	EMT & PARAMEDIC TREATMENT PROTOCOL
INTRODUCTION	PAGES

The following Treatment Protocols are written for the guidance of Emergency Medical Personnel to facilitate the rapid administration of acceptable measures to stabilize the ill or injured and insure their safe treatment and/or delivery to the most appropriate medical facility. While no fixed set of rules can span the variety of situations which may be encountered by EMS personnel, the Protocols herein contained are a comprehensive volume covering most situations routinely encountered. In the absence of specific instructions, optimum patient care must be the over-riding principle.

Modifications of the Protocols may be required and such modifications will be dictated by the patient assessment to customize the most appropriate treatment for each individual patient. These modifications will be done in consultation with Online Medical Control and must be in accordance with the standard of practice in pre-hospital care. Personnel are encouraged to make early and frequent contact with Online Medical Control whenever a doubt exists as to the proper management of any individual patient.

These Treatment Protocols are specific for Advanced Life Support intervention. EMT's should follow the protocols and implement care as allowed by their level of certification.

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**EMT & PARAMEDIC
TREATMENT PROTOCOL**

4100

TRAUMA

PAGES

	EMT & PARAMEDIC TREATMENT PROTOCOL 4101
TRAUMA ASSESSMENT AND MANAGEMENT PROCEDURES (TAMP)	PAGES 1 OF 3

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 receiving hospital prior to arrival at scene.

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.

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.

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<p>TRAUMA ASSESSMENT AND MANAGEMENT PROCEDURES (TAMP)</p>	<p>PAGES</p> <p>2 OF 3</p>

- a. Maintain C-spine.
- b. Perform **Airway Management Protocol 4901** as indicated.
- 3. Breathing.
 - 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.
- 4. Circulation.
 - a. Control bleeding by direct pressure.
 - 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. Contact Medical Control as early as possible. Consider notifying receiving hospital] of a Trauma Advisory if situation warrants.

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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 and draw blood.

- 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.

- c. Start a second IV if time and condition permit.


5. Prevent heat loss.

6. Refer to **Pain Management Protocol 4902** if indicated.

7. Contact Medical Control and transport to closest receiving hospital.

Special Notes:

1. Pregnant patients - tilt backboard to left.

	EMT & PARAMEDIC TREATMENT PROTOCOL 4102
HEAD TRAUMA	PAGES 1 OF 1

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 15 to 18 per minute.
 - 2. If no signs of herniation, ventilate at 12 to 15 per minute.
- C. If no signs of shock, maintain IV normal saline at KVO.
- D. Keep patient in reverse Trendelenburg unless patient is hypotensive. Elevate head to 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.



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SPINAL TRAUMA

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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.
3. Significantly distracting painful injury.
4. Abnormal motor and/or sensory exam
5. Spinal pain or tenderness.
6. Communication barrier
7. If in doubt, immobilize.

Note: Significant mechanisms include but are not limited to:

- High speed vehicle crash
- Fall greater than 10 ft
- Cranial facial injuries
- Penetration wounds with possible spinal involvement

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. Refer to **Selective Spinal Immobilization Protocol 4110**.

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.



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SPINAL TRAUMA

PAGES

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6. IV normal saline KVO, if significant injury is suspected
7. Contact receiving hospital.
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.



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CHEST TRAUMA

PAGES

1 OF 1

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 **per order of ONLINE MEDICAL CONTROL**.

C. Transport.

D. Contact receiving hospital.

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 direct order from ONLINE MEDICAL CONTROL**.
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 an advanced resuscitative skill authorized for qualified Paramedics only after contact with Medical Control. The procedure is **only** indicated for a true **tension** pneumothorax with all the signs listed above. If patient has a true tension pneumothorax:
 - a. Locate the 2nd intercostals space, midclavicular line on the affected side.
 - b. Prep the site with betadine.
 - c. Insert a 14 gauge angiocath into the skin over the top of the 3rd rib. A sudden release of air should be noted upon entering the pleural space. Remove the needle and leave the catheter in place. Secure well with tape.
 - d. Apply dressing, and secure on three sides, or use one-way valve.
4. Contact receiving hospital.



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ADBOMINAL TRAUMA

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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:
 - 1. Rapid transport.
- 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 receiving hospital.

	EMT & PARAMEDIC TREATMENT PROTOCOL 4106
MUSCULOSKELETAL TRAUMA	PAGES 1 OF 1

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.
4. If isolated injury **only**, perform **Pain Management Protocol 4902**.
5. If pelvic injury, monitor closely and if indicated, perform **Shock Protocol 4108**. MAST may be used for stabilizing pelvic and lower extremity fractures and for controlling hemorrhage in lower extremity bleeding. Call **ONLINE MEDICAL CONTROL** prior to inflation.
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.
7. Contact receiving hospital and transport to closest appropriate facility.



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4108

HYPOPERFUSION (SHOCK)

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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



EMT & PARAMEDIC TREATMENT PROTOCOL


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HYPOPERFUSION (SHOCK)

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6. If on reassessment blood pressure is still <90 or other signs and symptoms of shock are still present, then contact receiving hospital and reconsider causes.
 7. If still felt to be hypovolemic shock:
 - a. Repeat 20 ml/kg normal saline IV **per order of ONLINE MEDICAL CONTROL.**
 - b. Consider MAST, if indicated, (**per order of ONLINE MEDICAL CONTROL if EMT & EMT-I**) (see Special Notes below).
 - c. Continue treatment.
 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 receiving hospital.
 - ~~c. Consider dopamine infusion at 5 to 20 ug/kg per minute per order of ONLINE MEDICAL CONTROL. Titrate to maintain systolic pressure of 90 mm Hg.~~

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HYPOPERFUSION (SHOCK)	PAGES 3 OF 3

E. If cardiogenic shock is suspected:

1. Immediately contact Online Medical Control and transport.
2. Establish IV normal saline and, if patient does not have evidence of pulmonary edema, 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 receiving hospital and consider repeat 250 ml fluid bolus or dopamine infusion at 5 to 20 ug/kg per minute **per order of ONLINE MEDICAL CONTROL.**
 - b. Titrate to maintain systolic pressure of 90 mm Hg.

Special Notes:

1. Patients with distributive shock from infection may also have hypovolemia from vomiting, diarrhea, and poor fluid intake.
2. Diagnosis of cardiogenic shock can be very difficult without sophisticated monitoring devices. The potential exists for significant harm to the patient if, for example, hypovolemic shock is assumed and treated with IV fluid infusion. **Medical Control contact is therefore mandatory whenever cardiogenic shock is a consideration.**
3. MAST indicated only for stabilizing pelvic and lower extremity fractures and for controlling hemorrhage in lower extremity bleeding.



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TRAUMATIC ARREST

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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, 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 order of ONLINE MEDICAL CONTROL**.

J. Consideration of use of MAST and further treatment orders.

Special Notes:

1. In the setting of penetrating trauma, especially to the chest, a small percentage of arrested patients can survive with emergency thoracotomy. These are almost always patients who have had some signs of life in the field. Rapid transport, treatment en route, and early notification of the receiving hospital are the major prehospital contributions to survival. MOVE!



