

Intermediate Life Support Prehospital Care Protocols

2007

Charlotte Hungerford Hospital
Danbury Hospital
New Milford Hospital
Sharon Hospital
St. Mary's Hospital
Waterbury Hospital

Table of Contents

Introduction.....	3
Deviation from Protocol	3
Communications	3
General History & Patient Physical Assessment	4
Oxygen Therapy.....	5
Standing Orders	6
Intravenous Catheterization	7
Allergic Reaction / Anaphylaxis.....	8
Treatment of the Burn Patient (including the Rule of Nines).....	9
Chest Pain	12
Cardiac Arrest.....	13
Diabetic Emergencies	14
Treatment of the Patient experiencing Dyspnea.....	15
Environmental Emergencies	17
Obstetric Emergencies	18
Pediatric Patients.....	22
Poisoning / Toxin Exposure / Overdose	25
Seizures	26
Shock.....	27
Trauma	29
Head Trauma.....	30
Unresponsive Patients.....	31
<i>Appendix – Glasgow Coma Scale</i>	<i>32</i>
<i>Appendix – Paramedic Intercepts.....</i>	<i>33</i>
<i>Appendix – Presumption of Death</i>	<i>34</i>
<i>Appendix – Advanced Airway Management - Combitube</i>	<i>35</i>
<i>Appendix – AED Protocols</i>	<i>38</i>

Introduction

The protocols listed here are intended to be guidelines for pre-hospital patient management. Each procedure assumes the scene is safe and the EMT-Intermediate has donned all appropriate BSI. These protocols have been refined to meet the needs of the evolving EMT-Intermediate curriculum and will replace the existing Emergency Medical Technician Intermediate Protocols from December 2001. It is our hope that these protocols will help the Intermediates understand what is expected of them while providing patient care. If at any time, there is a procedure which is unclear, please contact medical control for clarification.

Deviation from Protocol

These protocols cannot be expanded upon except in extreme circumstances and with the full agreement and responsibility from the Medical Control Physician. Any deviation from protocol shall be documented in the Patient Care Report with an explanation of why it occurred.

Communications

Medical Control will be obtained from any one of the Region Five Hospitals, depending on where the patient is being transported. If the patient is going to be transported to a hospital other than the above listed, then your sponsor Hospital will be utilized as Medical Control.

Charlotte Hungerford Hospital can be reached by telephone at the following numbers:

(860) 496-6650 Emergency Department
(860) 496-6666 Hospital Operator

Danbury Hospital can be reached by telephone at the following numbers:

(203) 797-7100 Emergency Department
(203) 797-7500 Hospital Operator

New Milford Hospital can be reached by telephone at the following numbers:

(860) 350-7222 Emergency Department
(860) 355-2611 Hospital Operator

Saint Mary's Hospital can be reached by telephone at the following numbers:

(203) 709-6004 Emergency Department
(203) 709-6000 Hospital Operator

Sharon Hospital can be reached by telephone at the following numbers:

(860) 364-4111 Emergency Department
(860) 364-4141 Hospital Operator

Waterbury Hospital can be reached by telephone at the following numbers:

(203) 573-6290 Emergency Department
(203) 573-6000 Hospital Operator

General History and Patient Assessment

Each patient is to have an initial assessment as outlined in this section. Depending upon the results of this patient assessment, the provider will advance to provide appropriate treatment. This constitutes the minimal acceptable assessment, more detailed assessments may be required dependant on patient complaint and condition.

- 1) General Appearance
 - a) Age and sex
 - b) General state of health
 - c) Amount of distress (mild, moderate, severe)
- 2) Objective Signs
 - a) Level of consciousness
 - b) Respiratory assessment
 - c) Skin: Temperature, color, moisture
 - d) Pupil status
 - e) Glasgow Coma Scale / Trauma Score if indicated
- 3) Vital Signs
 - a) Pulse: rate, quality, and rhythm
 - b) Respiratory rate, character of breath sounds
 - c) Blood pressure
- 4) History of Episode (obtained from patient, family, or observer)
 - a) Chief complaint
 - b) Time of incident or onset of symptoms
 - c) Prior treatment if related to present illness or injury
 - d) Mechanism of injury if trauma
- 5) Pertinent Medical History
 - a) Previous medical problems or conditions
 - b) Routine medications
 - c) Allergies
 - d) Last menstrual period? Pregnancy
- 6) Other Pertinent History
 - a) Social (substance abuse, smoker, violence, etc.)
 - b) Family (cardiac, diabetic, asthma)
 - c) Sexual (G_xP_x, LMP)
 - d) Systems review focused to presentation
- 7) Written Documentation shall be left with every patient in the form of service specific Patient Care Report.

Oxygen Therapy

Please always remember that as you are providing your patients with Oxygen, **you are administering a medication**. As with any medication, the dose of oxygen must be carefully considered based on the patient's presentation. Listed below, you will find a table to assist you in choosing the appropriate dose of oxygen for your patient. **If you are unsure how much oxygen the patient needs based on your assessment, you must give them 100% oxygen delivered via non-rebreather mask.**

Equipment	Flow Rate (Dose)
Nasal Cannula	1-5 liters per minute
Non-Rebreather Mask (NRM)	10-15 liters per minute (bag remains filled)
Bag Valve Mask (BVM)	15 liters per minute

Patient's Respiratory Status	Equipment & Flow Rate (Dose)
<i>No apparent Distress</i> – Your assessment reveals a patient with pink, warm & dry skin. Their respirations are full, effective and not labored, lungs are clear. They deny dyspnea, pain or respiratory complaint.	<i>Ambient Air</i>
<i>Mild Distress</i> – Your assessment reveals a patient with pink, warm & dry skin. Their respirations are full, effective and not labored, lungs are clear. They complain of mild dyspnea and/or mild chest pain.	<i>Nasal Cannula at 2-4 liters per minute</i>
<i>Moderate to Severe Distress</i> – Your assessment reveals a patient with Respiratory Distress. This may include but is not limited to the following signs & symptoms: Wheezing, stridor, rales, rhonchi, “crackles”, pale & cool skin, diaphoresis, any sign of cyanosis, chest pain with dyspnea, suspected asthma/COPD with respiratory distress, suspected major fractures, suspected head injuries, suspected chest injuries, suspected multi system trauma, suspected shock, suspected smoke inhalation, suspected CHF/Pulmonary Edema, suspected near drowning victim, suspected CVA.	<i>Non-Rebreather Mask at 10-15 lpm</i> <i>Monitor these patients very closely!</i> <i><u>Be prepared, you may need to assist the ventilations of these patients with a BVM!</u></i>
<i>Respiratory Arrest</i> – Your assessment reveals a patient not breathing!	<i>Provide ventilations via pocket mask or Bag Valve Mask. Be sure to connect the device you are using to supplemental oxygen at 15 lpm! Insert Oral or Nasal airway as appropriate.</i>

Please remember to closely monitor all patients receiving oxygen therapy!

Monitor closely the patient receiving high concentrations of oxygen for signs of decreased level of consciousness and/or increased respiratory distress. Be prepared to provide ventilations if indicated.

Standing Orders for Intravenous Therapy

Intravenous therapy may be initiated on standing orders by medically authorized Intermediates in the presence of life threatening situations under the following guidelines and circumstances:

- 1) The patient with 2nd and/or 3rd degree **burns** covering more than 20% of their total Body Surface Area (Please see Rule of Nines in the appendix).
- 2) The patient in **Respiratory and/or Cardiac Arrest**.
- 3) The patient experiencing **Chest Pain** believed to be cardiac in nature. This will be determined based on the patient's history and complete patient assessment.
- 4) The **Diabetic** patient with altered mental status.
- 5) The patient experiencing **Dyspnea** and meeting the following criteria
 - A.) Dyspnea with moderate to severe distress with wheezing and/or hypotension believed to be related to **Anaphylaxis**.
 - B.) Dyspnea with moderate to severe distress with rhales and/or wheezing, diaphoresis and/or hypertension believed to be related to **Pulmonary Edema**.
- 6) The patient that has experienced some type of **Trauma** and meets the following criteria:
 - A.) The patient experiencing **Dyspnea**.
 - B.) The **tachycardic** patient.
 - C.) The **Hypotensive** patient.
 - D.) The patient with a **Rigid Abdomen**.
 - E.) The patient with **Significant Blood Loss**.
- 7) The **Unresponsive** Patient.
- 8) The patient displaying signs & symptoms of **Shock**.
- 9) Establish On-Line Medical Oversight if unsure.

Intravenous Access

Intravenous access may be initiated by standing order or after consultation with Medical Control using the following guidelines:

- Whether on standing order or direct medical control, an Intravenous will be started only after a complete examination, including lung sounds.
- Intravenous fluid shall be Normal Saline (0.9% Sodium Chloride).
- Whenever possible, the Intravenous shall be started while enroute to the Emergency Department or paramedic intercept point.
- The Intermediate will not attempt IV access on any patient less than 12 years old.
- **Only one attempt will be made on scene. If the patient is in critical condition, one more attempt may be made by the Intermediate while enroute to the hospital or paramedic intercept point.**
- Trauma patients require rapid transport to the ED; therefore, IV access shall only be initiated while enroute to the hospital or paramedic intercept point unless the patient is entrapped.
- The Intravenous will be run to Keep the Vein Open unless fluid replacement is required.
- All patients requiring IV access, but not fluid resuscitation shall have an IV established through an 20 gauge catheter or smaller (except in cases of “diabetic emergency”, use 18 gauge if possible).
- Any patients requiring fluid resuscitation shall have an IV established with an 18 gauge catheter or larger whenever possible.
- Lung sounds must be assessed prior to fluid resuscitation
- Patients without a cardiac and/or respiratory history, with clear lung sounds may be given an initial bolus of 250ml (Normal Saline). Contact Medical control if additional fluid is needed.
- Patients with a cardiac and/or respiratory history, with clear lung sounds may be given an initial bolus of 100ml (Normal Saline). Contact Medical control if additional fluid is needed.
- If the patient’s lungs are not clear, contact Medical Control regardless of patient history.
- Please remember you must reassess after each fluid bolus.
- Use of the Anticubital fossa (AC) shall be reserved for those patients in critical condition, or when previous attempts distal to the AC have failed.
- Please remember, if the vein is infiltrated, you may establish an IV proximal to the infiltrated site, but you may not make another attempt distal to that site. That is why we tell you to “start with the hands and work your way up to the AC”.
- You must document the number of attempts, location of the IV, gauge of the catheter, the solution (Normal Saline), and the flow rate.

Allergic Reaction / Anaphylaxis

Allergic reaction:

This patient is *stable* (No airway compromise, No shock).
The patient may have red-raised rash (urticaria) , c/o itchy skin, or reported contact/ingestion of allergic substance.

Treatment(s):

Oxygen as per protocol
Establish Medical Control if indicated or you are unsure
Transport to closest appropriate ED or Intercept location

Possible Physician Orders:

Establish IV
Paramedic Intercept

Anaphylaxis:

This patient is *unstable* (Upper airway obstruction, Shock).
This patient may have audible wheezes and/or altered mental status.

