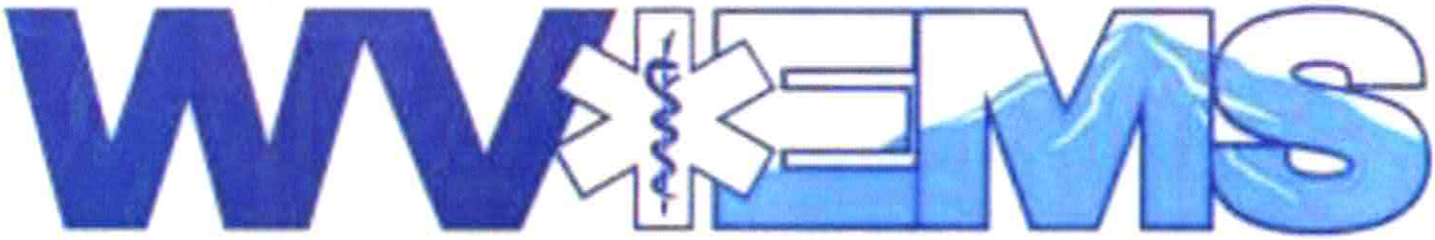
Regional Operational Protocols



Western Virginia Emergency Medical Services Council, Inc.

2012

Protocols

Protocols

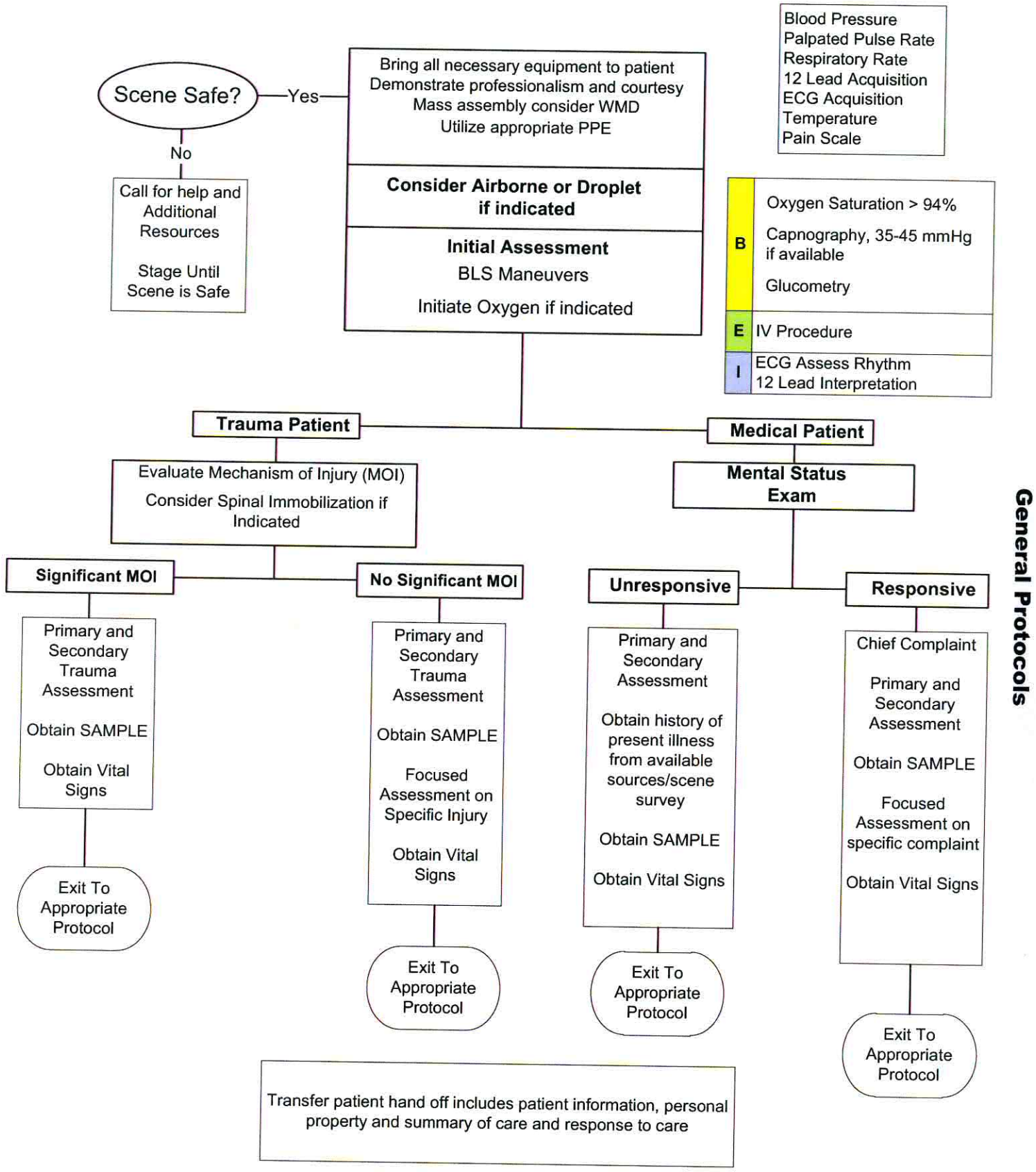
Reminder:

