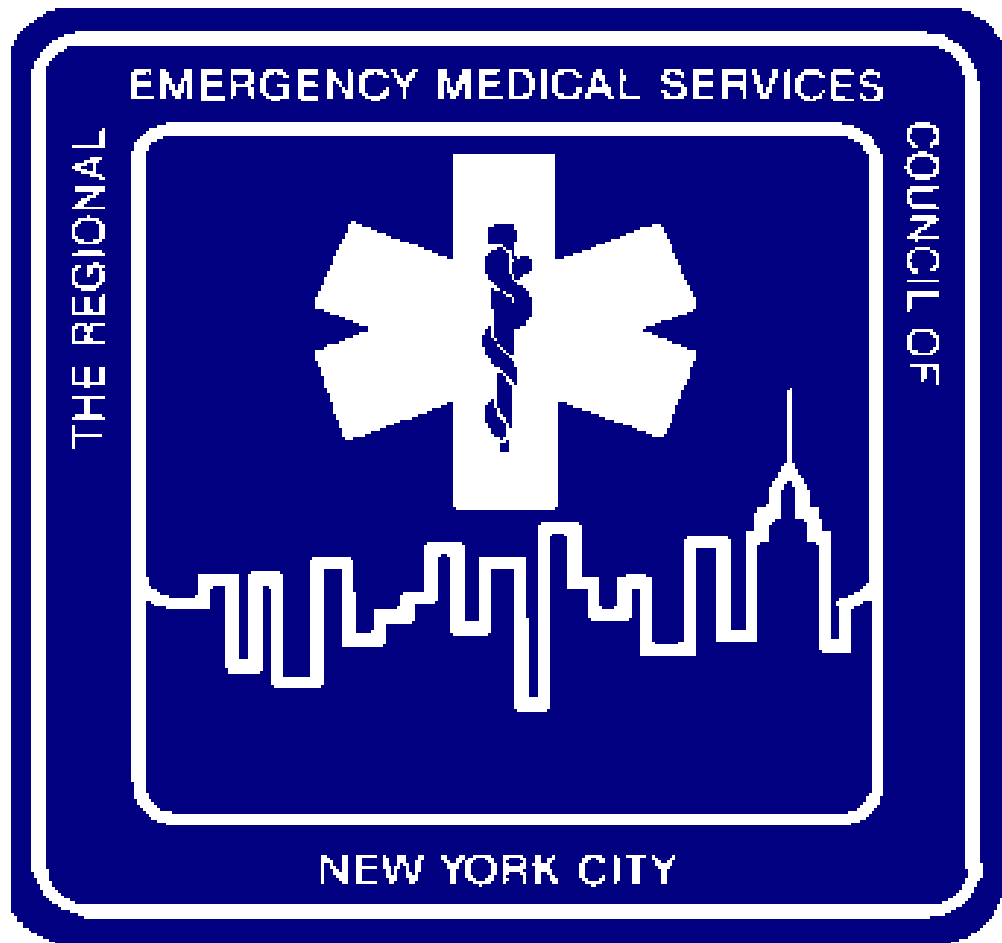


THE REGIONAL EMERGENCY MEDICAL ADVISORY COMMITTEE
NEW YORK CITY



PREHOSPITAL TREATMENT PROTOCOLS

ADVANCED LIFE SUPPORT (PARAMEDIC) PROTOCOLS

April 2010
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ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

500-A

SMOKE INHALATION AND/OR SUSPECTED CARBON MONOXIDE EXPOSURE

This protocol should be utilized ONLY for the management of symptomatic patients after exposure to smoke in an enclosed space.

1. Begin Basic Life Support Procedures
2. If necessary, perform Endotracheal Intubation*.
3. Begin cardiac & Pulse Oximetry monitoring.
4. Begin SpCO monitoring, if available
5. Begin two IV infusions of Normal Saline (0.9% NS). Refer also to Protocol #528 for all patients with burns.
6. Patients with the following symptoms, after exposure to smoke in an enclosed space, should be administered the medications listed in Table 1, if available.
 - Hypotension not attributable to other obvious causes
 - Altered mental status
 - Coma
 - Seizures
 - Respiratory arrest
 - Cardiac arrest

NOTE: PRIOR TO ADMINISTRATION OF HYDROXOCOBALAMIN, OBTAIN THREE BLOOD SAMPLES USING THE TUBES PROVIDED IN THE CYANIDE TOXICITY KIT.

WHENEVER HYDROXOCOBALAMIN IS ADMINISTERED, FOLLOW WITH A 20ML FLUSH OF NORMAL SALINE (0.9% NS) PRIOR TO ADMINISTRATION OF ANY OTHER MEDICATION.

* *If the patient is alert prior to performing Endotracheal Intubation, refer to Prehospital Sedation in General Operating Procedures. Prior Permission from Medical Control Is Required.*

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

TABLE 1		
AGE GROUP	HYDROXOCOBALAMIN ¹	SODIUM THIOSULFATE
Infant/Toddler (0-2 years)	¼ bottle	250mg/kg (3cc/kg prepared solution ^A) administered over 10 minutes, IV
Preschool (3-5 years)	½ bottle	
Grade School (6-13 years)	1 bottle	
Adult (≥14 years)	2 bottles (entire kit)	12.5g 150mL of a prepared solution ^B) administered over 10 minutes IV

A Hydroxocobalamin may be mixed with D5W, normal saline, or lactated ringers. The vented macro drip tubing that accompanies the cyanokit, should be used, wide open to ensure correct administration time of approximately 15 minutes (7.5 minutes per bottle).

B Sodium thiosulfate solution should be prepared by adding 12.5g (50mL) to a 100cc bag of D5W.

NOTE: IN THE EVENT THAT ONLY ONE INTRAVASCULAR ACCESS LINE IS ESTABLISHED, ADMINISTER HYDROXOCOBALAMIN FIRST BEFORE SODIUM THIOSULFATE.

MEDICAL CONTROL OPTIONS:

OPTION A: Administer Dopamine 5 ug/kg/min, IV/Saline Lock drip. If there is insufficient improvement in hemodynamic status, the infusion rate may be increased until the desired therapeutic effects are achieved or adverse effects appear. (Maximum dosage is 20 ug/kg/min, IV/Saline Lock drip.)

OPTION B: Transportation Decision.

NOTE: FOR PATIENTS EXHIBITING SIGNS AND SYMPTOMS CONSISTENT WITH CARBON MONOXIDE POISONING, REFER TO GENERAL OPERATING PROCEDURES – TRANSPORTATION DECISIONS AND PROCEDURES: HYPERBARIC CANDIDATES.

CYANIDE TOXICITY KIT (if available)

2 – 2.5g bottles of crystalline powder hydroxocobalamin	1 – 2 ml fluoride oxalate whole blood tube
1 – 12.5g bottles of sodium thiosulfate (50 mL of 25% solution)	1 – 2ml K2 EDTA tube
2 – 100mL bag 0.9% NS, D ₅ W, LR	1 – 2ml lithium heparin tube
1 – 100mL bag D ₅ W	

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

500-B

CYANIDE EXPOSURE

This protocol should be utilized ONLY for the management of critically ill patients with suspected exposure to cyanide.

If operating at a scene with suspected cyanide exposure where the total patient count is greater than 5, a class order¹ is required by an FDNY-OMA Medical Director to utilize this protocol due to the likelihood of a Weapons of Mass Destruction attack. Refer to REMSCO WMD protocol management decisions. The class order may be issued by a FDNY-OMA Medical Director who is on-scene or as relayed through an FDNY-OMA Medical Director through On-Line Medical Control (Telemetry) or through FDNY Emergency Medical Dispatch.

NOTE: THE ISSUANCE OF ANY CLASS ORDER SHALL BE CONVEYED TO ALL REGIONAL MEDICAL CONTROL FACILITIES FOR RELAY TO UNITS IN THE FIELD.

If operating at a scene with suspected cyanide exposure where the total patient count is 5 or less at one time, the following protocol remains as a Standing Order.

TREATMENT WITHIN THE "HOT" AND "WARM" ZONES MAY BE PERFORMED ONLY BY APPROPRIATELY TRAINED PERSONNEL WEARING APPROPRIATE CHEMICAL PROTECTIVE CLOTHING (CPC) AS DETERMINED BY THE FDNY INCIDENT COMMANDER.

NOTE: IF PROVIDERS ENCOUNTER A PATIENT WHO HAS NOT BEEN APPROPRIATELY DECONTAMINATED FROM LIQUID CYANIDE, THE PROVIDERS SHOULD LEAVE THE AREA IMMEDIATELY UNTIL SUCH TIME AS APPROPRIATE DECONTAMINATION HAS BEEN PERFORMED.

1. Begin Basic Life Support Procedures.
2. If necessary, perform Endotracheal Intubation*.
3. Begin cardiac & pulse oximetry monitoring.
4. Begin two IV infusions of Normal Saline (0.9% NS).

* *If the patient is alert prior to performing Endotracheal Intubation, refer to Prehospital Sedation in General Operating Procedures. Prior Permission from Medical Control Is Required.*

¹ Class Order - A general order given by a FDNY-OMA Medical Director to perform a specific intervention or interventions at a specific location/s during a specified time period. This order is generally reserved for disaster situations.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

5. Patients with the following symptoms, after exposure to cyanide, should be administered the medications listed in Table 1, if available.

