

## EMERGENCY MEDICAL TECHNICIAN **CRITICAL CARE** PROTOCOLS

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### 601 RESPIRATORY ARREST

1. For patients in actual or imminent respiratory arrest:
2. Begin Basic Life Support Respiratory Distress procedures.
3. If a tension pneumothorax is suspected, **CONTACT MEDICAL CONTROL** for permission to perform Needle Decompression. (See Appendix O.)
4. Perform Endotracheal Intubation\*.
5. Begin Cardiac Monitoring, record and evaluate EKG rhythm.
6. Begin an IV infusion of Normal Saline (0.9 NS) to keep vein open, or a Saline Lock.
7. If the patient requires sedation, contact Medical Control for implementation of one or more of the following **MEDICAL CONTROL OPTIONS**:

#### **MEDICAL CONTROL OPTIONS:**

##### \*PREHOSPITAL SEDATION PROCEDURE

If the patient is alert prior to performing Endotracheal Intubation, consider prehospital sedation as follows:

- a) Administer Diazepam 5 – 10 mg, IV/Saline Lock bolus. Repeat doses of Diazepam 5 – 10 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 20 mg.)

**OR**

- b) Administer Midazolam 1 – 2 mg, IV/Saline Lock bolus. Repeat doses of Midazolam 1 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 5 mg.)

**OR**

- c) Administer Etomidate 0.3 mg/kg, IV/Saline Lock bolus, over 30-60 seconds. (Maximum total dose is 20 mg.) After successful intubation, consider Diazepam 5 mg or Midazolam (Versed) 2 mg, for continued sedation.

OPTION A: Administer Naloxone 2 mg, IV/Saline Lock bolus. Repeat doses of Naloxone 2 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 10 mg.)

OPTION B: Transportation Decision.

**602**  
**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 the airway remains obstructed, **CONTACT MEDICAL CONTROL** for permission to perform Needle Cricothyroidotomy. (See Appendix N.)
5. Transportation Decision.

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### **603 NON-TRAUMATIC CARDIAC ARREST**

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

#### **Sub-Protocols\***

503-A	Asystole
503-B	Ventricular Fibrillation/Pulseless Ventricular Tachycardia
503-C	Pulseless Electrical Activity/Electro-Mechanical Dissociation/ Agonal Idioventricular Rhythm

\* 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.

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### 603-A ASYSTOLE

1. Perform Endotracheal Intubation.
2. In monitored asystolic arrests, begin Transcutaneous Pacing (if available).
3. Begin an IV infusion of Normal Saline (0.9 NS) to keep vein open, or a Saline Lock.
4. Administer Epinephrine 1 mg (10 ml of a 1:10,000 solution), IV/Saline Lock bolus.
5. Administer Atropine Sulfate 1 mg, IV/Saline Lock bolus.
6. Contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

#### MEDICAL CONTROL OPTIONS:

- OPTION A: If there is no change in the rhythm within 3 - 5 minutes, repeat Epinephrine 1 mg (10 mL of a 1:10,000 solution), IV/Saline Lock bolus every 3 - 5 minutes.
- OPTION B: Administer Atropine Sulfate 1 mg, IV/Saline Lock bolus. If there is no change in the rhythm within 3 - 5 minutes, repeat Atropine Sulfate 1 mg, IV/Saline Lock bolus, every 3 - 5 minutes. (Maximum total dosage is 3 mg)
- OPTION C: If there is no change in the rhythm, repeat Epinephrine 3 mg (3 ml of a 1:1,000 solution), IV/Saline Lock bolus, 3 - 5 minutes after the initial dose. If there is still no change in the rhythm, administer Epinephrine 5 mg (5 ml of a 1:1,000 solution), IV/Saline Lock bolus, 3 - 5 minutes after the previous dose. Subsequent doses of Epinephrine 5 mg (5 ml of a 1:1,000 solution), IV/Saline Lock bolus, should be given every 3 - 5 minutes for the duration of treatment.
- OPTION D: Begin Transcutaneous Pacing (if available).
- OPTION E: 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 F: Defibrillate \* using 200 joules, or biphasic equivalent. If this fails to convert the dysrhythmia, Defibrillation may be repeated as necessary, using 300 and 360 joules, or biphasic equivalent. (See Protocol # 503-B.)

\* Immediately following conversion to a supraventricular rhythm (even of a short duration), administer Lidocaine 1.5 mg/kg, IV/Saline Lock bolus. Repeat doses of Lidocaine .75 mg/kg, IV/Saline Lock bolus may be given every 5 minutes, and may be followed by Lidocaine 1 - 4 mg/min, IV/Saline Lock drip. (Maximum individual dose is 1.5 mg/kg and maximum total dosage is 3 mg/kg.)

- OPTION G: Administer Dextrose 25 gm (50 ml of a 50% solution), IV/Saline Lock bolus.

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OPTION H: Administer Naloxone 2 mg, IV/Saline Lock bolus. Repeat doses of Naloxone 2 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 10 mg.)

OPTION I: Transportation Decision.