This document provides protocols for common situations faced by EMS. It is not intended to provide complete instructions for all patients in all situations.

Many patients may require the use of more than one protocol, or may require care not addressed at all in these pages.

EMS providers should remember the primary objective is to provide the best possible care to all patients, and should not hesitate to consult with medical control in these situations.

General – Universal Patient Care/Initial Patient Contact



General – Cardiac Arrest (Adult)

Continuous Compression CPR (CC-CPR)

Contraindications:

Children < 8
Known/suspected overdose
Respiratory cause of arrest
Hypothermia
Near Drowning
Traumatic Arrest

Begin standard CPR and/or go to appropriate protocol

Consider bilateral Chest Decompression in traumatic arrests

Cardiac Arrest

200 Chest Compressions
Insert OPA, apply Non-rebreather mask at 100%

E IV Procedure
I Epinephrine 1 mg, 1:10,000 IV/IO

Rhythm analysis: Single shock without pulse check

200 Chest Compressions

Rhythm analysis: Single shock without pulse check

200 Chest Compressions
I Epinephrine 1 mg, 1:10,000 IV/IO

Rhythm analysis: Single shock without pulse check

200 Chest Compressions

Rhythm analysis: Single shock without pulse check

Endotracheal Intubation/King Airway while NOT interrupting compressions

Continue standard CPR
and / or
Exit to Appropriate
Cardiac
Protocol

1. Defibrillate at highest energy setting or the manufacturer's recommendation for energy level.

2. Chest compressions at least 100/min., deep and complete recoil.

3. If potentially perfusing rhythm returns, or signs of circulation, continue with one more round of 200 compressions before pulse check.

