WESTERN VIRGINIA E.M.S. COUNCIL
REGIONAL OPERATIONAL PROTOCOLS
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ACKNOWLEDGEMENTS

With the wave of change in the pre-hospital treatment of the sick and injured comes that daunting task of updating the Regional Protocols. Since the last update in August of 2001, we have seen changes in the American Heart Association standards of care for BLS, ACLS, and the PALS programs. The current update process began in March 2005 with input solicited from Operational Medical Directors, EMS providers of varied levels, hospitals, and others who are involved in the pre-hospital experience throughout the region. Once this initial process was completed, the draft protocols were submitted to the Operational Medical Directors of the region as well as a few select, experienced providers in the region identified by those Physicians, all of whom greatly enhanced the revision process with their invaluable comments and suggestions for improvement of our patient care outline. The final draft was submitted to the Regional Medical Directorate for review and adoption on May 19, 2006, with consideration given to the comments of those in attendance as well as those who could not attend. The current edition of the Regional Operational Medical Protocols is reflective of the cutting edge technology and practices available to serve the patients of the Western Virginia EMS Council region as well as serving as a template for an improved standard of care to be utilized by the providers of the region. Of the utmost importance is the fact that these protocols represent the consensus opinion of how pre-hospital care should be delivered while ensuring that the highest possible quality of care is given to preserve life, limb, and property.

The Western Virginia EMS Council would like to offer our sincere thanks to all who helped with this project. While it is not possible to list all of those who had a hand in this endeavor for concern some one would inevitably be left out we would not feel comfortable if we did not acknowledge the contributions of time, talent, and resources to this collaborative effort.

The development of this document also represents a change in Medical Direction at the Regional level. This project began under the direction of **Cheryl B. Haas, M.D.**, Emergency Physician with Lewis-Gale Medical Center and was completed under the direction of **Charles J. Lane, M.D.**, Emergency Physician and Medical Director of Emergency Medicine for Carilion Franklin Memorial Hospital. Their shared vision of what pre-hospital care should be and the means of its delivery is reflected throughout this document.

ACKNOWLEDGEMENTS (continued)

The shared belief of not only Dr. Haas and Dr. Lane but of all of the Medical Directors in the region, in the providers, to offer effective and quality assessment and management of the pre-hospital patient is evidenced by this document. Both have demonstrated admirable leadership and direction for EMS in the region and as such we shall always be indebted to Dr. Haas for her years of service and to Dr. Lane whom we look forward to working with for years to come.

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D. Scott Hayes, MD
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Alleghany Regional Medical Center
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Robert H. Logan, PhD, Executive Director
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In closing the Western Virginia EMS Council would like to recognize and thank the dedicated personnel, career and volunteer, across the region who will utilize the tools offered in this manual to continue to provide the best possible care to the all patients who reside or pass through this region of the Commonwealth of Virginia.

WESTERN VIRGINIA E.M.S. COUNCIL
REGIONAL OPERATIONAL PROTOCOLS
INTRODUCTION

1. These operational protocols have been designed to serve as a template to pre-hospital providers, physicians, and other emergency department staff in the delivery of prehospital care within the Western Virginia EMS Region.

2. Physicians rendering treatment orders to field personnel should utilize this manual as a basis for such orders. It is understood that variations from these protocols will, from time to time be necessary and that direct orders from an E.D. Physician will override those indicated herein.

3. Two basic types of orders are contained within these protocols for EMS personnel:

   a. "S" indicates a standing order

   b. "O" indicates that the procedure must be under the on-line order of a physician.

4. Those personnel who are certified to practice at the level of EMT-Shock Trauma shall utilize the protocol columns indicated with an "E". Likewise, those providers who are certified to practice at the level of EMT-Cardiac Technician shall utilize the protocol columns indicated with an "I". As with any certification versus protocol situation, even if the procedure is listed as in the column which corresponds with your level of certification you must have been trained on the device, procedure, or medication you intend to use.

5. On-line medical control should be established as soon as possible without delaying critical patient care. Medical control should be established at some point on a call requiring any treatment outlined in these protocols. Providers are not required to wait until they have completed all standing orders to contact on-line Medical Control. Providers should contact Medical Control whenever advise, confirmation, consultation, or direction is needed.

In the event that NO means of communication (radio, telephone, cellular, etc.) are possible with online medical control, technicians may perform procedures designated with an “O” IN A SITUATION OF JUSTIFIABLE PATIENT NEED. ANY TIME a procedure designated with an “O” is attempted without on-line medical control it will be reported by the technician to ALL OF THE FOLLOWING for medical review: agency supervisor, agency Operational Medical Director, and the Regional Education Coordinator for the Western Virginia EMS Council. FAILURE TO REPORT SUCH SITUATIONS REGARDLESS OF PATIENT OUTCOME MAY RESULT IN DECERTIFICATION.

6. Advanced Life Support providers are obligated to follow both Basic Life Support and Advanced Life Support protocols as appropriate.

7. Patients 12 years of age and younger are to be considered pediatric patients for the purpose of the Pediatric protocols. Providers should establish on-line Medical Control if there is any question on whether to treat a patient following adult or pediatric protocols. The use of a Broselow® Tape for drug dosages and appropriate equipment sizing is strongly encouraged.

8. The use of universal precautions is not listed in the specific protocols. Universal precautions should be utilized for ALL procedures at risk for exposure to pathogens. Infection control procedures including donning gloves, masks, eye protection, gowns, hand washing, and thoroughly cleaning equipment and the transport vehicle should ALWAYS be practiced as appropriate for the situation.

9. This manual serves to provide a degree of standardization and therefore defines the level of care that is expected to be provided by emergency medical service providers. Failure to abide by the protocols herein may result in disciplinary action. A provider’s authorization to practice may be administratively suspended by their Operational Medical Director pending an investigation and/or hearing.

10. Questions regarding the contents of this manual should be directed in writing to: Regional Medical Director, 1944 Peters Creek Road, Roanoke, Virginia 24017

WESTERN VIRGINIA E.M.S. COUNCIL
PROCEDURES FOR CERTIFICATION LEVELS

Those skills marked "X" may not have been included in the initial certification programs. Only those providers who have obtained certification in these procedures either through the initial program or add-on certification programs may perform these procedures in the pre-hospital setting.

Procedure	FR	EMT	EN	I	PM
Basic Airway Maneuvers (OPA/NPA)	X	X	X	X	X
Orotracheal Intubation			X	X	X
Nasotracheal Intubation				X	X
Esophageal-Tracheal Combitube		X	X	X	X
Transtracheal Jet Insufflation				X	X
Needle Pleural Decompression			X	X	X
CPAP			X	X	X
Melker Airway				X	X
Capnography			X	X	X
EKG Monitoring				X	X
Pacing				X	X
Cardioversion				X	X
Defibrillation	X	X	X	X	X
Intravenous Infusion			X	X	X
Intraosseous Infusion				X	X
EZ I.O.®				X	X

WESTERN VIRGINIA E.M.S. COUNCIL
PROCEDURES FOR CERTIFICATION LEVELS (continued)

Procedure	FR	EMT	EN	I	PM
External Jugular Cannulation				X	X
12 Lead ECG				X	X
Blood Draw			X	X	X
Oral Medication Administration		X	X	X	X
Subcutaneous Injection			X	X	X
Intramuscular Injection		X	X	X	X
Sublingual Administration		X	X	X	X
Inhalation Administration		X	X	X	X
Saline Locks			X	X	X
Glucometer		X	X	X	X
Pulse Oximetry		X	X	X	X
MAST/PASG		X	X	X	X

WESTERN VIRGINIA E.M.S. COUNCIL

BLS PROTOCOL: BG-1

Initial Patient Contact

FR	EMT	
S	S	**Body Substance Isolation** procedures
S	S	Evaluate scene for safety; If scene cannot be made safe, **DO NOT enter**
S	S	Determine mechanism of injury or nature of illness
S	S	Determine number of patients. Summon additional help if necessary
S	S	If a potentially life-threatening situation exists, **request ALS**
S	S	Perform initial assessment – if trauma patient obtain C-spine control
	S	If any of the following condition exist **treat immediately and transport**, with further assessment and treatment en route * Impending or actual airway obstruction * Inadequate ventilation * Signs of shock with altered LOC or absent bilateral radial pulses
S	S	Notify transporting agency of patient status
S	S	If patient is high priority, including major mechanism of injury, perform rapid assessment with goal of transporting patient in **less than 10 minutes**
S	S	If patient is low priority, perform focused exam and history
	S	Treat and transport patient appropriate to patient's status and condition.

WESTERN VIRGINIA E.M.S. COUNCIL
BLS PROTOCOL: BG-2
Airway Management

FR	EMT	
S	S	**Evaluate airway on all patients.** If patient is not breathing or airway compromised, continue with protocol
S	S	Request **ALS**
S	S	**Maintain cervical spine** control on patients with suspected trauma
S	S	Use head tilt-chin lift or jaw thrust maneuvers to open airway. If trauma suspected, use modified jaw thrust maneuver
S	S	If positioning does not open airway and foreign body is suspected, use foreign body maneuvers
S	S	If blood, secretions, or vomitus present, suction airway for no longer than **15 seconds. If airway immediately refills, alternate** suctioning with 30 seconds of oxygenation and/or ventilation
	S	If patient has altered LOC and **without** a gag reflex, place oral airway
S	S	If patient has altered LOC and **has a gag reflex**, place nasopharyngeal airway. **DO NOT** use NPA if severe head trauma is suspected
S	S	If patient is not breathing, or breathing is not adequate, **ventilate** according to protocol
S	S	Perform **advanced airway** procedures if trained and **authorized**
S	S	Apply **oxygen** per guidelines
	S	**Transport immediately**
S	S	Re-evaluate airway status **frequently**

WESTERN VIRGINIA E.M.S. COUNCIL

BLS PROTOCOL: BG-3

Ventilation

FR	EMT	
S	S	**All patients** should be assessed for the **presence and adequacy of ventilation**
S	S	If ventilation is absent or inadequate, establish an **airway, per protocol**
S	S	Request **ALS**
S	S	Support ventilation by using the most appropriate technique listed **(in order of preference):** * Two person bag-valve-mask or pocket mask with one-way valve if BVM not available * Oxygen powered flow restricted device – **EXCEPT** for children under the age of twelve years * One person bag-valve-mask
S	S	Perform **advanced airway** procedures if trained and authorized
S	S	Provide high flow **oxygen**. If oxygen is not available, start ventilation at a rate of 1 every 6 seconds and supplement with oxygen as soon as possible
S	S	**Assess patient for rise and fall of chest wall. If little or no chest wall motion, re-establish airway and try a different ventilation technique**
S	S	**Transport immediately**

WESTERN VIRGINIA E.M.S. COUNCIL
BLS PROTOCOL: BG-4
Oxygen Administration

FR	EMT	
S	S	Use oxygen in the following situations: * Shock * Respiratory emergencies * Neurologic emergencies * Cardiac emergencies * Major trauma
S	S	Provide oxygen per guidelines. If you are **assisting ventilations** provide **at least 15 lpm** to ventilation device
S	S	Use **appropriate** sized mask or cannula for pediatric patients
S	S	If patient **does not tolerate** nonrebreather mask, use up to **6 liters by nasal cannula**
S	S	If the patient is on home O2 and has respiratory or cardiac complaints, or is in shock, contact medical control. If unable to contact medical control, provide high flow O2 as described above. **Be prepared to assist ventilation if necessary**
S	S	If a patient is no home O2 and complaint is **not** related to shock, respiratory problems, or cardiac problems, continue administration of O2 **at the dose prescribed for the patient by physician**

WESTERN VIRGINIA E.M.S. COUNCIL
BLS PROTOCOL: BG-5
Cardiac Arrest Management - AED

FR	EMT	EN	
S	S	S	Perform initial assessment and establish if patient **unresponsive, apneic and pulseless**
S	S	S	If apneic **and** pulseless (10 second check recommended), begin CPR at a rate of 30 compressions to 2 breaths for 2 minutes. If arrest witnessed by responders attach AED immediately and analyze
S	S	S	Request **ALS**
S	S	S	**USE CAUTION** when defibrillating if the patient is wet or in contact with metal. If ***NITROGLYCERIN*** patches or cream are present on chest, use gloves to remove before defibrillation
S	S	S	Stop CPR **after two minutes, apply AED** and analyze. If indicated shock once at 360 Joules or the biphasic equivalent recommended by the device manufacturer. If **NO SHOCK ADVISED** continue CPR for 2 minutes, checking pulse between cycles.
S	S	S	**ALWAYS** call and visually clear patient before each analysis and defibrillation
S	S	S	Secure airway with a Combitube or similar device appropriate to training and certification
S	S	S	If after **ANY** analysis shock is **NOT** advised, check pulse. If no pulse, **continue CPR for two minutes**, then reanalyze.

(continued)

BG-5 Cardiac Arrest Management – AED (continued)

FR	EMT	EN	
	S	S	If no ALS has arrived, transport when: * Patient regains a pulse * After third AED analysis has been performed and the recommendation of the AED has been followed (i.e., if shock advised deliver shock)
S	S	S	Non transporting first response agencies should continue with CPR for two minutes and then repeat shocks as indicated between CPR cycles, continuing until arrival of transporting agency
S	S	S	Obtain focused history, including SAMPLE if possible
	S	S	**Once en route, contact medical control for permission to deliver additional defibrillations as indicated**
	S	S	**If patient becomes apneic and pulseless during transport or if additional defibrillations are ordered during transport, stop the unit and follow AED protocol** **DO NOT ATTEMPT TO USE AED IN A MOVING VEHICLE**
S	S	S	If patient is **hypothermic** deliver a **maximum of one** shock before contacting medical control
	S	S	If arrest is secondary to **major** trauma, transport immediately without applying AED

WESTERN VIRGINIA E.M.S. COUNCIL

BLS PROTOCOL: BG-6

Shock

FR	EMT	
S	S	**Maintain airway** per protocol
S	S	Administer high flow **oxygen** per protocol
S	S	Request ALS
S	S	Identify and treat underlying causes per appropriate protocol
S	S	Identify and control external sources of bleeding, per protocol
S	S	**If no spine, pelvic, or lower extremity injuries are present**, elevate the legs 8-12 inches
S	S	Splint suspected extremity injuries using patient's body and LBB. **DO NOT** delay transport to apply other types of splints. Additional splinting may be performed en route, as time permits
S	S	Maintain body heat, taking care not to overheat the patient
S	S	**Reassure patient**
	S	**Treat immediately and transport**, with further assessment and treatment en route if shock accompanied with **altered LOC or absent bilateral radial pulses** Otherwise, **transport and notify hospital** ASAP with a goal to limit on scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL

BLS PROTOCOL: BG-7
Assisted Medication Administration

FR	EMT	
	S	Determine that the following conditions exist: * Medication is prescribed for the patient. * Patient currently has condition for which the medication is prescribed * Medication is not discolored and has not expired
	S	Medication must be one of the following: * Home OXYGEN prescribed for respiratory diseases * ***EPINEPHRINE*** **autoinjector** prescribed for anaphylactic shock * ***NITROGLYCERIN*** spray or tablets prescribed for chest pain * **Metered dose inhaler** (MDI) with Beta agonist medication
	S	Verify **route** and **dosage** of drug
	S	Contact on-line **medical control prior** to assist with medication, if patient does not have prescribed medication, the medication is not intact, or there is no relief or effect **contact online medical direction for orders to utilize medications in the medication kit**
	O	Administer medication
	S	**Reassess patient**
	S	Contact on-line medical control for further instructions

WESTERN VIRGINIA E.M.S. COUNCIL
BLS PROTOCOL: BM-1
Allergic Reaction

FR	EMT	
S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	Request **ALS**
S	S	Allow patient to assume **position of comfort**
S	S	Perform focused history and physical exam
S	S	Determine if patient has taken any doses of **epinephrine or other medication prior to arrival**
	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**
S	S	**If patient has not improved or deteriorates en route, contact on-line medical control for possible medication administration (see BM-1a, anaphylaxis)**

WESTERN VIRGINIA E.M.S. COUNCIL
BLS PROTOCOL: BM-1a
Anaphylaxis

FR	EMT	
	O	Administer ***EPINEPHRINE*** **autoinjector** (patient's if available, advise medical control if patient does not have their prescribed EPI-PEN) if any of the following conditions exist: * Tongue or facial swelling * Difficulty breathing or swallowing, including signs of respiratory distress * Signs of shock with altered LOC or absent bilateral radial pulses * Generalized hives or itching **AND** a patient who has a **previous history of anaphylaxis** with exposure to the **current allergen**

WESTERN VIRGINIA E.M.S. COUNCIL
BLS PROTOCOL: BM-2
Altered Mental Status (Non-Traumatic)

FR	EMT	
S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	Request **ALS**
	S	If patient is responsive only to painful stimuli **OR** unresponsive, **maintain airway and ventilation** and transport **in lateral recumbent position**
	S	If patient is able to respond verbally allow patient to assume position of comfort. **If hemiparesis is present**, transport patient on affected side taking care to protect affected extremities from injury
	S	Obtain **blood glucose** reading
S	S	If patient is **able to respond verbally** perform focused history and physical exam. Determine the following: * Ability of patient to swallow and protect airway * Pertinent medical history to include diabetes and neurological diseases * Last meal, unusual activity, medication status, presence of illness or infection * Perform **Cincinnati Stroke Scale, (A-15)**
	S	If patient can protect airway, administer **oral glucose**: * Squeeze **small portions** of glucose between cheek and gum. **DO NOT** use large portions (airway hazard)
	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**
S	S	If patient has not improved, contact on-line medical direction

WESTERN VIRGINIA E.M.S. COUNCIL

BLS PROTOCOL: BM-3

Breathing Difficulty

FR	EMT	
S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	Request **ALS**
S	S	Allow patient to assume **position of comfort**
S	S	If patient has altered LOC, **maintain airway and ventilation** and transport
S	S	If patient is responsive, perform focused history and physical exam
S	S	Determine number of doses of (beta agonist) **metered dose inhaler (MDI) or other medication taken prior to arrival**
	O	Administer (beta agonist) metered dose inhaler or nebulized albuterol per **consultation with online medical direction**
	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL

BLS PROTOCOL: BM-4

Chest Pain with Cardiac History

FR	EMT	
S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	Request **ALS**
S	S	Perform focused history and physical exam
	S	Administer **2 baby ASPIRINS (162 mg)**; chew and swallow. **DO NOT** administer if patient has history of **allergy** or acute **GI bleed**
S	S	Determine number of doses of ***NITROGLYCERIN*** **taken prior** to arrival
	S	Allow at least 3 minutes following nitro administration, check blood pressure to make sure it is **over 100 systolic** prior to subsequent ***NITROGLYCERIN*** administration
	O	Administer patient's ***NITROGLYCERIN*** **spray or tablet** sublingually, **per on-line medical control.** Maximum of **three** doses unless ordered by medical control
	O	If patient does not have relief with **own *NITROGLYCERIN,* medical control <u>ONLY</u>** may authorize additional ***NITROGLYCERIN*** to be given from the medication kit
S	S	Recheck vital signs
S	S	**If patient worsens**, contact medical control
	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL
BLS PROTOCOL: BM-5
Frostbite

FR	EMT	
S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	Perform focused history and physical examination with special attention to possible **hypothermia**
S	S	If **hypothermia** is present, treat according to **BM-6, Environmental Emergency** as appropriate
S	S	Apply **loose** sterile dressings to affected areas
S	S	If extremity is involved splint **without** constricting
S	S	DO NOT: * Allow patient to use affected area * Rub area * Expose area to direct dry heat * Immerse area in snow or hot water * Attempt to break blisters * Attempt re-warming **unless** directed by on-line medical control
	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL
BLS PROTOCOL: BM-6
Environmental Emergency

FR	EMT	
S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	Gently move patient to a **temperature appropriate** environment
S	S	Remove excessive or wet clothing from the patient
S	S	Handle patient gently avoiding excessive movement
S	S	Suspect hypothermia in the following **high risk** patient groups or environments * Very young or old patients * Immobilized patients * Intoxicated patients * Cool, windy environments * Acute cold water immersion incident
S	S	**Heat Emergency:** * Allow intake of cool water or electrolyte replacement if patient is **awake and alert** * If patient is hot to the touch or has measured hyperthermia treat as **a life threatening emergency**, request **ALS** * **Immediately** start to cool the patient. Pour cool water over patient. Place ice packs in armpits, groin, and neck area. Place cool wet sheet over patient and fan patient * If shivering begins slow the cooling process (shivering produces heat!) * **Transport immediately**

(continued)

BM-6 Environmental Emergency (continued)

FR	EMT	
S	S	**Cold Emergency:** * **DO NOT** administer anything by mouth * Maintain **supine position**, covering under patient as well as over * If cardiac arrest occurs begin **CPR** and apply **AED**. Defibrillate a maximum of **one** time. Request **ALS** and transport immediately * If patient is **alert, responsive, and shivering**, use active external re-warming by pacing heat packs in the armpits, groin, and neck area and covering the patient with warm blankets * If altered LOC **OR** patient is not shivering use passive re-warming measures **ONLY** (blankets, warm environment, etc.)
	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL
BLS PROTOCOL: BM-7
Submersion Injury

FR	EMT	
S	S	Assure scene safety. **DO NOT** enter water unless trained to do so
S	S	Obtain and maintain C-spine control
S	S	If submersion not witnessed OR incident is a result of trauma (ex. diving, boating, MVA) **immobilize spine** prior to removal from water
S	S	Perform initial assessment. Evaluate and establish airway, treat priority conditions. Initiate O2 therapy per protocol. Have suction readily available
S	S	Refer to **BM-6, Environmental Emergency** as appropriate if **hypothermia** is suspected
	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL
BLS PROTOCOL: BM-8
OB/GYN Emergencies

FR	EMT	
S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	**Obtain and document the following history:** * Estimated date of delivery, if pregnant * Number of pregnancies and live births * Chronic illnesses * Prenatal care and potential complications * If contractions present, note duration of contraction and time between contractions
S	S	If condition permits, position patient **lying on left side**
S	S	**Breech or limb presentation:** * **Transport immediately** * Position mother head-down **with hips elevated** * **DO NOT** attempt to replace exposed structures or try to deliver by pulling on baby * During a breech delivery if head does not deliver **within one contraction after the body delivers,** place fingers into vagina and push away from baby's face to secure an airway

(continued)

BM-8 OB/GYN Emergencies (continued)

FR	EMT	
S	S	**Prolapsed umbilical cord:** * Position mother head-down **with hips elevated** * **DO NOT** attempt to replace the cord * Check the cord for presence of a pulse, wrap with a moist sterile dressing. If the cord **stops pulsating**, place fingers into vagina and push away from baby's face to secure an airway
S	S	If patient complains of urge to push, have a bowel movement or other indication of imminent delivery, **visualize** perineum. **If perineum is bulging or if head is crowning, prepare for field delivery**
S	S	When head delivers, **check the neck** for umbilical cord. If present attempt to slip cord over head. **If unsuccessful, contact medical control**
S	S	Following delivery: * If baby is breathing, once cord stops pulsating apply clamps at 7 and 10 inches away from baby * Cut cord **between** clamps. Monitor cord ends for continued bleeding * If bleeding continues, apply a second clamp close and proximal to the first. **NEVER** remove clamps once applied. * Apply sterile dressing to cord ends

(continued)

BM-8 OB/GYN Emergencies (continued)

FR	EMT	
S	S	Presence of vaginal bleeding: * Evaluate and treat for shock * Perform ***visual*** perineal examination * Apply sterile pads to perineal area. **DO NOT** attempt to pack the vagina * If postpartum bleeding, begin external uterine massage * Collect any extruded tissue for transport to the hospital. **DO NOT** remove tissue protruding from vagina * **Transport immediately** and request **ALS**
	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL
BLS PROTOCOL: BM-9
Absorbed Poisons

FR	EMT	
S	S	Evaluate scene for safety. Do not enter unless properly trained and equipped
S	S	Remove patient from potential exposure, including contaminated clothing
S	S	Obtain history of incident, including type and amount of substance, prior treatment, and time of exposure
S	S	**Brush off dry substances**
S	S	Irrigate area copiously with water, unless contraindicated by product. Consult MSDS, online medical direction or CHEM-TREC
S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL
BLS PROTOCOL: BM-10
Ingested Poisons

FR	EMT	
S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	Obtain history of incident, including type and amount of substance, prior treatment, and time of ingestion
S	S	Attempt to bring suspected substance or containers to hospital if safe to do so
S	S	Request ALS and transport immediately if the following conditions apply: * Altered LOC and unable to swallow * Ingestion of an acid, alkali, or petroleum product * Patient has taken ipecac prior to arrival
S	S	Monitor airway and be prepared for vomiting
	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL

BLS PROTOCOL: BM-11

Inhaled Poisons

FR	EMT	
S	S	Evaluate scene for safety. Do not enter unless properly trained and equipped
S	S	Remove patient from areas of potential exposure. Remove patient clothing due to possible vapor entrapment
S	S	Perform initial assessment. Place patient on **NRB mask**
S	S	If patient has inadequate breathing, **assist ventilation** and initiate transport
S	S	Obtain history of incident including type and amount of substance, prior treatment, and time/duration of exposure
S	S	If no trauma involved, allow patient to assume **position of comfort**
	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL
BLS PROTOCOL: BM-12
Seizures

FR	EMT	
S	S	Place patient on floor or area where fall is unlikely
S	S	Protect patient from injury, but **DO NOT** restrain
S	S	**DO NOT** place objects in the mouth during seizure or attempt to pry jaws open
S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol. **Request ALS**
S	S	Following seizure **maintain airway**
S	S	If seizure not a result of trauma, and spine injury unlikely, place patient on side in order to allow secretions to drain from the mouth until fully awake
	S	Obtain **blood glucose** reading
	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**
S	S	**If patient is competent and refuses transport, ensure that patient is not left unattended for the next 2-3 hours**

WESTERN VIRGINIA E.M.S. COUNCIL

BLS PROTOCOL: BM-13

Snake Bite

FR	EMT	
S	S	**Assure** scene safety. Do not bring snake to the Emergency Department. Do not delay transport to locate or identify the type of snake
S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	Lie patient down and **calm** patient. Place bitten part **at or below level of heart**
S	S	Place sterile dressing over bite area
S	S	**Immobilize area**, use splint if on extremity
S	S	**DO NOT:** * Use ice over bite * Apply tourniquet * Make incision, apply suction or use other methods to extract poison
	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL

BLS PROTOCOL: BT-1

General Trauma Management/Spinal Immobilization

FR	EMT	
S	S	Assure scene safety
S	S	Obtain and maintain C-spine control
S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	Ensure full spinal immobilization if spinal injury suspected. CONSIDER: * Mechanism of injury * Any injury above the clavicles * Patient with altered LOC * Patient with numbness, tingling, or unable to move extremities * Patient with back or neck pain
S	S	If priority condition exists or neurological deficits are present request ALS
S	S	If priority condition exists OR major mechanism of injury, perform rapid trauma assessment
S	S	If patient alert with no priority condition and minor mechanism of injury, perform focused history and physical exam
S	S	Identify and dress minor open wounds with sterile dressings en route
	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**
	S	**Transport** according to **A-12 Trauma Triage Patient Designation**

WESTERN VIRGINIA E.M.S. COUNCIL

BLS PROTOCOL: BT-2

Avulsion/Amputation Injury

FR	EMT	
S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol. **DO NOT** delay transport of priority patients while searching for missing part
S	S	Control bleeding per **BT-4 External Bleeding Protocol**
S	S	Place sterile dressing over soft tissue injury
S	S	Retrieve avulsed or amputated part and; * Wrap part in a gauze **moistened** with sterile water * Place part in a **sealed** plastic bag * Place plastic bag with part in an ice and water filled container **DO NOT** place part directly on ice
	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL
BLS PROTOCOL: BT-3
Body Cavity Injury

FR	EMT	
S	S	Obtain and maintain C-spine control and immobilize spine as appropriate
S	S	Perform initial assessment, treat priority condition. Initiate O2 therapy per protocol
S	S	If penetrating chest wound, apply **occlusive dressing** in manner to ensure a **flutter valve effect**. Dressing should extend at least 2 inches from edge of wound on all sides
S	S	If in respiratory distress treat as **priority** and request **ALS**
S	S	Refer to **BG-6 Shock Protocol,** as appropriate
S	S	If occlusive dressing applied and patient **respirations deteriorate**, release dressing on ***exhalation*** and immediately reapply dressing prior to next breath
S	S	Dress open wounds with sterile dressings
S	S	**If abdominal organs are exposed, treat as follows:** * **DO NOT** touch or try to replace exposed organ(s) * Apply sterile dressing (must be gauze not paper) moistened with saline over wound site * Apply an occlusive dressing **over** sterile dressing. **DO NOT** use aluminum foil * Cover the dressed wound to maintain warmth
S	S	Position patients with abdominal trauma on side with knees flexed **if no spinal injury suspected**
	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL

BLS PROTOCOL: BT-4

External Bleeding

FR	EMT	
S	S	Obtain and maintain C-spine control, as necessary
S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	Refer to **BG-6 Shock Protocol**, as appropriate
S	S	Apply direct gloved hand pressure to wound and apply pressure dressing. Elevate affected extremities as appropriate
S	S	If direct pressure does not control bleeding, **re**-evaluate efforts. **If** necessary apply pressure over appropriate proximal pressure points
S	S	If neck wound, apply **occlusive** dressing sealed on four sides. **Avoid circumferential** pressure dressing
S	S	If bleeding from the ear or nose is associated with head injury, **cover lightly** with sterile dressings. **DO NOT** apply pressure
S	S	Inflatable splints may be used if direct pressure controls bleeding and wound is in an area that will be covered by splint. Assess every **5 minutes** to ensure that bleeding remains controlled
S	S	Check pulses and perfusion distal to pressure dressing or inflated splints following application and at **5 minute intervals**
S	S	If bleeding remains uncontrolled, start **transport**, contact **ALS** and **medical control**
O	**O**	Tourniquets may only be applied if directed by **medical control**. Refer to **A-6, Application of Tourniquet Guideline** as needed
	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL
BLS PROTOCOL: BT-5
Head Injury

FR	EMT	
S	S	Obtain and maintain C-spine control. Establish and maintain airway by utilizing modified jaw thrust. **DO NOT** use chin lift
S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol. Pulse oximetry, if available, should be maintained **at a minimum of 90% or greater**
S	S	If patient has altered LOC treat as **priority** and request **ALS**
S	S	**Aggressively treat shock**. Maintain airway via use of suctioning and high concentration oxygen administration
S	S	If breathing is ***inadequate*** ventilate per protocol at a rate of **1 breath per every 6 seconds. Maintain this rate. DO NOT HYPERVENTILATE**
S	S	Establish **full** spinal immobilization
S	S	If patient is not in shock elevate head/backboard 8 to 12 inches. Maintain spinal immobilization
S	S	**Reassess and record** level of consciousness and vitals every 5 minutes. Notify hospital **ASAP** if deterioration noted
S	S	Identify and dress open wounds with sterile dressings
	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL

BLS PROTOCOL: BT-6

Impaled Object

FR	EMT	
S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	**If impaled object is in cheek:** * Remove if it can be easily removed * Place dressing on cheek * Transport with **special attention to airway** status
S	S	**If impaled object is in eye:** * Stabilize with sterile dressing * Place cup over eye and secure. Cup should not come into contact with object * Place patch over opposite eye and secure * **DO NOT** attempt to remove object
S	S	**If object is not in cheek or eye:** * Stabilize with bulky sterile dressings and secure * **DO NOT** attempt to remove object
S	S	**If patient is impaled on a fixed object:** * Contact medical control * Attempt to transport object with patient
	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL
BLS PROTOCOL: BT-7
Extremity Injury

FR	EMT	
S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	If priority condition exists **OR** major mechanism of injury noted, secure patient to long backboard and transport with goal to limit on-scene time to **10 min. or less**. Extremities should be **secured to patient's body and/or backboard**
S	S	If no priority condition exists proceed to focused history and physical exam. Assess for distal circulation, movement, and sensation
S	S	Dress open wounds with sterile dressing
O	**O**	**DO NOT** attempt to realign extremity unless distal extremity is cyanotic or pulseless
	S	Splint extremities in the **position in which they are found**. Apply splint to immobilize at least as far as **one joint above and below injury site**
	O	Refer to **O-8 MAST/PASG Guideline** as needed
	O	Use traction splint if available for suspected mid thigh **femoral** fractures **unless**: * The apparent injury is close to the hip, knee, or below the knee * Open thigh wound with protruding bone fragments * A nearly complete amputation exists * There is an unstable pelvis

(continued)

BT-7 Extremity Injury (continued)

FR	EMT	
S	S	Reassess distal extremity circulation, movement, and sensation **following any manipulation**, including immediately after placement of splints and **every 10-15 minutes** thereafter
S	S	If distal extremity circulation, movement, and sensation worsens following splint application, **loosen splint**. **If necessary** remove and replace splint
S	S	For **isolated injuries** place cold pack over injury but not directly in contact with skin
S	S	If patient alert with no priority condition **and** minor mechanism of injury, apply splints **before** movement or immobilization of patient
	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL

BLS PROTOCOL: BT-8

Thermal Burns

FR	EMT	
S	S	**Assure** scene safety
S	S	Remove patient from source and **stop burning** process
S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol. If inhalation injury use 15 lpm O2 via NRB mask
S	S	Suspect inhalation injury and treat as **priority** if any of the following are present: * Singed facial or nasal hairs * Hoarse voice or stridor * Black sputum * Burns on face
S	S	Remove materials from around the burned area which are not adhering to burned surfaced
S	S	Remove or loosen constricting items (rings, belts, collars, watches, etc.)
S	S	**Maintain body temperature**, assuring that patient **does not develop hypothermia**
S	S	If **priority** condition exists **OR burns are greater than 10% BSA, or involve the hands, feet, face or genetalia** request **ALS**
S	S	Apply dry sterile dressings to burned area
S	S	If burn is **under 10% and no priority conditions exist**, use sterile saline at room temperature to saturate dressings. **DO NOT** use ice or iced saline
S	S	Cover patient as necessary to **avoid heat loss**
	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL

ALS PROTOCOL: AC-1

ENHANCED – Cardiac Arrest Management

EN	
S	Establish airway and ventilation as appropriate per protocol
S	Check for pulse. If not breathing and no pulse begin **CPR**
S	Apply AED **per protocol**
S	Perform **advanced airway** procedures as certified. **DO NOT DELAY CHEST COMPRESSIONS**
S	Request ALS support (I/PM)
S	Establish **IV access**
S	If patient remains pulseless administer **1 mg EPI 1:10,000 IV**. Second and subsequent doses should be **1 mg EPI 1:1,000** followed by IV flush and should be administered every **5** minutes.
S	Obtain focused history, including SAMPLE
S	Reassess **ABC's** and **breath sounds**
S	**Transport** per AED protocol and contact medical control
S	***In the case of ROSC (Return of Spontaneous Circulation) AND patient has a pulse of greater than 80 AND shock was advised or delivered*** **administer 1 mg/kg LIDOCAINE over 2 minutes IV bolus.**
S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL

ALS PROTOCOL: AC-2

Symptomatic Cardiac Patient

EN	I	PM	
S	S	S	Perform Initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**
	S	S	Monitor **ECG: If cardiac dysrythmias are present, refer to specific protocols. ***ATTEMPT TO OBTAIN 12 LEAD ECG*** See O-10 - 12 Lead ECG Guideline**
S	S	S	Establish **IV/IO NS**, KVO as appropriate per certification and training
S	S	S	Administer **2 baby ASPIRINS (162 mg); chew and swallow. DO NOT** administer if patient has a history of **allergy** or acute **GI bleed**
S	S	S	If blood pressure is **above 100 systolic** and **IV/IO** access *established*, give **0.4** mg sublingual **NITROGLYCERIN**
O	**O**	**O**	If blood pressure is **above 100 systolic** and **IV/IO** access is *unavailable*, give **0.4** mg sublingual **NITROGLYCERIN**
S	S	S	If BP is above 100 systolic and pain persists, **NITROGLYCERIN** may be repeated at 5 minutes intervals to a **maximum of 3 doses**
	S	S	Administer **2 mg MORPHINE SULFATE** ***over 2 minutes*** **IV/IO**. Repeat every 5 minutes up to **10 mg total**, ***until pain is relieved, or the BP falls below 100 systolic.*** Morphine may be started after first dose of NITROGLYCERIN has been administered if patient still presents with pain.

WESTERN VIRGINIA E.M.S. COUNCIL
ALS PROTOCOL: AC-3
Post-Resuscitation (ROSC)

EN	I	PM	
S	S	S	Reassess **ABC's**, establish **baseline vital signs**, assess **breath sounds**, and **confirm ET placement** if intubated
	S	S	**Monitor ECG, pulse oximetry, end tidal CO2, obtain 12 lead ECG, draw blood. See O-4 - Capnography; O-10 - 12 Lead ECG; O-11 - Blood Draw**
S	S	S	Administer Oxygen, ventilate at **1 breath every 8 seconds with 100% O2**. Consider intubation if indicated and not previously performed.
S	S	S	Establish **IV/IO NS**, KVO as appropriate per certification and training
	S	S	If persistent **bradycardia** and signs of hypoperfusion, **refer to AC-5 Bradycardia Protocol**
	S	S	If persistent **tachycardia** greater than 150 and signs of hypoperfusion, **refer to appropriate protocol**
S	S	S	IV/IO should be run at a rate sufficient to maintain peripheral pulses
	O	S	**If patient remains hypotensive, start DOPAMINE drip 5 mcg/kg/min**. May slowly increase until a BP of 90 systolic is achieved. **Do not exceed 15 mcg/kg/min**
	S	S	If patient previously in V-FIB/V-TACH and **NOT** bradycardic, administer **1 mg/kg LIDOCAINE over 2 minutes IV bolus.**
S	S	S	Obtain **blood glucose.** If reading is **less than 60** administer **D50 25 G IV/IO**
S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL
ALS PROTOCOL: AC-4
Asystole

EN	I	PM	
S	S	S	Establish unresponsiveness and pulselessness. If no pulse begin CPR. **See A-7 - Determination of Non-Viability Guideline**
	S	S	**Confirm Asystole in two leads**
S	S	S	***Consider and address possible causes***
S	S	S	Continue doing CPR while preparing for additional interventions. Resume CPR immediately following interventions, so little to no interruption in CPR is experienced
S	S	S	Perform **advanced airway** procedures as certified. Once airway is controlled compressions are continuous at 100/min. with ventilations every 8 seconds. Ventilations should not interrupt chest compressions
S	S	S	Establish **IV/IO NS**, KVO as appropriate per certification and training
S	S	S	Administer **1 mg EPI 1:10,000 IV/IO**. Second and subsequent doses should be **1 mg EPI 1:1,000** followed by IV flush and should be administered every **5** minutes.
S	S	S	Continue CPR
	S	S	**Administer 1 mg ATROPINE IV/IO**. Dose may be repeated every **5** minutes to a maximum of three doses. *Atropine administration should be preceded by Epi*
S	S	S	If patient unresponsive to therapy, consider termination of resuscitation. **See A-14 - Termination of Resuscitation Efforts Guideline**

WESTERN VIRGINIA E.M.S. COUNCIL
ALS PROTOCOL: AC-5
Bradycardia

I	PM	
S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	**Monitor ECG, pulse oximetry, end tidal CO2, obtain 12 lead ECG, draw blood. See O-4 - Capnography; O-10 - 12 Lead ECG; O-11 - Blood Draw**
S	S	Establish **IV/IO NS**, KVO as appropriate per certification and training
SYMPTOMATIC PATIENT (chest pain, SOB, altered LOC, or signs of hypoperfusion)		
S	S	Consider immediate **external pacing**. Consider administration of **DIAZEPAM 5 mg IV/IO over 2 minutes**, prior to pacing based on LOC. **Monitor respiration closely**
S	S	Administer **ATROPINE 0.5 mg rapid IV** push for a **mildly** symptomatic patient
S	S	If symptoms continue, repeat dose of **ATROPINE** every **5** minutes to a maximum dose of **3 mg**
O	S	**DOPAMINE drip 5 mcg/kg/min**, if hypotension or signs of shock are not improved with pacing. May slowly increase until a BP of 90 systolic is achieved. **Do not exceed 15 mcg/kg/min**
S	S	**Transport and notify hospital** ASAP with goal to limit on–scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL
ALS PROTOCOL: AC-6
Cardiogenic Shock

I	PM	
S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	**Monitor ECG, pulse oximetry, end tidal CO2, obtain 12 lead ECG, draw blood. O-4, Capnography; O-10, 12 Lead ECG; O-11 Blood Draw**
S	S	Establish **IV/IO NS**, KVO as appropriate per certification and training
If patient has pulmonary edema, See AC-8 Pulmonary Edema		
S	S	If lung sounds are clear, administer **250 ml NS bolus**
S	S	If no response to fluid bolus and lungs are still clear, initiate second IV line administering NS at 100 ml/hr
O	S	**DOPAMINE drip 5 mcg/kg/min**, if unresponsive to therapy or if fluid bolus is contraindicated (fluid overload/respiratory distress). may slowly increase until a BP of 90 systolic is achieved. **Do not exceed 15/mcg/kg/min**
S	S	**Transport and notify hospital** ASAP with goal to limit on–scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL
ALS PROTOCOL: AC-7
Narrow Complex Tachycardia
(Supraventricular Tachycardia, Atrial Fibrillation/Flutter)

I	PM	
S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	Consider underlying non-cardiovascular causes; i.e. hypovolemia, trauma, fever, sepsis
S	S	Establish **IV/IO NS**, KVO as appropriate per certification and training
ASYMPTOMATIC		
S	S	**Monitor ECG, pulse oximetry, end tidal CO2, obtain 12 lead ECG, draw blood. See O-4 - Capnography; O-10 - 12 Lead ECG; O-11 - Blood Draw**
S	S	Contact **medical control**
SYMPTOMATIC (chest pain, SOB, altered LOC or signs of hypoperfusion) **pulse greater than 150 and BP *greater than 100 systolic, attempt to identify and treat reversible causes***		
S	S	If patient has a history of *Wolff-Parkinson-White (WPW) syndrome*, **contact medical control** before proceeding with protocol
S	S	Attempt **valsalva maneuver**
S	S	If symptoms persist and patient is unstable, draw up **20 ml saline**. Then, administer **ADENOSINE 6 mg rapid IV/IO push over 1-3 seconds,** using the med port closest to the angiocath. **IMMEDIATELY** followed by **rapid 20 ml saline flush**. Run a continuous ECG strip prior to and for at least two minutes following administration.
S	S	If tachycardia persists, may repeat **ADENOSINE 12 mg** in 1-2 minutes. Follow administration and recording method as noted above.

(continued)

AC-7 Narrow Complex Tachycardia, continued

I	PM	
SYMPTOMATIC **Pulse greater than 150 and *BP less than 100 systolic***		
O	S	Consider administration of **DIAZEPAM 5 mg over 2 minutes IV/IO** to desired effect prior to cardioversion based on LOC. May repeat dose as needed. **Monitor respiration closely**.
O	S	**Synchronized cardiovert** at **50 Joules for SVT or A-FLUTTER**, if no change, repeat synchronized Cardioversion at **100 Joules**. **Otherwise synchronized cardiovert** starting at **100 Joules**. If no change, synchronize cardiovert at **200 Joules**. If no change synchronized cardiovert at **300 Joules**. If no change synchronized cardiovert at **360 Joules**. ******IF USING A BIPHASIC MONITOR/DEFIBRILLATOR, USE THE DEVICE SPECIFIC DOSE AS INDICATED BY THE MANUFACTURER******
S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time **to 10 min. or less**

BIPHASIC DEVICE NOTES:

Manufacturer: ___________________________

Model: ___________________________________

Manufacturer Recommended Setting for Cardioversion:

____________, ____________, ____________, ____________

WESTERN VIRGINIA E.M.S. COUNCIL
ALS PROTOCOL: AC-8
Pulmonary Edema

I	PM	
S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol. Position patient upright, if possible
S	S	**Monitor ECG, pulse oximetry, end tidal CO2, obtain 12 lead ECG, draw blood. See O-4 - Capnography; O-10 - 12 Lead ECG; O-11 - Blood Draw**
S	S	Establish **IV/IO saline lock** as appropriate per certification and training
S	S	If blood pressure is above 100 systolic (without signs and symptoms of shock) and IV access established, administer **FUROSEMIDE 1mg/kg** over two minutes IV/IO. DO NOT EXCEED 80 mg. **(If new onset Pulmonary Edema initial dose of FUROSEMIDE should be 0.5mg/kg.)**
S	S	If blood pressure is above 100 systolic and IV access established, give sublingual **NTIROGLYCERIN 0.4 mg**, may be repeated every 5 minutes to a maximum of three doses.
S	S	If BP is less than 100 systolic consider **DOPAMINE drip 5 mcg/kg/min**, may slowly increase until a BP of 90 systolic is achieved. **Do not exceed 15 mcg/kg/min**
S	S	If systolic BP is greater than 100 administer MORPHINE SULFATE 2 mg over 2 minutes IV/IO. May be repeated up to **10 mg total**, ***as needed unless the BP falls below 100 systolic.*** Morphine may be started after first dose of NITROGLYCERIN has been administered
S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time **to 10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL
ALS PROTOCOL: AC-9
Pulseless Electrical Activity (PEA)

I	PM	
S	S	Establish unresponsiveness and pulselessness. If no pulse begin CPR. **See A-7 Determination of Non-Viability Guideline**
S	S	***Consider and address possible causes***
S	S	Continue doing CPR while preparing for additional interventions. Resume CPR immediately following interventions, so little to no interruption in CPR is experienced
S	S	Perform **advanced airway** procedures as certified. Once airway is controlled compressions are continuous at **100/min. with ventilations every 8 seconds**. Ventilations should not interrupt chest compressions
S	S	Establish **IV/IO NS**, KVO as appropriate per certification and training
S	S	Administer **1 mg EPI 1:10,000 IV/IO**. Second and subsequent doses should be **1 mg EPI 1:1,000** followed by IV flush and should be administered every **5** minutes.
S	S	Continue CPR
S	S	**Administer 1 mg ATROPINE IV/IO**. Dose may be repeated every **5** minutes to a maximum of three doses. *Atropine administration should be preceded by Epi*
S	S	If patient unresponsive to therapy, consider termination of resuscitation. **See A-14 Termination of Resuscitation Efforts Guideline**

WESTERN VIRGINIA E.M.S. COUNCIL
ALS PROTOCOL: AC-10
Runs of V-TACH

I	PM	
S	S	If rate **less than 60**, See **AC-5, Bradycardia**
S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol.
S	S	Establish **IV/IO saline lock** as appropriate per certification and training
S	S	**Monitor ECG, pulse oximetry, end tidal CO2, obtain 12 lead ECG, draw blood. See O-4 - Capnography; O-10 - 12 Lead ECG; O-11 - Blood Draw**
O	S	Administer **LIDOCAINE 1 mg/kg over 2 minutes IV/IO**
O	S	If runs of V-TACH continue, administer **LIDOCAINE 0.5 mg/kg 10 minutes after initial dose**. May be repeated to a maximum of 3 mg/kg. ***Monitor the patient's heart rate.***
O	S	**If arrhythmia resolves and maximum dosage not reached, continue LIDOCAINE 0.5 mg/kg over 2 minutes IV. May be repeated every 10 minutes to a maximum of 3 mg/kg. Monitor the patient heart rate.**
S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time **to 10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL
ALS PROTOCOL: AC-11
V-FIB/Pulseless V-TACH

I	PM	
S	S	Establish unresponsiveness and pulselessness. If no pulse **begin CPR**.
S	S	Check **ECG** monitor for rhythm, if not V-FIB/Pulseless V-TACH, refer to appropriate protocol
S	S	**If V-FIB/Pulseless V-TACH continue CPR for 5 cycles or 2 minutes then defibrillate at 360 joules; (if witnessed, shock immediately).** ******IF USING A BIPHASIC MONITOR / DEFIBRILLATOR, USE THE DEVICE SPECIFIC SETTING AS INDICATED BY THE MANUFACTURER******
S	S	Continue CPR while charging, resume immediately after defibrillating. Interventions should cause little to no interruption in CPR.
S	S	Complete 5 cycles or 2minutes of CPR, check ECG monitor for rhythm, check patient for pulse and **shock at 360 joules** if V-Fib/Pulseless V-TACH still present. Resume CPR immediately after defibrillating.
S	S	Consider **advanced airway** procedures as certified. Once airway is controlled compressions are continuous at 100/min. with ventilations every 8 seconds. **Ventilations should not interrupt chest compressions**
S	S	Establish **IV/IO NS**, KVO as appropriate per certification and training. Consider possible causes
S	S	Administer **EPI 1:10,000 1 mg IV/IO**. If V-FIB/Pulseless V-TACH persists, second and subsequent doses should be **EPI 1:1,000 1 mg** followed by IV/IO flush and should be administered every **5** minutes
S	S	Administer **3rd shock, check rhythm and pulse.** Continue CPR while charging. Resume CPR immediately after defibrillating. **CONSIDER *ANTIARRYTHMICS**
S	S	**AMIODARONE 300 mg IV/IO once,** followed by an additional **150 mg IV/IO once.** Second dose should be 5 minutes after initial dose **OR** **LIDOCAINE 1.5 mg/kg IV/IO once,** followed by an additional **0.75 mg/kg IV/IO twice**. Subsequent doses should be at least 5 minutes after previous doses; **MAXIMUM DOSE 3 mg/kg**