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### 603-B VENTRICULAR FIBRILLATION/ PULSELESS VENTRICULAR TACHYCARDIA

1. Immediately Defibrillate\* using 200 joules, or biphasic equivalent.

**NOTE: IF PATIENT HAS A PERMANENT PACEMAKER IN PLACE, POSITION THE PADDLES OR SEMI-AUTOMATIC DEFIBRILLATOR PADS AT LEAST FIVE (5) INCHES AWAY FROM THE PACEMAKER DEVICE.**

2. If there is no change in the rhythm, Defibrillate\* using 300 joules, or biphasic equivalent.
3. If there is still no change in the rhythm, Defibrillate\* using 360 joules, or biphasic equivalent.
4. Perform Endotracheal Intubation.
5. Begin an IV infusion of Normal Saline (0.9 NS) to keep vein open, or a Saline Lock.
6. Administer Epinephrine 1 mg (10 ml of a 1:10,000 solution), IV/Saline Lock bolus,  
**OR**  
Administer Vasopressin 40 unit IV/Saline Lock Bolus, single dose, 1 time only.
7. If there is still no change in the rhythm, Defibrillate\* using 360 joules, or biphasic equivalent.
8. Administer Lidocaine 1.5 mg/kg, IV/Saline Lock bolus. (Maximum individual dose is 1.5 mg/kg and maximum total dosage is 3 mg/kg.)  
**OR**  
Administer Amiodarone 300 mg, diluted up to a total of 20 ml of D<sub>5</sub>W, IV/Saline Lock Bolus.
9. If there is still no change in the rhythm, Defibrillate\* using 360 joules, or biphasic equivalent.
10. If there is still no change, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

#### **MEDICAL CONTROL OPTIONS:**

- OPTION A: If there is still no change in the rhythm, Defibrillate\* using 360 joules, or equivalent biphasic, after each medication, or after each minute of CPR.

\* If Amiodarone has NOT been administered, immediately following conversion to a supraventricular rhythm (even of a short duration), administer Lidocaine 1.5 mg/kg, IV/Saline Lock bolus. Repeat doses of Lidocaine 0.75 mg/kg, IV/Saline Lock bolus may be given every 5 minutes, and may be followed by Lidocaine 1-4 mg/min, IV/Saline Lock drip. (Maximum individual dose is 1.5 mg/kg and maximum total dosage is 3 mg/kg, exclusive of Lidocaine drip.)

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- OPTION B: Repeat Lidocaine 1.5 mg/kg, IV/Saline Lock bolus after 5 minutes. (Maximum individual dose is 1.5 mg/kg and maximum total dosage is 3 mg/kg.)
- OPTION C: If there is no change in the rhythm within 3 - 5 minutes, repeat Epinephrine 1 mg (10 mL of a 1:10,000 solution), IV/Saline Lock bolus every 3 - 5 minutes.
- OPTION D: If there is no change in the rhythm, administer Epinephrine 3 mg (3 ml of 1:1,000 solution), IV/Saline Lock bolus, 3 - 5 minutes after the initial dose. If there is still no change in the rhythm, administer Epinephrine 5 mg (5 ml of 1:1,000 solution), IV/Saline Lock bolus, 3 - 5 minutes after the previous dose. Subsequent doses of Epinephrine 5 mg, (5 ml of a 1:1,000 solution), IV/Saline Lock bolus, should be given every 3 - 5 minutes for the duration of treatment.
- OPTION E: Administer Sodium Bicarbonate 44 -88 mEq, IV/Saline Lock bolus. Repeat doses of Sodium Bicarbonate 44 mEq, IV/Saline Lock bolus, may be given every 10 minutes.
- OPTION F: Administer Dextrose 25 gm (50 ml of a 50% solution), IV/Saline Lock bolus.
- OPTION G: Administer Magnesium Sulfate 2 gm, IV/Saline Lock bolus, diluted in 10 ml of Normal Saline (0.9 NS), over 2 minutes.
- OPTION H: Transportation Decision.

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### **603-C PULSELESS ELECTRICAL ACTIVITY (PEA)/ ELECTRO-MECHANICAL DISSOCIATION (EMD)/ AGONAL IDIOVENTRICULAR RHYTHM**

**NOTE: CONSIDER THE POSSIBILITY OF CONDITIONS MASQUERADING AS PEA/EMD WHICH REQUIRE IMMEDIATE IN-HOSPITAL TREATMENT SUCH AS SEVERE SHOCK, TRAUMATIC CARDIAC ARREST, PERICARDIAL TAMPONADE, HYPOVOLEMIA, TENSION PNEUMOTHORAX, ETC.**

1. If a tension pneumothorax is suspected, **CONTACT MEDICAL CONTROL** for permission to perform Needle Decompression. (See Appendix O.)
2. Perform Endotracheal Intubation.
3. Begin an IV infusion of Normal Saline (0.9 NS) to keep vein open, or a Saline Lock.
4. Administer Epinephrine 1 mg (10 ml of a 1:10,000 solution), IV/Saline Lock bolus.
5. If the patient has a heart rate (based on rhythm strip) less than 60 beats/min, administer Atropine Sulfate 1 mg, IV/Saline Lock bolus.
6. 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 there is no change in the rhythm within 3 - 5 minutes, repeat Epinephrine 1 mg (10 mL of a 1:10,000 solution), IV/Saline Lock bolus every 3 - 5 minutes.
- OPTION B:** If the patient has a heart rate (based on rhythm strip) less than 60 beats/min, administer Atropine Sulfate 1 mg, IV/Saline Lock bolus. If there is no change in the heart rate within 3 - 5 minutes, repeat Atropine Sulfate 1 mg, IV/Saline Lock bolus, every 3 - 5 minutes. (Maximum total dosage is 3 mg.)
- OPTION C:** If there is no change in the rhythm, administer Epinephrine 3 mg (3 ml of a 1:1,000 solution), IV/Saline Lock bolus, 3 - 5 minutes after the initial dose. If there is still no change in the rhythm, administer Epinephrine 5 mg (5 ml of a 1:1,000 solution), IV/Saline Lock bolus, 3 - 5 minutes after the previous dose. Subsequent doses of Epinephrine 5 mg (5 ml of a 1:1,000 solution), IV/Saline Lock bolus, should be given every 3 - 5 minutes for the duration of treatment.
- OPTION D:** Administer Sodium Bicarbonate 44-88 mEq, IV/Saline Lock bolus. Repeat doses of Sodium Bicarbonate 44 mEq, IV/Saline Lock bolus, may be given every 10 minutes.
- OPTION E:** Administer Dextrose 25 gm (50 ml of a 50% solution), IV/Saline Lock bolus.

