

PRE-HOSPITAL PATIENT CARE PROTOCOLS

BASIC LIFE SUPPORT/ADVANCED LIFE SUPPORT



**Board Approved June 2007
Revised December 2009
Revised July 2011**

**Rappahannock EMS Council
435 Hunter Street
Fredericksburg, VA 22401**

PRE-HOSPITAL PATIENT CARE PROTOCOL

MEDICAL PROTOCOLS

Section II

**Rappahannock EMS Council
435 Hunter Street
Fredericksburg, VA 22401**

**BASIC LIFE SUPPORT/ADVANCED LIFE SUPPORT
ADMINISTRATIVE PATIENT CARE PROTOCOL**

**REVISED JUNE 2007; DECEMBER 2009; JULY 2011
BOARD APPROVED DECEMBER 15, 2011 (June 20, 2012)**

Rappahannock EMS Council Regional Treatment Protocols Medical Emergencies

Allergic Reaction / Anaphylaxis

Criteria:

1. Includes any patient who is having an adverse reaction to a foreign substance. Can be a food, medicine, environmental, or animal exposure.

Provider:	Order/Treatment:	Order Type:
FR	1. Administer Oxygen and assure SaO ₂ > 90%	S - Standing
FR	2. If the patient has a physician prescribed Epinephrine auto-injector, administer per the patient assisted medication protocol.	S - Standing
EMT-E/AEMT	3. If the allergic reaction is MINOR, administer Benadryl (Diphenhydramine) 25-50 mg IV/IM.	S - Standing
EMT-E/AEMT	4. Administer NS, titrate to maintain SBP > 100 mm Hg. 5. If the reaction is SEVERE, administer Epinephrine (1:1000) 0.3 mg SQ/IM in addition to IV/IM Benadryl. If patient is rapidly deteriorating, consider administering Epinephrine IV instead.	S - Standing
EMT-I	6. Benadryl (Diphenhydramine) <i>pediatric dose is 1 mg/kg; maximum single dose of 50 mg.</i> 7. Epinephrine <i>pediatric dose is 0.01 mg/kg, max dose 0.3 mg. *</i>	S - Standing
EMT-P	8. If the reaction has systemic involvement or is severe, administer 60 mg PO Wysolone (Prednisone)**. If patient has allergy to Prednisone administer Solu-Medrol (Methylprednisolone) 125 mg IV (<i>Pediatric dose 2 mg/kg up to max dose of 125 mg</i>). 9. If the patient is unconscious and SBP <90 mmHg initiate Dopamine 2-20 mcg/kg/min and titrate for SBP >100 mmHg.	S - Standing

Notes:

1. Perform a detailed patient assessment to categorize the reaction as minor (local symptoms & no respiratory involvement), moderate, or severe (wheezing, airway compromise and signs of shock).
2. ALS should be utilized whenever possible for all severe and most moderate reactions.
3. If the substance causing the reaction is still present, minimize contact with patient and attempt to isolate the substance.
4. * If pediatric patient has a PMH of anaphylaxis and is exhibiting signs and symptoms of allergic reaction, do not wait for progression to severe allergic reaction before administering Epinephrine.
5. ** Do not give any oral medications until the airway is assessed for angioedema.

Rappahannock EMS Council

Regional Treatment Protocols

Medical Emergencies

Altered Mental Status

Criteria:

1. Patients that are unresponsive or a GCS < 12.
2. Thorough attempts should be made to determine the cause of the altered LOC, and specific management should be made based on the cause.

Provider:	Order/Treatment:	Order Type:
FR	1. Administer Oxygen and assure SaO ₂ > 90%. Assess for and treat for shock (body position and warming).	S - Standing
EMT-B	2. Check finger stick blood glucose level (BGL). If BGL < 60 and patient is able to swallow effectively administer oral glucose.	S - Standing
EMT-E/AEMT	3. Establish peripheral IV and administer NS. Titrate IV fluid to achieve SBP at or above 90 mmHg and administer 20 cc/kg if < 90. If BGL < 60 administer 25 g IV Dextrose 50%. 4. If patient is suspected to be chronic user of alcohol and/or appears malnourished administer 100 mg IV Thiamine (Vitamin B1) PRIOR to administration of Glucose. 5. If unable to achieve IV access, administer 1 mg IG Glucagon IM/SQ. 6. If BGL is "high" or greater than 500 mg/dl administer 20 cc/kg IV NS to maximum of 2 liters. 7. If patient has normal BGL, and has respiratory depression (bradypnea) administer up to 2 mg IV/IN Narcan (Naloxone), titrate for respiratory effort.	S - Standing
EMT-I	8. <i>Pediatric dose for Dextrose is 2 cc/kg IV Dextrose 25% and Neonatal (< 30 days) is Dextrose 10%.</i> 9. <i>Pediatric dose for Narcan (Naloxone) is 0.1 mg/kg up to maximum single dose of 2 mg.</i>	S - Standing
CCP / AP	10. If patient is apneic from suspected opiate overdose and there is no IV/IO access, administer 2 mg Narcan (Naloxone) as SL IM injection.	S - Standing

Notes:

1. Possible causes of unconsciousness:
 A E I O U T I P S - Acidosis/alcohol, Epilepsy/Ethylene glycol, Infection, Overdose, Uremia (Renal Failure), Trauma/tumor, Insulin, Psychosis, and Stroke

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Altered States of Comfort

Criteria:

1. Patients with nausea and vomiting, pain, or anxiety and increased reaction to stimulus.
2. Patients in need of sedation prior to a procedure or skill, such as cardioversion or transcutaneous pacing.
3. Patients who require complex or extended extrication and who will benefit from anxiolysis or significant pain management in order to accommodate the extrication or patient manipulation required for disentanglement.