- Hypotension not attributable to other obvious causes
- Altered Mental Status
- Coma
- Seizures
- Respiratory arrest
- Cardiac arrest

NOTE: IF THERE ARE NO SIGNS OF CARDIAC/RESPIRATORY ARREST, HYPOTENSION, AMS, COMA, SEIZURES, DECOMPENSATED SHOCK, OR IS NOT OTHERWISE DEEMED CRITICAL: DO NOT ADMINISTER HYDROCOBALAMIN OR SODIUM THIOSULFATE. BEGIN TREATMENT AND REFER TO MEDICAL CONTROL OPTION B FOR TRANSPORTATION DECISION.

NOTE: PRIOR TO ADMINISTRATION OF HYDROXOCOBALAMIN, IF POSSIBLE, OBTAIN THREE BLOOD SAMPLES USING THE TUBES PROVIDED IN THE CYANIDE TOXICITY KIT.

TABLE 1		
AGE GROUP	HYDROXOCOBALAMIN ¹	SODIUM THIOSULFATE
Infant/Toddler (0-2 years)	¼ bottle	250mg/kg (3cc/kg prepared solution ^A) administered over 10 minutes, IV
Preschool (3-5 years)	½ bottle	
Grade School (6-13 years)	1 bottle	
Adult (≥14 years)	2 bottles (entire kit)	12.5g 150mL of a prepared solution ^B administered over 10 minutes IV

A Hydroxocobalamin may be mixed with D5W, normal saline, or lactated ringers. The vented macro drip tubing that accompanies the cyanokit, should be used, wide open to ensure correct administration time of approximately 15 minutes (7.5 minutes per bottle).

B Sodium thiosulfate solution should be prepared by adding 12.5g (50mL) to a 100cc bag of D5W.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

NOTE: WHENEVER HYDROXOCOBALAMIN IS ADMINISTERED, FOLLOW WITH A 20ML FLUSH OF NORMAL SALINE (0.9% NS) PRIOR TO ADMINISTRATION OF ANY OTHER MEDICATION.

MEDICAL CONTROL OPTIONS:

OPTION A: Administer Dopamine 5 ug/kg/min, IV/Saline Lock drip. If there is insufficient improvement in hemodynamic status, the infusion rate may be increased until the desired therapeutic effects are achieved or adverse effects appear. (Maximum dosage is 20 ug/kg/min, IV/Saline Lock drip.)

OPTION B: Transportation Decision.

CYANIDE TOXICITY KIT (if available)

2 – 2.5g bottles of crystalline powder hydroxocobalamin	1 – 2 ml fluoride oxalate whole blood tube
1 – 12.5g bottles of sodium thiosulfate (50 mL of 25% solution)	1 – 2ml K2 EDTA tube
2 – 100mL bag 0.9% NS, D ₅ W, LR	1 – 2ml lithium heparin tube
1 – 100mL bag D ₅ W	

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

501

RESPIRATORY ARREST

For patients in actual or imminent respiratory arrest:

NOTE: IF OVERDOSE IS SUSPECTED, REFER TO PROTOCOL 511 (Altered Mental Status)

1. Begin Basic Life Support Respiratory Distress procedures.
2. If a tension pneumothorax is suspected, perform Needle Decompression. (See Appendix O.)
3. Perform Endotracheal Intubation*.
4. Begin Cardiac Monitoring, record and evaluate EKG rhythm.
5. Begin an IV infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock.
6. Transportation Decision.

* *If the patient is alert prior to performing Endotracheal Intubation, refer to Prehospital Sedation in General Operating Procedures. Prior Permission from Medical Control Is Required.*

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

502

OBSTRUCTED AIRWAY

1. Begin Basic Life Support Obstructed Airway procedures.
2. Perform Direct Laryngoscopy. Attempt to remove the foreign body with Magill Forceps.
3. Perform Endotracheal Intubation.
4. If able to confirm intubation via direct visualization, but unable to ventilate:
 - a. Note the Endotracheal Tube depth.
 - b. Deflate the Endotracheal Tube cuff.
 - c. Advance the Endotracheal Tube to its deepest depth.
 - d. Return the Endotracheal Tube to its original depth.
 - e. Re-inflate the Endotracheal Tube cuff and attempt ventilation again.
 - f. If unable to effectively ventilate the patient using the above maneuvers, immediately initiate transport.
5. Transportation Decision.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

503

NON-TRAUMATIC CARDIAC ARREST

1. Begin Basic Life Support Non-Traumatic Cardiac Arrest procedures.
2. Begin Cardiac Monitoring, record and evaluate EKG rhythm.

Sub-Protocols*

503-A Ventricular Fibrillation/Pulseless Ventricular Tachycardia

503-B Pulseless Electrical Activity (PEA)/Asystole

- * In the event that initial EKG rhythm changes, refer to the appropriate cardiac arrest sub-protocol. Complete Standing Orders without repetition of previously administered drugs and contact Medical Control for further orders.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

503-A

VENTRICULAR FIBRILLATION/PULSELESS VENTRICULAR TACHYCARDIA

1. Continue CPR with minimal interruption.

NOTE:IN ARRESTS WITNESSED BY EMS, PERFORM CPR UNTIL DEFIBRILLATOR IS ATTACHED

IN ARRESTS NOT WITNESSED BY EMS, PERFORM TWO (2) MINUTES OF CPR PRIOR TO DEFIBRILLATOR USE

2. Defibrillate using the maximum joule setting possible (may vary depending on the defibrillator in use).

NOTE:IF PATIENT HAS A PERMANENT PACEMAKER IN PLACE, POSITION THE PADDLES OR AUTOMATED DEFIBRILLATOR PADS AT LEAST ONE (1) INCH AWAY FROM THE PACEMAKER DEVICE.

3. Continue CPR. If after two minutes of additional CPR if there is no change in the rhythm, Defibrillate a 2nd time as previously stated.-
4. Continue CPR. If after two minutes of additional CPR if there is no change in the rhythm, Defibrillate a 3rd time as previously stated.-
5. Perform Endotracheal Intubation.
6. If, after every two minute interval of additional CPR, there is no change in the rhythm, Defibrillate as previously stated.
7. Begin an IV/IO infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock.
8. Administer Vasopressin 40 units IV/IO/Saline Lock Bolus, single dose.
9. If there is no change in the rhythm, administer Amiodarone 300mg, diluted up to a total of 20mL of D₅W, IV / IO / Saline Lock bolus.
10. If there is no change in the rhythm within 3 – 5 minutes after the administration of Vasopressin, administer Epinephrine 1 mg (10 ml of a 1:10,000 solution), IV/IO/Saline Lock bolus, every 3 – 5 minutes.
11. If there is insufficient improvement in hemodynamic status, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:-

MEDICAL CONTROL OPTIONS:

OPTION A: If Ventricular Fibrillation or Pulseless Ventricular Tachycardia recurs, a repeat dose of 150 mg Amiodarone diluted up to a total of 10 ml D₅W, IV/IO/Saline Lock Bolus may be given.

OPTION B: Administer Sodium Bicarbonate 44-88 mEq IV/IO/Saline Lock bolus. Repeat doses of Sodium Bicarbonate 44 mEq, IV/IO/Saline Lock bolus, may be given every 10 minutes.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

- OPTION C:** Administer Magnesium Sulfate 2 gm, IV/IO/Saline Lock bolus, diluted in 10 ml of Normal Saline (0.9% NS), over 2 minutes.
- OPTION D:** In cases of hyperkalemia or Calcium Channel Blocker overdose administer Calcium Chloride (CaCl₂) 1 gm, SLOWLY, IV/IO/Saline Lock bolus. Follow with a Normal Saline (0.9% NS) flush.
- OPTION E:** Transportation Decision.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

503-B

PULSELESS ELECTRICAL ACTIVITY (PEA)/ASYSTOLE

NOTE: CONSIDER THE POSSIBILITY OF CONDITIONS MASQUERADING AS PEA/ASYSTOLE WHICH REQUIRE IMMEDIATE TREATMENT.

1. Continue CPR with minimal interruption.
2. If a tension pneumothorax is suspected, perform Needle Decompression. (See Appendix O.)
3. Perform Endotracheal Intubation.
4. Begin an IV/IO/ infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock.
5. Administer Vasopressin 40 units IV/IO/Saline Lock Bolus, single dose.
6. Administer Dextrose 25 gm (50 ml of a 50% solution), IV/Saline Lock bolus.
7. If there is no change in the rhythm within 3 – 5 minutes after administration of Vasopressin, administer Epinephrine 1 mg (10 ml of a 1:10,000 solution), IV/IO/Saline Lock bolus, every 3 – 5 minutes.
8. If the patient has a heart rate (based on rhythm strip) less than 60 beats/min, administer Atropine Sulfate 1 mg, IV/IO/Saline Lock bolus. If the heart rate, remains less than 60 bpm, repeat Atropine Sulfate 1 mg, IV/IO/Saline Lock bolus, every 3 – 5 minutes. (Maximum total dosage is 3 mg.)
9. If there is insufficient improvement in hemodynamic status, contact Medical Control for implementation of one or more of the following **MEDICAL CONTROL OPTIONS**:

MEDICAL CONTROL OPTIONS:

- OPTION A:** Administer Sodium Bicarbonate 44-88 mEq IV/IO/Saline Lock bolus. Repeat doses of Sodium Bicarbonate 44 mEq, IV/IO/Saline Lock bolus, may be given every 10 minutes.
- OPTION B:** In cases of hyperkalemia or Calcium Channel Blocker overdose administer Calcium Chloride (CaCl₂) 1 gm, SLOWLY, IV/IO/Saline Lock bolus. Follow with a Normal Saline (0.9% NS) flush.
- OPTION C:** Begin rapid IV/IO/Saline Lock infusion of Normal Saline (0.9% NS), up to three (3) liters.
- OPTION D:** Transportation Decision.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

504

SUSPECTED MYOCARDIAL INFARCTION

1. Begin Basic Life Support Chest Pain procedures.
2. Begin Cardiac Monitoring, record and evaluate EKG rhythm.
3. Perform, record, and evaluate a 12 Lead EKG.

