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This first set of West Virginia EMS Statewide ALS protocols is truly a monumental event in the history of EMS in West Virginia. These protocols are the product of many years of discussion, collaboration, debate, revisions, and hard work on the part of a legion of dedicated professionals. They are evidence of the ongoing effort to continually improve emergency medical care in West Virginia.

Unified statewide protocols has been a dream of countless EMS providers, administrators, and medical directors for many years. The current efforts began over five years ago with the early development of Statewide EMT-B and First Responder protocols. The experience and lessons learned from that project led to the realization that the same could be accomplished with ALS protocols as well.

Over the last two decades, Emergency Medicine has matured as a specialty. This has led to fewer and fewer localized variations in standards of emergency care. From a patient care perspective, these more uniform standards should be applicable to EMS on a statewide basis. To be sure, many individual providers who work in different regions of the state have faced the challenge of learning several different protocols for the treatment of a patient with the same condition.

Building on the success of the Statewide EMT-B and First Responder Protocols, in the spring of 2000, the State Critical Care Committee unanimously approved the concept to begin development of Statewide ALS protocols. Realizing the magnitude of this endeavor, the Regional Program Directors developed the early framework documents which combined the regional protocols into common state protocols. A list was developed and refined by the Medical Directors outlining the title to be used for each needed protocol.

In February 2001, a protocol workteam composed of EMS representatives from every region of the state convened at Flatwoods for an intense two day session. During this session, participants were instructed to use all available resources to construct a set of draft Statewide ALS Protocols. They were mandated to put old regional differences aside and cooperatively write the best patient care protocol possible. This effort produced the first draft of 54 ALS Protocols. This first draft was circulated across the state and reviewed by numerous personnel. Over 1,000 corrections and comments were received and reviewed. These comments were condensed into 13 pages of specific issues requiring discussion, debate, and action by the State Critical Care Committee. With input from the Medical Directors and providers in their region, the Regional Medical Directors discussed and debated these issues. The ultimate goal was consistent quality patient care and consensus was reached and draft two was completed. Further refinement led to approval of the final version by the State Critical Care Committee in October and December of 2001.

At midnight on February 15, 2002, the West Virginia EMS Statewide ALS Protocols will go into effect. As historic and incredible as this may seem, it is really only the beginning. In a project of this size and scope, it is impossible to produce a perfect set of protocols. These unified protocols are a dynamic process and will be subject to ongoing review and revisions. The need for additional protocols and modifications is already emerging. EMS personnel who use these protocols on a daily basis are encouraged to provide suggestions for improvement and feedback through their Agency Medical Director to their Regional Medical Director.

By working together in the spirit of cooperation, let these protocols mark a new beginning in our quest to provide the citizens and visitors of the State of West Virginia the finest emergency medical care in the country.

William D. Ramsey, M.D., FACEP
West Virginia State EMS Medical Director
Bruceton Mills, WV
December, 2001
Acknowledgments

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David Seidler, M.D.  Region 3/4 Medical Director
The late Karl Snider, D.O.  Region 5 Medical Director
David Anderson, M.D.  Region 6/7 Medical Director
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Special thanks to all the EMS personnel who contributed their comments during the development of these protocols.
The West Virginia EMS ALS Statewide Protocols are designed to enable EMS personnel to provide a wide variety of treatments to many types of patients. Understanding how they are organized and the terminology used is important.

Protocol Layout

At the top of each protocol page, the following information is contained in boxes:

- West Virginia EMS System Logo
- Type of protocol and protocol number
- Title of the protocol
- Page numbers

Example:

<table>
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<tr>
<th>EMT-Paramedic Treatment Protocol</th>
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<td>Chest Pain/Discomfort</td>
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Protocol Numbering System

Each protocol is assigned a four (4) digit number. The first digit represents the level of care of the provider who uses the protocol. See Classification of Levels of Care below. The second digit specifies the category of care. See Category of Care below. The last two digits are the specific protocol number.

For example: **Chest Pain Protocol 4202**

- 4 Level of care = EMT-P
- 2 Category of care = Cardiac
- 02 Specific protocol = Chest Pain
Classification of Levels of Care (first digit)

The State Critical Care Committee developed a numbering system to represent the levels of care available in the West Virginia EMS System. These numbers run from 1 to 7 and make up the first digit of the protocol number as follows:

- 1000  CCT-RN
- 2000  CCT-Paramedic
- 3000  Basic Interfacility Transport Paramedic
- 4000  EMT-Paramedic
- 5000  EMT-Intermediate
- 6000  EMT-Basic
- 7000  First Responder

**Note:** The numbers 8 and 9 are not levels of care but are used as follows:

- 8000  Open for future use
- 9000  Special Operational Policies and Protocols

Category of Care (second digit)

The second digit in the protocol number denotes the general category of care being provided within the protocol group. This is a general guideline since some conditions may overlap among categories.

- 4100  Trauma
- 4200  Cardiac
- 4300  Respiratory
- 4400  Pediatrics
- 4500  Environmental
- 4600  General medical
- 4700  Open
- 4800  Open
- 4900  Special Treatment Protocols
General Assessment and Management Procedures

Since the initial procedures needed to assess and manage patients are similar within certain categories, five (5) general protocols have been developed to streamline the process of outlining the treatment within specific protocols. These five (5) general protocols are designated as follows:

- **TAMP (4101)**  Trauma Assessment and Management Procedures
- **MAMP (4201)**  Medical Assessment and Management Procedures
- **Peds-TAMP (4408)**  Pediatric TAMP
- **Peds-MAMP (4401)**  Pediatric MAMP
- **CAT (4204)**  Cardiac Arrest Treatment

When directed within a protocol to perform one of the above (i.e.; “Perform TAMP” or “Perform MAMP”), then that protocol should be performed in conjunction with the remaining procedures outlined in each individual treatment protocol.

Special Shading and Icons

The following shaded boxes with icons indicate that specific contact is required with Medical Command (red telephone) or the Medical Command Physician (physician in surgical mask) in order to perform the treatments.

- **Means the treatment requires consultation with Medical Command.**

- **Means the treatment requires either consultation with MCP or direct contact with MCP.**

See specific details in Communication Protocol 9106.

**Note:** The shading and icons are not utilized in the 9000 series special operational policies and procedures

Special Pediatric Notes

For the purpose of these protocols, any patient under 12 years of age will be considered a pediatric patient. Certain patients who are larger or smaller than the norms for their age may require modification of this convention. Providers should consult with Medical Command as needed to assist in making this determination.
West Virginia
Office of
Emergency Medical Services

State Advanced Life Support (ALS) Protocols

4100 Series - Trauma

December 2001
Effective February 15, 2002
In the trauma patient, time is critical. Only initial assessment and treatment of life-threatening injuries should be performed on-scene. For severely injured patients, after appropriate airway management, “load and go” is more appropriate.

If dispatch information gives the responding ambulance reason to suspect the possibility of a significant accident situation (multiple vehicles, etc.), alert Medical Command prior to arrival at scene and consider aeromedical standby.

**A. Scene evaluation.**

1. Note potential hazard to rescuers and patient.
2. Identify number of patients; organize triage operations, if needed.
3. Observe patient position and surroundings.
4. Consider need for aeromedical evacuation.

**B. Consider mechanism of injury.**

1. Cause, precipitating factors, and weapons used.
2. Trajectories and forces involved to patient.
3. For vehicular trauma: condition of vehicle, windshield, steering wheel, compartment intrusion, car seat, type and use of seatbelts. Specific description of mechanism, i.e. auto-pole, rollover, auto-pedestrian, etc.
4. Helmet use?

**C. Patient assessment.**

1. Determine responsiveness.
2. Establish and maintain airway.
a. Maintain C-spine.

b. Perform Airway Management Protocol 4901 as indicated.

   a. If adequate, oxygen 15 LPM non-rebreather mask to maintain pulse oximeter >94%. If patient cannot tolerate mask, oxygen 6 LPM by nasal cannula to maintain pulse oximeter >94%.
   b. If inadequate, ventilate with 100% oxygen and perform Airway Management Protocol 4901 as indicated.

   a. Control bleeding.
   b. Assess perfusion status.

5. Neurological status.
   a. Determine level of consciousness using AVPU or GCS.
   b. Check pupils.

6. Limit on-scene time. Unless unusual circumstances, the goal should be:
   a. Not trapped - 10 minutes or less.
   b. Entrapped - within 5 minutes of extrication.

7. In consultation with Medical Command, establish mode (ground vs. air) and destination of transport.
D. Treatment.

1. Immobilize patient on long spine board or as indicated in Spinal Trauma Protocol 4103.

   **Note:** All multiple trauma patients are considered to have a significantly distracting painful injury.

2. Transport.

3. Monitor vital signs, ECG, pulse oximeter.

4. At least one large bore IV normal saline.

   a. If hypotensive (BP <90 systolic) or other signs and symptoms of shock such as tachycardia or delayed capillary refill, or high suspicion of major blood loss, administer 20 ml/kg normal saline IV up to 2 liters and reassess (refer to Shock Protocol 4108).

   b. If BP >90 systolic and patient has no other signs or symptoms of shock, administer 100 ml/hour normal saline IV.

5. Prevent heat loss.

6. Consider nasogastric tube placement if patient intubated and no facial trauma.

7. Refer to Pain Management Protocol 4902 if indicated.

8. Notify Medical Command.

Special Notes:

1. Pregnant patients - tilt backboard to left.
The goal of prehospital treatment of head injuries is to prevent further neurological deterioration until definitive care can be provided. This is best done by maintaining an adequate airway, oxygenation, prevention and treatment of hypotension combined with smooth, rapid transport to an appropriate facility with minimal on-scene time.

A. Perform **TAMP Protocol 4101**.

B. Maintain airway as indicated by **Airway Management Protocol 4901** with the following special considerations in patients requiring assisted ventilation:

1. If signs of impending herniation (increasing BP, bradycardia, decreasing GCS, dilation of pupil, paralysis, and posturing) are present, then ventilate at 20 to 30 per minute.

2. If no signs of herniation, ventilate at 12 to 20 per minute.

C. If no signs of shock, maintain IV normal saline at KVO.

D. Elevate head 30 degrees.

E. Perform neurological status checks every 5 minutes.

F. If patient is confused or unconscious, consider checking serum glucose with glucometer and treat as indicated in **Diabetic Protocol 4604**. Do not delay treatment or transport to check serum glucose.

G. If patient develops seizure activity, refer to **Seizure Protocol 4603**.

H. Monitor airway, vital signs, and level of consciousness repeatedly at scene and during transport, **status changes are important**.

**Special Notes:**

1. When head injury patients deteriorate, check first for proper airway, adequate oxygenation, and adequate blood pressure.
A. Perform **TAMP Protocol 4101**.

B. Spinal immobilization is indicated in patients who sustain a mechanism of injury potential for causing spinal injury and who have at least one of these clinical findings:

1. Altered mental status.
2. Evidence of intoxication.
5. Spinal pain or tenderness.
6. If in doubt, immobilize.

C. Spinal immobilization is **not** indicated in patients without a mechanism of injury potential for causing spinal injury or without one of the above clinical findings.

D. If immobilization indicated:

1. Maintain airway - stabilize cervical spine.
2. Assure adequate breathing to maintain pulse oximeter >94% as indicated by **Airway Management Protocol 4901**.
3. Full spinal immobilization unless the patient has respiratory or anatomical conditions which prohibit long back board use. In which case, partial spinal immobilization devices (KED, XP1) may be used.
4. Monitor vital signs, ECG and neurological status.
5. Transport.
6. Contact Medical Command.

7. IV normal saline KVO, if significant injury is suspected.

8. If patient has signs and symptoms of shock, treat **per Shock Protocol 4108**.

9. Mark level of sensory deficit gently with pen on patient’s skin to facilitate monitoring.

**Special Notes:**

1. Patients with paralysis of upper extremities, lower extremities, and chest wall muscles may be using abdominal muscles to breathe and may require assistance with ventilation.
Twenty-five percent of all motor vehicle deaths are due to thoracic trauma. Rapid recognition and immediate treatment of chest injuries can prove to be life-saving.

A. Perform TAMP Protocol 4101.

B. Perform the following, if indicated:
   1. Stabilize flail segment.
   2. Seal open chest wounds by taping three sides of an occlusive dressing.
   3. Stabilize impaled objects.
   4. If signs of a tension pneumothorax are present, including absent breath sounds and tracheal deviation and BP <80 and patient is not awake and talking, then perform needle decompression on affected side and contact Medical Command immediately.

C. Transport.

D. Notify Medical Command.

E. Treat cardiac dysrhythmias per appropriate cardiac protocol.

Special Notes:
1. Chest pain after trauma could be a sign of significant injury and not cardiac chest pain. Nitroglycerin should not be used without MCP order.
2. If tension pneumothorax develops in a patient with a sealed sucking chest wound, attempt to resolve by releasing air from the seal prior to decompressing chest.
3. Needle decompression is only indicated for a true tension pneumothorax with all the signs listed above. It is not appropriate to needle a simple pneumothorax. If patient is awake and talking, do not needle decompress the chest unless by direct MCP order.
Prehospital care is directed toward rapid stabilization and transport to an appropriate medical facility for definitive surgical intervention and treatment.

A. Perform **TAMP Protocol 4101**.

B. Treatment:

C. Penetrating trauma:
   1. Stabilize impaled objects with bulky dressings.
      a. Control external bleeding.
      b. Search and locate exit wounds when applicable.

D. Eviscerating trauma:
   1. Cover eviscerations with moist, sterile dressings.

E. Blunt trauma:
   1. Recognize and reassess.
   2. Expedite rapid transport.
   3. If patient is in shock, perform **Shock Protocol 4108**.
   4. Contact Medical Command.
Isolated musculoskeletal and extremity injuries are rarely a first priority. Pelvic injuries are high risk for serious internal bleeding. Total or partial amputations require special treatment procedures.

A. Perform TAMP Protocol 4101.

B. Treatment

1. Treat all painful, swollen or deformed areas as fractures.

2. Determine patient priority status:
   a. Stable patients - splint before transporting.
   b. Unstable patients - immobilize completely on long spine board - load and go.

3. Use bandaging, dressing, and splinting device(s) appropriate to the injury as described in EMT-B Musculoskeletal Injuries Protocol 324.


5. If pelvic injury, monitor closely and if indicated, perform Shock Protocol 4108.

6. Total or partial amputations:
   a. Wrap severed part in sterile gauze and place in sealed container immersed in ice water.
   b. IV normal saline KVO.
   c. In consultation with Medical Command, determine best mode of transport and most appropriate destination.

7. Contact Medical Command and transport to closest appropriate facility.
Hypoperfusion (Shock)

Shock, or hypoperfusion, is decreased effective circulation causing inadequate delivery of oxygen to tissues. Signs of early (compensated) shock include tachycardia, poor skin color, cool/dry skin, and delayed capillary refill. Systolic blood pressure is normal in early shock. In late (decompensated) shock, perfusion is profoundly affected. Signs include low blood pressure, tachypnea, cool/clammy skin, agitation, and altered mental status.