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4110

SELECTIVE SPINAL IMMOBILIZATION

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Spinal immobilization is not indicated in all injuries and may be withheld for patients meeting certain criteria. While an aggressive approach is mandated by the severe consequences of untreated spinal injuries, there is evidence that unnecessary and/or prolonged immobilization can also have adverse consequences on respiration and jugular venous flow, particularly for the elderly and the obese, as well as increased discomfort, increased anxiety, and greater risk of aspiration.

A. In the absence of significant mechanism of injury, (refer to protocol 4103 spinal immobilization) evaluate the patient for the following:

1. Painful distracting injury
2. Neurological abnormality including weakness, numbness, tingling and paralysis
3. Patient under the influence of intoxicating medications, alcohol, or other drugs (even if the patient is alert and oriented)
4. Altered level of consciousness
5. Midline cervical tenderness by complaint or exam

If **ALL** criteria are absent, you may choose not to immobilize the patient.



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TRAUMA ADVISORY

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Trauma Advisory is established to maximize patient care and treatment during the golden hour of a trauma call. The early notification of a Trauma Advisory to the hospital helps prepare for the staff and equipment at the receiving hospital.

A. Criteria for determining a Trauma Advisory:

Examples include but are not limited to the following:

1. Altered level of consciousness secondary to trauma.
2. Glasgow comma scale score of 12 or less.
3. Airway compromise unrelieved by mechanical methods.
4. Any significant penetrating or blast trauma to the chest (sucking chest wounds, flail chest, tension pneumothorax or hemothorax).
5. Blood pressure of 90 systolic or below associated with trauma.
6. Burn injury with associated trauma or burns classified as critical.
7. Two or more long bone fractures.
8. Paralysis secondary to trauma.
9. Pelvic or femur fractures open, angulated or bilateral.
10. Any significant mechanism of injury (ex. falls greater than 20 feet, death of occupant in same vehicle or ejection from vehicle).
11. Amputation(s) proximal to wrist or ankle.
12. Penetrating injury to the neck and extremities proximal to the elbow or knee.
13. Pregnancy with associated trauma.

B. Contact receiving hospital and speak with Online Medical Control as soon as possible.

C. Provide as much detailed information as possible to aid the receiving hospital in preparing for the patient.



**EMT & PARAMEDIC
TREATMENT PROTOCOL**

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CARDIAC

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EMT & PARAMEDIC TREATMENT PROTOCOL

4201

MEDICAL ASSESSMENT AND MANAGEMENT PROCEDURES (MAMP)

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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 dyspnea, 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, preferably antecubital, with saline lock or normal saline at KVO and draw blood. 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)	PAGES 2 OF 2

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. **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 receiving hospital.



EMT & PARAMEDIC TREATMENT PROTOCOL

4202

CHEST PAIN/DISCOMFORT ACUTE CORONARY SYNDROME (ACS)

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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 Protocol 4201**.

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

D. If patient has not taken aspirin in the last 12 hours, 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 have **not** taken *Viagra or Levitra* within last 24 hours (or *Cialis* within the last 72 hrs):

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 90 systolic, discontinue dosing and **contact ONLINE MEDICAL CONTROL** to discuss further treatment.

Special note: EMT-B, EMT-I, may assist patient with own Nitroglycerin 0.4 mg SL, repeat every 5 minutes until pain is relieved or 3 doses administered, If systolic blood pressure falls below 100mm Hg, discontinue dosing and contact ONLINE MEDICAL CONTROL.



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CHEST PAIN/DISCOMFORT ACUTE CORONARY SYNDROME (ACS)

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F. If blood pressure <90 systolic and/or patient is experiencing severe bradycardia or tachycardia, treat according to appropriate protocol. If patient has taken *Viagra* within last 24 hours, nitroglycerine should only be given **per direct order of ONLINE MEDICAL CONTROL**.

G. Transport.

H. Contact receiving hospital.

I. If chest pain persists:

1. Morphine sulfate 2 mg slow IV **per direct order of ONLINE MEDICAL CONTROL**.
2. Repeat morphine sulfate 2 mg **per direct order of ONLINE MEDICAL CONTROL** after five minutes if pain persists and BP is over 100 systolic.
3. Administer additional nitroglycerine 0.4 mg (1/150 gr.) sublingual **per direct order ONLINE MEDICAL CONTROL**.

J. Treat dysrhythmias according to specific protocols.

K. If transport time permits, complete **Cardiac Thrombolytic Therapy Screening** questionnaire (see Section L next page) and give copy to accepting physician.



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CHEST PAIN/DISCOMFORT ACUTE CORONARY SYNDROME (ACS)

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L. Cardiac Thrombolytic Therapy Screening:

Patient Name: _____ Age _____

Duration of symptoms: ____/____ hrs./mins.

YES NO

1. S-T segment elevated or depressed at least 0.1 mv? _____
2. History of bleeding problems, IE nose, gums, etc? _____
3. History of bleeding ulcers? _____
4. History of bleeding hemorrhoids? _____
5. Any surgery in last 6 months? _____
6. Any dental procedures in last 6 months? _____
7. History of stroke (including family)? _____
8. History of sudden/temporary weakness/numbness of face or extremities, dizziness or unsteadiness? _____
9. History of difficulty with speech or visions? _____
10. History of headaches or mental status changes? _____
11. Any recent falls or injuries? _____
12. History of high blood pressure? _____
13. History of diabetes? _____
14. History of hemorrhagic retinopathy? _____
15. Pregnant? _____
16. Receiving oral anticoagulants? _____
17. CPR performed recently? _____
18. IM injections recently? _____
19. Known cardiac arrhythmias? _____
20. Liver dysfunctions? _____



EMT & PARAMEDIC TREATMENT PROTOCOL

4203


SEVERE HYPERTENSION

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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 ONLINE MEDICAL CONTROL.**

- 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 contact receiving hospital.
- F. Measure blood pressure every 5 minutes.

	EMT & PARAMEDIC TREATMENT PROTOCOL 4204
CARDIAC ARREST TREATMENT (CAT)	PAGES 1 OF 1

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 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:

1. A - Secure airway. Refer to **Airway Management Protocol 4901**.
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**



EMT & PARAMEDIC TREATMENT PROTOCOL

4205

CARDIAC ARREST V-FIB/ PULSELESS V-TACH

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Ventricular fibrillation is a chaotic rhythm without a pulse. 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 360 joules or equivalent biphasic charge.
- C. Give 5 cycles of CPR and check rhythm
- D. If no conversion:
 1. Defibrillate at 360 joules or equivalent biphasic charge.
 2. 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.
 3. If no conversion, within 30 to 60 seconds defibrillate again at 360 joules or equivalent biphasic charge.
 4. If no conversion, continue epinephrine (1:10,000) 1 mg IV or 2 mg down ET tube every 3 to 5 minutes and administer **amiodarone 300mg IV**.
 5. Administer magnesium sulfate 1-2 grams IV if unresponsive to **amiodarone** or for torsades de pointes.
 6. If no conversion, defibrillate again at 360 joules or equivalent biphasic charge.
 7. If no conversion, **repeat amiodarone 150 mg IV**.
 8. If no conversion, defibrillate at 360 joules or equivalent biphasic charge.
 9. If no conversion, continue to alternate drug therapy with defibrillation and contact receiving hospital.



