EMT-BASIC / EMT BASIC INTERMEDIATE TECHNICIAN PROTOCOLS

Dane County Emergency Medical Services

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TREATMENT PROTOCOLS

INTRODUCTION

This document contains the protocols, guidelines, and instructions for emergent out-of-hospital care for EMT-Basic / EMT-Intermediate Technician under the medical control of UW Hospital and Clinics, St. Mary's Hospital Medical Center, Meriter Hospital, Stoughton Hospital, Fort Atkinson Memorial Hospital, Columbus Community Hospital, Sauk Prairie Memorial Hospital and The Monroe Clinic.

It establishes standards of care that conform to the current guidelines of the State of Wisconsin, EMS Section as well as that of Dane County Emergency Medical Service. This document also coincides with the recommendations set forth in the document "EMT-Basic Template for Suggested Minimum Care Guidelines" developed by the Wisconsin Physician Advisory Committee (September 2000) as well as "Standards and Procedures of Practical Skills Manual" (June 7, 2002).

The practice of out-of-hospital medicine requires a relative degree of flexibility to adequately address the great variability of situations that are part and parcel of working in a relatively uncontrolled environment. As such, circumstances may require occasional deviation from these instructions. The specific goals of any treatment must always be improvement in the patient's condition.

The practice of out-of-hospital medicine is also continually changing. As more and more research in this field is performed, guidelines for care will change. New technology, both in this particular arena and in hospital medicine, will likewise change the manner in which patients and their problems are managed. It is fully anticipated that this document will go through a variety of modifications over time, to make the most of new knowledge and advances in technology for the benefit of the patient.

The protocols are subdivided by the interventions available to each provider. **Those of more advanced training are expected to ensure that the interventions of the previous levels have been performed.** It is expected that each level will request appropriate additional resources (ALS Intercept, Helicopter) based on dispatch information, mechanism of patient condition/injury. Resource requests should be made as early as possible to maximize potential interventions and prevent delays in transport.

The orders that constitute each protocol are listed in the general order in which they are to be performed, with full awareness that in any given situation the order in which interventions are performed may change to adapt to the circumstance. All levels of providers may operate under these protocols without on-line medical control. **The orders that require direct physician communication are indicated:**

CONTACT MEDICAL CONTROL

No provider may exceed the limits of his or her level of training or certification. Specific medications may not be administered unless the service's medical director has specifically included those medications in the ambulance service's protocols.

The protocols are meant only to provide an outline of care priorities and do not cover every possible scenario. The provider is responsible for all information contained in the appropriate curriculum (EMT-Basic or EMT-Basic Intermediate Technician).

All patients are expected to receive standard assessments (including a full set of vital signs) and evaluation of airway patency, ventilation and CPR (Cardiopulmonary Resuscitation) when indicated. The protocols assume that all patients will be transported unless the Refusal of Care/Transportation protocol is initiated. The following protocols indicate the steps to be taken next. Some protocols indicate attention to airway and oxygen as additional reminders of their importance.

LEVEL OF PRACTICE

These protocols are designed for the EMT-Basic and EMT-Basic Intermediate Technician level and assume that these levels include the following:

Skill	EMT-Basic	EMT-Basic Intermediate Technician
Oropharyngeal Airway	*	*
Nasopharyngeal Airway	*	*
Bag-valve-mask	*	*
Oxygen Administration	*	*
Direct Pressure for bleeding	*	*
CPR & Semi-automatic defibrillation	*	*
Use of AED to monitor EKG	*	*
Dressing & bandaging	*	*
Spinal immobilization and splinting	*	*
AHA Obstructed airway maneuvers	*	*
Use of Magill forceps to relieve obstruction	*	*
Epinephrine for anaphylaxis	*	*
Combitube® placement	*	*
Endotracheal intubation		* (with additional training)
Naloxone (Narcan) administration for overdose		*
Aspirin administration for chest pain	*	*
Assist pt with own bronchodilator use	*	*
Assist pt with own nitroglycerine administration	*	*
I.V. access and fluid administration		*
Albuterol administration	*	*
Glucagon administration	*	*
Glucometer use	*	*
Atrovent administration	*(optional)	*(optional)
Dextrose 50% administration		*
Epinephrine administration for asthma		*
PSAG placement and inflation	*	*
Pulse Oximetry use	*	*
Mark I Kit Administration	*	*
Nitroglycerine spray		*

ALS EQUIPMENT USED BY THE EMT-BASIC INTERMEDIATE TECHNICIAN

I. Parenteral Fluids.

A. 1,000 cc bags of Normal Saline (NS).

B. 250 cc bags of 5% Dextrose in Water (D5W).

II. IV Equipment.

A. I.V. catheters in #14, #16, #18, #20 gauge sizes.

B. I.V. administration sets (Maxi drip).

C. Accessory I.V. equipment: appropriate disposable gloves, absorbent sheets, face shields, povodine iodine swabs, alcohol swabs, tape, tourniquet, arm boards, sterile dressings, band-aids, and sharps disposal containers.