Shock is categorized as: 1) hypovolemic, 2) distributive, or 3) cardiogenic.

A. If trauma, perform TAMP Protocol 4101. If medical, perform MAMP Protocol 4201.

B. Determine most likely cause of shock.

1. Hypovolemic (loss of fluid) is most common. Usually from bleeding or vomiting and diarrhea.

2. Distributive (loss of vascular tone) is usually from sepsis (infection). Other causes include anaphylaxis, toxic chemicals, or spinal cord injury.

3. Cardiogenic (heart pump failure). Most common cause in adults is acute MI or CHF. Is rare in children.

C. If hypovolemic shock is suspected (most common):

1. If associated with trauma, refer to TAMP Protocol 4101.

2. Monitor vital signs, ECG, and pulse oximeter.

3. Expedite transport.

4. As soon as possible without delaying transport, establish two (2) IV lines of normal saline with as large a catheter as possible up to a 14 gauge.

5. If systolic blood pressure <90 or patient has other signs and symptoms of shock such as tachycardia, delayed capillary refill, cool/clammy skin, or altered mental status, then administer 20 ml/kg normal saline IV set to maximum flow rate up to 2 liters and reassess.
Hypoperfusion (Shock)  Page 2 of 3

6. If on reassessment blood pressure is still <90 or other signs and symptoms of shock are still present, then contact Medical Command and reconsider causes.

7. If still felt to be hypovolemic shock:
   a. Repeat 20 ml/kg normal saline IV per order of Medical Command.
   b. Consider MAST, if indicated, per order of MCP (see Special Notes below).
   c. Continue treatment per MCP orders.

8. If blood pressure >90 systolic and patient has no other signs or symptoms of shock, administer 100 ml/hour normal saline IV and continue to monitor patient.

D. If distributive shock is suspected:
   1. If anaphylaxis or allergic reaction, refer to Allergic Reaction/Anaphylaxis Protocol 4501.
   2. Initial treatment same as hypovolemic shock above.
   3. If hypotension (BP <90 systolic) and other signs and symptoms of shock persist after administration of second 20 ml/kg normal saline bolus, then:
      a. Reassess that shock is distributive and not from untreated hypovolemia.
      b. Contact Medical Command and consider dopamine IV drip infusion at 2 to 5 ug/kg per minute per MCP order.
      c. Titrate dopamine drip at 5 to 20 ug/kg per minute in an effort to improve perfusion per MCP order.
E. If cardiogenic shock is suspected:

1. Immediate transport.

2. Establish IV normal saline and administer cautious fluid bolus of 250 ml.

3. Reassess appearance, vital signs, and signs and symptoms of shock.

4. If there is no rhythm disturbance and patient remains poorly perfused after the initial fluid bolus:

   a. Contact Medical Command and consider repeat 250 ml fluid bolus or dopamine IV drip infusion at 2 to 5 ug/kg per minute per MCP order.

   b. Titrate dopamine drip at 5 to 20 ug/kg per minute in an effort to improve perfusion per MCP order.

Special Notes:

1. Patients with distributive shock from infection may also have hypovolemia from vomiting, diarrhea, and poor fluid intake.
Patients who are found in full cardiac arrest as a result of trauma have an essentially zero chance of survival. If on the arrival of EMS personnel the patient has any signs of life (pulse or respirations), rapid transportation and treatment offer the only hope for survival. Trauma patients who have a witnessed cardiac arrest require rapid treatment and transportation. Early recognition of tension pneumothorax and immediate treatment can prove life-saving.

A. Perform **TAMP Protocol 4101.**

B. If patient is found pulseless and apneic, **contact MCP directly** for consultation on not beginning resuscitation. Follow **Death in the Field Protocol 9101.**

C. If patient has any pulse or respirations or has arrest witnessed by EMS personnel, begin CPR with c-spine protection and perform **CAT Protocol 4204.**

D. Establish and secure airway according to **Airway Management Protocol 4901.**

E. If intubated and unable to ventilate due to increased airway pressures, re-confirm proper ET placement and perform bilateral chest decompression.

F. As soon as possible without delaying transport, establish two (2) IV lines of normal saline with as large a catheter as possible up to a 14 gauge and administer 20 ml/kg normal saline IV up to 2 liters and reassess.

G. Full immobilization.

H. Transport. On scene time should be <5 minutes, if possible.

I. If patient is entrapped, consider **Cease-Efforts Protocol 9102 per direct MCP order.**

J. **Consult MCP** for consideration of use of MAST and further treatment orders.
West Virginia Office of Emergency Medical Services

State Advanced Life Support (ALS) Protocols

4200 Series - Cardiac

December 2001
Effective February 15, 2002
Revised June 7, 2004
The initial procedures needed to assess and manage medical patients are similar. Medical patients commonly suffer from cardiac or respiratory illnesses. Patients experiencing a cardiac emergency may present in many different ways including: chest pain, dyspnea, syncope, diaphoresis, weakness, dysrhythmias, or symptoms similar to previous cardiac problems. Patients may experience respiratory distress as a result of many different causes. This protocol outlines the **Medical Assessment and Management Procedures (MAMP)**. When directed by a protocol to “Perform MAMP”, this protocol should be performed in conjunction with the remaining procedures outlined in each individual treatment protocol.

### A. Airway and Oxygenation Management.

1. If airway is patent and spontaneous breathing is adequate and:
   a. No or mild to moderate dypsnea, then administer oxygen at 2 - 6 LPM nasal cannula to maintain pulse oximeter >94%.
   b. Severe dyspnea, then administer oxygen at 15 LPM non-rebreather mask to maintain pulse oximeter >94%.

2. If airway is not patent or breathing is inadequate, ventilate with 100% oxygen and perform **Airway Management Protocol 4901** as indicated.

### B. Circulation, Vital Signs, and Rhythm Assessment.

1. If no pulse present, perform **CAT** and CPR and treat per appropriate protocol.
2. If pulse is present, obtain vital signs.
3. Place patient on ECG and pulse oximeter monitor.

### C. Prepare for transport and transport if it does not interfere with definitive treatment.

### D. Establish venous access. Do not delay treatment or transport if immediate IV access is not critical to immediate treatment.
EMT - Paramedic Treatment Protocol 4201

Medical Assessment and Management Procedures (MAMP)

1. IV, preferably antecubital, with saline lock or normal saline at KVO.

2. If unable to establish and patient is critically ill and unconscious, consider establishing intraosseous per order of MCP.

E. If known, treat cause of respiratory distress per appropriate protocol:

1. If allergic reaction, refer to Anaphylaxis/Allergic Reaction Protocol 4501.
2. If lung sounds of wheezes or rhonchi with prolonged expiratory phase, refer to Bronchospasm Protocol 4302.
3. If lung sounds of rales or crackles with extremity edema or frothy sputum, refer to Pulmonary Edema Protocol 4303.
4. If inhalation injury, refer to Inhalation Injury Protocol 4304.
5. If airway obstruction, refer to Airway Obstruction Protocol 4305.
6. If cardiac chest pain, refer to Chest Pain Protocol 4202.

F. If cardiac emergency, consider causes that are potentially field reversible. Treat per appropriate protocols or as directed by Medical Command.

Drug OD (4606)  Tension Pneumothorax (4104)
Hypovolemia (4108)  Thrombosis, Coronary (ACS) (4202)
Hypoxia (4901)  Hypothermia (4503)

G. Expedite transport if not already enroute.

H. Contact Medical Command. Further treatment as ordered by Medical Command.
A. Indications for this protocol include one or more of the following:

1. Male over 25 years of age or female over 35 years of age, complaining of substernal chest pain, pressure or discomfort unrelated to an injury.

2. History of previous ACS/AMI with recurrence of “similar” symptoms.

3. Any patient with a history of cardiac problems who experiences lightheadedness or syncope.

4. Patients of any age with suspected cocaine abuse and chest pain.

B. Perform MAMP (4201)

C. Obtain 12 lead ECG, if available and causes no delay in treatment or transport.

D. If patient has no history of allergy to aspirin and has no signs of active bleeding (i.e., bleeding gums, bloody or tarry stools, etc.), then administer 4 (four) 81 mg chewable aspirin orally (324 mg total). Note: May be administered prior to establishment of IV access.

E. If blood pressure > 100 systolic and patient has not taken Viagra or Levitra within last 24 hours (or Cialis within the last 72 hours):

1. Administer nitroglycerine 0.4 mg (1/150 gr) SL. Note: May be administered prior to establishment of IV access.

2. Repeat every 5 minutes until pain is relieved or 3 doses administered.

3. If blood pressure falls below 100 systolic, discontinue dosing and contact MCP to discuss further treatment.
F. If blood pressure < 100 systolic and/or patient is experiencing severe bradycardia or tachycardia treat according to appropriate protocol. Further treatment per MCP orders. If patient has taken Viagra or Levitra within last 24 hours (Cialis within 72 hours) nitroglycerine should only be given by MCP order.

G. Transport.

H. Contact Medical Command.

I. If chest pain persists:

1. Morphine sulfate 2 mg slow IV per order of Medical Command.

2. Repeat morphine sulfate 2 mg per order of Medical Command after five minutes if pain persists and BP is over 100 systolic.

3. Administer additional nitroglycerine 0.4 mg (1/150 gr.) sublingual per order of Medical Command.

J. Treat dysrhythmias according to specific protocols.

K. If transport time permits, complete Cardiac Thrombolytic Therapy Screening questionnaire. (See Section L next page.)
## L. Cardiac Thrombolytic Therapy Screening:

<table>
<thead>
<tr>
<th>Duration of symptoms: <em><strong>/</strong></em> hrs./mins.</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. S-T segment elevated or depressed at least 0.1 mv?</td>
<td>___</td>
<td>___</td>
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<tr>
<td>2. History of bleeding problems, IE nose, gums, etc?</td>
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<td>___</td>
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<tr>
<td>3. History of bleeding ulcers?</td>
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<td>4. History of bleeding hemorrhoids?</td>
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<tr>
<td>5. Any surgery in last 6 months?</td>
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<tr>
<td>6. Any dental procedures in last 6 months?</td>
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<td>7. History of stroke (including family)?</td>
<td>___</td>
<td>___</td>
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<tr>
<td>8. History of sudden/temporary weakness/numbness of face or extremities, dizziness or unsteadiness?</td>
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<td>9. History of difficulty with speech or visions?</td>
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<td>10. History of headaches or mental status changes?</td>
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<tr>
<td>11. Any recent falls or injuries?</td>
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<tr>
<td>12. History of high blood pressure?</td>
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<tr>
<td>13. History of diabetes?</td>
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<td>___</td>
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<tr>
<td>14. History of hemorrhagic retinopathy?</td>
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<td>___</td>
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<tr>
<td>15. Pregnant?</td>
<td>___</td>
<td>___</td>
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<tr>
<td>16. Receiving oral anticoagulants?</td>
<td>___</td>
<td>___</td>
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<tr>
<td>17. CPR performed recently?</td>
<td>___</td>
<td>___</td>
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<tr>
<td>18. IM injections recently?</td>
<td>___</td>
<td>___</td>
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<tr>
<td>19. Known cardiac arrhythmias?</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>20. Liver dysfunctions?</td>
<td>___</td>
<td>___</td>
</tr>
</tbody>
</table>
An elevated blood pressure reading in emergency patients is not uncommon and usually is not by itself an emergency. True hypertensive emergencies are diagnosed on the basis of end-organ damage which is not easily determined in the prehospital setting. Overzealous treatment of elevated blood pressure in hypertensive patients can cause serious complications. Except in extreme cases, patients with isolated elevated blood pressure readings should receive supportive care and expeditious transport to the Emergency Department for further evaluation. Specific problems such as chest pain, pulmonary edema, and preeclampsia/eclampsia should be treated per appropriate protocols. Only when serial markedly elevated readings are obtained should drug therapy be considered with careful consultation with the medical command physician.

A. Perform MAMP Protocol 4201.

B. If chest pain is present, refer to Chest Pain Protocol 4202.

C. If pulmonary edema is present, refer to Pulmonary Edema Protocol 4303.

D. If pre-eclampsia/eclampsia is suspected, refer to OB/GYN Emergencies Protocol 4608.

E. Transport and notify Medical Command.

F. Measure blood pressure every 5 minutes. If three (3) successive readings have a systolic >250 mm Hg or a diastolic >130 mm Hg, consider nitroglycerine 0.4 mg (1/150 gr.) sublingual per MCP order.
According to the AHA Comprehensive ECC Algorithm, all cardiac arrest victims receive the same 4 treatments. This protocol outlines these standard Cardiac Arrest Treatment (CAT) procedures. When directed by a protocol to “Perform CAT”, this protocol should be performed in conjunction with the remaining procedures outlined in each individual treatment protocol.

A. Begin Primary ABCD Survey (BLS Algorithm).
   1. A - Assess airway and breathing.
   2. B - Give 2 slow breaths.
   3. C - Confirm no pulse and start CPR.
   4. D - Attach monitor/defibrillator.

B. Assess rhythm, re-confirm no pulse, and continue CPR.

C. If ventricular fibrillation/ventricular tachycardia, attempt defibrillation up to 3 shocks as per VF/VT Protocol 4205.

D. If non-VF/VT (asystole or PEA), continue CPR and treat per Asystole (4206) or PEA (4207) Protocols.

E. Continue to reassess rhythm, continue CPR if indicated, and simultaneously perform “F” below.

F. Perform Secondary ABCD Survey:
   2. B - Breathing: confirm and secure airway device. Assure ventilation and oxygenation.
   3. C - Circulation: Establish IV normal saline at KVO and administer epinephrine 1mg IV every 3 to 5 minutes.
   4. D - Differential Diagnosis: search for and treat reversible causes as outlined in MAMP Protocol 4201-F.
Ventricular fibrillation is a chaotic rhythm without a pulse. Pulseless v-tach is three or more ventricular complexes in succession at a rate greater than 100 without a pulse.

A. Perform **CAT Protocol 4204** and CPR if indicated.
   1. Immediate defibrillation in witnessed arrest.
   2. Confirm effectiveness of CPR during resuscitative effort.

B. Defibrillate at 200 joules or equivalent biphasic charge.

C. If no conversion:
   1. Defibrillate at 200 - 300 joules or equivalent biphasic charge.
   2. If no conversion, defibrillate at 360 joules or equivalent biphasic charge.
   3. If no conversion, perform **MAMP Protocol 4201** and administer epinephrine (1:10,000) 1 mg IV or if no venous, access 2 mg down ET tube.
   4. If no conversion, within 30 to 60 seconds defibrillate again at 360 joules or equivalent biphasic charge.
   5. If no conversion, continue epinephrine (1:10,000) 1 mg IV or 2 mg down ET tube every 3 to 5 minutes and administer lidocaine 1.5 mg/kg IV or if no venous access 3 mg/kg down ET tube.
   6. If no conversion, defibrillate again at 360 joules or equivalent biphasic charge.
   7. If no conversion, continue lidocaine 0.5 to 0.75 mg/kg IV every 3 to 5 minutes for maximum total dose of 3 mg/kg.