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- OPTION F: Administer Naloxone 2 mg, IV/Saline Lock bolus. Repeat doses of Naloxone 2 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 10 mg.)
- OPTION G: Begin rapid IV/Saline Lock infusion of Normal Saline (0.9 NS), up to 3 liters.
- OPTION H: Begin Transcutaneous Pacing (if available).
- OPTION I: 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 J: Transportation Decision.

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**604**

### **SUSPECTED MYOCARDIAL INFARCTION**

1. Begin Basic Life Support Chest Pain 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.

### **Sub-Protocols**

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

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### 604-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.
2. If chest pain still persists, apply Nitropaste 1 ½ inches (if available).

**NOTE: NITROGLYCERIN AND/OR NITROPASTE MAY NOT BE ADMINISTERED TO PATIENTS WITH A SYSTOLIC BLOOD PRESSURE OF LESS THAN 100 mm Hg, UNLESS AN IV/SALINE LOCK IS IN PLACE.**

3. Administer two chewable Baby Aspirin Tablet, 162 mg.
4. 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 2 - 5 mg, IV/Saline Lock bolus. Repeat doses of Morphine Sulfate 2-5 mg IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 15 mg.)

**NOTE: IF HYPOTENSION, HYPOVENTILATION, OR STUPOR DEVELOPS DURING ADMINISTRATION OF MORPHINE SULFATE, WITHHOLD MORPHINE SULFATE, ELEVATE THE LEGS, AND ADMINISTER NALOXONE 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: If the patient is experiencing hemodynamically compromising Premature Ventricular Contractions (PVCs), administer Lidocaine 1.5 mg/kg, IV/Saline Lock bolus. Repeat doses of Lidocaine 0.75 mg/kg, IV/Saline Lock bolus, may be given every 5 minutes, and may be followed by Lidocaine 1 - 4 mg/min, IV/Saline Lock drip. (Maximum individual dose is 1.5 mg/kg and maximum total dosage is 3 mg/kg.)

OPTION D: Transportation Decision.

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### 604-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.

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### **605 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**

605-A	Supraventricular Tachycardia
605-B	Atrial Fibrillation/Atrial Flutter
605-C Type	Ventricular Tachycardia with a Pulse/Wide Complex Tachycardia of Uncertain
605-D	Bradycardias/Complete Heart Block

## EMERGENCY MEDICAL TECHNICIAN CRITICAL CARE PROTOCOLS

### 605-A SUPRAVENTRICULAR TACHYCARDIA

1. In patients with unstable supraventricular tachycardia, CONTACT MEDICAL CONTROL for permission to perform Synchronized Cardioversion using 50 joules, or biphasic equivalent. If this fails to convert the dysrhythmia and the patient still has a pulse, Synchronized Cardioversion\* may be repeated as necessary, using 100, 200, 300 and 360 joules, or biphasic equivalent.
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.
3. 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:

##### \*PREHOSPITAL SEDATION PROCEDURE:

If the patient is alert prior to performing Synchronized Cardioversion, consider prehospital sedation as follows:

- a) Administer Diazepam 5 – 10 mg, IV/Saline Lock bolus. Repeat doses of Diazepam 5 – 10 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 20 mg.)

**OR**

- b) Administer Midazolam 1 – 2 mg, IV/Saline Lock bolus. Repeat doses of Midazolam 1 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 5 mg.)

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 50 joules, or biphasic equivalent. If this fails to convert the dysrhythmia and the patient still has a pulse, Synchronized Cardioversion may be repeated as necessary using 100, 200, 300, and 360 joules, or biphasic equivalent.

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OPTION C: Administer Amiodarone 150 mg, diluted in 100 ml D<sub>5</sub>W over 10 minutes, if available.

OPTION D: Transportation Decision.

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### **605-B** **ATRIAL FIBRILLATION / ATRIAL FLUTTER**

1. In patients with **unstable** Atrial Fibrillation / Atrial Flutter, CONTACT MEDICAL CONTROL for permission to perform Synchronized Cardioversion\* using 50 joules, or biphasic equivalent. If this fails to convert the dysrhythmia and the patient still has a pulse, Synchronized Cardioversion may be repeated as necessary using 100, 200, 300 and 360 joules, or biphasic equivalent.
2. In patients with **stable** Atrial Fibrillation / 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:**

##### \*PREHOSPITAL SEDATION PROCEDURE:

If the patient is alert prior to performing Synchronized Cardioversion, consider prehospital sedation as follows:

- a) Administer Diazepam 5 – 10 mg, IV/Saline Lock bolus. Repeat doses of Diazepam 5 – 10 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 20 mg.)