Provider:	Order/Treatment:	Order Type:
FR	1. Administer Oxygen and assure SaO ₂ > 90%. Assess for and treat for shock (body position and warming). Remove or limit external stimulus that is creating the patient's reaction.	S - Standing
EMT-E/AEMT	2. Establish one, if not two, large bore peripheral IV lines (two for a trauma patient). Administer NS IV at KVO rate and titrate prn for SBP > 90 mmHg. -- For DYSTONIC REACTIONS 3. Administer 25 mg IV/IM Diphenhydramine (Benadryl) -- For NAUSEA/VOMITING 4. Administer 4 mg IV Zofran (Ondansetron) IV q 5 minutes x 2.	S - Standing
EMT-I	Zofran (Ondansetron) <i>pediatric dose is 2 mg IV q 5 minutes x 2.</i> -- For PAIN MANAGEMENT 4. Administer Fentanyl (Sublimaze) 0.5-1 mcg/kg up to maximum single dose of 100 mcg. Repeat x 1 q 15 minutes as long as SBP and respiratory effort remains sufficient. 5. If unable to use fentanyl due to patient condition or allergy, administer Morphine Sulfate (Morphine) 2 mg q 5 minutes up to maximum of 10 mg. -- For ANXIETY MANAGEMENT / SEDATION 6. Administer Lorazepam (Ativan) 1 mg q 10 minutes to max of 2 mg. 7. If no response to Ativan or patient has allergy administer Midazolam (Versed) 0.02 mg/kg IV. 8. If patient can't tolerate side-effects of other anxiolytics administer Fentanyl 2 mcg/kg IV q 30 minutes.	S - Standing
CCP / AP	-- For CHEMICAL EXTRICATION AND/OR CRUSH SYNDROME 9. Administer 1-1.5 mcg/kg Fentanyl (Sublimaze) IV and 0.5-1 mg/kg Ketamine IV. Closely monitor airway for any signs of respiratory depression. 10. In cases where the patient has a concurrent crush injury and the extrication time exceeds standard vehicle extrication CONSIDER 100 mEq Sodium Bicarbonate in 1000 cc Normal Saline and infuse at 100-150 cc/hour. 11. In cases where the EKG indicates moderate to severe hyperkalemia, administer 1 g IV Calcium Chloride (must use separate IV line or stop Sodium Bicarbonate if running) and administer 10-20 mg nebulized Albuterol (Proventil) over 15-20 minutes. If hyperkalemia persists, patient remains pinned for extended period, and time permits, consider requesting insulin from nearest facility. Contact medical control for orders of insulin and Dextrose.	S - Standing

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Regional Treatment Protocols

Notes:

1. Patients with isolated burns to critical areas (head/face/airway, hands/feet, genitalia, or with circumferential burns or TBSA that meet criteria for treatment in a burn center should be transported directly to the burn center whenever possible.
2. Patients with multiple trauma AND burns are considered trauma patients and should be transported to the closest appropriate trauma center.
3. Ensure scene safety and contact additional resources for scenes involving hazardous materials, dangerous chemicals, or radiation exposures.
4. If greater than 300 mcg Fentanyl or 10 mg Morphine is necessary to manage the patient's condition contact medical control for additional orders.

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Cardiac Arrest/ACLS/PALS

Criteria:

1. Any medical cardiac arrest or near-arrest patient (pediatric patients = no signs of puberty), including cardiac dysrhythmias such as tachycardias, bradycardias, and ineffective cardiac rhythms (VF, PEA, IVR, etc). Treat with the appropriate algorithm within your scope of practice.
2. In all cases, attempt to determine cause of the problem and resolve or treat appropriately.