8. If no conversion, continue to alternate drug therapy with defibrillation and contact Medical Command.
### 9. If no conversion, in consultation with Medical Command, consider sodium bicarbonate 1 mEq/kg IV in prolonged arrest.

### 10. Consult directly with MCP for further orders and to determine if Cease-Efforts Protocol 9102 is appropriate. If decision is to cease-efforts, then refer to Cease-Efforts Protocol 9102 and Death in the Field Protocol 9101.

#### D. If conversion occurs:

1. Initiate lidocaine infusion at 2 mg/min IV drip.

2. Monitor vital signs and treat new rhythm per appropriate protocol.

3. Notify Medical Command and transport.

4. Adjust lidocaine drip at 1 to 4 mg/min by order of Medical Command.
## Cardiac Arrest - Asystole

A. Perform **CAT Protocol 4204** and CPR if indicated.

B. Perform **MAMP Protocol 4201**.

C. Confirm true asystole:
   1. Check lead and cable connections.
   2. Check monitor power is “on” and gain is “up”.
   3. Verify asystole in at least 2 leads.

D. Consider external transcutaneous pacing **per MCP order**. If witnessed, asystole may begin without MCP order.

E. Epinephrine 1:10,000:
   1. 1 mg IV; **or**
   2. If no venous access - 2 mg down the endotracheal tube.
   3. Repeat dosages every 3 to 5 minutes for duration of resuscitative effort.

F. Atropine.
   1. 1 mg IV, repeat dosage every 3 to 5 minutes as necessary up to a total of 3 mg or (0.04 mg/kg); **or**
   2. If no venous access - 2 mg down the endotracheal tube, repeat every 3 to 5 minutes as necessary up to a total of 6 mg or (0.08 mg/kg).

G. Contact Medical Command.

H. Consult **directly with MCP** to determine if **Cease-Efforts Protocol 9102** is appropriate. If decision is to cease-efforts, then refer to **Cease-Efforts Protocol 9102** and **Death in Field Protocol 9101**.
EMT-Paramedic  
Treatment Protocol  
4207  

Cardiac Arrest  
Pulseless Electrical Activity  

A. Perform **CAT Protocol 4204** and CPR.

B. Perform **MAMP Protocol 4201**.

C. Review potentially reversible causes as outlined in **MAMP Protocol 4201-F**.

D. Epinephrine 1:10,000:
   1. 1 mg IV; or
   2. If no venous access - 2 mg down the endotracheal tube.
   3. Repeat dosages every 3 to 5 minutes for duration of resuscitative effort.

E. If PEA rate is <60, then administer atropine:
   1. 1 mg IV, repeat dosage every 3 to 5 minutes as necessary up to a total of 3 mg or (0.04 mg/kg); or
   2. If no venous access - 2 mg down the endotracheal tube, repeat every 3 to 5 minutes as necessary up to a total of 6 mg or (0.08 mg/kg).

F. Contact Medical Command.

G. Consult directly with MCP to determine if **Cease-Efforts Protocol 9102** is appropriate. If decision is to cease-efforts, then refer to **Cease-Efforts Protocol** and **Death in Field Protocol 9101**.
Supraventricular tachycardia is usually a narrow complex rhythm with a rate >150. This includes paroxysmal supraventricular tachycardia (PSVT) and atrial fibrillation/atrial flutter with rapid ventricular response. For the purposes of this protocol, treatment will be based on assessment of patient’s blood pressure and mental status. Cardioversion will be performed in the field only if the patient has a systolic blood pressure <90 and a decreased level of consciousness. This protocol does not apply to sinus tachycardia associated with hypovolemia or other identifiable causes.

A. Perform MAMP Protocol 4201.

B. Assess level of consciousness and blood pressure.

C. As soon as rhythm is identified and patient is found to have a systolic blood pressure <90 and a significantly decreased level of consciousness, proceed to Section “F” below and prepare for immediate cardioversion. Do not delay cardioversion to establish IV.

D. If patient’s systolic BP >90 then:
   1. Vagal maneuvers; i.e., valsalva to increase intra-thoracic pressure.
   2. If no conversion, administer adenosine 6 mg rapid IV push followed by immediate 20 ml flush of normal saline. Reassess vital signs.
   3. If no conversion after 1 to 2 minutes, then administer adenosine 12 mg rapid IV push followed by immediate 20 ml flush of normal saline. Reassess vital signs.
   4. If no conversion after 1 to 2 minutes, then administer adenosine 12 mg rapid IV push followed by immediate 20 ml flush of normal saline. Reassess vital signs.

5. If no conversion after 3rd dose of adenosine, consult Medical Command for further treatment orders and prepare to transport.
E. If systolic BP <90 and patient is awake and alert:

1. Perform vagal maneuvers.

2. Expedite transport and consult Medical Command for further treatment orders.

3. Monitor vital signs and mental status closely for changes.

4. If ordered by MCP, administer adenosine 6 mg rapid IV push followed by immediate 20 ml flush of normal saline. Reassess vital signs.

5. Further treatment per order of MCP.

F. If systolic BP <90 and patient has significantly decreased level of consciousness:

1. Synchronized cardioversion at 100 joules or equivalent biphasic charge.

2. If no conversion, repeat synchronized cardioversion at 200 joules or equivalent biphasic charge.

3. If no conversion, synchronized cardioversion at 300 joules or equivalent biphasic charge.

4. If no conversion, synchronized cardioversion at 360 joules or equivalent biphasic charge.

5. If no conversion, expedite transport and contact MCP for further orders and consider administration of adenosine as outlined in “D” above per MCP order.
Ventricular tachycardia is a wide complex rhythm with a rate usually <150 but >100 bpm. Occasionally the rate may be >150, and these patients typically deteriorate rapidly. For the purposes of this protocol, treatment will be based on assessment of patient’s blood pressure and mental status. Cardioversion will be performed in the field only if the patient has a systolic blood pressure <90 and a decreased level of consciousness.

A. Perform **MAMP Protocol 4201**.

B. Assess level of consciousness and blood pressure.

C. As soon as rhythm is identified and patient is found to have a systolic blood pressure <90 and a significantly decreased level of consciousness, proceed to Section “F” below and prepare for immediate cardioversion. Do not delay cardioversion to establish IV.

D. If patient’s systolic BP >90, then:

1. Administer lidocaine 0.5 to 0.75 mg/kg slow IV. Reassess vital signs.

2. If no conversion, repeat lidocaine 0.5 to 0.75 mg/kg slow IV. Reassess vital signs.

3. If no conversion, expedite transport and consult Medical Command.

4. If **ordered by Medical Command**, continue lidocaine 0.5 to 0.75 mg/kg slow IV every 5 to 10 minutes to total maximum dose of 3 mg/kg.

5. Transport.

E. If systolic BP <90 and patient is awake and alert:

1. Expedite transport and treat as in “D” above.

2. Monitor vital signs and mental status closely for changes.
EMT - Paramedic
Treatment Protocol
4209

Dysrhythmia with a Pulse Ventricular Tachycardia (Wide Complex)

F. If systolic BP <90 and patient has significantly decreased level of consciousness:
   1. Synchronized cardioversion at 100 joules or equivalent biphasic charge.
   2. If no conversion, repeat synchronized cardioversion at 200 joules or equivalent biphasic charge.
   3. If no conversion, synchronized cardioversion at 300 joules or equivalent biphasic charge.
   4. If no conversion, synchronized cardioversion at 360 joules or equivalent biphasic charge.

   5. If no conversion, establish IV normal saline and administer lidocaine 0.5 to 0.75 mg/kg slow IV and consult Medical Command.

G. If conversion occurs:
   1. Initiate lidocaine infusion at 2 mg/min IV drip.
   2. Monitor vital signs and treat new rhythm per appropriate protocol.
   3. Transport and notify Medical Command.

   4. Adjust lidocaine drip at 1 to 4 mg/min by order of Medical Command.

Special Note: If at anytime patient does not have a pulse, refer to Cardiac Arrest Protocol 4205.
G. If conversion occurs:

1. Monitor vital signs and treat new rhythm per appropriate protocol.

2. Transport and contact Medical Command.

Special Note:

1. If at anytime patient no longer has a carotid pulse, refer immediately to appropriate cardiac arrest protocol.
Symptomatic sinus bradycardia is a heart rhythm <60 bpm accompanied by serious signs or symptoms. For the purpose of this protocol, serious signs or symptoms must include a systolic blood pressure <90 and chest pain or decreased level of consciousness which is most likely caused by the slow heart rate. This protocol is also used for symptomatic second and third degree heart block rhythms.

A. Perform **MAMP Protocol 4201**.

B. Begin preparation for external transcutaneous pacing.

C. If heart rate is <40:
   1. Atropine 1.0 mg rapid IV bolus.
   2. If rhythm and symptoms continue, atropine 1.0 mg IV every 3-5 minutes to total dose of 3 mg or 0.04 mg/kg.

   3. If rhythm and symptoms continue, contact MCP and consider external transcutaneous pacing **per MCP order**.

   4. Further treatment **per MCP order**.

D. If heart rate is >40 but <60:
   1. **Consult Medical Command** to consider atropine 0.5 to 1.0 mg IV.

   2. Prepare for transport.

   3. If rhythm and symptoms continue, **by order of Medical Command** repeat atropine 0.5 to 1.0 mg IV every 3 to 5 minutes to total maximum dose of 3 mg or 0.04 mg/kg.
4. If rhythm and symptoms continue, contact MCP and consider external transcutaneous pacing per MCP order.

E. If heart rate increases to 60 or greater with persistent hypotension (BP <90 systolic), go to Shock Protocol 4108 - Section E, Cardiogenic Shock.

F. If conversion occurs:

1. Monitor vital signs and treat new rhythm per appropriate protocol.

2. Transport and notify Medical Command.
Treatment is usually not indicated for ventricular ectopy (PVC’s). In rare circumstances, if the patient is symptomatic, the MCP may decide to treat the ventricular ectopy if more than 6 PVC’s per minute, multifocal, bigeminy, or couplets are present and with no evidence of second or third degree heart blocks or bundle branch block (widened QRS).

A. Perform **MAMP Protocol 4201**.

B. Common causes of ventricular ectopy include hypoxia and CHF, therefore, aggressive airway management and oxygenation may make further treatment unnecessary.

C. If chest pain and/or acute coronary syndrome symptoms, go to **Chest Pain Protocol 4202**.

D. If rhythm is bradycardia, go to **Symptomatic Bradycardia Protocol 4211** first.

E. **Contact Medical Command** and prepare for transport.

F. If ordered by MCP:

   1. Administer lidocaine 1.0 mg/kg IV. Repeat at 0.5 to 0.75 mg/kg IV every 5 to 10 minutes until ectopy is suppressed or maximum total dose of 3 mg/kg.

   2. If ectopy is suppressed, initiate lidocaine infusion at 1 to 4 mg per minute **per MCP order**.

G. Transport.
West Virginia
Office of
Emergency Medical Services

State Advanced Life Support (ALS) Protocols

4300 Series - Respiratory

December 2001
Effective February 15, 2002
Bronchospasm may be the manifestation of several disease processes, most commonly asthma, chronic bronchitis, and emphysema (COPD). Physical examination reveals wheezing and prolonged expiratory phase of breathing. Treatment is directed toward reversing the bronchoconstriction.

A. Perform MAMP Protocol 4201.

B. If heart rate is <130 (<150 pediatric):
   1. Administer albuterol nebulizer 2.5 mg with oxygen 8-10 LPM.
   2. Reassess vital signs and lung sounds.
   3. If distress is unrelieved:
      a. Expedite transport.
      b. Administer second albuterol nebulizer 2.5 mg.

C. Contact Medical Command

D. If patient is an adult and has no history of glaucoma and is not pregnant, consider administration of ipratropium bromide (Atrovent) 500 mcg in 2.5 ml normal saline by nebulizer after the second albuterol treatment per order of Medical Command.

E. If distress continues, repeat albuterol and/or ipratropium bromide every 10 to 15 minutes as ordered by Medical Command.

F. If distress continues and patient is <35 years of age and has no history of cardiac disease or hypertension, consider administration of epinephrine 1:1000, 0.01 mg/kg SQ, not to exceed 0.3 mg per dose per MCP order.
Bronchospasm

4. If distress is relieved:
   a. Monitor vital signs and transport.
   b. Notify Medical Command.

C. If heart rate is >130 (>150 pediatric):
   1. Confirm that patient’s tachycardia appears to be from respiratory distress and not from other causes.
   2. If patient is under age 45 and has no cardiac history:
      a. Proceed with treatment as in “B” above.
      b. Monitor patient’s symptoms and vital signs very closely.
      c. If any signs of increasing chest pain or cardiac symptoms develop, stop nebulizer, and treat per appropriate protocol.
      d. **Contact Medical Command.** Further treatment as **ordered by Medical Command.**

3. If patient is over age 45 and/or has a cardiac history, **consult Medical Command** before proceeding with treatment in “B” above.

4. Further treatment **per order of Medical Command.**
Patients experiencing pulmonary edema will have rales or crackles on lung exam and JVD and/or peripheral edema and/or frothy sputum. Remember that rales can also be heard in patients with lung infections who are not in pulmonary edema and furosemide is not appropriate treatment for these patients.

A. Perform **MAMP Protocol 4201** as appropriate.

B. If blood pressure is >100 systolic and patient has rales and JVD:
   1. Administer nitroglycerine 0.4 mg (1/150 gr) SL.
   2. **Contact Medical Command** and prepare for transport.
   3. If patient is not already taking furosemide (Lasix), then administer furosemide 40 mg IV **per order of MCP**.
   4. If patient is already taking furosemide, then administer furosemide 80 mg IV **per order of MCP**.
   5. **If ordered by MCP,** administer morphine sulfate 2 to 4 mg IV.
   6. **If ordered by MCP,** administer albuterol nebulizer 2.5 mg with oxygen 8 - 10 LPM.
   7. Transport with **further orders per MCP**.

C. If blood pressure is <100 systolic and patient has rales and JVD:
   1. Expedite transport and monitor vital signs closely.
   2. **Contact Medical Command** for **further orders per MCP**.

D. If blood pressure is <90 systolic, refer to **Shock Protocol 4108 - Section E, Cardiogenic Shock**.
Inhalation injury may be caused by toxins or thermal burns. In either case, the patient should be removed from the environment. **NEVER ATTEMPT, UNLESS TRAINED AND PROPERLY EQUIPPED. NEVER PLACE YOURSELF OR YOUR CREW IN DANGER.** Decontamination, if necessary, should be done by appropriate personnel.