Treatment(s):

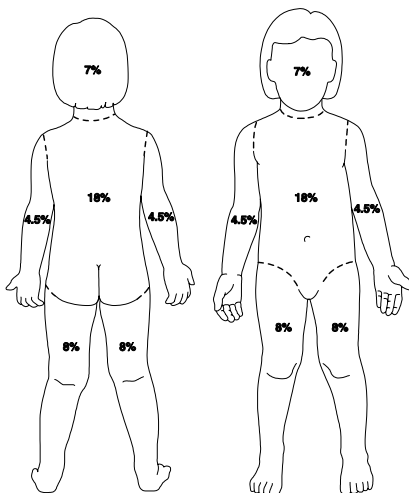
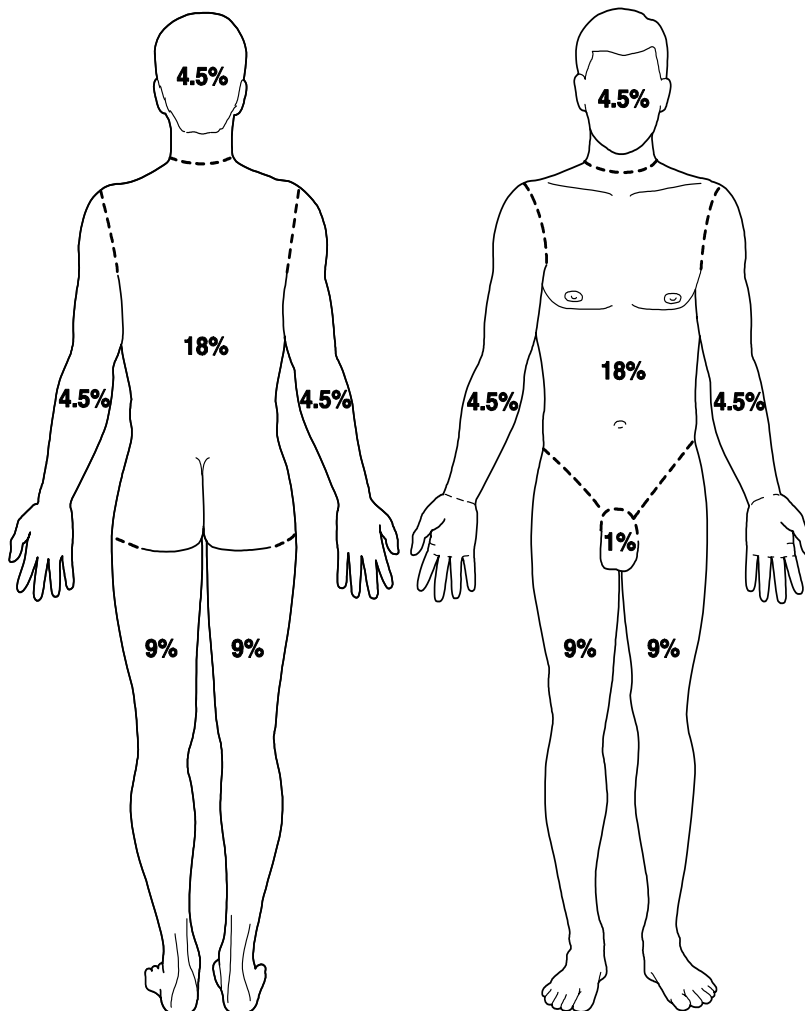
Airway management as per protocol
Oxygen per protocol
Administration of Epi Pen or Epi Pen jr
Request Paramedic Intercept
Establish Medical Control
Transport to closest appropriate ED or Intercept location
Establish IV while enroute

Possible Physician Orders:

Fluid Challenge patient, IV wide open

Treatment of the Burn Patient

Rule of Nines



Treatment of the Burn Patient

Thermal Burns:

Treatment(s):

Stop the burning process and remove the patient from the source of injury if safe to do so.
Consider respiratory insult due to possible toxic inhalation or from superheated gasses.
Consider Paramedic Intercept for airway or pain management.
Check for signs of dyspnea, check airway for burns, blackness, or singed hair.
Provide oxygen as per protocol.
Monitor vital signs.
Remove jewelry from affected area.
Do not remove any loose tissue or skin.
Estimate the extent of burn to the total body surface area using the rule of nines.
Please note: If you use the palm Method, the palm is equal to approx. 1% adult TBSA
Irrigate the burned area with sterile water or sterile saline until the burning stops.
Use caution when irrigating as this may precipitate hypothermia.
Apply dry sterile dressings or sterile burn sheets to the affected areas.
Establish IV per protocol if indicated to an area on the arm without burns.
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location

Possible Physician Orders:

IV flow rate to maintain patient's fluid balance

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Chemical Burns:

Treatment(s):

Consider Hazardous Materials Team if the scene is not safe or you are unsure.
Stop the burning process and remove the patient from the source of injury if safe to do so.
Consider Paramedic Intercept for airway or pain control
Provide oxygen as per protocol.
Remove affected clothing.
Brush off all dry chemical. **Avoid inhalation and contamination of yourself.**
Try to obtain the name of the chemical for identification of side effects.
If possible, obtain the MSDS for the chemical.
Flush with copious amounts of water/saline unless contraindicated.
Monitor vital signs.
Establish IV per protocol if indicated.
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location.

Possible Physician Orders:

IV flow rate to maintain patient's fluid balance.

Treatment of the Burn Patient

Electrical Burns:

The responsive patient

Treatment(s):

Request Paramedic Intercept for cardiac monitoring.
Provide oxygen as per protocol.
Monitor vital signs.
Treat any thermal burns as per protocol.
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location.

Possible Physician Orders:

Establish IV and flow rate.

Electrical Burns:

The unresponsive patient.

Treatment(s):

If patient is pulseless and apneic, follow cardiac arrest protocol.
Request Paramedic Intercept
Provide oxygen as per protocol.
Monitor vital signs.
Treat any thermal burns as per protocol.
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location.
Establish IV per protocol if indicated while enroute.

Possible Physician Orders:

Establish a second IV and flow rate.

Chest Pain – Acute Coronary Syndromes

Chest Pain Assessment:

Cardiac disease can manifest itself in several ways. When assessing a patient experiencing chest pain, pressure or discomfort, the Intermediate should note each presenting complaint and obtain a history appropriate to the presenting symptom. Common presenting symptoms of cardiac disease include:

- Chest pressure or discomfort
- Shoulder, neck or jaw pain
- Dyspnea
- Syncope
- Palpitations

Chest pain or discomfort is a common presenting symptom of cardiac disease. Chest pain is the most common presenting symptom of myocardial infarction. When confronted by a patient with chest pain, obtain the following essential elements of the history:

- Specific location of the chest pain (mid sternal, etc.)
- Radiation of pain, if present (e.g., to the jaw, back, or shoulders)
- Duration of the pain
- Factors that precipitated the pain (exercise, stress, etc.)
- Type or quality of the pain (dull or sharp)
- Associated symptoms (nausea, dyspnea)
- Anything that worsens, intensifies or alleviates the pain (including medications, moving or a deep breath)
- Previous episodes of a similar pain (e.g., angina)

Shoulder, arm, neck, or jaw pain or discomfort may also be an indicator of cardiac disease. Any of these may occur with or without associated chest pain, especially in older patients or patients with diabetes. If the patient has any of these symptoms and you suspect heart disease, obtain information similar to that described above for chest pain.

Treatment(s):

Request Paramedic Intercept
Provide oxygen as per protocol.
Monitor vital signs.
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location.
Establish IV per protocol if indicated while enroute.

Possible Physician Orders:

Adjustment of IV and/or Oxygen flow rates
Assist in the administration of the patient's nitroglycerin.
Consider and inquire about the use of any erectile dysfunction medications (phosphodiesterase inhibitors):
Sildenafil (Viagra) within 24 hours
Vardenafil (Levitra) within 24 hours
Tadalafil (Cialis) within 48 hours
If used, DO NOT administer Nitroglycerine Products.

Cardiac Arrest

Medical Cardiac Arrest:

Treatment(s):

Assess the patient to confirm Cardiac Arrest (ABC's).
Request Paramedic Intercept and additional help.
Attach AED utilizing current StMH guidelines (see appendix).
Initiate CPR utilizing current AHA guidelines or ARC equivalent.
If a Paramedic is not immediately available, secure the patient's airway with an Esophageal Tracheal Combitube utilizing current StMH guidelines (see appendix).
Establish IV per standing order protocol.
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location.

Traumatic Cardiac Arrest:

Treatment(s):

As you provide manual C-spine immobilization, open the patient's airway utilizing the modified jaw thrust method.
Assess the patient to confirm Cardiac Arrest (ABC's).
Request Paramedic Intercept and additional help.
Attach AED utilizing current StMH guidelines (see appendix).
Initiate CPR utilizing current AHA guidelines or ARC equivalent.
If a Paramedic is not immediately available, secure the patient's airway with an Esophageal Tracheal Combitube utilizing current StMH guidelines (see appendix) as you maintain C-spine immobilization.
Immobilize the patient's cervical spine with the proper size cervical collar, long spine board with at least 3 sets of straps & properly applied cervical immobilization device.
Transport to closest appropriate Trauma Center or Paramedic intercept location (Please refer to State wide Trauma Protocols).
Establish IV per standing order protocol while enroute.
Establish a second IV if time permits.
Establish Medical Control and provide Trauma Notification to the receiving facility as soon as possible.

Diabetic Emergencies

Responsive Patient:

Treatment(s):

Provide oxygen as per protocol.
Monitor vital signs.
If available, check the patient's Blood Sugar Glucose
If patient is displaying signs and symptoms of hypoglycemia, has an intact gag reflex, and is able to comply, give 1 tube of oral glucose.
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location.

Possible Physician Orders:

Paramedic Intercept
Establish IV access and flow rate
Repeat Oral Glucose

Unresponsive Patient:

Treatment(s):

Request Paramedic Intercept and check for Medic Alert tags.
Refer to Unresponsive protocol, including blood glucose level.
Establish IV access as per standing order protocol.
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location.

Signs and Symptoms:

Weak, rapid pulse
Cold, clammy skin
Weakness, uncoordination, headache
Irritable, agitated behavior
Decreased mental function or bizarre behavior
Coma

Treatment for the Patient Experiencing Dyspnea

Respiratory Distress:

Treatment(s):

If respiratory distress is due to an allergen (i.e.: insect bite, etc.) proceed to the anaphylaxis protocol.
Provide oxygen as per protocol.
Assist ventilations if necessary.
If moderate to severe respiratory distress, request Paramedic Intercept.
Monitor Vital Signs.
If the patient is hypertensive or normotensive, sit them up on the stretcher.
If the patient is hypotensive, recline the head of the stretcher to 45°.
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location.

Possible Physician Orders:

Assist patient with their own Multi Dose inhaler
Establish IV and flow rate

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Acute Pulmonary Edema:

Treatment(s):

Request Paramedic Intercept.
Provide oxygen as per protocol.
Assist ventilations if necessary.
Monitor Vital Signs.
Have patient sit up on stretcher to ease respiratory effort.
Establish IV, Run to **K.V.O.**
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location.