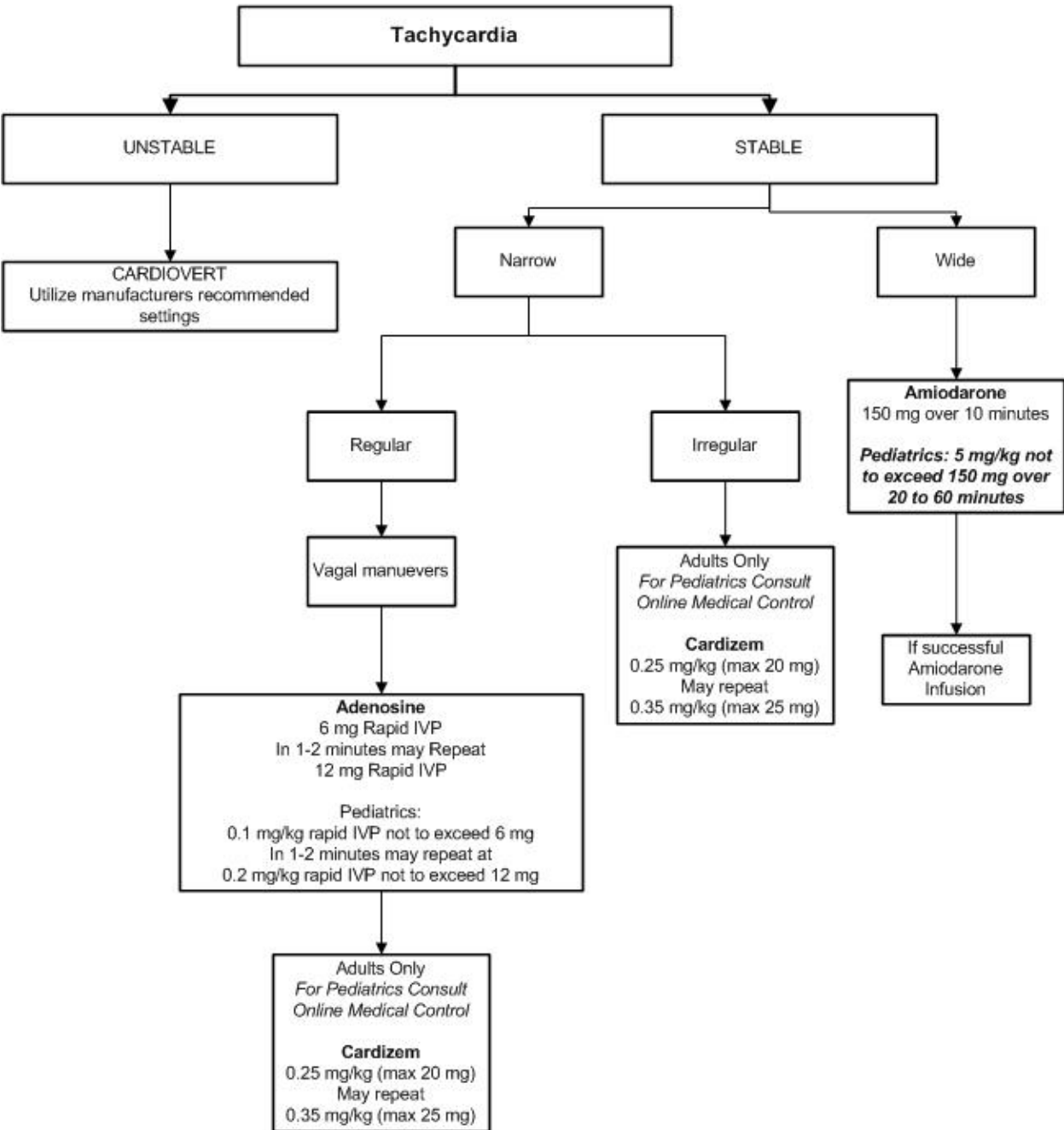
Provider:	Order/Treatment:	Order Type:
FR	1. Insert BLS Airways (NPA, OPA) and administer Oxygen to provide SaO ₂ > 90%. Attach AED and follow prompts.	S - Standing
EMT-B	2. If the patient is pulseless perform chest compressions per current ACLS and ECC guidelines. Compress at a rate of NO LESS THAN 100 per minute and a depth greater than 2 inches. Recommend use of automated chest compression device and CPR feedback mechanisms	S - Standing
EMT-B	3. Insert BiAD "Rescue Airway" such as King, pTL, Combitube and ventilate at rate of NO MORE THAN 10-14 per minute.	S - Standing
EMT-B	4. When performing a pulse check between cycles DO NOT STOP COMPRESSIONS for greater than 10 seconds.	S - Standing
EMT-I	5. Upon return of spontaneous circulation (ROSC) consider placing an endotracheal tube. DO NOT STOP COMPRESSIONS or STOP RESUSCITATION to place endotracheal tube.	S - Standing
EMT-I	6. Evaluate for and treat any causes of cardiac arrest: Hypovolemia - treat with 20cc/kg isotonic fluid boluses * Hypoxia - administer Oxygen; ensure patent BLS airway * Hydrogen ion - if prolonged down-time (>30 minutes) consider 1 mEq Sodium Bicarbonate IV * Hyper/hypokalemia - if suspected hyperkalemia consider 1 g IV Calcium Chloride and 50 mEq Sodium Bicarbonate * Hypoglycemia - if glucose < 60 mg/dl administer 25 g Dextrose 50% * Hypothermia - administer warmed fluids and warmed inhaled Oxygen * Toxins/Tablets - suspected overdose, administer 2.0 mg IV Naloxone (Narcan) * Tamponade, Tension, Thrombosis, Trauma	S - Standing

Notes:

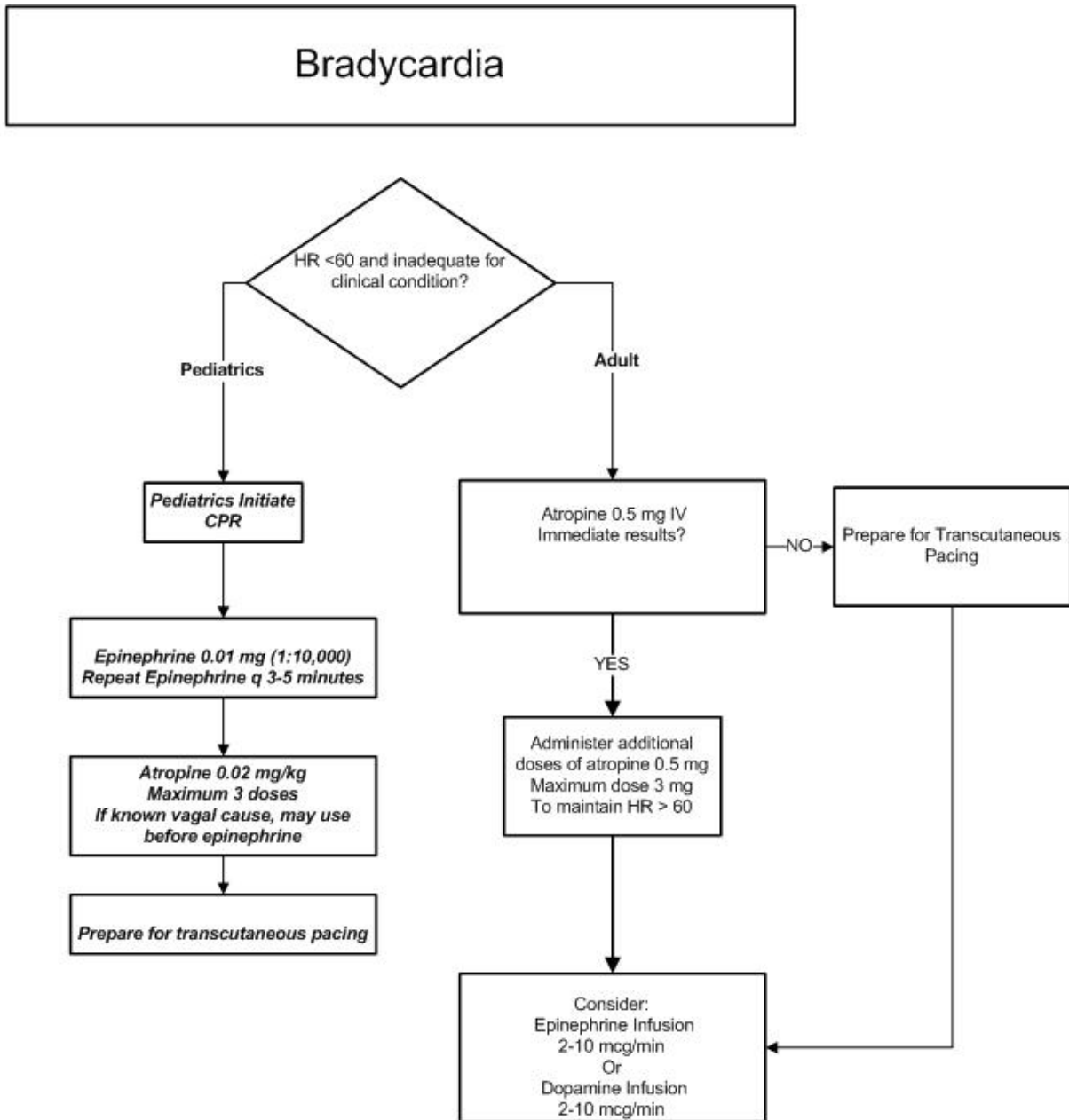
1. Immediately return to chest compressions after any rhythm or pulse check, pauses to deliver a shock should last no more than 5 seconds; have defibrillator charged and ready to go prior to stopping compressions.
2. ACLS treatment algorithms should be utilized - see enclosed references. For anti-arrhythmic agent use Lidocaine instead of Amiodarone. Amiodarone should only be considered for stable Ventricular Tachycardia.
3. If appropriate, contact medical control for Code Grey after potential causes have been corrected and patient remains unresponsive to therapy.
4. Cardizem (Diltiazem) is contraindicated in patients with history of Wolf-Parkinson-White Syndrome (WPW).
5. Consider halving the dosage of medications in patients with renal failure, hepatic failure, and/or patients >70 years of age.