EMT & PARAMEDIC TREATMENT PROTOCOL


4205

**CARDIAC ARREST
V-FIB/ PULSELESS V-TACH**

PAGES

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12. Consider sodium bicarbonate 1 mEq/kg IV in prolonged arrest, suspected hyperkalemia, or tricyclic antidepressant overdose.
 13. **Consult directly with ONLINE MEDICAL CONTROL** 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. Monitor vital signs and treat new rhythm per appropriate protocol.
 2. Contact receiving hospital and transport.

	<p>EMT & PARAMEDIC TREATMENT PROTOCOL</p> <p>4206</p>
<p>CARDIAC ARREST- ASYSTOLE</p>	<p>PAGES</p> <p>1 OF 1</p>

- 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. 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. 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 receiving hospital.
- G. Consult **directly with ONLINE MEDICAL CONTROL** 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 (PEA)

PAGES

1 OF 1

- 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 receiving hospital.
- G. Consult **directly with ONLINE MEDICAL CONTROL** 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**.



EMT & PARAMEDIC TREATMENT PROTOCOL

4208

SVT (NARROW COMPLEX)

PAGES

1 OF 3

Supraventricular tachycardia is usually a narrow complex rhythm with a rate >160. This includes paroxysmal supraventricular tachycardia (PSVT) and atrial fibrillation/atrial flutter with rapid ventricular response. For the purposes of this protocol, the patient will be considered **unstable** if either of the following is present:

1. There is severe dyspnea or chest pain
2. Blood pressure is less than 90 mm Hg systolic and the patient has a decreased level of consciousness

Note – The sign or symptom must be due to the supraventricular tachycardia.

Cardioversion will be performed in the field only if the patient is considered unstable. 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, if patient is found to be **unstable**, proceed to Section "F" below and prepare for immediate cardioversion.

D. For stable patients with systolic BP >90 **and a regular rhythm** then:

1. Vagal maneuvers; i.e., valsalva to increase intra-thoracic pressure.
Note – Carotid sinus massage is not authorized.
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 receiving hospital for further treatment orders and prepare to transport.


	EMT & PARAMEDIC TREATMENT PROTOCOL 4208
SVT (NARROW COMPLEX)	PAGES 2 OF 3

E. If systolic BP <90 **with a regular rhythm and** patient is awake and alert:

1. Perform vagal maneuvers.
2. Expedite transport and consult receiving hospital for further treatment orders.
3. Monitor vital signs and mental status closely for changes.
4. Administer adenosine 6 mg rapid IV push followed by immediate 20 ml flush of normal saline. Reassess vital signs.
5. Further treatment **per direct order of ONLINE MEDICAL CONTROL.**

F. If the patient is in **Unstable SVT**:

1. Consider sedation of patient responsive to voice stimulus with Valium 5-10 mg slow IV push only after contact with **ONLINE MEDICAL CONTROL.** Be prepared to support respirations if Valium is used.
2. Synchronized cardioversion at 100 joules or equivalent biphasic charge.
3. If no conversion, repeat synchronized cardioversion at 200 joules or equivalent biphasic charge.
4. If no conversion, synchronized cardioversion at 300 joules or equivalent biphasic charge.
5. If no conversion, synchronized cardioversion at 360 joules or equivalent biphasic charge.
6. If no conversion, expedite transport and **contact ONLINE MEDICAL CONTROL** for further orders. Consider administration of adenosine as outlined in "D" above.

	EMT & PARAMEDIC TREATMENT PROTOCOL 4208
SVT (NARROW COMPLEX)	PAGES 3 OF 3

G. If conversion occurs:

1. Monitor vital signs and treat new rhythm per appropriate protocol.
2. Transport and contact receiving hospital.

Special Note:

1. If at anytime patient no longer has a carotid pulse, refer immediately to appropriate **cardiac arrest protocol**.



EMT & PARAMEDIC TREATMENT PROTOCOL

4209

VENTRICULAR TACH (WIDE COMPLEX)

PAGES

1 OF 2

Ventricular tachycardia is a **regular** 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, the patient will be considered **unstable** if either of the following is present:

1. There is severe dyspnea or chest pain
2. Blood pressure is less than 90 mm Hg systolic and patient has a decreased level of consciousness.

Cardioversion will be performed in the field only if the patient is considered unstable.

- A. Perform **MAMP Protocol 4209**.
- B. Assess level of consciousness and blood pressure.
- C. As soon as rhythm is identified, if patient is found to be **unstable**, proceed to Section "F" below and prepare for immediate cardioversion.
- D. For stable patient's with systolic BP >90, then:
 1. Administer **amiodarone 150 mg IV over 10 min**. Reassess vital signs.
 2. If no conversion, expedite transport and contact **ONLINE MEDICAL CONTROL**.
- E. If systolic BP <90 **and** patient is awake and alert:
 1. Expedite transport and contact **ONLINE MEDICAL CONTROL**.
 2. Monitor vital signs and mental status closely for changes.



EMT & PARAMEDIC TREATMENT PROTOCOL

4209

VENTRICULAR TACH (WIDE COMPLEX)

PAGES

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F. If the patient is in **Unstable VTACH**:

1. Consider sedation of patient responsive to voice stimulus with Valium 5-10 mg slow IV push only after contact with **ONLINE MEDICAL CONTROL**. Be prepared to support respirations if Valium is used.
2. Synchronized cardioversion at 100 joules or equivalent biphasic charge.
3. If no conversion, repeat synchronized cardioversion at 200 joules or equivalent biphasic charge.
4. If no conversion, synchronized cardioversion at 300 joules or equivalent biphasic charge.
5. If no conversion, synchronized cardioversion at 360 joules or equivalent biphasic charge.
6. If no conversion, establish IV normal saline and administer **amiodarone 150 mg IV over 10 min.**
7. If no conversion, further treatment per **ONLINE MEDICAL CONTROL**.

G. If conversion occurs:

1. Monitor vital signs and treat new rhythm per appropriate protocol.
2. Transport and contact receiving hospital.

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



EMT & PARAMEDIC TREATMENT PROTOCOL

4211

SYMPTOMATIC SINUS BRADYCARDIA

PAGES

1 OF 1

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. **Use without delay for high-degree block (type II second-degree block or third-degree AV block)**
- C. If heart rate is <40:
 1. Atropine **0.5 mg** rapid IV bolus. **(While awaiting pacer)**
 2. If rhythm and symptoms continue, atropine **0.5 mg** IV every 3-5 minutes to total dose of 3 mg or 0.04 mg/kg.
 3. If rhythm and symptoms continue, consider external transcutaneous pacing. Follow **Transcutaneous Pacing Protocol 4904**. Consider sedation only after contact with **ONLINE MEDICAL CONTROL**.
 4. Further treatment **per direct order of ONLINE MEDICAL CONTROL**
- D. If heart rate is >40 but <60:
 1. Contact **ONLINE MEDICAL CONTROL** to consider atropine 0.5 mg IV.
 2. Prepare for transport.
 3. If rhythm and symptoms continue, by order of **ONLINE MEDICAL CONTROL**, repeat atropine 0.5 mg IV every 3-5 minutes to total dose of 3 mg or 0.04 mg/kg.
 4. If rhythm and symptoms continue, contact **ONLINE MEDICAL CONTROL** and consider transcutaneous pacing per direct 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 contact receiving hospital.