NOTE: AN UNSTABLE DYSRHYTHMIA MUST BE TREATED PRIOR TO INITIATION OF A 12 LEAD EKG.

FOR PATIENTS EXHIBITING ST ELEVATION, REFER TO GENERAL OPERATING PROCEDURES – TRANSPORTATION DECISIONS AND PROCEDURES: STEMI PATIENTS

4. Initiate transport.
5. Begin an IV infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock.
6. Monitor vital signs every 2 - 3 minutes.

Sub-Protocols

- 504-A Drug Therapy of Myocardial Ischemia
- 504-B Cardiogenic Shock

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

504-A

DRUG THERAPY OF MYOCARDIAL ISCHEMIA

1. If chest pain persists, administer a Nitroglycerin Tablet 1/150 gr. or Spray 0.4 mg, sublingually, every 5 minutes, for a total of 3 doses. Before each administration, check the patient's pulse and blood pressure to ensure the patient is hemodynamically stable.

NOTE: UNLESS OTHERWISE DIRECTED BY ON-LINE MEDICAL CONTROL, NITROGLYCERIN MAY NOT BE ADMINISTERED TO PATIENTS WITH A SYSTOLIC BLOOD PRESSURE OF LESS THAN 100 mmHg.

UNLESS OTHERWISE DIRECTED BY ON-LINE MEDICAL CONTROL, PATIENTS WHO HAVE USED ERECTILE DYSFUNCTION MEDICATIONS IN THE PREVIOUS 72 HOURS SHALL NOT BE GIVEN NITROGLYCERIN.

2. Administer two (2) chewable Aspirin Tablets, total of 162 mg.
3. If chest pain or other evidence of myocardial ischemia still persists, contact Medical Control for implementation of one or more of the following **MEDICAL CONTROL OPTIONS**:

MEDICAL CONTROL OPTIONS:

OPTION A: Administer Morphine Sulfate 0.1mg/kg (not to exceed 5mg), IV/Saline Lock bolus. Repeat doses of Morphine Sulfate 0.1mg/kg (not to exceed 5mg) IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 15 mg.)

NOTE: IF HYPOVENTILATION DEVELOPS, ADMINISTER NALOXONE UP TO 2 MG, IV/SALINE LOCK BOLUS.

OPTION B: Repeat Nitroglycerin Tablet 1/150 gr. or Spray 0.4 mg, sublingually, every 5 minutes (if transport is delayed or extended).

OPTION C: Transportation Decision.

NOTE: FOR PATIENTS EXHIBITING ST ELEVATION, REFER TO GENERAL OPERATING PROCEDURES – TRANSPORTATION DECISIONS AND PROCEDURES: STEMI PATIENTS.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

504-B

CARDIOGENIC SHOCK

1. Contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

MEDICAL CONTROL OPTIONS:

- OPTION A:** Administer a 250 ml IV bolus of Normal Saline (0.9% NS). Repeat once for a maximum total dose of 500 ml.
- OPTION B:** Administer Dopamine 5 ug/kg/min, IV/Saline Lock drip. If there is insufficient improvement in hemodynamic status, the infusion rate may be increased until the desired therapeutic effects are achieved or adverse effects appear. (Maximum dosage is 20 ug/kg/min, IV/Saline Lock drip.)
- OPTION C:** Transportation Decision.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

505

CARDIAC DYSRHYTHMIAS

1. Begin appropriate Basic Life Support Procedures.
2. Begin Cardiac Monitoring, record and evaluate EKG rhythm.
3. Begin an IV infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock.
4. Monitor blood pressure every 2-3 minutes.

Sub-Protocols

505-A: Supraventricular Tachycardia

505-B: Atrial Fibrillation/Atrial Flutter

505-C: Ventricular Tachycardia with a Pulse/Wide Complex Tachycardia of Uncertain Type

505-D: Bradydysrhythmias/Complete Heart Block

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

505-A

SUPRAVENTRICULAR TACHYCARDIA

1. In patients with unstable supraventricular tachycardia, perform Synchronized Cardioversion* using 100 joules. If this fails to convert the dysrhythmia and the patient still has a pulse, Synchronized Cardioversion may be repeated as necessary, using, 200, 300 and 360 joules.

NOTE: WHEN USING A DEFIBRILLATOR FOR WHICH THE MAXIMUM JOULE SETTING IS LESS THAN 360 JOULES, FURTHER REPEATED ATTEMPTS AT SYNCHRONIZED CARDIOVERSION SHOULD BE PERFORMED USING THE DEFIBRILLATOR'S MAXIMUM SETTING IN PLACE OF THE ENERGIES NOTED ABOVE.

2. In patients with stable supraventricular tachycardia, administer Adenosine as follows:
 - a. Administer Adenosine 6 mg, IV/Saline Lock bolus, rapidly, followed by a Normal Saline (0.9% NS) flush.
 - b. Observe EKG monitor for 1 – 2 minutes for evidence of cardioversion.
 - c. If there is no evidence of cardioversion, administer Adenosine 12 mg, IV/Saline Lock bolus, rapidly, followed by a Normal Saline (0.9% NS) flush.
 - d. If there is still no evidence of cardioversion, repeat Adenosine 12 mg IV/Saline Lock bolus, rapidly, followed by a Normal Saline (0.9% NS) flush.
1. If Adenosine fails to convert the dysrhythmia or the patient has evidence of low cardiac output, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

MEDICAL CONTROL OPTIONS:

OPTION A: If complex width is narrow and blood pressure is normal or elevated, administer Diltiazem 0.25 mg/kg, IV/Saline Lock bolus, slowly, over 2 minutes, monitoring blood pressure continuously.

OPTION B: If complex width is narrow and blood pressure is low, perform Synchronized Cardioversion* using 100 joules. If this fails to convert the dysrhythmia and the patient still has a pulse, Synchronized Cardioversion* may be repeated as necessary using, 200, 300, and 360 joules.

OPTION C: Administer Amiodarone 150 mg, diluted in 100 ml D₅W over 10 minutes.

OPTION D: Transportation Decision.

* *If the patient is alert prior to performing Cardioversion, refer to Prehospital Sedation in General Operating Procedures. Prior Permission from Medical Control Is Required.*

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

505-B

ATRIAL FIBRILLATION / ATRIAL FLUTTER

1. In patients with unstable Atrial Fibrillation or Atrial Flutter, perform Synchronized Cardioversion* using 100 joules. If this fails to convert the dysrhythmia and the patient still has a pulse, Synchronized Cardioversion may be repeated as necessary, using, 200, 300 and 360 joules.

NOTE: WHEN USING A DEFIBRILLATOR FOR WHICH THE MAXIMUM JOULE SETTING IS LESS THAN 360 JOULES, REPEATED ATTEMPTS AT SYNCHRONIZED CARDIOVERSION SHOULD BE PERFORMED USING THE DEFIBRILLATOR'S MAXIMUM SETTING IN PLACE OF THE ENERGIES NOTED ABOVE.

2. If Synchronized Cardioversion fails to convert the dysrhythmia, or the patient has stable Atrial Fibrillation or Atrial Flutter with a heart rate of 150 beats per minute or higher, contact Medical Control for implementation of one or more of the following Medical Control options:

MEDICAL CONTROL OPTIONS:

OPTION A: If complex width is narrow and blood pressure is normal or elevated, administer Diltiazem 0.25 mg/kg, IV/Saline Lock bolus, slowly, over 2 minutes, monitoring blood pressure continuously.

OPTION B: Administer Amiodarone 150 mg, diluted in 100 ml D₅W over 10 minutes.

OPTION C: Transportation Decision.

* *If the patient is alert prior to performing Cardioversion, refer to Prehospital Sedation in General Operating Procedures. Prior Permission from Medical Control Is Required.*

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

505-C

**VENTRICULAR TACHYCARDIA WITH A PULSE/
WIDE COMPLEX TACHYCARDIA OF UNCERTAIN TYPE**

NOTE: IN PATIENTS WITH PULSELESS VENTRICULAR TACHYCARDIA, SEE SUB-PROTOCOL 503-A.

1. In patients with unstable ventricular tachycardia with a pulse, perform Synchronized Cardioversion* using 100 joules. If this fails to convert the dysrhythmia and the patient still has a pulse, Synchronized Cardioversion* may be repeated as necessary using 200, 300 and 360 joules.
2. Administer Amiodarone 150 mg, diluted in 100 ml D₅W over 10 minutes.
3. If Amiodarone fails to convert the dysrhythmia or the patient has evidence of low cardiac output, contact Medical Control for implementation of one or more of the following **MEDICAL CONTROL OPTIONS**:

MEDICAL CONTROL OPTIONS

- OPTION A:** Perform Synchronized Cardioversion* using 100 joules. If this fails to convert the dysrhythmia and the patient still has a pulse, Synchronized Cardioversion may be repeated as necessary using 200, 300, and 360 joules.
- OPTION B:** Administer Magnesium Sulfate 2 gm, IV/Saline Lock bolus, diluted in 10 ml of Normal Saline (0.9% NS), over 2 minutes.
- OPTION C:** In cases of hyperkalemia or Calcium Channel Blocker overdose administer Calcium Chloride (CaCl₂) 1 gm, SLOWLY, IV/Saline Lock bolus. Follow with a Normal Saline (0.9% NS) flush.
- OPTION D:** Administer Sodium Bicarbonate 44 - 88 mEq, IV/Saline Lock bolus, for pre-existing acidosis. Repeat doses of Sodium Bicarbonate 44 mEq, IV/Saline Lock bolus, may be given every 10 minutes.
- OPTION E:** Transportation Decision.