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Tachycardia Algorithm

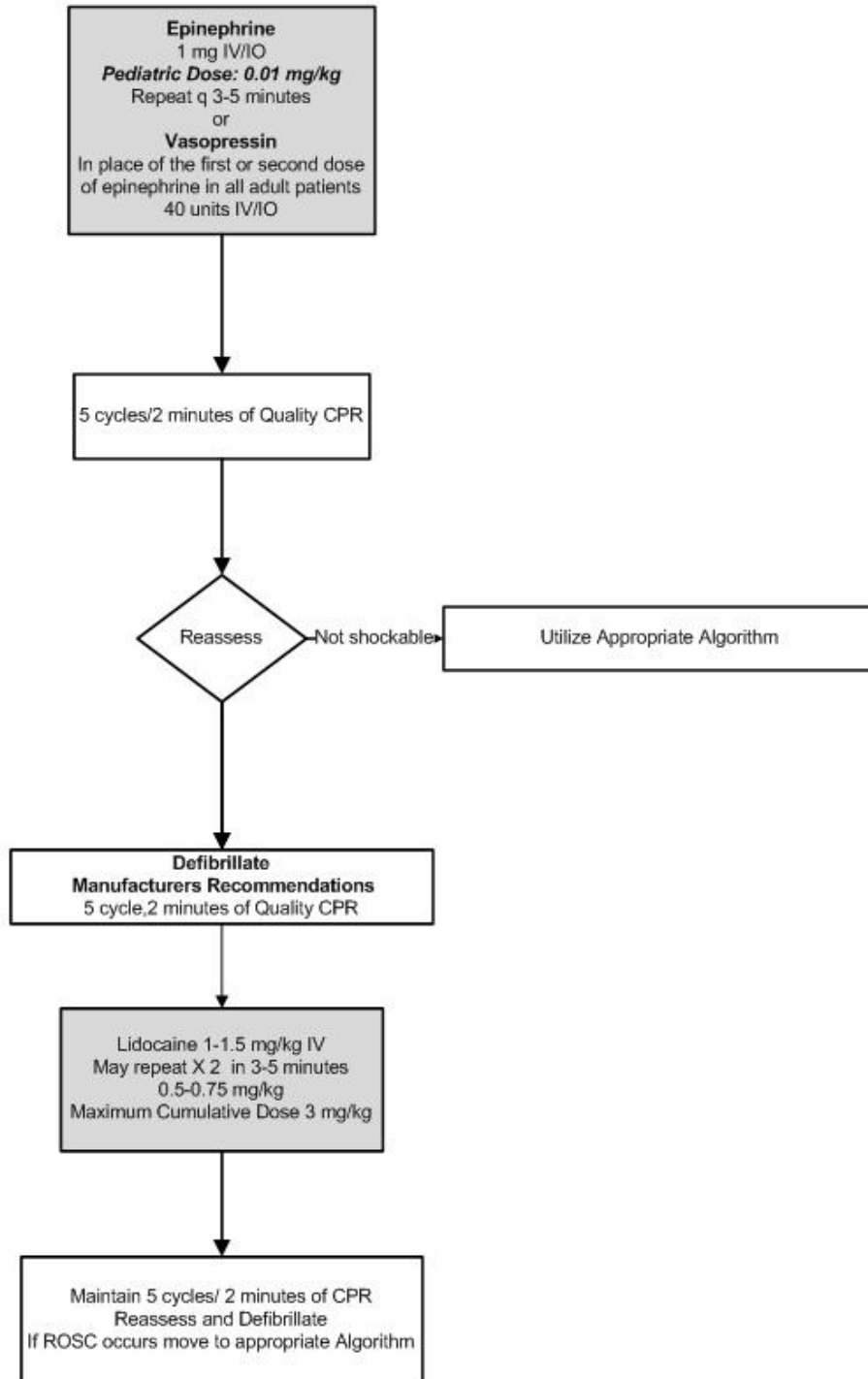


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Ventricular Fibrillation/Pulseless Ventricular Tachycardia



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Asystole and PEA

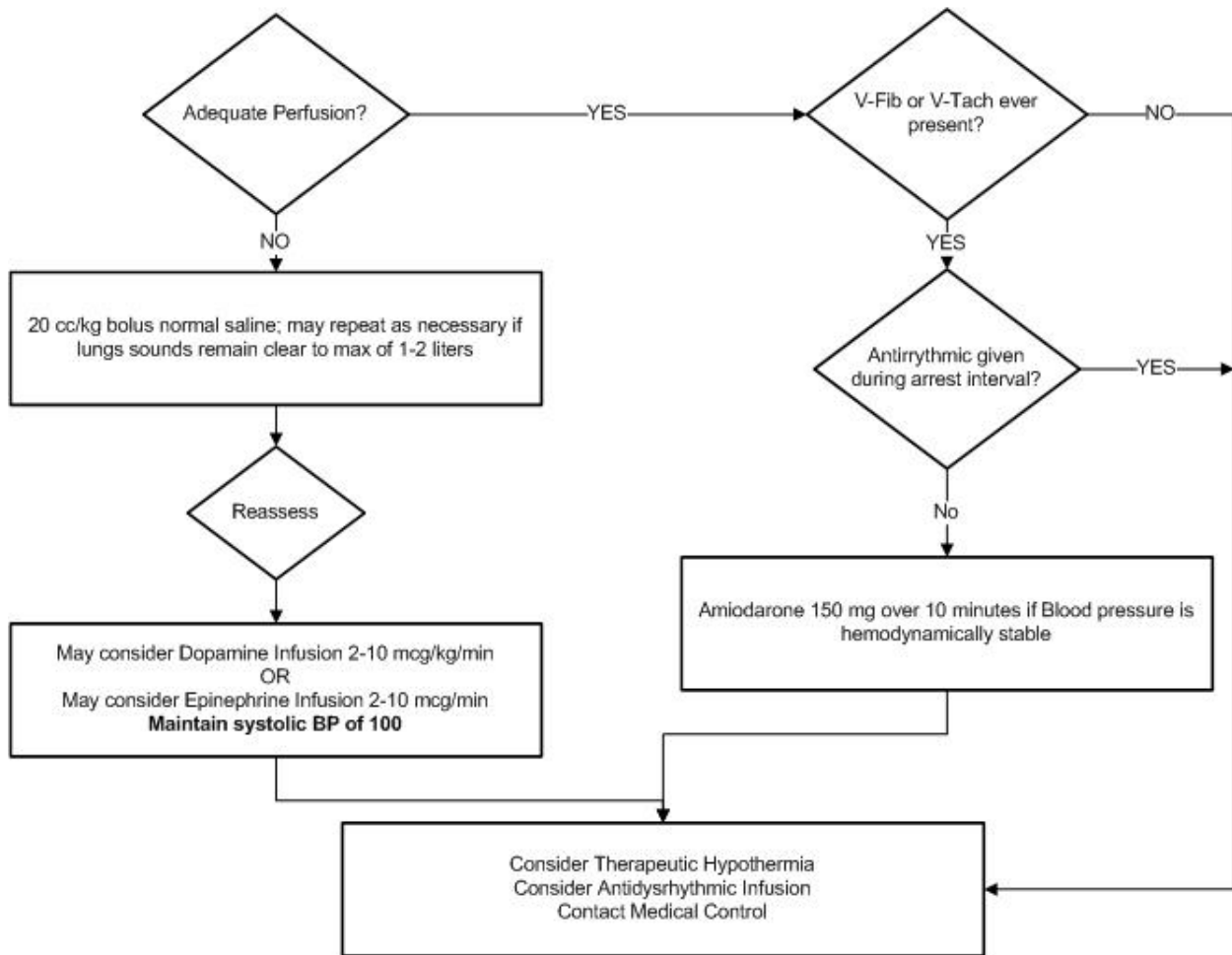
Epinephrine 1 mg IV/IO
Repeat q 3-5 minutes