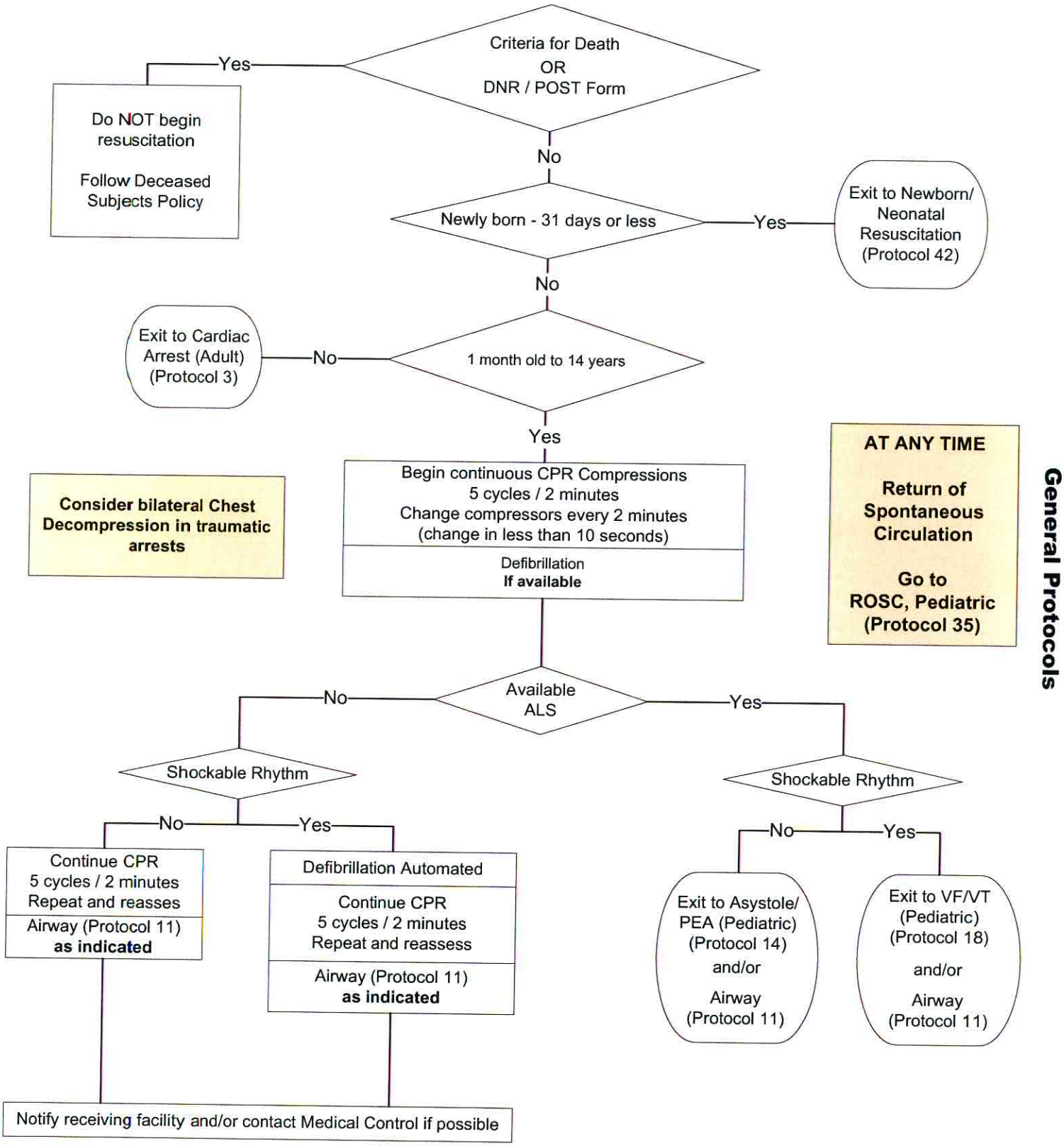
4. Upon return of circulation, go to Post Resuscutation Care (Adult) (Protocol 34)

Do NOT attempt ventilation/ intubation until after fourth set of 200 compressions

PEARLS
* Consider early IO placement if available and difficult IV anticipated.
* DO NOT HYPERVENTILATE: If advanced airway in place, ventilate 8-10 breaths per minute.
* Use a Team Focused Approach, assigning responders to predetermined tasks.
* Defibrillation energy should be at manufacturer's recommendation, maximum energy if unknown.

TERMINATION – If after 30 minutes of quality resuscitation effort and no Return of Spontaneous Circulation (ROSC) occurs, the team leader should inform the family of the situation and consider termination of resuscitation on the scene.

General – Cardiac Arrest (Pediatric)



General – Cardiac Arrest (Pediatric)

In contrast to adults, cardiac arrest in infants and children DOES NOT usually result from a primary cardiac event. Typically cardiac arrest is the end result of a progressive process precipitated by respiratory distress or asphyxiation leading to hypoxemia, acidosis and hypotension resulting finally in cardiac arrest.

Compressions:
Compressions should be started immediately with interposed ventilations or ventilations performed by second rescuer when available. High quality, uninterrupted compressions are key to the resuscitative effort. At least 100 compressions per minute should be performed in a 15:2 ratio of compressions:ventilations until and advanced airway is in place then ventilations should be at 8 – 10 breaths per minute. Depth of compressions should be 1.5 inches in the infant and 2 inches in children with complete chest recoil allowed.

Ventilations:
Ventilations are more important in the pediatric patient due to the nature of most cardiac arrests. However DO NOT hyperventilate with volume or by rate of ventilations. Hyperventilation and hyper-oxygenation carry the same dangers in pediatrics as adults. King Airway or BVM is the preferred method of oxygen delivery and ventilation.

Immediately resume compressions / CPR after each defibrillation and check pulses every 2 minutes.