Obtain [MSDS Sheet](#) for inhalant and/or refer to [DOT Emergency Response Guide](#) for direction. Contact Medical Command which may consult with WV Poison Control Center.

A. Perform **MAMP Protocol 4201**.

B. Specific history and physical exam:
   1. Type and amount of toxin, if known.
   2. Duration of exposure.
   3. History of loss of consciousness.
   4. If thermal injury, assess nares and oropharynx for singeing and soot.
   5. Assess lung sounds; if wheezing, refer to **Bronchospasm Protocol 4302**.
   6. If burns are present, treat per appropriate protocol:
      a. **Thermal Burns Protocol 4506**.
      b. **Chemical Burns Protocol 4507**.
      c. **Electrical/Lightning Burns Protocol 4508**.

C. Transport.

D. Notify Medical Command.
Airway Obstruction

A. Conscious.

1. Able to talk or cough:
   a. Reassure victim.
   b. Encourage coughing.
   c. Oxygen 15 LPM non-rebreather mask.
   d. Transport immediately and notify Medical Command.

2. Unable to talk or cough, or weak ineffective cough:
   a. Deliver repeated abdominal thrusts until obstruction relieved or victim becomes unconscious. For patients under 1 year of age, do alternating 5 back blows and 5 chest thrusts.
   b. Chest thrusts are preferred on advanced pregnancy and marked obesity.
   c. Transport immediately and notify Medical Command

B. Unconscious.

1. Open Airway.

2. Attempt ventilation.

3. Reposition airway, attempt ventilation.

4. Deliver 5 abdominal thrusts. For patients under 1 year of age, do alternating 5 back blows and 5 chest thrusts. Do not use abdominal thrusts in patients under 1 year of age.
5. Finger sweep for foreign body. **Do not perform finger sweep on patients under 8 years of age.**

6. Repeat steps 1 - 5 above.

7. If still obstructed, visualize with laryngoscope, remove obstruction with Magill forceps.

8. If unsuccessful, transport immediately. Repeat steps 1-5 enroute.

9. **Contact Medical Command.**

10. Consider needle cricothyrotomy **per direct MCP order.** Refer to Airway Management Protocol 4901.
West Virginia
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State Advanced Life Support
(ALS) Protocols

4400 Series - Pediatric

December 2001
Effective February 15, 2002
Revised June 7, 2004
The initial procedures needed to assess and manage pediatric medical patients are similar. Primary cardiac problems are rare in children. Pediatric patients may experience respiratory distress as a result of many different causes. This protocol outlines Pediatric-Medical Assessment and Management Procedures (Peds-MAMP). When directed by a protocol to “Perform Peds-MAMP”, this protocol should be performed in conjunction with the remaining procedures outlined in each individual treatment protocol.

A. Perform initial assessment:


2. Hands on physical assessment using Pediatric ABCDE’s. Airway, breathing, circulation, disability, and exposure.

B. Provide immediate resuscitation as needed and immediately make transport decision.

C. Perform additional assessment and treatments as required following general guidelines as outlined in adult MAMP Protocol 4201 with the following special notes for the pediatric patient.

1. Do not use nasal cannula in infants and small children. Use blow-by oxygen or mask to keep pulse oximeter >94%.

2. Perform focused history, more detailed physical exam, and ongoing assessment at the appropriate time before or during transport depending on decision made in “B” above.

3. In critically ill child who is unconscious and <6 years of age, if unable to establish IV, then establish intraosseous per order of MCP.
Shock, or hypoperfusion, is decreased effective circulation causing inadequate delivery of oxygen to tissues. Signs of early (compensated) shock include tachycardia, poor skin color, cool/dry skin, and delayed capillary refill. Systolic blood pressure is normal in early shock. In late (decompensated) shock, perfusion is profoundly affected. Signs include low blood pressure, tachypnea, cool/clammy skin, agitation, and altered mental status.

Shock is categorized as: 1) hypovolemic, 2) distributive, or 3) cardiogenic.

A. Perform Peds-MAMP Protocol 4401.

B. Determine most likely cause of shock.

1. Hypovolemic (loss of fluid) is most common. Usually from bleeding or vomiting and diarrhea.

2. Distributive (loss of vascular tone) is usually from sepsis (infection). Other causes include anaphylaxis, toxic chemicals, or spinal cord injury.

3. Cardiogenic (heart pump failure) is rare in children. Most common cause is congenital heart disease.

C. If hypovolemic shock is suspected (most common):

1. If associated with trauma, refer to Peds-TAMP Protocol 4408.

2. If history of vomiting and/or diarrhea and normal vital signs and minimal evidence of dehydration such as decreased tearing and dry mucous membranes, then transport and monitor vital signs.

3. If dehydrated with signs of early shock such as tachycardia and cool/dry skin, and delayed capillary refill, then:

   a. Begin transport.
b. Establish IV normal saline and administer 20 ml/kg bolus.

c. Contact Medical Command and reassess vital signs.

d. Continue fluids per order of Medical Command.

4. If signs of late (decompensated) shock such as low blood pressure, tachypnea, cool/clammy skin, agitation, and altered mental status, then:

   a. Make one attempt on-scene to establish IV normal saline and administer 20 ml/kg bolus set to maximum flow rate.

   b. Transport.

   c. If still evidence of shock, repeat 20 ml/kg normal saline bolus up to two times for a maximum total of 60 ml/kg.

   d. Contact Medical Command for further fluid management orders.

   e. If unable to establish IV access and patient is unconscious and less than six years old, proceed with intraosseous access per MCP order. Administer same normal saline boluses as above.

D. If distributive shock is suspected:

   1. If anaphylaxis or allergic reaction, refer to Allergic Reaction/Anaphylaxis Protocol 4501.

   2. Initial treatment same as hypovolemic shock above.
3. If hypotension, markedly increased heart rate, and mental status changes persist after administration of three 20 ml/kg normal saline boluses, then:

   a. Reassess that shock is distributive and not from untreated hypovolemia.

   b. **Contact Medical Command** and consider dopamine IV drip infusion at 2 to 5 ug/kg per minute *per MCP order*.

   c. Titrate dopamine drip at 5 to 20 ug/kg per minute in an effort to improve perfusion *per MCP order*.

E. If cardiogenic shock is suspected:

   1. Immediate transport.

   2. Establish IV normal saline and administer cautious fluid bolus of 10 ml/kg.

   3. Reassess appearance, vital signs, and work of breathing.

   4. If there is no rhythm disturbance and patient remains poorly perfused after the initial fluid bolus:

   a. **Contact Medical Command** and consider dopamine IV drip infusion at 2 to 5 ug/kg per minute *per MCP order*.

   b. Titrate dopamine drip at 5 to 20 ug/kg per minute in an effort to improve perfusion *per MCP order*.

**Special Notes:** Patients with distributive shock from infection may also have hypovolemia from vomiting, diarrhea, and poor fluid intake.
A. Perform Peds-MAMP (4401).

B. Protect patient from injury - place on left side.

C. Obtain history to help determine origin of seizure:
   1. Febrile - refer to Pediatric Emergencies - Fever Protocol 4409.
   2. Trauma - refer to Peds-TAMP Protocol 4408.
   3. History of seizures in the past and is patient taking any antiseizure medications.

D. If child is actively seizing:
   1. Protect airway, **DO NOT** attempt intubation during convulsion.
   2. Calm caregiver’s fears.
   3. Obtain key information and prepare for transport.
   4. If patient has been given prescription for Diastat and is still seizing then administer Diastat per rectum at prescribed dose and contact Medical Command.
   5. Quickly assess serum glucose with a glucometer and attempt to establish IV normal saline KVO or saline lock.
   6. If glucose level is < 80 mg/dl or cannot be determined:
      a. Administer IV dextrose as follows:
         i. D50W at 1.0 ml/kg for children older than two years.
         ii. D25W at 2.0 ml/kg for children younger than two years.
      b. If no IV available, administer glucagon 1.0 mg, IM.
EMT-Paramedic
Treatment Protocol
4403

Pediatric Emergencies
Seizures

7. Expedite transport and contact medical command.

8. If seizure lasts longer than 5 minutes or two or more episodes of seizure activity occur between which the patient does not regain consciousness:
   a. If no IV access is available administer diazepam 0.5mg/kg (maximum individual dose of 10.0 mg) per rectum per MCP order.
   b. If IV access has been established then administer diazepam 0.2 mg/kg IV (maximum individual dose of 10.0 mg) per MCP order.

9. If seizure continues, further treatment as ordered by Medical Command.

E. If child is not actively seizing:
   1. Monitor vital signs closely and be alert for recurrence of seizure.
   2. Transport
   3. Perform remaining assessment as indicated.
   4. Notify Medical Command.

Special note: If child is administered their personal prescription of Diastat by EMS, the child must be transported to the hospital for further evaluation.
Pediatric patients require the same skills and techniques as adult patients, however, unless you are calm and professional, the emotional reaction of the patient and others on the scene may become more intense. **Use extreme tact and professionalism. Do not let emotions or prejudices interfere with appropriate patient care.**

A. Assure that scene is safe for both rescuers and patient.

B. Perform **Peds-MAMP Protocol 4401.**

C. Complete thorough physical exam.

D. Provide appropriate emergency medical treatment for all injuries found (refer to appropriate trauma protocols).

E. Obtain history from all available sources including child, parent/caregiver, and other witnesses.

F. Alleged sexual abuse:
   1. Discourage patient from going to bathroom.
   2. Don’t allow patient to change clothes or wash.
   3. Give nothing by mouth.

G. Transport.

H. Contact Medical Command.

I. Upon arrival at the hospital, inform the receiving medical personnel of your findings and/or suspicions. Document the call carefully and thoroughly. Use the telephone to relay pertinent information to Medical Command.
Special Note: Current WV law sets forth that as mandated reporters of child abuse and neglect, EMS providers are required to report the circumstances of child abuse/neglect or cause a report to be made to the State Department of Human Services within 48 hours after suspecting abuse. Additionally, they are required to report the circumstances to the person in charge of the receiving institution or a designated person thereof. That person is then required to make the report or cause a report to be made. While EMS providers may report the circumstances to the Department of Human Services themselves, they **must** always make a report to the person in charge of the receiving institution, or a designated person thereof, who then has a statutory duty to report.
Sudden Infant Death Syndrome (SIDS) is the unexpected, sudden death of a seemingly normal, healthy infant that occurs during sleep with no physical evidence of disease or injury.

A. Begin resuscitation immediately unless rigor mortis, severe lividity, or tissue breakdown is evident. If any doubt, resuscitate. Refer to Pediatric Emergencies Cardiac Arrest Protocol 4406.

B. Note the position and condition of the victim and the surroundings.

C. Use extreme tact and professionalism. Do not let emotions or prejudices interfere with carrying out appropriate patient care or family support.
   1. Do not make judgments concerning the situation.
   2. Do not add to the parent’s sense of guilt or helplessness.
   3. Remember, people react differently to stressful situations.

D. If resuscitation is begun:
   1. Transport immediately.
   2. Continue treatment enroute per appropriate protocol.
   3. Contact Medical Command for further orders.

E. If resuscitation is not begun:
   1. Contact Medical Command immediately for confirmation of decision not to begin efforts by direct MCP order.
   2. Follow Death in the Field Protocol 9101.
Cardiac arrest in infants and children is rarely a primary event. It is usually a result of deterioration of respiratory function resulting in decreased cardiac function. Cardiac arrest can be prevented if the symptoms of respiratory failure and/or shock are recognized and quickly treated.

**Ventricular Fibrillation/Pulseless V-tach:**

A. Perform **CAT Protocol 4204** with the following special notes for pediatric patients:

1. If unable to establish IV, then establish IO.

2. Epinephrine 1:10,000, 0.01 mg/kg IV or IO every 3-5 minutes (tracheal tube 0.1 mg/kg, 1:1000).

3. Immediate defibrillation in witnessed arrest.

4. Confirm effectiveness of CPR during resuscitative effort.

B. Defibrillate at 2 joules/kg.

C. If no conversion:

1. Defibrillate at 4 joules/kg.

2. If no conversion, defibrillate again at 4 joules/kg.

3. If no conversion, establish airway and IV/IO access per **CAT**, and administer epinephrine (1:10,000) 0.01 mg/kg IV or IO, or epinephrine (1:1000) 0.1 mg/kg down ET tube.

4. If no conversion, within 30-60 seconds defibrillate at 4 joules/kg.

5. If no conversion, continue epinephrine every 3 to 5 minutes and administer lidocaine 1 mg/kg IV or IO or down ET tube.
6. If no conversion, defibrillate again at 4 joules/kg.

7. If no conversion, repeat lidocaine 1 mg/kg IV or IO or down ET tube.

8. If no conversion, defibrillate at 4 joules/kg.

9. If no conversion, continue to alternate drug therapy with defibrillation and contact Medical Command.

10. Transport.

D. If conversion occurs:

1. Monitor vital signs and treat new rhythm per appropriate protocol.

2. Notify Medical Command and transport.

Asystole:

A. Perform CAT with special notes as above.

B. Confirm true asystole:

1. Check lead and cable connections.

2. Check monitor power is “on” and gain is “up”.

3. Verify asystole in at least 2 leads.

C. Administer epinephrine (1:10,000) 0.01 mg/kg IV or IO, or epinephrine (1:1000) 0.1 mg/kg down ET tube. Repeat every 3 to 5 minutes.

D. Notify Medical Command and transport.
E. Search for and treat reversible causes as outlined in MAMP Protocol 4201-F.

F. Further treatment as ordered by MCP.

G. If conversion occurs:
   1. Monitor vital signs and treat new rhythm per appropriate protocol.
   2. Notify Medical Command and transport.

PEA (Pulseless Electrical Activity):

A. Perform CAT with special notes as above.

B. Review potentially reversible causes as outlined in MAMP Protocol 4201-F.

C. Administer epinephrine (1:10,000) 0.01 mg/kg IV or IO, or epinephrine (1:1000) 0.1 mg/kg down ET tube. Repeat every 3 to 5 minutes.

D. Notify Medical Command and transport.

E. Further treatment as ordered by MCP.

F. If conversion occurs:
   1. Monitor vital signs and treat new rhythm per appropriate protocol.
   2. Notify Medical Command and transport.
Cardiac dysrhythmias are rare in children. Bradycardia is almost always caused by hypoxia and is frequently a pre-arrest situation. Tachycardia may be SVT, VT, or sinus tachycardia. Tachycardia may be from hypoxia or pain, however, children may tolerate heart rates >200 without immediate serious consequences. Carefully assess the patient, and if they are essentially asymptomatic, then expedite transport and monitor closely.

A. Perform **Peds-MAMP Protocol 4401**.

B. Bradycardia (heart rate <60). Usually due to hypoxia. Always look for potentially reversible causes as outlined in **MAMP Protocol 4201-F**. Aggressively manage the airway.