EMT & PARAMEDIC TREATMENT PROTOCOL

4212

VENTRICULAR ECTOPY

PAGES

1 OF 1

Treatment is usually not indicated for ventricular ectopy (PVC's). In rare circumstances, if the patient is symptomatic, the ONLINE MEDICAL CONTROL 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 **ONLINE MEDICAL CONTROL** for further management and prepare for transport.

	<p>EMT & PARAMEDIC TREATMENT PROTOCOL</p> <p>4213</p>
<p>AUTOMATED EXTERNAL DEFIBRILLATOR (AED)</p>	<p>PAGES</p> <p>1 OF 1</p>

Indicated for the unresponsive, pulseless patient 8 years of age and older or weighing greater than 75 lbs/35kgs.

1. If multiple responders are present, begin CPR. Otherwise, turn on the AED and follow verbal instructions.
2. Apply leads to the chest as indicated on the packet.
3. Stop CPR and press "ANALYZE"
4. If shock is indicated, the AED will advise to "stand clear." Ensure everyone is clear by direct visualization and by stating "CLEAR." Press the "SHOCK" button.
5. If shock is not advised, begin CPR
6. After administering a shock, resume CPR immediately for 5 cycles, then press "ANALYZE."
7. Press the "SHOCK" button if indicated.
8. Continue CPR and press "ANALYZE" every 1-3 minutes if the patient remains pulseless.
8. Transport as soon as possible.




**EMT & PARAMEDIC
TREATMENT PROTOCOL**

4300

RESPIRATORY

PAGES

	<p>EMT & PARAMEDIC TREATMENT PROTOCOL</p> <p>4302</p>
<p>BRONCHOSPASM</p>	<p>PAGES</p> <p>1 OF 2</p>

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.

Special note: EMT-B, EMT-I, may assist patient with prescribed metered dose inhalers per physicians orders on the medication.

2. If pt is allergic to albuterol, give Brethine 0.25 mg SQ.

3. Reassess vital signs and lung sounds.

4. If distress is unrelieved:


a. Expedite transport.

b. Administer second albuterol nebulizer 2.5 mg.

c. Contact receiving hospital

d. If distress continues, repeat albuterol every 10 to 15 minutes **per direct order of ONLINE MEDICAL CONTROL.**

e. 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 direct order of ONLINE MEDICAL CONTROL.**

	EMT & PARAMEDIC TREATMENT PROTOCOL 4302
BROCHOSPASM	PAGES 2 OF 2

5. If distress is relieved:
 - a. Monitor vital signs and transport.
 - b. Contact receiving hospital.
- 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 receiving hospital.
 3. If patient is over age 45 and/or has a cardiac history, **consult Online Medical Control** before proceeding with treatment in "B" above.
 4. Further treatment per receiving hospital.

Special Notes:

In patients with COPD initiate low flow oxygen at 3 L/minute. If patient still has signs of cyanosis or decreased saturation on pulse oximeter, then cautiously increase oxygen as these patients may develop CO₂ narcosis precipitated by high flow oxygen.



EMT & PARAMEDIC TREATMENT PROTOCOL

4303

PULMONARY EDEMA

PAGES

1 OF 1

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 receiving hospital and prepare for transport.
 3. If patient **is not** already taking furosemide (*Lasix*), then administer furosemide 40 mg slow IVP.
 4. If patient **is** already taking furosemide, then administer furosemide 80 mg slow IVP.
 5. Administer morphine sulfate 2 to 4 mg IV per **direct order of ONLINE MEDICAL CONTROL**,
 6. Transport with **further orders per ONLINE MEDICAL CONTROL**.
- C. If blood pressure is <100 systolic and patient has rales and JVD:
 1. Expedite transport and monitor vital signs closely.
 2. Contact receiving hospital for **further orders per ONLINE MEDICAL CONTROL**.
- D. If blood pressure is <90 systolic, refer to **Shock Protocol 4108 - Section E, Cardiogenic Shock**.



EMT & PARAMEDIC TREATMENT PROTOCOL

4304

INHALATION INJURY

PAGES

1 OF 1

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 receiving hospital which may consult with SC 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. Contact receiving hospital.



EMT & PARAMEDIC TREATMENT PROTOCOL

4305

AIRWAY OBSTRUCTION

PAGES

1 OF 2

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 Contact receiving hospital.

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 contact receiving hospital

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.**



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AIRWAY OBSTRUCTION

PAGES

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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 receiving hospital.



**EMT & PARAMEDIC
TREATMENT PROTOCOL**

4400

PEDIATRICS

PAGES



EMT & PARAMEDIC TREATMENT PROTOCOL

4401

PEDIATRIC MEDICAL ASSESSMENT AND MANAGEMENT PROCEDURES PEDS-MAMP

PAGES

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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:

1. General impression. Appearance, work of breathing, and circulation of skin.
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.



EMT & PARAMEDIC TREATMENT PROTOCOL

4402

PEDIATRIC EMERGENCIES HYPOPERFUSION (SHOCK)

PAGES

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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.



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4402

PEDIATRIC EMERGENCIES HYPOPERFUSION (SHOCK)

PAGES

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- b. Establish IV normal saline and administer 20 ml/kg bolus.
- c. Contact receiving hospital and reassess vital signs.
- d. Continue fluids per order of receiving hospital.
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 receiving hospital 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 direct order of ONLINE MEDICAL CONTROL**. 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.



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**PEDIATRIC EMERGENCIES
HYPOPERFUSION (SHOCK)**

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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 receiving hospital and consider dopamine IV drip infusion at 2 to 5 ug/kg per minute **per direct order of ONLINE MEDICAL CONTROL.**
 - c. Titrate dopamine drip at 5 to 20 ug/kg per minute in an effort to improve perfusion **per direct order of ONLINE MEDICAL CONTROL.**
- 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 receiving hospital and consider dopamine IV drip infusion at 2 to 5 ug/kg per minute **per direct order of ONLINE MEDICAL CONTROL.**
 - b. Titrate dopamine drip at 5 to 20 ug/kg per minute in an effort to improve perfusion **per direct order of ONLINE MEDICAL CONTROL.**

Special Notes: Patients with distributive shock from infection may also have hypovolemia from vomiting, diarrhea, and poor fluid intake.



EMT & PARAMEDIC TREATMENT PROTOCOL

4403

PEDIATRIC EMERGENCIES SEIZURES

PAGES

1 OF 2

- A. Perform **Peds-MAMP Protocol 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 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. Quickly assess serum glucose with a glucometer and attempt to establish IV normal saline KVO or saline lock.
 5. If glucose level is <70 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, SQ, IV, and IO.



EMT & PARAMEDIC TREATMENT PROTOCOL


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PEDIATRIC EMERGENCIES SEIZURES

PAGES


1 OF 2

6. Expedite transport and contact receiving hospital.
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 direct order of ONLINE MEDICAL CONTROL.**
 2. If IV access has been established, then administer diazepam 0.2 mg/kg IV (maximum individual dose of 10.0 mg) **per direct order of ONLINE MEDICAL CONTROL.**
 8. If seizure continues, further treatment as ordered by receiving hospital.
- 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. Contact receiving hospital.