*Pediatric Dose: 0.01 mg/kg
IV/IO
Repeat q 3-5 minutes*

Consider
Underlying Causes
H's and T's

Rappahannock EMS Council Regional Treatment Protocols

Return of Spontaneous Circulation ROSC



Rappahannock EMS Council Regional Treatment Protocols Medical Emergencies

Cardiac Chest Pain

Criteria:

1. Patients with chest pain can have a variety of conditions - some of which are life-threatening. Determination should be made as to the root cause of the problem with special attention on early recognition and proper treatment of life threatening conditions.

Provider:	Order/Treatment:	Order Type:
FR	1. Administer Oxygen and assure SaO ₂ > 90%. Assess for and treat for shock (body position and warming).	S - Standing
FR	2. Assess pain level and check for evidence of pregnancy or aneurysm.	S - Standing
EMT-B	3. Perform a 12-lead EKG immediately. If the EKG interpretation presents with "acute", "acute MI", or "infarct" statement or if the EKG is interpreted by an ALS provider to show STEMI begin urgent transport to a destination able to provide PCI. If possible transmit the EKG to the receiving facility. DO NOT DELAY CARE ON THE SCENE FOR INTERVENTIONS. When providing patient report be sure to state "Code STEMI" at the beginning of the report. 4. If the patient has physician prescribed prescription for Nitroglycerin administer in accordance with patient-assisted medication protocols 5. Based on differential diagnosis, if chest pain appears cardiac administer Aspirin and Nitroglycerin following patient assisted medication protocol	S - Standing
EMT-E/AEMT	6. Establish IV; administer 20 cc/kg bolus of Normal Saline if the patient is hypotensive (SBP < 100 mm Hg).	S - Standing
EMT-I	7. Administer 0.4 mg Nitroglycerin SL x 3 q 5 minutes until pain free, SBP <90 mmHg, or maximum dose of 1.2mg is reached. Do not administer NTG if heart rate is less than 50. 8. If the patient's pain is >5 on pain scale administer 2-5 mg IV Morphine Sulfate IV/IM (<i>Pediatric dose 0.1 mg/kg up to 5 mg</i>) q 5 minutes to total of 10 mg until patient is pain-free or SBP < 90 mmHg. 9. If the patient's SBP is <90 mmHg (unrelated to analgesia) begin Dopamine (2-20 mcg/kg/min) infusion and titrate for SBP >110 and HR > 60. 10. If patient does not respond to Dopamine, begin Epinephrine drip and titrate for SBP >110 and HR > 60.	S - Standing

Notes:

- Chest pain should always be considered caused by life-threatening conditions until proven otherwise. If transport time to the initial cardiac catheterization facility is greater than 45 minutes consider alternate means of transport or possibility of transport to closer facility that can provide initial stabilization and then transfer.
- BLS providers must be trained on the equipment and acquisition of 12 lead EKG's in order to perform this as a standing order. BLS providers refer to patient assisted medication protocol for additional information.
- Avoid precipitous drop of BP greater than 10% (30% if relatively hypertensive) through the administration of NTG.
- In the setting of an AMI, PVC's may be resulting from cardiac ischemia. Treat the chest pain not the PVC's.
- If 12 lead EKG shows right-sided infarct, NTG is not recommended and crystalloid fluid may be necessary to support BP.

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Eclampsia

Criteria:

1. Pre-eclampsia Includes symptoms of peripheral edema, hypertension, and visual changes or disturbances.
2. Eclampsia is any pregnant patient (in second or third trimester) who is having tonic-clonic seizure activity.

Provider:	Order/Treatment:	Order Type:
FR	1. Administer Oxygen and assure SaO ₂ > 90%	S - Standing
FR	2. Determine the closest appropriate facility with obstetrical capabilities and plan for transport there. If patient is crowning, plan to deliver on the scene.	S - Standing
EMT-B	3. Check blood sugar to ensure seizure activity is not due to hypoglycemia.	S - Standing
EMT-I	4. Administer 2.5-5 mg IV Valium (Diazepam), repeat prn to maximum dose of 10 mg. 5. If seizures persist after Valium, administer 2.5 mg IV Versed (Midazolam) q 5 minutes x 2 (may substitute 2 mg intranasal if no IV access). EMT-I must contact medical control for Magnesium orders.	S - Standing
EMT-P	6. Administer Magnesium Sulfate 2-4 grams IV infusion over 20 minutes.	S - Standing

Notes:

1. When transporting a pregnant patient, transport in the left lateral recumbent position to avoid supine hypotension.
2. If patient is distinctly pre-eclamptic with symptoms of a headache, EMT-I and EMT-P providers may contact online medical control to request Magnesium Sulfate as a preventative measure.
3. Calcium chloride should be available as an antidote for signs of magnesium toxicity (flushed skin, diaphoresis, hypotension, flaccid paralysis, hypothermia, respiratory depression/paralysis, cardiac and CNS depression).

