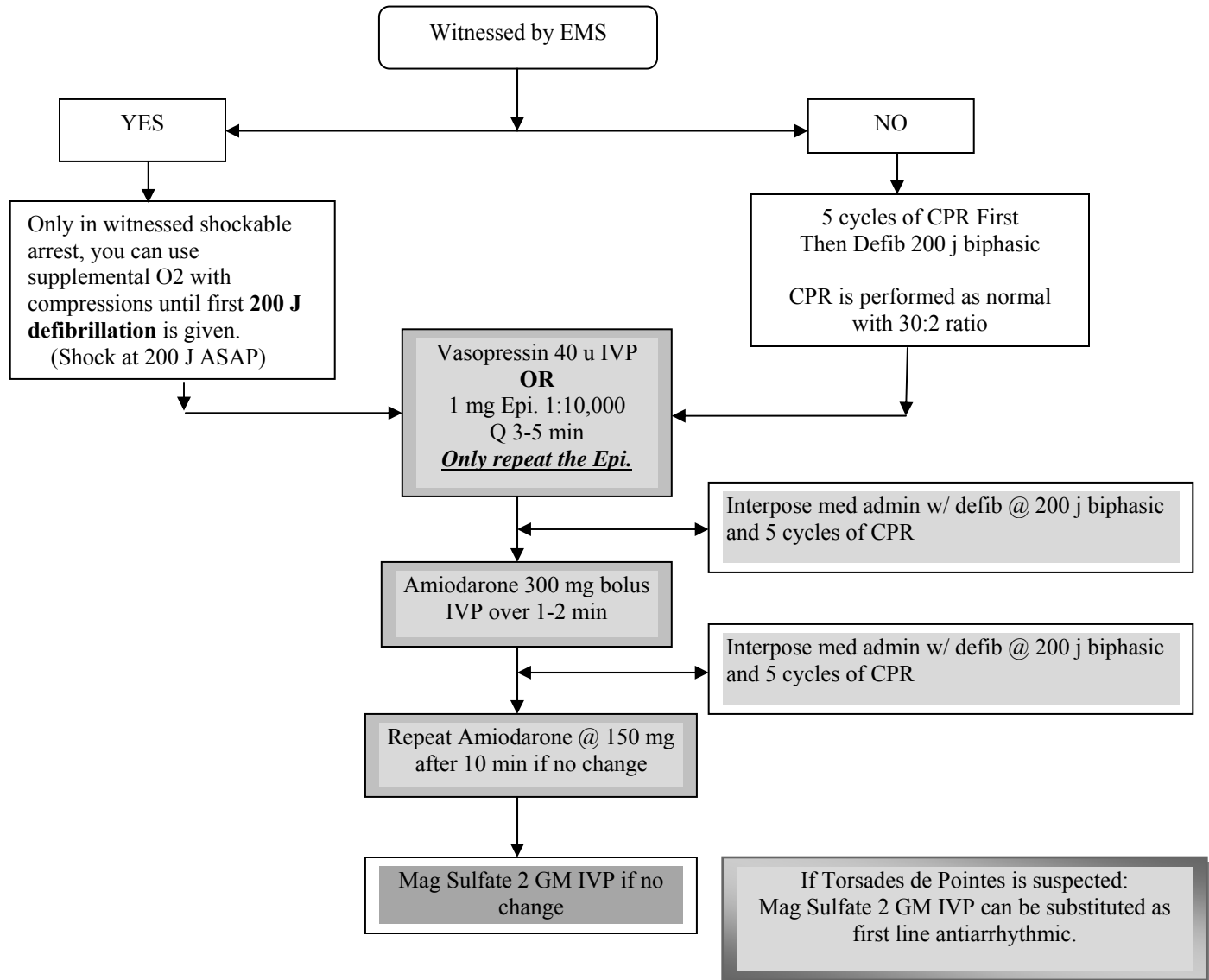
Consider correctable causes:

- Hyperkalemia: Dialysis pt., known hyperK<sup>+</sup>, or known Calcium Channel Blocker overdose...
  - Calcium Chloride 500-1000 mg slow IVP over 10 min.
  - PEDS – 20 mg/kg slow IVP over 10 min
- Acidosis:
  - Sodium Bicarb., 1 mEq/kg of 8.4% concentration (large box) for PEDIATRIC patients or elderly –due to small IV cath size- use 4.2% concentration (small box)
- Tension Pneumothorax
  - Chest decompression
- Known drug overdose
  - Narcan 2-6 mg titrate to effect for Adults
  - **PEDS – 0.1 mg/kg**

Contact Medical Control and consider termination of efforts if:

- No change in ECG from Asystole
- *Total of 3 Meds administered-not including O<sub>2</sub>*
- Patient has ETT or double lumen airway in place and CO<sub>2</sub> detector is purple
- Total arrest time has exceeded 20 min.

**VENTRICULAR FIBRILLATION/PULSELESS V-TACH**



DO NOT ADMIN AMIODARONE IVPB-Cardiac Enzymes will remain elevated for up to 30 min. if pulse restored after defib.

- Do not administer Meds via ETT, if IV/IO unsuccessful continue CPR only.
- Interpose med. Admin. w/ defib at 200 j biphasic x 1 and 5 cycles of CPR
- Do not defib more than once at a time.
- **Repeat Epi every 3-5 minutes in-between w/ defib and antiarrhythmics**
- Remember to give compressions even while the defibrillator is charging.
- ***Consider attempting a QUALITY resuscitation on scene where patient is located before moving them in a shockable cardiac arrest. The emphasis here is providing high quality CPR, early defibrillation and medications without any delay. This shall be done to promote provider safety in transport and improve chances of ROSC. As always, if safety concerns to the immediate scene are noted, transport immediately.***

FIELD DETERMINATION OF DEATH

1. Resuscitation is not to be attempted or continued, if a dead appearing patient has one or more of the following:
  - Rigor mortis.
  - Dependent lividity.
  - Decomposition of body tissues.
  - Devastating, non-survivable injury(s) clearly incompatible with life such as:
    - Decapitation.
    - Incineration.
    - Brain matter visible.
2. A valid DNR order, advanced directive, P.O.S.T., P.O.L.S.T., P.O.A. or patient advocacy paperwork is present or produced and the patient is in full cardiac arrest.
  - If the family states that the patient has a DNR but they cannot produce the paperwork, then Medical Control needs to be contacted to get an order to stop CPR.
3. An on scene physician with appropriate identification or Medical Control issues an order to stop CPR.
4. Blunt traumatic arrest and is in asystole.
5. Unwitnessed arrest with unknown amount of down time with asystole in 2 or more leads.
6. The paramedic may choose not to perform an EKG if obvious death is noted, because attempts need to be made to preserve any potential crime scene evidence.
7. If family member(s) / bystander(s) want resuscitative measures started, then begin and transport.
  - You may call Medical Control while en route for discontinuation orders.
8. **When in any doubt, start CPR.**

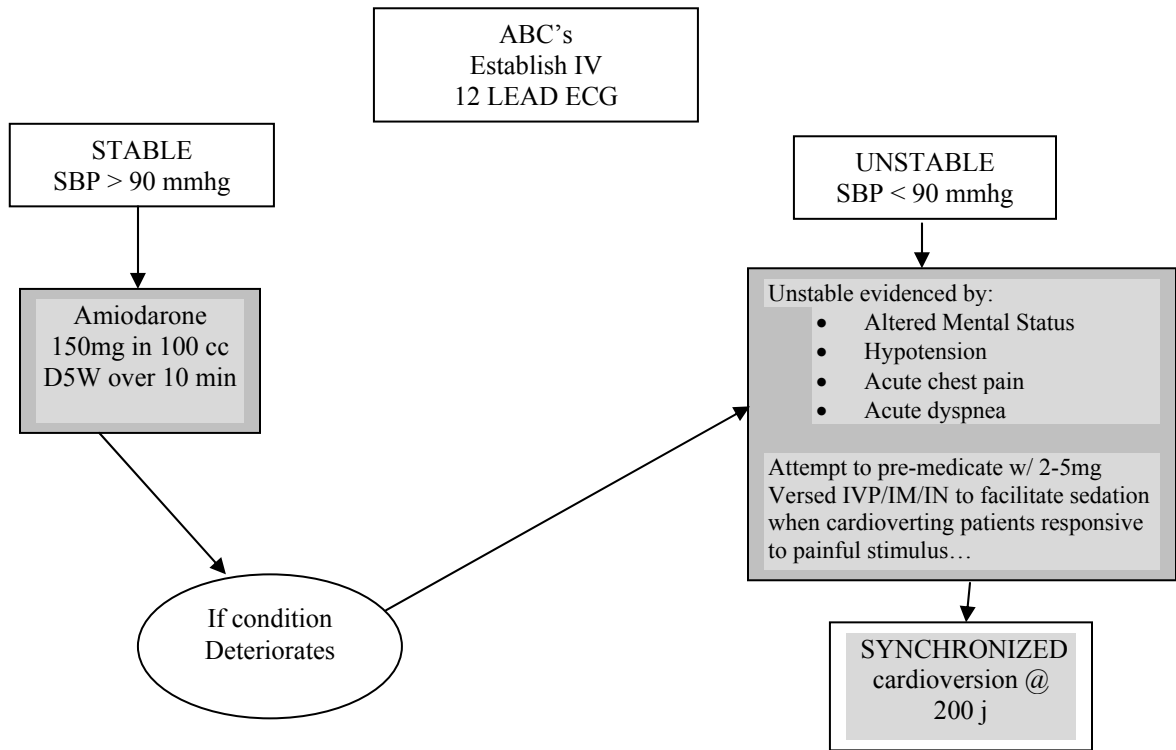
NOTE: CPR prior to crew arrival can be stopped by the crew if the death is obvious. However, if the crew begins CPR then it can only be stopped with direction for Medical Control. You should feel free to start or continue CPR when in doubt or if family insists.

Termination of resuscitation efforts may be considered after **20 minutes** of ACLS interventions with no signs of improvement in the **medical cardiac arrest** patient.

Termination of resuscitation efforts may be considered after **15 minutes** of ALS interventions with no signs of improvement in the **traumatic cardiac arrest** patient. Bilateral chest decompression is also indicated in traumatic cardiac arrest to treat underlying potential for tension pneumothorax and cardiac tamponade potentials with associated known or suspected thoracic trauma.

**Any questions, call on-line medical control at the transportation destination you would transport to.**

**VENTRICULAR TACHYCARDIAS**



Procedure for Synchronized Cardioversion with the Zoll E:

- Place patient on electrodes and combo-pads
- Press synch button to activate synchronizer
- Synch. markers should be visible at top or bottom of screen
- Select appropriate joule setting
- Press defib button and wait for patient to be cardioverted.

Troubleshooting if synchronizer does not deliver cardioversion:

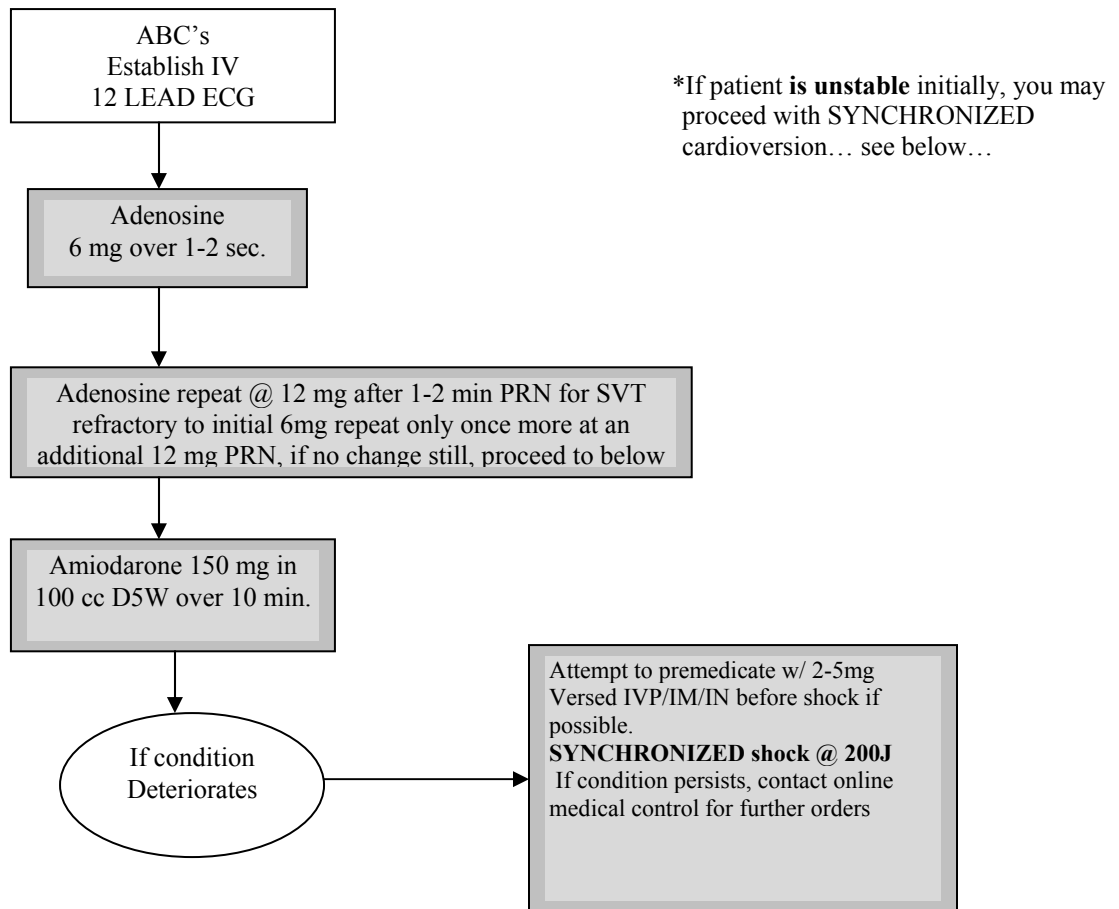
- Increase gain so that QRS complex is at least half or 2/3 of the monitor screen.
- Patient is not being monitored with electrodes as well as combo pads
- Combo pads are not properly applied.

**ATRIAL TACHYCARDIA  
(Supraventricular Tachycardia)**

THE FOLLOWING CRITERIA MUST BE MET TO CONFIRM SVT PRIOR TO TREATMENT:

- No history to suggest a compensatory tachycardia
- Regular R-R intervals of the QRS complexes
- QRS width less than or equal to 1 small block / 0.04 seconds / 1 mm
- Heart rate must be greater than 150/min in Adult, 180/min in Child, 220/min in Infant

Confirmed SVT? Proceed with below...