1. If no pulse, treat per **Cardiac Arrest Protocol 4406**.

2. If pulse present but patient is hemodynamically unstable with low blood pressure, poor perfusion, and decreased level of consciousness:
   a. Reassess airway and assist ventilations.
   b. **Contact Medical Command** and administer epinephrine (1:10,000) 0.01 mg/kg IV or IO, or epinephrine (1:1000) 0.1 mg/kg down ET tube **per MCP order**. Repeat every 3 to 5 minutes **per MCP order**.
   c. If ordered by MCP, administer atropine 0.02 mg/kg IV, IO, or ET. Minimum dose: 0.1 mg. Maximum single dose: 0.5 mg for child; 1.0 mg for adolescent.

3. If child is essentially asymptomatic, monitor closely and expedite transport. Continually reassess airway and oxygenation.
C. Narrow Complex with rate >220 (probably SVT), with a pulse and no evidence of hemodynamic instability, shock, or decreased level of consciousness.

1. Vagal maneuvers.

2. If no conversion, administer adenosine 0.1 mg/kg IV or IO followed by immediate 20 ml flush of normal saline per order of MCP. Maximum first dose of 6 mg.

3. If no conversion, may double and repeat dose once per order of MCP. Maximum second dose of 12 mg.

D. Narrow complex with rate >220 (probably SVT), with low blood pressure and other signs and symptoms of shock including decreased level of consciousness.

1. If vascular access is in place and adenosine can be given within 90 seconds, then treat as in “C 2 and C 3” above per order of MCP.

2. If no conversion and still in shock, then synchronized cardioversion at 0.5 to 1.0 joules/kg per order of MCP.

3. If no conversion and still in shock, then synchronized cardioversion at 2.0 joules/kg per order of MCP.

E. Wide complex with rate >150 (probably VT).

1. If conscious, administer lidocaine 1mg/kg IV, per order of MCP.

2. If unconscious with signs of shock, deliver synchronized cardioversion as outlined in “D2 and D3” above per order of MCP.
In the trauma patient, time is critical. Only initial assessment and treatment of life-threatening injuries should be performed on scene. For severely injured patients, after appropriate airway management, “load and go” is more appropriate.

If dispatch information gives the responding ambulance reason to suspect the possibility of a significant accident situation (multiple vehicles, etc.), alert Medical Command prior to arrival at scene and consider aeromedical standby.

A. Scene evaluation.
   1. Note potential hazard to rescuers and patient.
   2. Identify number of patients; organize triage operations, if needed.
   3. Observe patient position and surroundings.
   4. Consider need for aeromedical evacuation.

B. Consider mechanism of injury.
   1. Cause, precipitating factors, and weapons used.
   2. Trajectories and forces involved to patient.
   3. For vehicular trauma: condition of vehicle, windshield, steering wheel, compartment intrusion, car seat, type and use of seatbelts. Specific description of mechanism, i.e., auto-pole, rollover, auto-pedestrian, etc.
   4. Helmet use?

C. Patient assessment.
   1. Determine responsiveness.
   2. Establish and maintain airway.
### EMT-Paramedic Treatment Protocol 4408

#### Pediatric - Trauma Assessment and Management Procedures (Peds-TAMP)

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<table>
<thead>
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<tbody>
<tr>
<td>a.</td>
<td>Maintain C-spine.</td>
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<tr>
<td>b.</td>
<td>Perform <strong>Airway Management Protocol 4901</strong> as indicated.</td>
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#### Breathing.

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<tr>
<td>a.</td>
<td>If adequate, oxygen 15 LPM non-rebreather mask to maintain pulse oximeter &gt;94%.</td>
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<tr>
<td>b.</td>
<td>If inadequate, ventilate with 100% oxygen and perform <strong>Airway Management Protocol 4901</strong> as indicated.</td>
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#### Circulation.

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<tbody>
<tr>
<td>a.</td>
<td>Control bleeding.</td>
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<td>b.</td>
<td>Assess perfusion status.</td>
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#### Neurological status.

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<tr>
<td>a.</td>
<td>Determine level of consciousness using AVPU or GCS.</td>
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<tr>
<td>b.</td>
<td>Check pupils.</td>
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#### Limit on-scene time.

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<tr>
<td>a.</td>
<td>Not trapped - 10 minutes or less.</td>
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<tr>
<td>b.</td>
<td>Entrapped - within 5 minutes of extrication.</td>
</tr>
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</table>

7. **In consultation with Medical Command**, establish mode (ground vs. air) and destination of transport.
D. Treatment.

1. Immobilize patient on long spine board or as indicated in Spinal Trauma Protocol 4103.

   Note: All multiple trauma patients are considered to have a significantly distracting painful injury. Infants and toddlers with minor injuries or no apparent injury may be left in child safety seats and immobilized, provided the seat is undamaged.

2. Transport.

3. Monitor vital signs, ECG, pulse oximeter.

4. If child has significant injuries or mechanism for significant injury, establish at least one IV line of normal saline with as large a catheter as possible up to a 14 gauage.

   a. If any signs of shock such as tachycardia, tachypnea, cool/clammy skin, or low blood pressure, or high suspicion of major blood loss, administer 20 ml/kg normal saline IV set to maximum flow rate and refer to Pediatric Shock Protocol 4402.

   b. If patient has no signs or symptoms of shock, maintain normal saline IV at KVO.

5. Prevent heat loss.

6. Consider nasogastric tube placement if patient intubated and no facial trauma.

7. Refer to Pain Management Protocol 4902 if indicated.

8. Notify Medical Command.
Fever is defined as a core temperature of 100.4° F (38° C) or greater. Fever is a sign of infection rather than a problem itself. Body temperature less than 105 degree F is not harmful in and of itself. Emergency management of the febrile child involves an assessment to determine if any associated problems are present which require emergent treatment.

A. Perform Peds MAMP Protocol 4401 as appropriate.

B. If child appears acutely ill, do not delay transport to check temperature. Transport and treat associated problems per appropriate protocol.

C. Check core temperature. If core temperature >102 degree F:
   1. Facilitate passive cooling by removing excess clothing and blankets.
   2. If child has not been given acetaminophen in the last 4 hours, then offer to assist parent/guardian with administration of acetaminophen at 10mg/kg.

D. If child has temperature >105 degree F:
   1. Treat as in “C” above and also facilitate active cooling by applying wet towels with tepid water to trunk and head.
   2. Do not submerge in water or use ice or rubbing alcohol.

E. Notify medical command.

F. Transport.
A. Temperature Control: Whether infant is full term or premature, avoid “cold stress”.

1. Dry quickly.

2. Keep the infant as warm as possible.

3. Turn ambulance heater on high to reduce radiant heat loss.

4. Cover head and body with dry blankets.

5. Maintain axillary temperature at 97°F. Check temperature every 15 minutes.

B. Airway and Breathing:

1. Position, supine with head in sniffing position, gently suction mouth, then nose with bulb syringe. If copious secretions are noted, place infant on his/her side with neck slightly extended, continue intermittent suctioning.

2. Assess breathing rate (normal 30 - 60 per minute):

   a. If adequate respirations, proceed to circulation.

   b. If inadequate respirations, cyanosis, or gasping/grunting respirations, apply 100% oxygen via non-rebreather mask at 15 LPM held firmly on infant’s face. If no response/improvement after 5-10 seconds, begin positive pressure ventilations by bag valve mask with supplemental oxygen at rate of 40 to 60 per minute.

   c. If prolonged ventilation by bag valve mask is needed, consider intubation.
C. Circulation:

1. If heart rate within normal ranges (normal heart rate >100 per minute at apical or umbilical sites), assess skin color and continue treatment and transport as in “D” below.

2. If heart rate <100 per minute, apply 100% oxygen by positive pressure ventilation with bag valve mask and ventilate at 40 to 60 per minute.

3. Reassess after 30 seconds.

4. If no improvement and heart rate remains 80 to 100 per minute, continue ventilation.

**Neonates with heart rates less than 80 per minute are in eminent danger of cardiac arrest.**

5. CPR should be started if the heart rate drops below 60 or persists between 60 and 80 beats per minute despite adequate ventilation with 100% oxygen ventilation by bag valve mask.

6. Treat per **Pediatric Dysrhythmias Protocol 4407** or **Pediatric Cardiac Arrest Protocol 4406** as required.

7. Notify Medical Command

D. Transportation:

1. Assure infant remains warm.

2. Maintain airway and oxygenation

3. Transport.
West Virginia
Office of
Emergency Medical Services

State Advanced Life Support
(ALS) Protocols

4500 Series - Environmental

December 2001
Effective February 15, 2002
Anaphylaxis is an acute allergic reaction characterized by varying degrees of respiratory distress, hypotension, wheezing, hives, non-traumatic edema, and tachycardia. It may be precipitated by a bite or sting or from exposure to certain drugs or allergens.

A. Perform **MAMP Protocol 4201**.

B. If from sting, remove injection mechanism, if present.

C. If patient is in mild distress with hives or itching but no or minimal respiratory distress (no wheezing or stridor):

1. Consider diphenhydramine (*Benadryl*) per **MCP order**.
   a. Adult: 25-50 mg, IM or slow IV.
   b. Pediatric: 1 mg/kg, IM or slow IV - Maximum 25 mg.

2. Maintain normal saline IV at KVO.

3. Reassess for improvement or worsening of reaction.

4. Transport and notify Medical Command.

D. If patient is in moderate distress with severe hives and/or moderate respiratory distress (wheezing):

1. Immediately administer epinephrine, 1:1000:
   a. Adult: 0.3 mg SQ.
   b. Pediatric: 0.01 mg/kg SQ (maximum single dose of 0.3 mg).
   c. If age >50, **per MCP order**.
2. Administer diphenhydramine (*Benadryl*):
   a. Adult: 25-50 mg, IM or slow IV.
   b. Pediatric: 1 mg/kg, IM or slow IV - Maximum 25 mg.

3. Expedite transport if not already in transport.

4. Maintain normal saline IV at 100 ml/hr.

5. Reassess and contact Medical Command.

6. If patient still wheezing consider, albuterol nebulizer 2.5 mg with oxygen at 8 to 10 LPM **per order of Medical Command.**

7. If patient is still in moderate distress, consider repeating epinephrine one time **per MCP order**.

8. Further treatment **per order of Medical Command and MCP.**

E. If patient is in severe distress with signs of shock such as low blood pressure and/or decreased level of consciousness, then treat as in “D” above, and if no response, then as follows:

1. Administer normal saline IV bolus of 20 ml/kg set to maximum flow rate.

2. **Contact Medical Command** and consider epinephrine 1:10,000, 0.5 - 1.0 mg, slow IV **per order of MCP.**

3. Reassess and expedite transport.

4. If shock continues, treat **per Adult Shock Protocol 4108** or **Pediatric Shock Protocol 4402.**
Heat exposure can cause various types of heat illness. Heat cramps, heat exhaustion, and heat stroke are the most often encountered. Heat cramps are often associated with heat exhaustion. Initial treatment for all heat illness is similar. Secondary treatment may differ after the signs and symptoms are specifically identified. Heat stroke is a serious life-threatening condition requiring rapid treatment and transport.

**A. General treatment:**

1. Remove patient from hot environment and place in cool environment.
2. Perform **MAMP Protocol 4201** as appropriate.
3. Loosen or remove clothing.

**B. If patient has warm, moist skin, with general weakness, dizziness, nausea, or occasionally syncope (heat exhaustion):**

1. If patient has normal level of consciousness and is not nauseated, encourage patient to drink oral fluids (cool water or Gatorade or Pedialyte).
2. If patient has decreased level of consciousness or is vomiting, administer normal saline IV 250 ml bolus, then run at 250 ml/hour.
3. Cool by fanning without chilling the patient. Watch for shivering.
4. If patient experiences muscle cramps, apply moist towels over cramped muscles.
5. Transport and notify Medical Command.

**C. If patient has very hot, dry skin with rapid pulse, rapid shallow breathing, and/or altered mental status or unconsciousness (heat stroke):**

1. Expedite transport.
2. Administer normal saline IV at 250 ml/hr initially.

3. If signs and symptoms of shock continue, treat per Shock Protocol 4108.
   
   Note: Shock associated with heat stroke may be hypovolemic, distributive, or cardiogenic shock.

4. Cover patient with moist sheet.

5. Apply ice packs to axilla, neck, ankles, and wrists. Do not overcool - watch for shivering.

6. Monitor vital signs and temperature closely.

7. Notify Medical Command.

8. Further treatment per order of Medical Command.
When cold exposure affects the entire body, hypothermia or general cooling develops. When cold exposure affects a particular body part, local cooling or frostbite occurs. Frostbite most commonly affects the ears, nose, face, hands, feet, and toes.

A. General treatment:
   1. Place patient in warm environment.
   2. Perform MAMP Protocol 4201 section with warm humidified oxygen and warmed IV fluids.
   3. Remove all wet clothing.
   4. Insulate core (head, neck, and trunk) with warm blankets.
   5. Rapid smooth transport.

B. If patient is hypothermic and alert and responding appropriately:
   1. Keep the patient still and handle very gently.
   2. Actively rewarm the patient by applying heat packs, hot water bottles, or electric heating pads to neck, chest, and abdomen.
   3. Allow patient to slowly drink warm fluids, but do not allow patient to drink stimulants.
   4. In consultation with Medical Command, establish mode (ground vs. air) and destination of transport.
   5. Monitor vital signs closely during transport.
C. If patient is hypothermic and unconscious or not responding appropriately:

1. Handle patient as gently as possible and expedite transport.
2. Wrap patient in insulated blankets for passive rewarming only.
3. Give nothing by mouth.
4. Continue IV normal saline at KVO.
5. If patient has no pulse, perform CAT and CPR with the following cautions:
   a. Check pulse for at least 60 seconds.
   b. Defibrillate VF/VT max 3 shocks (200, 300, 360).
   c. Withhold IV medications till patient is rewarmed to core temperature of >86 degree F.

7. In consultation with Medical Command, establish mode (ground vs. air) and destination of transport.

8. Further treatment per order of Medical Command.

D. Frostbite.

1. Remove constrictive clothing and jewelry and cover with dry dressing.
2. Do not rub or massage area or break blisters. Do not apply direct heat. Do not allow patient to use affected area. Do not re-expose to cold.
3. Transport and notify Medical Command.
Environmental Emergencies
Snakebite Envenomation

West Virginia has two native venomous snakes. These are the timber rattlesnake and copperhead. Both are hemotoxic. Not all venomous snakebites involve envenomation. Envenomated patients will have one or more fang marks with ecchymosis, progressive edema, severe burning pain, and/or non-clotted oozing blood.

A. Upon arrival, make sure the patient and snake are not in close proximity. Retreat well beyond striking range. Persons are often bitten again while trying to capture or kill the snake.