III. Combitube® equipment.

A. Combitube® and Combitube SA®.

B. Bag-valve-mask.

C. Suctioning equipment.

IV. Drugs.

A. Adult Epipen® autoinjector 0.3 mg (0.3cc of 1:1000 epinephrine) and pediatric Epipen® autoinjector 0.15 mg (0.3cc of 1:2000 epinephrine).

B. Dextrose 25 Gm (50% solution) in 50 cc pre-filled syringes.

C. Naloxone (Narcan) 2mg. injection.

D. Albuterol inhalation solution 2.5 mg/3cc. for nebulization.

E. Nitroglycerin 0.4 mg per spray or tablet

F. Aspirin 81 mg chewable tablets –a total of four tablets (unit dose).

G. Glucagon 1 mg Emergency Administration Kit for injection.

H. Atrovent 500 mcg./2.5 cc. for nebulization.

I. Mark I Administration Kit (Atropine and 2PAMCL [Pralidoxime chloride])

V. Pneumatic antishock garment (PASG).

A. David Clark "MAST®" products, Adult and Pediatric.

VI. Pulse oximeter (optional).

VII. Blood Glucose Monitor.

VIII. Nebulizer.

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GENERAL PROCEDURES FOR THE EMT-BASIC INTERMEDIATE TECHNICIAN

The EMT-Basic-Intermediate Technician (EMT-Basic IV) is an advanced level EMT-B who has completed additional training beyond that of an EMT-Basic, and is authorized under Wis. Stats. 1460.50 (5) and Wis. Admin. Rule 110 to perform selected advanced procedures under physician direction. Patient assessment and critical decision-making is heavily emphasized in the EMT-Basic Intermediate Technician training.

I. Apply a process of decision making to use the assessment findings to form a field impression of the patient's condition.

II. Don Personal Protective Equipment (PPE) as indicated.

III. Follow EMT-Basic Intermediate Technician Protocols.

IV. Make radio contact with Medical Control as soon as needed/possible.

V. Report assessment.

- A. Age and gender of patient.
- B. Problem or chief complaint. Brief history of illness or injury.
- C. Level of consciousness, general appearance, degree of distress, skin temperature and color.
- D. Vital signs including pulse oximetry.
  1. Check quality of central and peripheral pulses.
  2. Cardiac monitoring as needed using monitoring electrodes only.
- E. Physical exam findings.
- F. Other pertinent information (past medical history, medications, allergies).
- G. Report any EMT-Basic Intermediate Technician actions taken by protocol.

VI. Request and/or receive any orders for ALS procedures requiring voice Medical Control.

VII. After receiving order from Medical Control, verify it with Medical Control and initiate procedure.

VIII. Document all orders and have the physician in the ED sign the ambulance report form for orders.

IX. On all critical patients, particularly those on whom ALS procedures are done monitor vital signs often and report significant changes to Medical Control. Always get at least one set of vital signs after an ALS intervention, if time allows (five minutes for trauma; ten minutes for medical incidents).

X. Consider ALS level tiered response for critical patients if not already sent.

XI. Record on the ambulance report form:

- A. Results of patient assessment.
- B. Treatment performed / medications administered with dose and route.
- C. Name of EMT-Basic Intermediate Technician performing treatments.

XII. Review performance by performing a run critique with other team members.

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GENERAL PATIENT CARE

This protocol provides general guidelines for patient management. Refer to additional protocols as appropriate for treatment of specific conditions.

I. Ensure scene safety.
   A. Perform a scene survey to assess environmental conditions and mechanism of illness or injury. If hazardous conditions are present (such as swift water, hazardous materials, electrical hazards, or confined space), contact an appropriate agency before approaching the patient. Wait for the designated specialist to secure the scene and patient as necessary.
   B. Observe Body Substance Isolation.

II. Approach the patient and identify self. Establish patient responsiveness. If cervical spine trauma is suspected, manually stabilize the spine.

III. Assess the patient's airway for patency, protective reflexes and the possible need for advanced airway management. Assess for possible airway obstruction. Administer high-flow, 100% concentration oxygen if needed. Use a non-rebreather mask or blow-by as tolerated for the pediatric patient.