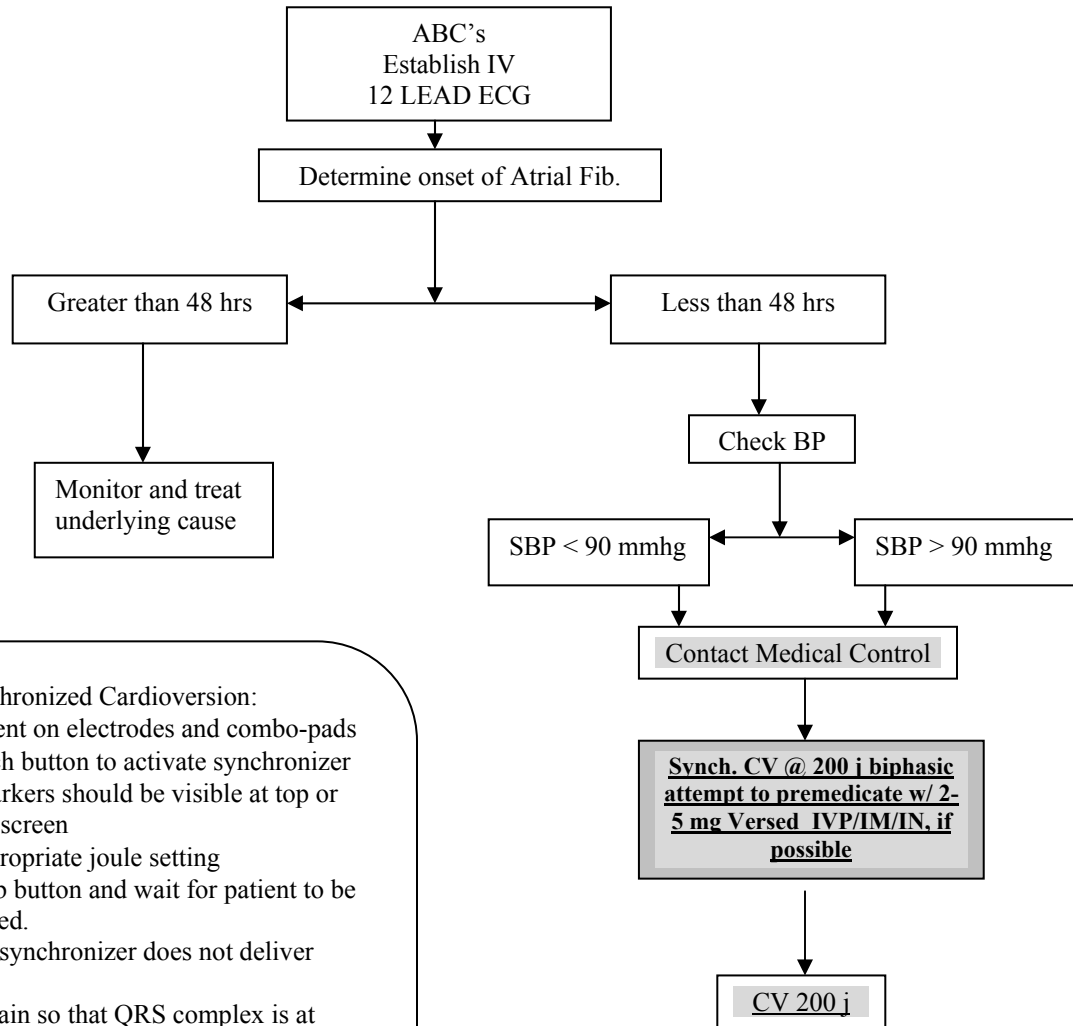
Procedure for Synchronized Cardioversion with the Zoll E:

- Place patient on electrodes and combo-pads
- Press synch button to activate synchronizer
- Synch. markers should be visible at top or bottom of screen
- Select appropriate joule setting
- Press defib button and wait for patient to be cardioverted.

Troubleshooting if synchronizer does not deliver cardioversion:

- Increase gain so that QRS complex is at least half or 2/3 of the monitor screen.
- Patient is not being monitored with electrodes as well as combo pads
- Combo pads are not properly applied.

**ATRIAL FIBRILLATION**



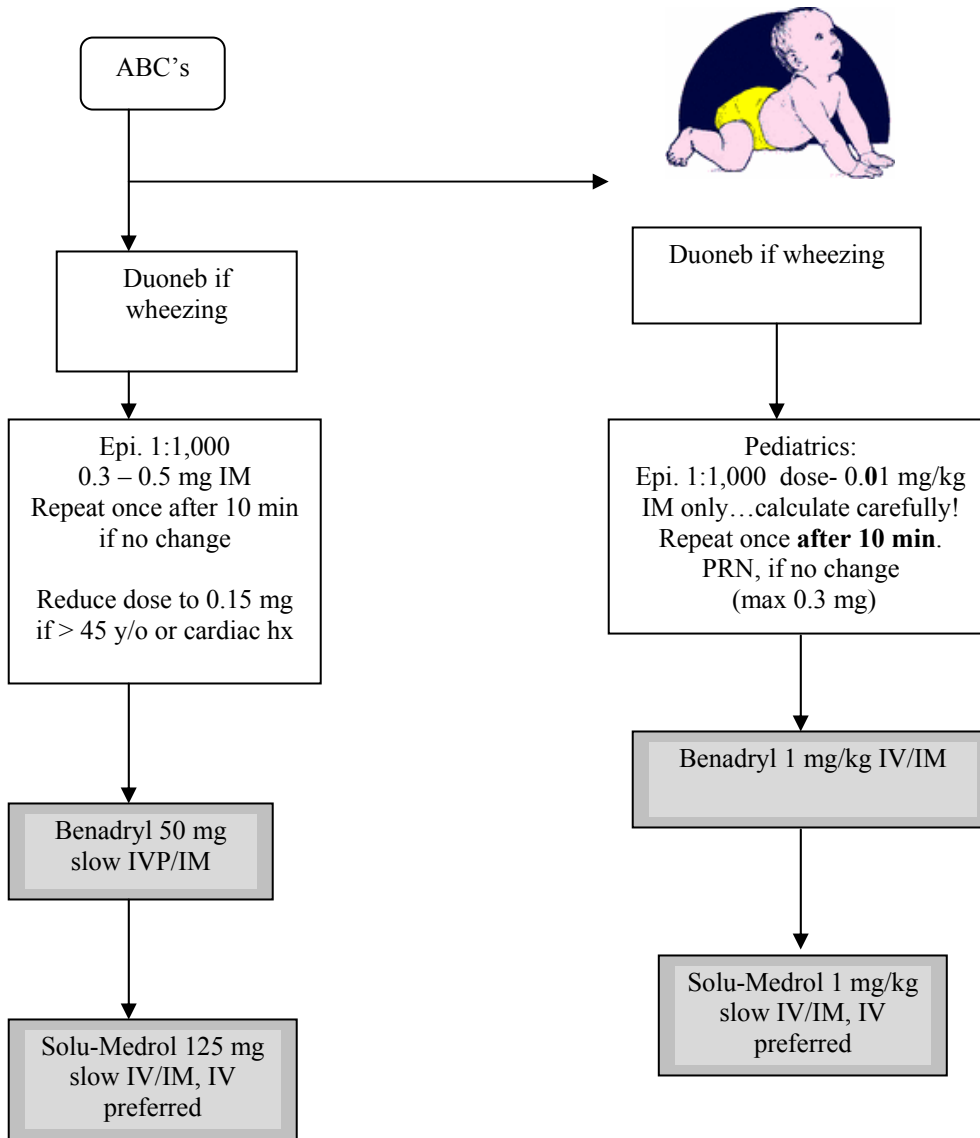
Procedure for Synchronized Cardioversion:

- Place patient on electrodes and combo-pads
- Press synch button to activate synchronizer
- Synch. markers should be visible at top or bottom of screen
- Select appropriate joule setting
- Press defib button and wait for patient to be cardioverted.

Troubleshooting if synchronizer does not deliver cardioversion:

- Increase gain so that QRS complex is at least half or 2/3 of the monitor screen.
- Patient is not being monitored with electrodes as well as combo pads
- Combo pads are not properly applied.

**ALLERGIC REACTIONS**



*\*Consider using the first-aid sting swabs for assistance with pain relief if the patient has been stung by an insect.*

**CONSULT WITH ON-LINE MEDICAL CONTROL FOR THE ADMINISTRATION OF AN EPINEPHRINE DRIP FOR REFRACTORY ANAPHYLAXIS WHEN 2 INTRAMUSCULAR DOSES DO NOT STOP THE CONDITION.**  
 (acceptable dosing range would be 2-10 mcg/min in Adults, and 0.1-1.0 mcg/kg/min in pediatrics)

**POISONINGS/OVERDOSES**

ABC'S

Determine:

- Onset of symptoms
- Drug/Poison
- Amount ingested/exposed

Versed 2mg slow IVP or 5mg IM/IN for Cocaine Toxicity

Narcan 0.5 mg slow IVP, titrate **up to 10 mg** if known Opiate ingestion, monitor and treat accordingly for respiratory depression & BP.

Do not exceed 2 mg in one dosage. Contact on-line medical control for further orders of Narcan once a total of 8 mg has been given.  
Monitor CO2 level



Pediatric Narcotic Overdose:

For patients < 5 yrs old or <20 kg : Administer Narcan 0.1 mg/kg IV/IO/IM/IN  
For patients > 5 yrs old or > 20 kg: Administer Narcan 0.5 mg IV/IO/IM/IN increments, not to exceed 2 mg each dose. If pt. remains unresponsive with 2 mg, they may receive up to 8 mg MAX

Considerations:

- Protect yourself from toxin or combative patients.
- Avoid too rapid a reversal of toxin.
- Attempt to collect pill bottles/containers/MSDS sheets and transport with patient.

Precautions:

- Be cautious when admin. Narcan in pts. Who have ingested Ultram. It may induce seizures.

If confirmed Beta Blocker O.D. only:

Call On-Line Medical Control to consult for administration of Glucagon... per MD orders only...

If Tricyclic-Antidepressant OD:

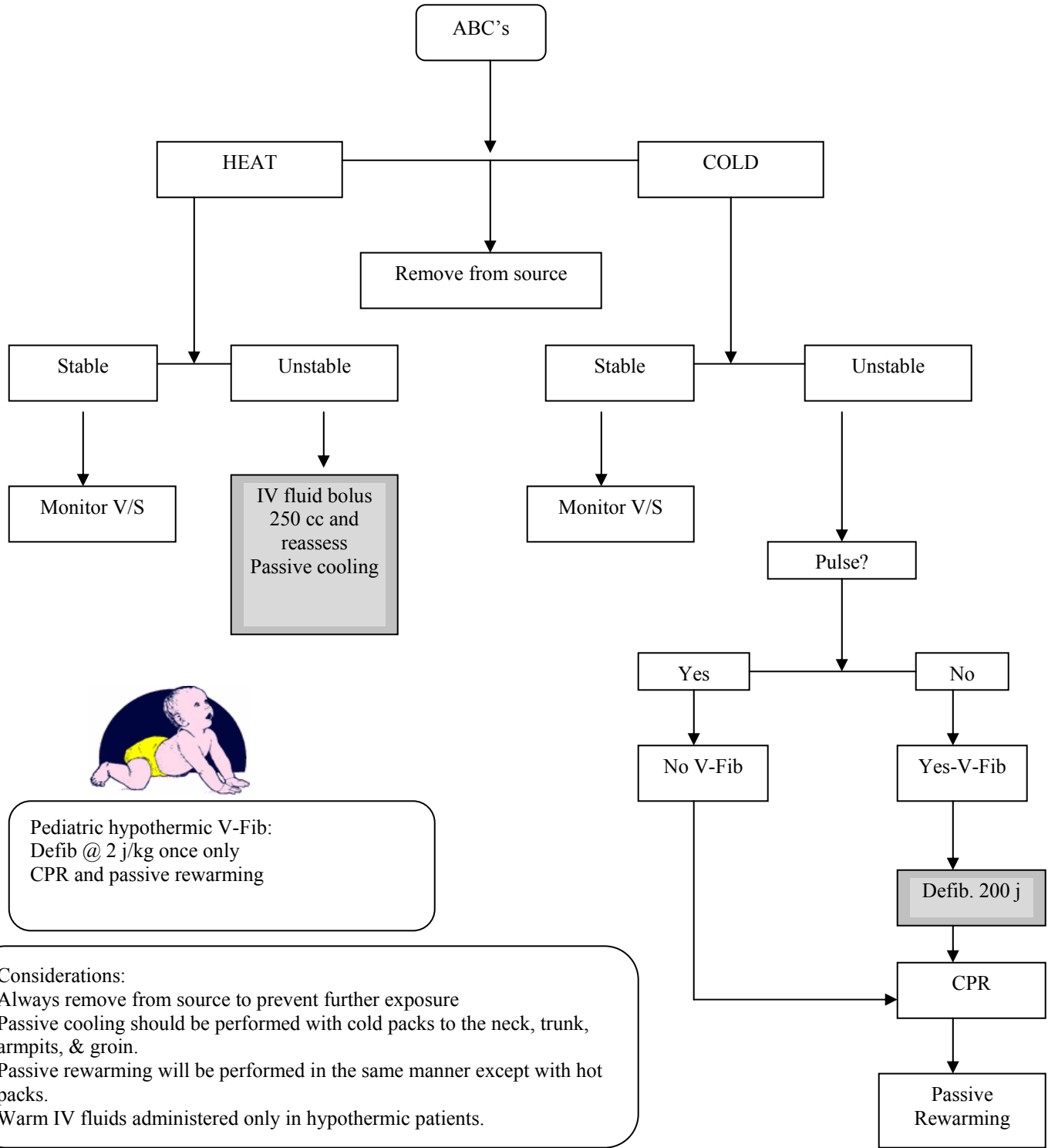
Sodium Bicarbonate 1-2 mEq/kg slow IVP

Examples of Tricyclic Antidepressants (TCA's):

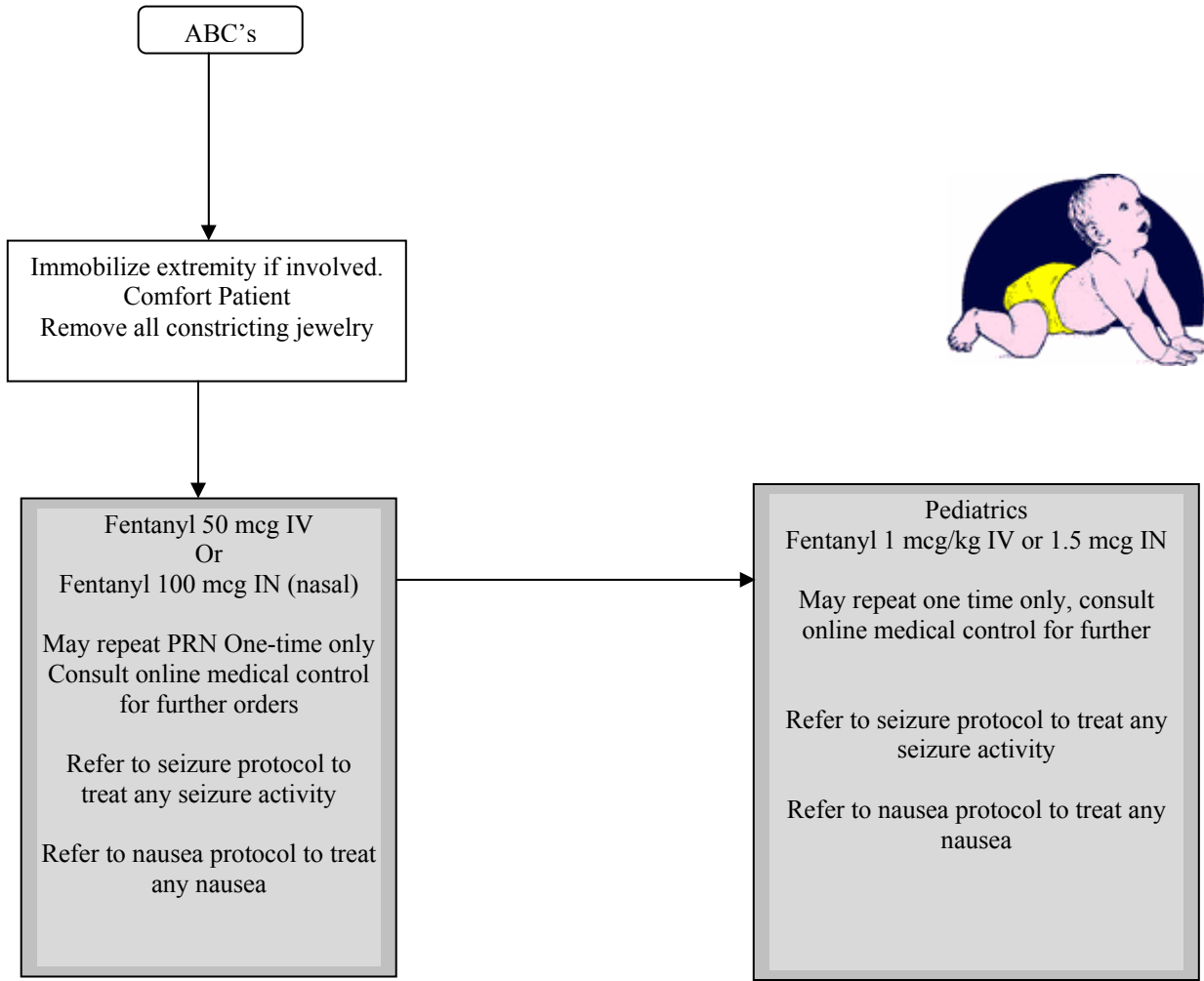
- Amitriptylline/Elavil
- Amoxapine/Moxadil
- Desipramine/Norpramin
- Doxepin/Sinequan
- Imipraminine/Tofranil
- Nortriptylline/Pamelor