B. Keep patient calm. Movement can increase venom absorption.

C. Remove all jewelry and constrictive clothing on affected extremity.

D. Clean the bite site with soap and water.

E. Perform MAMP Protocol 4201. Do not place IV in bitten extremity.

F. Place a constricting band proximal to the bite. The band should only restrict superficial venous and lymphatic flow while maintaining distal pulses and capillary refill. The band should be snug but loose enough to easily slide a finger underneath.

G. Immobilize the extremity at the level of the heart. Do not apply ice.

H. Transport and notify Medical Command.

I. Contact Medical Command for further treatment orders and consider use of Pain Management Protocol 4902 per MCP order.

Special Notes:

1. Do not bring live snake to ER. If experienced personnel are available to properly kill and transport snake, then do so.

2. Patients previously envenomated are at risk of anaphylactic reaction. Be prepared to treat per Anaphylaxis Protocol 4501.
With near-drowning or drowning, always look for associated problems such as airway obstruction, cardiac arrest, heart attack, hypothermia, or substance abuse. Also be alert to associated injuries especially to the head and neck. **Do not** attempt a rescue in which you must enter deep water or swim unless trained to do so.

A. Remove patient from water as rapidly as possible, protecting C-spine.

B. Perform **TAMP Protocol 4101** in adults or **Peds-TAMP Protocol 4408** in pediatric cases.

C. If patient has no pulse, perform **CAT** and CPR.

D. If cold water drowning (<70 degree F at recovery depth), refer to **Cold Exposure Protocol 4503**.

E. Expedite transport and notify Medical Command.

**Special Notes:**

1. If patient is unconscious, assume spinal injury and fully immobilize patient on long backboard.

2. If confirmed cold water drowning, **Cease-Efforts Protocol 9102** should not be instituted unless patient has been rewarmed as per direct MCP order.
Burns - Thermal

### Minor Burns Criteria
1. Superficial and partial thickness:
   - Adult <18%, Child <9%
2. Full thickness <2%.
3. Does not meet major burn criteria 3 thru 6.

### Major Burns Criteria
1. Superficial and partial thickness:
   - Adult >18%, Child >9%
2. Full thickness >2%.
3. Partial or full thickness of:
   - Face, neck, hands, feet, genitalia
4. Suspected or positive airway involvement.
5. Electrical burns
6. Circumferential burns or associated injuries.

### General Treatment of All Burns

A. General treatment of all burns.

1. Stop the burning process by removing the victim from the source and removing affected clothing, jewelry, etc.
2. Manage airway and follow **Airway Management Protocol 4901** as required.
3. If signs of respiratory involvement such as facial burns, singed face or nasal hairs, swollen, sooty, or reddened mucous membranes, or patient was in confined space and/or unconscious, assume inhalation injury and treat per **Inhalation Injury Protocol 4304**.
4. Monitor vital signs, ECG, and pulse oximeter as required.
5. If significant pain, follow **Pain Management Protocol 4902**.
B. If minor burn:
   1. Cover with clean dressing.
   2. Consider application of cool/moist compress.
   3. Consider IV normal saline at KVO if significant pain.
   4. Notify Medical Command and transport.

C. If major burn:
   1. Cover with clean dry dressing.
   2. Establish IV normal saline and administer 20 ml/kg bolus then run at KVO.

3. In consultation with Medical Command, establish mode (ground vs. air) and destination of transport, including consideration of transport to burn center.

4. Monitor vital signs closely in transport.
EMT - Paramedic Treatment Protocol 4507

Burns - Chemical Page 1 of 1

A. Avoid self-contamination by using protective clothing and gloves.

B. Decontaminate grossly by removal of excess chemical.

C. During decontamination process, perform **Airway Management Protocol 4901** as required.

D. Treat other life threatening conditions per appropriate protocol.

E. If dry, brush off the excess.

F. Remove all clothing and/or jewelry.

G. Flush with large amounts of water (precaution: certain substances such as heavy metals may cause further burning if flushed with water). If in doubt about flushing, contact Medical Command. If involves eyes, flush for at least 20 minutes.

H. Attempt to identify substance from labels, data sheets, or other personnel on-scene, but do not delay treatment or transport during this process.

I. Contact Medical Command and advise of nature of substance. Medical Command to notify WV Poison Control for further information as required.

J. After adequate decontamination at scene, transport and treat enroute.

K. Monitor vital signs and patient status enroute.

L. Other treatment as dictated by appropriate protocol.

M. Assure that receiving facility is advised of potential contaminated patient.
When assessing electrical or lightning injuries, it is important to establish if loss of consciousness occurred, the locations of entry and/or exit wounds, and the potential for c-spine injury. Commonly occurring with electrical injuries are long bone fractures, cardiac dysrhythmias, and neurological deficits. Victims of lightning strikes may be in cardiac arrest, but frequently can be resuscitated quickly after intubation and assisted ventilations.

A. Insure patient is not in contact with electrical source. Do not become a patient.

B. Perform TAMP Protocol 4101.

C. Cover wounds with clean dressings as required.

D. Treat associated conditions per appropriate protocols.

E. In consultation with Medical Command, establish mode (ground vs. air) and destination of transport, including consideration of transport to burn center.

F. Transport.
This protocol is for those patients with a non-specific complaint, general illness, or injury, where, in the opinion of the paramedic, it would be prudent to establish monitoring and venous access in the event the patient’s condition might change, necessitating further treatment.

**Contact Medical Command if there is any change in the patient’s condition.**

A. Place patient on ECG and/or pulse oximeter if appropriate.

B. Oxygen as needed to maintain pulse oximeter >94%.

C. Monitor vital signs.

D. Transport.

E. Peripheral IV with saline lock or normal saline at KVO.

F. Notify Medical Command.
Successful management of stroke is a time dependent process. Potential restoration of blood flow to the brain must take place within 3 hours of the onset of symptoms. Patients must receive accurate and efficient evaluation, treatment, and rapid transport to an appropriate facility.

A. Perform **MAMP Protocol 4201**.

B. Determine exact time of symptom onset (last time patient seen normal).

C. Assess patient for the following neurological deficits, **including time of onset of each of the symptoms**:
   1. Speech disturbances.
   2. Facial weakness or paralysis.
   3. Extremity weakness or paralysis.

D. Immediate transport with head elevated, and on left side if decreased level of consciousness.

E. Notify Medical Command.

F. If decreased level of consciousness:
   1. Check serum glucose level with glucometer.
   2. If glucose level is <80 mg/dl, administer D50W, 25 gm IV.

G. Obtain 12 lead ECG, if available and causes no delay in treatment or transport.

H. **In consultation with Medical Command**, establish mode (ground vs. air) and destination of transport.

I. If transport time permits, complete **CVA Thrombolytic Therapy Screening questionnaire** (see section “J” on next page).
J.  CVA Thrombolytic Therapy Screening - Do Not Delay Transport!

Patient selection criteria:

1. Onset of CVA symptoms of less than 3 hours duration.  
2. Evidence of ongoing neurologic changes.  
3. No contraindications to thrombolytic or anticoagulant therapy.  

Absolute contraindications:

4. Active internal bleeding.  
5. History of CVA.  
6. Intracranial or intraspinal surgery or trauma in the last 2 months.  
8. Known bleeding disorder.  
9. Severe uncontrolled hypertension.  

Relative contraindications:

10. Major surgery in the last 10 days (i.e. CABG, organ biopsy, previous puncture of noncompressible vessels, obstetrical delivery).  
11. Cerebrovascular disease.  
12. GI or GU bleeding in the last 10 days.  
13. Trauma in the last 10 days.  
14. Hypertension, systolic BP over 180mm Hg and/or diastolic over 110 mm Hg.  
15. High likelihood of left heart thrombus (i.e. mitral stenosis with atrial fibrillation).  
17. Subacute bacterial endocarditis.  
18. Significant liver dysfunction or bleeding defects secondary to hepatic/renal disease.  
20. Diabetic hemorrhagic retinopathy or other hemorrhagic ophthalmic conditions.  
22. Patient currently receiving oral anticoagulants.  
23. Age over 75.
Most seizures require no specific treatment other than insuring an airway and protecting the patient.

A. Perform **MAMP Protocol 4201**.

B. Protect patient from injury - place on left side if decreased level of consciousness.

C. Obtain history to help determine origin of seizure:
   1. Trauma - refer to **TAMP Protocol 4101**.
   2. Suspected overdose - refer to **Ingestion/Poisoning/Overdose Protocol 4606**.
   3. History of seizures in past and is patient taking any antiseizure medications.

D. If patient is actively seizing:
   1. Protect airway, **do not** attempt intubation during convulsions.
   2. Calm bystanders and family.
   3. Obtain key information and prepare for transport.
   4. Quickly assess serum glucose with a glucometer and attempt to establish IV normal saline KVO or saline lock.
   5. If glucose level is <80 mg/dl:
      a. Administer D50W, 25 gm IV.
      b. If no IV available, administer glucagon 1.0 mg, IM.
   6. Expedite transport and contact Medical Command.
7. If seizure lasts longer than 5 minutes or two or more episodes of seizure activity occur between which the patient does not regain consciousness:

   1. If no IV access is available, administer diazepam 0.5mg/kg (maximum individual dose of 10.0 mg) per rectum **per MCP order**.

   2. If IV access has been established, then administer diazepam 5-10 mg IV (maximum individual dose of 10.0 mg) **per MCP order**.

8. If seizure continues, further treatment as **ordered by Medical Command**.

E. If patient is not actively seizing:

   1. Monitor vital signs closely and be alert for recurrence of seizure.

   2. Transport.

   3. Perform remaining assessment as indicated.

   4. Notify Medical Command.
Hypoglycemia or low blood sugar is a common emergency faced by diabetic patients. Rapid recognition and treatment by EMS personnel is important. Confusion and altered mental status are the most common symptoms of hypoglycemia, however, diabetic patients may have various complaints and are at risk for a multitude of medical problems. Diabetic patients may also become ill from hyperglycemia or high blood sugar, which may lead to diabetic ketoacidosis.

A. Perform **MAMP Protocol 4201**.

B. Assess level of consciousness and blood glucose level by glucometer.

C. Draw blood sample.

D. Treat as indicated in the following **“Diabetic Treatment Chart”**:

<table>
<thead>
<tr>
<th>Blood sugar (BS) level</th>
<th>BS &lt; 40 mg/dl</th>
<th>BS 40-80 mg/dl</th>
<th>BS &gt;80 mg/dl</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awake/alert</td>
<td>Repeat reading. If still &lt;40, administer D50W, 25 gm IV*</td>
<td>Administer 15 gm of oral glucose by mouth and recheck blood glucose level.</td>
<td>Monitor patient closely. Note other signs and symptoms, refer to “F” below.</td>
</tr>
<tr>
<td>Confused/unconscious</td>
<td>Administer D50W, 25 gm IV* and recheck blood glucose level.</td>
<td>Administer D50W, 25 gm IV* and recheck blood glucose level.</td>
<td>Recheck blood glucose level and consider other causes. Refer to “H” below.</td>
</tr>
</tbody>
</table>

* Pediatric dosing:
  - D50W at 1.0 ml/kg for children older than two years.
  - D25W at 2.0 ml/kg for children younger than two years.

E. If IV dextrose is indicated as above, but no IV is available, administer glucagon 1.0 mg, IM.
**F.** If patient has signs and symptoms of diabetic ketoacidosis such as Kussmaul respirations, acetone smell on breath, and/or history of not taking insulin, and blood glucose level is >80 mg/dl:

1. If no evidence of pulmonary edema or CHF, administer 20 ml/kg normal saline IV, then run at KVO.

2. Further treatment as **ordered by Medical Command.**

**G.** If signs of shock, refer to **Shock Protocol 4108** or **Pediatric Shock Protocol 4402.**

**H.** If patient is unconscious and blood glucose level is >80 mg/dl, **consult Medical Command** and consider treatment per **Unconscious Patient Protocol 4605.**
To use this protocol, a patient must have a current Glasgow coma scale total of <12. This protocol is intended to guide the management of patients with a decreased level of consciousness who have no history of trauma. For trauma patients with a decreased level of consciousness, follow Head Trauma Protocol 4102.

A. Perform MAMP Protocol 4201.

B. Maintain airway as indicated by Airway Management Protocol 4901 with the following special considerations in patients with decreased level of consciousness.

1. Reassess that there is no history of even remote trauma which could have resulted in a cervical spine injury. If in doubt, protect spine by performing Spine Trauma Protocol 4103.

2. If a readily treatable cause is suspected such as hypoglycemia or narcotic overdose and ventilation can be maintained without intubation, consider assisting ventilation without intubation until treatment is administered and condition reassessed.

C. Assess blood glucose level by glucometer and draw blood sample.

D. If blood glucose level is less than or equal to 80 mg/dl, then:

1. Treat per Diabetic Emergencies Protocol 4604.

2. If chronic alcohol abuse or poor nutrition is suspected, then administer Thiamine 100 mg IV if D50W is administered.

E. If blood glucose level is >80, then administer naloxone hydrochloride 2 mg IV.

F. Expedite transport and notify Medical Command.
There are numerous agents and drugs which produce toxic effects in patients. This protocol is designed to provide the general guidelines for treatment. Specific treatments or antidote therapy may be appropriate as directed by the Medical Command Physician in consultation with the WV Poison Control Center. Providing as much information as possible to Medical Command will allow more accurate evaluation, treatment, and coordination of medical care.

A. Perform MAMP Protocol 4201.

B. Determine the substance ingested:

1. What?
2. When?
3. How much?
4. Over what period of time?
5. Determine if any actions were taken by bystanders, family members, and/or patient prior to EMS arrival.

C. Expedite transport and notify Medical Command.

D. If patient has decreased level of consciousness (GCS <12):

1. Treat per Unconscious Patient Protocol 4605.

2. If patient is intubated, insert naso-gastric tube, and administer activated charcoal 1 gm/kg down NG per order of Medical Command.

E. If patient is alert and cooperative, administer activated charcoal 1 gm/kg orally, unless contraindicated.

F. Treat seizures, hypotension, and other associated conditions per appropriate protocols.
A. Approach all apparent behavioral patients carefully and professionally. Assure scene safety.

B. Attempt to calm the patient and bystanders.

C. Do not appear threatening or authoritative.

D. Complete initial assessment.

E. Complete focused history and physical exam if possible.

F. Treat any existing trauma and/or medical problems per appropriate protocols.

G. If patient is medically stable, in consultation with Medical Command, consider transporting to a facility with advanced psychiatric care capability.

H. Consider restraining patient as needed to protect life or prevent injury per MCP order.
Obtaining a detailed history can be very important in treating the pregnant or potentially pregnant patient. The following questions should be asked to the obstetric patient:

- Length of gestation?
- Number of prior pregnancies (gravida)?
- Number of prior pregnancies carried to term (para)?
- Previous cesarean sections?
- History of gynecologic or obstetric complications?
- Is there pain or contractions?
- Does patient feel the urge to push or have a bowel movement?
- Is there vaginal bleeding or discharge?
- Prenatal care?
- Multiple births anticipated?