*** There is some evidence that Amiodarone may be more effective in this protocol, but counterbalanced by more difficulty in administration.**

(continued)

AC-11 V-FIB/Pulseless V-TACH, continued

O	S	**Consider use of MAGNESIUM SULFATE OR SODIUM BICARBONATE. See below**
S	S	Continue sequence of: Rhythm check, CPR while charging, Shock, 5 cycles of CPR, Rhythm check. Meds should be given soon after rhythm check, before or after next shock at appropriate time interval. If rhythm changes during treatment follow appropriate protocol.
S	S	If patient unresponsive to therapy after 20 minutes, consider termination of resuscitation or make a transport decision. **See A-14 Termination of Resuscitation Efforts Guideline**

DURING ARREST MANAGEMENT:

MAGNESIUM SULFATE at 1 to 2 Gram IV/IO push
For Hypomagnesemia or Torsades de Pointes

SODIUM BICARBONATE at 1mEq/kg IV/IO
Known hyperkalemia, prolonged resuscitation, TCA or ASA overdose

POST ARREST (ROSC):

(Use the anti-arrhythmic that converted the patient)

AMIODARONE 150 mg over 10 minutes (second site recommended)

LIDOCAINE 1 mg/kg IV bolus over 2 minutes

BIPHASIC DEVICE NOTES:

Manufacturer: ________________________

Model: _______________________________

Manufacturer Recommended Setting for Defibrillation:

___________, ___________, ___________, ___________

Monophasic = 360 joules
Biphasic = Device specific dose
Unknown = 200 joules

WESTERN VIRGINIA E.M.S. COUNCIL
ALS PROTOCOL: AC-12
V-TACH / Wide Complex Tachycardia

I	PM	
S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	If no pulse, See **AC-11 V-FIB / Pulseless V-TACH Protocol**
S	S	Establish **IV / IO NS**, KVO as appropriate per certification and training
ASYMPTOMATIC		
S	S	**Monitor ECG, pulse oximetry, end tidal CO2, obtain 12 lead ECG, draw blood. See O-4 - Capnography; O-10 - 12 Lead ECG; O-11 - Blood Draw**
S	S	Administer **AMIODARONE 150 mg IV / IO drip** over 10 minutes
SYMPTOMATIC (chest pain, SOB, altered LOC or signs of hypoperfusion)		
S	S	Consider administration of **DIAZEPAM 5 mg over 2 minutes IV / IO** to desired effect prior to cardioversion based on LOC. May repeat dose as needed. **Monitor respiration closely**.
S	S	**Synchronized cardiovert** at **100 Joules**. If no change, synchronize cardiovert at **200 Joules**. If no change synchronized cardiovert at **300 Joules**. If no change synchronized cardiovert at **360 Joules**. ******IF USING A BIPHASIC MONITOR / DEFIBRILLATOR, USE THE DEVICE SPECIFIC SETTING AS INDICATED BY THE MANUFACTURER******

(continued)

AC-12 V-TACH/Wide Complex Tachycardia, continued

I	PM	
S	S	If **tachycardia persists**, repeat synchronized cardioversion at **360 Joules** ***<u>***IF USING A BIPHASIC MONITOR/DEFIBRILLATOR, USE THE DEVICE SPECIFIC SETTING AS INDICATED BY THE MANUFACTURER***</u>***
S	S	Administer **AMIODARONE 150 mg IV/IO drip** over 10 minutes
S	S	If tachycardia recurrent or persists, cardiovert at last energy level
S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time **to 10 min. or less**

BIPHASIC DEVICE NOTES:

Manufacturer: _________________________

Model: ________________________________

Manufacturer Recommended Setting for Cardioversion:

___________, ___________, ___________, ___________

WESTERN VIRGINIA E.M.S. COUNCIL
ALS PROTOCOL: AM-1
Allergic Reaction

EN	I	PM	
S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
	S	S	**Monitor ECG, pulse oximetry, end tidal CO2, obtain 12 lead ECG, draw blood. See O-4 - Capnography; O-10 - 12 Lead ECG; O-11 - Blood Draw**
S	S	S	Establish **IV/IO NS**, KVO as appropriate per certification and training
S	S	S	Administer **DIPHENHYDRAMINE 25 mg IV/IO**
	S	S	Administer **METHYLPREDNISOLONE 125 mg IV/IO**
S	S	S	If **wheezing** administer **ALBUTEROL 2.5 mg, nebulized**
S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene **time to 10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL
ALS PROTOCOL: AM-1a
Anaphylaxis

EN	INT	PM	
S	S	S	Anaphylaxis is a generalized allergic reaction involving more than one body system that is potentially life threatening. The use of **EPINEPHRINE** can be life saving, however, **EPINEPHRINE** can cause serious cardiac complications, including cardiac arrest; its use should be restricted unless **CLEARLY** indicated.
S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol and treat per protocol **AM-1**
S	S	S	If **hypotensive** administer **500 ml fluid bolus**
O	**O**	**O**	Administer **EPINEPHRINE 1:1,000 0.5 mg IM injection**, repeat if needed
	S	S	If no response to **EPINEPHRINE** and fluid bolus and severe hypotension persists with anaphylaxis, consider use of DOPAMINE **5 mcg/kg/min**, may slowly increase until a BP of 90 systolic is achieved. **Do not exceed 15 mcg/kg/min**
S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene **time to 10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL
ALS PROTOCOL: AM-2
Altered Mental Status

EN	I	PM	
S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	S	Perform **Cincinnati Stroke Scale** evaluation **(see A-15)**
S	S	S	Establish **IV/IO NS**, KVO as appropriate per certification and training
	S	S	**Monitor ECG, pulse oximetry, end tidal CO2, obtain 12 lead ECG, draw blood. See O-4 - Capnography; O-10 - 12 Lead ECG; O-11 - Blood Draw**
S	S	S	Obtain **blood glucose** reading
S	S	S	If hypoglycemia known or suspected, give sugar/glucose solution by mouth if able to swallow
S	S	S	If **glucose** reading is **less than 60** or **unavailable** and **hypoglycemia suspected**, administer **D50 25 G IV/IO**
S	S	S	If **IV/IO access attempted and not successful** and hypoglycemia is suspected administer **GLUCAGON 1mg IM**
S	S	S	If patient regains consciousness following glucagon administration, give sugar/glucose solution by mouth
S	S	S	If no improvement, administer **NALOXONE 2 mg IV/IO/IM** over **2 minutes, titrate to respirations**. Dosing may be repeated to a **maximum of 4 mg**
S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**
S	S	S	Should patient **refuse transport** following administration of **D50 or GLUCAGON**, refer to **A-13 Medical Release Guidelines**

WESTERN VIRGINIA E.M.S. COUNCIL
ALS PROTOCOL: AM-3
Asthma

EN	I	PM	
S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	S	If **wheezing** administer **ALBUTEROL 2.5 mg, nebulized.** If wheezing continues repeat **ALBUTEROL 2.5 mg, nebulized** after 10 minutes
S	S	S	Establish **IV/IO saline lock** as appropriate per certification and training
	S	S	**Monitor ECG, pulse oximetry, end tidal CO2, obtain 12 lead ECG, draw blood. See O-4 - Capnography; O-10 - 12 Lead ECG; O-11 - Blood Draw**
	S	S	Administer **METHYLPREDNISOLONE 125 mg IV/IO,** if continued **wheezing after second albuterol** treatment
O	**O**	S	If patient is at risk of **IMMINENT RESPIRATORY FAILURE** and condition deteriorates, administer **EPINEPHRINE 1:1,000 0.5 mg IM injection**
S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL
ALS PROTOCOL: AM-4
CVA/Stroke

EN	I	PM	
S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	S	Perform **Cincinnati Stroke Scale** evaluation **(see A-15). Try to determine from patient or bystanders the precise time of onset of symptoms**
S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**
	S	S	**Monitor ECG, pulse oximetry, end tidal CO2, obtain 12 lead ECG, draw blood. See O-4, Capnography; O-10, 12 Lead ECG; O-11 Blood Draw**
S	S	S	Establish **IV/IO saline lock** as appropriate per certification and training
S	S	S	Obtain **blood glucose** reading
S	S	S	If **glucose** reading is **less than 60** or **unavailable** and **hypoglycemia suspected**, administer **D50 25 G IV/IO**
S	S	S	Position patient in a semi-Fowler's position. If hemiparesis is present, transport patient on affected side taking care to protect affected extremities from injury

WESTERN VIRGINIA E.M.S. COUNCIL

ALS PROTOCOL: AM-5

Exacerbation of COPD

(Marked Increase in Difficulty Breathing)

EN	I	PM	
S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	S	If **wheezing** administer **ALBUTEROL 2.5 mg, nebulized.** If wheezing continues repeat **ALBUTEROL 2.5 mg, nebulized** after 10 minutes
S	S	S	Establish **IV/IO saline lock** as appropriate per certification and training
	S	S	**Monitor ECG, pulse oximetry, end tidal CO2, obtain 12 lead ECG, draw blood. See O-4, Capnography; O-10, 12 Lead ECG; O-11 Blood Draw**
	S	S	Administer **METHYLPREDNISOLONE 125 mg IV/IO,** if continued **wheezing after second albuterol** treatment
S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL
ALS PROTOCOL: AM-6
Environmental Emergency

EN	I	PM	
S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol, refer to **BM-6 Environmental Emergency Protocol**
S	S	S	Gently move patient to a **temperature appropriate** environment
S	S	S	Remove excessive or wet clothing from the patient
S	S	S	Handle patient gently avoiding excessive movement
S	S	S	**Heat Emergency:** * Allow intake of cool water or electrolyte solution if patient is **awake and alert and suffering from Heat Exhaustion** * DO NOT allow PO intake if patient is not fully awake, able to protect airway, and/or suffering from Heat Stroke * Establish **IV/IO NS**, as appropriate per certification and training, **bolus 250 ml/hr** * Begin rapid cooling, avoid causing patient to shiver * **Transport immediately**
S	S	S	**Cold Emergency:** * **DO NOT** administer anything by mouth * Establish **IV/IO NS**, as appropriate per certification and training * If patient is **alert, responsive, and shivering**, use active external re-warming by pacing heat packs in the armpits, groin, and neck area and covering the patient with warm blankets * If altered LOC **OR** patient is not shivering use passive re-warming measures **ONLY** (blankets, warm environment, etc.)

(continued)

AM-6 Environmental Emergency (continued)

EN	I	PM	
S	S	S	**Hypothermic Cardiac Arrest:** * **Palpate carotid pulse for 30 seconds, I and PM should run an ECG strip** * Begin CPR * Establish **IV/IO NS**, as appropriate per certification and training, bolus 500 ml of warmed fluids * Use caution when administering defibrillation or medication until the patient is rewarmed.
	S	S	**Monitor ECG, pulse oximetry, end tidal CO2, obtain 12 lead ECG, draw blood. See O-4, Capnography; O-10, 12 Lead ECG; O-11 Blood Draw**
S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL
ALS PROTOCOL: AM-7
Hyperglycemia/Diabetic Coma

EN	I	PM	
S	S	S	If unable to determine if hypoglycemia or hyperglycemia, follow **AM – 2 Altered Mental Status Protocol**
S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
	S	S	**Monitor ECG, pulse oximetry, end tidal CO2, obtain 12 lead ECG, draw blood. See O-4, Capnography; O-10, 12 Lead ECG; O-11 Blood Draw**
S	S	S	**Obtain blood glucose reading**
S	S	S	Establish **IV/IO NS**, as appropriate per certification and training. Administer 250 ml/hr bolus
S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL
ALS PROTOCOL: AM-8
Hypoperfusion (Non-Traumatic)

EN	I	PM	
S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	S	Obtain thorough history. Consider CHF, anaphylaxis, Cardiogenic shock, MI, dehydration, sepsis, etc. Refer to appropriate protocol as indicated
	S	S	**Monitor ECG, pulse oximetry, end tidal CO2, obtain 12 lead ECG, draw blood. See O-4, Capnography; O-10, 12 Lead ECG; O-11 Blood Draw**
S	S	S	**Position patient supine with lower extremities elevated 8-10 inches**
S	S	S	Establish **IV/IO NS**, **(2 sites, large bore)** as appropriate per certification and training. Fluids should be run at a rate sufficient to **maintain peripheral perfusion**.
S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL

ALS PROTOCOL: AM-9

OB/GYN Emergencies

EN	I	PM	
S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	S	**Obtain history to include: due date, prior pregnancies/deliveries, prenatal care, drug use, complications of prior pregnancies.** Refer to **BM – 8 OB/GYN Emergencies**
S	S	S	Place patient in **left lateral recumbent** position
S	S	S	Establish **IV/IO NS**, as appropriate per certification and training.
S	S	S	If child birth imminent, **visually confirm** crowning. Prepare for field delivery if present
S	S	S	If **pre-eclampsia suspected**, decrease external stimuli, *transport quietly and smoothly*. Obtain blood glucose reading
	S	S	**If pre-eclamptic patient begins to seize or develops altered LOC, administer MAGNESIUM SULFATE 2 G IV/IO over 2 minutes**
	S	S	If **seizures persist, administer DIAZEPAM 5mg IV/IO, repeat every 2 minutes until seizures subside or a maximum of 20 mg is reached. Monitor respiration closely**
S	S	S	If vaginal bleeding present determine if history of pregnancy or recent delivery. If post-delivery, perform ***external*** uterine massage
S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL

ALS PROTOCOL: AM-10

Poisoning and Overdose

EN	I	PM	
S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	S	Follow appropriate BLS protocol for method of exposure. Refer to **BM – 9, Absorbed; BM – 10, Ingested; BM – 11 Inhaled**
S	S	S	Establish **IV/IO NS**, as appropriate per certification and training. If patient is hypotensive refer to **AM – 8 Hypoperfusion Protocol**
	S	S	**Monitor ECG, pulse oximetry, end tidal CO2, obtain 12 lead ECG, draw blood. See O-4, Capnography; O-10, 12 Lead ECG; O-11 Blood Draw**
S	S	S	If patient is unconscious and/or has a depressed respiratory rate consider narcotic/opiate overdose. Administer **NALOXONE 2 mg IV/IO/IM** over **2 minutes, titrate to respirations**. Dosing may be repeated to a **maximum of 4 mg**
	O	S	If **S.L.U.D.G.E. (salivation, lacrimation, urination, defecation, GI complaints, emesis)** symptoms, **meiosis (small pupils), bradycardia, hypotension, altered LOC** are found suspect **organophosphate insecticide poisoning/nerve agent**. Administer **ATROPINE 2 mg IV/IO every 5 minutes** until symptoms improve
	O	S	If **decreased mental status/seizures, cardiac arrhythmia (especially wide complex) and/or hypotension** are found suspect **tricyclic antidepressant** overdose. Administer **SODIUM BICARBONATE 50 mEq IV/IO**
	O	S	If **calcium channel blocker or beta blocker** overdose suspected administer **GLUCAGON 1 mg IV/IO**. Consider external pacing and fluid bolus as indicated
S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL
ALS PROTOCOL: AM-11
Seizures

EN	I	PM	
S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	S	Protect patient from injury, **DO NOT** insert anything into mouth
S	S	S	Establish **IV/IO NS**, as appropriate per certification and training.
S	S	S	Obtain **blood glucose** reading
S	S	S	If **glucose** reading is **less than 60** or **unavailable** and **hypoglycemia suspected**, administer **D50 25 G IV/IO**
	S	S	Administer **DIAZEPAM 5 MG IV/IO. Repeat every 2 minutes** until **seizures subside** or a maximum of **20 mg is reached**. **Monitor respirations closely**
	S	S	**Monitor ECG, pulse oximetry, end tidal CO2, obtain 12 lead ECG, draw blood. See O-4, Capnography; O-10, 12 Lead ECG; O-11 Blood Draw**
S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL
ALS PROTOCOL: AM-12
Snake Bite

EN	I	PM	
S	S	S	**Assure** scene safety. Do not bring snake to the Emergency Department. Do not delay transport to locate or identify the type of snake
S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
O	S	S	If indicated treat allergic reaction or anaphylaxis per protocol, refer to **AM – 1, Allergic Reaction; AM – 1a, Anaphylaxis**
S	S	S	Lie patient down and **calm** patient. Place bitten part **at or below level of heart**
S	S	S	**Immobilize area**, use splint if on extremity
S	S	S	**DO NOT:** * Use ice over bite * Apply tourniquet * Make incision, apply suction or use other methods to extract poison
	S	S	**Monitor ECG, pulse oximetry, end tidal CO2, obtain 12 lead ECG, draw blood. See O-4, Capnography; O-10, 12 Lead ECG; O-11 Blood Draw**
S	S	S	Establish **IV/IO saline lock** as appropriate per certification and training
O	S	S	Administer **MORPHINE 5 mg IV/IO** as needed for pain
S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL
ALS PROTOCOL: AM-13
Nausea and Vomiting

I	PM	
S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	Establish **IV/IO NS**, as appropriate per certification and training.
S	S	If patient has **prolonged vomiting, active vomiting after** EMS **arrival** or **nausea** ***causing significant discomfort*** administer **PROMETHAZINE 12.5 mg IV/IO or 25 mg IM**
O	S	If patient has **recurrent or persistent nausea and/or vomiting** and **15 minutes** have **elapsed** since initial dose, a second dose of **PROMETHAZINE 12.5 mg IV/IO or 25 mg IM** may be administered
S	S	If the patient presents with evidence of symptomatic dehydration/hypotension administer 250 ml/hr bolus
S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL

ALS PROTOCOL: AM-14

Agitated/Violent Patient

EN	I	PM	
S	S	S	**Assure** scene safety. Do not engage patient unless risk of harm is minimized by law enforcement or number of personnel present
S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol. Obtain **blood glucose** if possible
S	S	S	Control environmental factors; attempt to move patient to a private area free of family and bystanders. ***MAINTAIN ESCAPE ROUTE***
S	S	S	Attempt de-escalation, utilize an empathetic approach. Ensure patient safety and comfort. ***AVOID CONFRONTATION***
S	S	S	**Ensure patient competency, if patient is competent consent is required. If patient is incompetent consent is not required**
S	S	S	**Physical Restraint:** * One person per limb plus head (5 minimum) * Restrain in the supine or left lateral recumbent position. DO NOT “hobble”, “hog-tie” or “sandwich” between backboards. * Ensure method of restraint does not effect breathing or circulation and move to Chemical Restraint ASAP
	O	**O**	If **chemical agitation** or **alcohol withdrawal** is suspected administer **DIAZEPAM 5 MG IV or 10 mg IM.** Repeat as needed to a **maximum of 20 mg**. Monitor respirations closely.
	O	**O**	If alcohol related agitation **(NOT WITHDRAWAL)** is suspected administer **HALOPERIDAL 5 mg IV/IM**. Repeat as needed. Consider administration of **DIPHENHYDRAMINE 50 mg IV/IM** for **dystonic reaction** as needed.
S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL

ALS PROTOCOL: AT-1

Burns

EN	I	PM	
S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol. If **inhalation injury** suspected use **15 lpm O2 via non-rebreather**
			BURNS less than 10% OF BODY SURFACE AREA
S	S	S	**Cool** with **normal saline** solution for 15 – 20 minutes
S	S	S	Cover burn area with sterile dressing or sheet, remove restrictive items; i.e. rings, necklace, etc. Use sterile saline at room temperature to saturate dressings. **DO NOT** use ice or iced/chilled saline
			BURNS greater than 10% OF BODY SURFACE AREA
	S	S	**Monitor ECG, pulse oximetry, end tidal CO2, obtain 12 lead ECG, draw blood. See O-4, Capnography; O-10, 12 Lead ECG; O-11 Blood Draw**
S	S	S	**Cover** burn with dry sterile dressing or burn sheet
S	S	S	Establish **IV/IO NS**, **(2 sites, large bore)** as appropriate per certification and training. Administer **250 ml/hr bolus**
O	S	S	Administer **MORPHINE 5 mg IV/IO over 2 minutes**. Repeat **every 5 minutes** until pain is relieved, to a maximum of **20 mg or systolic BP falls below 100.** ***Monitor respirations and BP closely.***
O	**O**	S	If **IV/IO access unavailable** administer **MORPHINE 10 mg IM** to a maximum of 20 mg or systolic falls below 100. ***Monitor respirations and BP closely.***
S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL
ALS PROTOCOL: AT-2
Multiple Trauma / Neurological Injury

EN	I	PM	
S	S	S	**Transport and notify hospital** ASAP with a goal to limit on-scene time to **10 min. or less**
S	S	S	**Transport** according to **A-12 Trauma Triage Patient Designation**
S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	S	If breathing is ***inadequate*** ventilate at a rate of **1 breath every 6 seconds**
O	**O**	S	If tension pneumothorax is suspected, perform **needle decompression** on the affected side, **See O-9 Needle Pleural Decompression Guideline**
S	S	S	Splint suspected extremity injuries using patient's body and LBB. **DO NOT** delay transport to apply other types of splints. Additional splinting may be performed en route if time permits
S	S	S	Establish **IV/IO NS**, **(2 sites, large bore)** as appropriate per certification and training while en route to facility or during entrapment. **DO NOT DELAY SCENE TIME**
S	S	S	IV should be run at a rate sufficient to **maintain peripheral pulses. Contact medical control after two liters of fluid has been infused.**
	S	S	**Monitor ECG, pulse oximetry, end tidal CO2, obtain 12 lead ECG, draw blood. See O-4, Capnography; O-10, 12 Lead ECG; O-11 Blood Draw**

WESTERN VIRGINIA E.M.S. COUNCIL
ALS PROTOCOL: AT-3
Pain Associated with Extremity Fracture

EN	I	PM	
S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol.
S	S	S	Establish **IV/IO saline lock** as appropriate per certification and training
O	S	S	If pain associated with an **isolated** musculoskeletal injury, administer **MORPHINE 5 mg IV/IO over 2 minutes**. Repeat **every 5 minutes** until pain is relieved, to a maximum of **20 mg or systolic BP falls below 100.** ***<u>Monitor respirations and BP closely.</u>***
O	**O**	S	If **IV/IO access unavailable** administer **MORPHINE 10 mg IM** to a maximum of 20 mg or systolic falls below 100. ***Monitor respirations and BP closely.***
S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL

ALS PROTOCOL: AT-4

Traumatic Cardiac Arrest

EN	I	PM	
S	S	S	Consider withholding resuscitative efforts if pulseless and apneic greater than 10 minutes or if any injuries meet non-viability guidelines, See **A-7 Determination of Non-Viability Guideline**
S	S	S	Establish **unresponsiveness and pulselessness. If no pulse begin CPR**
	S	S	Check ECG rhythm. Treat underlying ECG rhythm according to appropriate protocol
S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less**
S	S	S	Perform **advanced airway** procedures as certified
S	S	S	Consider and treat underlying causes as trained and certified
S	S	S	Perform bilateral needle decompression, **See O-9 Needle Pleural Decompression Guideline**
S	S	S	Establish **IV/IO NS**, **(2 sites, large bore)** as appropriate per certification and training while en route to facility or during entrapment. **DO NOT DELAY SCENE TIME**
S	S	S	Administer **1000 ml fluid bolus,** if patient pulseless and apneic greater than ten minutes consider termination of efforts, **see A-14 Termination of Resuscitation Efforts Guideline**

WESTERN VIRGINIA E.M.S. COUNCIL

PEDIATRIC PROTOCOL: P-1

General Assessment and Management

BLS	EN	I	PM	
S	S	S	S	Perform initial assessment, treat priority conditions, Initiate O2 therapy per protocol
S	S	S	S	Reassure child and allow caregiver to remain with child
S	S	S	S	Assess child's weight. Use **appropriate** sized equipment
S	S	S	S	If child is alert, able to communicate, stable, and no major MOI, perform focused history and examination
S	S	S	S	If major MOI, child or caregiver unable to communicate, unstable or high priority condition present, **transport immediately** with further exam during transport, if possible. **Contact ALS** as appropriate
S	S	S	S	Use **brachial** pulse in children under one year of age
S	S	S	S	**Do not** attempt blood pressure if child **under 3 years of age**
S	S	S	S	Unless care will be compromised, allow caregiver to accompany child during transport
S	S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less.** Child should be restrained in a manner appropriate for age during transport. If patient is a trauma patient exercise C-spine precautions and immobilization. **DO NOT use** patient car seat as a restraint when trauma is suspected.