Treatment for the Patient Experiencing Dyspnea

Asthma:

Any patient with a history of asthma or similar presentation experiencing moderate to severe distress who has not used their inhaler upon EMS arrival should be encouraged to use it in the manner prescribed by their private physician. Please remember ***not all wheezing is related to asthma!***

Treatment(s):

If moderate to severe respiratory distress, request Paramedic Intercept.
Provide oxygen as per protocol.
Assist ventilations if necessary.
Monitor Vital Signs.
If the patient is hypertensive or normotensive, sit them up on the stretcher.
If the patient is hypotensive, recline the head of the stretcher to 45°.
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location.

Possible Physician Orders:

Assist patient with their own Multi Dose inhaler
Establish IV and flow rate

COPD- with Bronchospasm:

Any patient with a history of asthma or similar presentation experiencing moderate to severe distress who has not used their inhaler upon EMS arrival should be encouraged to use it in the manner prescribed by their private physician. Please remember ***not all wheezing is related to asthma!***

Treatment(s):

If moderate to severe respiratory distress, request Paramedic Intercept.
Provide oxygen as per protocol.
Assist ventilations if necessary.
Monitor Vital Signs.
If the patient is hypertensive or normotensive, sit them up on the stretcher.
If the patient is hypotensive, recline the head of the stretcher to 45°.
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location.

Possible Physician Orders:

Assist patient with their own Multi Dose inhaler
Establish IV and flow rate

Environmental Emergencies

Heat Emergencies:

Elderly patients and children are more susceptible to heat emergencies.

Treatment(s):

Remove patient from the warm environment if safe to do so.
If moderate to severe distress, request Paramedic Intercept.
Provide oxygen as per protocol.
Monitor Vital Signs
Begin gradual cooling measures. **Rapid cooling can harm the patient.**
Obtain accurate history including rate of onset.
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location.

Possible Physician Orders:

More aggressive cooling measures
Establish IV access and flow rate
Paramedic Intercept

Cold Emergencies:

The emphasis of this protocol is to perform only the absolutely essential treatment on the scene and initiate rapid but careful transport. **Do not presume death** in the unresponsive, non-breathing, pulseless patient with suspected hypothermia. Patients are not dead until they are warm and dead. Initiate CPR as appropriate and attach an AED. One shock may be delivered if indicated by the AED's analysis.

Treatment(s):

Remove patient from the cold environment if safe to do so.
If moderate to severe distress, request Paramedic Intercept.
Provide oxygen as per protocol.
Monitor Vital Signs
Handle all hypothermic patients with care.
Remove all clothing and maintain the patient in a warm, draft-free environment. Cover the patient including the head, leaving the face exposed. Obtain accurate history including rate of onset.
Active rewarming and/or Rough handling may precipitate v-fib.
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location.

Possible Physician Orders:

Establish IV and flow rate.
Begin infusing warmed IV fluids.
Further Defibrillation via AED in the setting of cardiac arrest as indicated by the AED.

Obstetric Emergencies

Medical Terminology:

Gravida: the total number of all of the woman's current and past pregnancies
Para: the number of pregnancies that have remained viable to delivery.
Example: a woman that is pregnant for the **fourth** time, and has **two** children, is said to be gravida 4, para 2.

Normal Delivery:

Treatment(s):

Provide oxygen as per protocol.
Monitor Vital Signs.
Consider Paramedic Intercept
Determine if delivery is imminent using the following signs & symptoms:
- Check for crowning
- Contractions 2-3 minutes apart, duration 1 minute.
- Woman that has had multiple deliveries.
- Amniotic sac has broken.
- The woman has the urge to "bear down" or move her bowels.
If delivery appears imminent, prepare for delivery.
Position the patient on her back and assemble OB kit.
Allow the delivery to progress naturally.
When the head emerges, support it and use bulb syringe to suction the mouth then the nose. Gently tear amniotic sac if not already torn (before delivery of shoulders and chest).
If umbilical cord is around neck, gently slip it over the head.
If you are unable to slip it over the head, place umbilical clamps 2 inches apart and cut cord between clamps (**you must have access to airway before clamping!**).
Deliver anterior shoulder, then posterior shoulder.
If umbilical cord is not already cut, place a clamp 6 inches from the infant's navel. Place the second clamp 8 inches from the infant and cut between the clamps.
Check both ends for bleeding/apply additional clamps if bleeding is present.
Dry the baby and wrap up to prevent hypothermia.-Cover the head and provide tactile stimulation if needed.
Evaluate the newborn based on the APGAR score at one and five minutes.
Delivery of placenta should occur within 30 minutes. Once delivered, place placenta in a plastic bag and take to hospital. If placenta has not been delivered in 10 minutes, do not delay transport.
If post-partum bleeding is excessive, massage lower abdomen firmly (uterine massage). If mother is going to breastfeed, assist her in putting baby to breast.
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location.

Possible Physician Orders:

Establish IV and flow rate

Obstetric Emergencies (continued)

APGAR Score

Activity

Limp	0
Some flexion noted	1
Active, much flexion noted	2

Pulse

No Pulse	0
Less than 100 beats per minute	1
Greater than 100 beats per minute	2

Grimace, reflex to suctioning

None	0
Some grimacing noted	1
Cries, coughs or sneezes	2

Respirations

No Respirations	0
Irregular or Ineffective	1
Good respiratory effort, effective, good cry	2

Obstetric Emergencies (continued)

Complications during Delivery:

Breech Presentation:

Treatment(s):

Prepare mother for normal delivery.

Allow buttocks and trunk to deliver spontaneously.

Support the infant with the palm and volar surface of arm.

If head does not deliver in 3 minutes, place gloved hand into the birth canal with the palm toward the baby's face. Form a "V" with fingers on either side of the baby's nose/mouth and push the vaginal wall away from the infant's face to allow for ventilation.

Transport the mother with her buttocks elevated on pillows and maintain the infant's airway as described above.

Establish Medical Control if indicated or you are unsure.

Transport to closest appropriate ED or Intercept location.

Prolapsed Cord:

Treatment(s):

Place mother on high flow Oxygen.

Place mother in supine position with hips elevated, (or knee-chest w/hips elevated).

Assess cord, if pulse can be felt, maintain mother's position. If pulse cannot be felt when touching the cord, insert a gloved hand into the birth canal and attempt to gently elevate the presenting part off of the cord to relieve the compression to the cord, then reassess for return of pulsation to the cord. Maintain this position until relieved by Emergency or OB staff.

Establish Medical Control if indicated or you are unsure.

Transport to closest appropriate ED or Intercept location.

Limb Presentation:

Treatment(s):

Place mother in Trendelenberg position (feet elevated).

Establish Medical Control if indicated or you are unsure.

Transport to closest appropriate ED or Intercept location.

Obstetric Emergencies (continued)

Multiple Births:

Treatment(s):

Assess the situation and request additional resources as needed.
Prepare mother for normal delivery.
After delivery of the first infant, clamp & cut the cord as for normal delivery.
If second infant has not delivered within 10 minutes, begin transport immediately.
If the first infant is in a Breech presentation, and the head does not deliver within 2 minutes, begin rapid transport to the hospital.
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location.

Ante partum Hemorrhage:

Treatment(s):

Please follow the shock protocol.
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location.

Post Partum Hemorrhage:

Treatment(s):

Please follow the shock protocol.
Assist the mother in putting the baby to breast (if she will be breast feeding).
Uterine massage (massage the fundus).
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location.

Possible Physician Orders:

Establish IV and flow rate
Paramedic Intercept

Eclampsia: seizures

Provide oxygen as per protocol.
Monitor Vital Signs. Monitor Blood Pressure very closely, watch for hypertension.
Reduce external stimulus-no lights and siren unless extremely necessary.
Place patient on her left side to ease blood flow to the heart.
Beware of possible seizures and take precautions to minimize injury
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location.

Possible Physician Orders:

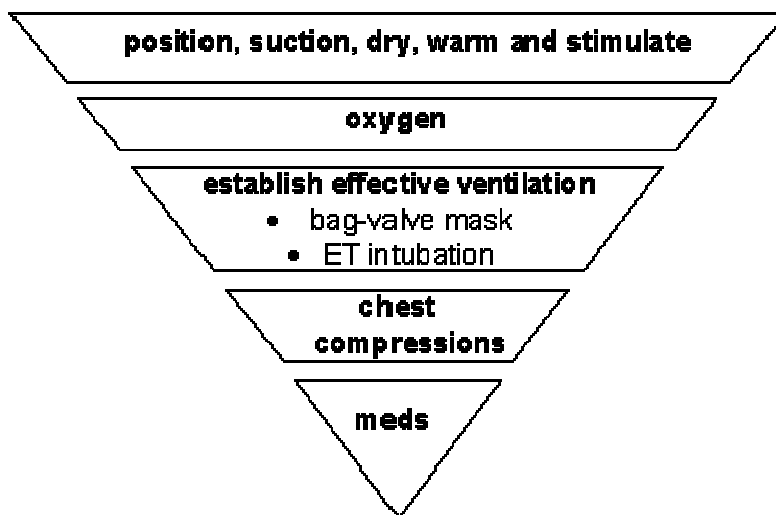
Establish IV and flow rate
Paramedic Intercept

Pediatric Patients

Special Note:

The pediatric is not a small adult and therefore requires an “inverted pyramid” approach to interventions with a secure airway and adequate oxygenation being first and foremost.

Most Pediatric cardiac arrests are secondary to respiratory arrests.



Normal Heart Rates by Age (beats per min.)

Age	Awake	Sleeping
Neonate	100-180	80-160
Infant (6 months)	100-160	75-160
Toddler	80-110	60-90
Preschooler	70-110	60-90
School-age child	65-110	60-90
Adolescent	60-90	50-90

Normal Systolic Blood Pressure by Age

Age	Systolic Blood Pressure (mmHg)
0 to 1 month old	Greater than 60
1 month old to 1 year old	Greater than 70
Older children	70 + (2 x age in years)

Normal Respiratory Rates by Age

Age	Breaths Per Minute
Infant	30-60
Toddler	24-40
Preschooler	22-34
School age	18-30
Adolescent	12-18

Pediatric Patients (continued)

Respiratory Distress:

Nasal flaring
Inspiratory retractions (sternal, supraclavicular, intercostal and/or substernal)
Tachypnea
Head-bobbing
See-saw respirations
Restlessness
Tachycardia
Grunting
Stridor

Respiratory Failure:

Cyanosis
Diminished breath sounds
Decreased level of consciousness
Poor skeletal muscle tone
Inadequate respiratory rate, effort or chest excursion
Tachycardia

Comparison of Croup and Epiglottitis:

	<u>Croup</u>	<u>Epiglottitis</u>
Age	3 months to 3 years	3 to 7 years
Location	Subglottic	Supraglottic
Onset	Gradual	Sudden
Organism	Viral	Bacterial
Fever	100-101°F	102-104°F
Signs and Symptoms	“Barking” cough Retractions Hoarse voice Harsh cough Loud stridor	Drooling Retractions Muffled voice Usually no cough Prefers to sit up and lean forward to breathe (Tripod)

Signs and Symptoms may include:

Fever
Hoarse voice, "seal bark", cough
Stridor
Tachypnea
Drooling - unable to manage (swallow) oral secretions.
Positioning to maintain airway, "Tripod" position
Accessory muscle usage

Pediatric Patients (continued)

In the prehospital setting it is very difficult to differentiate between croup and epiglottitis, therefore always assume the worst. Both conditions will be treated as follows:

Treatment(s):

Provide oxygen as per protocol.
Monitor Vital Signs.
Cool air - air conditioning as necessary.
Attempt to calm patient, anxiety and stress exacerbate the stridor.
Do not attempt to visualize oropharynx.
Do not attempt I.V. access. This may increase patient's agitation and worsen their condition.
Manually ventilate as necessary as this may still be possible when the patient is unable to move air on his own. External ventilation pressures are effective even when negative inspiratory pressures are not.
Request Paramedic intercept - for airway control
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location.