* *If the patient is alert prior to performing Cardioversion, refer to Prehospital Sedation in General Operating Procedures. Prior Permission from Medical Control Is Required.*

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

505-D

BRADY DYSRHYTHMIAS and COMPLETE HEART BLOCK

1. If the patient has a ventricular rate of less than 60 beats/min and signs of decompensated shock:
 - a. Administer Atropine Sulfate 0.5 mg, IV/Saline Lock bolus.
 - b. Begin Transcutaneous Pacing*.
2. If there is insufficient improvement in cardiac status, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

MEDICAL CONTROL OPTIONS:

OPTION A: Repeat Atropine Sulfate 0.5 mg, IV/Saline Lock bolus every 3 – 5 minutes. (Maximum total dosage is 3 mg.)

OPTION B: Administer Dopamine 2 ug/kg/min, IV/Saline Lock drip. If there is insufficient improvement in hemodynamic status, the infusion may be increased until the desired therapeutic effects are achieved or adverse affects appear. (Maximum dosage is 10 ug/kg/min, IV/Saline Lock drip.)

OPTION C: In cases of hyperkalemia or Calcium Channel Blocker overdose administer Calcium Chloride (CaCl₂) 1 gm, SLOWLY, IV/Saline Lock bolus. Follow with a Normal Saline (0.9% NS) flush.

OPTION D: Administer Sodium Bicarbonate 44 - 88 mEq, IV/Saline Lock bolus, for pre-existing acidosis. Repeat doses of Sodium Bicarbonate 44 mEq, IV/Saline Lock bolus, may be given every 10 minutes.

OPTION E: Transportation Decision.

* *If the patient is alert prior to performing Transcutaneous Pacing, refer to Prehospital Sedation in General Operating Procedures. Prior Permission from Medical Control Is Required.*

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

506

ACUTE PULMONARY EDEMA

1. Begin Basic Life Support Respiratory Distress procedures.
2. Begin Cardiac Monitoring, record and evaluate EKG rhythm.
3. Begin an IV infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock.
4. Monitor vital signs every 2-3 minutes.
5. Administer Nitroglycerin Tablet 1/150 gr or Spray 0.4 mg, sublingually, every 5 minutes, for a total of 3 doses. Before each administration, check the patient's pulse and blood pressure to ensure the patient is hemodynamically stable.

NOTE: UNLESS OTHERWISE DIRECTED BY ON-LINE MEDICAL CONTROL, NITROGLYCER SHALL NOT BE ADMINISTERED TO PATIENTS:

- WITH A SYSTOLIC BLOOD PRESSURE OF LESS THAN 100 mm Hg

AND/OR

- WHO HAVE USED ERECTILE DYSFUNCTION MEDICATIONS IN THE PREVIOUS 72 HOURS

6. Initiate CPAP Therapy, if available, (see Appendix P)
7. Contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

MEDICAL CONTROL OPTIONS:

OPTION A: Administer Morphine Sulfate 0.1mg/kg (not to exceed 5mg), IV/Saline Lock bolus. Repeat doses of Morphine Sulfate 0.1mg/kg (not to exceed 5mg) IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 15 mg.)

NOTE: IF HYPOVENTILATION DEVELOPS, ADMINISTER NALOXONE UP TO 2 MG, IV/SALINE LOCK BOLUS

OPTION B: Administer Lorazepam 1 – 2 mg, IV/IN Saline Lock bolus.

OR

Administer Midazolam 1 – 2 mg, IV/IN Saline Lock bolus.

OPTION C: Repeat Nitroglycerin Tablet 1/150 gr. or Spray 0.4 mg, sublingually.

OPTION D: Administer Furosemide 20 – 80 mg, IV/Saline Lock bolus. (Maximum combined total dosage is 80 mg.)

OPTION D: Transportation Decision.

MANDATORY QUALITY ASSURANCE COMPONENT: FOR EVERY APPLICATION OF A CPAP ON A PATIENT, THE ACR/PCR DOCUMENTATION MUST BE REVIEWED BY THE SERVICE MEDICAL DIRECTOR, WHO IS THEN RESPONSIBLE FOR FORWARDING A COPY OF THE ACR/PCR TO THE NYC REMAC FOR SYSTEM-WIDE QA PURPOSES.

FOR THE PURPOSES OF PATIENT CONFIDENTIALITY, COPIES OF THE PCR/ACR CAN BE MAILED TO: THE REGIONAL EMS COUNCIL OF NYC, 475 RIVERSIDE DRIVE, SUITE 1929, NEW YORK, NEW YORK 10115. PLEASE LABEL THE ENVELOPE "CONFIDENTIAL QA".

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

507

ASTHMA

In patients with acute asthma and/or active wheezing:

1. Begin Basic Life Support Respiratory Distress procedures.
2. Administer Albuterol Sulfate 0.083% (one unit dose of 3 ml), by nebulizer, at a flow rate that will deliver the solution over 5 to 15 minutes. May be repeated twice (total of 3 doses).
3. Administer Ipratropium Bromide 0.02% (1 unit dose of 2.5 ml), by nebulizer, in conjunction with each Albuterol Sulfate dose.

NOTE: ALBUTEROL SULFATE AND IPRATROPIUM BROMIDE MAY BE MIXED AND ADMINISTERED SIMULTANEOUSLY, IF APPROVED BY THE AGENCY MEDICAL DIRECTOR.

IPRATROPIUM BROMIDE IS CONTRAINDICATED IN CASES OF SUSPECTED 'NUT' OR 'SOY' ALLERGY.

DO NOT DELAY TRANSPORT TO ADMINISTER ADDITIONAL NEBULIZER TREATMENTS.

4. In patients with signs of impending respiratory failure, administer Epinephrine 0.3 mg (0.3 ml of a 1:1,000 solution), IM.
5. Begin Cardiac Monitoring, record and evaluate EKG rhythm, in patients in severe respiratory distress with history of dysrhythmia or cardiac disease.
6. In patients in severe respiratory distress, begin an IV/Saline Lock infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock.
7. In patients with persistent severe respiratory distress, administer Magnesium Sulfate, 2 gm, IV/Saline lock, diluted in 50-100 ml Normal Saline (0.9% NS) over 10-20 minutes.
8. In patients with persistent severe respiratory distress, administer Methylprednisolone 125 mg, IV/Saline lock bolus, or IM,
OR
Administer Dexamethasone, 12 mg, IV/Saline Lock bolus, or IM.
9. If the patient develops or remains in severe respiratory distress, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

MEDICAL CONTROL OPTIONS:

OPTION A: Repeat Albuterol Sulfate 0.083% (one unit dose of 3 ml), by nebulizer, at a flow rate that will deliver the solution over 5 to 15 minutes.

OPTION B: Repeat Epinephrine 0.3 mg (0.3 ml of a 1:1,000 solution), IM.

OPTION C: Transportation Decision.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

508

CHRONIC OBSTRUCTIVE PULMONARY DISEASE

In patients in severe respiratory distress due to chronic obstructive pulmonary disease:

1. Begin Basic Life Support Respiratory Distress procedures.
2. Begin Cardiac Monitoring, record and evaluate EKG rhythm.
3. Administer Albuterol Sulfate 0.083% (one unit dose of 3 ml), by nebulizer, at a flow rate that will deliver the solution over 5 - 15 minutes. May be repeated twice (total of 3 doses).
4. Administer Ipratropium Bromide 0.02% (1 unit dose of 2.5 ml), by nebulizer, in conjunction with each Albuterol Sulfate dose.

NOTE: ALBUTEROL SULFATE AND IPRATROPIUM BROMIDE MAY BE MIXED AND ADMINISTERED SIMULTANEOUSLY, IF APPROVED BY THE AGENCY MEDICAL DIRECTOR.

IPRATROPIUM BROMIDE IS CONTRAINDICATED IN CASES OF SUSPECTED 'NUT' OR 'SOY' ALLERGY.

DO NOT DELAY TRANSPORT TO ADMINISTER ADDITIONAL NEBULIZER TREATMENTS.

4. Begin an IV infusion of Normal Saline (0.9% NS) to keep vein open, or Saline Lock.
5. In patients with persistent severe respiratory distress, administer Methylprednisolone 125 mg, IV/Saline lock bolus, or IM,
OR
Administer Dexamethasone, 12 mg, IV/Saline Lock bolus, or IM.
6. If the patient remains in severe respiratory distress, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

MEDICAL CONTROL OPTIONS:

OPTION A: Repeat Albuterol Sulfate 0.083% (one unit dose of 3 ml), by nebulizer, at a flow rate that will deliver the solution over 5 - 15 minutes.