##### **OR**

- b) Administer Midazolam 1 – 2 mg, IV/Saline Lock bolus. Repeat doses of Midazolam 1 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 5 mg.)

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 50 joules, or biphasic equivalent. If this fails to convert the dysrhythmia and the patient still has a pulse, Synchronized Cardioversion may be repeated as necessary using 100, 200, 300, and 360 joules, or biphasic equivalent.

OPTION C: Administer Amiodarone 150 mg, diluted in 100 ml D<sub>5</sub>W over 10 minutes, if available.

OPTION D: Transportation Decision.

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

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

1. In patients with unstable ventricular tachycardia with a pulse, **CONTACT MEDICAL CONTROL** for permission to perform Synchronized Cardioversion\* using 100 joules, or biphasic equivalent. 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, or biphasic equivalent.
2. Administer Lidocaine 1.5 mg/kg, IV/Saline Lock bolus.
3. Contact Medical Control for implementation of one or more of the following **MEDICAL CONTROL OPTIONS**:

**MEDICAL CONTROL OPTIONS:**

**\*PREHOSPITAL SEDATION PROCEDURE:**

If the patient is alert prior to performing Synchronized Cardioversion, consider prehospital sedation as follows:

- a) Administer Diazepam 5 – 10 mg, IV/Saline Lock bolus. Repeat doses of Diazepam 5 – 10 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 20 mg.)

**OR**

- b) Administer Midazolam 1 – 2 mg, IV/Saline Lock bolus. Repeat doses of Midazolam 1 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 5 mg.)

OPTION A: Repeat doses of Lidocaine 0.75 mg/kg, IV/Saline Lock bolus, may be given every 5 minutes. (Maximum individual dose is 1.5 mg/kg and maximum total dosage is 3 mg/kg).

OPTION B: If Lidocaine converts the dysrhythmia, administer Lidocaine 1-4 mg/min, IV/Saline Lock drip.

OPTION C: Perform Synchronized Cardioversion\* using 100 joules, or biphasic equivalent. 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, or biphasic equivalent.

OPTION D: Administer Magnesium Sulfate 2 gm, IV/Saline Lock bolus, diluted in 10 ml of Normal Saline (0.9 NS), over 2 minutes.

OPTION E: Transportation Decision.

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### **605-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, administer Atropine Sulfate 0.5-1 mg, IV/Saline Lock bolus.
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. (Maximum total dosage is 3 mg.)

OPTION B: Begin Transcutaneous Pacing\* (if available).

#### \*PREHOSPITAL SEDATION PROCEDURE:

If the patient is alert prior to performing Transcutaneous Pacing, consider prehospital sedation as follows:

- a) Administer Diazepam 5 – 10 mg, IV/Saline Lock bolus. Repeat doses of Diazepam 5 – 10 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 20 mg.)

#### **OR**

- b) Administer Midazolam 1 – 2 mg, IV/Saline Lock bolus. Repeat doses of Midazolam 1 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 5 mg.)

OPTION C: Administer Dopamine 5 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 20 ug/kg/min, IV/Saline Lock drip.)

OPTION D: Administer Epinephrine 1 ug/min, IV/Saline Lock drip. Prepare infusion by adding 1 mg of Epinephrine (1 ml of a 1:1,000 solution) to 250 ml of Normal Saline (0.9 NS) (1 ug/min = 15 ml/hr = 15 gtts/min). 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/min, IV/Saline Lock drip.)

OPTION E: Transportation Decision.

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### 606 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.
6. Administer Nitropaste 1 ½ inches (if available).

**NOTE: NITROGLYCERIN AND/OR NITROPASTE MAY NOT BE ADMINISTERED TO PATIENTS WITH A SYSTOLIC BLOOD PRESSURE OF LESS THAN 100 mm Hg, UNLESS AN IV/SALINE LOCK IS IN PLACE.**

7. Administer Furosemide 20-80 mg, IV/Saline Lock bolus. (Maximum combined total dosage is 80 mg.)
8. Contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

#### MEDICAL CONTROL OPTIONS:

OPTION A: Administer Morphine Sulfate 2 - 5 mg, IV/Saline Lock bolus. Repeat doses of Morphine Sulfate 2 - 5 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 15 mg.)

**NOTE: IF HYPOTENSION, HYPOVENTILATION, OR STUPOR DEVELOPS DURING ADMINISTRATION OF MORPHINE SULFATE, WITHHOLD MORPHINE SULFATE, ELEVATE THE LEGS, AND ADMINISTER NALOXONE 2 mg, IV/SALINE LOCK BOLUS.**

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

OPTION C: Transportation Decision.

## EMERGENCY MEDICAL TECHNICIAN CRITICAL CARE PROTOCOLS

### 607 ASTHMA

#### In patients with acute asthma and/or active wheezing:

1. Begin Basic Life Support Respiratory Distress procedures.
2. Administer Albuterol Sulfate 0.83% (one unit dose bottle 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).

#### OR

Administer Metaproterenol 5% (0.3 ml in 2.5-5 ml of Normal Saline (0.9 NS)), by nebulizer, at a flow rate that will deliver the solution over 5 to 15 minutes. May be repeated twice (total of 3 doses).