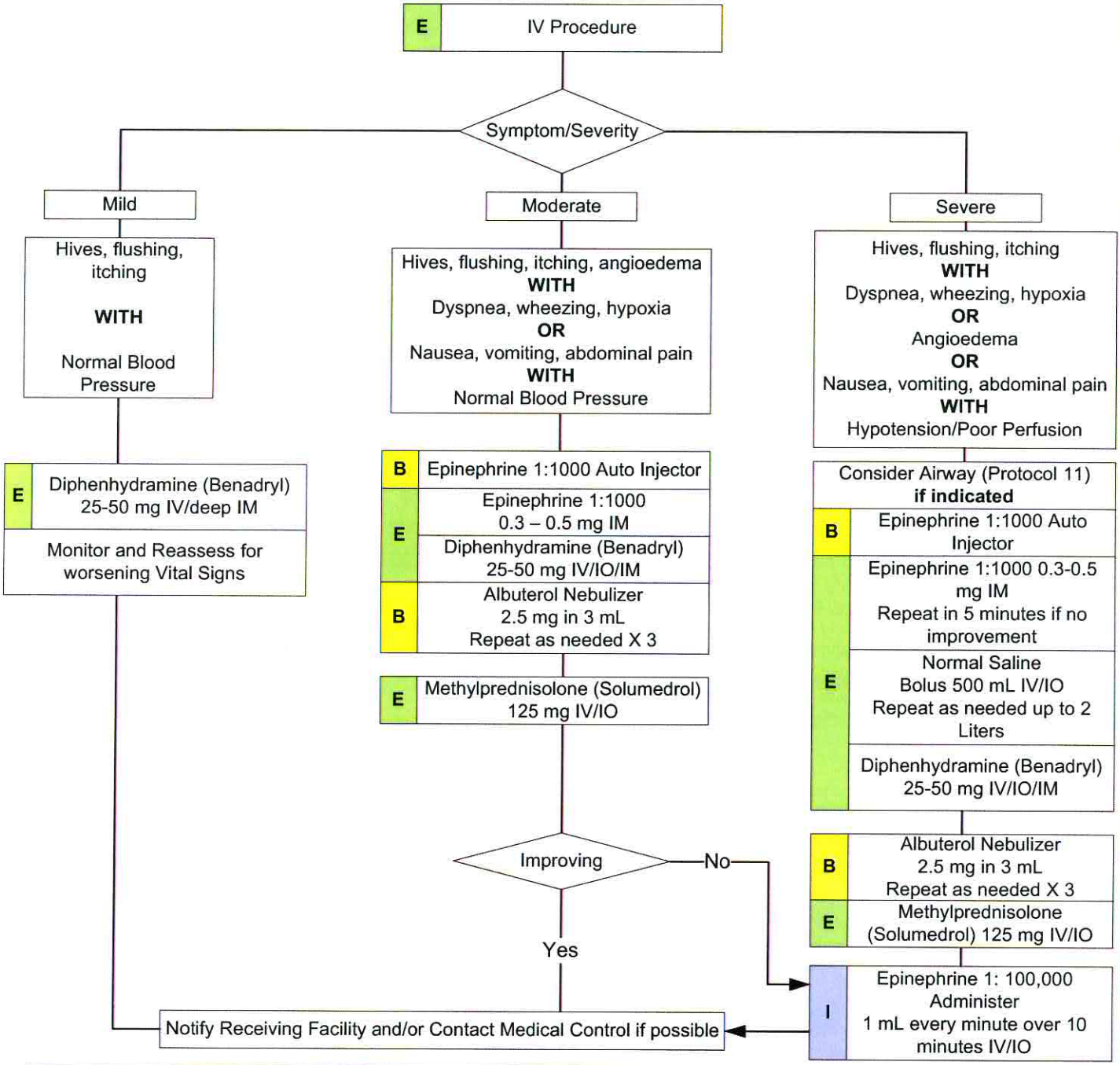
Defibrillation Energy:
First shock is 2 joules / kg with all subsequent shocks at 4 joules / kg.

Scene / Family Members / Public Areas:
In general high quality compressions cannot be effected during transport. This also represents a hazard to the crew. Cardiac arrests should have resuscitation effort performed where the victim is found unless a hazard exists, physical space does not allow access to patient or until return of spontaneous circulation. In the pediatric patient, after 30 minutes of effort with no response, then transport should be undertaken safely.

Studies show family members who desire to be present during a resuscitation demonstrate better understanding of the event and improved closure. This can be of enormous benefit to the family during the grieving process. The Team Leader should update the family and assign a rescuer to the family to answer questions and be of support during the event. Family members should be allowed access to the resuscitation effort unless they demonstrate a disruption to the effort.