OPTION B: Transportation Decision.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

510

ANAPHYLACTIC REACTION

- 1) Begin Basic Life Support Anaphylactic Reaction procedures.
- 2) If the patient is exhibiting obvious airway compromise, perform Endotracheal Intubation*.
- 3) Administer Epinephrine 0.3 mg (0.3 ml of a 1:1,000 solution), IM.
- 4) If the patient has signs of bronchospasm, administer Albuterol Sulfate 0.083% (one unit dose bottle of 3 ml), by nebulizer, at a flow rate that will deliver the solution over 5 – 15 minutes.
- 5) Monitor vital signs every 5 minutes.
- 6) Begin Cardiac Monitoring, record and evaluate EKG rhythm.
- 7) Begin an IV infusion of Normal Saline (0.9% NS) or Ringer's Lactate (RL) via a large bore (14 - 16 gauge) catheter to keep vein open, or a Saline Lock.
- 8) If the patient has signs of decompensated shock:
 - a) Administer Epinephrine 0.1 mg (1 ml of a 1:10,000 solution), diluted in 50 ml Normal Saline (0.9% NS), IV/Saline Lock-drip, over 5 minutes, and
 - b) Begin rapid IV/Saline Lock infusion of Normal Saline (0.9% NS) or Ringer's Lactate (RL), up to 3 liters via macro-drip.
- 9) If the patient has no signs of shock, administer Diphenhydramine 50 mg, IV/Saline Lock bolus, or IM, if IV/Saline Lock access has not been established.
- 10) Contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

MEDICAL CONTROL OPTIONS:

OPTION A: Repeat any of the above Standing Orders.

OPTION C: Administer Dopamine 5 ug/kg/min, IV/Saline Lock drip. If there is insufficient improvement in hemodynamic status, the infusion rate may be increased until desired therapeutic effects are achieved or adverse effects appear. (Maximum dosage is 20 ug/kg/min, IV/Saline Lock drip.)

OPTION D: Administer Methylprednisolone 125 mg, IV/Saline Lock bolus, slowly, over 2 minutes.

OR

Administer Dexamethasone 12 mg, IV/Saline Lock bolus, slowly over 2 minutes.

OPTION E: Transportation Decision.

* *If the patient is alert prior to performing Endotracheal Intubation, refer to Prehospital Sedation in General Operating Procedures. Prior Permission from Medical Control Is Required.*

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

511

ALTERED MENTAL STATUS

1. Begin Basic Life Support Altered Mental Status procedures.
2. Begin an IV infusion of Normal Saline (0.9% NS) to keep vein open, or Saline Lock.
3. Administer Dextrose 25 gm (50 ml of a 50% solution), IV/Saline Lock bolus.

NOTE: A GLUCOMETER (IF AVAILABLE) MAY BE USED TO DOCUMENT BLOOD GLUCOSE LEVEL PRIOR TO DEXTROSE ADMINISTRATION.

IF THE GLUCOMETER READING IS ABOVE 120 mg/dl, DEXTROSE MAY BE WITHHELD.

4. In patients with diabetic histories where an IV/Saline Lock route is unavailable, administer Glucagon 1 mg, IM.
5. If the patient's mental status fails to improve significantly, administer Naloxone, titrate in increments of 0.4 mg up to response, up to 2 mg, IV/Saline Lock bolus. If IV/Saline Lock access has not been established, administer Naloxone 0.8 mg, up to response, up to 2 mg IM or IN.

NOTE: IF AN OVERDOSE IS STRONGLY SUSPECTED, ADMINISTER NALOXONE PRIOR TO DEXTROSE.

6. If there still is no change in mental status or it fails to improve significantly, repeat Dextrose 25 gm (50 ml of a 50% solution), IV/Saline Lock bolus.
7. If there is still no change in mental status, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

MEDICAL CONTROL OPTIONS:

OPTION A: Repeat any of the above standing orders.

OPTION B: Transportation Decision.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

513
SEIZURES

For patients experiencing seizures that are ongoing or recurring:

1. Begin Basic Life Support Seizures procedure.
2. Begin Cardiac Monitoring, record and evaluate EKG rhythm.
3. Begin an IV/Saline Lock infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock.
4. Administer Dextrose 25 gm (50 ml of a 50% solution), IV/Saline Lock bolus.
5. Administer Lorazepam 2 mg, IV/Saline Lock bolus, or, if IV access is unavailable, IN or IM. A single repeat dose of Lorazepam 2 mg, may be given after 5 minutes if seizure activity persists or recurs.

OR

Administer Diazepam 5 mg, IV/Saline Lock bolus. A single repeat dose of Diazepam 5 mg, IV/Saline Lock bolus, may be given if seizure activity persists or recurs. (Rate of administration may not exceed 5 mg/min.)

OR

Administer Midazolam 10 mg, IM or IN, if IV access is unavailable.

6. If seizure activity persists, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

MEDICAL CONTROL OPTIONS:

OPTION A: Repeat Lorazepam 2 mg, IV/Saline Lock bolus, or, if IV access is unavailable, IN or IM.

OR

Repeat Diazepam 5 mg, IV/Saline Lock bolus. (Rate of administration may not exceed 5 mg/min.)

OR

Repeat Midazolam 10 mg, IN or IM, if IV access is unavailable.

OPTION B: Transportation Decision.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

515

NON-CARDIOGENIC SHOCK

1. Begin Basic Life Support Shock procedures.
2. If a tension pneumothorax is suspected, perform Needle Decompression. (See Appendix O.)
3. Begin rapid IV/Saline Lock infusion of Normal Saline (0.9% NS) or Ringer's Lactate (RL) via one to two large bore (14 - 16) gauge catheters, up to 3 liters, via a macro-drip.
4. Begin Cardiac Monitoring, record and evaluate EKG rhythm.
5. If transportation of the patient is delayed or extended and/or the above measures fail to maintain or improve hemodynamic status, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

MEDICAL CONTROL OPTIONS:

OPTION A: Continue rapid IV/Saline Lock infusion of Normal Saline (0.9% NS) or Ringer's Lactate (RL), up to an additional 3 liters (total of 6 liters), via a macro-drip.

OPTION B: Transportation Decision.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

520

TRAUMATIC CARDIAC ARREST

NOTE: IN PATIENTS IN TRAUMATIC CARDIAC ARREST, RAPID TRANSPORT IS THE HIGHEST PRIORITY!

1. Begin transportation of the patient and other Basic Life Support Traumatic Cardiac Arrest procedures.
2. If a tension pneumothorax is suspected, perform Needle Decompression. (See Appendix O.)
3. Perform Endotracheal Intubation if other methods of airway control are not effective.
4. Excluding patients with penetrating chest trauma, begin cardiac monitoring, record and evaluate EKG rhythm. If the EKG demonstrates ventricular fibrillation or pulseless ventricular tachycardia, while in route, treat as per protocol 503A.
5. Begin rapid IV/IO/Saline Lock infusion of Normal Saline (0.9% NS) or Ringer's Lactate (RL) via one or two large bore (14 -16 gauge) catheters, up to 3 liters, via a macro-drip.
6. If transportation of the patient is delayed or extended and/or the above measures fail to improve hemodynamic status, contact Medical Control for implementation of one or more of the following **MEDICAL CONTROL OPTIONS:**

MEDICAL CONTROL OPTIONS:

OPTION A: Continue rapid IV/IO/Saline Lock infusion of Normal Saline (0.9% NS) or Ringers Lactate (RL), up to an additional 3 liters (total of 6 liters), via a macro-drip.

OPTION B: Transportation Decision.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

521

HEAD INJURIES

In patients with head trauma with a Glasgow Coma Scale (GCS) score of 13 or lower

1. Begin Basic Life Support Head and Spine Injuries procedures.
2. Begin an IV infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock.
3. Begin Cardiac Monitoring, record and evaluate EKG rhythm.
4. Perform Endotracheal Intubation* in patients with a Glasgow Coma Scale score of less than 8, if less invasive methods of airway management are not effective.
5. If a seizure is witnessed:
 - a. Administer Lorazepam 2 mg, IV/Saline Lock bolus, or, if IV access is unavailable, IN or IM. A single repeat dose of Lorazepam 2 mg, may be given after 5 minutes if seizure activity persists or recurs.

OR

- b. Administer Diazepam 5 mg, IV/Saline Lock bolus. A single repeat dose of Diazepam 5 mg, IV/Saline Lock bolus, may be given if seizure activity persists or recurs. (Rate of administration may not exceed 5 mg/min.)

OR

- c. Administer Midazolam 10 mg, IM or IN, if IV access is unavailable.

6. If the Glasgow Coma Scale (GCS) score is less than 8, and active seizures or one or more of the following signs of brain herniation are present, hyperventilate the patient to maintain a continuous end-tidal waveform capnography value between 30-35mmHg:
 - a. Fixed or asymmetric pupils
 - b. Abnormal flexion or extension (neurologic posturing)
 - c. Hypertension and bradycardia (Cushing's Reflex)
 - d. Intermittent apnea (periodic breathing)
 - e. Further decrease in GCS score of 2 or more points (neurologic deterioration)
7. If seizure activity persists, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

MEDICAL CONTROL OPTIONS:

OPTION A: Repeat Lorazepam 2 mg, IV/Saline Lock bolus, or, if IV access is unavailable, IN or IM.

OR

Repeat Diazepam 5 mg, IV/Saline Lock bolus. (Rate of administration may not exceed 5 mg/min.)

OR

Repeat Midazolam 10 mg, IN or IM, if IV access is unavailable.

OPTION B: Transportation Decision.