WESTERN VIRGINIA E.M.S. COUNCIL

PEDIATRIC PROTOCOL: P-2

Airway Management

BLS	EN	I	PM	
S	S	S	S	Assess airway on all pediatric patients. **Establish and maintain airway in all cases where airway is compromised or ventilation is inadequate**
S	S	S	S	If trauma patient, maintain C-spine
S	S	S	S	If child presents with stridor or drooling, refer to **P-16, Croup/Epiglottitis protocol.** Differentiate between foreign body obstruction and medical causes
S	S	S	S	Administer **oxygen** per protocol
S	S	S	S	If child is unconscious or is a trauma patient, position supine on backboard: * Use folded blanket or pad beneath torso to **maintain airway in a neutral position** * **Do not hyperextend head**
S	S	S	S	Use oral airway to maintain position in unconscious patients. Insert with tip facing down toward tongue and utilize a tongue depressor or similar item
S	S	S	S	If child is conscious, not a trauma patient, and is in respiratory distress, allow to assume a **position of comfort** (usually sitting)
S	S	S	S	If foreign body is suspected refer to **P-3 or P-4 Foreign Body Protocols**
S	S	S	S	Use suction to render and maintain airway free of secretions and foreign material **unless child presents with stridor**
S	S	S	S	If ventilation is not adequate refer to **P-5 Pediatric Ventilation Protocol**
S	S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less.**

WESTERN VIRGINIA E.M.S. COUNCIL
PEDIATRIC PROTOCOL: P-3
Foreign Body Obstruction – Infant (less than 1 year old)

BLS	EN	I	PM	
S	S	S	S	Determine if there is a strong suspicion, or witnessed event of foreign body aspiration. **DO NOT** use foreign body maneuver if **stridor is suspected** to be a result or product of **epiglottitis or croup**
S	S	S	S	If patient is conscious and airway is obstructed: * Perform 5 back blows followed by 5 chest thrusts * Check airway * Continue to perform 5 back blows and 5 chest thrusts until obstruction relieved or patient becomes unconscious
S	S	S	S	If patient **becomes unconscious** after attempts to clear airway: * Visually inspect airway for foreign body and **remove if visible and accessible** * **DO NOT** perform blind finger sweep * Attempt ventilation. If unsuccessful, reposition airway and reattempt ventilation **once** * If airway still obstructed, perform 5 back blows followed by 5 chest thrusts * Repeat steps listed above until airway obstruction relieved

(continued)

P-3 Foreign Body Obstruction – Infant (continued)

BLS	EN	I	PM	
S	S	S	S	If patient is **found unconscious**: * Open airway and inspect for foreign body; remove if visible and accessible * **DO NOT** perform blind finger sweep * Attempt ventilation. If unsuccessful, reposition airway and reattempt ventilation **once** * If airway still obstructed, perform 5 back blows followed by five chest thrusts * Repeat steps listed above until airway obstruction relieved
S	S	S	S	Initiate **immediate transport** and contact medical control
	S	S	S	If **persistent attempts** to relieve complete obstruction are unsuccessful, attempt intubation: * If foreign body is **visible and above level of vocal cords,** remove foreign body using Magill forceps * If foreign body **not visible**, insert ET tube past level of carina, pull back to correct position and ventilate
S	S	S	S	If airway obstruction is relieved, support ventilation and circulation and necessary and provide high flow oxygen

WESTERN VIRGINIA E.M.S. COUNCIL
PEDIATRIC PROTOCOL: P-4
Foreign Body Obstruction – Child (1-8 years old)

BLS	EN	I	PM	
S	S	S	S	Determine if there is a strong suspicion, or witnessed event of foreign body aspiration. **DO NOT** use foreign body maneuver if **stridor is suspected** to be a result or product of **epiglottitis or croup**
S	S	S	S	If patient is conscious and airway is obstructed: * Perform 5 abdominal thrusts * Check airway * Continue to perform abdominal thrusts until obstruction relieved **or** patient becomes unconscious
S	S	S	S	If patient **becomes unconscious** after attempts to clear airway: * Visually inspect airway for foreign body and **remove if visible and accessible** * **DO NOT** perform blind finger sweep * Attempt ventilation. If unsuccessful, reposition airway and reattempt ventilation **once**. If airway still obstructed, perform 5 abdominal thrusts * Repeat steps listed above until airway obstruction relieved

(continued)

P-4 Foreign Body Obstruction – Child (continued)

BLS	EN	I	PM	
S	S	S	S	If patient is **found unconscious**: * Open airway and inspect for foreign body; remove if visible and accessible * **DO NOT** perform blind finger sweep * Attempt ventilation. If unsuccessful, reposition airway and reattempt ventilation **once.** * Perform five abdominal thrusts if unable to ventilate * Repeat steps listed above until airway obstruction relieved
S	S	S	S	Initiate **immediate transport** and contact medical control
	S	S	S	If **persistent attempts** to relieve complete obstruction are unsuccessful, attempt intubation: * If foreign body is **visible and above level of vocal cords,** remove foreign body using Magill forceps * If foreign body **not visible**, insert ET tube past level of carina, pull back to correct position and ventilate
S	S	S	S	If airway obstruction is relieved, support ventilation and circulation and necessary and provide high flow oxygen

WESTERN VIRGINIA E.M.S. COUNCIL
PEDIATRIC PROTOCOL: P-5
Ventilation Management

BLS	EN	I	PM	
S	S	S	S	Assess airway and adequacy of ventilation on all pediatric patients. **Establish airway per protocol when airway is compromised or ventilation is inadequate**
S	S	S	S	Ventilation should be supplemented with 15 **lpm oxygen ASAP**
S	S	S	S	If ventilation inadequate, assist in the following order of preference: * Two person bag-valve-mask **without** pop-off valve * One person bag-valve-mask **without** pop-off valve * Mouth to mask with one way valve and supplemental oxygen (if available) * **F**low **R**estricted **O**xygen **P**owered **V**entilation **D**evice **(DEMAND VALVE).** May ***<u>ONLY</u>*** be used on patients over 8 years of age
S	S	S	S	Use **appropriate** size equipment for age and size
S	S	S	S	Ventilation rate should be **1 breath every 3 seconds for children under 8 years of age**
	S	S	S	**If BVM ineffective,** perform **advanced airway** procedures **as certified.** BLS providers should request ALS
	S	S	S	If intubated tube should be secured at 3 times the tube size i.e. 3.0 mm ET should be taped at 9 cm at the lip)
S	S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less.**

WESTERN VIRGINIA E.M.S. COUNCIL

PEDIATRIC PROTOCOL: P-6

General Cardiac Arrest Management

BLS	EN	I	PM	
S	S	S	S	Establish **airway and ventilation** per appropriate protocol
S	S	S	S	Check for pulse: * In **infant** check for pulse at **brachial** artery * In **child** check for pulse at **carotid** artery
S	S	S	S	If patient is not breathing begin **CPR** at **30 compressions and two breaths for 5 cycles/2 minutes** (approximate rate of 100 compressions per minute). Patients ***under the age of 1 year*** should be **15 compressions and 2 breaths for 5 cycles/2 minutes.**
S	S			Follow AED protocol **as appropriate**. **DO NOT** use AED if: * **Under 1** year of age * **Too small** to apply without pads touching
S	S	S	S	Reassess **ABC's** and **breath sounds**
S	S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less.**

WESTERN VIRGINIA E.M.S. COUNCIL

PEDIATRIC PROTOCOL: P-7

Hypoperfusion - Shock

BLS	EN	I	PM	
S	S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	S	S	Obtain accurate history. Consider trauma, anaphylaxis, cardiogenic shock, dehydrations, sepsis
S	S	S	S	Maintain warmth and prevent heat loss
	S	S	S	Establish **IV/IO NS**, KVO as appropriate per certification and training
	S	S	S	Administer **20 ml/kg** fluid bolus as rapidly as possible
S	S	S	S	Reassess **ABC's** and **breath sounds**
S	S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less.**
		S	S	**Monitor ECG, pulse oximetry, end tidal CO2, See O-4, Capnography**
	S	S	S	Repeat **20 ml/kg** fluid bolus if perfusion is still inadequate
S	S	S	S	Reassess **ABC's** and **breath sounds**
	O	**O**	**O**	Repeat **20 ml/kg** fluid bolus as needed if perfusion is still inadequate
S	S	S	S	Frequently reassess **ABC's** and **breath sounds**

WESTERN VIRGINIA E.M.S. COUNCIL

PEDIATRIC PROTOCOL: P-8
Bradycardia with Pulse

BLS	EN	I	PM	
S	S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	S	S	Obtain accurate history to differentiate causes
S	S	S	S	If no signs of severe respiratory or circulatory compromise, **contact medical control** and transport promptly
S	S	S	S	Assess respiration. If ineffective, assist with BVM. Disengage pop-off valve
	S	S	S	**If BVM ineffective,** perform advanced airway procedures. BLS providers should request ALS
	S	S	S	Reassess breath sounds. If absent on one side, consider mainstem intubation or pneumothorax
S	S	S	S	**If pulse rate is less than 60 in an infant (less than 80 in a neonate) and signs of poor perfusion are present, begin CPR. Refer to P-9 Pediatric Asystole/PEA Protocol**
		S	S	**Monitor ECG, pulse oximetry, end tidal CO2, See O-4, Capnography**
S	S	S	S	Maintain warmth and prevent heat loss
S	S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less.**
	S	S	S	Establish **IV/IO NS**, KVO as appropriate per certification and training
	S	S	S	Administer **20 ml/kg** fluid bolus as rapidly as possible
		S	S	Reassess ABC's and breath sounds
	O	S	S	Administer ***EPINEPHRINE 1:10,000*** **0.01 mg/kg IV/IO, may repeat every 5 minutes as needed**
	S	S	S	Administer **20 ml/kg** fluid bolus as rapidly as possible
S	S	S	S	Reassess ABC's and breath sounds
		S	S	Administer ***ATROPINE*** **0.02 mg/kg IV/IO, may repeat every five minutes as needed**
	S	S	S	Obtain blood glucose reading, if blood glucose less than 60, administer ***DEXTROSE 25%*** **2ml/kg IV/IO**

WESTERN VIRGINIA E.M.S. COUNCIL
PEDIATRIC PROTOCOL: P-9
Cardiac Arrest – Asystole / PEA

BLS	EN	I	PM	
S	S	S	S	Establish unresponsiveness and pulselessness. If no pulse begin CPR. **See A-7, Determination of Non-Viability**
S	S	S	S	Airway/respiratory compromise frequently precedes pediatric arrest – **secure airway and ventilate with 100% oxygen ASAP.** ***Consider and address possible causes***
		S	S	**Confirm Asystole in two leads**
	S	S	S	Continue doing CPR while preparing for additional interventions. Resume CPR immediately following interventions, as they should cause little to no interruption in CPR
	S	S	S	If BVM ineffective, perform advanced airway procedures as certified. Once airway is controlled compressions are continuous at 100/min. with ventilations every 5 seconds. This should not interrupt chest compressions.
	S	S	S	Establish **IV/IO NS**, KVO as appropriate per certification and training
	S	S	S	Administer ***EPINEPHRINE 1:10,000*** **0.01 mg/kg IV/IO, may repeat every 5 minutes as needed**
S	S	S	S	Reassess **ABC's** and **breath sounds**
	S	S	S	Administer **20 ml/kg** fluid bolus as rapidly as possible
S	S	S	S	Reassess **ABC's** and **breath sounds**
	S	S	S	Repeat **20 ml/kg** fluid bolus as rapidly as possible
S	S	S	S	Frequently reassess **ABC's** and **breath sounds**
S	S	S	S	Obtain blood glucose reading
	S	S	S	If blood glucose less than 60, administer ***DEXTROSE 25%*** **2ml/kg IV/IO**
S	S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less.**

WESTERN VIRGINIA E.M.S. COUNCIL

PEDIATRIC PROTOCOL: P-10
Cardiac Arrest – VFIB/Pulseless V-TACH

BLS	EN	I	PM	
S	S	S	S	Establish unresponsiveness and pulselessness. If no pulse **begin CPR**.
		S	S	Check **ECG** monitor for rhythm, if not V-FIB/Pulseless V-TACH refer to appropriate protocol
		S	S	**If V-FIB/Pulseless V-TACH continue CPR for 5 cycles or 2 minutes then defibrillate at 2 joules/kg; (if witnessed, shock immediately).** ****IF USING A BIPHASIC MONITOR / DEFIBRILLATOR, USE THE DEVICE SPECIFIC SETTING AS INDICATED BY THE MANUFACTURER****
		S	S	Continue CPR while charging. Resume CPR immediately after defibrillating. Interventions should cause little to no interruption in CPR. Complete 5 cycles or 2 minutes of CPR, check ECG monitor for rhythm, check patient for pulse and **shock at 4 joules/kg i**f V-Fib/Pulseless V-Tach still present.
	S	S	S	Consider **advanced airway** procedures as certified. Once airway is controlled compressions are continuous at 100/min. with ventilations every 5 seconds. **Ventillations should not interrupt chest compressions**
	S	S	S	Establish **IV/IO NS**, KVO as appropriate per certification and training. Consider possible causes.
	S	S	S	Administer **EPI 1:10,000 0.01 mg/kg IV/IO**. If V-FIB/Pulseless V-TACH persists, second and subsequent doses should be **EPI 1:10,000 0.01 mg/kg** followed by IV/IO flush and should be administered every **5** minutes, should follow pulse check

(continued)

		S	S	Administer **3rd shock, check rhythm and pulse.** Continue CPR while charging. Resume CPR immediately after defibrillating. **Consider *Antiarrythmics.**
		S	S	**AMIODARONE 5mg/kg IV/IO,** followed by an additional **5mg/kg IV/IO** 5 minutes after initial dose **OR** **LIDOCAINE 1mg/kg IV/IO once. Maximum dose is 100 mg.**
		S	S	**Consider use of MAGNESIUM SULFATE or SODIUM BICARBONATE. See below.**
		S	S	Continue sequence of: Rhythm check, CPR while charging, Shock, 5 cycles of CPR, Rhythm check. Meds should be given soon after rhythm check, before or after next shock at appropriate time interval. If rhythm changes during treatment follow appropriate protocol.
S	S	S	S	Obtain blood glucose reading
	S	S	S	If blood glucose less than 60, administer **DEXTROSE 25% 2 ml/kg IV/IO**
		O	**O**	If patient unresponsive to therapy after 20 minutes, consider termination of resuscitation or make a transport decision. **SSee A-14 Termination of Resuscitation Effort Guideline**

DURING ARREST MANAGEMENT:

MAGNESIUM SULFATE at 25 mg/kg IV/IO push
For hypomagnesemia or Torsades de Pointes

SODIUM BICARBONATE at 0.1mEq/kg IV/IO
Known hyperkalemia, prolonged resuscitation, TCA or ASA overdose

BIPHASIC DEVICE NOTES:

Manufacturer: ________________________

Model: _______________________________

Manufacturer Recommended Setting for Defibrillation:

___________, ___________, ___________, ___________

Monophasic = 4 joules/kg
Biphasic = Device specific dose/kg
Unknown = 2 joules/kg

WESTERN VIRGINIA E.M.S. COUNCIL
PEDIATRIC PROTOCOL: P-11
Post - Resuscitation (ROSC)

BLS	EN	I	PM	
S	S	S	S	Reassess **ABC's,** establish **baseline vital signs,** assess **breath sounds, confirm ET placement** if intubated
S	S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less.**
		S	S	**Monitor ECG, pulse oximetry, end tidal CO2, see O-4, Capnography**
S	S	S	S	Administer high flow **oxygen** and assist ventilation if indicated
	S	S	S	If BVM ineffective, perform advanced airway procedures as certified. BLS providers should request ALS
	S	S	S	Establish **IV/IO NS**, KVO as appropriate per certification and training.
S	S	S	S	If persistent bradycardia and signs of Hypoperfusion, reassess airway, ventilation and pulse oximetry. If still uncorrected, refer to **P-8 Pediatric Bradycardia Protocol**
S	S	S	S	Obtain blood glucose reading
	S	S	S	If blood glucose less than 60, administer ***DEXTROSE 25%*** **2ml/kg IV/IO**
	S	S	S	**If signs of Hypoperfusion, administer 20 ml/kg fluid bolus as rapidly as possible.**
S	S	S	S	Reassess ABC's and breath sounds
	S	S	S	Repeat 20 ml/kg fluid bolus if perfusion still inadequate
S	S	S	S	Reassess ABC's and breath sounds
	O	**O**	**O**	Repeat 20 ml/kg fluid bolus as needed if perfusion still inadequate

WESTERN VIRGINIA E.M.S. COUNCIL
PEDIATRIC PROTOCOL: P-12
Tachycardia with Pulse

BLS	EN	I	PM	
S	S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	S	S	Obtain accurate history to differentiate causes, rule out trauma
		S	S	**Monitor ECG, pulse oximetry, end tidal CO2, see O-4, Capnography**
S	S	S	S	Maintain warmth and prevent heat loss
S	S	S	S	If no signs of severe respiratory or circulatory compromise **contact medical control** and transport promptly
S	S	S	S	If heart rate less than 220 with Hypoperfusion, refer to **P-7 Pediatric Hypoperfusion – Shock Protocol**
		S	S	If heart rate greater than 220 with signs of Hypoperfusion synchronized cardiovert at 0.5joules/kg
S	S	S	S	Reassess **ABC's** and **breath sounds**
		S	S	If unchanged, synchronized cardiovert at 1.0 joules/kg
S	S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less.**
	S	S	S	Establish **IV/IO NS**, KVO as appropriate per certification and training.
		S	S	**If narrow complex and** heart rate greater than 220 **without signs of hypoperfusion,** draw up 10 ml saline. Then administer ***ADENOSINE*** **0.1 MG/KG over 1-3 seconds,** using the med port closest to the angiocath. **IMMEDIATELY** followed by **rapid 10 ml saline flush.** Run a continuous ECG strip prior to and for at least two minutes after administration. Maximum dose 6 mg
S	S	S	S	Reassess ABC's and breath sounds
		S	S	If unchanged, administer ***ADENOSINE*** **0.2 mg/kg over 1-3 seconds.** Follow administration method noted above. Maximum dose of 12 mg
S	S	S	S	Reassess ABC's and breath sounds

WESTERN VIRGINIA E.M.S. COUNCIL
PEDIATRIC PROTOCOL: P-13
Allergic Reaction

BLS	EN	I	PM	
S	S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
		S	S	**Monitor ECG, pulse oximetry, end tidal CO2, see O-4, Capnography**
S	S	S	S	Maintain warmth and prevent heat loss, place patient in a position of comfort
S	S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene **time to 10 min. or less**
	S	S	S	Establish **IV/IO NS**, KVO as appropriate per certification and training
	S	S	S	Administer **DIPHENHYDRAMINE 1mg/kg IV/IO to a maximum of 25 mg**
		S	S	Administer **METHYLPREDNISOLONE 2 mg/kg IV/IO**
	S	S	S	If **wheezing** administer **ALBUTEROL 2.5 mg, nebulized, repeat every 5 minutes as needed**
S	S	S	S	Reassess ABC's and breath sounds

WESTERN VIRGINIA E.M.S. COUNCIL
PEDIATRIC PROTOCOL: P-13a
Anaphylaxis

BLS	EN	I	PM	
O	**O**	**O**	**O**	Anaphylaxis is a generalized allergic reaction involving more than on body system that is potentially life threatening. The use of **EPINEPHRINE** can be life saving, however, **EPINEPHRINE** can cause serious cardiac complications, including cardiac arrest, it's use should be restricted unless **CLEARLY** indicated.
S	S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol and treat per **protocol P-13**
	S	S	S	If **hypotensive** administer **20 ml/kg fluid bolus**
	O	**O**	**O**	Administer **EPINEPHRINE 1:1,000 0.01 mg/kg IM injection**, repeat if needed
S	S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene **time to 10 min. or less**

WESTERN VIRGINIA E.M.S. COUNCIL

PEDIATRIC PROTOCOL: P-14

Altered Mental Status

BLS	EN	I	PM	
S	S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	S	S	Obtain accurate history to differentiate causes. Assess for trauma. If postictal, refer to **P-19 Pediatric Seizure Protocol**
		S	S	**Monitor ECG, pulse oximetry, end tidal CO2, see O-4, Capnography**
S	S	S	S	Maintain warmth and prevent heat loss
	S	S	S	Establish **IV/IO NS**, KVO as appropriate per certification and training.
	S	S	S	Obtain blood glucose reading, if blood glucose less than 60, administer ***DEXTROSE 25%*** **2ml/kg IV/IO**
S	S	S	S	Reassess **ABC's** and **breath sounds**
	S	S	S	If condition unchanged administer ***NALOXONE*** **0.1 mg/kg IV/IO**
S	S	S	S	Reassess **ABC's** and **breath sounds**
S	S	S	S	Place patient in **left lateral recumbent position**, unless trauma is suspected
S	S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less.**
S	S	S	S	Frequently reassess **ABC's** and **breath sounds**

WESTERN VIRGINIA E.M.S. COUNCIL

PEDIATRIC PROTOCOL: P-15

Asthma / Respiratory Distress/ Failure

BLS	EN	I	PM	
S	S	S	S	If child presents with stridor or drooling, refer to **P-16 Pediatric Croup/Epiglottitis Protocol.** Differentiate between foreign body obstruction and medical causes
S	S	S	S	Allow child to assume position of comfort
S	S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
		S	S	**Monitor ECG, pulse oximetry, end tidal CO2, see O-4, Capnography**
S	S	S	S	Assess respiration. If ineffective, assist with BVM. Disengage pop-off valve
	S	S	S	If BVM ineffective, assess technique. Perform advanced airway procedures as certified. BLS providers should contact ALS
	S	S	S	Reassess **ABC's** and **breath sounds. If absent on one side consider mainstem intubation or pneumothorax**
S	S	S	S	Treat patients with respiratory distress as priority patients. Transport promptly
S	S	S	S	If patient had a prescribed beta agonist metered dose inhaler (MDI) and has not taken the maximum dose prescribed, contact medical control for possible additional doses. Refer to **BG-7 Assisted Medication Administration Protocol**
	S	S	S	If wheezing, administer ***ALBUTEROL*** **2.5 mg nebulized.** Repeat every 10 minutes as needed.
S	S	S	S	Frequently reassess **ABC's** and **breath sounds**
S	S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less.**
	O	**O**	**O**	Establish **IV/IO NS**, KVO as appropriate per certification and training, during transport
		O	**O**	If wheezing continued after 2 nebulizer treatments administer ***METHYLPREDNISOLONE*** **2 mg/kg IV/IO**

WESTERN VIRGINIA E.M.S. COUNCIL

PEDIATRIC PROTOCOL: P-16
Croup / Epiglottitis

BLS	EN	I	PM	
S	S	S	S	If child presents with stridor or drooling consider foreign body obstruction
S	S	S	S	Allow child to assume position of comfort. **DO NOT touch or agitate the child**
S	S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy by **blow-by technique**. **Consider administration by parent**
S	S	S	S	Assess respiration. If **ineffective**, assist with BVM. Disengage pop-off valve
	S	S	S	**If BVM ineffective, assess technique**. Perform advanced airway procedures as certified. BLS providers should contact ALS
S	S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less.**
S	S	S	S	Frequently reassess **ABC's** and **breath sounds**
S	S	S	S	Obtain **ECG if child is cooperative**
	S	S	S	Consider **IV/IO NS**, KVO as appropriate per certification and training, during transport

WESTERN VIRGINIA E.M.S. COUNCIL
PEDIATRIC PROTOCOL: P-17
Fever

BLS	EN	I	PM	
S	S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	S	S	Obtain history and temperature if possible
S	S	S	S	Remove **heavy** cover, **BUT** avoid overexposure
O	**O**	**O**	**O**	Active cooling **MAY** be attempted **ONLY** if ordered by medical control
S	S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less.**
	S	S	S	If child has signs of hypoperfusion, establish **IV/IO NS**, **as appropriate** per certification and training, during transport and administer **20 ml/kg** fluid bolus as rapidly as possible
S	S	S	S	Reassess **ABC's** and **breath sounds**
		S	S	Obtain **ECG**
	O	S	S	**Repeat 20 ml/kg** fluid bolus if perfusion still inadequate
S	S	S	S	Frequently reassess **ABC's** and **breath sounds**

WESTERN VIRGINIA E.M.S. COUNCIL
PEDIATRIC PROTOCOL: P-18
Poisoning

BLS	EN	I	PM	
S	S	S	S	**Assure rescuer safety.** Remove child from toxic environment as necessary
S	S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	S	S	Obtain history to determine nature of poisoning. Assess for trauma
S	S	S	S	Maintain warmth and prevent heat loss
	S	S	S	If child presents with altered mental status establish **IV/IO NS**, KVO **as appropriate** per certification and training
	S	S	S	If patient is unconscious and/or has a depressed respiratory rate administer ***NALOXONE*** **0.1 mg/kg IV/IO over two minutes.** May administer 2 mg IM if no IV/IO access available
		S	S	**Monitor ECG, pulse oximetry, end tidal CO2, draw blood. O-4, Capnography**
	S	S	S	Obtain blood glucose reading, if blood glucose less than 60, administer ***DEXTROSE 25%*** **2ml/kg IV/IO**
S	S	S	S	Reassess **ABC's** and **breath sounds**
S	S	S	S	Place patient in **left lateral recumbent position**, unless trauma is suspected
S	S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less.**