IV. Assess patient's breathing, including rate, auscultation, inspection effort, and adequacy of ventilation as indicated by chest rise. Obtain pulse oximeter reading. If signs of respiratory distress, failure or arrest, refer to the appropriate protocol for treatment options.

V. Control hemorrhage using direct pressure or a pressure dressing.

VI. Assess circulation and perfusion by measuring heart rate and observing skin color and temperature; capillary refill time, and the quality of central and peripheral pulses.
   A. Blood pressure should be measured only in children older than three years.
   B. Initiate CPR using the American Heart Association standard of care for adults and children for patients with absent pulse.

VII. Initiate cardiac monitoring (optional for EMT-Basic).
   A. EMT-Basic ambulances may only use their AED for "monitoring" purposes if monitoring electrodes are used. At no time should defibrillation pads be applied to a patient with a palpable pulse.
   B. Even if familiar with EKG rhythms, the EMT must always "treat the patient, not the monitor". (As EKG monitoring is not considered part of the "standard of care" by the EMT, it will not be included with each of the following protocols but is allowed at the EMT discretion.) DO NOT INTERPRET EKG RHYTHMS.
   C. Specific emergencies that should include 12 Lead EKG monitoring are: cardiac emergencies, altered level of consciousness, abnormal vital signs, pulse rate below 60 and above 120, respiratory distress, seizures and arrhythmias. 4 Lead monitoring should be used for chest trauma and major multi-system trauma.
   D. Monitoring must not delay transportation of the patient.

VIII. Evaluate mental status, including pupillary reaction, distal function and sensation and AVPU assessment.

IX. If spinal trauma is suspected, continue manual stabilization, place a rigid cervical collar and immobilize the patient on long backboard or similar device.

X. Initiate transport, if the patient's condition is critical or unstable.
   A. Perform focused history and detailed physical examination en route to the hospital if patient status and management of resources permit.
   B. If the patient's condition is stable, perform focused history and detailed physical examination on scene, and then initiate transport.

XI. Reassess vital signs as follows; trauma every 5 minutes, medical emergencies every 10 minutes unless patient's condition changes or deteriorates.

CONTACT MEDICAL CONTROL for additional instruction as indicated.

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AIRWAY MANAGEMENT AND OXYGEN THERAPY GUIDELINES

Regardless of the nature of the response, the EMT-Basic shall always insure via the Primary Survey that the patient has an adequate airway. The steps below shall be followed as necessary.

I. All patients shall be assessed immediately as to the patency and adequacy of the airway. Follow the AHA guidelines.

II. Aggressive airway management is indicated if any of the following exist:
   A. Cardiac or respiratory arrest.
   . B. Any form of airway obstruction
   C. Any unconscious patient
   D. Any patient with labored, shallow, or rapid respirations

III. When breathing is inadequate, but an advanced airway is not (yet) needed, the EMT-Basic should assist the patient's ventilation via:
   A. Pocket mask with supplemental oxygen –or-
   B. Bag-valve-mask with 100% oxygen
   C. Airway adjuncts (oral or nasal airways). Never use an oral airway in a patient with an intact gag reflex.
   D. Consider a non-visualized airway (refer to Combitube® Protocol) in patients without a gag reflex.

IV. If aggressive management is not indicated and airway is intact, administer supplemental oxygen following a pulse oximeter reading to any patient who exhibits any of the following:
   A. Symptomatic cardio/respiratory problems
   B. Altered mental status
   C. Seizures
   D. Severe trauma
   E. Signs of shock
   F. Signs of stroke regardless of SaO_2 reading

V. Supplemental oxygen is supplied by:
   A. Nasal cannula at 2-6 liters per minute (oxygen concentration-- 24% - 44%)
   B. Nonrebreather mask at 8-15 liters per minute (oxygen concentration—80 - 95%)

VI. Oxygen should not be withheld from patients with chronic lung disease who are dyspneic. Use pulse oximeter and titrate to condition.

VII. Always give 100% oxygen to suspected carbon monoxide poisoning victims. Do not use a pulse oximeter as it may be misleading.

VIII. A saturation value of 92% or greater is usually considered adequate, though many patients should have supplemental oxygen regardless of oximetry readings.

IX. A saturation value less than 92% is low. "Troubleshoot" for technical problems, and give higher concentrations of oxygen. Consider assisting ventilations. CONSULT MEDICAL CONTROL.

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PROTOCOL FOR THE USE OF PULSE OXIMETRY

I. Purposes for using pulse oximetry in prehospital care
   A. To be used as an aid in making decisions regarding oxygen therapy and adequacy of ventilation.
   B. To continuously monitor a patient's oxygen delivery, particularly in response to therapeutic actions such as oxygen therapy, airway maintenance, ventilation, etc.