* If the patient is alert prior to performing Endotracheal Intubation, refer to Prehospital Sedation in General Operating Procedures. Prior Permission from Medical Control Is Required.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

527

CHEMICAL EYE INJURIES

1. Begin Basic Life Support Eye Injuries procedures.
2. Assist the patient with removal of contact lens (if present).
3. If the patient is agitated or unable to hold eyelid open, instill Proparacaine HCl 0.5% solution or Tetracaine HCl 0.5% solution, 1-2 gtts, topically, into the affected eye(s) to facilitate irrigation. The initial dose may be repeated only once.
4. Transportation Decision.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

528

BURNS

1. Begin Basic Life Support Burns procedures.
2. If there is evidence of burns to the upper airway or upper airway compromise is anticipated, perform Endotracheal Intubation*.
3. For patients with electrical burns, begin Cardiac Monitoring, record and evaluate the EKG rhythm.
4. Begin Pulse Oximetry monitoring.
5. Begin an IV infusion of Normal Saline (0.9% NS) or Ringer's Lactate (RL) up to 2 liters, via a macro-drip, if transport is delayed or extended.
6. For patients who are experiencing severe pain due to the burn injury:
 - a) For patients with a systolic blood pressure greater than 110mmHg, administer Morphine Sulfate 0.1mg/kg (not to exceed 5mg), IV/Saline Lock bolus. For continued pain, repeat dose of 0.1mg/kg (not to exceed 5mg) may be repeated five minutes following the initial dose. (Maximum total dose is 10mg.)

NOTE: IF HYPOVENTILATION DEVELOPS, ADMINISTER NALOXONE UP TO 2 MG, IV/IN/SALINE LOCK BOLUS.

THE ADMINISTRATION OF NARCOTIC ANALGESICS IS CONTRAINDICATED IN PATIENTS WITH BURNS INVOLVING THE FACE AND/OR AIRWAY.

MEDICAL CONTROL OPTIONS:

OPTION A: Transportation Decision.

* *If the patient is alert prior to performing Endotracheal Intubation, refer to Prehospital Sedation in General Operating Procedures. Prior Permission from Medical Control Is Required.*

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

529

PAIN MANAGEMENT FOR ISOLATED EXTREMITY INJURY

For patients with isolated extremity injury, if there is severe pain

1. Begin Basic Life Support Procedures.
2. Begin cardiac monitoring. Record and evaluate rhythm.
3. Begin Pulse Oximetry monitoring.
4. Begin an IV/Saline Lock infusion of Normal Saline (0.9% NS) at a KVO rate.
5. Monitor vital signs every 5 minutes.
6. For patients with a systolic blood pressure greater than 110 mmHg, administer Morphine Sulfate 0.1 mg/kg (not to exceed 5 mg), IV/Saline Lock bolus. For continued pain, repeat dose of 0.1 mg/kg (not to exceed 5 mg) may be administered. (Maximum total dose is 10 mg).

**NOTE: IF HYPOVENTILATION DEVELOPS, ADMINISTER NALOXONE UP TO 2 MG,
1V/SALINE LOCK BOLUS.**

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

530

EMOTIONALLY DISTURBED PATIENT

1. Begin Basic Life Support procedures.

NOTE: ASSESS SUCH PATIENTS FOR AN UNDERLYING MEDICAL OR TRAUMATIC CONDITION CAUSING AN ALTERED MENTAL STATUS AND TREAT AS NECESSARY.

2. Contact medical control if patient agitation inhibits treatment.
3. POST IM or IN SEDATION: Begin an IV/Saline Lock infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock.
4. Begin cardiac monitoring, record and evaluate EKG rhythm.
5. Apply pulse-oximeter.

NOTE: IN ORDER TO PROTECT PATIENT'S AIRWAY, CONSIDER PLACING PATIENT IN A LATERAL RECUMBENT POSITION.

6. If patient is at risk for respiratory or cardiac arrest by continuing to struggle while being physically restrained by the police, contact medical control for implementation of one of the following **MEDICAL CONTROL OPTIONS:**

MEDICAL CONTROL OPTIONS:

Prehospital Chemical Restraint Procedure

NOTE: IF PATIENT IS AGITATED, THE INITIAL ROUTE OF CHOICE IS IM OR IN. ONCE THE PATIENT IS SEDATED, IV ACCESS SHOULD BE ESTABLISHED IN THE EVENT ADDITIONAL SEDATION IS NECESSARY.

OPTION A: Administer Diazepam, 5 – 10 mg, IV/Saline Lock bolus.

OR

Administer Midazolam, 1 – 2 mg, IV/Saline Lock bolus or if IV access is unavailable, administer Midazolam, 10 mg IM or IN.

OR

Administer Lorazepam, 2 – 4 mg, IV/Saline Lock bolus or if IV access is unavailable, administer Lorazepam, 4 mg IM or IN.

OPTION B: Transportation Decision.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

540

OBSTETRIC COMPLICATIONS

For patients with severe pre-eclampsia, eclampsia or post-partum hemorrhage:

NOTE: SEVERE PRE-ECLAMPSIA IS CHARACTERIZED BY A SYSTOLIC BLOOD PRESSURE OF 160 mmHg OR HIGHER, A DIASTOLIC BLOOD PRESSURE OF 110 mmHg OR HIGHER, AND/OR SEVERE HEADACHES, VISUAL DISTURBANCES, ACUTE PULMONARY EDEMA, OR UPPER ABDOMINAL TENDERNESS.

1. Begin Basic Life Support Obstetric Emergencies procedures.
2. Begin an IV/Saline Lock infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock.
3. Contact Medical Control for implementation of one or more of the following **MEDICAL CONTROL OPTIONS**:

MEDICAL CONTROL OPTIONS:

OPTION A: For severe pre-eclampsia or eclampsia, administer Magnesium Sulfate 2 gm, IV/Saline Lock drip, diluted in 50 - 100 ml of Normal Saline (0.9% NS), over 10 - 20 minutes. If seizures develop, continue, or recur in transport, repeat Magnesium Sulfate 2 gm, IV/Saline Lock drip, diluted in 100 ml of Normal Saline (0.9% NS), over 10 - 20 minutes.

OPTION C: Transportation Decision.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

543

NEONATE RESUSCITATION

For neonates requiring resuscitation whose amniotic fluid does not contain thick meconium:

1. Begin Basic Life Support Neonatal Resuscitation procedures.

For neonates requiring resuscitation whose amniotic fluid does contain thick meconium AND who are LIMP, APNEIC, OR PULSELESS:

1. Begin Basic Life Support Neonatal Resuscitation procedures only after the airway has been cleared of thick meconium, as follows:
 - a. Perform Endotracheal Intubation and directly suction the Endotracheal Tube via a Meconium Aspirator/Adapter while slowly withdrawing the Endotracheal Tube.
 - b. Repeat this procedure until the Endotracheal Tube is clear of thick meconium, up to 2 more times (total of 3 times).

NOTE: DO NOT REPLACE THE ENDOTRACHEAL TUBE ONCE THE AIRWAY HAS BEEN CLEARED OF THICK MECONIUM UNLESS THE NEONATE REMAINS LIMP, APNEIC, OR PULSELESS.

For ALL neonates requiring resuscitation once Basic Life Support Neonatal Resuscitation procedures have begun:

2. If CPR has been initiated, and the heart rate remains less than 60 beats per minute and not rapidly increasing after 30 seconds of CPR, perform Endotracheal Intubation.

NOTE: DO NOT INTUBATE UNLESS OTHER METHODS OF AIRWAY MANAGEMENT ARE NOT EFFECTIVE, I.E., DO NOT SUCCESSFULLY INCREASE THE HEART RATE.

During transport, or if transport is delayed:

3. If abdominal distention occurs, pass a Nasogastric Tube. If unsuccessful, pass an Orogastic Tube.
4. If Endotracheal Intubation has been performed, and the heart rate remains less than 60 beats per minute, administer Epinephrine 0.1 mg/kg (1 ml/kg of a 1:10,000 solution), via the Endotracheal Tube.
5. If Epinephrine has been administered, and the heart rate still remains less than 60 beats per minute, the respiratory rate remains less than 30 breaths per minute, or the neonate remains cyanotic or limp, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

MEDICAL CONTROL OPTIONS

OPTION A: Repeat Epinephrine 0.1 mg/kg (1 ml/kg of a 1:10,000 solution), via the Endotracheal Tube.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

- OPTION B:** If transport is delayed or extended, begin an IV or IO infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock. Do not attempt vascular access more than twice.
- OPTION C:** If transport is delayed or extended, and the neonate is pale and has slow or absent central pulses, administer Epinephrine 0.01 mg/kg (0.1 ml/kg of a 1:10,000 solution) IV/Saline Lock, or IO.
- OPTION D:** If transport is delayed or extended, and the neonate is pale and has weak but rapid central pulses, begin an IV/Saline Lock or IO infusion of Normal Saline (0.9% NS) 10 ml/kg.
- OPTION E:** Transportation Decision.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

550

PEDIATRIC RESPIRATORY ARREST

For pediatric patients in actual or impending respiratory arrest, or who are unconscious and cannot be adequately ventilated:

1. Begin Basic Life Support Pediatric Respiratory Distress/Failure procedures.

NOTE: DO NOT HYPER-EXTEND THE NECK. IF AN OBSTRUCTED AIRWAY IS SUSPECTED, SEE PROTOCOL #551.

2. Perform Endotracheal Intubation, if less invasive methods of airway management are not effective.
3. If a tension pneumothorax is suspected, perform Needle Decompression, using an 18-20 gauge catheter. (See Appendix O.)

NOTE: TENSION PNEUMOTHORAX IN A CHILD IN RESPIRATORY ARREST MAY DEVELOP AFTER RESUSCITATIVE EFFORTS HAVE BEGUN.