WESTERN VIRGINIA E.M.S. COUNCIL

PEDIATRIC PROTOCOL: P-19

Seizures

BLS	EN	I	PM	
S	S	S	S	**Refer to BM-12 Seizure Protocol. In addition perform the following as indicated**
S	S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol
S	S	S	S	Obtain history to determine nature of poisoning. Assess for trauma
S	S	S	S	Remove **heavy** cover, **BUT** avoid overexposure
S	S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less.**
	S	S	S	Establish **IV/IO NS**, KVO **IF** child is actively seizing
	S	S	S	Obtain blood glucose reading, if blood glucose less than 60, administer ***DEXTROSE 25%*** **2ml/kg IV/IO**
		S	S	Administer ***DIAZEPAM*** **0.2 mg/kg IV/IO *OR* 0.5 mg/kg IM/PR. Be prepared for 5-10 minutes of apnea after diazepam administration**. Secure airway and ventilate as appropriate with bag valve mask
S	S	S	S	Reassess **ABC's** and **breath sounds**
		S	S	**Monitor ECG, pulse oximetry, end tidal CO2, see O-4, Capnography**
S	S	S	S	Place patient in **left lateral recumbent position**, unless trauma is suspected

WESTERN VIRGINIA E.M.S. COUNCIL

PEDIATRIC PROTOCOL: P-20

Burns

BLS	EN	I	PM	
S	S	S	S	**Assure** rescuer safety. Remove patient from source of burning. Remove clothing and jewelry
S	S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol. If **inhalation injury** suspected **15 lpm O2 via NRB**
S	S	S	S	Maintain warmth prevent heat loss
S	S	S	S	Determine extent of burns, assess for trauma
S	S	S	S	Dress burns with **dry, sterile** dressings. Elevate extremities
S	S	S	S	If burn **less than 10% BSA** use sterile saline at room temperature to saturate dressings. **NO ICE or ICED saline**
		S	S	**Monitor ECG, pulse oximetry, end tidal CO2, see O-4, Capnography**
	S	S	S	If burn **greater than 15% BSA**, administer **10 ml/kg/hr** fluid bolus **en route**. If in hypoperfusion, refer to **P-7 Pediatric Hypoperfusion/Shock Protocol**
S	S	S	S	Frequently reassess **ABC's** and **breath sounds**
		S	S	Consider ***MORPHINE SULFATE*** **0.1 mg/kg IV/IO for pain relief**
		S	S	If IV/IO access unavailable, administer ***MORPHINE SULFATE*** **0.1 mg/kg IM. May repeat until a maximum of 5 mg has been reached.**
S	S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less.**

WESTERN VIRGINIA E.M.S. COUNCIL

PEDIATRIC PROTOCOL: P-21

Multiple Trauma / Neurologic Injury

BLS	EN	I	PM	
S	S	S	S	Refer to **BT-1 General Trauma Management/Spinal Immobilization Protocol** as appropriate
S	S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less.**
S	S	S	S	**Transport** according to **A-12, Trauma Triage Patient Designation**
S	S	S	S	Consider patient age and weight when assessing mechanism of injury
S	S	S	S	Use equipment appropriate for age and size
S	S	S	S	Perform initial assessment, treat priority conditions. Initiate O2 therapy per protocol. **Anticipate copious secretions** and have suction available
S	S	S	S	Hyperventilate **if patient presents** with dilated pupil(s), unresponsiveness, hemiparesis, and/or posturing. Ventilate at a rate of 1 breath every 2 seconds
		S	S	If tension pneumothorax is suspected, perform **needle decompression** between **2nd and 3rd rib - midclavicular**
S	S	S	S	Fully immobilize spine. Apply padding to torso as needed to **maintain neutral positioning**. If necessary, apply padding to sides of patient to fill voids
S	S	S	S	Splint suspected extremity injuries using patient's body and immobilization device. **DO NOT** delay transport to apply other types of splints. Additional splinting may be performed en route if time permits
S	S	S	S	If signs of hypoperfusion present, refer to **P-7 Pediatric Hypoperfusion/Shock Protocol**
		S	S	**Monitor ECG, pulse oximetry, end tidal CO2, see O-4, Capnography**

WESTERN VIRGINIA E.M.S. COUNCIL

PEDIATRIC PROTOCOL: P-22

Traumatic Cardiac Arrest

BLS	EN	I	PM	
S	S	S	S	Establish **unresponsiveness** and **pulselessness.** If no pulse begin **CPR**
		S	S	Check **ECG** rhythm**.** Treat underlying ECG rhythm according to appropriate protocol
S	S	S	S	**Transport and notify hospital** ASAP with goal to limit on-scene time to **10 min. or less.**
S	S	S	S	Perform **advanced airway** procedures as certified. BLS providers should request ALS
S	S	S	S	Consider and treat **underlying causes**
	S	S	S	Perform **needle decompression** between **2nd and 3rd rib - midclavicular**
	S	S	S	Establish large bore **IV or IO** access **as appropriate**, during transport or entrapment. **DO NOT DELAY SCENE TIME**
	S	S	S	Administer **20ml/kg** fluid bolus, reassess. Repeat up to 2 times as needed

WESTERN VIRGINIA E.M.S. COUNCIL
A-1 - Drug Box Exchange / Procedure

1. EMS provider breaks seal and places seal in top tray of drug box.

2. EMS provider documents medications used on PPCR or patient reporting software and **a physician's signature shall be obtained** (including **DEA number in any and all cases where narcotics are used).** Boxes will be returned to the Emergency Department, if the signature of the physician or nurse is not legible and/or there is not a DEA number when needed.

3. EMS provider and E.D. nurse, physician, Pharmacist or Pharmacy Technician and/or other person as authorized, check used box to account for narcotics. Both assure that all trash and used needles have been removed from the box. The old seal should be left in the box and forwarded to the pharmacy. The nurse, physician, or authorized person will sign the appropriate space indicating that all narcotics have been accounted for.

4. E.D. nurse, physician, Pharmacist or Pharmacy Technician or authorized person issues a new box to the EMS provider, both complete the "Drug Box Exchange Log". The seal on the new box is not to be broken until needed on the scene of an emergency. Boxes on which seals have been broken must be returned to the E.D. or Pharmacy for exchange. A copy of a PPCR or patient reporting printout with an explanation of why the seal was broken must accompany the box.

5. Pharmacy will fill the box in accordance with the contents used from the box schematic. The pharmacy checks the box to assure all contents are present and in-date. The box is sealed with a blue numbered seal provided by the EMS Council. A hospital sticker indicating the date of the first drug to expire is to be placed on the outside of the box.

6. If a box is returned to the pharmacy with dirty needles or excessive litter and debris, the box will be held out of service and the EMS Council notified. The Council will in turn notify the agency and/or personnel responsible and they will be required to report to the hospital to correct the situation. Repeated occurrences by the same provider/agency may result in suspension or revocation of drug box privileges.

(continued)

A-1 - Drug Box Exchange / Procedure (continued)

7. Refilled boxes are returned to the E.D. or stored in the pharmacy for distribution. Each hospital is responsible to assure that the boxes are properly secured against tampering while at the hospital.

8. If an EMS provider opens a box and finds one or more medications missing he/she shall document such on the PPCR or patient reporting software and the EMS provider shall notify the EMS Council in writing of the discrepancy; noting the box number and seal number in the report. If the missing drug is a narcotic **refer to item # 11**. As long as the missing medication is not a narcotic, the box may be returned to service by the hospital pharmacy after restocking the box.

9. No item for item exchange may be made in the E.D. The box must be returned to the pharmacy to be checked, restocked, and resealed.

10. When narcotics are used on a call. The **ALS technician** will bring the unused portion to the E.D. The nurse, physician, or authorized person checking the box will record the amount remaining on the PPCR or patient reporting printout and sign his/her name. The person signing will then be responsible for proper disposal and accounting for the narcotic according to hospital policy.

11. In the event that medications are missing are missing from the box the following steps must be followed:

    A. If the seal is found to be broken during a routine drug inspection:

        1. Avoid handling the box.
        2. Contact local law enforcement. **(NARCOTICS ONLY)**
        3. Contact the agency Chief or Captain
        4. Contact the Western Virginia EMS Council
        5. Complete and file a drug diversion form with the Office of EMS **(see 12 VAC 5-31-520, D of the Virginia EMS Rules and Regulations)**
        6. Have drug box inspection forms ready for police, EMS Council, and Office of EMS personnel.

(continued)

A-1 - Drug Box Exchange / Procedure (continued)

B. If the seal is on the box and medications are missing while performing patient care or after arriving at the hospital:

1. Continue patient care, you may continue to utilize the contents of the box.
2. If the medication needed is not present consider requesting another unit to meet en route, DO NOT DELAY TRANSPORT.
3. Upon arrival at the hospital notify the E.D. Nursing Supervisor of the problem.
4. Follow the procedures listed in **11-A, above**.
5. The box must be secured in the hospital and may be released only after being notified by the EMS Council.

C. In all cases you will be asked to write a report stating the events surrounding the incident. It should include the box number, seal number, witnesses and a description of what occurred.

D. Depending on the individual circumstances, the Operational Medical Director of the agency or the Regional Medical Director may suspend the agency's authorization to administer drugs in the pre-hospital setting pending outcome of a formal investigation by law enforcement or the Office of EMS and may require implementation of additional security measures at the agency(s) expense.

WESTERN VIRGINIA E.M.S. COUNCIL
A-2 - Drug Box Content Listing

DRUG	PACKAGE	QUANTITY
Adenosine	6 mg inj.*	3
Amiodarone	150 mg inj.*	3
Atropine	1 mg prefill	6
Dextrose 25%	2.5 gram prefill	1
Diazepam	10 mg inj.*	2
Diphenhydramine	50 mg inj.*	1
Dopamine	800 mg/500 ml premixed bag	1
Epinephrine 1:1,000	30 inj.*	1
Epinephrine 1:10,000	10 ml prefill	1
Furosemide	40 mg inj.*	2
Haloperidol	5 mg inj.*	2
Lidocaine	100 mg prefill	4
2% Lidocaine Jelly	5 ml tube	1
Magnesium	1 gram inj.*	2
Methylprednisolone	125 mg inj.*	1
Morphine Sulfate	10 mg inj.*	2
Naloxone	4 mg inj.*	1
Normal Saline	10 ml inj.*	2
Normal Saline	50 ml bag	1
0.05% Oxymetazoline	15 ml spray	1
Promethazine	25 mg inj.*	1
Sodium Bicarbonate	50 mEq prefill	3

Description	Quantity
IV additive labels	2
60 gtt set	1
3 way stop cock	1
Carpuject Delivery Device	1

STAT Drug Pack

DRUG	PACKAGE	QUANTITY
Albuterol	0.083% cartridge	3
Baby Aspirin	81 mg tablet	2 minimum
Dextrose 50%	25 gram prefill	2
Epinephrine pen	0.3 mg autoinjector	2
Epinephrine pen	0.15 mg autoinjector	1
Glucagon	1 mg kit	1
Nitroglycerin	0.4 mg SL tablets	1 bottle
Disposable Nebulizer Kit		1

**** inj. may be an ampule, vial, prefilled syringe or carpuject device***

Nitroglycerin *is to be sealed with a tamper seal once the seal is broken the pharmacy is to remove the bottle from the box.*

WESTERN VIRGINIA E.M.S. COUNCIL
A-3 - Drug Box Schematic

Top Shelf

Adenosine 6 mg vial (3) **Magnesium** 1 gram vial (2) **Amiodarone** 150 mg vial (3)	**Diphenhydramine** 50 mg vial **Methylprednisolone** 125 mg vial **Normal Saline** 10 ml vials (2)	**Furosemide** 40 mg vial (2) **Epinephrine** **1:1,000** 30 ml vial
2% Lidocaine Jelly 5 ml tube	**0.05% Oxymetazoline** 15 ml spray	**3 way stop cock**

Middle Shelf

Promethazine 25 mg vial (2)	**Haloperidol** 5 mg vial (2)	**Naloxone** 4 mg vial	**Diazepam** 10 mg vial (2)	**Morphine** 10 mg vial (2)

Bottom

Dopamine 800 mg/500 ml premixed bag **Sodium Bicarbonate** 50 mEq prefill (3) **Normal Saline** 50 ml bag **60 gtt drip set (1)**	**Atropine** 1 mg prefill (6) **Epinephrine 1:10,000** 1 mg prefill **Lidocaine** 100 mg prefill (4) **Dextrose 25%** 2.5 gram prefill

WESTERN VIRGINIA E.M.S. COUNCIL
A-4 - Airway Management

1. Follow the steps outlined in **BG-2 Airway Management Protocol** to immediately establish an airway on all patients.

2. If the above measures prove to be **inadequate, or there is risk of vomiting with aspiration, or the patient is unconscious,** perform endotracheal intubation or insert A Non-Visualized Airway as certified if indicated. The guidelines for intubation are:

    a. Orotracheal intubation is the preferred technique

    b. Non-Visualized Airway placement is to be utilized per the manufacturers guidelines in patients whom an endotracheal tube cannot be placed or in cases where the provider is not certified to intubate.

    c. Adequately pre-oxygenate before **ANY AND EVERY** attempt at an airway placement.

    d. If unable to intubate (within 30 seconds) after two attempts, place a Non-Visualized Airway and attempt endotracheal intubation around the NVA. **Never use a Combitube if patient has a known history of latex allergy.** Continue to ventilate patient through NVA if unable to ventilate.

    e. Ventilate patient with 100% O2 via BVM.

    f. **ALWAYS** confirm airway placement by two of the following methods:

        1. **Adequate chest wall movement** with auscultation of equal, bilateral breath sounds, and absence of epigastric sounds.

        2. Use of end-tidal CO2 detector and or esophageal detector device.

        3. Use of Capnography with positive waveform indicating intubation.

CAUTION: End-Tidal CO2 detectors may be unreliable in cases of cardiac arrest or pulmonary embolism.

WESTERN VIRGINIA E.M.S. COUNCIL
A-5 Oxygen Therapy

The amount of oxygen administered should be based on clinical evaluation of the patient, i.e. respiratory rate and depth, skin color and temperature, capillary refill, level of consciousness, lung sounds and history of present illness or mechanism of injury.

Oxygen should be delivered in a manner that maintains **oxygen saturation (SaO2) levels of at least 92%**. If pulse oximetry is not available, oxygen should be delivered using a non-rebreather mask at 15 lpm.

There are no absolute contraindications to oxygen administration. However it should be used with **CAUTION** with patients who are likely to have a hypoxic drive, i.e. emphysema and chronic bronchitis patient on continual home oxygen. In such cases, oxygen should be delivered in a manner that maintains **oxygen saturation (SaO2) levels of at least 92%**

For patients on home oxygen, continue their home oxygen delivery level **EXCEPT** in patients with signs of shock, cardiovascular or respiratory complaints. **If pulse oximetry is not available,** oxygen should be delivered to the potential **hypoxic drive patient at 1 to 3 lpm via nasal cannula.** Increased oxygen delivery may result in respiratory depression; be prepared to assist ventilation with a bag-valve-mask device. The decision to increase oxygen flow above the previous listed recommendations must be based on careful overall patient evaluation and assessment.

The following devices are commonly used in the pre-hospital setting:

Nasal Cannula

1 lpm	24%	4 lpm	36%
2 lpm	28%	5 lpm	40%
3 lpm	32%	6 lpm	44%

Non-rebreather mask

10 – 15 lpm	80% - 100%

WESTERN VIRGINIA E.M.S. COUNCIL
A-6 Application of Tourniquet

1. Tourniquets should only be used as a last resort to control bleeding on extremity injuries.

2. The following precautions shall be followed when using a tourniquet:

    a. Use a wide bandage and secure tightly. Commercial tourniquets or blood pressure cuffs are preferred. If blood pressure cuff is used assure cuff remains inflated.

    b. **NEVER** use wire, rope, belts, or any other materials that may cut into the underlying tissues.

    c. **DO NOT** remove or loosen tourniquet once it is applied unless directed by medical control.

    d. **ALWAYS** leave tourniquet in open view.

    e. **DO NOT** apply a tourniquet directly over any joint, but remain as close to the injury as possible.

3. Place a rolled pad under the tourniquet and over the main artery of the extremity.

4. If not using a commercial tourniquet or blood pressure cuff, utilize the following:

    a. Use a bandage four inches wide and six to eight layers deep.

    b. Wrap bandage around extremity twice.

    c. Tie one knot in the bandage and place a stick or rod on top of the knot, then tie the ends of the bandage over the stick in a square knot.

    d. Twist the stick until bleeding stops – **NO FURTHER**

    e. Once the bleeding has stopped, secure the stick or rod in place.

5. Tighten any tourniquet **ONLY** to the point where bleeding is controlled.

6. Notify other emergency personnel who may care for the patient that a tourniquet has been applied.

7. Document the use of a tourniquet and the time applied. In addition, note the time and location directly on the patients forehead.

WESTERN VIRGINIA E.M.S. COUNCIL
A-7 Determination of Non-Viability

1. To determine the non-viability of a patient, the following action steps are to be performed by 2 EMS certified providers.

   a. Visual/physical inspection of the body (mortal injury and obvious death)

      1. Decapitation
      2. Transection of chest and/or abdomen
      3. Rigor mortis (not applicable in the hypothermic patient)
      4. Decomposition of the body
      5. Lividity (not applicable in the hypothermic patient)
      6. Charring of the body
      7. Extensive head trauma
      8. Chest injury/trauma indicative of mortal injury
      9. Other bodily disfigurement indicative of mortal injury

   AND

   b. Physical assessment of patient to include evaluation of the airway, breathing, and circulatory status (absent) and auscultation of breath and heart sounds (absent). ECG monitoring should not be used to determine non-viability.

2. Patient(s) on crime scene incidents are to be evaluated as indicated above with EMS providers being sensitive to evidence on or around the patient. **Providing complete and thorough documentation is essential if any area or item within the crime scene is disturbed during this process.**

3. EMS Durable Do Not Resuscitate (DNR) document in place

4. Online medical direction is received. This may include online medical direction from the patients physician.

5. Rigor mortis and lividity are not to be used as a guideline for determining non-viability in hypothermic patients.

6. If none of the above conditions can be determined, resuscitative measures are to be initiated and carried out in accordance with the appropriate protocol.

WESTERN VIRGINIA E.M.S. COUNCIL
A-8 External Cardiac Pacing

The following guidelines are general in nature due to the differences between the manufacturers of external cardiac pacing equipment.

1. Follow the attachment guidelines for pads and leads as indicated by the manufacturer.

2. Set rate for capture at 80 minute.

3. Slowly adjust amperage controls until electrical capture occurs.

4. Reassess patient's clinical status; pulse, LOC, BP, skin color/temp, capillary refill, etc.

5. Rate may be adjusted up to 100/min. in increments of 5/min. to achieve a positive change in the patient's clinical status.

6. At the discretion of the Online Medical Control Physician, consider the use of ***DIAZEPAM*** in a conscious patient if clinical status allows.

WESTERN VIRGINIA E.M.S. COUNCIL
A-9 Intravenous Therapy

1. **Indications for pre-hospital IV placement include:**

    a. Site of entry for IV drugs that are indicated or anticipated.

    b. Fluid replacement in:

        1. Dehydration
        2. Hemorrhage
        3. Burns

2. **Catheter size:**

    a. Small-bore catheters (18 gauge or smaller) should be used for:

        1. “Drug-only” infusion ports
        2. ”KVO” access in patients with fluid restrictions

    b. Large-bore catheters (14 or 16 gauge) should be used for:

        1. Fluid replacement, i.e. trauma, GI bleed, etc.
        2. Cardiac arrest resuscitation

3. **Administration sets:**

    a. Saline locks should be used for:

        1. “Drug-only” infusion ports
        2. ”KVO” access in patients with fluid restrictions

    b. 10, 12, 15, and 20 drop/ml sets (macro-drip) should be used for:

        1. Fluid replacement
        2. When a potential need for fluid replacement exists, as in trauma
        3. Cardiac arrest resuscitation
        4. Hypoglycemic patients

(continued)

A-9 Intravenous Therapy (continued)

4. **Pediatric IV:**

   a. Only 60 drop/ml sets (micro-drip or mini-drip) should be used.

   b. IV's should flow at a KVO rate unless otherwise specified by specific protocol or online medical control. **Carefully monitor the IV flow rate to avoid fluid overload.**

   c. No greater than a 250 ml bag of normal saline should be used in children three years old and under.

5. **General:**

   a. IV placement as a general rule should be initiated during transport.

   b. Exceptions include:

      1. Delayed extrication of trauma patient(s)
      2. Cardiac arrest
      3. Hypoglycemia
      4. Unstable patient who needs immediate pharmacological or Electrical therapy

   c. IV fluid used should be NORMAL SALINE 0.9%

   d. Aseptic technique should always be observed. If circumstances dictate that aseptic technique cannot be used (in extreme situations), the receiving hospital should be informed in order that they may replace the IV as early as possible to reduce the chance of infection.

   e. Apply dressing to the IV site (Band-Aid, op-site, etc.). Secure IV line in place utilizing one or more stress loops.

6. **Transport**

   a. EMT's may perform transport of patients who have a IV line in place prior to the providers arrival. In this situation the EMT should monitor the line and contact the facility of origin or medical direction for questions or concerns.

WESTERN VIRGINIA E.M.S. COUNCIL
A-10 Medical Communication

EMS personnel are to provide pre-arrival notification to their inbound hospital under any of the following circumstances to the best of their ability:

1. Moderate to critically ill or injured patients in need of advanced life support (ALS) care or treatment advice.

2. Moderate to critically ill/injured patients that may require immediate medical attention upon arrival at medical facility (AIC judgment).

3. An incident requiring transport of multiple patients to a single medical facility. Example: vehicle accidents, fires, etc.

4. When the inbound facility has made a prior request to be notified of all or specific types of patients being transported to their facility.

5. On-line medical control should be established as soon as possible without delaying **critical** patient care. Medical control should be established at some point on a call requiring any **treatment** outlined in these protocols. Providers **are not required** to wait until they have competed standing orders to contact on-line Medical Control. Providers should contact Medical Control whenever advice, confirmation, or direction is needed.

6. Online medical control should be established with the receiving facility physician only. Request that the physician be brought to the radio prior to requesting treatment and medication orders as the information relayed may be a deviation from your report.

WESTERN VIRGINIA E.M.S. COUNCIL
A-11 Relaying of Patient Information

1. Patient's full name, DOB, and/or social security number ***MAY*** be relayed to the receiving hospital under any of the following circumstances:

    a. If there is a medical benefit in obtaining patient records for field treatment. (Example: Cardiac arrest, chest pain, unresponsive patient, etc)

    b. If there is a medical benefit in obtaining patient's records for the continued care of the patient on arrival at the receiving facility. (Example: Cardiac arrest, chest pain, unresponsive patient, etc)

    c. Patient gives permission for the information to be relayed.

2. Patient's full name, DOB, and/or social security number are ***NOT*** to be relayed to the receiving facility under the following circumstances:

    a. Domestic related violence (i.e., shooting, stabbing, assault, etc.)

    b. Suicide attempt, regardless of method.

    c. Patients suffering from other related trauma or medical conditions where there is **no** medical benefit from the relaying of such information.

    d. When permission has not been obtained from the patient.

    e. Sexual assault.

    f. The patient is a minor.

3. Care and caution should always be exercised when relaying patient information, especially if it is being done on a communication device that can be monitored such as a radio.

WESTERN VIRGINIA E.M.S. COUNCIL
A-12 Trauma Triage Patient Designation

Patients meeting <u>any</u> of the following criteria should be transported to a **Level I** or **Level II Trauma Center** according to the specific guidelines outlined in the **WVEMS Regional Trauma Triage Plan.** Please consult the plan for your response area. Note that in some cases, the plan calls for transfer to the closest hospital, and then for interfacility transfer to an appropriate trauma center.