In this protocol, general treatment of the OB or GYN patient is followed by additional special considerations for specific situations.

A. Perform **MAMP Protocol 4201**.

B. Transport pregnant patients on left side unless in active labor.

C. If vaginal bleeding is present, attempt to determine amount.

D. If signs or symptoms of shock, treat per **Shock Protocol 4108**.

E. If patient is in late stages of pregnancy and shows signs of preeclampsia and/or eclampsia (toxemia) such as edema, hypertension, and hyper-reflexes:

1. Transport as smoothly and quietly as possible and monitor closely for signs of seizure activity.

2. If seizures occur, treat per **Seizure Protocol 4603**.
F. Normal delivery:

1. Determine timing and duration of contractions, and observe for crowning.

2. Transport on left side, if time permits.

3. If delivery is imminent, proceed with delivery:
   a. Prevent explosive delivery by supporting head and perineum.
   b. Suction baby's mouth, then nose as soon as head is delivered.
   c. If cord is around neck and is loose, slip over head out of way. If cord is tight, place two clamps and cut in between and unwind.
   d. Hold and support infant during delivery. Refer to Newborn Infant Care Protocol 4410.

4. APGAR score at 1 and 5 minutes (see chart in “J” below).

5. When cord ceases pulsating, clamp at 6 and 8 inches from navel, cut cord between clamps.

6. Expedite or resume transport and continue treatment enroute.

7. Notify Medical Command and prepare to deliver placenta.

8. Massage the fundus after placenta is delivered.

G. Breech Delivery:

1. Expedite transport and notify Medical Command.

2. Allow spontaneous delivery with support of presenting part at the perineum.

3. If head not delivered within 4 minutes, insert a gloved hand into the vagina to form a “V” airway around infant's nose and mouth.
H. Prolapsed cord:
   1. Place mother in knee-chest position.
   2. Oxygen at 15 LPM by non-rebreather mask.
   3. Insert gloved hand into vagina to push presenting part of baby off the cord to insure continued circulation through the cord. Continue until relieved at hospital.
   4. Expedite transport and notify Medical Command.

I. Limb presentation:
   1. Rapid transport.
   2. Notify Medical Command.

J. APGAR Scoring Chart:

<table>
<thead>
<tr>
<th>Sign</th>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Heart rate</strong></td>
<td>Absent</td>
<td>&lt;100/min</td>
<td>&gt;100/min</td>
</tr>
<tr>
<td><strong>Resp. effort</strong></td>
<td>Absent</td>
<td>Weak cry</td>
<td>Strong cry</td>
</tr>
<tr>
<td><strong>Muscle tone</strong></td>
<td>Limp</td>
<td>Some flexion</td>
<td>Good flexion</td>
</tr>
<tr>
<td><strong>Reflex irritability</strong></td>
<td>No response</td>
<td>Some motion</td>
<td>Cry</td>
</tr>
<tr>
<td>(feet stimulated)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Color</strong></td>
<td>Blue and pale</td>
<td>Body pink; ext. blue</td>
<td>Pink</td>
</tr>
</tbody>
</table>
Airway management is an essential part of the care of all patients. It is an ongoing process which requires assessment of many different signs and symptoms. Evaluating and recognizing respiratory distress, respiratory failure, and respiratory arrest are critical in determining what level of intervention is required to properly treat the patient. The key areas to be assessed include: general impression, patency of airway, presence or absence of protective reflexes, and adequacy of breathing.

This protocol is designed to guide the paramedic through the sequence of airway management and is to be used in conjunction with other treatment protocols for specific conditions.

A. Assess airway for patency and protective reflexes.

B. Determine adequacy of breathing by assessing the rate, depth, effort, and adequacy of ventilation by inspection and auscultation.

C. If airway is patent and spontaneous breathing is adequate, and:
   1. No or mild to moderate distress, then administer oxygen at 2-6 LPM nasal cannula to maintain pulse oximeter >94%.
   2. Severe distress, then administer oxygen at 15 LPM non-rebreather mask to maintain pulse oximeter >94%.

D. If airway is not patent, then:
   1. Attempt to open airway by using head tilt/chin lift if no spinal trauma is suspected, or modified jaw thrust if spinal trauma is suspected.
   2. If foreign body obstruction of airway is suspected, then refer to Airway Obstruction Protocol 4305.
   3. If anatomical obstruction is occurring and airway cannot be maintained with positioning and the patient is unconscious, consider placing an oropharyngeal or nasopharyngeal airway adjunct.
E. If breathing is inadequate, ventilate with 100% oxygen.

F. If airway cannot be maintained by above means, including attempts at assisted ventilations or if prolonged assisted ventilation is anticipated, or if protective mechanisms are absent:

1. Perform endotracheal intubation.

2. Confirm endotracheal tube placement using clinical assessment and end-tidal CO2 monitoring.

G. If unable to intubate because of increased muscle tone and patient clearly has compromised airway requiring intubation, consult Medical Command and consider administration of diazapam 5 mg IV per MCP order.

H. If endotracheal intubation is not possible, insert esophageal-tracheal combitube and confirm placement.

I. Continue ventilation with 100% oxygen.

J. If unable to secure airway by any of the above methods and patient is in impending danger of cardio/respiratory arrest, consider needle cricothyrotomy per MCP order.

Special Notes:

1. Do not use nasal route for airway if maxillofacial trauma is present.

2. Any patient with suspected spinal trauma needs in-line stabilization with any airway procedure.

3. Consider nasogastric tube placement if patient intubated and no facial trauma.
West Virginia
Office of
Emergency Medical Services

State Advanced Life Support (ALS) Protocols

4900 Series - Special Treatment

December 2001
Effective February 15, 2002
Revised June 7, 2004
Pain management in the field may be indicated when there is isolated trauma to extremities, severe burns, or amputations. Occasionally, patients with severe musculoskeletal back, neck, or flank pain may require pain treatment in order to facilitate packaging and transport. Except in rare circumstances, pain medication should not be administered to multiple trauma patients with possible head, abdomen, or chest injuries.

In some patients non-narcotic pain medication may be more appropriate. Extreme care must be exercised in determining the patient’s risk for complications associated with the administration of this class of drugs (Toradol). Carefully determine if the patient has a history of kidney problems, gasterointestinal ulcers, or bleeding disorders, as well as cardiac problems, or allergies to aspirin or ibuprofen. These patients may not be candidates to receive ketoralac tromethamine (Toradol) in the field. Consultation with MCP is essential on all patients in which Toradol is considered.

Nausea and/or vomiting can be a side-effect of narcotic pain medications or associated with many conditions including motion sickness while being transported. Promethazine may be administered per order of Medical Command for patients suffering from severe nausea or to prevent nausea associated with these conditions.

A. Perform TAMP (4101) or MAMP (4201).
B. Review patient’s allergies, current medications, and past medical history.
C. IV normal saline KVO or saline lock.
D. Contact Medical Command.
E. If severe pain, administer morphine sulfate 2 to 4 mg IV (pediatric dose 0.05mg/kg) per order of Medical Command.

F. Consider administration of promethazine 6.25 to 12.5 mg IV (pediatric dose 0.5 mg/kg to total single dose of 6.25 mg) diluted with minimum of 3 ml of normal saline, to prevent or treat nausea and vomiting, per order of Medical Command.

G. If pain not relieved may repeat dosing per MCP order. Doses greater than 4 mg IV in a single dose require MCP order.

H. If non-narcotic pain medication appears more appropriate for patient, administer ketoralac tromethamine (Toradol) 15 to 30 mg IV or 30-60 mg IM per MCP order. IM dosing should be reserved for longer transport times.

I. Expedite transport and monitor vital signs and mental status closely.

Special Note:

1. Reduced doses of promethazine may be indicated in the elderly, those with asthma, and those susceptible to CNS depression.

2. Do not mix Toradol in syringe with any other medication.

3. Do not administer Toradol to patients with aspirin or ibuprofen allergy or elderly patients with a cardiac history.

4. Patients with history of renal problems, GI bleeding, ulcers, or bleeding disorders are usually not candidates for Toradol.
West Virginia
Office of
Emergency Medical Services

State Advanced Life Support
(ALS) Protocols

9100 Series - Special Operational

December 2001
Effective February 15, 2002
This protocol is designed to be used when EMS personnel encounter patients who are dead at the time of arrival in which resuscitation is medically inappropriate or for use immediately after the Cease-Effort Protocol 9102 has been performed.

A. Perform initial assessment as per any patient.

B. Determine history.

C. **Criteria:** The decision to not begin resuscitation may occur under the following circumstances if ordered in consultation with MCP.

1. When there are changes to the body which indicate a prolonged postmortem interval, i.e. decomposition, rigor in normothermic body.

2. Injuries incompatible with life such as decapitation or transection of torso.

3. Pulseless, apneic patients in multiple casualty situations where available resources are required to maintain living patients.

4. Proper DNR documentation.

5. Resuscitation efforts pose a danger to the health and/or safety of the rescuers.

D. **Criteria:** The decision to not begin resuscitation may occur under the following circumstances by direct verbal contact and order of MCP.

1. Victims of trauma who are pulseless and apneic at the time of arrival of first responders or EMS personnel.

2. Blunt trauma patients who become pulseless and apneic, cannot be extricated quickly, and the entrapment precludes medically effective resuscitation efforts.

3. Circumstances where beginning or continuing resuscitation is not medically appropriate as determined by EMS personnel and direct contact with the Medical Command Physician.
Special Operational Protocol
9101

Death in the Field

E. Procedure:

1. Contact Medical Command immediately and consult with MCP as required in “C” and “D” above. Discuss situation and obtain confirmation that no resuscitation is indicated.

2. After consultation with MCP, note exact time and date of declaration of death.

3. Protect and preserve the scene until jurisdictional authority has been determined as in #4 below.

4. Notify the Medical Examiner Authority (County or State) on all out-of-hospital deaths except those registered with and receiving hospice care.

5. If the county authority is unavailable or does not call back within 10 minutes, then contact the State Medical Examiner’s Office at 1-877-563-0426.

6. Unless hospice death, notify local law enforcement.

7. While awaiting return call from Medical Examiner Authority, collect the following information:

   a. Has patient been under the care of a regular attending physician. If so, note the name and contact number. If death was expected, attempt to contact physician and inquire if he or she will certify death and sign the death certificate.

   b. Past medical problems.

   c. History and circumstances of death.

   d. Inquire from family or those present about anatomical gift documentation including drivers license or living will. Check for medic alert tags concerning anatomical gift.
8. When Medical Examiner Authority calls, give above information. Medical Examiner Authority will determine if case meets criteria for Medical Examiner case. If yes, follow instructions from Medical Examiner.

9. If death does not meet criteria for Medical Examiner investigation, the Medical Examiner Authority will release the body. Contact patient’s attending physician and confirm the history and circumstances of the death. Assure that the attending physician will certify the death and sign the death certificate. Document the time and name of the physician. Assist family with transport arrangements for the body to morgue or funeral home. If anatomical gift information was discovered, then notify Medical Command of the name and type of donation.

10. If the deceased has no attending physician or the physician refuses to certify and sign the death certificate, then the case must be a Medical Examiner case. Follow instructions of Medical Examiner.

11. EMS personnel are not required to transport the body, but may do so if instructed and this is standard practice as a courtesy to the local community.

12. EMS personnel should document carefully the signs, symptoms, and vital signs which confirmed and allowed the declaration of death. These facts should be recorded in the patient care record.

13. For Medical Examiner cases, the hospital copy of the patient care record should be completed and given to the Medical Examiner Authority if they are on-scene or left with the body at the morgue if transport is made.
This protocol is designed to be used when in direct consultation with the Medical Command Physician (MCP), the medical decision is made to discontinue resuscitation efforts in the field and proceed to the Death in the Field Protocol 9101.

A. **Criteria:** EMS personnel may request orders to cease resuscitation efforts on a patient in the field when any of the following are present:

1. Resuscitation initially started by first responders, family members, etc. is determined to have been medically inappropriate (i.e. terminal cancer or traumatic arrest).

2. Full cycle of ALS treatment has been unsuccessful and patient has been confirmed pulseless and apneic by EMS for at least 20 minutes.

3. Proper “Do Not Resuscitate” documentation has been discovered or clarified by family or power of attorney.

4. BLS resuscitation has proved unsuccessful and no ALS is available for an extended period of time. Patient has been confirmed pulseless and apneic by EMS for at least 20 minutes.

5. Physical exhaustion of available providers to provide care.

6. The scene environment is judged to be unsafe for rescuers to continue resuscitation.

7. Extremely remote areas where evacuation may require hours or days.

B. **Procedure:**

1. EMS personnel will contact Medical Command and speak directly to the MCP.

2. Specific history and details of care will be discussed and MCP will make final decision, give final order to cease resuscitation, and note exact date and time.

3. Proceed immediately to Death in the Field Protocol 9101.
C. **Exceptions**: The following situations may necessitate transport of patients and continued resuscitation efforts **per direct MCP order**:

1. Volatile or potentially dangerous situations where movement of the patient and exit from the scene is required for the safety of the rescuers.

2. Hypothermic patients. Treat per **Cold Exposure Protocol 4503**.

3. Pediatric patients less than 12 years of age.

**Special Note**: If patient is removed from scene and resuscitation continued, the resuscitation efforts should be continued until arrival at the hospital.
The purpose of this policy is to establish common, acceptable guidelines for Medical Command Centers, hospitals, and EMS personnel under which diversion of ground ambulances transporting patients from the field may occur. This policy does not supersede a hospital’s or EMS personnel’s obligation to provide care should a patient require emergency stabilization or in the event that a patient desires to be transported to and treated at a specific facility. Any unstable patient should be transported to the closest appropriate facility regardless of the facility’s alert status. Additionally, ambulances should not bypass a hospital on red alert if transport time will be lengthened by more than 15 minutes.

A. Definitions of diversion alert status system:

1. **Red Alert Status:** Notification from a hospital to Medical Command that said hospital has identified a strain in operational ability due to any two (2) of the criteria listed below and that such hospital is requesting that affected EMS personnel make the condition known to all patients and/or patients’ families requesting transportation to said hospital.

2. **Yellow Alert Status:** Notification from a hospital to Medical Command that said hospital has identified a temporary lack of ability to provide a particular type of service or speciality support that they normally and routinely provide. Said hospital is requesting that affected EMS personnel make this condition known to all patients and/or patients’ families requesting transport to said hospital. Yellow alert status may place the facility on red alert if criteria #1 is also met and, in consultation with medical command, it is determined with reasonable certainty that the patient in question may require the services affected by the yellow alert.