### THERMAL EXPOSURES

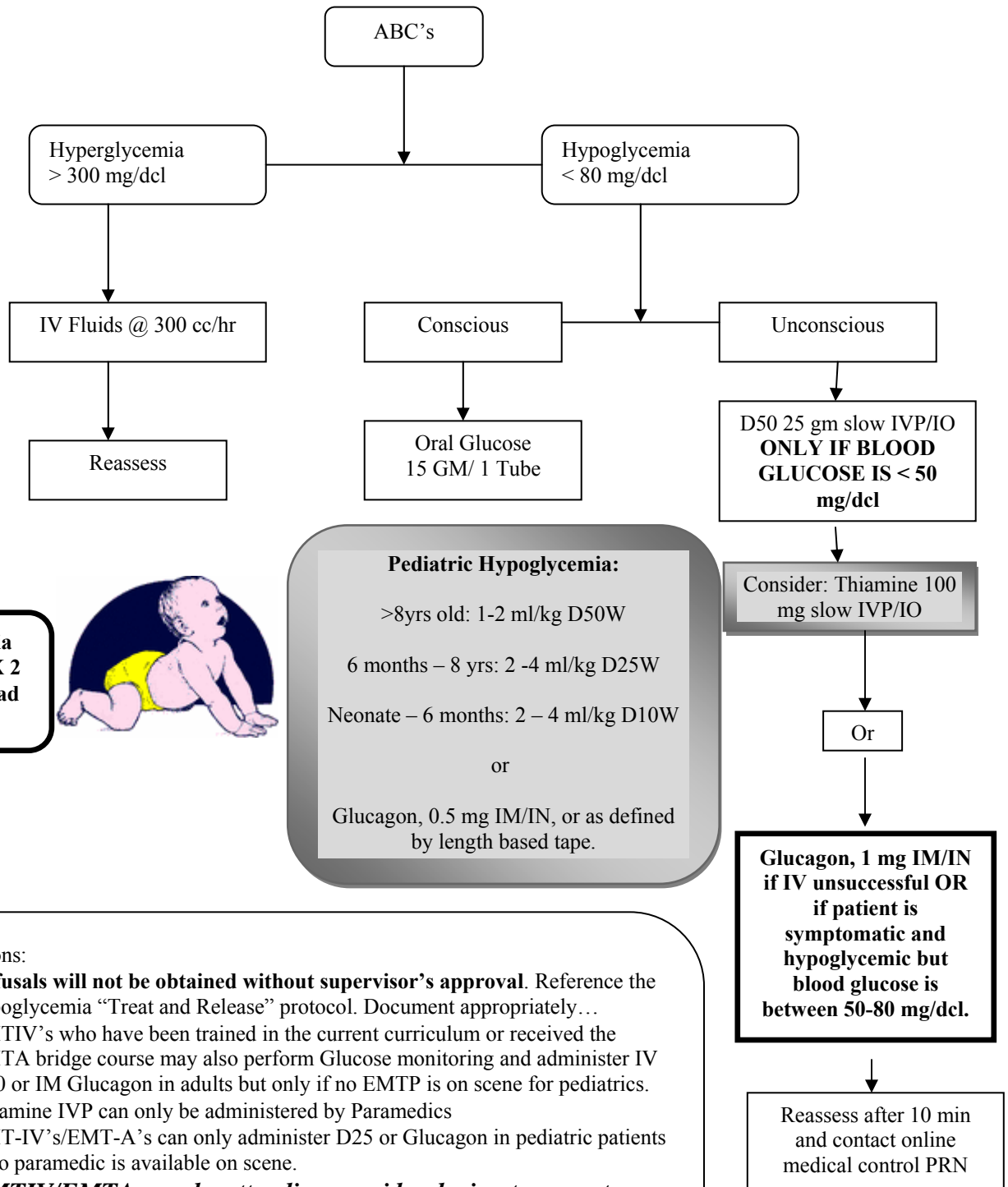


**POISONOUS SNAKE BITE**



Considerations:  
Never place yourself in danger attempting to identify the cause of the bite.  
Do not apply constricting bands on extremities.

DIABETIC EMERGENCIES



**Pediatric Hyperglycemia**  
 Fluid bolus @ 20 cc/kg X 2  
 Observe for fluid overload



**Pediatric Hypoglycemia:**  
 >8yrs old: 1-2 ml/kg D50W  
 6 months – 8 yrs: 2 -4 ml/kg D25W  
 Neonate – 6 months: 2 – 4 ml/kg D10W  
 or  
 Glucagon, 0.5 mg IM/IN, or as defined by length based tape.

Considerations:

- **Refusals will not be obtained without supervisor’s approval.** Reference the hypoglycemia “Treat and Release” protocol. Document appropriately...
- EMTIV’s who have been trained in the current curriculum or received the EMTA bridge course may also perform Glucose monitoring and administer IV D50 or IM Glucagon in adults but only if no EMTP is on scene for pediatrics.
- Thiamine IVP can only be administered by Paramedics
- EMT-IV’s/EMT-A’s can only administer D25 or Glucagon in pediatric patients if no paramedic is available on scene.
- ***EMTIV/EMTA may be attending provider during transport after D50 is administered only if patient has no other associated illness/injury requiring ALS intervention/monitoring. This should be carefully considered, these calls will be reviewed in the QA process to ensure ALS monitoring was not required.***

**HYPERTENSIVE CRISIS**

- Carefully monitor and assess patient for complications of uncontrolled hypertension. Observe for pulmonary edema and treat appropriately.
- Transport pt. with head elevated at least 30 degrees if at all possible.
- **DO NOT treat hypertension pre-hospital unless ordered to do so by On-Line Medical Control.**

**EMT/EMT-IV**

- Supplemental O2
- IV NS TKO or heplock
- Transport without delay to nearest facility
- Hyperventilation of the patient with possible signs of ICP from hemorrhagic CVA or TBI is no longer recommended.



Paramedic / ALS

- Obtain ECG / 12 lead if time permits.
- Do not treat hypertension pre-hospital unless ordered to do so by on-line medical control...

**NAUSEA/VOMITING**

Indication:  
 Uncontrollable/active vomiting, or nausea alone... also to be used in conjunction with trauma, suspected AMI pt.'s, and suspected ICP from Traumatic Brain Injury or Hemorrhagic CVA to be a prophylactic against retching (dry heaves) that could worsen the ICP.

Assess ABC's  
 O2, IV, ECG, glucose check

Zofran (Ondansetron)  
 4 mg IVP route is preferred  
 OR  
 Phenergan 12.5 mg IV, 25 mg IM, if IV, dilute in NS flush.

You may repeat initial dose ONE TIME as needed in 10 mins

Zofran 4 mg IV/IM (IV route is preferred)  
 OR  
 Phenergan (Promethazine) 12.5 mg IVP or 25 mg IM if a sedative effect is desired or otherwise indicated to use as an alternative for Zofran.

**Only use Zofran in trauma or AMS / suspected CVA**

Contraindications for Zofran:

- Hepatitis
- Cirrhosis

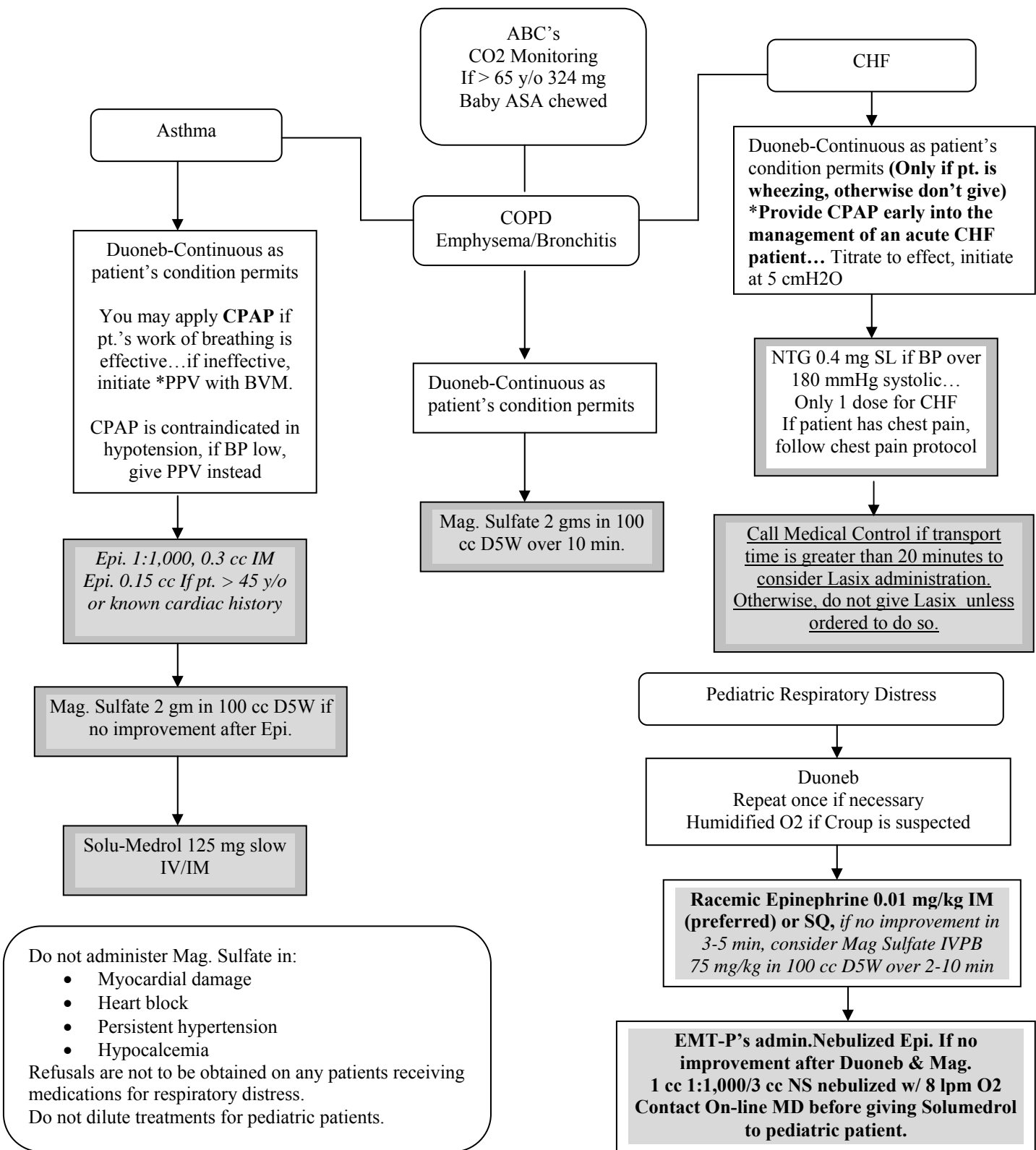


IV Fluid Bolus 20 cc/kg

Pediatrics 1-4 yrs old  
 Zofran (Ondansetron)  
 0.1 mg/kg  
 Greater than 4 y/o: 4 mg

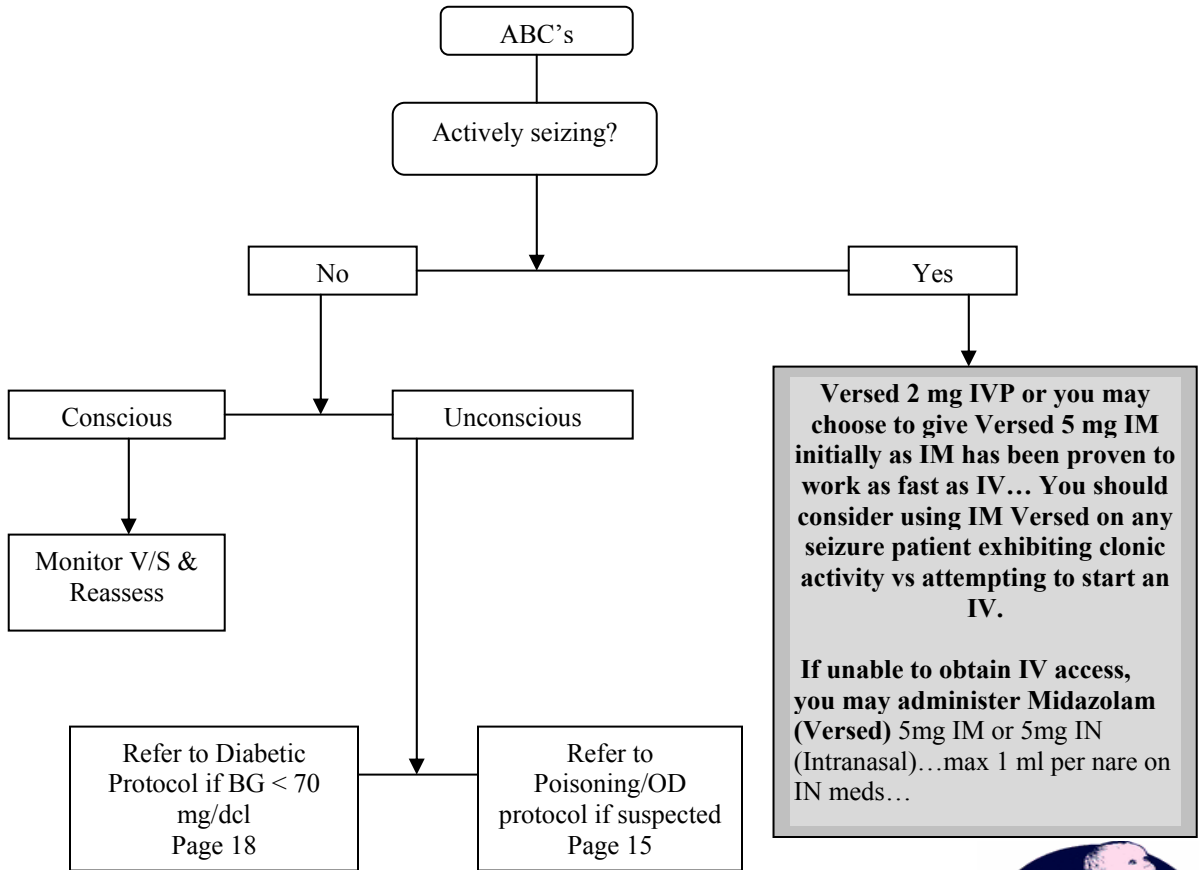
ADULT MEDICAL EMERGENCIES

RESPIRATORY DISTRESS



\*PPV – Positive Pressure Ventilations... use a BVM to supplement tidal volume... will likely yield need for intubation in many COPD exacerbation patients... reference PAI/RSI protocol as needed... page 30...

**SEIZURES**



**Pediatric active seizures:**

Versed (Midazolam) 0.1 mg/kg IV or 0.2 mg/kg IM, not to exceed 5 mg on any pediatric patient each dose.

**If unable to obtain IV access, you may administer Midazolam (Versed) 0.2 mg/kg IM, the IM dose may actually be a more rapid route of administration in a pediatric pt. having an active seizure.**

**You may repeat the initial dose ONE TIME if patient is still seizing after 5-10 minutes...**

**Special Note on IN (Intranasal Meds)**

The efficacy of intranasal (IN) meds in a seizure pt. is questionable due to the possible disordered control of breathing and potential clonic activity. If ordered to use IN Versed in seizures, give ½ the dose up each nare with the patient in an upright position. There is a maximum of 1 ml per nare.

**STROKE/CVA**

Assess for:  
 Confusion, severe headache, hx of HTN or CVA/TIA  
 Hemiparesis/plegia  
 Facial Droop, speech disturbance, altered mental status  
 Arm weakness or drift

ABC's

Determine time of onset:  
 "When did you last notice  
 him/her acting normal?"

Maintain in semi-fowlers if not  
 contraindicated.

Perform Cincinnati Stroke Scale:

- (1) Speech:
  - "You can't teach an old dog new tricks."
- (2) Facial symmetry:
  - Observe crease line of mouth and eyebrows
- (3) Arm drift:
  - Have patient hold arms out at 45 degree angle with eyes closed.
  - Assist with raising arms if necessary but remove your hands after they close their eyes.

Hyperoxygenate w/ BVM and 100% O<sub>2</sub>,  
 consider placement of a nasal cannula at 4-6  
 lpm flow rate on the patient to minimize  
 desaturation in preparation of CFI/PAI or RSI

Sedate and intubate if necessary. Refer  
 to RSI Protocol. Page 31

Any signs of retching (dry heaving) or  
 other complaints of nausea should be  
 treated with Zofran 4 mg IVP, contact  
 online medical control for repeat doses

Monitor airway and BP every 5 minutes

Transport only to a designated Stroke  
 Facility, if possible...

These would be most all area hospitals  
 who have become accredited stroke  
 centers. Call ahead as early as possible to  
 give report as a "stroke alert".