Pre-Hospital Trauma Center Transfer Criteria

Adult Patient	Pediatric Patient
Airway Assisted Ventilation Partial or complete airway obstruction Unable to establish or maintain an airway	**Airway** Requires constant observation for patency O2 administration or assisted ventilation Partial or complete airway obstruction Intubation
Central Nervous System Unconscious/Unresponsive greater than 5 minutes Does not follow commands Unable to move extremities	**Central Nervous System** Unconscious/Unresponsive greater than 5 minutes Not moving extremities
Hemodynamics Systolic pressure less than 90 with signs and symptoms of shock Pulse greater than 120 with signs and symptoms of shock Uncontrolled bleeding	**Hemodynamics** less than 10 kg – systolic less than 50 10 – 20 kg – systolic less than 70 greater than 20 kg – systolic less than 90 Poor Peripheral pulses Poor perfusion Uncontrolled bleeding
Penetrating Injury (such as stab wound, gunshot, or impalement) Head Neck Chest, Abdomen Extremities with uncontrolled bleeding and/or loss of pulse Amputation above knee or elbow	**Penetrating Injury** Head Neck Chest, Abdomen Extremities with uncontrolled bleeding and/or loss of pulse Amputation above knee or elbow
Trauma in Pregnancy	

Patients with CPR initiated at the scene should be transported to the closest hospital.

WESTERN VIRGINIA E.M.S. COUNCIL
A-13 Medical Release / Refusal

Any competent adult may refuse medical care and/or transportation for any reason as long as he/she is in fact mentally competent and has been fully informed of the circumstances surrounding their illness or injury. A mentally competent patient is considered to be alert and oriented to person, place, time, and event or situation. Suicidal patients should not be considered as being mentally competent.

When an adult refuses treatment, perform the following procedures.

Perform as thorough an assessment as possible and allowed by the patient. Completely inform the patient of their medical condition. Indicate what treatment are necessary and possible problems or complication that may occur from refusing care within the scope of your training. Document assessment findings and indications that the patient understands and is competent to refuse care.

Encourage the patient to grant consent for treatment and transportation to the hospital

Do not force assistance on a mentally competent patient

Always have at least one witness present. Obtain written release. It is preferable to have a neutral party witness the signing of the release.

Any pregnant patient regardless of age is considered to be an adult.

Any patient displaying documents from a recognized court system that indicates the patient is an emancipated minor is considered to be an adult; should be accompanied by photo identification.

Any patient who is age 14 or older is considered to be an adult unless they are in the care and company of a parent or legal guardian who are competent (i.e., school official, law enforcement, etc.)

(continued)

A-13 Medical Release / Refusal (continued)

If there is any doubt in regards to a patient's mental capacity or the patient is a minor, perform the following:

a. If an emergency medical condition exists, initiate treatment under implied consent when informed consent cannot be quickly obtained from another appropriate party.

b. A reasonable form of restraint may be used **ONLY if necessary** and when there is implied consent. Restraint should only be used when the patient is a threat to themselves or others. Restraint should not exceed that reasonably necessary. If the patient is combative reasonable care should be used. Whenever possible, law enforcement personnel should be utilized to assist. Document what indications lead to your determination of incompetence. **ALS providers may refer to AM-14 Agitated/Violent Patient Protocol.**

c. If a parent refuses medical care for a child, follow the same steps outlined above for competent adults. If you believe that the child has a life threatening condition, local law enforcement or social services officials should be contacted immediately. Consultation between the EMS provider, Medical Control and the appropriate authorities may allow the authorities to take the child into protective custody.

Document verbatim what you told the patient relative to specific risks and potential complications that could result from refusing care and transportation. Include measurement indicators used to assess the patient's mental competency and ability to understand.

In certain situations where the provider is in doubt or concerned regarding the patients condition or assistance is needed in making a rational medical decision the provider should always err on the side of the patient. The provider should contact online medical direction for guidance. While the physician is not there they may be able to assist in the decision making process by your assessment findings and description of the current conditions and/or situation.

WESTERN VIRGINIA E.M.S. COUNCIL

A-14 Termination of Resuscitation Efforts (For Patients WITHOUT DNR Orders)

The following provides a guideline for pre-hospital providers and on-line Medical Control physicians to follow in the termination of “out-of-hospital” resuscitation efforts in the absence of valid Durable Do Not Resuscitate orders. **TERMINATION OF RESUSCITATION EFFORTS IS AN ON-LINE MEDICAL CONTROL DECISION ONLY**

1. In situations where an adult patient is in **medical cardiac arrest refractory to full ACLS intervention,** the on-line Medical Control physician may, at their discretion, direct pre-hospital providers to cease resuscitation efforts where continued treatment and transportation of the patient appears futile.

    a. Consider the emotional needs of those present when considering termination efforts. Termination of resuscitation may not be appropriate in all circumstances.

    b. Provide appropriate BLS and/or ALS care.

    c. Contact on-line Medical Control

    d. Provide a complete report of patient’s history, condition, and treatment

    e. Follow any additional courses of treatment as directed by on-line Medical Control.

2. If on-line Medical Control directs the termination of resuscitation efforts:

    a. If resuscitation efforts are terminated on the scene, the pre-hospital provider should document the time and on-line physician name on the PPCR or patient reporting software.

    b. Follow local protocols/SOP/SOG concerning the notification of law enforcement and/or Medical Examiner. Remain on the scene until the proper authorities arrive.

    c. Document patient’s history, condition and treatment on the PPCR or patient reporting software.

    d. Proceed to the on-line Medical Control hospital and exchange the drug box.

    e. The PPCR and or patient reporting printout should be signed by the on-line Medical Control physician at the earliest opportunity.

WESTERN VIRGINIA E.M.S. COUNCIL
A-15 Cincinnati Pre-Hospital Stroke Scale

1. Rapid recognition, transport, and alerting the receiving emergency department that you have a potential stroke (CVA) patient enables the receiving facility to utilize the most effective diagnostic and treatment tools available and possibly reduce or eliminate the devastation of a stroke. If a stroke is suspected, perform the **CINCINNATI PRE-HOSPITAL STROKE SCALE** evaluation.

2. The **CINCINNATI PRE-HOSPITAL STROKE SCALE** should not be used on:

    a. Patients that are victims of multiple trauma (i.e., car accidents, assaults, gun shot wounds, etc.)

    b. Patients that have isolated minor injuries (i.e., twisted ankles, sore throats, toothaches, simple lacerations, etc.)

    c. Critically ill (i.e., systolic BP less than 80, intubated patients, etc.)

3. Have the patient perform the following three activities. Transport and notify the Hospital **immediately** if the patient scores **ABNORMAL** in <u>**ANY**</u> one activity:

    a. **Facial Droop** (ask the patient to show teeth or smile)

        Normal (both sides move equally well)
        Abnormal (one side of the face doesn't move as well as the other)

    b. **Arm Drift** (ask the patient to hold their arms straight forward and away from the body at 90 degrees to the torso)

        Normal (both arms move the same **OR** both arms don't move at all)
        Abnormal (one arm doesn't move **OR** one arm drifts down independent Of the other)

    c. **Speech** (ask the patient to say "you can't teach an old dog new tricks")

        Normal (patient says correct words with no slurring noted)
        Abnormal (patient slurs words, says the wrong words, or can't speak)

WESTERN VIRGINIA E.M.S. COUNCIL
A-16 Verification of On Scene Medical Personnel

1. EMS personnel will accept an order only from a physician with a license to practice medicine in the Commonwealth of Virginia. Other health care professionals, i.e. nurses, medical technicians, etc. have no role in providing medical control.

2. EMS personnel may accept written orders from a physician transferring a patient from one medical facility to another if the orders are appropriate and within the scope of these protocols.

3. When not in a medical facility, and not known by the providers, the individual must provide identification verifying that he/she is a physician and willing to provide medical control to the providers.

4. The EMS provider will ask the physician to sign the PPCR or patient reporting printout. At the EMS provider's discretion he/she will ask the physician to accompany the patient in the ambulance, to the hospital. If the physician agrees and the orders are within the scope of these protocols, the EMS provider should follow them.

5. If the on scene physician refuses the procedures outlined in step 4 or orders Supplied are inappropriate, the following steps shall be taken:

   a. Immediately contact Medical Control

   b. Advise the on scene physician that you are operating under the direction of a Medical Control physician and ask him/her to speak with the online physician. If radio communications are not available, contact must be made by phone.

   c. The Medical Control physician may ask the on scene physician to provide an ID proving that he/she is licensed to practice medicine in the Commonwealth of Virginia.

   d. The on scene physician will be granted or denied permission to treat the patient by the Medical Control physician.

   e. The EMS personnel shall continue treating the patient with the assistance of the on scene physician if permission is granted.

   f. If permission is denied, inform the physician that the Online Medical Control physician is assuming the responsibility for patient care.

WESTERN VIRGINIA E.M.S. COUNCIL
A-17 - Exposure Procedures

This guideline is written as a reference on how to manage exposure to infectious/communicable diseases. If your agency has a plan in place, please follow your agency recommendations and requirements.

1. As soon as possible, wash exposed area with soap and water. First Aid treatment as necessary.
2. If wound is not life threatening to injured individual, do not delay care of your patient.
3. As soon as possible after exposure, and upon arrival at the hospital, notify your agency Infection Control Officer.
4. Inform the hospital emergency department "Charge Nurse" of the exposure to insure that the "Source Patient" blood is drawn and sent for laboratory testing.
5. Do not seek medical treatment in the hospital unless the injury requires such treatment or the Infection Control Officer and Emergency Department Physician feels that treatment necessary.
6. The exposed individual should be sent to an agency approved physician for baseline examination and/or baseline blood samples within 24 hours of the exposure.
7. The laboratory results of the "Source Patient" shall be communicated to the Agency Infection Control Officer and the exposed individual within 24 hours to determine if any additional treatments are required.

My agency Infection Control Officer is:

______________________________ **(Name)**

______________________________ **(Contact Number)**

WESTERN VIRGINIA E.M.S. COUNCIL

A-18 - Quality Management

Per **12 VAC 5-31-600** each agency in the Commonwealth of Virginia shall have a quality management system in place. In that regulation it is noted that an agency shall maintain a QM report that documents quarterly PPCR or Patient Care report reviews that are supervised by the Operational Medical Director.

In an effort to continue to keep the protocols up to date and to bring the latest in pre-hospital medicine to the providers of the region, the EMS Council will, from time to time request certain information from each agency. The EMS Council intends to compile this information to determine the effectiveness of field interventions and look for areas in which we may improve, lessen restrictions, or re-evaluate specific protocols to ensure appropriate care for those who request the services of EMS.

Periodically agencies or specific providers may be asked to participate in trial uses of potential protocols for evaluation purposes. In such a case the PPCR or Patient Care report must be submitted to the EMS Council and a mandatory survey or questionnaire may accompany the privilege of participation.

WESTERN VIRGINIA E.M.S. COUNCIL
O-1 - Transtracheal Jet Insufflation

TJI is appropriate when airway control is needed and endotracheal intubation cannot readily be accomplished. This includes patients unconscious or semi-conscious secondary to trauma (with the possibility of C-spine fracture), teeth clamped shut in trismus or with seizures, laryngospasm, facial trauma, active bleeding, excessive vomitus, etc.

PROCEDURE

1. Stabilize and clean the trachea and locate the cricothyroid membrane.

2. Puncture the cricothyroid membrane in the middle with a 12 or 14 gauge angiocath attached to a 10 ml syringe containing 2-3 ml of sterile saline. May also use an FDA approved pre-manufactured device.

3. Aspirate after the needle is advanced about halfway into the trachea (aspiration of air confirms correct position)

4. Advance the catheter caudally until the hub rests on the skin.

5. Attach the insufflator to the hub and ventilate by depressing the trigger until the chest rises (approximately 1 second for ventilation and 4 seconds for exhalation)

    a. Bag-valve resuscitators and commercial demand valves should not be utilized. Only FDA approved insufflation devices should be used.

6. Observe chest rise and fall and auscultate for breath sounds

7. Airway resistance can be increased if necessary by placing the second hand lightly over the nose and mouth during ventilation.

8. Advanced airway management may be performed with the catheter in place.

WESTERN VIRGINIA E.M.S. COUNCIL
O-2 - C.P.A.P.

This procedure is designed to assist the conscious patient that is in severe respiratory distress.

Indications: Respiratory distress associated with suspected pulmonary edema, asthma C.O.P.D. (Emphysema, Chronic Bronchitis), with an oxygen saturation of Less than 90% while receiving oxygen via non-rebreather.

Contraindications: Altered mental status, hypoventilation, upper airway or facial trauma open stoma or tracheostomy, severe cardiopulmonary instability, pulmonary edema other than CHF, systolic pressure less than 100.

PROCEDURE

1. Assess patient needs and initiate high flow oxygen as needed.

2. Monitor pulse oximetry and end-tidal CO2.

3. Apply C.P.A.P. if indicated:

    a. Connect C.P.A.P. device to suitable oxygen supply.

    b. Attach breathing circuit to C.P.A.P. device and ensure device is functioning appropriately.

    c. Apply and secure proper size breathing circuit mask to patient, ensuring proper seal is obtained and maintained.

    d. Titrate until positive patient conditions are displayed and increase in pulse oximetry in noted.

4. Reassess patient

5. Follow appropriate protocol based on underlying condition i.e., asthma, CHF, COPD

WESTERN VIRGINIA E.M.S. COUNCIL
O-3 - Melker Airway®

This procedure is for establishing an emergency airway when conventional methods have been unsuccessful or are not possible.

Indications: Airway obstruction, severe upper airway or facial trauma, 2 failed intubation attempts.

Contraindications: Patient less than 4 years of age, ability to successfully intubate, ability to effectively use airway adjunct and BVM device, inability to definitively identify the appropriate anatomical structures.

PROCEDURE

1. Identify the cricothyroid membrane between the cricoid and thyroid cartilages.

2. Cleanse the area of insertion with an alcohol prep or iodine solution.

3. Carefully palpate the area of insertion and manually stabilize the cartilage. Make a one inch vertical incision, midline, using a #15 short handle scalpel blade.

4. Attach the 6cc syringe to the 18 gauge TFE catheter and advance it through the incision caudally at a 45 degree angle.

5. Aspirate for air

6. Remove the syringe and needle leaving the catheter in place

7. Feed the wire guide through the catheter and into the airway approximately one inch.

8. Remove the catheter and leave the guide wire in place.

9. Advance the dilator, tapered end first, into the connector end of the airway until the handle stops against the connector.

10. Advance the emergency airway access assembly over the wire guide with a reciprocating motion and completely into the trachea.

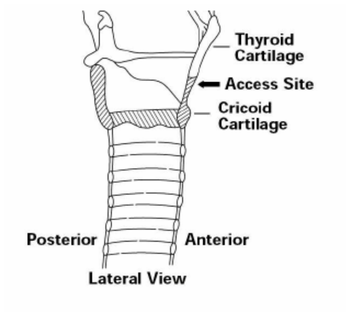
11. Remove the wire guide and dilator simultaneously.

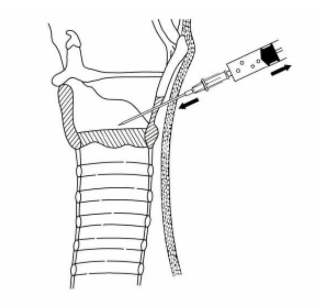
12. Secure the emergency airway catheter in place with the tracheostomy tape strip.

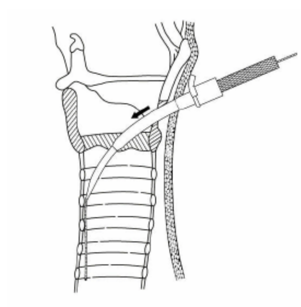
13. Connect the catheter to the appropriate ventilatory device and ventilate per protocol.

(continued)

O-3 - Melker Airway® (continued)







WESTERN VIRGINIA E.M.S. COUNCIL
O-4 - Capnography

The purpose of this procedure is to confirm placement and effectiveness of advanced airway procedures, also, it should be utilized to identify the underlying cause of respiratory distress in patients with a pulse.

Indications: Any patient with a respiratory complaint or history, any patient receiving advanced airway procedures.

Contraindications: None

PROCEDURE

Intubated Patients:

1. Confirm tube placement using traditional methods outlined per the protocol for the device used, to include secondary confirmation device.

2. Attach the Capnography tube device to the advanced airway port.

3. Observe waveform and numerical values present after 6 respiratory exchanges have occurred.

Non-Intubated Patients:

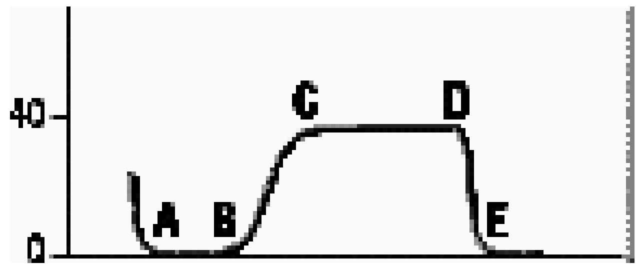
1. Patient should be assessed and respiratory needs addressed.

2. Apply the sampling device as appropriate per the manufacturer's guidelines.

3. Observe the waveform and numerical values present after 6 respiratory exchanges have occurred.

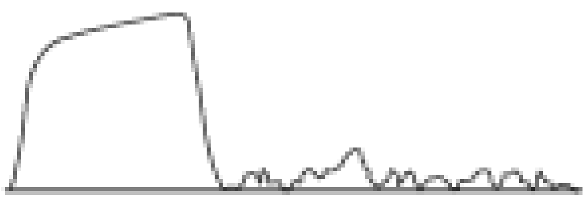
(continued)

The diagram below shows the shape of a normal capnogram.



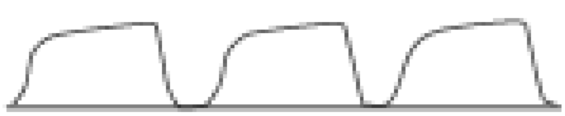
A-B: A near zero baseline – Exhalation of CO2 free gas contained in dead space.
B-C: Rapid, sharp rise—Exhalation of mixed dead space and alveolar gas.
C-D: Alveolar plateau—Exhalation of mostly alveolar gas.
D: End-tidal value— Peak CO2 concentration—normally at the end of exhalation.
D-E: Rapid, sharp downstroke—Inhalation

Sudden loss of EtCO2 to zero or near zero



Possible causes:
Airway disconnection
Dislodged ET tube/esophageal intubation
Totally obstructed/kinked ET tube
Complete ventilator malfunction

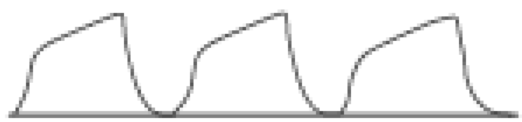
Sustained low EtCO2 with good alveolar plateau



Possible causes:
Hyperventilation
Hypothermia
Sedation, anesthesia
Dead space ventilation

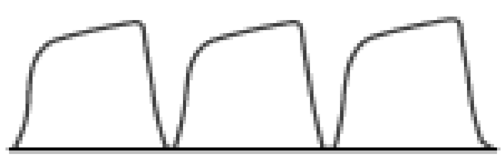
(continued)

Sustained low EtCO2 without alveolar plateau



Possible causes:
Incomplete exhalation
Partially kinked ET tube
Brochospasm
Mucous plugging
Poor sampling techniques

Elevated EtCO2 with good alveolar plateau



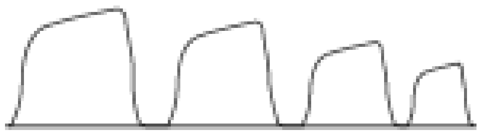
Possible causes:
Inadequate minute ventilation/hypoventilation
Respiratory-depressant drugs
Hyperthermia, pain, shivering

Gradually increasing EtCO2

Possible causes:
Hypoventilation
Rising body temperature/malignant hyperthermia
Increased metabolism
Partial airway obstruction
Absorption of CO2 from exogenous source

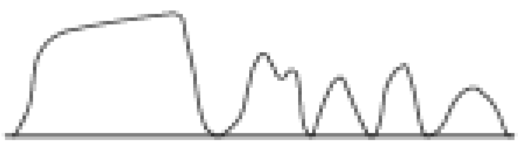
(continued)

Exponential decrease in EtCO2



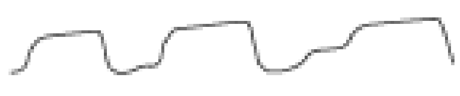
Possible causes:
Cardiopulmonary arrest
Pulmonary embolism
Sudden hypotension; massive blood loss
Cardiopulmonary bypass

Sudden decrease in EtCO2 to a low non-zero value



Possible Causes:
Leak in the airway system
ET tube in hypopharynx
Poorly fitting anesthetic mask
Partial airway obstruction
Partial disconnect from ventilator circuit

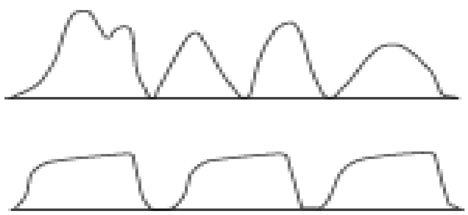
Rise in baseline and EtCO2



Possible causes:
Defective exhalation valve
Rebreathing of previously exhaled CO2
Exhausted CO2 absorber

(continued)

Spontaneous breathing during mechanical ventilation



Spontaneous breathing efforts may be evident on the CO2 waveform display. The patient on the top demonstrates poorer quality spontaneous breathing effort than the patient on the bottom.

WESTERN VIRGINIA E.M.S. COUNCIL
O-5 - External Jugular Cannulation

External jugular Cannulation is appropriate in the critical patient who needs IV access and in whom no suitable peripheral vein is found or when attempts at peripheral IV access have been unsuccessful.

The external jugular vein runs in a line from the angle of the jaw to the junction of the medial and middle third of the clavicle. Pressing on the vein just above the clavicle will make it more prominent.

PROCEDURE

1. Place the patient in a supine position, preferably head down, to distend the vein and to prevent air embolism.

2. If C-spine injury is not suspected, turn the patient's head to the opposite side. If C-spine precautions are necessary; manually stabilize the head in a neutral position during the procedure.

3. Clean the site and align the angiocath with the vein, pointing the needle at the junction of the medial and middle thirds of the clavicle.

4. Press on the vein just above the clavicle to make it more prominent and insert the angiocath at the mid-portion of the vein, cannulating in the usual manner.

5. Once the needle is removed from the angiocath, quickly attach the IV tubing to prevent the introduction of an air embolism.

6. Tape the IV tubing securely. Cervical collars can be placed over the IV site if C-spine immobilization is necessary.

WESTERN VIRGINIA E.M.S. COUNCIL
O-6 - Intraosseous Infusion

Personnel who have been trained and certified in the use of intraosseous infusion may perform the procedure under the following conditions:

1. Patient Selection

    a. Patient 6 years of age or less unless otherwise specified by online Medical Control.

    b. Patient unstable and in critical or impending critical condition.

    c. Patient has no immediate IV route available.

2. Procedure

    a. Only the medial tibial site will be utilized by field personnel.

    b. The Jamshidi bone marrow needle will be utilized.

    c. Procedure shall follow in accordance with established training guidelines set by the Regional Medical Directorate.

WESTERN VIRGINIA E.M.S. COUNCIL
O-7 - EZ I.O.®

The EZ-IO Intraosseous device is an alternative to the Jamshidi bone marrow needle that requires additional training and specific approval of the agency OMD. The EZ-IO Intraosseous Device may be inserted in either the tibia or the humerous and may be utilized on adult as well as pediatric patients.

1. Patient Selection/Indications

    a. Cardiac arrest, medical or traumatic

    b. Profound hypovolemia with alteration of mental status

    c. Major thermal burns

    d. Multi-system trauma

    e. Any other patient requiring immediate volume, blood, and/or medication administration in which adequate peripheral access attempts (including external jugular vein, when accessible) have been unsuccessful and where further delay will likely result in further patient decompensation or demise.

2. Contraindications

    a. General

        1. Adequate IV and or IO access already in place.
        2. Inability to locate landmarks due to significant edema or obesity.
        3. Peripheral arterial and or peripheral vascular disease

    b. Site Specific

        1. Previous orthopedic procedures
        2. IO insertion within previous 24 hours
        3. Bone fracture
        4. Tumor, infection, or soft tissue injury
        5. Tibia insertion site shall not be utilized in the presence of a knee replacement

(continued)

O-7 - EZ I.O.® (continued)

PROCEDURE

1. Locate the proper site for EX-IO insertion; Adult tibial, adult humeral or pediatric tibial.

2. Prepare the area of insertion by cleaning with an alcohol prep or iodine solution

3. Prepare the EZ-IO driver and needle set

    a. Open the EZ-IO case

    b. Remove the driver and one EZ-IO cartridge

    c. Open the EZ-IO cartridge and attach the needle set to the driver

    d. Remove the needle set from the cartridge

    e. Remove the safety cap from the needle set.

4. Begin insertion of the EZ-IO needle set. Position the driver at 90 degrees to the insertion site and power the needle set through the skin until you feel the tip encounter bone.

5. Continue to insert the EZ-IO applying firm and steady pressure. Stop when the needle flange touches the skin or a sudden decrease in resistance is felt.