Asthma:

Treatment(s):

Provide oxygen as per protocol.
Monitor Vital Signs.
Request Paramedic intercept - for airway control
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location.

Pediatric Trauma:

Management of the pediatric trauma includes the same priorities as in the adult patient.

Treatment(s):

Rapid assessment including GCS
Initiate resuscitative measures and provide initial stabilization
Provide oxygen as per protocol.
Monitor Vital Signs.
Request Paramedic intercept
Secondary survey
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location.

Overdose / Poisoning

It is essential to obtain the following information on all drug overdoses and poisonings:

- Attempt to determine the name and ingredients of the substance(s) taken.
- Attempt to determine if there was any alcohol taken with the substance(s).
- Attempt to determine the amount taken.
- The approximate time the substance was taken.
- The method of introduction: ingestion, injection, inhalation, or topical.
- Look for the container(s) the substance came in and transport with patient if possible.
- Attempt to determine the reason for the ingestion: S.I., accidental overdose, or mixture of incompatible substances.
- Attempt to determine if the patient vomited prior to your arrival.

Treatment(s):

- Provide oxygen as per protocol and support ventilations as needed.
- Monitor Vital Signs.
- Request Paramedic Intercept if needed.
- Treat all life threatening situations as per appropriate protocol.
- When establishing medical control, provide the above answers to ED as well as the patient's condition.
- Transport to closest appropriate ED or Intercept location.

Additional Ingestion Treatment(s):

- If patient is *unresponsive* request a Paramedic Intercept.
- If patient is *responsive*, contact Medical Control

Possible Physician Orders:

- Establish an IV and flow rate
- Administer Activated Charcoal 25-50 Gms. PO (by mouth)

Additional Inhaled Exposure Treatment(s):

- Consider Hazardous Materials Team if the scene is not safe or you are unsure.
- Remove patient from toxin **when safe to do so.**

Additional Topical Exposure Treatment(s):

- Remove patient from the source of contamination **when safe to do so.**
- Remove any contaminated clothing **if safe to do so.**
- Remove any contaminant **if safe to do so.**
- If the contaminant is solid, Brush away all contaminant **if safe to do so** and irrigate with copious amounts of water when not contraindicated.
- If the contaminant is liquid, irrigate with copious amounts of water when not contraindicated.
- If the eye(s) have been exposed to a contaminant they should be flushed with copious amounts of Normal Saline Solution.

Seizures

Treatment(s):

Clear the area around the patient to provide as much protection as possible.
Provide oxygen as per protocol and support ventilations as needed.
Maintain airway & suction as needed. These patients require constant airway monitoring.
Monitor Vital Signs.
Request Paramedic Intercept.
Obtain a blood glucose level if a glucometer is available.
If patient is *unresponsive*, establish an IV as per standing order protocol.
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location.

Treating the Patient in Shock

Signs & Symptoms:

The patient's systolic blood pressure is 80 mm or less (later sign).
The patient's systolic blood pressure is 80-100 mm and other signs/symptoms of shock are present. These other signs & symptoms include the following:
Anxiety or restlessness
Pale, ashen, or cyanotic skin
Clammy, diaphoretic skin
Tachycardia
Altered Mental Status
Nausea & Vomiting
Tachypnea
Cool, dry skin

Hemorrhagic/Hypovolemic Shock:

Treatment(s):

Provide oxygen as per protocol and support ventilations as needed.
Control obvious bleeding
Monitor Vital Signs.
Request Paramedic Intercept.
Place the patient in the Trendelenberg position unless contraindicated.
Maintain the patient's body temperature
Establish large bore IV access.
Initiate fluid bolus based on the criteria addressed on page 7 of this document.
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location.

Possible Physician's Orders:

Second large bore IV NaCl
Additional fluid bolus
Run the IV "wide-open".
Apply and inflate MAST unless contraindicated.

Cardiogenic Shock:

Treatment(s):

Provide oxygen as per protocol and support ventilations as needed.
Monitor Vital Signs.
Request Paramedic Intercept.
Place the patient in the Trendelenberg position unless contraindicated.
Establish IV access.
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location.

Possible Physician's Orders:

Fluid bolus and drip rate

Treating the Patient in Shock (continued)

Neurogenic Shock:

Treatment(s):

Maintain airway while performing spinal immobilization
Provide oxygen as per protocol and support ventilations as needed.
Monitor Vital Signs.
Request Paramedic Intercept.
Assess and reassess neuro status during your time with the patient. Check for any type of
Neuro deficit to the lower extremities or upper and lower extremities
Place the patient in the Trendelenberg position unless contraindicated.
Establish IV access.
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location.

Possible Physician Orders:

Fluid bolus and drip rate
Apply and inflate MAST unless contraindicated.

Additional Note:

When treating the patient in shock, always consider other causes of shock. A partial list of causes follows:

Tension pneumothorax
Sepsis
Metabolic abnormalities
Toxins

Treating the Trauma Patient

Trauma:

With each Trauma patient, our focus should be to provide the best care **as we begin transport to the closest appropriate facility**. These patients need immediate assessment and sometimes intervention by a surgeon. With this in mind, these patients shall be rapidly immobilized and transported whenever possible. All advanced care including Intravenous access shall be done while enroute to the appropriate ED or intercept location.

The following patients require Request for Paramedic Intercept:

- Amputations other than digits
- Burns 10-24% involving hands, feet or genitalia
- Burns greater than 25% TBS or with airway compromise
- Death of same vehicle occupant
- Ejection from vehicle
- Evidence of Spinal cord injury
- Motorcycle crash victims
- Pedestrian hit by a car (>10mph)
- Penetrating trauma to head, neck or torso
- Significant vehicle deformity (bent steering wheel)
- Traumatic Cardiac Arrest
- Unresponsive Patient
- Unrestrained Rollover
- Unstable vitals: BP<90, RR <10 or >30, GCS <9

Initial Assessment:

- A**irway-cervical spine immobilization.
- B**reathing-expose chest, check for adequate air exchange.
- C**irculation-identify and control bleeding.
- D**isability-brief neurological evaluation.
- E**xpose-do not palpate blindly.

Focused History & Physical Exam:

- Head-skull depressions/fluid from nose, ears or mouth/pupils
- Maxillo-facial
- Chest/Back-rib fx? lung sounds, Sub. Emphysema, entrance or exit wounds
- Abdomen-rigid, tender?
- Extremities-fractures, bleeding?
- GLASGOW COMA SCALE – This will be done on **ALL** trauma patients and documented on the run-form.

Treating the Trauma Patient (continued)

Treatment(s):

Remember to ensure your crew's safety.
Call for additional resources as required (multiple patients, extrication needed)
Maintain airway while performing spinal immobilization
Provide oxygen as per protocol and support ventilations as needed.
Monitor Vital Signs.
Immobilize C-spine with C-collar, backboard with at least 3 sets of straps & CID.
Request Paramedic Intercept if needed.
Treat for shock as necessary.
Assess and reassess neuro status during your time with the patient. Check for any type of Neuro deficit to the lower extremities or upper and lower extremities
Establish IV access if the patient fits any of the standing order criteria.
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location.

Possible Physician Orders:

Aggressive fluid resuscitation with multi-IV's
Apply and inflate MAST unless contraindicated.

Head Injuries:

Treatment(s):

Maintain airway while performing spinal immobilization
Provide oxygen as per protocol and support ventilations as needed.
Monitor Vital Signs.
Immobilize C-spine with C-collar, backboard with at least 3 sets of straps & CID.
Request Paramedic Intercept if needed.
Treat for shock as necessary.
Assess and reassess neuro status during your time with the patient. Check for any type of Neuro deficit to the lower extremities or upper and lower extremities
Establish IV access if the patient fits any of the standing order criteria.
Establish Medical Control if indicated or you are unsure.
Transport to closest appropriate ED or Intercept location.

Possible Physician Orders:

Establish IV access and fluid rate.

Treating the Unresponsive Patient

Treatment(s):

Check & ensure an open airway.

Provide oxygen as per protocol and support ventilations as needed.

Monitor Vital Signs.

Request Paramedic Intercept.

Treat all life threatening situations as per appropriate protocol.

Perform brief neurological exam to include Glasgow Coma Scale and pupil response.

Obtain a blood glucose level if a glucometer is available.

Determine from family/bystanders any pertinent history.

Establish Medical Control if indicated or you are unsure.

Transport to closest appropriate ED or Intercept location.

Appendix - Glasgow Coma Scale

All trauma patients or patients with an altered level of consciousness will have a GCS calculated and documented on the run form. The GCS is scored between 3 and 15. A score of 3 being the worst and 15 the best. It is composed of three parameters: Best Eye Response, Best Verbal Response and Best Motor Response as given below:

Eye Opening	4	Spontaneous
	3	To Voice
	2	To Pain
	1	None

Verbal Response	5	Oriented
	4	Confused
	3	Inappropriate Words
	2	Incomprehensible Words
	1	None

Motor Response	6	Obeys Commands
	5	Localizes Pain
	4	Withdraw (pain)
	3	Flexion (pain)
	2	Extension (pain)
	1	None

Note that the phrase 'GCS of 11' is essentially meaningless. It is important to break the figure down into its components, such as E3V3M5 = GCS 11.

Appendix – Paramedic Intercept

A paramedic may be requested to respond to an incident location or to an intercept site along the route to the hospital.

Paramedics should be requested as early as possible to avoid delay in further ALS care. When requesting paramedics, also obtain their ETA. If the EMT's on the scene can safely package and transport the patient to the hospital before an intercept can be made, transport should not be delayed. If a patient is unstable and the benefit of stabilizing the patient prior to transport is critical a delay for paramedic level care is acceptable.

IV access should be accomplished following standing orders and/or direct Medical Control consultation as needed.

Once the paramedic has taken report on the patient(s), that paramedic is now in control of that patient(s) and the scene.