PEARLS
* Monophasic and Biphasic waveform defibrillators should use the same energy levels of 2 joules/kg and increase to 4 joules/kg on subsequent shocks.
* In order to be successful in pediatric arrest, a cause must be identified and corrected.
* Airway is more important intervention in pediatric arrest. This should be accomplished quickly with BVM or supraglottic device. Patient survival is often dependent on proper ventilation and oxygenation airway interventions.
* Effective CPR is critical
  1. Push hard and fast at appropriate rate
  2. Ensure full chest recoil
  3. Minimize interruptions in CPR. Pause CPR < 10 seconds to verify rhythm

Medical – Allergic Reaction/Anaphylaxis (Adult)



PEARLS

* Allergic reactions occur when a patient is exposed to an allergen (pollen, insect, medication, food, etc.) causing the body to respond by releasing specific immunoglobulins such as histamine which causes hives, itching and capillary leaking leading to edema. Most allergic reactions are mild and involve only the skin such as erythema, hives and / or itching and are usually resolved with an anti-histamine like diphenhydramine.
* Anaphylaxis is a severe form of an allergic reaction and recent studies show it is under-recognized and under-treated.

Epinephrine 1:100,000:

In the patient with severe anaphylaxis who is not responding to Epinephrine IM and fluid resuscitation, IV Epinephrine should be administered. Take your Epinephrine 1:10,000 and draw out 1 mL which equals 0.1 mg of epinephrine. Dilute this 1 mL with 10 mL of Normal Saline in a separate syringe to yield a concentration of 1:100,000 (0.1 mg in 10 mL of Normal Saline.) Administer 1 mL each minute over 10 minutes or until symptoms resolve.

WMD – CHEM PACK

This protocol is designed for WMD ONLY. Providers are only to perform skills that they have been trained on.

S: Salivation
L: Lacrimation
U: Urination (increase)
D: Defecation/Diarrhea
G: GI Upset/ABD pain
E: Emesis
M: Muscle twitching

Scene Safe
Appropriate PPE

Yes → Obtain history of exposure
Observe for specific toxidromes
Initiate triage and/or decontamination
As indicated

No → Call for help / additional resources
Stage until scene is safe

Symptom Severity

Asymptomatic	Minor Symptoms: Respiratory Distress + SLUDGEM	Major Symptoms Altered Mental Status, Seizures, Respiratory Distress, Respiratory Arrest
Monitor and reassess every 15 minutes Initiate appropriate treatment	IV Procedure	IV Procedure
	Duodote Kit if available OR Nerve Agent Kit IM 2 doses rapidly **If available**	Duodote Kit if available OR Nerve Agent Kit IM 3 doses rapidly **If available**
	Atropine 2 mg IV/IO/IM Every 5 minutes ***Peds: 0.05 – 0.1 mg/kg Until symptoms Resolve***	Atropine 6 mg IV/IO/IM Every 5 minutes ***Peds: 0.05 – 0.1 mg/kg, until symptoms resolve***
	Pralidoxime (2 PAM) 600 mg IV/IO/IM ***Peds: 25-50 mg/kg***	Pralidoxime (2 PAM) 1800 mg IV/IO/IM ***Peds: 25-50 mg/kg***

Seizure Activity?
Exit to Seizure (Protocol 48)

Notify receiving facility and/or contact Medical Control if possible

PEARLS
* In the face of a bona fide attack, begin with 1 Nerve Agent Kit for patients less than 7 years of age; 2 Nerve Agent Kits for children 8-14 years of age, and 3 Nerve Agent Kits for patients 15 years of age and over.
* Follow local HAZMAT guidelines for decontamination and transportation of patient; use of personal protective equipment.
* For patients with major symptoms, there is no limit for Atropine dosing.
* Carefully evaluate patients to ensure they are not symptomatic from exposure to another agent (e.g., narcotics, vesicants, etc.).
* Each Nerve Agent Kit contains 600mg of Pralidoxime (2 PAM) and 2 mg of Atropine
* The main symptom that the atropine addresses is excessive secretions, so Atropine should be given until salivation improves.

Procedures

Procedures

Procedures may only be performed as trained, authorized by an OMD, and in accordance with the Virginia Scope of Practice Maximums.

The procedures listed here contain general instructions and protocols for their implementation.

If using equipment not listed here, or in the event of conflicting instructions, follow the manufacturer's suggested settings and/or procedures.