During transport, or if transport is delayed:

4. Administer Naloxone 2 mg, IM, or via the Endotracheal Tube, in patients two (2) years of age or older. Use half the amount (1 mg) of this drug in patients less than two (2) years of age. (Refer to Length Based Dosing Device)
5. If abdominal distention occurs, pass a Nasogastric Tube. If unsuccessful, pass an Orogastic Tube.
6. If there is insufficient improvement in respiratory status, contact Medical Control for implementation of one or more of the following **MEDICAL CONTROL OPTIONS**:

MEDICAL CONTROL OPTIONS:

OPTION A: Begin an IV or IO infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock. Attempt vascular access no more than twice.

OPTION B: Administer Naloxone 2 mg, IV/Saline Lock or IO bolus, via the Endotracheal Tube or IM, in patients two (2) years of age or older. Use half the amount (1 mg) of this drug in patients less than two (2) years of age. (Refer to Length Based Dosing Device)

OPTION C: Transportation Decision.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

551

PEDIATRIC OBSTRUCTED AIRWAY

For pediatric patients who are unconscious or cannot breathe, cough, speak, or cry:

1. Begin Basic Life Support Pediatric Obstructed Airway procedures.
2. Perform Direct Laryngoscopy. Attempt to remove the foreign body with appropriate size Magill Forceps.

NOTE: IF AN ENLARGED EPIGLOTTIS IS VISUALIZED, SEE PROTOCOL #552.

3. Perform Endotracheal Intubation, if less invasive methods of airway management are not effective.
4. If able to confirm intubation via direct visualization but unable to ventilate:
 - a. Note the Endotracheal Tube depth
 - b. Deflate the Endotracheal Tube cuff
 - c. Advance the Endotracheal Tube to its deepest depth
 - d. Return the Endotracheal Tube to its original depth
 - e. Reinflate the Endotracheal Tube cuff and attempt ventilation again
 - f. If unable to effectively ventilate the patient using the above maneuvers, immediately initiate transport
4. Transportation Decision.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

552

PEDIATRIC CROUP/EPIGLOTTITIS

1. Begin Basic Life Support Pediatric Croup/Epiglottitis procedures.

NOTE: DO NOT ATTEMPT ENDOTRACHEAL INTUBATION. USE HIGH PRESSURE BAG-VALVE-MASK OR MOUTH-TO-MASK VENTILATION. (MOUTH-TO-MOUTH OR MOUTH-TO-MOUTH AND NOSE VENTILATION MAY BE USED AT PROVIDER OPTION.)

During transport, or if transport is delayed:

2. If abdominal distention occurs, pass a Nasogastric Tube. If unsuccessful, pass an Orogastric Tube.

NOTE: DO NOT ATTEMPT TO PASS A NASOGASTRIC OR OROGASTRIC TUBE IN A CONSCIOUS PATIENT.

3. Transportation Decision.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

553

PEDIATRIC NON-TRAUMATIC CARDIAC ARREST

1. Begin Basic Life Support Pediatric Non-Traumatic Cardiac Arrest procedures.
2. Begin Cardiac Monitoring, record and evaluate EKG rhythm.
3. If in ventricular fibrillation or pulseless ventricular tachycardia:
 - a. Immediately Defibrillate at 2 joules/kg, using paddles of appropriate size. (Refer to Length Based Dosing Device)
 - b. Immediately resume CPR for 5 cycles while defibrillator is recharging.
4. If still in ventricular fibrillation or pulseless ventricular tachycardia:
 - Immediately repeat Defibrillation at 4 joules/kg, using paddles of appropriate size. (Refer to Length Based Dosing Device)
4. Immediately resume CPR for 5 cycles while defibrillator is recharging.

NOTE: IF THE DEFIBRILLATOR IS UNABLE TO DELIVER THE RECOMMENDED DOSE, USE THE LOWEST AVAILABLE SETTING.

5. Perform Endotracheal Intubation if less invasive methods of airway management are not effective.
During transport, or if transport is delayed:
 6. If the patient is intubated, administer Epinephrine 0.1 mg/kg (0.1 ml/kg of a 1:1,000 solution), via the Endotracheal Tube. (Refer to Length Based Dosing Device)
 7. If abdominal distention occurs, pass a Nasogastric Tube. If unsuccessful, pass an Orogastic Tube.
 8. Begin an IV or IO infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock. Attempt vascular access no more than twice.
 9. If still in ventricular fibrillation or pulseless ventricular tachycardia:
 - Immediately repeat Defibrillation at 4 joules/kg, using paddles of appropriate size. (Refer to Length Based Dosing Device)
 - Immediately resume CPR for 5 cycles while the Defibrillator is recharging.
 - Administer Amiodarone, 5 mg/kg, IV/Saline Lock, or IO. (Refer to Length Based Dosing Device)
 10. Repeat Epinephrine 0.01 mg/kg (0.1 ml/kg of a 1:10,000 solution) IV/Saline Lock or IO bolus every 3-5 minutes. (Refer to Length Based Dosing Device)

OR

If vascular access has not been established, repeat epinephrine 0.1 mg/kg (0.1 ml/kg of a 1:1,000 solution) via the Endotracheal Tube every 3-5 minutes. (Refer to Length Based Dosing Device)

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

NOTE: THE IV/SALINE LOCK OR IO DOSE OF EPINEPHRINE FOR PEDIATRIC PATIENTS IS 0.01 MG/KG (0.1 ML/KG OF A 1:10,000 SOLUTION). THE ENDOTRACHEAL TUBE DOSE OF EPINEPHRINE FOR PEDIATRIC PATIENTS IS 0.1 MG/KG (0.1 ML/KG OF A 1:1,000 SOLUTION).

11. If there is insufficient improvement in hemodynamic status, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

MEDICAL CONTROL OPTIONS:

OPTION A: Repeat any of the above Standing Orders.

OPTION B: Administer Naloxone 2 mg IV/Saline Lock or IO bolus, or via the Endotracheal Tube, in patients two years of age or older. Use half the amount (1 mg) of this drug in patients less than two (2) years of age. (Refer to Length Based Dosing Device)

OPTION C: Administer Dextrose 0.5 gm/kg, IV/Saline Lock or IO bolus. Use 10% Dextrose in patients less or equal to one (1) month of age. Use 25% Dextrose in patients greater than one (1) month of age and less than 14 years of age. (Refer to Length Based Dosing Device)

OPTION D: Administer Sodium Bicarbonate 1 mEq/kg, IV/Saline Lock or IO bolus. (Refer to Length Based Dosing Device)

OPTION E: If torsades de pointes is present, administer Magnesium Sulfate, 25-50 mg/kg, IV/Saline Lock, or IO.

OPTION F: Begin rapid IV/Saline Lock, or IO infusion of Normal Saline (0.9% NS), 20 ml/kg. (Refer to Length Based Dosing Device)

OPTION G: Transportation Decision.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

554

PEDIATRIC ASTHMA/WHEEZING

For pediatric patients with acute asthma and/or active wheezing:

1. Begin Basic Life Support Pediatric Respiratory Distress/Failure procedures.
2. Administer Albuterol Sulfate 0.083% (one unit dose of 3 ml), by nebulizer, at a flow rate that will deliver the solution over 5 – 15 minutes. (Refer to Length Based Dosing Device) May be repeated twice during transport (total of 3 doses).
3. Administer Ipratropium Bromide 0.02% (one unit dose of 2.5 ml in children 6 years of age or older, one half unit dose of 2.5 ml in children under 6 years of age), by nebulizer, in conjunction with each Albuterol Sulfate dose. (Refer to Length Based Dosing Device)
4. In patients one (1) year of age or older with severe respiratory distress, respiratory failure, and/or decreased breath sounds, administer Epinephrine 0.01 mg/kg (0.01 ml/kg of a 1:1,000 solution), IM. Maximum dose is 0.3 mg. (Refer to Length Based Dosing Device)

NOTE: SEVERE RESPIRATORY DISTRESS IN A CHILD IS CHARACTERIZED BY MARKEDLY INCREASED RESPIRATORY EFFORT, I.E., SEVERE AGITATION, DYSPNEA, TRIPOD POSITION, AND SUPRASTERNAL AND SUBSTERNAL RETRACTIONS.

A SILENT CHEST IS AN OMINOUS SIGN THAT INDICATES RESPIRATORY FAILURE AND ARREST ARE IMMINENT.

During transport, or if transport is delayed:

4. If the patient develops or remains in severe respiratory distress or respiratory failure, and/or continues to have decreased breath sounds, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

MEDICAL CONTROL OPTIONS:

OPTION A: Repeat Albuterol Sulfate 0.083% (one unit dose of 3 ml), by nebulizer, at a flow rate that will deliver the solution over 5 to 15 minutes. (Refer to Length Based Dosing Device).

OPTION C: Repeat Epinephrine 0.01 mg/kg (0.01 ml/kg of a 1:1,000 solution), IM, 20 minutes after the initial dose. (Refer to Length Based Dosing Device)

OPTION D: Begin an IV infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock. Attempt IV no more than twice.

OPTION E: Transportation Decision.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

555

PEDIATRIC ANAPHYLACTIC REACTION

1. Begin Basic Life Support Anaphylactic Reaction procedures.
2. If the patient develops signs of respiratory failure, airway obstruction, or decompensated shock, perform Endotracheal Intubation, and administer Epinephrine 0.01 mg/kg (0.1 ml/kg of a 1:10,000 solution), via the Endotracheal Tube. (Refer to Length Based Dosing Device)
3. If Endotracheal Intubation cannot be accomplished, administer Epinephrine 0.01 mg/kg (0.01 ml/kg of 1:1,000 solution), IM. Maximum dose is 0.3 mg (0.3 ml of a 1:1,000 solution.) (Refer to Length Based Dosing Device)

During transport, or if transport is delayed:

4. If abdominal distention occurs, pass a Nasogastric Tube. If unsuccessful, pass an Orogastic Tube.
5. If the patient develops or remains in decompensated shock, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

MEDICAL CONTROL OPTIONS:

OPTION A: Repeat any of the above Standing Orders.