Considerations:

Do not delay necessary treatments to perform Stroke Scale.  
 Attempt to determine time of onset.



**ADULT MEDICAL EMERGENCIES**

**SHOCK-NON-TRAUMATIC ORIGIN**

Indications:  
 Known or suspected compensated or decompensated shock in the medical patient.  
 Unlike trauma, in this situation you should bolus the patient back to a normal BP for the patient.  
**Initiate 20 ml/kg fluid boluses** as long as the patient does not have s/s of pulmonary edema.

ABC's, O2, IV, ECG, Blood Sugar

You may give up to a total of 3 boluses at 20 ml/kg each.... For a total of 60 ml/kg.  
 If rales or s/s of pulmonary edema present, do not give further fluids.  
 If hepatomegaly (liver engorgement) presents, slow the rate, and consider alternative therapies.

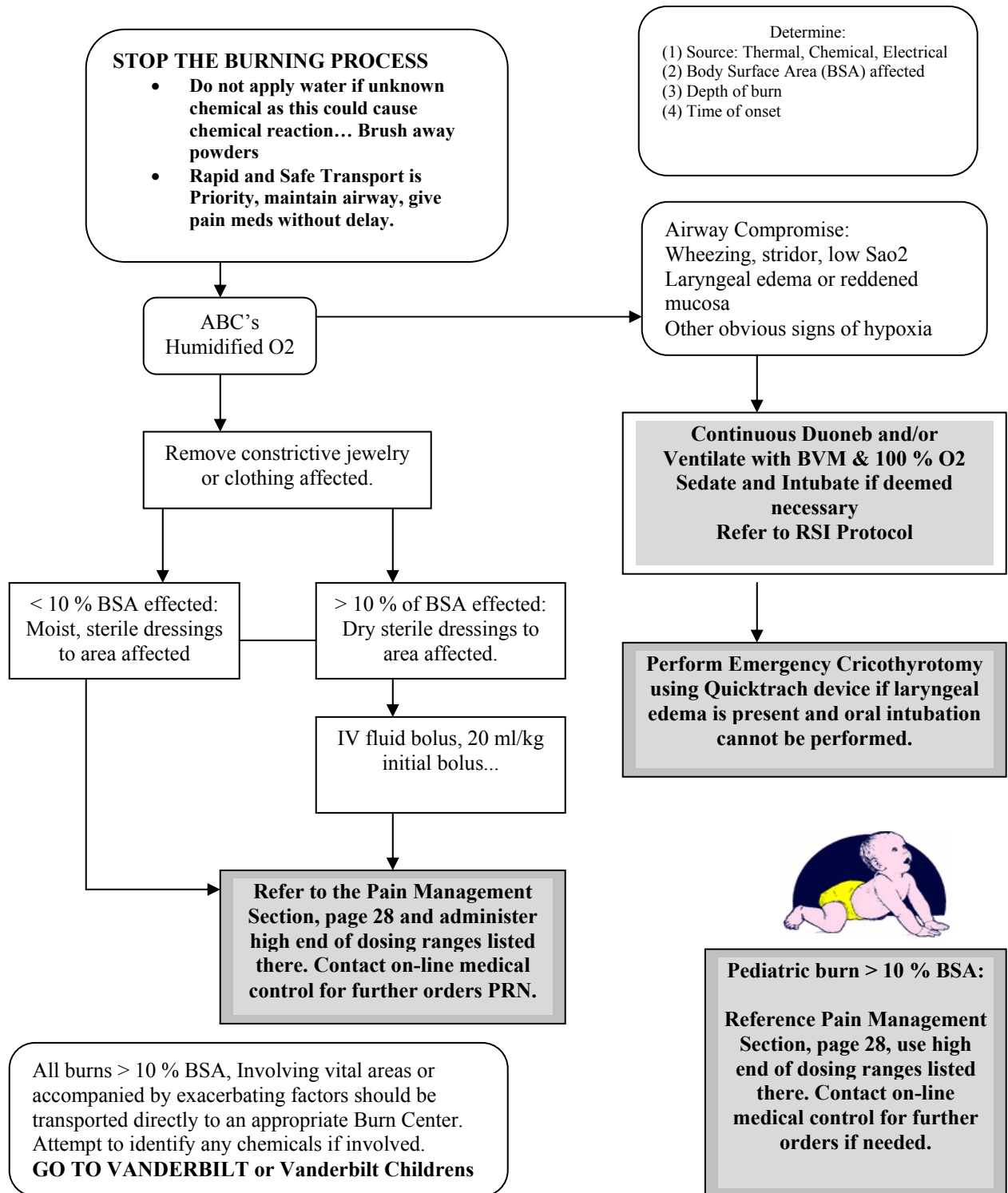
If pt. remains hypotensive refractory to fluids or has pulmonary edema:  
 Dopamine Infusion IVPB 5mcg/kg/min  
 Or  
 Epi. Infusion @ 2-10 ug/min (adults), peds Epi gtt is 0.1-1.0 mcg/kg/min

Contraindications:  
 This protocol is not to be used for any patient that is presenting in shock due to trauma or Neurogenic or Anaphylactic Shock.

DOPAMINE QUICK REFERENCE CHART Patient Weight in KG												
Ug/kg/min	2.5	5	10	20	30	40	50	60	70	80	90	100
<b>2 ug</b>	*	*	*	1.5	2	3	4	5	5	6	7	8
<b>5 ug</b>	*	1	2	4	6	8	9	11	13	15	17	19
<b>10 ug</b>	1	2	4	8	11	15	19	23	26	30	34	38
<b>15 ug</b>	1.4	3	6	11	17	23	28	34	39	45	51	56
<b>20 ug</b>	2	4	8	15	23	30	38	45	53	60	68	75

Epinephrine Drip										
Ug/min	1	2	3	4	5	6	7	8	9	10
<b>Udrops</b>	15	30	45	60	75	90	105	120	135	150

**BURN EMERGENCIES**



## THORACIC INJURIES/ CHEST DECOMPRESSION

This procedure may only be performed by TN licensed EMT-Paramedics employed by Robertson County EMS.

Observe for:  
Thoracic injuries accompanied with decreased breath sounds.  
Tachycardia, Tachypnea, Decreased BP  
Decreased SaO<sub>2</sub> and no improvement despite O<sub>2</sub> therapy.

### PROCEDURE

1. ECG, IV'S, SaO<sub>2</sub>
2. Maintain Spinal precautions and immobilize if indicated
3. Administer O<sub>2</sub> via 10-15 lpm NRB or PPV w/ BVM & 100% O<sub>2</sub>
4. Identify and prep site with Betadine and/or alcohol
  - 2<sup>nd</sup> or 3<sup>rd</sup> intercostal space at the mid-clavicular line.
5. Insert decompression needle with syringe attached at a 90 degree angle to the chest over the top of the rib
  - Confirm placement with aspiration or sudden "pop" or release of pressure/resistance
6. Remove needle and thread catheter until flush with chest wall.
7. If needle becomes possible occluded, attempt to aspirate occlusion with syringe or insert a second needle next to first site.

**\*You are better off to perform a field thoracentesis in the patient who you think needs it and they don't rather than forego the procedure and the patient develop the tension pneumothorax that can cause them to rapidly deteriorate. Document your justification appropriately. (i.e. low SPO<sub>2</sub> refractory to high flow O<sub>2</sub>, hypotension, JVD, tracheal deviation, absent breath sounds, asymmetrical rise and fall, paradoxical chest wall movement, acute dyspnea). If the pt. is in mild distress and breath sounds are only diminished, you can withhold while carefully monitoring for the above mentioned s/s to present. Note that mid-axillary placement is no longer recommended. You may use standard IV cath's in pediatric pt.'s.**

Considerations:  
Do not apply MAST trousers to any patients with Thoracic trauma.  
Do not administer Dopamine to patient with post-traumatic hemorrhaging.  
Do not wait for tracheal deviation and distended neck veins to become visible before decompression.

**\*For sucking chest wounds (open pneumothorax), you should apply the chest seals by following directions on the packaging of the HyFin Dressings carried on the ambulance. These may need to be "burped" occasionally in transport if s/s of pneumothorax present, but in this situation needle thoracentesis is not indicated.**

## PAIN MANAGEMENT POST-TRAUMATIC INJURIES

### Indications:

- Patients who have sustained minor or major traumatic injury requiring analgesics.

### Contraindications:

- Profound Hypotension prior to analgesic administration
- Acute Respiratory Depression prior to analgesic administration

### Precautions: (If presented with the following, contact On-Line Medical Control for consult)

- Critically injured patients in unstable condition
- Patients who are already “pre-medicated” from acute alcohol intoxication or under the effects of heavy regimens of prescribed narcotic analgesics

### ADULT - Pain Management in Trauma:

**\*\*\* Administer 4 mg Zofran (Ondansetron) with administration of analgesics to prevent associated nausea\*\*\***

- For **Multi-System Trauma**, Soft-tissue Trauma, Musculoskeletal Injuries, and Burns administer:

**Fentanyl (Sublimaze) 50 - 100 mcg IVP initial dose – normally healthy adults**  
- MAY REPEAT ONE TIME IN 10 MINUTES IF NEEDED-

or

**50 mcg IVP initial dose for geriatric patients (> 65 yrs old)**  
- MAY REPEAT ONE TIME IN 10 MINUTES IF NEEDED

or

50 – 100 mcg Intranasal (IN) if no IV available in **stable patient**  
- MAY REPEAT ONE TIME IN 15-20 MINUTES IF NEEDED

### PEDIATRIC – Pain Management in Trauma:

**\*\*\* Administer 0.1 mg/kg Zofran (Ondansetron) with the administration of analgesics to prevent associated nausea\*\*\***

- For **Multi-System Trauma**, Soft-tissue Injuries, Musculoskeletal Injuries, and Burns administer:

**Fentanyl (Sublimaze) 1 – 2 mcg/kg IV/IM...MAY REPEAT IN 10 MINUTES IF NEEDED.**

or

1.5 mcg/kg IN (Intranasal)... MAY REPEAT IN 10 MINUTES IF NEEDED

#### Special Notes:

**IN (Intranasal) – Fentanyl only**...for patients without an IV in place who are stable, and may require analgesic effects... must be able to maintain their own airway... give ½ the dose up each nare with the patient in an upright position. There is a maximum of 1 ml per nare.

## ETOMIDATE FOR SEDATION IN PROLONGED EXTRICATION

Indications:

Patients in extreme pain due to multiple fractures, involved in prolonged extrication situations, to prevent further injury during movement.

O2| IV

Etomidate 10 mg increments IV/IM, Max. 40 mg  
Monitor respiratory drive and be prepared to assist ventilations.

**OR**

If Etomidate is unavailable you may use Versed as the Sedative for this situation. The dose would be 2mg IVP, 5mg IM/IN, pediatric doses 0.1 mg/kg IV, 0.2 mg/kg IM/IN... IV is preferred route

One time dose only, without online medical control approval for any further...

Note, if you do not have any Etomidate on hand at the time, you may administer Versed to sedate patients in complicated extrication situations. (As listed above)

**NEVER HESITATE TO CALL ON-LINE MEDICAL CONTROL FOR FUTHER ORDERS IF NEEDED.**

Contraindications for Etomidate administration:

- Decreased respiratory drive prior to administration
- Decreased level of consciousness due to any etiology\cause

Be cautious of Trismus when administering Etomidate, be prepared to RSI if this occurs.

Also observe for muscle tremors.

**PHARMACOLOGICALLY ASSISTED INTUBATION (PAI)/RAPID SEQUENCE INDUCTION (RSI) PROTOCOL**

Indications:

1. Any medical or trauma patient over the age of 8 y/o who may be anxious, combative, and/or confused due to hypoxia and in need of prolonged ventilatory support via ETT.
2. Other means of maintaining oxygenation and adequate airway control are unsuccessful

1. Assess ABC's, confirm need for PAI or RSI
2. O2 via PPV & 100% O2, SaO2
  - a. **CONSTANTLY MONITOR SAO2**
3. **ECG** and IV access, PLEASE CONSIDER PLACING CANNULA AT HIGH FLOW RATE IN NARES OR DIRECTED INTO OROPHARYNX TO MINIMIZE DESATURATION...
4. **Lidocaine 1 mg/kg slow IVP – give only if you suspect ICP** with Traumatic Brain Injury (TBI) or likely hemorrhagic stroke patients... often evidenced by widened pulse pressure, anisocoria (unequal pupils), posturing, HTN with bradycardia (Cushing's Reflex)
  - a. **Etomidate 40 mg slow IVP – or – Versed 5 mg IVP** (if Etomidate is unavailable at the time)
  - b. **PEDIATRIC** - Atropine 0.02 mg/kg slow IVP to prevent reflex bradycardia
5. Assess airway and jaw tone
6. Perform Sellick's Maneuver and **attempt to intubate**
7. If **unsuccessful** and/or **patient is still combative** and/or mandible is still **clenched**:
  - a. Admin. **1-1.5 mg/kg Succinylcholine** slow IVP
8. Reassess airway status and/or jaw tone
9. Perform Sellick's Maneuver and attempt to intubate
  - a. **If successful,**
    - i. **Confirm placement** with breath sounds and colorimetric capnometer.
  - b. **If unsuccessful,**
    - i. **insert double lumen airway and/or continue to ventilate with BVM**
    - ii. **No further administration of a NMB is permitted**
10. If endotracheally intubated after Succinylcholine & **transport time > 10 min**:
  - a. **Norcuron, 0.1 mg/kg slow IVP** to maintain paralysis and inhibit fasciculations
11. **Maintain sedation PRN (as needed)** with **Versed (Midazolam) 5 mg IVP**, may repeat in 5-10 minutes if necessary to maintain sedative effect. Contact on-line medical control for further orders if needed to facilitate appropriate management of any intubated patient.
12. Note time of medication administration and document accordingly.

**Note:**

- **This procedure is only to be performed by TN licensed EMT-Paramedics, who have received the training and are approved by Robertson County EMS, its EMS Director(s) and Medical Director.**
- **Medical control must be consulted before this procedure can be performed in pediatric patients less than 8 y/o**
- **Fasciculations may only present as rapid eye twitching and excessive salivation. Full tonic-clonic activity may not be present.**
- **Ensure that patient is properly sedated prior to NMB administration and while intubated.**
- **Be cautious of Succinylcholine administration in patients with burns and pediatric patients less than 8 y/o.**

**Contraindications:**

- **Known hyperkalemia**
- **Renal failure**
- **Facial Trauma that precludes endotracheal intubation**
- **Eye injury**
- **Known recent history of Glaucoma**
- **Neck deformity or inability to locate landmarks for Cricothyrotomy as a emergency airway**