12 Lead ECG

Clinical Indications:

- Suspected cardiac patient
- Suspected tricyclic overdose
- Electrical injuries
- Syncope

Procedure:

1. Assess patient and monitor cardiac status.
2. Administer oxygen as patient condition warrants.
3. If patient is unstable, definitive treatment is the priority. If patient is stable or stabilized after treatment, perform a 12 Lead ECG.
4. Prepare ECG monitor and connect patient cable with electrodes.
5. Enter the required patient information (patient name, etc.) into the 12 lead ECG device.
6. Expose chest and prep as necessary. Modesty of the patient should be respected.
7. Apply chest leads and extremity leads using the following landmarks:
    - RA -Right arm
    - LA -Left arm
    - RL -Right leg
    - LL -Left leg
    - V1 -4th intercostal space at right sternal border
    - V2 -4th intercostal space at left sternal border
    - V3 -Directly between V2 and V4
    - V4 -5th intercostal space at midclavicular line
    - V5 -Level with V4 at left anterior axillary line
    - V6 -Level with V5 at left midaxillary line
8. Instruct patient to remain still.
9. Press the appropriate button to acquire the 12 Lead ECG.
10. If the monitor detects signal noise (such as patient motion or a disconnected electrode), the 12 Lead acquisition will be interrupted until the noise is removed.
11. Once acquired, transmit the ECG data to the appropriate hospital if possible. Contact the receiving hospital to confirm that a 12 Lead ECG has been received.
12. Monitor the patient while continuing with the treatment protocol.
13. Document the procedure, time, and results on/with the patient care report (PCR)

Note that while 12 Lead ECG acquisition may be performed by BLS providers, only Intermediates and Paramedics may interpret the 12 lead. Other levels may acquire and transmit to the ED, and may communicate the machine's interpretation to the hospital, but under no circumstances should they attempt to interpret the 12 lead ECG.

Policies

Abuse & Neglect

Recognition and Reporting

Policy:

Domestic violence is physical, sexual, or psychological abuse and/or intimidation, which attempts to control another person in a current or former family, dating, or household relationship. The recognition, appropriate reporting, and referral of abuse is a critical step to improving patient safety, providing quality health care, and preventing further abuse.

Abuse is the physical and/or mental injury, sexual abuse, negligent treatment, or maltreatment of a child, senior citizen, or incapacitated adult by another person. Abuse may be at the hand of a parent, caregiver, spouse, neighbor, or adult child of the patient. The recognition of abuse and the proper reporting is a critical step to improve the health and wellbeing of these at-risk populations.

Purpose:

Ensure compliance with "Mandatory Reporter" status under the Code of Virginia.

Assessment of an abuse case based upon the following principles:

- **Protect** the patient from harm, as well as protecting the EMS team from harm and liability.
- **Suspect** that the patient may be a victim of abuse, especially if the injury/illness is not consistent with the reported history.
- **Respect** the privacy of the patient and family.
- **Collect** as much information and evidence as possible and preserve physical evidence.

Procedure:

1. Assess the/all patient(s) for any psychological characteristics of abuse, including excessive passivity, compliant or fearful behavior, excessive aggression, violent tendencies, excessive crying, behavioral disorders, substance abuse, medical non-compliance, or repeated EMS requests. This is typically best done in private with the patient.
2. Assess the patient for any physical signs of abuse, especially any injuries that are inconsistent with the reported mechanism of injury. Defensive injuries (e.g. to forearms), and injuries during pregnancy are also suggestive of abuse. Injuries in different stages of healing may indicate repeated episodes of violence.
3. Assess all patients for signs and symptoms of neglect, including inappropriate level of clothing for weather, inadequate hygiene, absence of attentive caregiver(s), or physical signs of malnutrition.
4. Immediately report any suspicious findings to both the receiving hospital (if transported) and social services:
   - If child abuse or neglect is suspected, contact Child Protective Services at (800) 552-7096.
   - If elder abuse or neglect (including incapacitated adults), contact Adult Protective Services at (888) 832-3858.
5. EMS personnel should attempt in private to provide the patient with the phone number of the local domestic violence program, or the **National Hotline, 1-800-799-SAFE**.

Criteria for Death

Policy:

CPR and other EMS interventions are to be withheld only if the patient is obviously dead or a valid Virginia Durable Do Not Resuscitate Order and/or POST form (see separate policy) is present.