	<p>EMT & PARAMEDIC TREATMENT PROTOCOL</p> <p>4404</p>
<p>PEDIATRIC EMERGENCIES SUSPECTED CHILD ABUSE/ NEGLECT</p>	<p>PAGES</p> <p>1 OF 2</p>

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 receiving hospital.
- I. Upon arrival at the hospital, inform the receiving physician of your findings and/or suspicions. Document the call carefully and thoroughly. Use the telephone to relay pertinent information to receiving hospital.

	<p>EMT & PARAMEDIC TREATMENT PROTOCOL</p> <p>4404</p>
<p>PEDIATRIC EMERGENCIES SUSPECTED CHILD ABUSE/ NEGLECT</p>	<p>PAGES</p> <p>2 OF 2</p>

Special Note: Current SC 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.

	EMT & PARAMEDIC TREATMENT PROTOCOL 4405
PEDIATRIC EMERGENCIES SUDDEN INFANT DEATH SYNDROME (SIDS)	PAGES 1 OF 1

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 receiving hospital for further orders.
- E. If **resuscitation is not begun**:
 - 1. Contact receiving hospital immediately for confirmation of decision not to begin efforts **by direct order of ONLINE MEDICAL CONTROL**.
 - 2. Follow **Death in the Field Protocol 9101**.



EMT & PARAMEDIC TREATMENT PROTOCOL

4406

PEDIATRIC EMERGENCIES CARDIAC ARREST

PAGES

1 OF 3

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. **Resume CPR for 5 cycles**
2. If no conversion, defibrillate 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 **amiodarone 5mg/kg IV/IO**.



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PEDIATRIC EMERGENCIES CARDIAC ARREST

PAGES

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6. If no conversion, defibrillate again at 4 joules/kg.
 7. If no conversion, repeat **amiodarone 5mg/kg IV/IO (maximum 15mg/kg)**.
 8. If no conversion, defibrillate at 4 joules/kg.
 9. If no conversion, continue to alternate drug therapy with defibrillation and contact receiving hospital.
 10. Transport.
- D. If conversion occurs:
1. Monitor vital signs and treat new rhythm per appropriate protocol.
 2. Contact receiving hospital 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. Contact receiving hospital and transport.



EMT & PARAMEDIC TREATMENT PROTOCOL

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PEDIATRIC EMERGENCIES CARDIAC ARREST

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E. Search for and treat reversible causes as outlined in **MAMP Protocol 4201-F**.

F. Further treatment as **ordered per ONLINE MEDICAL CONTROL**.

G. If conversion occurs:

1. Monitor vital signs and treat new rhythm per appropriate protocol.
2. Contact receiving hospital 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. Contact receiving hospital and transport.

E. Further treatment as **ordered per ONLINE MEDICAL CONTROL**.

F. If conversion occurs:

1. Monitor vital signs and treat new rhythm per appropriate protocol.
2. Contact receiving hospital and transport.



EMT & PARAMEDIC TREATMENT PROTOCOL

4407

**PEDIATRIC EMERGENCIES
CARDIAC DYSRHYTHMIAS**

PAGES

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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. **Perform CPR if, despite oxygenation and ventilation, heart rate is <60 with poor perfusion.**
 - c. Contact receiving hospital 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 direct order of ONLINE MEDICAL CONTROL**. Repeat every 3 to 5 minutes **per direct order of ONLINE MEDICAL CONTROL**.
 - d. 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 per **direct order of ONLINE MEDICAL CONTROL**.
3. If child is essentially asymptomatic, monitor closely and expedite transport. Continually reassess airway and oxygenation.



EMT & PARAMEDIC TREATMENT PROTOCOL

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**PEDIATRIC EMERGENCIES
CARDIAC DYSRHYTHMIAS**

PAGES

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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 direct order of ONLINE MEDICAL CONTROL**. Maximum first dose of 6 mg.
3. If no conversion, may double and repeat dose once **per direct order of ONLINE MEDICAL CONTROL** 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 direct order of ONLINE MEDICAL CONTROL**.
2. If no conversion and still in shock, then synchronized cardioversion at 0.5 to 1.0 joules/kg **per direct order of ONLINE MEDICAL CONTROL**.
3. If no conversion and still in shock, then synchronized cardioversion at 2.0 joules/kg **per direct order of ONLINE MEDICAL CONTROL**.

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

1. If conscious, administer **amiodarone 5mg/kg IV over 20 to 60 min, per direct order of ONLINE MEDICAL CONTROL**.
2. If unconscious with signs of shock, deliver synchronized cardioversion as outlined in "D2 and D3" above.



EMT & PARAMEDIC TREATMENT PROTOCOL

4408

PEDIATRIC TRAUMA ASSESSMENT AND MANAGEMENT PEDS-TAMP

PAGES

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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 Receiving hospital prior to arrival at scene.

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.

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

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PEDIATRIC TRAUMA ASSESSMENT AND MANAGEMENT PEDS-TAMP

PAGES

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- a. Maintain C-spine.
- b. Perform **Airway Management Protocol 4901** as indicated.
3. Breathing.
 - a. If adequate, oxygen 15 LPM non-rebreather mask to maintain pulse oximeter >94%.
 - b. If inadequate, ventilate with 100% oxygen and perform **Airway Management Protocol 4901** as indicated.
4. Circulation.
 - a. Control bleeding by direct pressure.
 - 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.



EMT & PARAMEDIC TREATMENT PROTOCOL

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PEDIATRIC TRAUMA ASSESSMENT AND MANAGEMENT PEDS-TAMP

PAGES

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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 gauge.
 - 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. Contact receiving hospital.



EMT & PARAMEDIC TREATMENT PROTOCOL

4409

PEDIATRIC EMERGENCIES- FEVER

PAGES

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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. Transport and treat associated problems per appropriate protocol.
 - 1. Facilitate passive cooling by removing excess clothing and blankets.
 - 2. **Do not** submerge in water or use ice or rubbing alcohol.
- C. Contact receiving hospital.
- D. Transport.



EMT & PARAMEDIC TREATMENT PROTOCOL

4410

NEWBORN INFANT CARE

PAGES

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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.



EMT & PARAMEDIC TREATMENT PROTOCOL

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NEWBORN INFANT CARE

PAGES

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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. Contact receiving hospital

D. Transportation:

1. Assure infant remains warm.
2. Maintain airway and oxygenation
3. Transport.



**EMT & PARAMEDIC
TREATMENT PROTOCOL**

4500

ENVIRONMENTAL

PAGES



EMT & PARAMEDIC TREATMENT PROTOCOL

4501

ALLERGIC REACTION/ ANAPHYLAXIS

PAGES

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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*)
 - a. Adult: 25-50 mg, IM or slow IV.
 - b. Pediatric: 1 mg/kg, IM or slow IV - Maximum 25 mg, **per direct order of ONLINE MEDICAL CONTROL.**
 2. Maintain normal saline IV at KVO.
 3. Reassess for improvement or worsening of reaction.
 4. Transport and Contact receiving hospital.
- 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), **per direct order of ONLINE MEDICAL CONTROL.**
 - c. If age >35, or patient has a history of heart disease, hypertension, or stroke, epinephrine given **per direct order of ONLINE MEDICAL CONTROL.**

Special note: EMT-B, EMT-I, may assist patient with prescribed Epinephrine auto injector.