**NOTE: DO NOT DELAY TRANSPORT TO ADMINISTER ADDITIONAL NEBULIZER TREATMENTS.**

3. Begin Cardiac Monitoring, record and evaluate EKG rhythm, in patients in severe respiratory distress with history of dysrhythmia or cardiac disease.
4. 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.
5. 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 0.83% (one unit dose bottle of 3 ml), by nebulizer, at a flow rate that will deliver the solution over 5 to 15 minutes.

#### OR

Repeat Metaproterenol 5% (0.3 ml in 2.5-5 ml of Normal Saline (0.9 NS)), by nebulizer, at a flow rate that will deliver the solution over 5-15 minutes.

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

OPTION C: Administer Magnesium Sulfate 2 gm, IV/Saline Lock drip, diluted in 50 - 100 ml Normal Saline (0.9 NS), over 10 - 20 minutes.

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

#### OR

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

OPTION E: Transportation Decision.

**608**  
**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 0.83% (one unit dose bottle 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).

**OR**

Administer Metaproterenol 5% (0.3 ml in 2.5 - 5 ml of Normal Saline (0.9 NS)), by nebulizer, at a flow rate that will deliver the solution over 5 to 15 minutes. May be repeated twice (total of 3 doses).

**NOTE: 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. 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 0.83% (one unit dose bottle of 3 ml), by nebulizer, at a flow rate that will deliver the solution over 5 to 15 minutes.

**OR**

Repeat Metaproterenol 5% (0.3 ml in 2.5-5 ml of Normal Saline (0.9 NS)), by nebulizer, at a flow rate that will deliver the solution over 5 to 15 minutes.

OPTION B: Administer Methylprednisolone 125 mg, IV/Saline Lock bolus, **slowly**, over 2 minutes, or IM.

**OR**

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

OPTION C: Transportation Decision.

**610**  
**ANAPHYLACTIC REACTION**

1. Begin Basic Life Support Anaphylactic Reaction procedures.
2. If the patient is exhibiting obvious airway compromise, perform Endotracheal Intubation\*, and administer Epinephrine 2 mg (2 ml of a 1:1,000 solution, diluted to 10 ml total fluid volume with Normal Saline), via the Endotracheal Tube.
3. If Endotracheal Intubation has not been accomplished, and the patient has no signs of decompensated shock, 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 0.83% (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 there is still no change, contact Medical Control for implementation of one or more of the following **MEDICAL CONTROL OPTIONS**:

**MEDICAL CONTROL OPTIONS:**

**\*PREHOSPITAL SEDATION PROCEDURE:**

If the patient is alert prior to performing Endotracheal Intubation, consider prehospital sedation as follows:

- a) Administer Diazepam 5 – 10 mg, IV/Saline Lock bolus. Repeat doses of Diazepam 5 – 10 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 20 mg.)

**OR**

- b) Administer Midazolam 1 – 2 mg, IV/Saline Lock bolus. Repeat doses of Midazolam 1 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 5 mg.)

**OR**

- c) Administer Etomidate 0.3 mg/kg, IV/Saline Lock bolus, over 30-60 seconds. (Maximum total dose is 20 mg.) After successful intubation, consider Diazepam 5 mg or Midazolam (Versed) 2 mg, for continued sedation.

**OPTION A:** Repeat any of the above standing orders.

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OPTION B: 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.

OPTION C: Administer Diphenhydramine 50 mg, IV/Saline Lock bolus, or IM, if IV/Saline Lock access has not been established.

OPTION D: Administer Epinephrine 1 ug/min, IV/Saline Lock drip. Prepare infusion by adding 1 mg of Epinephrine (1 ml of a 1:1,000 solution) to 250 ml of Normal Saline (0.9 NS) (1 ug/min = 15 ml/hr = 15 gtts/min). If there is insufficient improvement in hemodynamic status, the infusion may be increased until the desired therapeutic effects are achieved or adverse effects appear. (Maximum dosage is 4 ug/min, IV/Saline Lock drip.)

OPTION E: 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 F: Administer Methylprednisolone 125 mg, IV/Saline Lock bolus, **slowly**, over 2 minutes, or IM.

**OR**

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

**NOTE: DEXAMETHASONE IS NOT TO BE ADMINISTERED IM IN ANAPHYLACTIC REACTION**

OPTION G: Transportation Decision.

**611**  
**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, THE PATIENT HAS NO SYMPTOMS OR SIGNS OF HYPOGLYCEMIA, DEXTROSE MAY BE WITHHELD.**

4. Administer Thiamine 100 mg, IV/Saline Lock bolus.
5. In patients with diabetic histories where an IV/Saline Lock route is unavailable, administer Glucagon 1 mg, IM. (Thiamine need not be administered to these patients).
6. If there is no change in mental status, administer Naloxone up to 2 mg, IV/Saline Lock bolus. If IV/Saline Lock access has not been established, administer Naloxone 2 mg, IM.

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

7. If there is still no change, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

**MEDICAL CONTROL OPTIONS:**

- OPTION A: 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.
- OPTION B: If there still is no change in the patient's mental status or it fails to improve significantly, repeat Naloxone 2 mg, IV/Saline Lock bolus, up to 4 additional doses. (Maximum total dosage is 10 mg.)
- OPTION C: Transportation Decision.