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Regional Treatment Protocols

Medical Emergencies

Hypotension

Criteria:

1. Patients that are symptomatic or "shocky" with new or relative hypotension run the risk of hypoperfusion and the source of hypotension should be identified and resolved if possible (such as treating for vomiting). An absolute vital sign indication is SBP < 90 mm Hg when it is not a normal finding with the patient.
2. Volume deficit from vomiting, diarrhea, or other forms of infection should be treated aggressively with isotonic fluid boluses prior to beginning vasopressor and require a medium or large bore peripheral line.
3. Volume deficit from blood loss (GI bleeding, trauma, etc) should be managed with isotonic fluid boluses and ideally replacement of Oxygen carrying capacity. Avoid creating hypertension as this may create additional bleeding and precipitate blood loss. Two large-bore peripheral lines should be established **without delaying** the transport of the patient.

Provider:	Order/Treatment:	Order Type:
FR	1. Administer Oxygen and assure SaO ₂ > 90%. Assess for and treat for shock (body position and warming).	S - Standing
EMT-E/AEMT	2. Establish peripheral IV and administer 20 cc/kg IV Normal Saline (NS). Titrate IV fluid to achieve SBP at or above 90 mmHg up to 2 L.	S - Standing
EMT-E/AEMT	3. Administer 4 mg IV Zofran (Ondansetron) to treat or provide prophylaxis against nausea. May repeat x 1 q 5 minutes prn.	S - Standing
EMT-I	4. Zofran (Ondansetron) pediatric dose is 2 mg, repeat x 1 q 5 prn.	S - Standing
EMT-P	4. If patient remains hypotensive (SBP <80 mm Hg) after 2 liters of NS, administer Dopamine (Dopamine HCL) Infusion starting at 5 mcg/kg/min and titrate for SBP at or above 90 mm Hg (maximum dose of 20 mcg/kg/min).	S - Standing

Notes:

1. Whenever administering IV fluid bolus, especially in patients with existing cardiac disease, monitor closely for sign of pulmonary edema. If patient develops SOB or rales, stop fluid bolus and move to vasopressor therapy.
2. All patients with unstable VS should be monitored by EKG and pulse oximetry. Whenever possible also evaluate capnography.

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Overdose/Poisoning/Toxic Ingestion

Criteria:

1. Patients with intentional or accidental exposure to medications and substances that affect various body systems.
2. The goals of patient management are to maintain vital signs, support the cardiorespiratory system, and protect the airway,

Provider:	Order/Treatment:	Order Type:
FR	1. Administer Oxygen and assure SaO ₂ > 90%	S - Standing
FR	2. Treat for shock - position them supine with legs elevated and maintain body temperature if they exhibit signs/symptoms of shock	S - Standing
EMT-E/AEMT	3. Establish peripheral IV, titrate NS to maintain SBP at/above 90 mmHg	S - Standing
EMT-E/AEMT	4. If the suspected overdose/poisoning is an opioid AND there is significant respiratory depression administer up to 2 mg Narcan (Naloxone) IV titrating for effective respiratory function. If unable to establish IV access, administer intranasal (IN) in volume of 1cc per nare.	S - Standing
EMT-I	5. <i>Pediatric dose for Narcan (Naloxone) is 0.1 mg/kg to maximum dose of 2 mg.</i> 6. If the patient has overdosed on a benzodiazepine and is apneic (with no PMH of seizures) consider Romazicon (Flumazenil) 0.2 mg IV over 15 seconds, repeat q 5 minutes prn x 4.	S - Standing

Notes:

1. Always consider the fact that multiple substances may be involved and symptoms from conflicting substances may be masked. Whenever possible, gather the substance and transport with the patient for evaluation at the receiving facility.
2. Treatment is generally supportive. Induction of emesis is rarely appropriate.
3. Some drugs and substances have specific antidotes, it is important to accurately and quickly recognize the substance(s) that are involved. Access the Virginia Poison Control Network through 1-800-222-1222 and seek guidance and advice on treatment and information on the substance(s) involved.
4. Use Romazicon with caution as it will prevent successful use of benzodiazepines as anti-convulsant therapy

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Patient Assisted Medication

Criteria:

1. Patients must have physician prescribed medication for a known condition and the medication must be for them (not a family members or friends medication). If the medication is appropriate for the current medical complaint, BLS providers may assist patient in taking their medication.
2. Ensure that the patient has no allergy to the medication to be administered and that they are able to maintain their own airway.
3. If the differential diagnosis indicates cardiac related chest pain, administer Aspirin and Nitroglycerin from the ambulance BLS medication box.

Provider:	Order/Treatment:	Order Type:
EMT-B	1. Administer Oxygen and assure SaO2 > 90%	S - Standing
EMT-B	2. Once the medication is administered, document on the patient care report along with detailed information on patient condition and symptoms that led you to this administration and then obtain a physician's signature when the patient is delivered.	S - Standing
EMT-B	3. ASPIRIN - if the patient has not taken >160 mg of Aspirin in the last four hours, administer four (4) 81 mg chewable Aspirin. Contraindications: bleeding disorders, recent major surgery (within 7 days), patient is pregnant, history of esophageal varices. 4. EPI-PEN - if the patient has a history of allergic reaction and is currently experiencing symptoms of anaphylaxis 5. Nebulizer/Metered-Dose Inhaler (MDI) - if the patient has not already had two doses within the last 30 minutes you may administer one dose. For additional dosing contact medical control for approval. 6. NITROGLYCERIN - if the patient is CURRENTLY having chest pain, has not already administered three (3) or more tablets, has a heart rate greater than 50, AND has a systolic blood pressure at or above 100 mm Hg administer 0.4 mg of SL tablets or spray. Administer up to two (2) doses or 0.8 mg if patient continues to have CP and systolic BP remains at or above 100 mm Hg. Must re-check complete vital signs between doses. 7. Document no less than two complete sets of VS, one prior to and one after the administration of medication.	S - Standing

Notes:

1. For any patient assisted medication other than Aspirin, the BLS provider should request ALS assistance. DO NOT WAIT ON SCENE for ALS to arrive, meet with them enroute to the receiving facility.
2. For patient complaints of chest pain, consider aspirin and nitroglycerin; allergic reaction consider Epi-pen; difficulty breathing consider nebulizer/MDI.