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ALLERGIC REACTION/ ANAPHYLAXIS

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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, **per direct order of ONLINE MEDICAL CONTROL.**
 3. Expedite transport if not already in transport.
 4. Maintain normal saline IV at 100 ml/hr.
 5. Reassess and contact receiving hospital.
 6. If patient still wheezing consider, albuterol nebulizer 2.5 mg with oxygen at 8 to 10 LPM.
 7. If patient is still in moderate distress, consider repeating epinephrine one time **per direct order of ONLINE MEDICAL CONTROL.**
 8. Further treatment **per order of ONLINE MEDICAL CONTROL.**
- 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 receiving hospital and consider epinephrine 1:10,000, 0.5 - 1.0 mg, slow IV **per direct order of ONLINE MEDICAL CONTROL.**
 3. Reassess and expedite transport.
 4. If shock continues, treat **per Adult Shock Protocol 4108** or **Pediatric Shock Protocol 4402.**

	EMT & PARAMEDIC TREATMENT PROTOCOL 4502
HEAT EXPOSURE	PAGES 1 OF 2

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 decreased level of consciousness or is vomiting, administer normal saline IV 250 ml bolus, then run at 250 ml/hour.
2. Cool by fanning without chilling the patient. Watch for shivering.
3. If patient experiences muscle cramps, apply moist towels over cramped muscles.
4. Transport and Contact receiving hospital.

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.



EMT & PARAMEDIC TREATMENT PROTOCOL


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HEAT EXPOSURE

PAGES

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2. Administer normal saline IV at 250 ml bolus, and then run at 250 ml/hour.
 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. Cool by fanning.
 5. Apply ice packs to axilla, neck, ankles, and wrists. Do not overcool - watch for shivering.
 6. Monitor vital signs and temperature closely.
 7. Contact receiving hospital.

	<p>EMT & PARAMEDIC TREATMENT PROTOCOL</p> <p>4503</p>
<p>COLD EXPOSURE</p>	<p>PAGES</p> <p>1 OF 2</p>

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 Receiving hospital, establish mode (ground vs. air) and destination of transport.
5. Monitor vital signs closely during transport.



EMT & PARAMEDIC TREATMENT PROTOCOL


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COLD EXPOSURE


PAGES

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- 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 45 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.
 6. Expedite transport.
 7. In consultation with receiving hospital, establish mode (ground vs. air) and destination of transport.
- 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 Contact receiving hospital.

	<p>EMT & PARAMEDIC TREATMENT PROTOCOL</p> <p>4504</p>
<p>SNAKEBITE ENVENOMATION</p>	<p>PAGES</p> <p>1 OF 1</p>

- 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 Contact receiving hospital.
 - I. Contact receiving hospital for further treatment orders and consider use of **Pain Management Protocol 4902 per direct order of ONLINE MEDICAL CONTROL.**
- 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**.

	EMT & PARAMEDIC TREATMENT PROTOCOL 4505
NEAR DROWNING/ DROWNING	PAGES 1 OF 1

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 Contact receiving hospital.

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 order of ONLINE MEDICAL CONTROL**.



EMT & PARAMEDIC TREATMENT PROTOCOL

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BURNS- THERMAL

PAGES

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Minor Burns Criteria	Major Burns Criteria
<ol style="list-style-type: none"> 1. Superficial and partial thickness: Adult <18%, Child <9% 2. Full thickness <2% 3. Does not meet major burn criteria 3 thru 6. 	<ol style="list-style-type: none"> 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. Circumferential burns or associated injuries

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**.



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BURNS- THERMAL

PAGES

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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. Contact receiving hospital 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. Transport to closest appropriate hospital.
4. Monitor vital signs closely in transport.



EMT & PARAMEDIC TREATMENT PROTOCOL


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BURNS- CHEMICAL

PAGES

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- 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 receiving hospital. 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 receiving hospital and advise of nature of substance. Receiving hospital to notify SC 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.

	<p>EMT & PARAMEDIC TREATMENT PROTOCOL</p> <p>4508</p>
<p>BURNS- ELECTRICAL/ LIGHTNING</p>	<p>PAGES</p> <p>1 OF 1</p>

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. Transport to closest appropriate hospital.



EMT & PARAMEDIC TREATMENT PROTOCOL

4509

MARINE ENVENOMATIONS

PAGES

1 OF 1

- A. Symptoms of Portuguese man of war & true Jellyfish.
 - 1. Immediate pain following envenomation.
 - 2. Painful red lesions may progress to hives, hemorrhage, or ulceration.
 - 3. Systemic effects may include nausea, vomiting, headache, muscle spasm, respiratory distress, cardiac arrhythmias..
 - 4. Hypersensitivity reactions may occur but true anaphylaxis is rare.
- B. Treatment for Portuguese man of war & true Jellyfish.
 - 1. First remove any adherent tentacles that will cause further delivery of venom. **Do not scrape them off** as this may trigger further venom activation.
 - 2. Rinse the affected area with **sea water or normal saline. Do not use fresh water.**
 - 3. Irrigate affected area with vinegar for at least 30 minutes.
 - 4. Use shaving cream and remove with a tongue depressor.
- C. Stingrays
 - 1. Immerse wound in hot water.
 - 2. Localized wound care.
 - 3. Transport to hospital.
 - 4. Advise against refusal of care due to high probability of barb remaining in wound.




**EMT & PARAMEDIC
TREATMENT PROTOCOL**

4600

GENERAL MEDICAL


PAGES

	<p>EMT & PARAMEDIC TREATMENT PROTOCOL</p> <p>4601</p>
<p>GENERAL ILLNESS</p>	<p>PAGES</p> <p>1 OF 1</p>

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 receiving hospital 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. Contact receiving hospital.

	EMT & PARAMEDIC TREATMENT PROTOCOL 4602
STROKE	PAGES 1 OF 2

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. Contact receiving hospital.
- F. If decreased level of consciousness:
 - 1. Check serum glucose level with glucometer.
 - 2. If glucose level is <70 mg/dl, administer D50W, 25 gm IV.
- G. Transport to closest appropriate hospital.
- H. If transport time permits, complete **CVA Thrombolytic Therapy Screening Questionnaire** (see section "I" on next page).



EMT & PARAMEDIC TREATMENT PROTOCOL

4602

STROKE

PAGES

2 OF 2

I. CVA Thrombolytic Therapy Screening - Do Not Delay Transport!

Yes No

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. _____
7. History of known intracranial neoplasms, A-V malformation or aneurysm. _____
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). _____
16. Acute pericarditis. _____
17. Subacute bacterial endocarditis. _____
18. Significant liver dysfunction or bleeding defects secondary to hepatic/renal disease. _____
19. Pregnancy. _____
20. Diabetic hemorrhagic retinopathy or other hemorrhagic ophthalmic conditions. _____
21. Septic thrombophlebitis. _____
22. Patient currently receiving oral anticoagulants. _____

	EMT & PARAMEDIC TREATMENT PROTOCOL 4603	
SEIZURES		PAGES 1 OF 2

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.
 4. Pregnancy- Administer magnesium sulfate 2 grams IV for pregnant patients > 20 weeks gestation with HTN (suggests eclampsia).
- 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 <70 mg/dl:
 - a. Administer Thiamine 100mg followed by D50W, 25 gm IV.
 - b. If no IV available, administer glucagon 1.0 mg, IM, SQ.
 6. Expedite transport and contact receiving hospital.