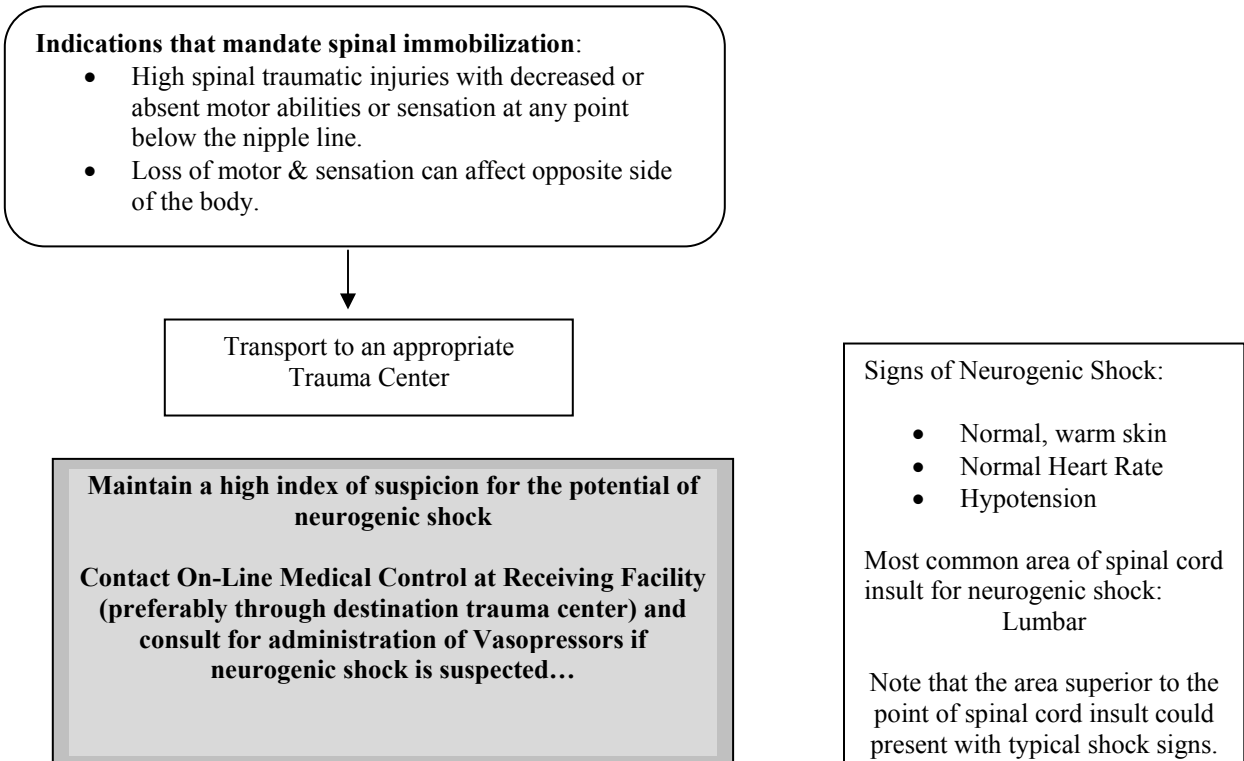
**SPINAL CORD INJURIES / SELECTIVE SPINAL IMMOBILIZATION PROTOCOL**

**CERVICAL SPINE CLEARANCE**

This protocol shall only apply to patients that are alert, oriented appropriately, and ambulatory. The patient must be older than 8 yrs. Special caution should be applied in geriatric patients due to age, bone conditions, pain tolerance of the later generation populations, and other special considerations to decide if spinal immobilization is required. If immobilization would worsen the geriatric patient’s condition with underlying past medical histories such as CHF, acute kyphosis, etc. then the EMS provider may elect to forego immobilization assuming the criteria below is met. The following criteria must be satisfied in order to forego spinal immobilization:

- Low energy mechanism of injury (low speed MVA under 25 mph, falls from standing or sitting)
- No neurological complaints of weakness, paresthesia, paralysis, or loss of consciousness
- No distracting injuries (small lacerations are ok)
- Not under the influence of alcohol or drugs
- No spine tenderness on palpations and no complaints of neck or back pain

**If spinal immobilization is not initiated, the medical record must reflect assessment of the points listed above.**



## TRAUMA CENTER DESTINATION GUIDELINES

When transporting to a Trauma Center will exceed thirty (30) minutes, the patient will be transported to the closest facility unless doing so will adversely affect the overall outcome of the patient's condition. Medical Direction as well as local state and local guidelines will ultimately have final jurisdiction concerning the decision.

Any person of legal age (18 y/o or older) or the parent or legal guardian of any minor, patient or any member of the patient's family shall have the right to request transport to a specific destination. If a destination further than the one chosen would be more appropriate for the patient's condition, the attending EMT/Paramedic will recommend this change to the deciding party. If the recommendation is still against the responsible party's decision then the attending EMT/Paramedic will transport to the requested facility but document accordingly on the run document at the appropriate available time.

Transport of the patient to the requested destination shall not violate this rule and shall not constitute refusal of care, of neglect of the duty imposed by law on all emergency medical service personnel and providers if:

1. The person making the decision is informed that Tennessee has a Trauma system, which would, in the patient's circumstances, usually take him/her to another facility.
2. The trauma center chosen as the patient's destination is overloaded and cannot treat the patient.
  - The patient or responsible party may still choose transport to the facility at which time their request must be carried out regardless of the accepting facilities capabilities.
  - If the patient's condition deteriorates during transport, such that the patient's life or health are in serious jeopardy if the requested or, planned destination is pursued, or, if the Medical Control deems transport to a Level I Trauma Center, may not be necessary, the patient may be transported to another appropriate facility.

### Physiologic Criteria:

GCS < 13 (does not follow commands) S/S of shock (rapid HR; altered mental status; cool, clammy, pale skin, etc.) Remember hypotension is a late sign of shock.

Pediatric Trauma (may not see S/S of shock until late)

Geriatric Trauma (also may not see S/S of shock until late)

Hypothermia

Airway compromise (actual or potential)

### Anatomic Criteria:

Penetrating injuries to the torso

Limb paralysis

Limb amputation proximal to the wrist or ankle where bleeding cannot be controlled

Trauma combined with burns of > 15% particularly those involving the face or airway

### Mechanism of Injury:

High speed MVA

Prolonged extrication

Fatality within the same vehicle

Ejection from the same vehicle

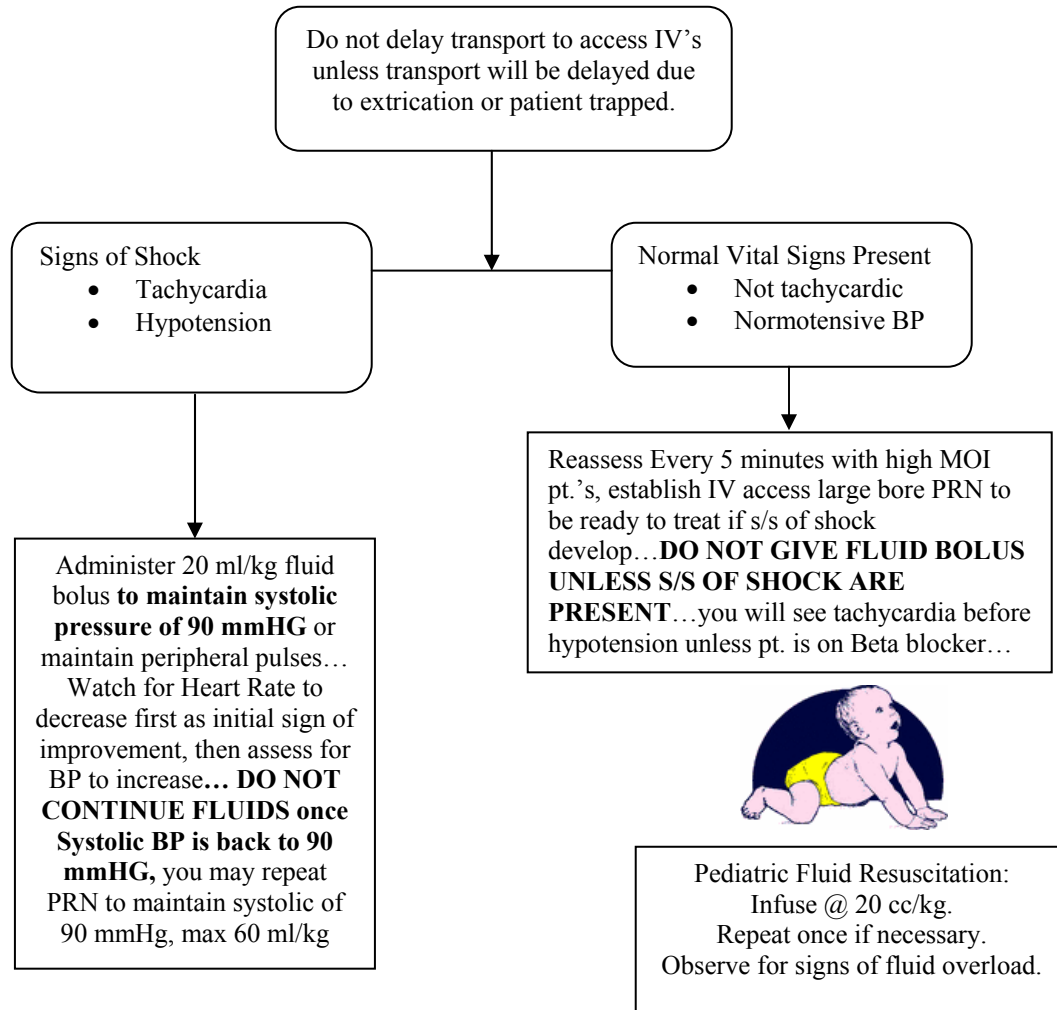
Intrusion into the passenger compartment of vehicle by > 12 inches

**Mechanism of injury should accompany either a physiologic or anatomic criterion**

**You may transport to Skyline ER for all trauma center criteria patients, with the exception of any trauma patient having: Burns, Amputations, PEDIATRIC patients, or OB/GYN patients, these must be transported to Vanderbilt, Vanderbilt Children's if patient is pediatric. Do not bypass the closest appropriate trauma center unless you have physician orders or otherwise feasible justification that can be documented and upheld**



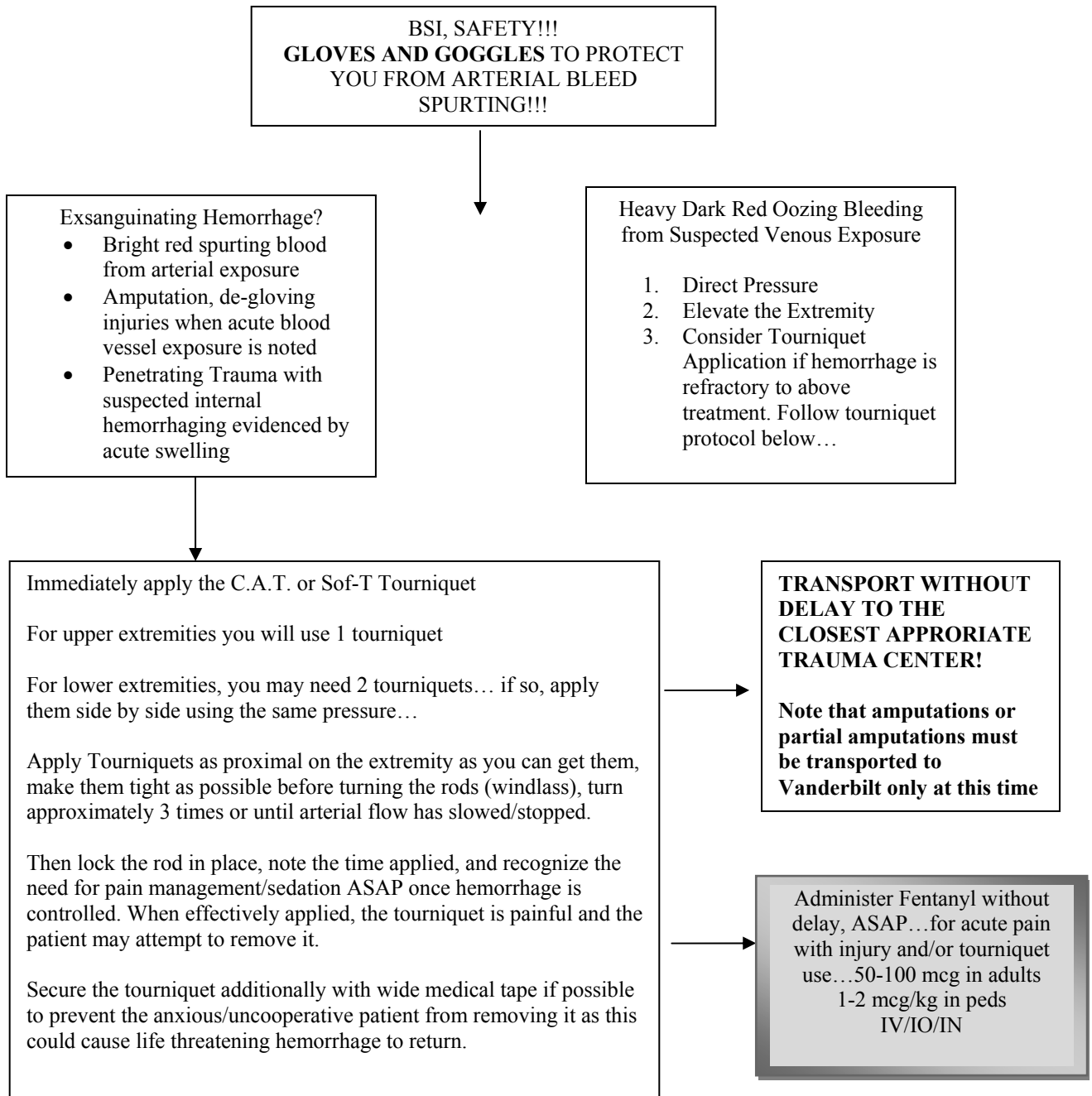
**TRAUMA FLUID RESUSCITATION**



Consideration:

- Ensure IV fluids are warm when infusing into hypothermic patients.
- All hemodynamically compromised patients should have at least one IV with blood tubing connected to it.
- You may consider use of IO device unless area of injury prohibits IO placement when you are unable to obtain peripheral vascular access (IV)...fluid administration and rates are the same with IV/IO.

**UNCONTROLLABLE EXTREMITY BLEED / EXSANGUINATING HEMMORHAGE**



## BREECH OR LIMB PRESENTATION

- ABC's, O2, SaO2, IV, ECG, Glucose check
- Place mother in knee-chest position
- Allow infant to deliver spontaneously while supporting it.
- If head delivers, ensure that cord is not wrapped around the neck.
  - ❑ If so, gently slip 2 fingers underneath cord and attempt to slip cord over head.
  - ❑ Gently extract legs downward until buttocks is delivered.
  - ❑ Then rotate upward until both shoulders deliver.
- If the head does not deliver within 4-6 min, insert a gloved hand into the vagina and create an airway between the face and vaginal wall.
- Be prepared for immediate suctioning as necessary.
  - ❑ Avoid placing excessive pressure on infants eyes
- Transport immediately and DO NOT remove your hand until relieved by hospital staff.
- Contact Medical Control

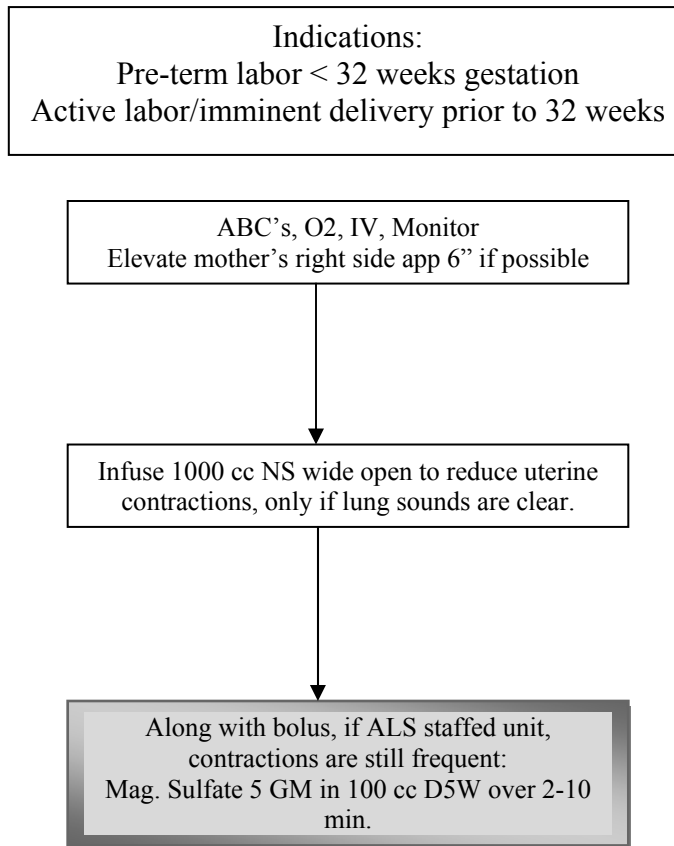
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## PROLAPSED CORD

- ABC's, O2, SaO2, IV, ECG, Glucose check
- Place mother in trendelenburg or knee-chest position.
- Insert a gloved hand into vagina and gently push the infant's head off of cord.
- Transport immediately and DO NOT remove your hand until relieved by hospital staff.
- **Contact Medical Control to consider cutting of cord if possibility of strangulation.**

All patients in active labor or imminent delivery should have oxygen, IV access, and ECG. Glucose checks should be performed on both the mother as well as the newborn.