Appendix – Presumption of Death

The following conditions are the ONLY exceptions to initiating and maintaining resuscitative measures in the field on a clinically dead patient:

1. Traumatic injury or body condition clearly indicating biological death (irreversible brain death), limited to the following:
 - a. Decapitation: the complete severing of the head from the remainder of the patient's body.
 - b. Decomposition or putrefaction: the skin is bloated or ruptured, with or without soft tissue sloughed off, or there is the odor of decaying flesh. The presence of at least one of these signs indicated death occurred at least 24 hours previously.
 - c. Transection of the torso: the body is completely cut across below the shoulders and above the hips through all major organs and vessels. The spinal column may or may not be severed.
 - d. Incineration: Ninety percent of the body surface area third degree burn as exhibited by ash rather than clothing and complete absence of body hair with charred skin.
 - e. Dependent lividity with rigor: when clothing is removed there is a clear demarcation of pooled blood within the body, and major joints are immovable.
* Requires additional confirmation as found in III.2.a-f.
 2. Valid Do Not Resuscitate order as evidenced by a valid DNR bracelet or DNR transfer form (from a skilled nursing facility).
-

III GENERAL PROCEDURES

1. In cases of decapitation, decomposition, transection of the torso, or incineration, the condition of clinical death must be determined by noting the nature and extent of the condition of the body as defined above. No CPR need be performed and medical control need not be notified.
2. In cases of dependent lividity with rigor the condition of clinical death must be confirmed by observation of the following:
 - a. Reposition the airway and look, listen, and feel for at least thirty seconds for spontaneous respirations; respirations are absent.
 - b. Palpate the carotid pulse for at least thirty seconds; pulse is absent
 - c. Auscultate with a stethoscope for lung sounds and visualize for chest movement for at least thirty seconds: lung sounds and breathing movements are absent.
 - d. Auscultate with a stethoscope for heart sounds for at least 30 seconds; heart sounds are absent.
 - e. Examine the pupils of both eyes with a light; both pupils are non-reactive.
 - f. ECG monitoring by paramedic; finding of asystole. OR A physician's order by radio to withhold resuscitation.

Please note: Information printed here was taken from the May 8, 1996 memorandum titled "Resuscitation Guidelines" from OEMS

Appendix – The Esophageal Treacheal Combitube

Introduction:

The Combitube airway is designed to provide a patent airway for arrested patients (respiratory / cardiac) when visualization of the airway or endotracheal intubation is not possible. It is designed to be inserted blindly. The double lumen design allows effective ventilations to be provided regardless of whether esophageal or tracheal placement is accomplished. The pharyngeal balloon fills the hypopharynx, eliminating the need for a mask seal, and the associated face/mask seal problems. If the Combitube is placed in the esophagus, the distal cuff will occlude the esophagus preventing aspiration of gastric content. Ventilations are then provided through the perforations at the pharyngeal site. If the device is placed in the trachea, it functions as an endotracheal tube, with the distal cuff preventing aspiration.

Indications:

1. Patients in irreversible respiratory arrest (i.e. narcotic overdose, hypoglycemia).
2. Patients in cardiac arrest.
3. Unconscious patients without a gag reflex, and in need of ventilatory support.

Contraindications:

1. Intact gag reflex
2. Patient height less than 48 inches.
3. Conscious patient.
4. Known esophageal disease. (cancer, varices)
5. Caustic substance ingestion. (acid, lye)
6. Allergy or sensitivity to latex

Precautions:

1. Take universal precautions (BSI), including facial protection, as expulsion of stomach content can occur in esophageal placement.
2. May be used in trauma in a neutral position. (flexion or extension need not occur to facilitate placement)
3. Defibrillation should not be delayed to place Combitube.
4. Pulse oximetry may be unreliable in low perfusion states, such as cardiac arrest.

Appendix – The Esophageal Treacheal Combitube

Procedure:

1. Open the airway and suction mouth and oropharynx.
2. Perform assessment and record vital signs, level of consciousness, and oxygen saturation if available.
3. Insure there are no contraindications to this procedure.
4. Begin positive pressure ventilation with 100% oxygen and oral airway. Ventilate the patient with each ventilation lasting at least 2 seconds.
5. Auscultate bilateral lung sounds to ensure air entry with BVM and rule out FBAO or pre-existing condition.
6. While patient is being ventilated, assemble Combitube as follows:
 - a. Attach the large syringe with 100cc's of air to the BLUE cuff #1.
 - b. Attach the small syringe with 15cc's of air to the WHITE cuff #2.
 - c. Test the device by inflating both balloons, looking for leaks.
 - d. Deflate all air from both cuffs, and leave syringes attached.
 - e. Attach fluid detector to the shorter white tube. (#2)
 - f. Lubricate tube tip and pharyngeal balloon with a water soluble lubricant.
7. With the head in a neutral position, grasp the mandible and tongue between the thumb and fingers. Place the Combitube into the midline of the mouth.
8. Slide the Combitube **GENTLY** along the palate and posterior surface of the oropharynx. Use a curving motion to guide the tube inward and downward. Advance the tube until the upper teeth or gums are between the two black rings.
9. **DO NOT** force the tube. If resistance is met, withdraw the tube, reposition the head and reattempt.
10. If unable to place the tube within 30 seconds, ventilate with 100% oxygen for 1-2 minutes before you reattempt.
11. Inflate large pharyngeal balloon (#1) with 100cc of air.
 - 85ml of air for 37 French size.
12. Inflate distal balloon (#2) with 15cc of air. (**DO NOT** over-inflate, serious damage may result.)
 - 12ml of air for 37 French size.
13. Begin ventilation through the longer blue connecting tube #1.
14. Confirm tube placement by auscultating both lungs and gastric area. If appropriate breath sounds are heard esophageal placement has occurred continue to ventilate and continuously monitor for change.
15. If no breath sounds are heard and gastric sounds are appreciated, remove fluid deflector from the white tube, attach BVM and begin ventilation through tube #2.
16. Confirm tube placement by auscultating both lungs and gastric area. If appropriate breath sounds are heard tracheal placement has occurred continue to ventilate and continuously monitor for changes.
17. If no breath sounds are heard and no gastric sounds are heard, the tube is placed to deep and occluding the tracheal opening. Deflate both balloons, and withdraw 2-3 centimeters. Re-inflate the balloons and attempt again beginning at step #13.
18. A maximum of two attempts at Combitube placement is permitted.
19. If the patient regains consciousness or gag reflex, the Combitube **MUST** be removed.
 - Balloon Deflation Procedure:
 - a) **Have working suction ready**, and suction oropharynx.
 - b) If not contraindicated, roll patient to recovery position.
 - c) Deflate blue balloon #1.
 - d) Deflate white balloon #2.
 - e) Remove Combitube.

Appendix – The Esophageal Treacheal Combitube

Charting and Documentation:

The following information must be charted on the patient care report form:

1. Patient's presenting signs and symptoms, including vital signs, level of consciousness, and oxygen saturation if available.
2. Indications for Combitube use.
3. Number of endotracheal intubation attempts.
4. Size of Combitube 41 French or 37 French (Combitube SA)
5. Which connecting tube was used for ventilation. (blue or white)
6. Steps taken to verify tube placement.
7. Number of attempts made at Combitube placement.
8. Repeat assessment and vital signs every five minutes.
9. Changes from baseline that may have occurred, if any.
10. Signature and certification / license number of EMT performing insertion.

Certification:

1. Attend lecture and demonstration of Combitube placement and evaluation.
2. Demonstrate an understanding of the indications, contraindications, and possible complications related to the use of the Combitube.
3. In a lab setting, demonstrate the proper insertion, removal, and use of the Combitube.
4. Pass a written examination.
5. Pass an oral examination incorporating practical scenarios.

Continuing Certification:

1. Review class and repeat certification steps 1-5
2. Record review of all cases where this protocol has been used.
3. Recertification at the intermediate level will occur annually.

Quality Assurance:

1. The following will be measured for continuous quality improvement.
 - Appropriateness of use
 - Adherence to protocol
 - Deviations from protocol
 - Corrective action taken
2. Biannual statistics will be forwarded to each department using the Combitube.
3. Completion of a "Combitube" form, for feedback in the following areas:
 - Ease of use
 - Effectiveness of ventilation
 - Complications of use
 - Suggestions for improvement

Use of Automated External Defibrillators for Children: An Update

An Advisory Statement from the Pediatric Advanced Life Support Task Force, International Liaison Committee on Resuscitation

On the basis of the published evidence to date, the Pediatric Advanced Life Support (PALS) Task Force of the International Liaison Committee on Resuscitation (ILCOR) has made the following recommendation (October 2002):

- Automated external defibrillators (AEDs) may be used for children 1 to 8 years of age who have no signs of circulation. Ideally the device should deliver a pediatric dose. The arrhythmia detection algorithm used in the device should demonstrate high specificity for pediatric shockable rhythms, i.e., it will not recommend delivery of a shock for nonshockable rhythms (Class IIb).

In addition:

- Currently there is insufficient evidence to support a recommendation for or against the use of AEDs in children <1 year of age.
- For a lone rescuer responding to a child without signs of circulation, the task force continues to recommend provision of 1 minute of CPR before any other action, such as activating the emergency medical services (EMS) system or attaching the AED.
- Defibrillation is recommended for documented ventricular fibrillation (VF)/pulseless ventricular tachycardia (VT) (Class I).

ILCOR Recommendations

ILCOR recently examined (October 2002) the literature regarding the use of AEDs in children. The consensus was: AEDs may be used for children 1 to 8 years of age with no signs of circulation. Ideally the device should deliver a pediatric dose. The arrhythmia detection algorithm used in the device should demonstrate high specificity for pediatric shockable rhythms, i.e., the device will not recommend a shock for nonshockable rhythms (Class IIb).

- Currently the evidence is insufficient to support a recommendation for or against the use of AEDs in children <1 year of age.
- For a lone rescuer responding to a child without signs of circulation, provision of 1 minute of CPR is still recommended before any other action such as activating EMS or attaching the AED.
- Defibrillation is recommended for documented VF/pulseless VT (Class I).

Limitations

One important limitation that arose during task force deliberations on this topic was the lack of data on *clinical use* of newly developed pediatric pad/cable systems that reduce the energy delivered by AEDs designed for use in the adult. This was especially problematic when discussing the risks and benefits of use of AEDs in very young infants. Relevant points of discussion included the following:

1. The experimental data in the Atkinson study³⁸ examining sensitivity and specificity included infants, but the sample size diminished with decreasing age, and thus there is less confidence in the data from that study analyzing sensitivity/specificity in the youngest patients.
2. Very small infants might receive doses demonstrated to cause myocardial damage in animal studies.
3. The incidence of shockable rhythms as a clinical cause of unresponsiveness in young infants is lower than in older children.

The last 2 points suggest that the number needed to harm and the number needed to treat would move in unfavorable directions with decreasing age, and thus there is consensus in the task force that the recommendations for very young infants be more conservative. The task force recognized that there were insufficient clinical data to determine the *best* appropriate lower age (the age at which the number needed to harm exceeds number needed to treat). Therefore, a pragmatic decision was made to limit the recommendation to children 1 to 8 years of age because many resuscitation councils use 1 year as the transition from infant to child CPR. Linking the recommendation to 1 year of age will facilitate training and retention.