3. **Mini-Disaster Alert:** Notification from a hospital that a physical incapacitation of a necessary functional component of the hospital has occurred making further patient care untenable, i.e. fire, flood, gas leak, bomb scare, etc. The facility has, in effect, suspended operation and can receive absolutely no patients. Unless the situation is isolated to the Emergency Department, all other means of patient admissions must be halted prior to a mini-disaster alert being implemented.
B. **Diversion Criteria:** The determination to place a hospital on red alert status and consider diversion of ambulances from any hospital emergency department can only be made when two (2) of the following criteria are met. **Criteria #1 must always be one of the two criteria prompting the red alert.**

1. The emergency department is overloaded, i.e. filled to capacity with patients whose conditions do not allow for extended delay in treatment; or, there is already an overwhelming number of critical patients and any additional critical patients would exceed the care capability of the facility.

2. There are no monitored beds available in the emergency department.

3. There are no monitored beds available in the entire facility.

4. The entire facility is full to capacity with no beds available.

5. A particular service is on yellow alert and medical command has determined with reasonable certainty that the particular patient in question may require that specific service on an urgent basis.

C. **Override:** A red alert will be automatically disregarded if any of the following conditions occur:

1. A patient is unstable and requires immediate stabilization as determined by EMS personnel in consultation with Medical Command.

2. The diversion of the patient would add an additional 15 minutes to the transport time. This may frequently occur in the more rural areas.

3. The patient or patient’s family, after explanation of risks and consultation with the MCP, still insist on transport to the red alert facility; and the MCP has determined that this decision poses no immediate danger to the patient. Patient or legal guardian must sign refusal of appropriate care section of patient care record.
D. Each hospital will pre-determine a representative position which will be the sole communicator with Medical Command. The designated position must be provided in writing to Medical Command.

1. The designated hospital representative will notify Medical Command when requesting a particular diversion alert status. The representative will report to Medical Command the criteria met to qualify for the diversion alert status, first by phone and then by faxing the Diversion Alert Status Form directly to Medical Command. The requesting hospital will maintain the information as contained in Section “F” below on file for one year following the request for diversion.

2. Medical Command will notify affected EMS agencies when a particular hospital is on a diversion alert. EMS personnel will inform the patient and/or patient’s family of possible extensive delays in treatment at the hospital which is on diversion status. However, the patient or patient’s family has the final destination decision unless there is a concern by the EMS personnel that the patient will be adversely affected by the requested destination. In the case of that concern, consultation with the Medical Command Physician should occur to determine the final destination of the patient.

3. It is the designated hospital representative’s responsibility to notify Medical Command when the diversion status changes. Red alert status will automatically terminate after 2 hours unless the hospital notifies Medical Command and requests an additional 2 hour extension. If after 4 hours the operational deficits have not been corrected, then the hospital may request an additional 2 hour extension, but hospital administration must explain in writing within 24 hours what measures have been taken to assure that this situation does not reoccur. At no time may a facility be on red alert status for more than 6 hours in a 24 hour period beginning at 12 midnight.
4. In the event that all hospitals within a catchment area meet criteria for red alert status, then Medical Command will notify those hospitals that red alert status is automatically suspended and patients are transported to the usual closest appropriate facility.

5. Yellow alert status must be updated by the hospital representative to Medical Command every 6 hours.

E. **Compliance Monitoring:** Medical Command will maintain the data base on all alert status diversions and report them to the regional medical director for review.

1. In the event that non-compliance with this policy is identified, the Regional Medical Director will notify the hospital in question and request in writing an explanation for the variance.

2. If non-compliance continues to be an issue, then the Regional Medical Director will notify in writing the State EMS Medical Director for further action, including possible site visit by the Bureau for Public Health.

See next page for Section F, Diversion Alert Status Form.
F. **Diversion Alert Status Form:** To be completed by designated hospital representative and faxed to Medical Command immediately after phone notification.

<table>
<thead>
<tr>
<th>Date:</th>
<th>Hospital:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Initiated:</td>
<td>Time Cancelled:</td>
</tr>
<tr>
<td>Charge Physician:</td>
<td>Charge Nurse:</td>
</tr>
<tr>
<td>Representative Requesting Diversion:</td>
<td></td>
</tr>
<tr>
<td>Alert Status Requested and Criteria: (i.e. Red Alert, Yellow Alert, Criteria 1-5)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Medical Command Operator:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Patients in ED:</td>
<td>Number of Critical Patients:</td>
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<tr>
<td>Number of Monitor Beds in ED:</td>
<td>Number in Use:</td>
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<tr>
<td>Number of Monitor Beds In-House:</td>
<td>Number in Use:</td>
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<tr>
<td>Number of Beds In-House:</td>
<td>Number in Use:</td>
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Signature of Designated Representative:
Field access to aeromedical transport may enhance the probability of survival of a select, small percentage of trauma patients. Field response to the scene of injury by an EMS helicopter service has been shown to be effective in rural situations when either the speed of the helicopter or the advanced skills of the medical crew can greatly supplement patient care.

Any situation where the helicopter can respond to the scene of injury and decrease the overall out-of-hospital time or provide advanced skills not otherwise available is a valid aeromedical request if one of the following criteria also exists:

A. **Mechanism of Injury Criteria:** The following categories have been shown to produce the highest probability of lethal injury:

1. Incidents with high energy dissipation (i.e. semi vs. car; car vs pedestrian; 2-car head-on; car vs motorcycle).

2. MVC with high speed impact, death of another occupant, roll-over, or ejected patients.

3. Extended entrapment (projected entrapment >15 minutes).

4. High energy injuries such as gunshots.

B. **Injury Criteria:**

1. Penetrating injury to head, neck, or torso.

2. Severe blunt trauma to head, neck, or torso.

3. Major airway problems such as uncorrected obstruction or massive facial trauma.

4. Amputations proximal to wrist/ankle.

5. Intrathoracic injury.

7. Physical findings:
   a. Hypovolemic shock.
   b. Major burns >20% TBS or second or third degree.

C. **Environmental Criteria**: The following criteria alone may be used to request helicopter response to scene.

1. Patients in remote locations inaccessible by ground EMS.

2. Multiple casualty incidents that totally overwhelm the local agencies’ capabilities (i.e. industrial accidents, multi-car crashes, or haz-mat incidents).

D. Procedure:

1. Contact Medical Command by radio. If radio communications or cell phone is not available, then instruct local dispatch communication center to contact Medical Command by telephone.

2. Identify agency, unit number, incident location, description of incident, and any other information requested.

3. Request either response or standby alert. Request can be made for helicopter to be placed on standby alert even before arrival on scene. This will, in many cases, shorten the helicopter’s lift-off time if air transport is deemed necessary. Request response as soon as criteria is identified.

4. Give a brief description of incident and an accurate location (include names of roadways, cross streets, and other pertinent landmarks). Names of nearby towns and your location in reference to them is helpful.

5. Advise Medical Command of the agency and radio frequency of the ground contact for the helicopter.
6. Remain in radio or telephone contact with Medical Command for information concerning availability of aircraft, estimated flight time, and/or other special landing zone or scene requirements.

7. Medical Command will dispatch the closest available helicopter based on location of incident and will coordinate triage and destination notification.

8. Landing zone preparation:
   a. Secure a level 75' X 75' area clear of power lines, trees, debris, and other obstructions.
   
   b. Ensure all bystanders and personnel remain at least 100 feet from aircraft at all times.
   
   c. At night, use red lights of an emergency vehicle to mark area. Use only the red lights on a vehicle. Do not use white lights or flood lights. Do not shine any lights at the aircraft either on approach or while on the ground. High intensity light sticks may be used but no flares.
   
   d. After landing, do not approach the aircraft.

9. Communications:
   a. Designate one individual to monitor ground contact radio frequency and communicate with the aircraft. Do not change frequency unless instructed to do so by aircraft or Medical Command.
   
   b. Establish radio and visual contact with the aircraft and give quick update of any LZ changes, hazards, and patient update information.
   
   c. When aircraft is making final approach to land, keep radio traffic to a minimum so as not to distract the pilot. Alert pilot immediately if new hazard or situation develops. Follow directions given by pilot.
The West Virginia OEMS protocols are designed to allow EMS personnel the ability to provide a wide variety of treatments to many types of patients by utilizing off-line protocols. However, since protocols cannot cover all situations, on-line medical direction is essential to a quality EMS system.

EMS personnel are expected to contact Medical Command for on-line medical direction as outlined in the protocols or anytime additional consultation is needed by the provider. All ALS treatment rendered, even by off-line protocol, requires notification of medical command. In order to provide for the most efficient and accurate communication between the provider and the Medical Command Operator, the following procedures will be used when communicating with Medical Command.

A. **Call-in Status Level:** In order to quickly and effectively identify the level of interaction required to properly manage the patient, the following terminology will be used:

1. **Status 3** - Provider has provided care to patient following off-line protocol and no further consultation or orders are required at this time. Medical Command is being notified to receive a report on the patient, to confirm the treatment given, to identify which protocol was used, and to allow notification of appropriate destination facility.

   **Note:** Even if treatment was rendered fully by off-line protocol, notification and report are still required. Medical Command Operator will also confirm that proper protocol procedure was followed and request additional information as required.

2. **Status 2** - Provider has provided care to patient and has followed protocol to the point where contact with Medical Command is now required in order to proceed with additional off-line treatment or treatments found in the protocol. These treatments within the protocols will include the words... *"by order of Medical Command"* or *"in consultation with Medical Command"* or *“contact Medical Command”*. Status 2 consultation allows the provider and the Medical Command operator to confer and confirm that the next steps in treatment are appropriate by jointly interpreting that section of the protocol. If they both agree, then Medical Command will provide the necessary confirmation to proceed. If they do not agree, then consultation with the Medical Command Physician (MCP) is indicated.
3. **Status 1 Charlie** ("C" signifies "Consultation"): Provider has provided care to patient and has followed protocol to the point where consultation with Medical Command Physician (MCP) is now required in order to proceed with additional treatment or treatments. These orders or treatments within the protocols will include the words.... **“by order of MCP”** or **“by MCP order”** or **“in consultation with MCP”**. The Medical Command Operator is permitted to relay the consult information between the provider and the MCP and communicate the orders back to the provider from the MCP. If any uncertainty exists during this process, then the provider, operator, or MCP may upgrade the call to a Status 1 Delta.

4. **Status 1 Delta** ("D" signifies "Direct"): Provider has provided care to patient and has followed protocol to the point where **direct voice** communication with Medical Command Physician (MCP) is now required in order to proceed with additional treatment or treatments. These orders or treatments within the protocols will include the words.... **“by direct order of MCP”** or **“by direct MCP order”** or **“in direct consultation with MCP”**. There are only a few situations where direct communication with MCP is required in the protocols (i.e. Cease-Efforts Protocol 9102 requires direct consultation with MCP to discontinue efforts in the field). Occasionally field providers will encounter patients who, in their opinion, require direct consultation with the MCP in order to formulate the proper care plan for the patient. Additionally, there may be situations which are so complex that direct consultation with the MCP is critical for proper resolution of the situation (i.e. discussion with family concerning a certain therapy, physician on the scene who wishes to take control of the patient, etc.). In these situations, field providers can request a **Status 1 Delta** to speak **directly with the MCP**. In addition, Medical Command Operators or MCPs can also upgrade any call to a Status 1 Delta if they feel the situation dictates.
B. **Communication Procedures:** When communicating with Medical Command, the provider should use the following designations:

1. Unit with an EMT-P level of ALS care should be designated as a “Medic” Unit. (For example: \"Oakland County **Medic** 690 calling Charleston MedBase on Call 9.\")

2. Unit with an EMT-B level of BLS care should be designated as an “EMT” Unit. (For example: \"Oakland County **EMT** 690 calling Huntington MedCom on Call 9.\")

3. Unit with a CCT-Paramedic or CCT-Nurse should be designated as a “CCT” Unit. (For example: \"Oakland County **CCT** 690 calling WVU MedCom on 340\")

C. **Methods for contacting Medical Command:** There are three (3) general methods for contacting Medical Command:

1. Telephone (landline): Should be used whenever the patient’s location and condition permit. It offers the best quality communication available and keeps radio frequencies less congested. It also provides a greater amount of security for discussion of sensitive patient information. Providers may use the local phone number of the Medical Command Center or the toll free 800 number of the specific center.

2. Cellular Phone: Cell phone is an acceptable method of contact if landline is not available and sensitive information needs to be given, however, when in a mobile unit, it is not a substitute for radio contact if the coverage is available.

3. UHF or VHF Radio: Direct radio contact with Medical Command is the preferred method of contact while responding to a call, transporting a patient, or on the scene of an MVC or other non-residential incident. Depending on the area of the state, this may best be accomplished by either UHF or VHF frequencies.
D. **Inability to contact Medical Command:** If the provider is unable to make contact with Medical Command by any of the above means, properly authorized EMS personnel may continue to follow the appropriate protocol(s) in the best interest of the patient. However, the provider must then:

1. Immediately upon arrival at the receiving facility, contact Medical Command by phone and provide a full patient report **and** the method, time, and location of the unsuccessful efforts to reach Medical Command.

2. If this report is made prior to leaving the receiving facility, no further reporting is required by the provider.

3. If Medical Command is not contacted prior to leaving the receiving facility, by law the provider must submit a report to the State Office of Emergency Medical Services on the appropriate form within 48 hours. Failure to do so may be grounds for suspension or even legal action.

E. **Details of Call-in:** When contacting Medical Command the following specific procedures should be followed:

1. In establishing initial contact, EMS personnel shall identify their unit with the proper designation as above.

2. After Medical Command has answered, provide the following information:

   - Unit ID
   - EMSP last name and certification number
   - Age and sex of patient
   - Chief complaint
   - Status of call
   - Destination if Status 3
   - BREAK

3. Medical Command will then determine priority of call if other calls are also occurring.
4. If **Status 1 Delta**, Medical Command will alert the MCP and establish contact between provider and MCP.

5. If **Status 1 Charlie**, Medical Command will take information and consult with MCP for further orders.

6. If **Status 2**, Medical Command will take information and either concur with further treatment by protocol or consult with MCP for further orders.

7. If **Status 3**, Medical Command will take information for report, clarify details, confirm protocol usage, and notify the receiving facility. If there is increased traffic during this time, the Medical Command Operator may ask the provider to continue transport and call by phone after arrival at the receiving facility, and give complete report at that time.

8. When Medical Command is prepared to receive the full report, the provider will give the following pertinent patient information:

   - Age and sex of patient
   - Chief complaint/mechanism of Injury
   - Brief history of present condition
   - Past medical history
   - Medications
   - Allergies
   - Vital signs, GCS, and ECG
   - Assessment
   - Treatment given and in progress (include protocol # (s))
   - Treatment and orders requested
   - Updated ETA and destination

9. If the patient’s condition changes or new complaints develop, Medical Command shall be recontacted with updated findings and treatment.