**TOCOLYSIS-PRETERM LABOR**



This protocol does not apply to patients who  
present in Preeclampsia or Eclampsia. Refer to  
those specific protocols if necessary. Page 38

## OBSTETRICAL EMERGENCIES PROTOCOLS

### PREECLAMPSIA

Indications: Patients < 32 EGD presenting w/  
SBP > 180 and DBP > 110 with or without a hx  
of proteinuria and pedal or sacral edema

O<sub>2</sub>, IV, ECG  
Elevate right side app 6", if possible

Mag. Sulfate IVPB 5 GM in 100cc over 2-10  
min

---

### ECLAMPSIA

Indications: EGD < 32 weeks w/  
signs/symptoms of Preeclampsia and actively  
seizing

O<sub>2</sub>, IV, ECG  
Elevate right side app 6", if possible

Mag. Sulfate IVPB 5 GM in 100cc over 2-10  
min

Note that if the patient is experiencing eclamptic  
seizures, you should treat with Mag Sulfate as  
noted above before giving Versed... unless  
otherwise directed by On-Line Medical Control

**NORMAL DELIVERY**

**A. ASSESSMENT**

- Determine gestational age, due date, prenatal/past medical care
- Interval & frequency of uterine contractions
- Prior pregnancies (gravida)/deliveries (para)
- Any pregnancy associated complications
- Urge to push or have a bowel movement
- Loss of amniotic fluid, crowning

**B. MANAGEMENT**

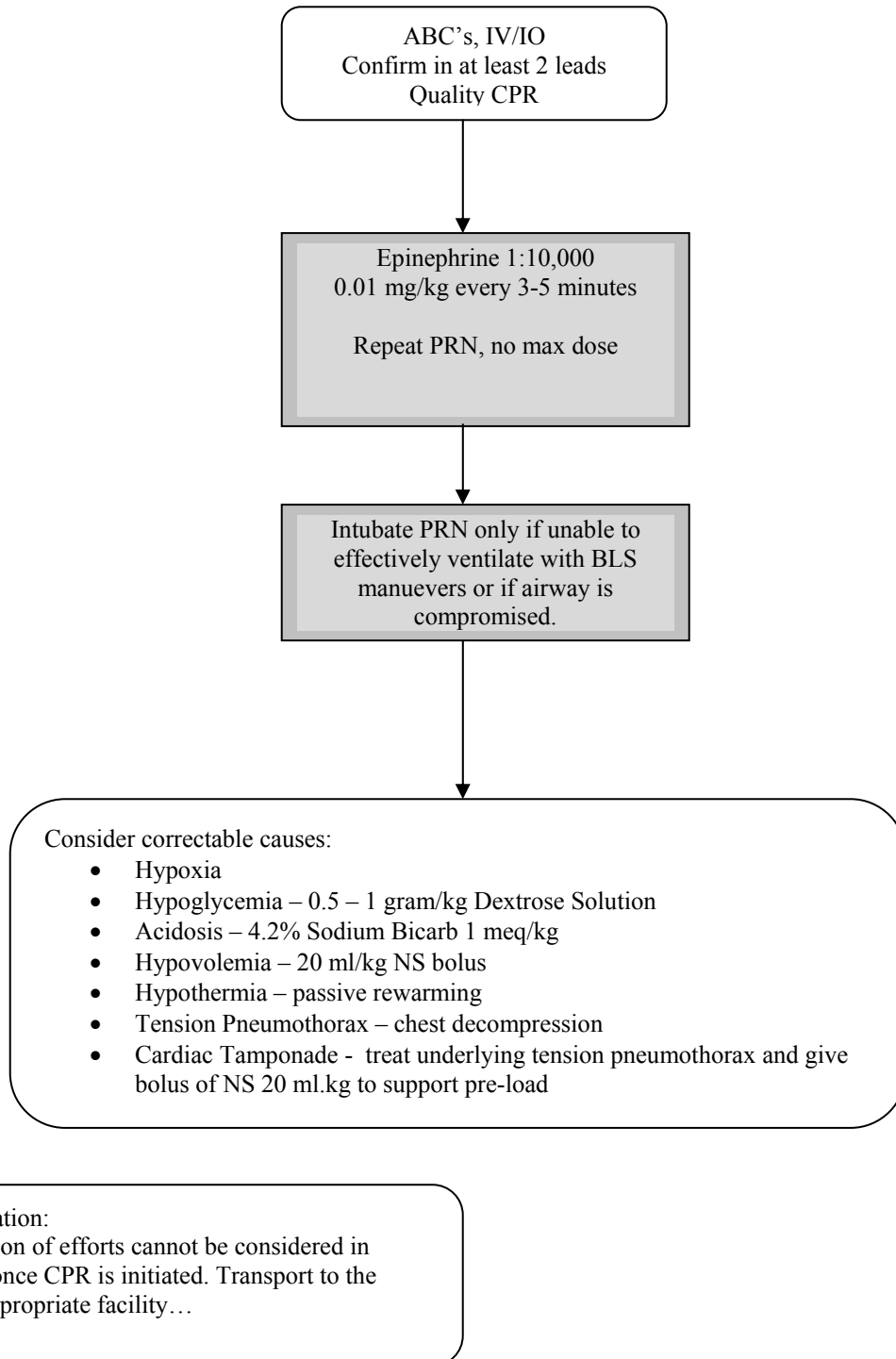
- **ABC's, O2, IV, ECG, Glucose check**
- Determine if there is visible crowning/presenting part
- Place patient on back with buttocks elevated and knees spread apart
- Drape sheets under buttocks and over stomach and legs
  - ❑ Maintain patients dignity
- Place light pressure against presenting head with palm of hand
- Suction mouth and both nares once head is delivered
- Continue to deliver body ensuring a firm but gentle hold
- Suction mouth and both nares again once fully delivered
- Clamp umbilical cord 8 & 10 inches from baby
- Maintain baby below level of patients heart until cord stops pulsating, then cut cord
- Vigorously dry infant and wrap with blanket to maintain heat.
- Check APGAR Score at 1 & 5 minutes post-delivery
- Place infant on mother's chest and allow to nurse.
- Be prepared for delivery of placenta but, do not delay transport.
- Once placenta delivers, massage fundus, just superior to umbilicus to decrease postpartum hemorrhaging.
- Observe for signs of Shock and treat appropriately.
- Be alert to the possibility of multiple births.
- Contact Medical Control

**C. Considerations**

- The greatest risk to the newborn is airway obstruction and hypothermia. Keep infant warm, covered, and its airway maintained with bulb syringe. Always remember to squeeze bulb syringe prior to insertion into mouth or nares.
- The greatest risk to the mother is postpartum hemorrhage. Watch closely for signs of Hypovolemic Shock and excessive bleeding.
- Consider the possibility of pregnancy in any female of childbearing age with complaints of vaginal bleeding, menstrual cycle irregularity, abdominal pain, cramping, or low back pain not associated with traumatic injury.
- Spontaneous or induced abortions may result in copious vaginal bleeding. Reassure mother, elevate legs, treat for shock, and transport.

All patients in active labor or imminent delivery should have oxygen, IV access, and ECG.  
Glucose checks should be performed on both the mother as well as the newborn.

**PULSELESS ELECTRICAL ACTIVITY/ASYSTOLE**



**SYMPTOMATIC BRADYCARDIA**

Assessment:  
Heart rate < 60 bpm with signs of decreased perfusion  
Cardiac rhythm may present with Sinus Bradycardia,  
Junctional Bradycardia, or Heart Block.

ABC's

Severe Cardiopulmonary Compromise?  
(Poor perfusion, hypotension,  
respiratory difficulty)

No

Yes

Observe  
Support ABC's  
Consider transfer or transport to  
ALS Facility

Oxygenate & ventilate (PPV)  
Chest compressions if despite oxygenation  
& ventilation for:  
H/R < 80 bpm in infants  
H/R < 60 bpm in a child  
(Special conditions may apply in severe  
hypothermia)

Epi 1:10,000  
IV/IO: 0.01 mg/kg

Consideration:

Refer to PEA/Asystole Protocol if Asystole  
develops. Page 30

**Hypoxia is the primary cause of  
Bradycardia in the pediatric patient, initiate  
positive pressure ventilations without delay  
anytime Bradycardia is noted in a pediatric  
patient.**

If Bradycardia is refractory to the Epinephrine,  
give the following:

Atropine 0.02 mg/kg  
(minimum dose: 0.1 mg)  
(maximum single dose: 0.5 mg for child;  
1 mg for adolescent)

Repeat Epinephrine if no change in 3-5 minutes  
after the Atropine, following that  
administration, you may repeat the Atropine  
dosage ONE TIME ONLY, max dose Atropine  
0.04 mg/kg

Epi 1:10,000 every 3-5 mins PRN until  
Bradycardia resolves



**SUPRAVENTRICULAR TACHYCARDIA (SVT)**

**RECOGNIZE THAT MOST PEDIATRIC TACHYCARDIAS ARE COMPENSATORY TACHYCARDIAS, GIVE FLUIDS IF HISTORY SUGGESTS:**

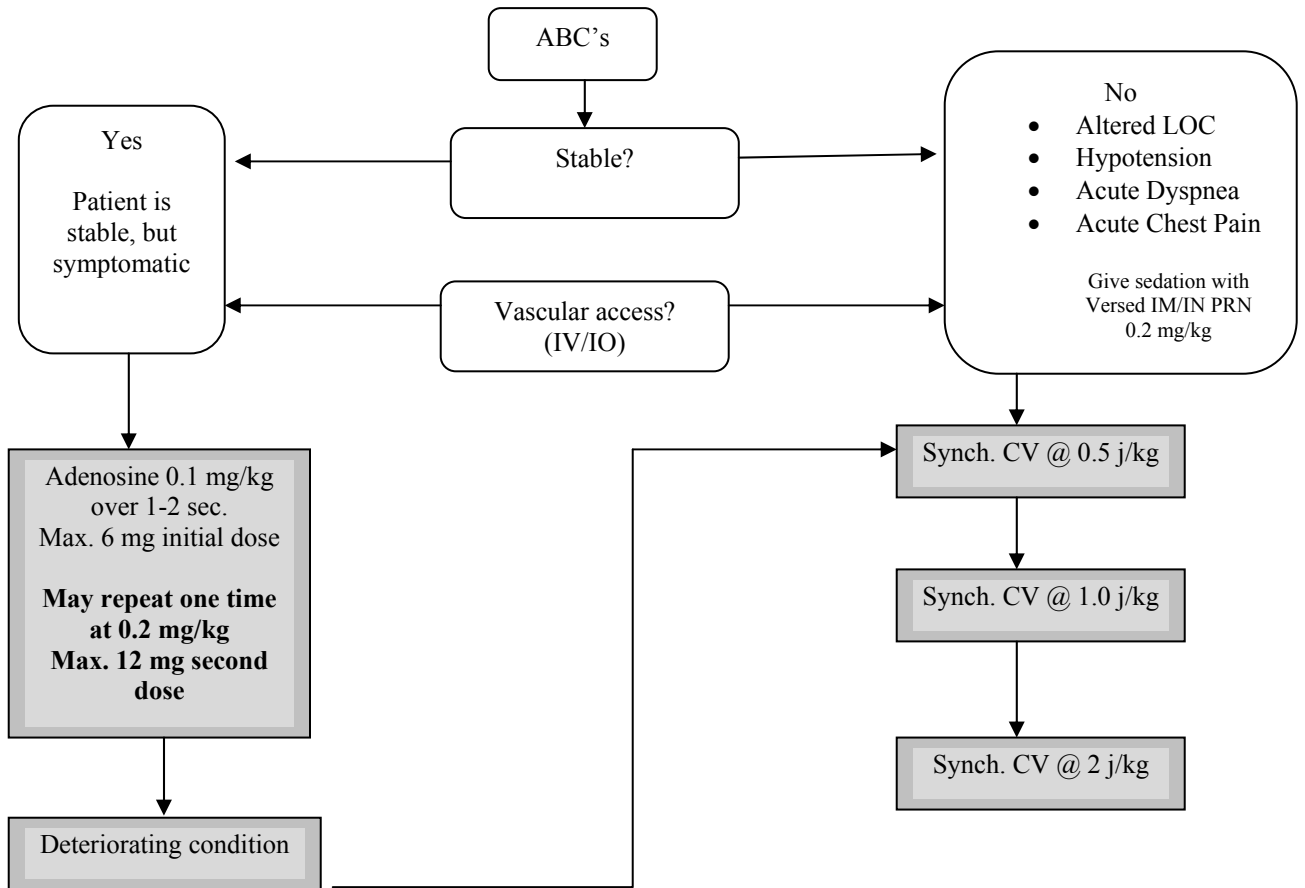
- Dehydration, excessive vomiting

**ASSESS FOR:**

- Pallor, poor skin turgor, sunken fontanelles
- Altered mental status, obtunded, unaware of family or environment
- Weak, thready pulse

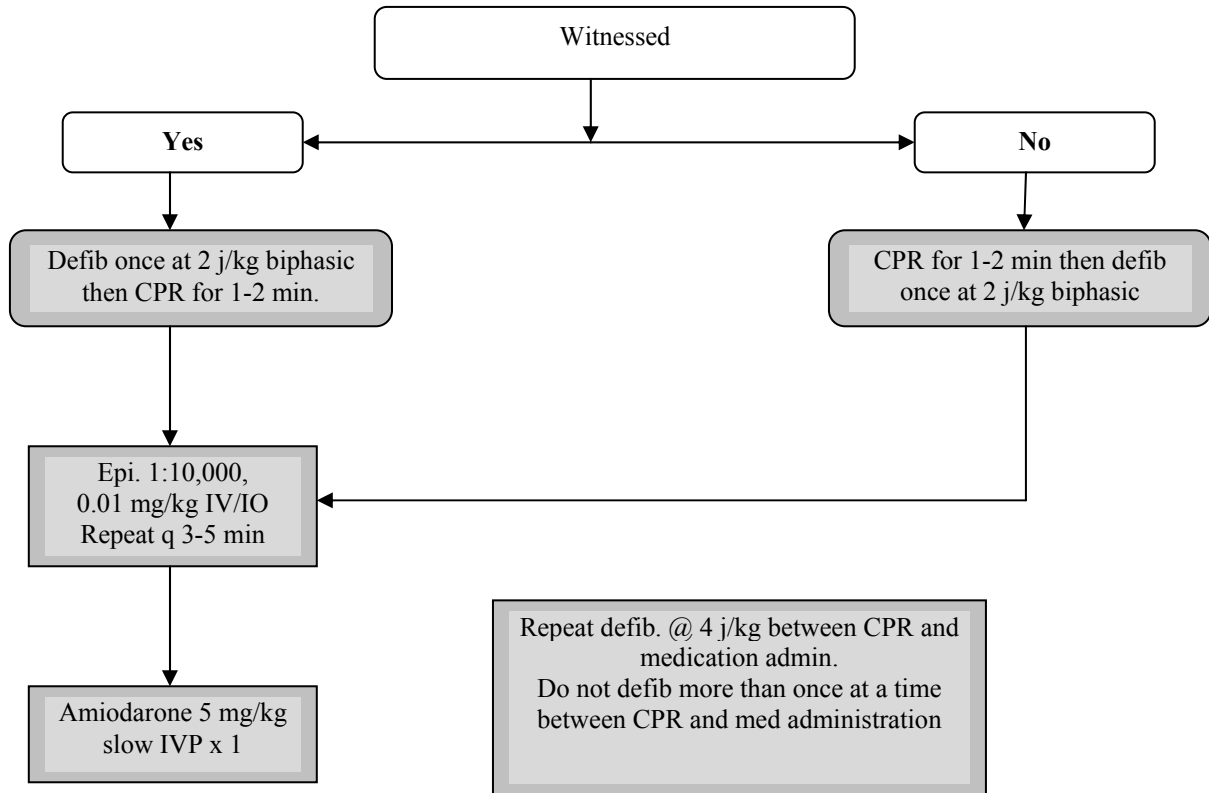
**MUST CONFIRM TO TREAT AS S.V.T.**

- Heart rate of 180 or higher in children
- Heart rate of 220 or higher in infants
- Must have regular R-R intervals
- Must have narrow complex QRS, width of QRS must be no more than 1 small block (0.04 seconds)
- No associated history of potential hypovolemia as noted above



Consideration:  
Do not delay Synchronized cardioversion to establish IV access and administer Adenosine.