6. Remove the driver from the needle set and return it to the case.

7. Remove the stylet from the catheter and dispose of in an approved sharps container.

8. Confirm proper placement by at least one of the following methods.

    a. Catheter stands up at a 90 degree and is firmly seated in the bone

    b. Blood at the tip of the stylet (not always visible)

    c. Aspiration of a small amount of bone marrow with a syringe

    d. A free-flow of drugs or fluids without difficulty and no evidence of leakage under the skin

9. Attach the primed EZ-Connect or any standard luer lock extension set to the EZ-IO hub and flush with 10 cc of Normal Saline

(continued)

O-7 - EZ I.O.® (continued)

10. Begin infusing fluids and/or medications per appropriate protocol. Pressure infusion may be necessary to maintain specified flow rates.

11. Apply wristband and dress the site.

REMOVAL

1. The EZ-IO should never be in place greater than 24 hours.

2. Grasp the hub directly or attach a sterile syringe (preferred), while supporting the patient's extremity rotate the catheter clockwise and gently pull. Once catheter has been removed place it in an approved sharps container.

WESTERN VIRGINIA E.M.S. COUNCIL
O-8 - M.A.S.T. /P.A.S.G

1. Indications for use

   a. Unstable fractures of the pelvis or lower extremities.

2. Absolute contraindications

   a. Acute recognized respiratory distress, specifically pulmonary edema with associated rales.

   b. Penetrating chest trauma

3. Relative contraindications

   a. When more appropriate splinting devices are available (i.e., traction splint for isolated femur fracture)

4. Application procedures

   a. Complete primary survey and treat any life-threatening conditions.

   b. Complete secondary survey

   c. Dress and document all wounds and injuries to be covered.

   d. Using appropriate immobilization, move the patient on to the MAST/PASG or slip them onto the patient (not lifting the legs greater than 12 inches)

   e. Secure garment attaching as much Velcro as possible. **Keep the top of the abdominal section below the lowest rib.**

   f. Connect foot pump and inflate garment to 30 – 60 mm/Hg

   g. Perform distal neurovascular assessment as with any splinting device.

5. Deflation

   a. Deflate abdominal section if patient begins to show indications of respiratory distress

   b. DO **NOT CUT MAST/PASG OFF OF THE PATIENT.**

WESTERN VIRGINIA E.M.S. COUNCIL
O-9 - Needle Pleural Decompression

1. Any patient suspected of having a tension pneumothorax should be receiving high flow oxygen and ventilatory assistance. Needle pleural decompression is appropriate in the critical patient who presents with a rapidly decompensating tension pneumothorax evidenced by more than one of the following (not ALL may be present).

    a. Increasing respiratory distress and cyanosis.

    b. Loss of radial pulses (decompensated shock)

    c. Decreasing level of consciousness.

    d. Poor ventilation despite an open airway.

    e. Neck vein distension (may not be present in hypovolemia)

    f. Absent or decreased breath sounds on the affected side.

    g. Signs and symptoms of shock

    h. Tracheal deviation away from the side of injury (A **LATE** sign).

2. Providers should be aware of the potential complications associated with this procedure, as follows:

    a. Hemorrhage as a result of laceration of the intercostal vessels due to poor needle placement.

    b. Creation of a pneumothorax if the patient is misdiagnosed. Laceration of the lung with air leakage and bleeding is possible if misdiagnosed or if technique is improper.

    c. Infection, which is minimized by cleaning the skin surface prior to the procedure.

(continued)

O-9 - Needle Pleural Decompression (continued)

PROCEDURE

1. Locate the second or third intercostal space on the anterior chest at the midclavicular line **on the same side of the tension pneumothorax**. This can be aided by feeling for the bump located on the sternum about a quarter of the way from the suprasternal notch or "angle of Louis".

2. Clean the area with an antiseptic.

3. Prepare a flutter valve or other appropriate manufactured device and attach to a 14 gauge 3 inch angiocath. **(DO NOT USE THE FINGER OF A RUBBER GLOVE)**

4. Remove the plastic cap from the angiocath needle and insert the angiocath into the skin over the **UPPER** border of the second or third rib, midclavicular line. Insert the angiocath at a 90 degree angle to the rib.

5. While advancing the angiocath, feel for a "pop" and listen for the sound of air escaping from the needle. Advance the catheter until the hub of the angiocath contacts the skin, then remove the needle and leave the catheter in place.

6. Stabilize the angiocath hub in place with tape and do not remove the angiocath unless directed by Medical Control. Monitor the patient closely for the reoccurrence of the tension pneumothorax.

WESTERN VIRGINIA E.M.S. COUNCIL

O-10 - 12 Lead ECG

The purpose of this guideline is to promote the definitive identification of the patient that may be suffering a myocardial infarction or serious dysrhythmia. It is the intended to ease the transfer of the cardiac patient to the receiving facility and decrease the time it takes the patient to reach definitive therapy.

Indications: Chest pain, dyspnea, palpitations, syncope, malaise

Contraindications: Not to be administered during a cardiac arrest unless ROSC is obtained.

PROCEDURE

1. Prepare all of the equipment in accordance with manufacturer guidelines i.e., cleaning the skin, accounting for all leads, prepping the skin, removing clothing from the torso, removing watches and jewelry from the arms, sock from the legs, shaving the chest in the area the electrodes will be placed, etc.

2. Ensure the skin is clean and dry.

3. Place the limb leads. **LIMB LEADS ARE NOT TO BE PLACED ON THE CHEST OR TORSO.**

4. Place the pre-cordial leads.

5. Ensure that all leads are attached.

6. Turn machine on.

7. Record the tracing after ensuring that an accurate feed is being received from each channel or electrode.

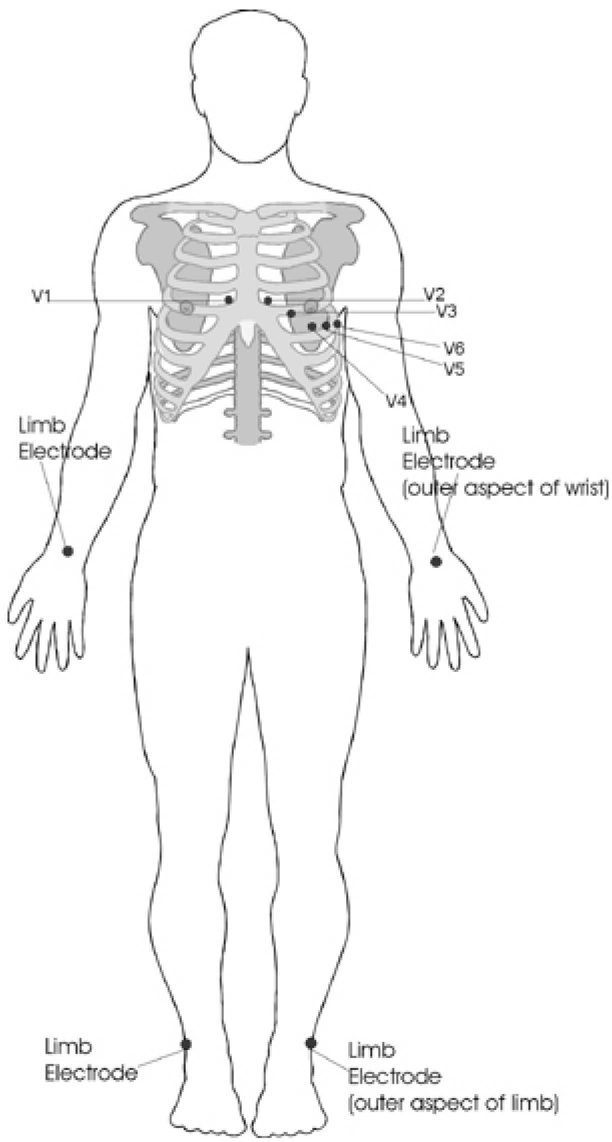
8. Examine the tracing following the guidelines in this protocol and prior training.

9. Send ECG to ED via telemetry if available or contact receiving facility for assistance with interpretation.

10. Consider requesting ED bypass directly to Cardiac Catheterization Lab in confirmed acute cases.

WESTERN VIRGINIA E.M.S. COUNCIL
O-10 - 12 Lead ECG (continued)

ELECTRODE POSITIONS FOR 12 LEAD ECG



Please note that for a 12 lead ECG, 10 electrodes are placed on the body and the twelve leads are derived from the signals obtained from the 10 electrodes. The terms 'electrodes' and 'leads' are not interchangeable and should not be confused.

Also note that electrode V3 should be placed midway between electrodes V2 and V4 and that electrodes V4, V5 and V6 should all be placed at the same level as V4.

WESTERN VIRGINIA E.M.S. COUNCIL
O-11 - Blood Draw

Prehospital providers may draw blood in the field to assist receiving facilities in securing diagnostic laboratory tests more rapidly. All ALS level technicians who have received proper training and evaluation in the technique of phlebotomy as part of starting an IV site may perform the procedure only under the following conditions:

Patient Selection

1. Patients who meet the criteria for establishment of an IV site under **AC-2 Symptomatic Cardiac Patient Protocol**

2. Patients who meet the criteria for establishment of an IV site under **AC-8 Pulmonary Edema Protocol**

3. Patients who meet the criteria for establishment of an IV site under **AM-3 or AM-5 Asthma and/or Exacerbation of COPD Protocol**

Condition of patient should be taken into account through the provider's impression. Drawing blood in the field is **NOT REQUIRED** but will enable receiving facilities to complete diagnostic tests more rapidly and could mean faster definitive diagnoses and treatment for the patient. Never stop to draw blood if it will delay critical measures i.e., drug administration during cardiac arrest, transport of a multi-system trauma patient, etc.

PROCEDURE

1. Select a site that is appropriate for IV cannulation, as well as phlebotomy. Prepare all necessary equipment; blood tubes, vacutainer with luer-lock adapter, IV fluid and/or saline lock.

2. Cannulate the vain in normal manner. Do not attach IV tubing.

3. Attach vacutainer **OR** 10cc or larger syringe to the IV catheter hub. Do not delay treatment as dictated by patient condition to obtain blood samples in the field.

4. Draw blood in order prescribed by the receiving facility. If blood draw is difficult or flows extremely slow **DO NOT** lose a patent IV site to draw blood samples in the field.

5. Note time of blood draw on PPCR or patient reporting software and on the blood tubes. Label each individual tube with the patients last name, DOB, and your initials. Tape tubes to the patients IV bag or place in a plastic bag for delivery to the staff at the receiving facility.

WESTERN VIRGINIA E.M.S. COUNCIL
WMD-0 General Instructions

1. The safety of you and your crew is the first priority.

2. The scene should be deemed safe to operate in via the use of air monitoring devices under the use of trained Hazardous Materials personnel.

3. Appropriate protective equipment should be utilized at all times. Different situations will require different equipment. Firefighter Turnout clothing and SCBA may offer little to no protection.

4. EMS responders will operate under incident command and will be placed in the "Cold Zone." This is an area that has been deemed safe to occupy with no protective equipment. This area designation must come from Incident Command.

5. In some cases depending on the size of the event or the nature of the agent(s), the choice may be made to establish a field hospital in which EMS personnel would likely be the bulk of the staff. That is the main purpose for the following protocols. In the event you encounter a patient and one of the WMD protocol apply and you subsequently transport the patient, some of the drugs or quantities of drugs listed in WMD-1 through WMD-7 may not be available. In the event a drug in the protocol schedule is not available you should contact medical control and maintain supportive efforts. Most of the medications and kits listed are available for distribution in the event of a WMD event. Efforts toward distribution will be handled by Incident Command.

6. The use of S.T.A.R.T. and Triage Tags is recommended once patients have been decontaminated and moved to an area that is safe for EMS providers to render care.

WESTERN VIRGINIA E.M.S. COUNCIL
WMD Protocol: WMD-1
Blister Agents

EMT	EN	I	PM	
S	S	S	S	Take steps to ensure responder safety per your agency SOP/SOG, prior to initiating any direct patient contact or exiting your vehicle. **DO NOT APPROACH WITHOUT PROPER PROTECTIVE EQUIPMENT. FIREFIGHTER TURNOUT CLOTHING AND SCBA MAY NOT BE EFFECTIVE PROTECTION.**
S	S	S	S	Contact ***local law enforcement/emergency manager*** and/or ***hazardous material team /fire department*** if needed. Consult your **Emergency Response Guide** as applicable. Consider requesting a Regional HAZ-MAT Team.
S	S	S	S	Ensure that the product and any hazards or side effects have been identified and that you and your crew have the appropriate protection (respiratory, skin, and head/face) and the patient has been thoroughly decontaminated prior to initiating direct patient contact.
S	S	S	S	**Notify the potential receiving facility as soon as practical; inform them of the agent or substance involved and potential number of patients**.
S	S	S	S	Administer Oxygen as dictated by the situation and the needs of the patient. Refer to BLS Protocols **BG-2**, **BG-3**, **BG-4** and General Protocol **A-4**, as appropriate for your level of certification and scope of practice.
S	S	S	S	If the patient has severe burns present as a result of contact with the agent, refer to BLS Protocol **BT-8** and/or ALS Protocol **AT-1** as appropriate for your level of certification and scope of practice.
	S	S	S	If severe burns are absent obtain 2 large bore IV lines with NS 0.9%. Maintain at a KVO rate unless the patient's condition dictates otherwise.
		S	S	Monitor **ECG** rhythm
S	S	S	S	***Contact medical control AND/OR incident command*** for possible additional orders or instructions.
S	S	S	S	***Transport to closest appropriate facility or to the location assigned by Incident Command***.
S	S	S	S	Decontaminate yourself, your crew, the vehicle and equipment as soon as the situation permits. Any equipment that can't be decontaminated or is questionable should be disposed of properly.

WESTERN VIRGINIA E.M.S. COUNCIL
WMD Protocol: WMD-2
Biological Agents

EMT	EN	IT	PM	
S	S	S	S	Take steps to ensure responder safety per your agency SOP/SOG, prior to initiating any direct patient contact or exiting your vehicle. **DO NOT APPROACH WITHOUT PROPER PROTECTIVE EQUIPMENT. FIREFIGHTER TURNOUT CLOTHING AND SCBA MAY NOT BE EFFECTIVE PROTECTION.**
S	S	S	S	Contact ***local law enforcement/emergency manager*** and/or ***hazardous material team /fire department*** if needed. Consult your **Emergency Response Guide** as applicable. Consider requesting a Regional HAZ-MAT Team.
S	S	S	S	Ensure that the product and any hazards or side effects have been identified and that you and your crew have the appropriate protection (respiratory, skin, and head/face) and the patient has been thoroughly decontaminated prior to initiating direct patient contact.
S	S	S	S	**Notify the potential receiving facility as soon as practical; inform them of the agent or substance involved and potential number of patients**.
S	S	S	S	Administer Oxygen as dictated by the situation and the needs of the patient. Refer to BLS Protocols **BG-2**, **BG-3**, **BG-4** and General Protocol **A-4.** as appropriate for your level of certification and scope of practice.
		S	S	Monitor **ECG** rhythm
S	S	S	S	***Contact medical control AND/OR incident command*** for possible additional orders or instructions.
S	S	S	S	***Transport to closest appropriate facility or to the location assigned by Incident Command***.
S	S	S	S	If field hospital is established on site or antibiotics are made available for distribution by EMS personnel: Check for any known drug allergies, if allergic contact Incident Command or Medical Direction. If no allergies; administer **Ciprofloxacin (Cipro) 500mg orally *OR* Doxycycline (Doxy) 100mg orally**.
S	S	S	S	Decontaminate yourself, your crew, the vehicle and equipment as soon as the situation permits. Any equipment that can't be decontaminated or is questionable should be disposed of properly.

WESTERN VIRGINIA E.M.S. COUNCIL

WMD Protocol: WMD-3
Choking Agents

EMT	EN	IT	PM	
S	S	S	S	Take steps to ensure responder safety per your agency SOP/SOG, prior to initiating any direct patient contact or exiting your vehicle. **DO NOT APPROACH WITHOUT PROPER PROTECTIVE EQUIPMENT. FIREFIGHTER TURNOUT CLOTHING AND SCBA MAY NOT BE EFFECTIVE PROTECTION.**
S	S	S	S	Contact ***local law enforcement/emergency manager*** and/or ***hazardous material team /fire department*** if needed. Consult your **Emergency Response Guide** as applicable. Consider requesting a Regional HAZ-MAT Team.
S	S	S	S	Ensure that the product and any hazards or side effects have been identified and that you and your crew have the appropriate protection (respiratory, skin, and head/face) and the patient has been thoroughly decontaminated prior to initiating direct patient contact.
S	S	S	S	**Notify the potential receiving facility as soon as practical; inform them of the agent or substance involved and potential number of patients**.
S	S	S	S	Administer Oxygen as dictated by the situation and the needs of the patient. Refer to BLS Protocols **BG-2**, **BG-3**, **BG-4** and General Protocol **A-4**, as appropriate for your level of certification and scope of practice.
S	S	S	S	Irrigate and flush patient with copious amounts of water.
O	S	S	S	**Administer 2.5mg of nebulized albuterol for difficulty breathing and/or wheezing.**
	S	S	S	**Establish IV access.**
	S	S	S	**Administer 125mg methylprednisolone (Solu-Medrol) IV.**
		S	S	Monitor **ECG** rhythm
S	S	S	S	***Contact medical control AND/OR incident command*** for possible additional orders or instructions.
O	S	S	S	**Repeat dosing of 2.5mg of nebulized albuterol for difficulty breathing and/or wheezing.**
S	S	S	S	***Transport to closest appropriate facility or to the location assigned by Incident Command***.
S	S	S	S	Decontaminate yourself, your crew, the vehicle and equipment as soon as the situation permits. Any equipment that can't be decontaminated or is questionable should be disposed of properly.

WESTERN VIRGINIA E.M.S. COUNCIL

WMD Protocol: WMD-4
Cyanide

EMT	EN	IT	PM	
S	S	S	S	Take steps to ensure responder safety per your agency SOP/SOG, prior to initiating any direct patient contact or exiting your vehicle. **DO NOT APPROACH WITHOUT PROPER PROTECTIVE EQUIPMENT. FIREFIGHTER TURNOUT CLOTHING AND SCBA MAY NOT BE EFFECTIVE PROTECTION.**
S	S	S	S	Contact ***local law enforcement/emergency manager*** and/or ***hazardous material team /fire department*** if needed. Consult your **Emergency Response Guide** as applicable. Consider requesting a Regional HAZ-MAT Team.
S	S	S	S	Ensure that the product and any hazards or side effects have been identified and that you and your crew have the appropriate protection (respiratory, skin, and head/face) and the patient has been thoroughly decontaminated prior to initiating direct patient contact.
S	S	S	S	**Notify the potential receiving facility as soon as practical; inform them of the agent or substance involved and potential number of patients**.
S	S	S	S	Administer Oxygen as dictated by the situation and the needs of the patient. Refer to BLS Protocols **BG-2**, **BG-3**, **BG-4** and General Protocol **A-4**, as appropriate for your level of certification and scope of practice.
S	S	S	S	If patient displays no severe signs and symptoms, continue oxygenation, monitor, observe and transport.
S	S	S	S	**If severe signs and symptoms are noted, break one (1) Amyl Nitrate Pearl and hold under the patient's nose or place in the non-rebreather mask for 30 seconds of every minute.**
	S	S	S	**Establish IV access.**
		S	S	Monitor **ECG** rhythm
S	S	S	S	***Contact medical control AND/OR incident command*** for possible additional orders or instructions.
		S	S	**Administer Sodium Nitrite 300mg IV**
		S	S	**Administer Sodium Thiosulfate 12.5G/50ml IV**
S	S	S	S	***Transport to closest appropriate facility or to the location assigned by Incident Command***.
S	S	S	S	Decontaminate yourself, your crew, the vehicle and equipment as soon as the situation permits. Any equipment that can't be decontaminated or is questionable should be disposed of properly.

WESTERN VIRGINIA E.M.S. COUNCIL
WMD Protocol: WMD-5
Radiation

EMT	EN	IT	PM	
S	S	S	S	Take steps to ensure responder safety per your agency SOP/SOG, prior to initiating any direct patient contact or exiting your vehicle. **DO NOT APPROACH WITHOUT PROPER PROTECTIVE EQUIPMENT. FIREFIGHTER TURNOUT CLOTHING AND SCBA MAY NOT BE EFFECTIVE PROTECTION.**
S	S	S	S	Contact ***local law enforcement/emergency manager*** and/or ***hazardous material team /fire department*** if needed. Consult your **Emergency Response Guide** as applicable. Consider requesting a Regional HAZ-MAT Team.
S	S	S	S	Ensure that the product and any hazards or side effects have been identified and that you and your crew have the appropriate protection (respiratory, skin, and head/face) and the patient has been thoroughly decontaminated prior to initiating direct patient contact.
S	S	S	S	**Notify the potential receiving facility as soon as practical; inform them of the agent or substance involved and potential number of patients**.
S	S	S	S	Administer Oxygen as dictated by the situation and the needs of the patient. Refer to BLS Protocols **BG-2**, **BG-3**, **BG-4** and General Protocol **A-4**, as appropriate for your level of certification and scope of practice.
S	S	S	S	***Contact medical control AND/OR incident command*** for possible additional orders or instructions.
S	S	S	S	***Transport to closest appropriate facility or to the location assigned by Incident Command***.
S	S	S	S	When available attach dosimeter to patients as well as providers and responders.
S	S	S	S	If field hospital is established on site or medication will be made available for distribution by EMS personnel: Check for any known drug or shellfish allergies, if allergic contact Incident Command or Medical Direction. If no allergies; administer **Potassium Iodine 130mg orally**. This dose should be repeated in 24 hours *(Note the time and date of the initial dose on the patients attached triage tag).
S	S	S	S	Decontaminate yourself, your crew, the vehicle and equipment as soon as the situation permits. Any equipment that can't be decontaminated or is questionable should be disposed of properly.

WESTERN VIRGINIA E.M.S. COUNCIL
WMD Protocol: WMD-6
Riot Control Agents

EMT	EN	IT	PM	
S	S	S	S	Take steps to ensure responder safety per your agency SOP/SOG, prior to initiating any direct patient contact or exiting your vehicle. **DO NOT APPROACH WITHOUT PROPER PROTECTIVE EQUIPMENT. FIREFIGHTER TURNOUT CLOTHING AND SCBA MAY NOT BE EFFECTIVE PROTECTION.**
S	S	S	S	Contact ***local law enforcement/emergency manager*** and/or ***hazardous material team /fire department*** if needed. Consult your **Emergency Response Guide** as applicable. Consider requesting a Regional HAZ-MAT Team.
S	S	S	S	Ensure that the product and any hazards or side effects have been identified and that you and your crew have the appropriate protection (respiratory, skin, and head/face) and the patient has been thoroughly decontaminated prior to initiating direct patient contact.
S	S	S	S	**Notify the potential receiving facility as soon as practical; inform them of the agent or substance involved and potential number of patients**.
S	S	S	S	Administer Oxygen as dictated by the situation and the needs of the patient. Refer to BLS Protocols **BG-2**, **BG-3**, **BG-4** and General Protocol **A-4**, as appropriate for your level of certification and scope of practice.
S	S	S	S	Irrigate and flush patient with copious amounts of water. Also, consider neutralizing agents.
O	S	S	S	If the patient is ***wheezing*** **administer 2.5mg of nebulized albuterol for difficulty breathing and/or wheezing.**
	S	S	S	**Establish IV access.**
		S	S	Monitor **ECG** rhythm
	S	S	S	**Administer 125mg methylprednisolone (Solu-Medrol) IV.**
O	S	S	S	**Repeat dosing of 2.5mg of nebulized albuterol for difficulty breathing and/or wheezing.**
S	S	S	S	***Contact medical control AND/OR incident command*** for possible additional orders or instructions.
S	S	S	S	***Transport to closest appropriate facility or to the location assigned by Incident Command***.
S	S	S	S	Decontaminate yourself, your crew, the vehicle and equipment as soon as the situation permits. Any equipment that can't be decontaminated or is questionable should be disposed of properly.