**613**  
**STATUS EPILEPTICUS**

***For adult 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 Thiamine 100 mg, IV/Saline Lock bolus.
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: Administer Lorazepam 2 mg, IV/Saline Lock bolus, or, if IV access is unavailable, IM. A ~~single~~ Repeat doses of Lorazepam 2 mg, IV/Saline Lock bolus, or, if IV access is unavailable, IM, may be given after 5 minutes if seizure activity persists or recurs.
- OR**
- Administer Diazepam 5 mg, IV/Saline Lock bolus. Repeat doses 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, if IV access is unavailable.
- OPTION B: Transportation Decision.

**615**  
**NON CARDIOGENIC SHOCK**

1. Begin Basic Life Support Shock procedures.
2. If a tension pneumothorax is suspected, **CONTACT MEDICAL CONTROL** for permission to 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 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 macro drip.
- OPTION B: Transportation Decision.

**620**  
**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, **CONTACT MEDICAL CONTROL** for permission to perform Needle Decompression. (See Appendix O.)
3. Perform Endotracheal Intubation if other methods of airway control are not effective.
4. Begin rapid IV/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 macro drip.
5. 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/Saline Lock infusion of Normal Saline (0.9 NS) or Ringers Lactate (RL), up to an additional 3 liters (total of 6 liters), via macro drip.
- OPTION B: Transportation Decision.

**621  
HEAD INJURIES**

**In patients with head trauma that have a Glasgow Coma score of 13 or lower:**

1. Begin Basic Life Support Head and Spine Injuries 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. If there is still no change, or if a seizure is witnessed, contact Medical Control for implementation of one or more of the following **MEDICAL CONTROL OPTIONS**:

**MEDICAL CONTROL OPTIONS:**

OPTION A: Perform Endotracheal Intubation in patients with a Glasgow Coma Scale score of less than 8.

**NOTE: ADMINISTER LIDOCAINE 1.5 MG/KG, IV/SALINE LOCK BOLUS, IMMEDIATELY PRIOR TO INTUBATION TO MINIMIZE THE INCREASE IN INTRACRANIAL PRESSURE. (MAXIMUM DOSE IS 1.5 mg/kg.)**

OPTION B: If a seizure activity is witnessed:

- a) Administer Diazepam 5-10 mg, IV/Saline Lock bolus. Repeat doses of Diazepam 5-10 mg, IV/Saline Lock bolus, may be given if seizure activity persists or recurs. (Rate of administration may not exceed 5 mg/min)

**OR**

- b) Administer Lorazepam 2 - 4 mg, IV/Saline Lock or IM. Repeat doses of Lorazepam 2 -4 mg, IV/Saline Lock, or IM, may be given every 5 minutes, if seizure activity persists or recurs. (Maximum total dosage is 8 mg.)

OPTION C: Transportation Decision.

**627**  
**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.

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### 628 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, contact MEDICAL CONTROL before performing Endotracheal Intubation\*.
3. For patients with electrical burns, begin Cardiac Monitoring, record and evaluate the EKG rhythm.
4. Begin an IV infusion of Normal Saline (0.9 NS) or Ringer's Lactate (RL) to keep vein open, or a Saline Lock.
5. Begin a rapid IV/Saline Lock infusion of Normal Saline (0.9 NS) or Ringer's Lactate (RL), up to 3 liters, if transport is delayed or extended.
6. If the patient requires sedation, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

#### MEDICAL CONTROL OPTIONS:

##### \*PREHOSPITAL SEDATION PROCEDURE:

If the patient is alert prior to performing Endotracheal Intubation, consider prehospital sedation as follows:

- a) Administer Diazepam 5 – 10 mg, IV/Saline Lock bolus. Repeat doses of Diazepam 5 – 10 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 20 mg.)

**OR**

- b) Administer Midazolam 1 – 2 mg, IV/Saline Lock bolus. Repeat doses of Midazolam 1 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 5 mg.)

**OR**

- c) Administer Etomidate 0.3 mg/kg, IV/Saline Lock bolus, over 30-60 seconds. (Maximum total dose is 20 mg.) After successful intubation, consider Diazepam 5 mg or Midazolam (Versed) 2 mg, for continued sedation.

OPTION A: For the purposes of analgesia, Morphine Sulfate 2 - 5 mg, IV/Saline Lock bolus, may be administered. Repeat doses of Morphine Sulfate 2 - 5 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 15 mg.)

**NOTE: IF HYPOTENSION, HYPOVENTILATION, OR STUPOR DEVELOPS, WITHHOLD MORPHINE SULFATE, ELEVATE THE LEGS, AND ADMINISTER NALOXONE 2 mg, IV/SALINE LOCK BOLUS.**

OPTION B: Transportation Decision.

**629**  
**PAIN MANAGEMENT FOR ISOLATED EXTREMITY INJURY**

*For patients with isolated extremity injury, if there is severe pain with prolonged scene/transport time:*

1. Begin Basic Life Support Procedures.
2. Begin cardiac monitoring. Record and evaluate rhythm strip.
3. Begin pulse Oximetry monitoring (if available).
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. If there is severe pain with prolonged scene/transport time, contact Medical Control for implementation of one or more of the following **MEDICAL CONTROL OPTIONS**:

**MEDICAL CONTROL OPTIONS:**

OPTION A: Administer Morphine Sulfate 2 - 5 mg, IV/Saline Lock bolus. Repeat doses of Morphine Sulfate 2 - 5 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 15 mg.)