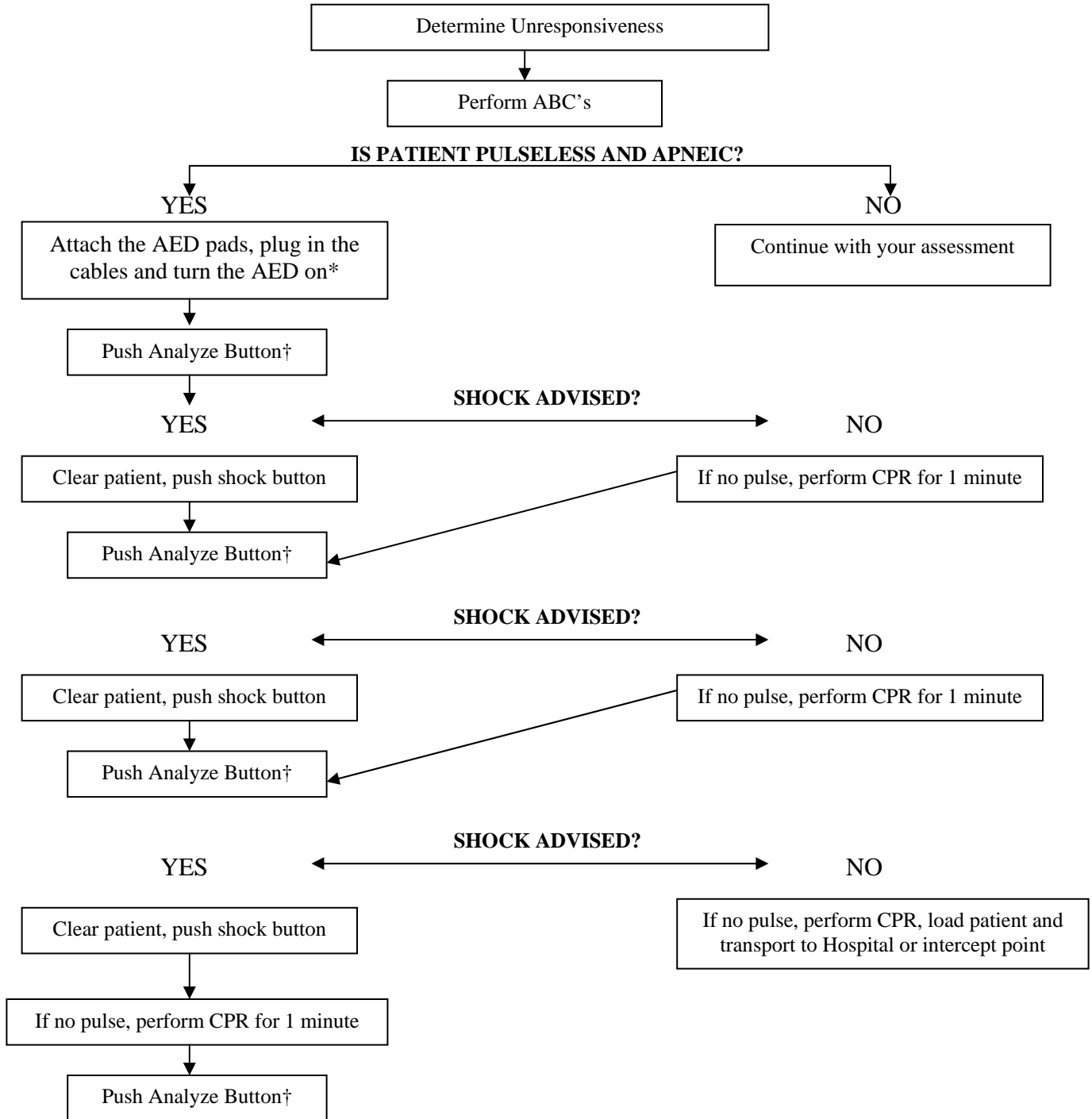
Until clinical data from pediatric AED use becomes available, the task force recommends that institutions that routinely care for children at risk for arrhythmias and cardiac arrest (e.g., in-hospital settings) should continue to use defibrillators capable of energy adjustment for weight-based doses.

Because there is insufficient evidence to determine the best placement of AED pads (i.e., anterior/posterior versus sternal/apical), the task force has not recommended a preferred position for pad placement.

This data appeared in Circulation. 2003;107:3250. The original article may be found at <http://circ.ahajournals.org/cgi/content/full/107/25/3250>. All information has been reprinted with permission from Lippincott, Williams & Wilkins

* **CARDIAC ARREST MANAGEMENT / AED PROTOCOL** *

GUIDELINES 2000



*** For patients 1-8 years old, perform 1 minute of CPR prior to attaching the AED. Use pedi capable AED whenever possible. If pedi AED is not available, follow the pedi monophasic guidelines contained in this protocol.**

† Some AED models may analyze automatically.

Defibrillation may be performed, when advised by the AED, for up to three consecutive shocks. A second stack of three shocks may be performed, when advised by the AED, for a total of six shocks. Medical Control must be consulted after this point and transport must be initiated if possible.

CPR must be performed for one minute after three consecutive shocks or after a “No Shock Advised” warning

Pre-Hospital Care Protocol for Defibrillation

GUIDELINES 2000

Situation # 1: "No Shock Advised"

1. Establish:
 - a. Unresponsiveness
 - b. Patient not breathing
 - c. Patient does not have a pulse
 2. Initiate CPR (if the AED is not yet to the patient's side).
 3. If possible, request ALS unit.
 4. Turn the AED on and follow the voice prompts.*
 5. "Connect electrodes" to the patient (follow diagrams on each electrode for placement).
 - a. The patient's chest must be bare.
 - b. The electrodes will not stick to hair, it must be shaved prior to placement.
 6. "Push Analyze", "analyzing patient, stand clear" (do not touch or move the patient during this time).
 7. "No Shock Advised, Check for pulse, if no pulse, start CPR".
 8. If a pulse is detected:
 - a. Check vital signs.
 - b. Assist ventilations as needed with 100% oxygen via BVM.
 - c. Continue to monitor the patient and await Paramedic Intercept. Place patient in the recovery position if appropriate.
 9. If no pulse is detected:
 - a. Perform CPR for one minute.
 - b. After one minute, the AED will announce "Push Analyze"
 10. "No Shock Advised, Check for pulse, if no pulse, start CPR".
 11. If a pulse is detected:
 - a. Check vital signs.
 - b. Assist ventilations as needed with 100% oxygen via BVM.
 - c. Continue to monitor the patient and await Paramedic Intercept. Place patient in the recovery position if appropriate.
 12. If no pulse is detected:
 - a. Perform CPR for one minute.
 - b. After one minute, the AED will announce "Push Analyze"
 - c. If "No shock advised", resume CPR, facilitate rapid transport, and Paramedic Intercept.
 13. Initiate transport to receiving facility or designated intercept location.
 - a. Perform CPR with oxygenated BVM Support.
 - b. When prompted "Push Analyze" (the LifePak 500 has a motion detection sensor, if moving the machine will not analyze the rhythm. You will need to stop all motion and patient movement.)
 14. "No Shock Advised, Check for pulse, if no pulse, start CPR".
 15. If no pulse is detected:
 - a. Resume CPR with oxygenated BVM support.
 - b. If motion was stopped resume transport to facility and Paramedic Intercept.
 - c. Continue as above until intercept or arrival at receiving facility.
 16. If a pulse is detected:
 - a. Check vital signs
 - b. Assist ventilations as needed with 100% oxygen via BVM
 - c. Continue to monitor patient until Paramedic Intercept or arrival at receiving facility.
- **For patients 1-8 years old, perform 1 minute of CPR prior to attaching the AED. Use pedi capable AED for these patients whenever possible. If pedi AED is not available, follow the pedi monophasic guidelines contained in this protocol.**

These protocols were drafted in accordance with the Physio-Control LifePak 500. Please be sure to follow all recommended manufacturer guidelines for upkeep and maintenance for your AED.

Pre-Hospital Care Protocol for Defibrillation **GUIDELINES 2000**

Situation #2: “Shock Advised”

1. Establish:
 - a. Unresponsiveness
 - b. Patient not breathing
 - c. Patient does not have a pulse
2. Initiate CPR (if the AED is not yet to the patient’s side).
3. When possible request ALS (Paramedic Intercept) unit.
4. Turn on the AED and follow the voice prompts.*
5. “Connect electrodes” to the patient (follow the diagram on each electrode for placement).
 - a. The patient’s chest must be bare.
 - b. The electrode will not stick to hair; it must be shaved prior to placement.
6. “Push analyze”, “Analyzing patient, stand clear” (do not touch or move the patient during this time).
7. “No shock advised”, “check for pulse, if no pulse start CPR”.
 - a. **Go to situation #1 protocol.**
8. “Shock advised”
 - a. Machine will cycle up the capacitor to deliver the shock.
 - b. **Ensure no one is touching the patient.** Scan the patient from head to toe, “I am clear, you are clear, everyone is clear.”
9. “Stand clear, push to shock”
 - a. Make sure everyone is clear.
 - b. Push the shock button to deliver the shock.
10. “Analyzing now, stand clear”:
 - a. Machine will automatically start the analyze process, ensure no one is touching or moving the patient.
11. “Shock advised”
 - a. Machine will cycle up the capacitor to deliver the shock.
 - b. Ensure no one is touching the patient. Scan the patient from head to toe, “I am clear, you are clear, everyone is clear.”
12. “Stand clear, push to shock”
 - a. Make sure everyone is clear.
 - b. Push the shock button to deliver the shock.
13. “Analyzing now, stand clear”:
 - a. Machine will automatically start the analyze process, ensure no one is touching or moving the patient.
14. “Shock advised”
 - a. Machine will cycle up the capacitor to deliver the shock.
 - b. Ensure no one is touching the patient. Scan the patient from head to toe, “I am clear, you are clear, everyone is clear.”
15. “Stand clear, push to shock”
 - a. Make sure everyone is clear.
 - b. Push the shock button to deliver the shock.
16. “Check for pulse, if no pulse, start CPR.”
17. If a pulse is detected:
 - a. Check vital signs
 - b. Assist ventilations as needed with 100% oxygen via BVM
 - c. Continue to monitor patient and facilitate loading, transport, and paramedic intercept.
18. If no pulse is detected:
 - a. Perform CPR for one minute.
 - b. After one minute, the AED will announce “Push analyze”
19. Repeat steps 6 through 18.
20. After 2 stacks of shocks (6 total shocks) contact online medical control for further instructions or additional stacks of shocks.

*** For patients 1-8 years old, perform 1 minute of CPR prior to attaching the AED. Use pedi capable AED for these patients whenever possible. If pedi AED is not available, follow the pedi monophasic guidelines contained in this protocol.**
Note: If at any time a “No Shock Advised, check for pulse, if no pulse, start CPR” Statement is given please go to Situation #1, step number 7. If it is necessary to defibrillate during transport, bring the vehicle to a complete stop prior to pushing the analyze button.
These protocols were drafted in accordance with the Physio-Control LifePak 500. Please be sure to follow all recommended manufacturer guidelines for upkeep and maintenance for your AED.