OPTION B: Begin an IV or IO infusion of Normal Saline (0.9% NS) via a large bore IV (18-22 gauge) or IO catheter to keep the vein open, or a Saline Lock. Attempt vascular access no more than twice.

OPTION C: Begin rapid IV/Saline Lock or IO infusion of Normal Saline (0.9% NS), 20 ml/kg. Repeat as necessary. (Refer to Length Based Dosing Device)

OPTION D: Transportation Decision.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

556

PEDIATRIC ALTERED MENTAL STATUS

For pediatric patients in coma, with evolving neurological deficit, or with altered mental status of unknown etiology:

NOTE: MAINTENANCE OF NORMAL RESPIRATORY AND CIRCULATORY FUNCTION IS ALWAYS THE FIRST PRIORITY. PATIENTS WITH ALTERED MENTAL STATUS DUE TO RESPIRATORY FAILURE OR ARREST, OBSTRUCTED AIRWAY, SHOCK, TRAUMA, NEAR DROWNING OR OTHER ANOXIC INJURY SHOULD BE TREATED UNDER OTHER PROTOCOLS.

1. Begin Basic Life Support Altered Mental Status procedures.
2. During transport, or if transport is delayed:
 - Administer Glucagon 1 mg, IM.
3. Begin an IV or IO infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock. Attempt vascular access no more than twice.
4. Administer Dextrose 0.5 gm/kg, IV/Saline Lock or IO bolus. Use 10% Dextrose in patients less or equal to one (1) month of age. Use 25% Dextrose in patients greater than one (1) month of age and less than 14 years of age. (Refer to Length Based Dosing Device)
5. If the patient's mental status fails to improve significantly, administer Naloxone, titrate in increments of 0.4 mg up to response, up to 2 mg, IV/Saline Lock or IO bolus. If IV/Saline Lock/IO access has not been established, administer Naloxone 0.8 mg up to response, up to 2 mg, IM or IN.
6. If there is still no change in mental status, contact Medical Control for implementation of one or more of the following **MEDICAL CONTROL OPTIONS**:

MEDICAL CONTROL OPTIONS:

OPTION A: Repeat any of the above standing orders.

OPTION B: Transportation Decision.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

557
PEDIATRIC SEIZURES

For patients experiencing seizures that are ongoing or recurring:

1. Begin Basic Life Support Seizures procedures.

During transport, or if transport is delayed:

2. Administer Glucagon 1 mg, IM.
3. Begin an IV or IO infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock. Attempt vascular access no more than twice.
4. Administer Dextrose 0.5 gm/kg, IV/Saline Lock or IO bolus. Use 10% Dextrose in patients less or equal to one (1) month of age. Use 25% Dextrose in patients greater than one (1) month of age and less than 14 years of age. (Refer to Length Based Dosing Device)
5. If seizures persist, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

MEDICAL CONTROL OPTIONS:

OPTION A: Administer Lorazepam 0.05 mg/kg, IV/IN/Saline Lock or IO bolus, slowly, over 2 minutes. Repeat doses of Lorazepam 0.05 mg/kg, IV/IN/Saline Lock or IO bolus, slowly, over 2 minutes, may be given if seizures persist. (Refer to Length Based Dosing Device)

OR

Administer Diazepam 0.1mg/kg, IV/Saline Lock or IO bolus, slowly, over 2 minutes. Repeat doses of Diazepam 0.1 mg/kg, IV/Saline Lock or IO bolus, slowly, over 2 minutes, may be given if seizures persist. (Refer to Length Based Dosing Device)

OPTION B: If IV/Saline Lock or IO access has not been established, administer Midazolam 0.1 mg/kg, IM or IN. (Maximum dose is 5 mg.) (Refer to Length Based Dosing Device)

OR

If IV/Saline Lock or IO access has not been established, administer Diazepam 0.5 mg/kg, via rectum. (Refer to Length Based Dosing Device)

NOTE: DO NOT ADMINISTER LORAZEPAM, DIAZEPAM, OR MIDAZOLAM IF THE SEIZURES HAVE STOPPED.

OPTION C: Transportation Decision.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

558

PEDIATRIC DECOMPENSATED SHOCK

For pediatric patients in decompensated shock:

NOTE: PATIENTS IN COMPENSATED SHOCK SHOULD NOT BE TREATED UNDER THIS PROTOCOL.

1. Begin Basic Life Support Pediatric Shock procedures.
2. If signs of hemorrhage or dehydration are not present, begin Cardiac Monitoring, record and evaluate EKG rhythm.

NOTE: FOR PATIENTS IN SUPRAVENTRICULAR TACHYCARDIA OR VENTRICULAR TACHYCARDIA WITH A PULSE AND WITH EVIDENCE OF LOW CARDIAC OUTPUT, PROCEED TO MEDICAL CONTROL OPTIONS.

During transport, or if transport is delayed:

3. Begin rapid IV/Saline Lock or IO infusion of Normal Saline (0.9% NS) or Ringer's Lactate (RL), 20 ml/kg, via a large bore IV (18-22 gauge) or IO catheter, or a Saline Lock. Attempt vascular access no more than twice. (Refer to Length Based Dosing Device)
4. If signs of hemorrhage or dehydration are present, and the patient remains in decompensated shock, continue rapid IV/Saline Lock or IO infusion of Normal Saline (0.9% NS) or Ringer's Lactate (RL), up to an additional 20 ml/kg (total of 40 ml/kg), via a second large bore IV (18-22 gauge) catheter, or a Saline Lock, if necessary. Attempt second IV no more than twice. (Refer to Length Based Dosing Device)
5. If the patient still remains in decompensated shock, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

MEDICAL CONTROL OPTIONS:

OPTION A: If signs of hemorrhage or dehydration are still present, continue rapid IV/Saline Lock or IO infusion of Normal Saline (0.9% NS) or Ringer's Lactate (RL), up to an additional 20 ml/kg (total of 60 ml/kg). (Refer to Length Based Dosing Device)

OPTION B: If transport is delayed or extended, and:

- a. If in supraventricular tachycardia or ventricular tachycardia with a pulse, with evidence of low cardiac output, and the Defibrillator is able to deliver calculated dose, perform Synchronized Cardioversion at 0.5-1 joules/kg, using paddles of appropriate size. If this fails to convert the dysrhythmia, Synchronized Cardioversion may be repeated at 1-2 joules/kg, using paddles of appropriate size.

NOTE: DO NOT PERFORM SYNCHRONIZED CARDIOVERSION IN PEDIATRIC PATIENTS WITH SUPRAVENTRICULAR TACHYCARDIA OR VENTRICULAR TACHYCARDIA WITH A PULSE UNLESS THE DEFIBRILLATOR IS ABLE TO DELIVER CALCULATED DOSE.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

- b. If in supraventricular tachycardia with evidence of low cardiac output, but the Defibrillator is not able to deliver calculated dose, administer Adenosine 0.1 mg/kg, IV/Saline Lock or IO bolus, rapidly, followed by 2 - 3 ml of Normal Saline (0.9% NS) flush. (Maximum initial dose is 6 mg.) If this fails to convert the dysrhythmia, Adenosine may be repeated twice at 0.2 mg/kg, IV/Saline Lock or IO bolus, rapidly, followed by 2 - 3 ml Normal Saline (0.9% NS) flush. (Maximum subsequent doses are 12 mg.)

OPTION C: Transportation Decision.

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

559

PEDIATRIC TRAUMATIC CARDIAC ARREST

NOTE: FOR PEDIATRIC PATIENTS IN TRAUMATIC CARDIAC ARREST, RAPID TRANSPORT IS THE HIGHEST PRIORITY!

1. Begin transportation of the patient and other Basic Life Support Traumatic Cardiac Arrest procedures.

During transport, or if transport is delayed:

2. Perform Endotracheal Intubation if other methods of airway control are not effective.
3. If a tension pneumothorax is suspected, perform Needle Decompression. (See Appendix O.)
4. Begin rapid IV/Saline Lock or IO infusion of Normal Saline (0.9% NS) or Ringer's Lactate (RL), 20 ml/kg, via a large bore IV (18-22 gauge) or IO catheter, or a Saline Lock. Attempt vascular access no more than twice. (Refer to Length Based Dosing Device)
5. If abdominal distention occurs, pass a Nasogastric Tube. If unsuccessful, or in patients with craniofacial trauma, pass an Orogastric Tube.

NOTE: DO NOT PASS A NASOGASTRIC TUBE IN PATIENTS WITH CRANIOFACIAL TRAUMA.

6. If the patient remains in traumatic cardiac arrest, continue rapid IV/Saline Lock or IO infusion of Normal Saline (0.9% NS) or Ringer's Lactate (RL), 20 ml/kg (total of 40 ml/kg), via a second large bore IV (18-22) catheter, or a Saline Lock (if necessary). Attempt second IV no more than twice. (Refer to Length Based Dosing Device)
7. If the patient still remains in traumatic cardiac arrest, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

MEDICAL CONTROL OPTIONS:

OPTION A: Continue rapid IV or IO infusion of Normal Saline (0.9% NS) or Ringer's Lactate (RL) up to an additional 20 ml/kg (total of 60 ml/kg). (Refer to Length Based Dosing Device)

OPTION B: Transportation Decision.