**NOTE: IF HYPOTENSION, HYPOVENTILATION, OR STUPOR DEVELOPS, WITHHOLD MORPHINE SULFATE, ELEVATE THE LEGS, AND ADMINISTER NALOXONE 2 mg, IV/SALINE LOCK BOLUS.**

OPTION B: Transportation Decision.

**640**  
**OBSTETRIC COMPLICATIONS**

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

**NOTE: SEVERE PRE-ECLAMPSIA IS CHARACTERIZED BY A SYSTOLIC BLOOD OF PRESSURE OF 160 mmHg OR HIGHER, A DIASTOLIC BLOOD PRESSURE OR 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 50-100 ml of Normal Saline (0.9 NS), over 10-20 minutes.
- OPTION B: Transportation Decision.

**643**  
**NEWLY BORN RESUSCITATION**

**For newly borns requiring resuscitation whose amniotic fluid does not contain thick meconium:**

1. Begin Basic Life Support Newly Born Resuscitation procedures.

**For newly borns requiring resuscitation whose amniotic fluid does contain thick meconium and who are limp, apneic, or pulseless:**

1. Begin Basic Life Support Newly Born 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 NEWBORN REMAINS LIMP, APNEIC, OR PULSELESS.**

**For all newly borns requiring resuscitation once Basic Life Support Newly Born 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.
3. During transport, or if transport is delayed, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

**MEDICAL CONTROL OPTIONS:**

- OPTION A: If abdominal distention occurs, pass a Nasogastric Tube. If unsuccessful, pass an Orogastic Tube.
- OPTION B: If Endotracheal Intubation has been performed, and the heart rate remains less than 60 beats per minute, administer Epinephrine 0.1 mg/kg (0.1 ml/kg of a 1:1,000 solution), via the Endotracheal Tube.
- OPTION C: Repeat Epinephrine 0.1 mg/kg (0.1 ml/kg of a 1:1,000 solution), via the Endotracheal Tube.
- OPTION D: Administer Naloxone 0.1 mg/kg, via the Endotracheal Tube.
- OPTION E: If transport is delayed or extended, and the newly born is pale and has weak but rapid central pulses, begin an IV/Saline Lock or IO infusion of Normal Saline (0.9 NS) 10

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ml/kg, via a large bore IV (18-22 gauge) or IO catheter, or a Saline Lock. Attempt vascular access no more than twice.

OPTION F: Transportation Decision.

**650**  
**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 HYPEREXTEND THE NECK. IF AN OBSTRUCTED AIRWAY IS SUSPECTED, SEE PROTOCOL #651.**

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

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

4. During transport, or if transport is delayed, contact Medical Control for implementation of one or more of the following **MEDICAL CONTROL OPTIONS**:

**MEDICAL CONTROL OPTIONS:**

- OPTION A: 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. (See Appendix J.)
- OPTION B: If abdominal distention occurs, pass a Nasogastric Tube. If unsuccessful, pass an Orogastric Tube.
- OPTION C: 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 D: Transportation Decision.

**651**  
**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 #652.**

3. Perform Endotracheal Intubation, if less invasive methods of airway management are not effective.
4. Transportation Decision.

**652**  
**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.)**

2. During transport, or if transport is delayed contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

**MEDICAL CONTROL OPTIONS:**

OPTION A: 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.**

OPTION B: Transportation Decision.

653

**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.
  - a. If in ventricular fibrillation or pulseless ventricular tachycardia, immediately Defibrillate at 2 joules/kg, using paddles of appropriate size. (See Broselow Tape or Appendix J.)
  - b. If still in ventricular fibrillation or pulseless ventricular tachycardia, immediately repeat Defibrillation at 4 joules/kg, using paddles of appropriate size. (See Broselow Tape or Appendix J.)
  - c. If still in ventricular fibrillation or pulseless ventricular tachycardia, immediately repeat Defibrillation at 4 joules/kg, using paddles of appropriate size. (See Broselow Tape or Appendix J.)

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

3. Perform Endotracheal Intubation, if less invasive methods of airway management are not effective.
4. Transport Decision.
5. During transport or if transport is delayed 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: 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. (See Broselow Tape or Appendix J.) Repeat if vascular access has not been established.
- OPTION C: If abdominal distention occurs, pass a Nasogastric Tube. If unsuccessful, pass an Orogastric Tube.
- OPTION D: 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 E: If vascular access is established, administer Epinephrine 0.01mg/kg (0.1 ml/kg of a 1:10,000 solution) IV/Saline Lock or IO bolus, repeat as needed. (See Broselow Tape or Appendix J.)

**NOTE: THE STANDARD DOSE OF EPINEPHRINE FOR PEDIATRIC PATIENTS IS 0.01 MG/KG (0.1 ML/KG OF A 1:10,000 SOLUTION). HIGH DOSE EPINEPHRINE FOR PEDIATRIC PATIENTS IS 0.1 MG/KG (0.1 ML/KG OF A 1:1,000 SOLUTION).**

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OPTION F: Administer Lidocaine 1 mg/kg, IV/Saline Lock or IO bolus, or via the Endotracheal Tube. (See Broselow Tape or Appendix J.)

**OR**

Administer Amiodarone 5 mg/kg, IV/Saline Lock or IO bolus. (See Broselow Tape or Appendix J.)

OPTION G: Administer Atropine Sulfate 0.02mg/kg, IV/Saline Lock or IO bolus or via the Endotracheal Tube. Minimum dose is 0.10 mg, maximum dose is 1 mg. (See Broselow Tape or Appendix J.)