**VENTRICULAR FIBRILLATION/PULSLESS V-TACH**

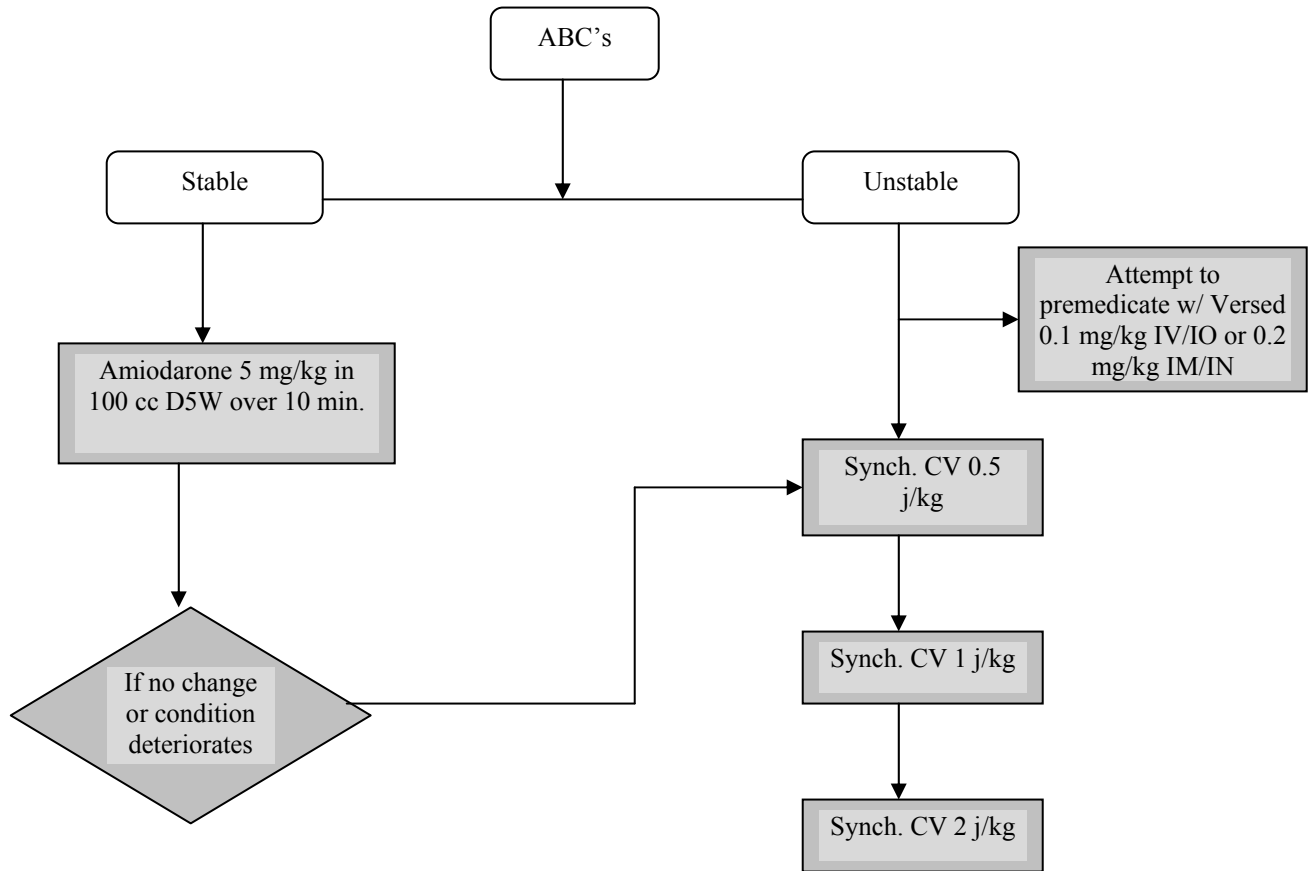


Consideration:

Rule out reversible causes, H's and T's

Less than 5% of pediatric cardiac arrests are truly V-Fib in nature. Consider possibly Asystole and confirm in 3 leads. Apply Pediatric pads for any patient < 10 kg or 1 y/o

VENTRICULAR TACHYCARDIA



**INTERFACILITY TRANSPORTATION OF BLOOD PRODUCTS****PURPOSE:**

Patients may require transportation to another, Medical/Trauma Center with blood or blood products infusing. A paramedic or registered nurse must accompany these patients in the patient compartment, or physician trained in these procedures. The paramedic shall be knowledgeable in the administration of blood, blood products, adverse reactions, and all necessary equipment used in administering and regulating the blood products. Emergency medical technicians who have IV certification are not authorized to transport patients with admixtures, blood, or blood products. Prior to initiating transportation the physician will provide the paramedic with written medical orders for the treatment of any adverse reaction(s) the patient might have. When transporting the patient, at least epinephrine, Benadryl, and a suitable diuretic should be available in the patient compartment. If the transporting paramedic has not received specific training, the paramedic may refuse to transport the patient with blood or blood products infusing. The ambulance service must maintain a record of all personnel completing this specialized training.

**PROCEDURE:**

Blood should be administered immediately after taken from the blood bank. Room storage should not exceed thirty (30) minutes. Carefully check blood type for compatibility with the patient prior to beginning the transfusion. Check vital signs prior to the transfusion. The blood should be run through at least an 18-gauge IV catheter or larger with the blood hung three to four feet above the patient. The IV line should be flushed with Normal Saline prior to beginning the transfusion. Blood should be administered only with Normal Saline IV fluid. Dextrose causes red cells to clump, swell, and hemolyze; calcium (Lactated Ringer's) may cause blood to clot. The transfusion should be initiated at a rate of 50 cc/hr, for the first ten minutes then as ordered by the referring physician. Patient condition and vital signs should be monitored closely during the transfusion. The blood should be mixed during the transfusion by inverting the bag occasionally. After, the transfusion is completed, flush the IV tubing until clear with Normal Saline and maintain the IV as ordered by the referring physician. If a reaction occurs during the transfusion, terminate the transfusion immediately. Initiate the treatment ordered by the transferring physician and establish medical control as soon as possible. Save the donor blood for testing at the receiving facility.

**INTERFACILITY TRANSPORTATION OF BLOOD PRODUCTS-CONTINUED**

**ADVERSE REACTIONS:**

- Circulatory Overloading: Dyspnea, increase in blood pressure, and jugular vein distention.
- Febrile Reaction: Chilling, fever, headache, flushing, tachycardia and anxiety.
- Septic Reaction: Chilling, fever, headache, tachycardia, and hypotension.

**IMMUNOLOGIC REACTION:**

- Flushing, itching, rash, urticaria and asthmatic wheezing.
- Acute Hemolytic Reaction:
  - Severe reaction which may cause back pain
  - dyspnea, hypotension
  - diaphoresis
  - cold skin
  - jugular vein distention
  - disseminated intravascular coagulation
  - Death.

**IF PROBLEMS OCCUR:**

\* Discontinue blood administration and flush tubing with saline

Call Medical Control to consider:

\*Bendaryl 25 mg if allergic signs and symptoms are present

\*Lasix 40-80 mg

\*Fluids if hypotensive

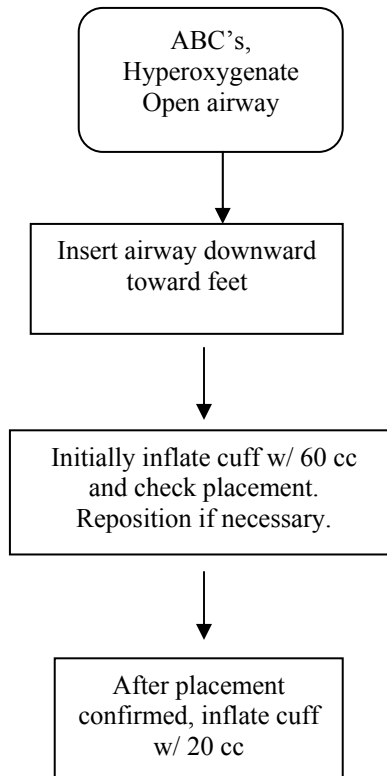
### Supraglottic Airway Device/King® Airway

**Indications:**

- Any adult patient in need of prolonged ventilatory support that is not improving w/ 100% O2 via BVM or mask

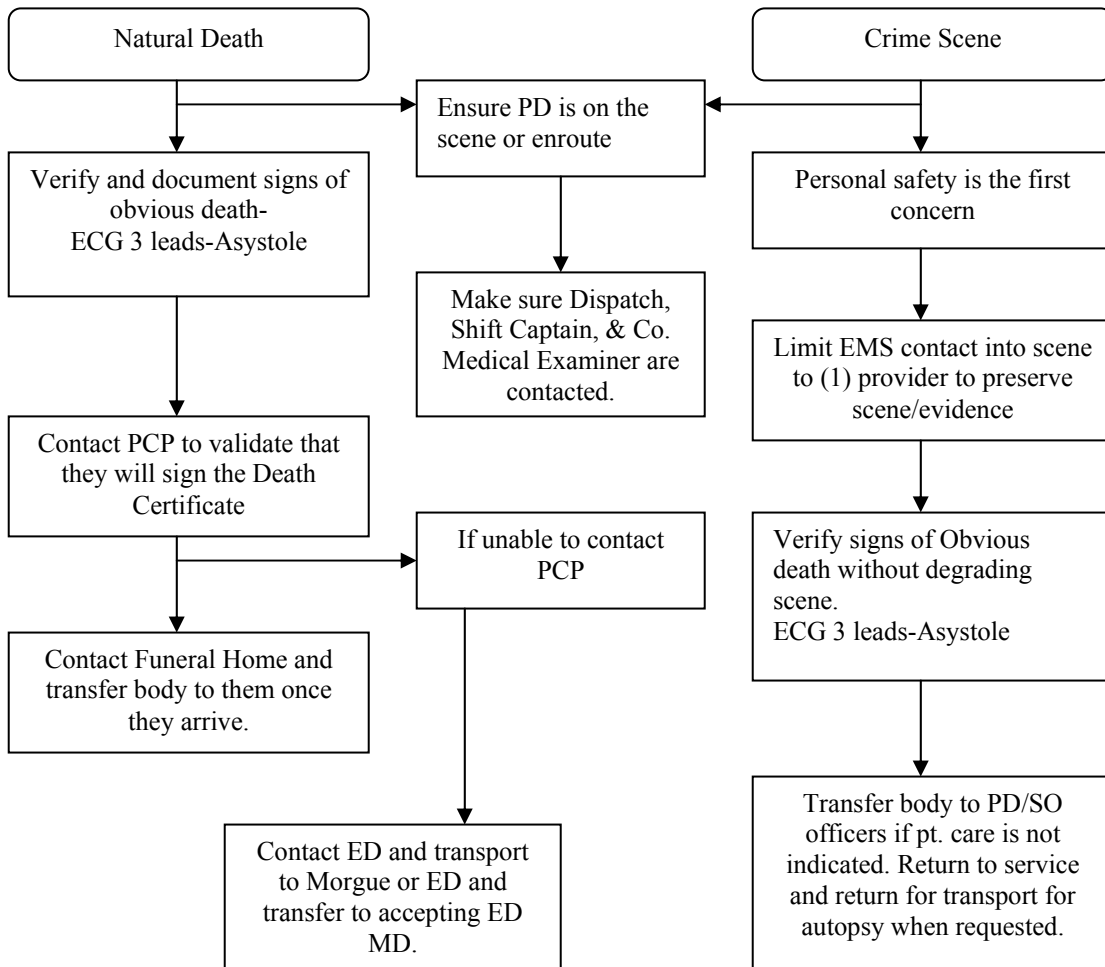
**Contraindications:**

- Conscious w/ a gag reflex
- < 5 ft or > 7 ft in height
- < 16 years old
- Caustic substance ingestion-acids, alkalis, petroleum products
- Hx of Liver Cirrhosis or Esophageal Varices



**NATURAL DEATH/CRIME SCENE MANAGEMENT**

Assessment:  
 Devastating Injuries/Signs of obvious death  
 • i.e. Decapitation, exsanguinations of body fluids, pupils dilated. lividity, rigor mortis, pupils fixed  
 Identify time when last scene alive, cause, pmhx, meds., all, and recent hx of illness or complaints



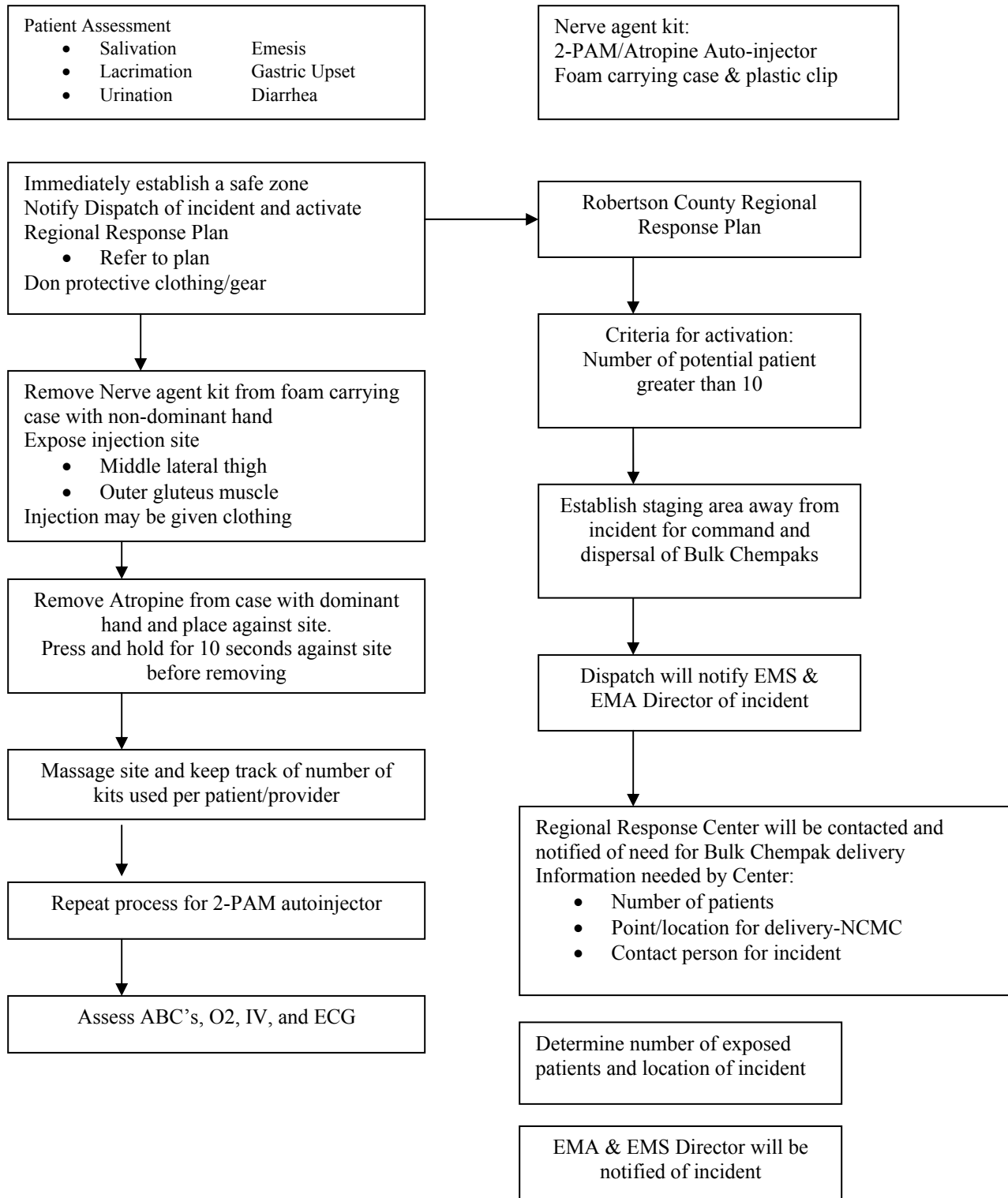
Do not withhold resuscitative efforts if care is indicated and signs of obvious death are not present.  
 Avoid crime scene degradation if care is not indicated.

Document the PCP and actual physician name who was contacted, as well as time contacted and return phone number. Only Paramedics will document DOA reports when partnered w/ an EMT.

**ADDENDUM**

**NERVE AGENT EXPOSURE, SYMPTOMATIC PATIENT**

**NOTE: THIS IS PRIMARILY FOR EMS PROVIDERS AND PATIENTS WHO MAY BE INVOLVED IN POSSIBLE NERVE AGENT EXPOSURES.**





## EMERGENCY CRICOTHYROTOMY DEVICE Rusch Quicktrach

### Indications

1. Acute upper airway obstruction, which cannot be relieved using basic airway maneuvers, finger sweep, or endotracheal visualization and Magill forceps removal.
2. Respiratory arrest with facial or neck anatomy or injury, which make endotracheal intubation impossible.
3. This procedure is only to be performed by TN licensed EMT-Paramedics who have received the training and are approved by Robertson County EMS, its EMS Director(s) and Medical Director.