AED Treatment Guidelines

GUIDELINES 2000

1. Perform an Initial Assessment. If the patient is in cardiac arrest, one person operates the AED while other(s) initiate CPR.
2. Call for Paramedic assistance as soon as possible.
3. Turn the machine on. Apply defibrillation pads to the patient's chest as indicated on package and/or pads.
 - a. The defibrillator electrodes will be applied to every patient who is in respiratory and cardiac arrest.* When using the AED, be sure to record the following information:
 - date and time
 - age, sex and approximate weight of the patient
 - history of present event
 - relevant past medical history
 - b. The defibrillator will be brought to the side of patients with a dispatch of:
 - Cardiac arrest
 - chest pain or palpitations
 - respiratory distress
 - altered mental status of any type
 - syncope or near syncope
4. Press analyze†, defibrillator will advise "SHOCK ADVISED" or "NO SHOCK ADVISED.
5. If the AED prompts "NO SHOCK ADVISED, CHECK FOR PULSE, IF NO PULSE, START CPR", follow voice prompts and provide routine BLS care.
6. If the AED prompts "SHOCK ADVISED", the AED will automatically charge. **Ensure that the patient is clear**, state loudly "STAND CLEAR" prior to pressing the Shock button.
7. The AED will either begin to analyze automatically, or advise you to "PUSH ANALYZE". If "NO SHOCK ADVISED...", follow step 5.
8. If "SHOCK ADVISED", follow step 6 (the AED will automatically charge).
9. If a third "SHOCK ADVISED", follow step 6 (the AED will automatically charge).
10. After the third shock is delivered "CHECK FOR PULSE, IF NO PULSE, START CPR". In one minute, the AED will prompt "CHECK FOR PULSE, IF NO PULSE, PUSH ANALYZE". If "SHOCK ADVISED", you may deliver another stack of 3 shocks as prompted by the AED. (The AED will automatically charge).
11. Package the patient and begin transport to either the Paramedic Intercept point, or the nearest Emergency Department, depending on which is the closest.

Pediatric Monophasic AED Treatment Guidelines

1. For patients 1-8 years old, perform 1 minute of CPR prior to attaching the AED. Use pedi capable AED for these patients whenever possible. If a Biphasic pediatric capable AED is not available, it will be acceptable to use an adult AED. No modification to the AED or its pads will be necessary. When applying adult pads to the pediatric patient, be sure the pads are not touching or overlapping. This could cause the current to arc across the patient's chest.
2. If the AED prompts "NO SHOCK ADVISED, CHECK FOR PULSE, IF NO PULSE, START CPR", you will follow the adult protocol outlined in Situation # 1.
3. If, at any time, the AED prompts "SHOCK ADVISED", you will ensure that the patient is clear as the unit automatically charges, state loudly "STAND CLEAR" prior to pressing the Shock button.
4. After the first shock is delivered, **you will turn the unit off for ten seconds!** This will allow the unit to reset to the lower joule setting. Turn the machine back on and analyze as you normally would. If the AED prompts "SHOCK ADVISED", you may shock a second time. Pediatric patients will not be shocked more than two times with a monophasic AED.
5. If the patient is shocked multiple times, you must remember to print out each event when the machine is downloaded.

Please do not push the analyze button while the vehicle is moving or when someone is touching the patient.

*** The AED will not be applied to patients 0-1 year of age. For patients 1-8 years old, perform 1 minute of CPR prior to attaching the AED. Use pedi capable AED for these patients whenever possible. If pedi AED is not available, make sure there is space between the adult pads.**

† Some AED models may analyze automatically.

Pre-Hospital Care Protocol for Defibrillation

Continuous Quality Improvement and Continuing Education Requirements

I: Continuous Quality Improvement:

- A. Every effort must be made upon arrival at the receiving facility to download and print a copy of the event summary.
- B. One copy of the event summary and your run form must be attached to the patient chart, and a second copy must be left for your EMS coordinators **along with a peer review form and a copy of your run form.**
- C. If you are unable to leave a copy of the event summary and/or your run form, it/they must be faxed to the emergency department fax machine, to be attached to the patient record (This must be done upon your arrival back in quarters.). A second copy must be mailed, along with a peer review form and a copy of your run form to your EMS Coordinator, or dropped off at the earliest convenient time.
 - 1) To mail: EMS Coordinator, St. Mary's Hospital, 56 Franklin Street, Waterbury, CT. 06706
 - 2) Or drop off a copy to our office in the Emergency Department.
- D. If needed there is an AED printer and software located in the EMS Coordinators office behind the blue file cabinet. Instructions for use are attached to it. If no one is here, security will let you in. Please have security lock the door when you leave.

II. Continuing Medical Education Requirements:

- A. St. Mary's Hospital expects that all personnel utilizing an AED will be recertified **annually** by an approved instructor. Please contact this office for a list of current instructors.
- B. Acceptable substitutions for this include an **EMT-Basic refresher or an AHA Healthcare Provider renewal.**
- C. You must maintain current State of Connecticut OEMS certification or licensure.
- D. CPR training to the Healthcare Provider, or equivalent, is **required.** This may be used as a substitution for a sponsor hospital AED program.

Please note: An EMT's medical control for the use of the AED may be suspended for the following:

- A. Failure to obtain recertification or license renewal through OEMS.
- B. Failure to attend a recertification class for the AED.
- C. Failure to adhere to your sponsor hospital's AED protocols.
- D. Non professional behavior.

* CARDIAC ARREST MANAGEMENT / AED *

ASSESSMENT		
Takes or verbalizes body substance isolation precautions	Yes	No
Briefly questions rescuer about arrest events	Yes	No
Directs rescuer to stop CPR	Yes	No
Verifies absence of spontaneous pulse (<i>skill station examiner states "no pulse"</i>)	Yes	No
Turns on defibrillator power	Yes	No
Attaches defibrillator electrodes to patient	Yes	No
Ensures all individuals are standing clear of the patient	Yes	No
Initiates analysis of the rhythm	Yes	No
Delivers shock when indicated (up to three successive shocks)	Yes	No
Verifies absence of spontaneous pulse (<i>skill station examiner states "no pulse"</i>)	Yes	No
TRANSITION		
Directs resumption of CPR	Yes	No
Gathers additional information of arrest event	Yes	No
Confirms effectiveness of CPR (ventilation and compressions)	Yes	No
INTEGRATION		
Directs insertion of a simple airway adjunct	Yes	No
Directs ventilation of patient	Yes	No
Assures high concentration of oxygen connected to the ventilatory adjunct	Yes	No
Assures CPR continues without unnecessary or prolonged interruption	Yes	No
Re-evaluates patient in approximately one minute	Yes	No
Repeats defibrillator sequence	Yes	No
TRANSPORTATION		
<i>Verbalizes transportation</i>	Yes	No

CRITICAL CRITERIA

- Did not take or verbalize body substance isolation precautions
- Did not evaluate the need for immediate use of the AED
- Did not direct initiation / resumption of ventilation / compressions at appropriate times
- Did not assure all individuals were clear of patient before delivering each shock
- Did not operate the AED properly (inability to deliver shock)

Student's Name: _____ **Service:** _____ **Date:** _____

Evaluator's Name: _____ **Signature:** _____

This is an adaptation of the National Registry of Emergency Medical Technicians Skill Sheets for Cardiac Arrest Management created with permission from the National Registry of Emergency Medical Technicians (7/24/01).

GUIDELINES 2000

* Automated External Defibrillator Peer Review Form *

<u>EMS Service Responding</u>		<u>EMS Service Case Number</u>		<u>Date of Event</u>	
<u>Patient's First Name</u>			<u>Patient's Last Name</u>		
<i>Patient's Home Address</i>					
<u>Receiving Facility</u>		<u>Patient's Sex</u> <input type="checkbox"/> Male <input type="checkbox"/> Female	Age	<u>Patient's Race</u> <input type="checkbox"/> White <input type="checkbox"/> African American <input type="checkbox"/> Asian <input type="checkbox"/> Hispanic <input type="checkbox"/> Native American <input type="checkbox"/> Other: _____	
<i>Incident Location</i> <input type="checkbox"/> Home <input type="checkbox"/> Work <input type="checkbox"/> Public Place <input type="checkbox"/> Car <input type="checkbox"/> Sports <input type="checkbox"/> Other: _____				<i>Cause of Arrest</i> <input type="checkbox"/> Cardiac <input type="checkbox"/> Trauma <input type="checkbox"/> Other: _____	
<u>First Responder</u>	<u>EMS Personnel</u>	<u>EMS Personnel</u>	<u>EMS Personnel</u>	<u>ALS Personnel</u>	<u>ALS Personnel</u>