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Respiratory Distress

Criteria:

1. Includes any patient who is having difficulty breathing or disordered breathing related to an acute or chronic process.

Provider:	Order/Treatment:	Order Type:
FR	1. Administer Oxygen and assure SaO ₂ > 90%	S - Standing
EMT-B	2. If the patient has a history of asthma/COPD and has a physician prescribed inhaler, administer per the patient assisted medication protocol.	S - Standing
EMT-B	3. Consider CPAP for dyspnea that is NOT related to an allergic reaction. Refer to patient-assisted medication protocol for MDI and albuterol administration.	S - Standing
EMT-I	4. For asthma/COPD: - Mix and administer Atrovent (Ipratroprium) 0.5 mg and Ventolin (Albuterol) 2.5 mg via nebulizer. Repeat Albuterol ONLY x 2. Medical control required for > 7.5 mg. (<i>Pediatric dose the same if > 2 years of age; < 2 years of age administer 1.25 mg diluted with 2 cc NS</i>) - Administer Solu-Medrol (Methylprednisolone) 125 mg IV if no relief or improvement from first dose of Albuterol (<i>Pediatric dose 2 mg/kg IV, maximum dose 125 mg.</i>) - For a severe asthma attack with deteriorating patient condition administer Epinephrine 1:1000 0.3 mg SQ/IM (<i>pediatric 0.01 mg/kg; max dose 0.3 mg</i>).	S - Standing
EMT-I	5. For congestive heart failure (CHF) or pulmonary edema - Administer nitroglycerin (NitroSTAT) 0.4 mg SL, repeat q 5 minutes x 3. Hold for SBP < 90 mmHg - Administer 0.5 mg/kg IV Furosemide (Lasix) if patient does not take as home med, if they do administer 1.0 mg/kg. Do not administer during pregnancy, or if hypokalemia is suspected. - Administer Morphine Sulfate 2.0 mg IV q 5 minutes to max of 10 mg. Hold for SBP < 90 mmHg.	S - Standing
EMT-I	6. If patient takes Lasix at home daily, consider SL Nitroglycerin and CPAP.	S - Standing
EMT-P	7. For asthma: if no response to Albuterol and Solu-Medrol consider Magnesium Sulfate 45mg/kg IV, repeat in 10 minutes at 30 mg/kg but do not exceed 2.5 g total (<i>pediatric dose the same</i>).	O - Med Control
CCP / AP	8. For croup, ARDS, and/or status asthmaticus administer 3 ml Epinephrine 1:10,000 by nebulizer (<i>pediatric dose the same</i>).	S - Standing

Notes:

1. Perform a detailed patient assessment and gather an appropriate PMH to determine the suspected cause of the dyspnea.
2. Epinephrine is a potent inotrope and chronotrope and should be used with extreme caution in patients greater than 60 years of age, pre-existing cardiomyopathy, and those with a heart rate > 120.

Rappahannock EMS Council Regional Treatment Protocols Medical Emergencies

Seizures

Criteria:

1. Patients that are having grand mal seizures.

Provider:	Order/Treatment:	Order Type:
FR	1. Administer Oxygen and assure SaO ₂ > 90%. Assess for and treat for shock (body position and warming).	S - Standing
EMT-B	2. If respirations are < 8, assist with BVM and supplemental Oxygen.	S - Standing
EMT-I	3. If patient is hypoglycemic, with no indication of acute cerebral hemorrhage, administer 25 g IV Dextrose 50%. (<i>Pediatric dose 2 cc/kg Dextrose 25%, Neonatal dose (< 30 days) 2 cc/kg Dextrose 10%</i>) For active grand mal seizure activity unrelated to hypoglycemia establish an IV and administer Ativan (Lorazepam) 2 mg IV/IM may repeat once at 5 minutes (<i>Pediatric dose 0.1 mg/kg up to max single dose of 2 mg - may repeat once at 5 minutes</i>).	S - Standing
EMT-I	4. If grand mal seizures persist beyond 4 mg IV/IM Ativan or if unable to establish IV/IO administer 0.1 mg/kg IN Versed (Midazolam) up to maximum single dose of 5 mg q 3 minutes - total of 10mg (<i>Pediatric dose 0.02 mg/kg</i>). ** If unable to establish IV administer Versed IN (not to exceed 1 cc/nare) or Valium PR. 5. If patient has sensitivity to other anticonvulsants administer 2.5 mg IV/PR Valium (Diazepam) q 3 minutes x 4 (<i>Pediatric dose 0.3 mg/kg IV/IO or 0.5 mg/kg PR</i>).	S - Standing

Notes:

1. Versed and Valium both cause respiratory depression - monitor ventilatory effort closely after administration, provide Oxygen, monitor and protect airway.
2. Consider Romazicon for antidote in benzodiazepine overdose.