WESTERN VIRGINIA E.M.S. COUNCIL
WMD Protocol: WMD-7
Nerve Agents

EMT	EN	I	PM	
S	S	S	S	Take steps to ensure responder safety per your agency SOP/SOG, prior to initiating any direct patient contact or exiting your vehicle. **DO NOT APPROACH WITHOUT PROPER PROTECTIVE EQUIPMENT. FIREFIGHTER TURNOUT CLOTHING AND SCBA MAY NOT BE EFFECTIVE PROTECTION.**
S	S	S	S	Contact ***local law enforcement/emergency manager*** and/or ***hazardous material team /fire department*** if needed. Consult your **Emergency Response Guide** as applicable. Consider requesting a Regional HAZ-MAT Team.
S	S	S	S	Ensure that the product and any hazards or side effects have been identified and that you and your crew have the appropriate protection (respiratory, skin, and head/face) and the patient has been thoroughly decontaminated prior to initiating direct patient contact.
S	S	S	S	**Notify the potential receiving facility as soon as practical; inform them of the agent or substance involved and potential number of patients**.
S	S	S	S	**If patient does not display severe signs and symptoms administer one (1) Mark I kit. If the patient displays severe signs and symptoms administer three (3) Mark I kits and one (1) 10mg Diazepam Auto-Injector.**
S	S	S	S	**If patient improves following the treatment listed above, contact medical control, monitor, support, and transport patient as soon as practical.**
S	S	S	S	If no improvement noted administer Oxygen as dictated by the situation and the needs of the patient. Refer to BLS Protocols **BG-2**, **BG-3**, **BG-4** and General Protocol **A-4**, as appropriate for your level of certification and scope of practice.
	S	S	S	Obtain IV access
		S	S	Monitor ECG rhythm
		S	S	Administer Atropine 2mg IV every 3-5 minutes until secretions stop or begin drying
		S	S	**If patient is having seizures administer 10mg Valium every 10 minutes as long as seizures persist.**
S	S	S	S	***Contact medical control AND/OR incident command*** for possible additional orders or instructions.
S	S	S	S	***Transport to closest appropriate facility or to the location assigned by Incident Command***.
S	S	S	S	Decontaminate yourself, your crew, the vehicle and equipment as soon as the situation permits. Any equipment that can't be decontaminated or is questionable should be disposed of properly.

WESTERN VIRGINIA E.M.S. COUNCIL

AP-1 - Dopamine Drip Chart

1,600 mcg/ml

(800 mg / 500 ml D5W)

WEIGHT: Top = Pounds   Bottom = Kilograms

mcg/kg/min	99 45	110 50	121 55	132 60	143 65	154 70	165 75	176 80	187 85	198 90	209 95	220 100	231 105	242 110
2	3	4	4	5	5	5	6	6	6	7	7	8	8	8
5	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**
6	10	11	12	14	15	16	17	18	19	20	21	23	24	25
7	**12**	**13**	**14**	**16**	**17**	**18**	**20**	**21**	**22**	**24**	**25**	**26**	**28**	**29**
8	14	15	17	18	20	21	23	24	26	27	29	30	32	33
9	**15**	**17**	**19**	**20**	**22**	**24**	**25**	**27**	**29**	**30**	**32**	**34**	**35**	**37**
10	17	19	21	23	24	26	28	30	32	34	36	38	40	41
11	**19**	**21**	**23**	**25**	**27**	**29**	**31**	**33**	**35**	**37**	**39**	**41**	**43**	**45**
12	20	23	25	27	29	32	34	36	38	41	43	45	47	50
13	**22**	**24**	**27**	**29**	**32**	**34**	**37**	**39**	**41**	**44**	**46**	**49**	**51**	**54**
14	24	26	29	32	34	37	39	42	45	47	50	53	55	58
15	**25**	**28**	**31**	**34**	**37**	**39**	**42**	**45**	**48**	**51**	**54**	**56**	**60**	**62**

(Calculations rounded to nearest drop per minute)

WESTERN VIRGINIA E.M.S. COUNCIL
AP-2 - IV Drip Rate Chart

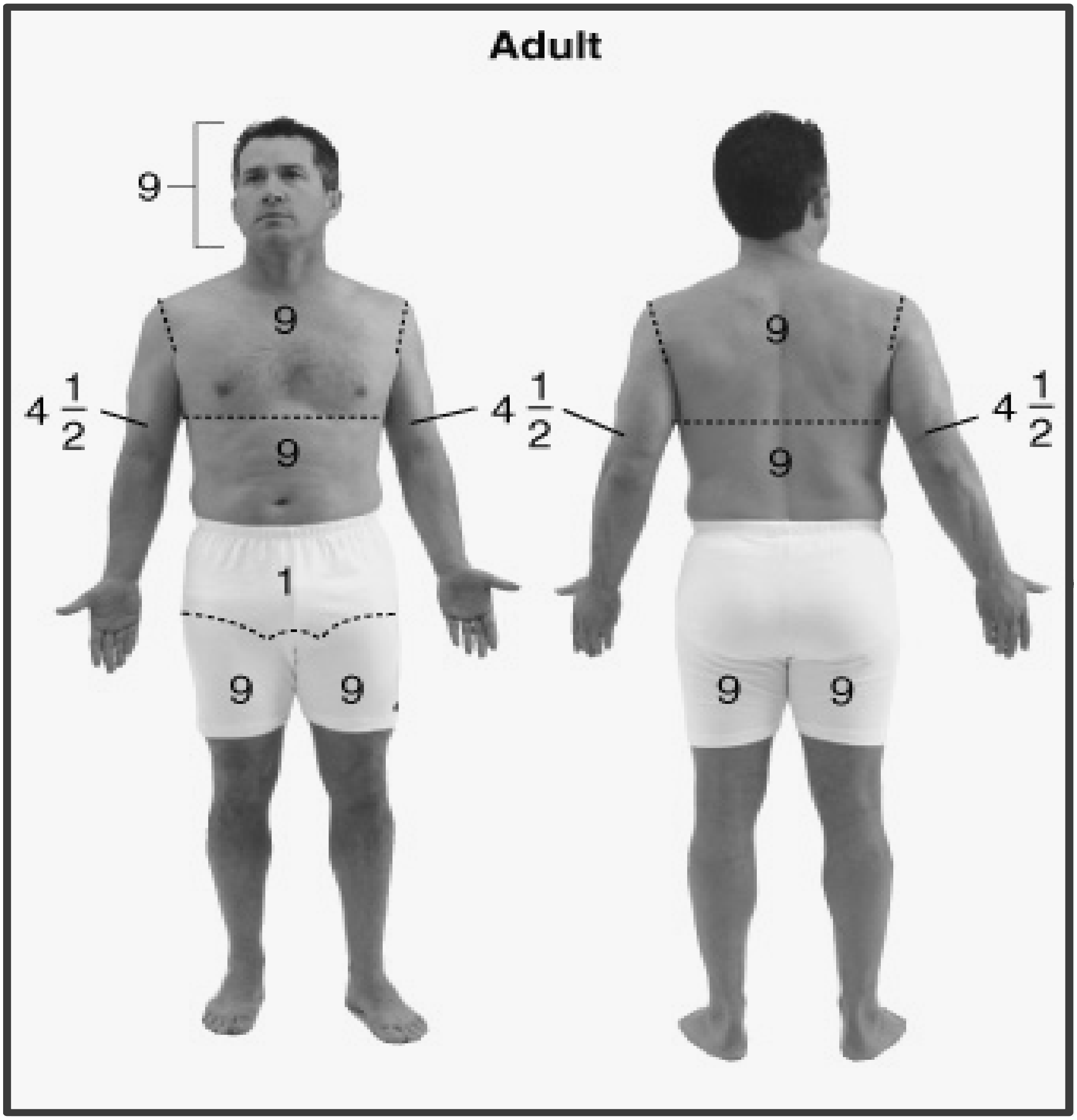
ml's per hour

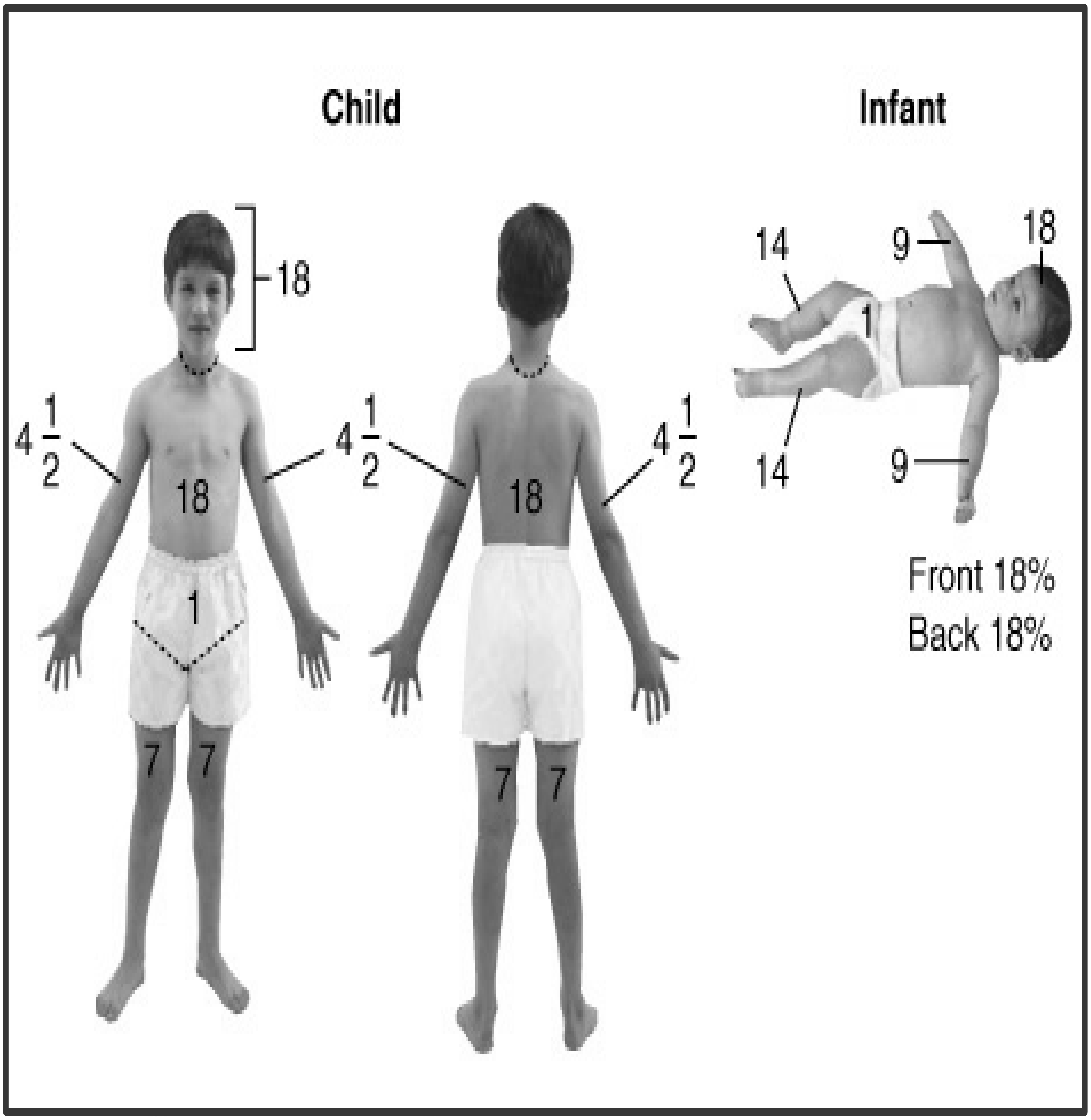
GTTS	50	100	150	175	200	250	300	350	400
10	8	17	25	29	33	42	50	58	67
15	13	25	38	44	50	63	75	88	100
20	17	33	50	58	67	83	100	117	133
60	50	100	150	175	200	250	300	350	400

(Rates rounded to nearest drop per minute)

WESTERN VIRGINIA E.M.S. COUNCIL

AP-3 - Rule of Nines Chart




Child
Infant
18
4 1/2
4 1/2
18
1
7 7
4 1/2
4 1/2
18
7 7
14
9
18
1
14
9
Front 18%
Back 18%

WESTERN VIRGINIA E.M.S. COUNCIL

AP-4 - Glasgow Coma Scale

Eye Opening	**Spontaneous**	**4**
	To Voice	**3**
	To Pain	**2**
	None	**1**
Verbal Response	**Oriented**	**5**
	Confused	**4**
	Inappropriate Words	**3**
	Incomprehensible Words	**2**
	None	**1**
Motor Response	**Obeys Commands**	**6**
	Localizes Pain	**5**
	Withdraws to pain	**4**
	Flexion to pain	**3**
	Extension to pain	**2**
	None	**1**

WESTERN VIRGINIA E.M.S. COUNCIL

AP-5 - Pediatric Reference Chart

Age	Heart Rate	Respiratory Rate	Minimum Systolic BP
Infant (less than 1 year)	100 – 160	30 – 60	greater than 60
Toddler (1 to 2 years)	90 – 150	24 – 40	greater than 70
Preschooler (3 to 5 years)	80 – 140	22 – 34	greater than 75
School-aged child (6 to 10 years)	70 – 120	18 – 30	greater than 80
Adolescent (11 to 18 years)	60 – 100	12 – 16	greater than 90

Weight (kg)	Laryngoscope Blade	ET Tube	ET Tube Length	Stylet	Suction Catheter
Newborn **3-5 kg**	0-1 straight	3.0-3.5 uncuffed	10-10.5	6 Fr	6-8 Fr
Infant **6-9 kg**	1 straight	3.5 uncuffed	10-10.5	6 Fr	8 Fr
Toddler **10-11 kg**	1 straight	4.0 uncuffed	11-12	6 Fr	8-10 Fr
Small Child **12-14 kg**	2 straight	4.5 uncuffed	12.5-13.5	6 Fr	10 Fr
Child **15-18 kg**	2 straight or curved	5.0 uncuffed	14-15	6 Fr	10 Fr
Child **19-22 kg**	2 straight or curved	5.5 uncuffed	15.5-16.5	14 Fr	10 Fr
Large Child **24-30 kg**	2-3 straight or curved	6.0 cuffed	17-18	14 Fr	10 Fr
“Adult” **greater than or equal to 32 kg**	3 straight or curved	6.5 cuffed	18.5-19.5	14 Fr	12 Fr

WESTERN VIRGINIA E.M.S. COUNCIL
AP-6 Contact Information

Western Virginia EMS Council, Inc.
Main Office
1944 Peters Creek Road
Roanoke, Virginia 24017

800-972-4367 Toll Free
540-562-3482 Local
540-342-3488 Fax

Western Virginia EMS Council, Inc.
New River Valley Field Office
6580 Valley Center Road
Radford, Virginia 24141

800-972-4367 Toll Free
540-267-3326 Local
540-267-3327 Fax

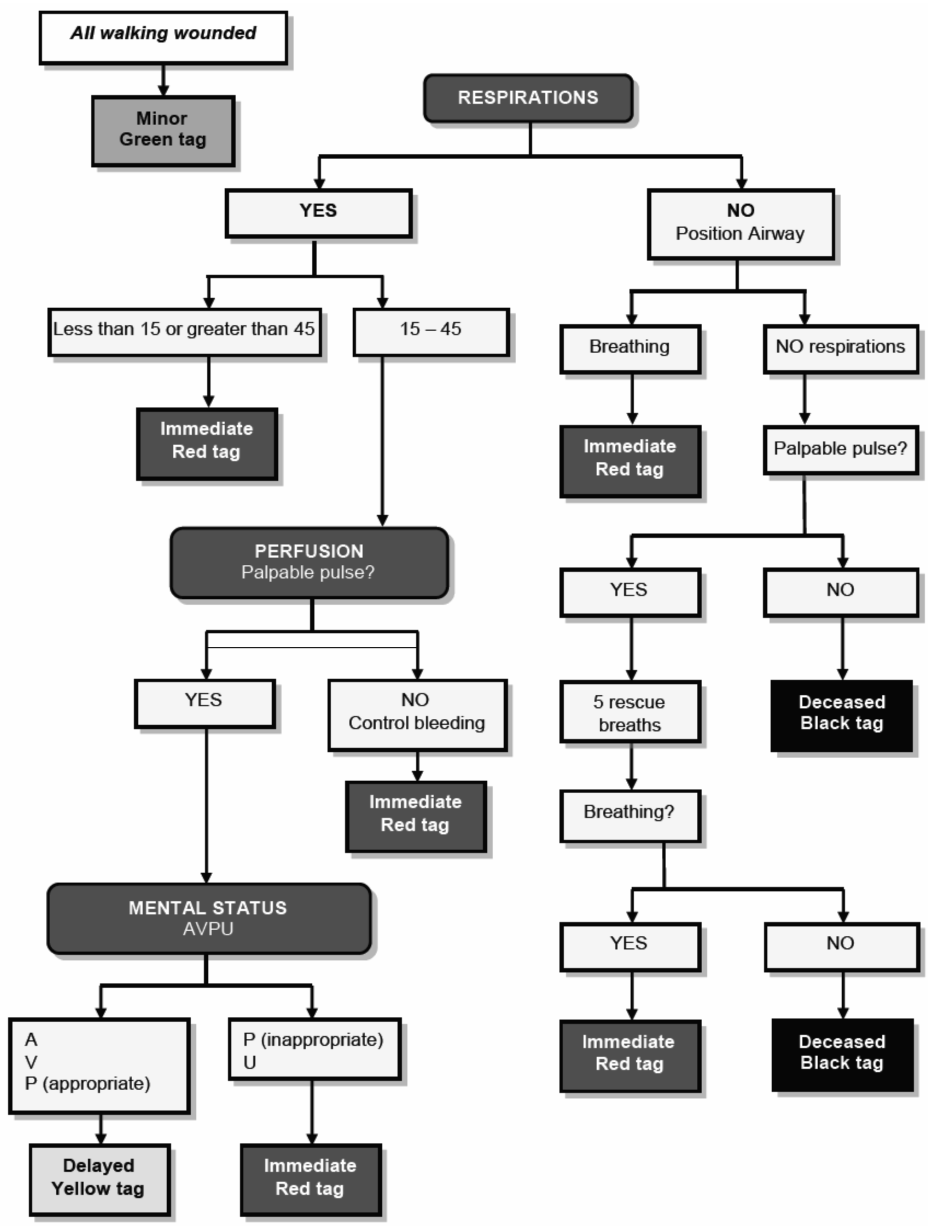
Western Virginia EMS Council, Inc.
Piedmont Field Office
P.O. Box 3909
Martinsville, Virginia 24115

800-972-4367 Toll Free
276-634-4771 Local
276-634-4578 Fax

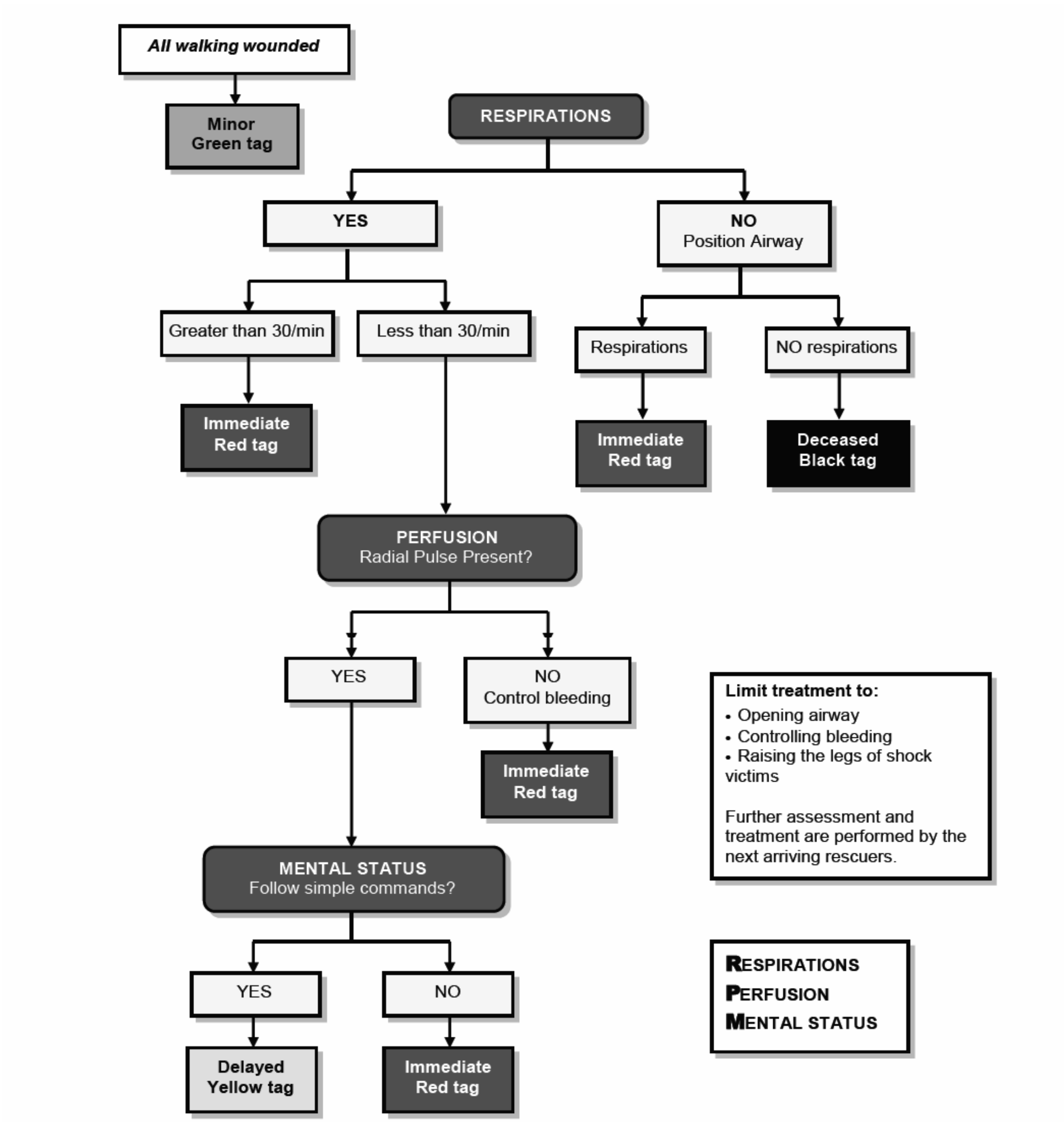
Virginia Department of Health
Office of Emergency Medical Services
109 Governor Street, Suite UB-55
Richmond, Virginia 23219

800-523-6019 Toll Free
804-864-7600 Local (Richmond)
804-864-7580 Fax

WESTERN VIRGINIA E.M.S. COUNCIL
AP-7 JUMPSTART Triage



WESTERN VIRGINIA E.M.S. COUNCIL
AP-8 START Triage



WESTERN VIRGINIA E.M.S. COUNCIL

AP-9 - Adult Revised Trauma Chart

The Trauma Score is a numerical grading system for estimating the severity of injury. The score is comprised of the Glasgow Coma Scale (reduced to approximately one third total value) and measurements of cardiopulmonary function. Each parameter is given a number (high for normal and low for impaired function). Severity of injury is estimated by summing the numbers. The lowest score is 0 and the highest score is 12.

GCS Conversion	GCS Total	Code Value
	13-15	4
	9-12	3
	6-8	2
	4-5	1
	3	0
Systolic Blood Pressure	Greater than 89	4
	76-89	3
	50-75	2
	1-49	1
	0	0
Respiratory Rate	10-29 per minute	4
	Greater then 29 per min.	3
	6-9 per minute	2
	1-5 per minute	1
	0	0

WESTERN VIRGINIA E.M.S. COUNCIL

AP-10 - APGAR Neonatal Chart

APGAR Neonatal Score (Score at 1 and 5 minutes post partum)		
Appearance and Color 2 – Completely Pink 1 – Pink, hands/feet blue 0 – Blue, pale	**1 MIN.**	**5 MIN.**
Pulse / Heart Rate 2 – Over 100 1 – Less than 100 0 - Absent	**1 MIN.**	**5 MIN.**
Grimace / Stimulation 2 – Cough or sneeze 1 – Grimace 0 – No response	**1 MIN.**	**5 MIN.**
Activity / Muscle Tone 2 – Well flexed and active 1 – Flexion of extremities 0 - Limp	**1 MIN**	**5 MIN.**
Respiratory Effort 2 – Strong cry 1 – Weak/hypoventilation 0 - Absent	**1 MIN**	**5 MIN.**
Total Score		

WESTERN VIRGINIA E.M.S. COUNCIL

AP-11 - Intrinsic Vital Sign Reference

Pediatric Weights and Vital Signs

(Averages only – use actual weight or tape estimate for dosing medications)

AGE	WEIGHT (kg)	WEIGHT (lbs)	Pulse	Respirations	Systolic BP
Birth	3.5	7	100-160	30-60	50-70
6 months	7	15	90-120	25-40	80-100
1 year	10	22	90-120	20-30	80-100
3 years	15	33	80-120	20-30	80-110
6 years	20	44	70-110	18-25	80-110
10 years	33	70	60-90	18-25	90-120

Adult Vital Signs

(Averages only-use actual weight for dosing medications, also consider current state of health)

GENDER	PULSE	RESPIRATIONS	SYSTOLIC BP
Male	60-100	12-20	120-150
Female	60-100	12-20	110-140
Female *Post Menopause*	60-100	12-20	120-150