	EMT & PARAMEDIC TREATMENT PROTOCOL 4603	
SEIZURES	PAGES 2 OF 2	

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:
 - a. If no IV access is available, administer diazepam 0.5mg/kg (maximum individual dose of 10.0 mg) per rectum **per direct order of ONLINE MEDICAL CONTROL.**
 - b. If IV access has been established, then administer diazepam 5-10 mg IV (maximum individual dose of 15.0 mg) **per direct order of ONLINE MEDICAL CONTROL.**
- 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. Contact receiving hospital.



EMT & PARAMEDIC TREATMENT PROTOCOL

4604

DIABETIC EMERGENCIES

PAGES

1 OF 2

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”**:

Blood sugar (BS) level	BS < 70 mg/dl	BS > 70 mg/dl
Awake/alert	Administer 15 gm of oral glucose by mouth and recheck BS level	Monitor patient closely. Note other signs and symptoms, refer to “H” below.
Confused/unconscious	Administer thiamine 100mg followed by D50W, 25 gm IV* and recheck BS level.	Recheck BS level and consider other causes. Refer to “H” below.

* 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.



EMT & PARAMEDIC TREATMENT PROTOCOL

4604

DIABETIC EMERGENCIES

PAGES


2 OF 2

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 > 400 mg/dl:

1. If no evidence of pulmonary edema or CHF, administer 500 cc bolus normal saline IV. (20 ml/kg normal saline IV in pediatric patient), then run at KVO.
2. Further treatment as ordered by **ONLINE MEDICAL CONTROL**.

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 receiving hospital and consider treatment per **Unconscious Patient Protocol 4605**.

	<p>EMT & PARAMEDIC TREATMENT PROTOCOL</p> <p>4605</p>
<p>UNCONSCIOUS PATIENT UNKNOWN CAUSE (NON-TRAUMA)</p>	<p>PAGES</p> <p>1 OF 1</p>

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 70 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 D50 is administered.
- E. If blood glucose level is >70, then consider naloxone 2 mg IV. Naloxone may also be given at same dose IM, IO, or via ET tube if unable to establish IV access.

Note: Naloxone IS OFTEN OVERUSED and is indicated in the following:

 - 1. Patients with decreased level of consciousness with respiratory depression (indications for intubation) to arouse so as to avoid intubation.
- F. Expedite transport and Contact receiving hospital.



EMT & PARAMEDIC TREATMENT PROTOCOL

4606

INGESTION POISONING/ OVERDOSE

PAGES

1 OF 1

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 Receiving hospital Physician in consultation with the SC Poison Control Center. Providing as much information as possible to Receiving hospital 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 Contact receiving hospital.
- 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 direct order of ONLINE MEDICAL CONTROL**.
- E. If patient is alert and cooperative, administer activated charcoal 1 gm/kg orally **per direct order of ONLINE MEDICAL CONTROL**.
- F. Treat seizures, hypotension, and other associated conditions per appropriate protocols.



EMT & PARAMEDIC TREATMENT PROTOCOL


4607

BEHAVIORAL EMERGENCIES

PAGES

1 OF 1

- 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 receiving hospital, consider transporting to a facility with available psychiatric consultation.
- H. Consider restraining patient as needed to protect life or prevent injury **per direct order of ONLINE MEDICAL CONTROL. Refer to Restraint Protocol 9107.**


	EMT & PARAMEDIC TREATMENT PROTOCOL 4608
OBSTETRICAL AND GYNECOLOGIC EMERGENCIES	PAGES 1 OF 3

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?
- Total 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 of patients with active bleeding or signs of shock in the third trimester must be in the left lateral decubitus position whenever possible.
- 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**.

	EMT & PARAMEDIC TREATMENT PROTOCOL 4608
OBSTETRICAL AND GYNECOLOGIC EMERGENCIES	PAGES 2 OF 3

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. Ensure privacy to extent possible.
 - b. Scrub and glove, prepare the perineum with providine iodine as time permits.
 - c. open obstetrical packet and drape patient as time allows.
 - d. Prevent explosive delivery by supporting head and perineum.
 - e. Suction baby's mouth, then nose as soon as head is delivered.
 - f. 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.
 - g. 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. Contact receiving hospital and prepare to deliver placenta. Gentle massage of the uterus will minimize bleeding and facilitate delivery of the placenta. Do not pull on the umbilical cord.

G. Breech Delivery:

1. Expedite transport and contact receiving hospital.
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.



EMT & PARAMEDIC TREATMENT PROTOCOL

4608

OBSTETRICAL AND GYNECOLOGIC EMERGENCIES

PAGES

3 OF 3

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 contact receiving hospital.

I. Limb presentation:

1. Rapid transport.
2. Contact receiving hospital.

J. APGAR Scoring Chart:

Sign	0	1	2
Heart rate	Absent	<100/min	>100/min
Resp. effort	Absent	Weak cry	Strong cry
Muscle tone	Limp	Some flexion	Good flexion
Reflex irritability (feet stimulated)	No response	Some motion	Cry
Color	Blue and pale	Body pink; ext. blue	Pink

Note: In most instances, childbirth is an uncomplicated process. If complications arise, they can be extremely serious, and beyond the capabilities of anyone lacking considerable experience with difficult deliveries and neonatal resuscitation. For this reason, it is mandatory that transport is the priority unless delivery is imminent.



EMT & PARAMEDIC TREATMENT PROTOCOL

PAGES



**EMT & PARAMEDIC
TREATMENT PROTOCOL**

4900

SPECIAL TREATMENT

PAGES



EMT & PARAMEDIC TREATMENT PROTOCOL

4901

AIRWAY MANAGEMENT

PAGES

1 OF 2

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.



EMT & PARAMEDIC TREATMENT PROTOCOL

4901

AIRWAY MANAGEMENT


PAGES

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- 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 receiving hospital and consider administration of diazepam 5 mg IV **per direct order of ONLINE MEDICAL CONTROL.**
- H. If endotracheal intubation is not possible, insert esophageal-tracheal combitube and confirm placement.
- I. Continue ventilation with 100% oxygen.

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.

	EMT & PARAMEDIC TREATMENT PROTOCOL 4902
PAIN MANAGEMENT	PAGES 1 OF 1

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.

- A. Perform **TAMP Protocol 4101**.
- B. Review patient's allergies and current medications.
- C. IV normal saline KVO or saline lock.
- D. Contact receiving hospital.
- E. Administer morphine sulfate 2 to 10 mg IV (pediatric dose 0.05mg/kg) **per direct order of ONLINE MEDICAL CONTROL**.
- F. Consider administration of nitrous oxide (self administered) **per direct order of ONLINE MEDICAL CONTROL**.
- G. Consider administration of promethazine (phenergan) 12.5 to 25 mg IV to prevent or treat nausea and vomiting.
- I. Expedite transport and monitor vital signs and mental status closely.