### Complications

1. Bleeding
2. Vocal cord injury
3. Failure to place the catheter in the trachea

### Contraindications

1. Direct laryngeal injury
2. Known laryngeal condition:
  - Stricture
  - Tumor
3. Subglottic stenosis
4. Coagulopathy
5. Child less than 80 lbs or 12 yrs of age
6. Known tracheal transection
7. Expanding hematoma in the area of cricothyrotomy

### Protocol

1. Position the patient in the neutral recumbent position.
  - Maintain C-spine precautions if suspected cervical injury.
2. following exposure of the neck, identify the thyroid cartilage, cricoid cartilage and cricothyroid membrane.
  - Document at least 2 methods used to identify landmarks
  - Four finger widths from sternal notch upward to cricothyroid membrane
  - Four finger widths from chin downward to cricothyroid membrane
3. Prep the skin with alcohol, povidine iodine pad, or chloraprep/chlorascrub device (Document aseptic technique)
4. Carefully palpate the cricothyroid membrane and maintain landmark identification while stabilizing the cartilage
5. Firmly hold the device and puncture the site at a 90 degree angle. (Note: Because of the sharp tip and conical shape of the needle, an incision of the skin with a scalpel is not necessary.) The opening of the trachea is achieved by dilating the through the skin. This reduces the risk of bleeding as only the smallest necessary opening is made.
6. After puncturing the cricothyroid ligament, check the entry of the needle into the trachea by aspirating air through the syringe. If air is present, the needle is within the trachea\*\*\* (see special note below)\*\*\*. Now, change the angle of insertion to 60 degrees and advance the device forward into the trachea to the level of the stopper. The stopper reduces the risk of inserting the needle too deeply and causing damage to the rear wall of the trachea.
7. Remove the stopper. After the stopper is removed, be careful not to advance the device further with the needle still attached.
8. Hold the needle and syringe firmly and slide only the plastic cannula along the needle into the trachea until the flange rests onto the neck. Carefully remove the needle and syringe. Next, secure the cannula with the neck strap, apply the connecting tube to the 15 mm airway connection, and connect the other end to the resuscitation bag or ventilation circuit.

**EMERGENCY CRICOTHYROTOMY DEVICE  
Rusch Quicktrach**

(Continued from page 50)

9. Connect BVM and 100% Oxygen to airway and ventilate.
  - End Tidal CO2 monitoring must also be performed if possible at time of transport.

**Note**

The Rusch Quicktrach kit is **not** designed for pediatric patients.

**\*\*\*special note from step procedure step 6\*\*\* - WARNING- Should no aspiration of air be possible in step 6 because of an extremely thick neck, it is possible to remove the stopper and carefully insert the needle further until entrance into the trachea is made. Once this is verified, continue as in Step 7.**

## **Ebola Criteria Protocol**

**In the event the we have a patient that meets criteria for a possible ebola, we have developed a protocol to limit exposure to personnel, as well as the public.**

### **Criteria**

**For a patient to “meet criteria” for possible Ebola, they must present with a combination of the following Signs/Symptoms**

- **Fever greater than 100.4 degrees**
  - **Severe headache**
  - **Muscle pain**
  - **Weakness**
  - **Diarrhea**
  - **Vomiting**
  - **Abdominal pain**
- **Unexplained hemorrhage (bleeding or bruising)**
  - **bleeding from gums**
  - **eyes**
  - **Nose**
  - **anus**

**AND any one of the following:**

### **RISK FACTORS**

- **Contact with blood or body fluids of a person known or suspected to have been infected with EVD in the last 21 days prior to symptom onset?**
  - **Residency or travel to an area where EVD transmission is active in the last 21 days.**
  - **Direct handling with bats, rodents or nonhuman primates from disease/endemic areas.**

**NEVER USE THE WORD “EBOLA” OVER THE RADIO EXCEPT ON THE SECURE FREQUENCY.**

### **Dispatch/Response**

**Dispatch will further question patients per dispatch protocol that indicate any of the above symptoms to identify if the patient meets the criteria for the Ebola protocol.**

**For calls received in dispatch that meet the above symptoms AND have met the RISK FACTORS:**

- **dispatch the appropriate EMS unit and notify the shift supervisor**

**ADDENDUM**

**PHYSICIAN ON SCENE**

**PURPOSE:**

To establish guidelines for determining patient care responsibility at the scene of a medical emergency when a physician is on the scene. The physician must be a licensed health care professional medically qualified to render emergency care in the State of Tennessee who specializes in the care that is needed. It is recognized that the presence of a qualified physician on scene may facilitate patient care.

**PROCEDURE**

1. EMTs or Paramedics shall:
  - Inform the physician that the EMT or Paramedics must contact their Medical Control.
  - Inform Medical Control of the presence of the physician on scene.

2. Medical Control may:
  - Ask to speak to the physician to determine qualifications.
  - Request that EMT or Paramedics verify the licensure of the physician.
3. Any Physician may offer assistance, but:
  - Must provide proof that he/she is a licensed emergency room physician,
  - Allow the EMT/Paramedic to remain under Medical Control Direction or,
  - Request to talk to the base hospital to offer medical advice and assistance or,
  - Take **total responsibility** for care given by the EMT/Paramedic and **physically accompany** the patient until such time that the patient arrives at a hospital and responsibility is assumed by the receiving physician, and shall,
    - Sign for all instructions given to the EMT/Paramedic
    - Maintain Medical Control contact whenever possible.
4. If the patient's private physician arrives on the scene:
  - Inform the patient's private physician that the EMT/Paramedic must make contact with Medical Control.
  - May request that the patient's physician contact Medical Control.
  - At no time will the EMT/Paramedic take any Verbal orders over the phone unless they are coming from Medical Control. The **exception** to this rule is if the physician is a local physician and is known by the EMT/Paramedic.

### **Vidacare® EZ-IO Emergency Vascular Access Device**

Effective Summer 2014, Paramedics and Advanced EMT's may perform this skill **ONLY** if the EMTA has been through the update course, signed off on the skill, and licensure update has been completed. Paramedics and EMTA's both may perform Intraosseous access on both adult and pediatric patients.

Indications for Conscious or Unconscious Adult or Pediatric:

- Inability to establish peripheral IV access after 3 attempts or 90 seconds
- Need to administer medication or volume replacement
- Note that a visualization alone counts as an attempt

1. Gather and assemble equipment
2. Locate landmarks:
  - Tibial Tuberosity – Approximately 2 - 3 fingers width below patella, slightly medially, assess for the flat part of the bone...
  - Humeral Head – Place patients upper extremity in retracted/natural position and place the hand of the arm over the umbilicus region, assess for flat spot of posterior/lateral humeral head... consider using larger size IO needle for humeral head placement
3. Cleanse site
4. Attach correct sized EZ-IO needle to drill
  - Adult 40 kg and over: Blue, 15 ga. X 25mm (Blue)
  - Pedi 3 kg to 39 kg: Red, 15 ga. X 0.6" (Pink)
  - Adult Obese or Adult Humeral Head: Yellow, 15 ga. X 45mm (Yellow)
5. Stabilize leg or arm, depending on site preference
6. Insert needle into site and remove stylette
7. Consider 100 mg Lidocaine flush in conscious **ADULTS**
8. Confirm placement w/ 10 ml saline flush
9. Attach tubing and fluids
  - Place pressure bag on IV bag
10. Secure needle at site...

**ROBERTSON COUNTY EMS PATIENT CARE TREATMENT PROTOCOLS**

We will no longer access porta cath, protocol removed

**PATIENT RESTRAINT (CHEMICAL AND PHYSICAL)**

Great consideration should be given before restraint of a patient, no patient should be restrained just to keep them quiet or get back at them for any reason. The patient should be significantly impaired (E.g., intoxication, medical illness, injury, psychiatric condition, etc.) and lack the capacity to make an informed decision regarding their own care **AND/OR** exhibits violent, combative or uncooperative behavior which does not respond to verbal de-escalation. The application of restraints must be done out of the necessary to ensure patient and/or provider safety or to facilitate patient treatment and assessment.

**Treatment**

- Safety of personnel is the main priority in any situation where a patient exhibits aggressive or combative behaviors and needs to be restrained.
- Basic assessment and management (up to your scope of practice)
- Use the minimum amount of force and restraint necessary to safely accomplish patient care and transportation with regard to the patient's dignity. Avoid unnecessary force.
- Attempt less restrictive measures to control before restraining such as verbal de-escalation.
- Assure that adequate personnel are present and that police assistance has arrived, if available, before attempts to restrain patient.
- Plan your approach and activities before restraining the patient.
- Consider the patient's amount of strength and range of motion when determining how to apply the restraints.
- Have one person talk to and reassure the patient throughout the restraining procedure.
- Approach with a minimum of four persons, one assigned to each limb, all to act at the same time.
- Initial take down may best be accomplished leaving the patient in the prone position. After restraint, the patient should be placed in a supine position.
- Call for additional help if patient continues to struggle against restraint.
- Restrain all 4 extremities with patient supine on stretcher.
- Use soft restraints to prevent the patient from injuring him or herself or others.
- A member of law enforcement should accompany a patient in the ambulance if the patient has been restrained.
- Consider secondary injuries or medical condition such as hypoglycemia.
- Do not place restraints in a manner that may interfere with evaluation and treatment of the patient or in any way that may compromise patient's respiratory effort.
- Evaluate circulation to the extremities frequently.
- Thoroughly document reasons for restraining the patient, the restraint method used, and results of frequent reassessment.
- Initial "take down" may be done in a prone position to decrease the patient's visual field and stimulation, and the ability to bite, punch, and kick. After the individual is controlled, he/she shall be restrained to the stretcher or other transport device in the supine position.
- **DO NOT** restrain patient in a hobbled, hog-tied, or prone position.
- **DO NOT** sandwich patient between devices, such as long boards or Reeve's stretchers, for transport. Devices like backboards should be padded appropriately.
- A stretcher strap that fits snugly just above the knees is effective in decreasing the patient's ability to kick.
- Padded or leather wrist or ankle straps are appropriate. Handcuffs and plastic ties are not considered soft restraints.
- Never apply restraints near the patient's neck or apply restraints or pressure in a fashion that restricts the patient's respiratory effort.

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(CONTINUED FROM PREVIOUS PAGE)

- Never cover a patient's mouth or nose except with a surgical mask or a NRB mask with high flow oxygen. A NRB mask with high flow oxygen may be used to prevent spitting in a patient that also may have hypoxia or another medical condition causing his/her agitation, but a NRB mask should never be used to prevent spitting without also administering high flow oxygen through the mask.
- Continuously monitor the airway, breathing, circulation, neurovascular status (pulse, motor, & sensation) on restrained limbs, and the continued needed for restraints.
- After applying the restraints, the patient's PMS must be assessed immediately to determine it's presence. A member of the crew will accompany the patient at all times and vital signs will be assessed every ten (10) minutes.
- Documentation will include attempts at verbal de-escalation, a brief description of the facts as to why restraints were indicated, the type of restraint, who applied them, a description of the efforts taken to ensure patient safety, comfort, and overall well-being, the condition of the patient while restrained, and the condition of the patient upon arrival of the hospital.
- Removal of restraints should be done so at the hospital with adequate numbers of personnel and by order of the attending physician.

#### AEMT / EMT-IV

- IV NS TKO

#### PARAMEDIC

- **Note that chemical restraint is preferred over the use of physical restraints is possible. When indicated, get chemical restraint administered without delay to protect the patient and EMS personnel.**

If chemical restraint is deemed necessary the following may be administered:

**Versed (Midazolam) 5 mg IM using 18ga IM needle, give 2 mg IV...Either route may be repeated once in 5 - 10 minutes if needed to facilitate controllable patient in order to prevent them from harming themselves or others.**

#### Performance Parameters

1. Verbal techniques include:
  - a. Direct empathetic and calm voice.
  - b. Present clear limits and options.
  - c. Respect personal space.
  - d. Avoid direct eye contact.
  - e. Non-confrontational posture.
2. There is a risk of serious complications or death if patient continues to struggle violently against restraints. Chemical restraint by sedation by ALS personnel may be indicated in some dangerous, agitated patients.

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## **Documentation**

The following must be documented in the patient care report

1. Reason for restraints, (document any attempts to de-escalate).
2. Circumstances of the incident.
3. Why the patient could not be transported without restraints.
4. Any relevant comments made by patient.
5. Vital signs before and after restraining if available.
6. Any injury to the patient or Provider(s) that may have occurred before, during or after the restraining process.
7. An incident report should be completed and given to your immediate supervisor and forwarded to the CQI coordinator for review within 24 hours.

## **Appropriate Devices**

Restraint devices that can be utilized for restraint by RCEMS providers are

- Supine on Long Spine Board with straps.
- Soft roller gauze.
- Triangular bandages
- Blankets and sheets.

**HANDCUFFS ARE NOT AN APPROVED RESTRAINT DEVICE FOR RCEMS PERSONNEL TO APPLY. IF THE PT IS HANDCUFFED A LAW ENFORCEMENT REPRESENTATIVE MUST ACCOMPANY THE PATIENT. IF THIS WAS DONE ON A SCENE AND LAW ENFORCEMENT IS UNABLE TO RIDE WITH THE PATIENT THEY MUST AT LEAST FOLLOW THE PATIENT TO THE EMERGENCY ROOM.**

**SUMMARY OF PROTOCOL REVISIONS**

<b>Page #</b>	<b>Summary</b>
5	IV Fluid admin: LRS deleted from protocols, all IV fluid are now 0.9% NaCl
5	Sec. 3-a: Deleted time constraint for obtaining 12 lead ECG's
5	Sec. 4-g: Clarification that EMT's will not be attending tech after an IV has been established in the field.
6	Sec. 6-c: Clarification that pediatric drug dosages will be used over Broselow recommendations
6	Sec. 6-d: Broselow tape will be used as quick reference for age/size clarifications
10	V-Fib/Pulseless V-Tach: Clarification that Epi is to admin every 3-5 min in between defib and antiarrhythmics is V-Fib protocol, edited to reflect 2010 AHA ECC standards
11	NEW PROTOCOL-Induced Hypothermia After Cardiac Arrest
14	Atrial Fib: Cardizem added to replace Lopressor
19	Diabetic Emergencies-Revised: Clarification that EMT's may not be attending tech on ALS unit after D50 is administered
20	Hypertensive Crisis: edited to reflect current ASLS / AMLS guidelines
22	Respiratory Disress: Pediatric nebulized epi added after repeated Duoneb and Mag Sulfate, pediatric racemic epi to be given prior to Mag drips
25	Stroke/CVA: Hospital Destinations added
28	Pain Mgmt.: Pediatric Dosage added
29	Etomidate for Extrication: Precautions for Etomidate added
32	Trauma Destination Guidelines revised
36	Tocolysis: LRS replaced with 0.9% NS, Mag Sulfate changed to 5 mg for consistency
39	Pediatric PEA-Epi ETT dosage at 0.1 mg/kg deleted
42	Pediatric V-Fib/Pulseless V-Tach: Epi ETT dosage at 0.1 mg/kg deleted
46	Double Lumen/King Airway: Directions for Combitube omitted

## REFERENCES

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- Advanced Medical Life Support, 1st Ed., © 2011; Mosby El Sevier
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- Healthcare Providers Manual for Basic Life Support, American Heart Association
- Infectious Disease Standard # 1910.1030, Tennessee Occupational Health and Safety Administration.
- Model Prehospital Treatment Protocol Guidelines, Tennessee Department of Health and Environment Paul Auerbach, M.D.
- Pediatric Advanced Life Support, © 2010, American Heart Association, American Academy of Pediatrics
- Pediatric Education for Prehospital Professionals 2<sup>nd</sup> Ed., American Academy of Pediatrics
- Prehospital Trauma Life Support, 7th ed., Elsevier Health Sciences Publishing, American College of Surgeons/Committee on Trauma, National Association of Emergency Medical Technicians.
- The Administration of Blood and Blood Components, Brent Lemonds, R.N., EMT-P
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- Monroe Carell Jr. Children's Hospital at Vanderbilt, Emergency Action Handbook, revised 9/2011
- Edited and updated by Robertson County EMS Protocol Review Committee with approval from Dr. Nicholas Strane; EMS Medical Director.



**ROBERTSON COUNTY EMS PATIENT CARE TREATMENT PROTOCOLS  
DEVIATIONS FROM WHAT IS ALREADY WRITTEN WILL NOT BE TOLERATED.**