Purpose:

The purpose of this policy is to:

- Honor those who have obviously expired prior to EMS arrival.

Procedure:

1. If a patient is in complete cardiopulmonary arrest (clinically dead) and meets one or more of the criteria below, CPR and other EMS interventions need not be initiated:
    - Body decomposition
    - Rigor mortis
    - Dependent lividity
    - Major blunt force trauma
    - Injury not compatible with life (i.e., decapitation, burned beyond recognition, massive open or penetrating trauma to the head or chest with obvious organ destruction)
    - Extended downtime with asystole on the ECG
2. If a bystander or first responder has initiated CPR or automated defibrillation prior to EMS's arrival, and any of the above criteria (signs of obvious death) are present, EMS may discontinue CPR and other interventions.
3. If doubt exists, start resuscitation immediately. Once resuscitation is initiated, continue resuscitation efforts until either:
    a) Resuscitation efforts meet the criteria for implementing the **Discontinuation of Prehospital Resuscitation Policy** (see separate policy)
    b) Patient care responsibilities are transferred to the destination hospital staff.

Medication Reference

Medication	Adult Dosage	Pediatric Dosage
midazolam **(Versed)** **WVEMS Protocols:** * **2-Behavioral/Pt. Restraint** * **11-Airway** * **15-Post Resuscitation Care (Adult)** * **16-Post Resuscitation Care (Pediatric)** * **24-Crush Syndrome** * **48-Seizure** * **50-Tachycardia (Adult)** * **51-Tachycardia (Pediatric)** * **53-Pregnancy Related Emerg.** **Indication/Contraindications:** * Benzodiazepine used to control seizures and for sedation * Use with caution if hypotensive	**Chemical Restraint** * 2 -5mg IV/IO/IM, repeated every 3-5 minutes as needed **Sedation** * 2-5 mg IV/IO repeated every 3-5 minutes as needed **Seizures** * 5mg IV/IO/IM/IN, repeated every 3-5 minutes as needed **Shivering in Induced Hypothermia** * 3-5 mg IV/IO • May repeat once	* See Color Coded List **Sedation** * 0.2 mg/kg IV/IO **Seizures** * 0.1 mg/kg IV/IO/IM/IN, repeated every 3-5 minutes as needed (MAX 10 mg)
morphine sulfate **(MS Contin)** **WVEMS Protocols:** * **7-Pain Control** * **34-Cardiac Chest Pain** **Indication/Contraindications:** * Narcotic pain relief * Antianxiety * Possible beneficial effect in pulmonary edema * Avoid if hypotensive	* 2-4 mg IV/IO/IM • May repeat every 10 minutes as needed (MAX 10 mg)	* See Color Coded List * 0.1 mg IV/IO/IM • May repeat every 10 minutes as needed (MAX 10 mg)

Medication Reference

Medication	Adult Dosage	Pediatric Dosage
naloxone **(Narcan)** **WVEMS Protocols:** *** 13-Asystole/PEA (Adult)** *** 14-Asystole/PEA (Pediatric)** *** 43-OD/Poison/Toxics (Adult)** *** 44-OD/Poison/Toxics (Pediatric)** **Indication/Contraindications:** * Narcotic antagonist	* Up to 2 mg IV/IO/IM/IN • Titrate to respirations/ oxygenation, NOT consciousness	* See Color Coded List * 0.1 mg/kg IV/IO/IM/IN • Titrate to respirations/ oxygenation, NOT consciousness
nitroglycerin **(Nitrostat)** **WVEMS Protocols:** *** 34-Cardiac Chest Pain** *** 45-Pulmonary Edema/CHF** **Indication/Contraindications:** * Vasodilator used in aginal syndromes and CHF * **Contraindicated** if: • SBP <90 mmHg • Use of Viagra or Levitra within previous 24 hours • Use of Cialis within previous 36 hours	**Sublingual Tablets** * 0.4 mg SL • Repeat every 5 minutes as needed to MAX of 3 tablets **Paste** * Apply 1 inch topically	Ø
ondansetron **(Zofran)** **WVEMS Protocols:** *** 28-Abdominal Pain** *** 41-Nausea/Vomiting** **Indication/Contraindications:** * Antiemetic used to control nausea and/or vomiting	* 4 mg IV/IO • May repeat once as needed	* See Color Coded List **ONLY if >6 months:** * 0.15 mg/kg IV/IO • May repeat once as needed