Special Note:

1. Nitrous oxide (Nitronox) is contraindicated in patients with the following:
 - a. ETOH or drug intoxication
 - b. Major head injury or head injury with altered mental status
 - c. COPD
 - d. Abdominal pain
 - e. Chest injury

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




**EMT & PARAMEDIC
TREATMENT PROTOCOL**

9100

SPECIAL OPERATIONAL

PAGES

	<p>EMT & PARAMEDIC TREATMENT PROTOCOL</p> <p>9101</p>
<p>DEATH IN THE FIELD PROTOCOL</p>	<p>PAGES</p> <p>1 OF 3</p>

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.
 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 SC EMS DNR documentation.
 5. Resuscitation efforts pose a danger to the health and/or safety of the rescuers.
 6. Victims of trauma who are pulseless and apneic at the time of arrival of first responders or EMS personnel.
 7. Blunt trauma patients who become pulseless and apneic, cannot be extricated quickly, and the entrapment precludes medically effective resuscitation efforts.
 8. Circumstances where beginning or continuing resuscitation is not medically appropriate as determined by EMS personnel.



EMT & PARAMEDIC TREATMENT PROTOCOL

9101


DEATH IN THE FIELD PROTOCOL

PAGES

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D. Procedure:

1. Note exact time and date of declaration of death.
2. Protect and preserve the scene until jurisdictional authority has been determined as in #4 below.
3. Notify the Medical Examiner Authority (County coroner)
4. Notify local law enforcement if needed.
5. While awaiting return call from coroner, collect the following information:
 - a. Past medical problems.
 - b. History and circumstances of death.
 - c. Inquire from family or those present about drivers license or living will. Check for medic alert tags.
6. When coroner calls or arrives on scene, give above information. Follow instructions from coroner.
7. 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.
8. 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.
9. The hospital copy of the patient care record should be completed and given to the coroner if they are on-scene or left with the body at the morgue if transport is made.

	EMT & PARAMEDIC TREATMENT PROTOCOL 9102
CEASE-EFFORTS PROTOCOL	PAGES 1 OF 2


This protocol is designed to be used when in **direct consultation with the Receiving Hospital Physician (ONLINE MEDICAL CONTROL)**, 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 receiving hospital and speak **directly to the ONLINE MEDICAL CONTROL**.
2. Specific history and details of care will be discussed and **ONLINE MEDICAL CONTROL** 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**.

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<p>CEASE-EFFORTS PROTOCOL</p>	<p>PAGES</p> <p>2 OF 2</p>

C. **Exceptions:** The following situations may necessitate transport of patients and continued resuscitation efforts **per direct ONLINE MEDICAL CONTROL 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.



EMT & PARAMEDIC TREATMENT PROTOCOL


9103

CONTROLLED SUBSTANCE PROTOCOL


PAGES

1 OF 2

1. The maximum allotment for Midway Fire Rescue is 90 mg Valium and 90 mg Morphine. The maximum allotment for Georgetown County EMS is 180 mg Valium and 180 mg Morphine. The maximum allotment for Murrells Inlet – Garden City Rescue is 60 mg Valium and 48 mg Morphine. The Controlled Substances will be the responsibility of the on-duty Paramedic who signed for the Controlled Substance.
2. Controlled Substances are to be kept under double lock and key. The Nitrous Oxide unit shall always have a lockout tag on it.
3. The keys for the locks will always be kept with the responsible individual.
4. Narcan and Romazicon must be available whenever Morphine and Valium is carried.
5. A logbook is maintained showing a complete inventory of all Controlled Substances. Both the on-coming and off-going Paramedic shall inventory the Controlled Substances together and the logbook is updated at that time. Paramedics shall sign the logbook acknowledging the correct amounts.
6. Any change in inventory shall be documented. If used on a call, include the DHEC run number.
7. Controlled Substances may be given according to protocols; however, verbal orders must be obtained directly from the **ONLINE MEDICAL CONTROL** prior to giving the medication.
8. A second individual must document the medication and the amount given, if possible. If medication is wasted from a partially used syringe, it must be witnessed and documented by a Nurse or Emergency Room Physician after the Paramedic arrives in the Emergency Room.

	EMT & PARAMEDIC TREATMENT PROTOCOL 9103
CONTROLLED SUBSTANCE PROTOCOL	PAGES 2 OF 2

9. Controlled Substances are only filled by written prescription from Dr. Stover. Only the Chief or Assistant Chief of Midway Fire Rescue may fill the prescriptions. The only person who can fill out the prescriptions for Georgetown County EMS is the EMS Manager or Shift Supervisors. The only person who can fill out the prescriptions for Murrells Inlet – Garden City Rescue is the Paramedic Supervisor.
10. All DHEC requirements for Controlled Substances are to be followed.
11. If Controlled Substances are requested by another agency, the Paramedic must go with the patient and administer the required Controlled Substance.

	EMT & PARAMEDIC TREATMENT PROTOCOL 9105
USE OF RESTRAINTS	PAGES 1 OF 1

Restraints are any physical means used to restrict a patient's movement, activity, or access to their body. Patients generally have a right to be free from restraints unless restraint is necessary to treat their medical condition or to prevent patients from harming themselves or others.

1. Restraints may be used only to ensure physical safety of the patient or EMS providers.
2. Only soft restraints can be used including soft posey wrist restraints and kling.
3. Soft restraints can only be used in the following situations:
 - A. To protect patients from physically harming themselves.
 - B. To protect EMS providers from patient violence.
 - C. Allow assessment of uncooperative patients, patients with altered mental status, or those under the influence of alcohol or drugs.
4. Use caution when caring for patients in restraints. Injuries can occur to EMS providers secondary to violent behavior.
5. Failure to correctly use or monitor patients in restraints can lead to serious injury or even death.



EMT & PARAMEDIC TREATMENT PROTOCOL

9106

PAGES

REFUSAL OF CARE AND/OR TRANSPORTATION

1 OF 1

- A. A patient, while suffering from an illness or injury, may decline all or part of the indicated emergency treatments and/or transportation. A patient may not refuse emergency treatment and/or transportation if any of the following factors are present:
1. Impaired capacity to understand the emergent nature of his/her medical condition due, but not limited to, alcohol, drugs or medications, mental illness, traumatic injury, or grave disability.
 2. Age 17 or less unless the patient is emancipated.
- B. EMS will render treatment and transportation to all patients under the following conditions:
1. When it is medically indicated.
 2. When treatment or transportation is requested by the patient.
 3. When evidence of impaired capacity exists.
 4. When the patient is age 17 or less and is not emancipated.
- C. For patients who refuse part or all of any indicated emergency treatment and/or transportation the following steps shall be taken:
1. Consider involvement of law enforcement early if there is a threat to self or others or a threat of grave disability.
 2. Consider contacting Online Medical Control for assistance or to allow the physician to talk directly with the patient if he/she so desires.
 3. Patients continuing to refuse treatment/transport despite the foregoing measures will sign the Refusal of Treatment Form witnessed by one of the following in order of preference:
 - a. Immediate family member
 - b. Law Enforcement Officer
 - c. Other EMS personnel.
 4. Patients continuing to refuse treatment/transport and who refuse to sign the Refusal of Treatment Form shall have this documented on the PCR. Document on the Refusal of Treatment Form that the patient refused to sign and witness as noted above.