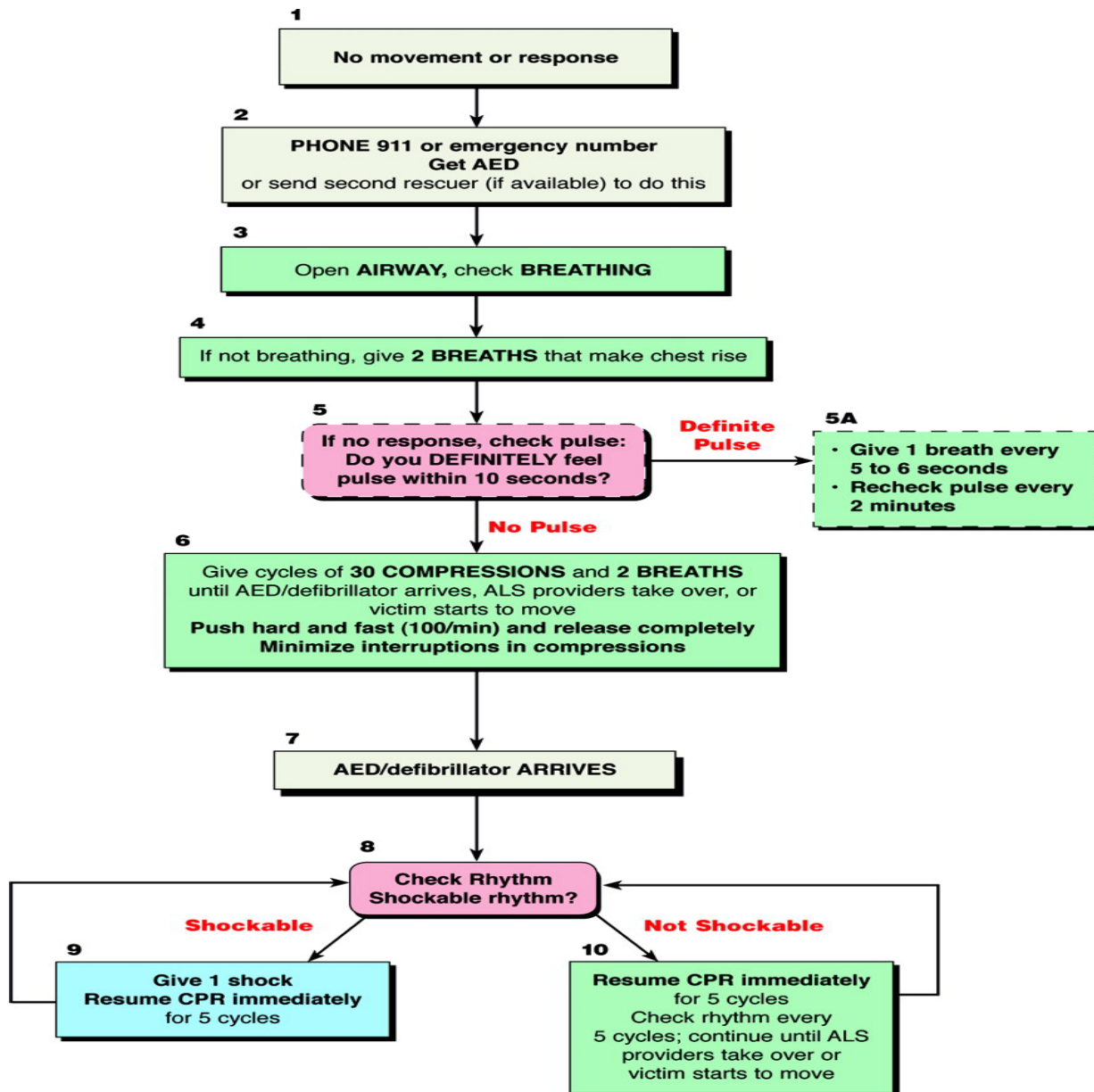
<u>Patient's signs & symptoms prior to Cardiac Arrest</u>					
<input type="checkbox"/> Unknown					
<u>Duration of Patient's signs & symptoms prior to Cardiac Arrest</u>					
<input type="checkbox"/> Unknown					
Patient History (check all appropriate histories)					
CVA <input type="checkbox"/> Htn <input type="checkbox"/> Cardiac Hx <input type="checkbox"/> Seizure <input type="checkbox"/> Asthma <input type="checkbox"/> Cancer <input type="checkbox"/> Angina <input type="checkbox"/> COPD <input type="checkbox"/> AICD <input type="checkbox"/> Pacemaker <input type="checkbox"/> AMI <input type="checkbox"/> Liver <input type="checkbox"/>					
<u>Witnessed Arrest?</u> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk.		<u>Were pulses regained?</u> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk.		<u>Were respirations regained?</u> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk.	
<u>Did the Medic arrive?</u> <input type="checkbox"/> Yes <input type="checkbox"/> No		<u>Was the pt admitted?</u> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk.		<u>Pt regains consciousness?</u> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk.	
<u>Was the pt discharged?</u> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk.		<u>Positive Cardiac History?</u> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk.			
Private MD:		Treating MD:		EMD <input type="checkbox"/> YES <input type="checkbox"/> NO	
				Bystander CPR <input type="checkbox"/> YES <input type="checkbox"/> NO	
				BY WHOM:	
Time of Arrest		Post Resuscitation Vitals			
Time Of Call		Time :		BP: /	Pulse: Resp:
Time R1 Arrival		Time :		BP: /	Pulse: Resp:
Time R2/R4 Arrival		Resuscitation			
Time CPR Initiated		<input type="checkbox"/> In Field R1	<input type="checkbox"/> In Field R5	<input type="checkbox"/> Unsuccessful	
Time De-fib connected		<input type="checkbox"/> In Field R2	<input type="checkbox"/> In Hospital	Total Shocks -	
Time Of De-fib		Comments / Deviations from Protocol:			
Time of De-fib					
Time of De-fib					
Time CPR Started					
Time Paramedic Intercepted					
Time of Transport to ER		Discharge Condition:			
Arrival time at ER		<input type="checkbox"/> Normal		<input type="checkbox"/> Non-Functional	
		<input type="checkbox"/> Functional / Impaired		<input type="checkbox"/> Morgue	



ECC GUIDELINES 2005

With the introduction and transition to “ECC Guidelines 2005” several significant changes to adult and pediatric CPR are being brought forward. These changes reflect the latest science and knowledge of resuscitation. Effective June 1st, 2006, these new guidelines may be utilized by providers with St. Mary’s Hospital or Waterbury Hospital Medical Direction. To utilize the new guidelines the equipment being operated must be Guidelines 2005 compliant, and the providers must be trained to the new guidelines standard. If the equipment being operated is still programmed to the Guidelines 2000 standard, please follow the previous guidelines and algorithms for usage. Please remember there are no human trials or data to correlate the one shock sequence AED and CPR at this time, therefore there is no mandate from the ECC or training community to incur the expense of upgrading all AEDs. As equipment is upgraded and / or replaced please be sure to have it programmed to the Guidelines 2005 standard.

We estimate that it will take two years before all providers become trained in the Guidelines 2005 AED and CPR usage. During this transition time, it is imperative to have good communication among crew members working for the cardiac arrest victim. It is expected that personnel will work cooperatively during this time. Failure to do so may result in poor patient care, and will be viewed as a breach in protocol, and investigated as such.



✱ CARDIAC ARREST MANAGEMENT / AED ✱
ECC GUIDELINES 2005

ASSESSMENT		
Takes or verbalizes body substance isolation precautions	Yes	No
Briefly questions rescuer about arrest events	Yes	No
Directs rescuer to stop CPR	Yes	No
Verifies absence of spontaneous pulse (<i>skill station examiner states "no pulse"</i>)	Yes	No
Directs the resumption of CPR	Yes	No
Turns on defibrillator power	Yes	No
Attaches defibrillator electrodes to patient	Yes	No
Directs the stopping of CPR	Yes	No
Ensures all individuals are standing clear of the patient	Yes	No
Initiates analysis of the rhythm	Yes	No
Directs the resumption of CPR during the "charging" phase	Yes	No
Stops and Clears the patient prior to delivering the shock	Yes	No
Delivers shock when indicated	Yes	No
Directs the resumption of CPR for 2 minutes	Yes	No
SECOND SHOCK		
After 2 minutes directs the reanalyze phase, with CPR during the Charge	Yes	No
Directs the resumption of CPR for 2 minutes	Yes	No
Gathers additional information of arrest event	Yes	No
Confirms effectiveness of CPR (8-10 ventilations/minute and fast compressions)	Yes	No
INTEGRATION		
Directs insertion of a simple airway adjunct	Yes	No
Directs ventilation of patient at 8-10 breaths per minute	Yes	No
Assures high concentration of oxygen connected to the ventilatory adjunct	Yes	No
Assures CPR continues without unnecessary or prolonged interruption	Yes	No
Re-evaluates patient in approximately two minutes	Yes	No
Repeats defibrillator sequence	Yes	No
TRANSPORTATION		
<i>Verbalizes transportation</i>	Yes	No
CRITICAL CRITERIA		

- Did not take or verbalize body substance isolation precautions
- Did not evaluate the need for use of the AED
- Did not direct initiation / resumption of ventilation / compressions at appropriate times
- Did not assure all individuals were clear of patient before delivering each shock
- Did not operate the AED properly (inability to deliver shock)

Student's Name: _____ **Service:** _____ **Date:** _____

Evaluator's Name: _____ **Signature:** _____

ECC GUIDELINES 2005

✱ Automated External Defibrillator Peer Review Form ✱

<u>EMS Service Responding</u>		<u>EMS Service Case Number</u>		<u>Date of Event</u>	
<u>Patient's First Name</u>			<u>Patient's Last Name</u>		
<i>Patient's Home Address</i>					
<u>Receiving Facility</u>		<u>Patient's Sex</u> <input type="checkbox"/> Male <input type="checkbox"/> Female		<u>Age</u>	
<u>Patient's Race</u> <input type="checkbox"/> White <input type="checkbox"/> African American <input type="checkbox"/> Asian <input type="checkbox"/> Hispanic <input type="checkbox"/> Native American <input type="checkbox"/> Other: _____					
<i>Incident Location</i> <input type="checkbox"/> Home <input type="checkbox"/> Work <input type="checkbox"/> Public Place <input type="checkbox"/> Car <input type="checkbox"/> Sports <input type="checkbox"/> Other: _____				<i>Cause of Arrest</i> <input type="checkbox"/> Cardiac <input type="checkbox"/> Trauma <input type="checkbox"/> Other: _____	
<u>First Responder</u>	<u>EMS Personnel</u>	<u>EMS Personnel</u>	<u>EMS Personnel</u>	<u>ALS Personnel</u>	<u>ALS Personnel</u>

<u>Patient's signs & symptoms prior to Cardiac Arrest</u>					
<input type="checkbox"/> Unknown					
<u>Duration of Patient's signs & symptoms prior to Cardiac Arrest</u>					
<input type="checkbox"/> Unknown					
<u>Patient History (check all appropriate histories)</u>					
CVA <input type="checkbox"/> Htn <input type="checkbox"/> Cardiac Hx <input type="checkbox"/> Seizure <input type="checkbox"/> Asthma <input type="checkbox"/> Cancer <input type="checkbox"/> Angina <input type="checkbox"/> COPD <input type="checkbox"/> AICD <input type="checkbox"/> Pacemaker <input type="checkbox"/> AMI <input type="checkbox"/> Liver <input type="checkbox"/>					
<u>Witnessed Arrest?</u> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk.		<u>Were pulses regained?</u> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk.		<u>Were respirations regained?</u> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk.	
<u>Did the Medic arrive?</u> <input type="checkbox"/> Yes <input type="checkbox"/> No		<u>Was the pt admitted?</u> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk.		<u>Was the pt discharged?</u> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk.	
<u>Private MD:</u>		<u>Treating MD:</u>		<u>EMD</u> <input type="checkbox"/> YES <input type="checkbox"/> NO	
				<u>Bystander CPR</u> <input type="checkbox"/> YES <input type="checkbox"/> NO	
				<u>BY WHOM:</u>	
<u>Time of Arrest</u>		<u>Post Resuscitation Vitals</u>			
<u>Time Of Call</u>		Time :		BP: /	Pulse: Resp:
<u>Time R1 Arrival</u>		Time :		BP: /	Pulse: Resp:
<u>Time R2/R4 Arrival</u>		<u>Resuscitation</u>			
<u>Time CPR Initiated</u>		<input type="checkbox"/> In Field R1		<input type="checkbox"/> In Field R5 <input type="checkbox"/> Unsuccessful	
<u>Time De-fib connected</u>		<input type="checkbox"/> In Field R2		<input type="checkbox"/> In Hospital Total Shocks -	
<u>Time Of De-fib</u>		<u>Comments / Deviations from Protocol:</u>			
<u>Time CPR Re-Started</u>					
<u>Time of De-fib</u>					
<u>Time CPR Re-Started</u>					
<u>Time Paramedic Intercepted</u>					
<u>Time of Transport to ER</u>		<u>Discharge Condition:</u>			
<u>Arrival time at ER</u>		<input type="checkbox"/> Normal		<input type="checkbox"/> Non-Functional	
		<input type="checkbox"/> Functional / Impaired		<input type="checkbox"/> Morgue	