OPTION H: 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. (See Appendix J.)

OPTION I: 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. (See Broselow Tape or Appendix J.)

OPTION J: Administer Sodium Bicarbonate 1 mEq/kg, IV/Saline Lock or IO bolus. (See Broselow Tape or Appendix J.)

OPTION K: Begin rapid IV/Saline Lock, or IO infusion of Normal Saline (0.9% NS), 20 ml/kg. (See Broselow Tape or Appendix J.)

OPTION L: Transportation Decision.

**654**  
**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 0.83% (one unit dose bottle of 3 ml), by nebulizer, at a flow rate that will deliver the solution over 5 to 15 minutes. (See Appendix J.) May be repeated twice during transport (total of 3 doses).

**OR**

Administer Metaproterenol 5% (0.3 ml in 2.5-5 ml of Normal Saline (0.9 NS), by nebulizer, at a flow rate that will deliver the solution over 5 to 15 minutes. (See Appendix J.) May be repeated twice during transport (total of 3 doses).

3. 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 ml. (See Appendix J.)

**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 0.83% (one unit dose bottle of 3 ml), by nebulizer, at a flow rate that will deliver the solution over 5 to 15 minutes. (See Appendix J.)

**OR**

Repeat Metaproterenol 5% (0.3 ml in 2.5 - 5 ml of Normal Saline (0.9 NS), by nebulizer, at a flow rate that will deliver the solution over 5 to 15 minutes. (See Appendix J.)

OPTION B: Repeat Epinephrine 0.01 mg/kg (0.01 ml/kg of a 1:1,000 solution), IM, 20 minutes after the initial dose. (See Appendix J.)

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

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OPTION D: Transportation Decision.

**655**  
**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, CONTACT MEDICAL CONTROL for permission to perform Endotracheal Intubation.
3. If Endotracheal Intubation is not indicated, administer Epinephrine 0.01 mg/kg (0.01 ml/kg of a 1:1,000 solution), IM. Maximum dose is 0.3 mg (0.3 ml of a 1:1,000 solution.) (See Appendix J.)
4. During transport, or if transport is delayed 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: 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. (See Broselow Tape or Appendix J.)
- OPTION C: 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.) (See Appendix J.)
- OPTION D: If abdominal distention occurs, pass a Nasogastric Tube. If unsuccessful, pass an Orogastric Tube.
- OPTION E: 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 F: Begin rapid IV/Saline Lock or IO infusion of Normal Saline (0.9 NS), 20 ml/kg. Repeat as necessary. (See Broselow Tape or Appendix J.)
- OPTION G: Administer Epinephrine 0.1 ug/kg/min, IV/Saline Lock or IO drip. Prepare infusion by adding 1 mg of Epinephrine (1 ml of a 1:1,000 solution to 1 liter of Normal Saline (0.9 NS) (0.1 ug/kg/min = 6 ml/kg/hr = 6 gtts/kg/min). 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 1.5 ug/kg/min, IV/ Saline Lock or IO drip. (See Broselow Tape or Appendix J.)
- OPTION H: Transportation Decision.

**656**  
**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.

**During transport, or if transport is delayed:**

2. Administer Glucagon 1 mg, IM. (See Appendix J.)
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. (See Broselow Tape or Appendix J.)
5. If there is no change in mental status, administer Naloxone 2 mg, IV/Saline Lock or IO bolus, 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. (See Appendix J.)
6. 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: If there is still no change in mental status, repeat Naloxone 2 mg, IV/Saline Lock or IO bolus, 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. (See Appendix J.)
- OPTION C: If IV/Saline Lock access has not been established, administer Naloxone 2 mg, IM, in patients two (2) years of age or older. Use half the amount (1 mg) of this drug in patients less than (2) years of age. (See Appendix J.)
- OPTION D: Transportation Decision.

**657**  
**PEDIATRIC STATUS EPILEPTICUS**

*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. (See Appendix J.)
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. (See Broselow Tape or Appendix J.)
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 Diazepam 0.1 mg/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. (See Appendix J.)

**OR**

Administer Lorazepam 0.05mg/kg IV/Saline Lock or IO bolus, **slowly**, over 2 minutes. Repeat doses of Lorazepam 0.05 mg/kg, IV/Saline Lock or IO bolus, **slowly**, over 2 minutes, may be given if seizures persist. (See Appendix J.)

OPTION B. If IV/Saline Lock or IO access has not been established, administer Diazepam 0.5 mg/kg, via rectum. (See Appendix J.)

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

OPTION C: Transportation Decision.

**658**  
**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. (See Broselow Tape or Appendix J.)
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. (See Broselow Tape or Appendix J.)
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). (See Broselow Tape or Appendix J.)

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.

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

- 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. If this fails to convert the dysrhythmia, Adenosine may be repeated at 0.2 mg/kg, IV/Saline Lock or IO bolus, **rapidly**, followed by 2 - 3 ml Normal Saline (0.9 NS) flush.

OPTION C: Transportation Decision.

**659**  
**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, **CONTACT MEDICAL CONTROL** for permission to 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. (See Broselow Tape or Appendix J.)
5. 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. (See Broselow Tape or Appendix J.)
6. 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: 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.**

OPTION B: 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). (See Appendix J.)

OPTION C: Transportation Decision.