II. Indications
   A. It should be used in any patient who would be a candidate for oxygen therapy.

III. Contraindications
   A. Suspected carbon monoxide poisoning (Oximeter will give a falsely elevated SAO_2 reading in this situation, and be misleading regarding the patient's true status.)
   B. Nail polish.

IV. Procedure
   A. Assess the patient. Do the primary survey. Obtain vital signs. Assess the rate and quality of respirations.
   B. Use the pulse oximeter on any patient to whom you would consider administering oxygen.
   C. If it doesn't delay oxygen administration in a critical patient, determine the patient's baseline SAO_2 reading on room air.
   D. Administer supplemental oxygen if indicated (see Oxygen Therapy Guidelines).
   E. Complete the assessment. Perform the secondary survey.
   F. During the care of the patient, note any changes in oxygen saturation, particularly changes in response to treatment given to the patient.
   G. Include the oximetry findings, along with the flow-rate and method of delivery of oxygen, in the report to the hospital.
   H. Record the oximetry findings, along with the flow-rate and method of delivery of oxygen, on the ambulance run report form.

V. Troubleshooting
   A. Check to see if there is pulsatile blood flow registered by the probe (most oximeters have a way of indicating this).
   B. Reattach the probe, or change its location.
   C. Avoid bright light on the sensor. "Shade" the probe with a blanket or sheet if necessary to get a reading.
   D. Remove nail polish or place the probe on another site.
   E. A cold, vasoconstricted finger may give unreliable readings. Place the probe on another site if necessary.
   F. Check for excessive movement (tremor, seizure activity). Stabilize the site to get a reading.

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INTRAVENOUS LINES FOR USE BY THE EMT-BASIC INTERMEDIATE TECHNICIAN

I. Guidelines for starting intravenous lines.

A. An I.V. should be started if there are any signs or symptoms that indicate the possibility of a potential life-threatening condition or if there is an anticipated use for I.V. medications.

B. An I.V. should be started if there are any factors that indicate the possibility/potential for hypovolemic shock. Use a large bore I.V. catheter, 16 gauge or greater.

C. I.V. lines should be started at the scene (preferably in the ambulance just prior to transport) in order to give the EMT-Basic Intermediate Technician a good chance at a successful start. If there is difficulty starting an I.V. in a critical patient, transport should not be delayed and the I.V. should be omitted.

D. The EMT-Basic Intermediate Technician should select a vein that looks most favorable for likelihood of a successful I.V. start. In general, try distal veins first. Antecubital veins are often easily cannulated but the I.V. may be lost if the patient bends his/her arm. If antecubital veins are used, splint the arm in extension with an arm board.

E. No more than three I.V. attempts are to be made, unless approved by Medical Control.

F. In general, I.V.s will not be started in children or infants. There may be exceptions based on the likely ease of starting an I.V. and the judgment of the Medical Control physician.

II. Rates of I.V. fluids.

A. TKO (To keep vein open). Slow 30 cc/hr (5 drops/minute) unless rate specified by specific protocol.

B. Wide open. As fast as possible to infuse volume. Start with an initial "fluid challenge" of 200 cc, recheck the BP, then "titrate" to patient's condition.

When this order is given, it is the responsibility of the EMT-Basic Intermediate Technician to monitor the patient for changes and adjust the flow rate ("titrate") to the patient's blood pressure and general condition. In general, decrease the flow rate if the patient's BP is greater than 100 systolic and maintained.

Note: Intravenous NS given rapidly, to bring blood pressure to 90-100 systolic, is appropriate for all forms of shock except heart failure shock. **Breath sounds should be evaluated before rapid I.V. NS is given. Any abnormality in the breath sounds, e.g., wheezes or rales (crackles) is an indication that heart failure shock may be present and the I.V. rate should be TKO. Contact Medical Control if in doubt.**

C. Other rate as directed by the Medical Control physician.

D. Second I.V. line if appropriate, i.e. major trauma or burns.

III. Label I.V. sites.

A. Note type and gauge of needle used, date, and time.

B. Give verbal report of catheter gauge to emergency department personnel.

IV. Record on the ambulance report form:

A. Note type and name of fluid and rate.

B. Catheter type and gauge, date, and time.

C. Name of person attempting I.V. infusion.

D. Record total number of cc's infused.

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PROTOCOL FOR USE OF THE COMBITUBE®

I. Authorization: All Dane County emergency services participate in a state-approved Non-Visualized Advanced Airway program. Combitube® placement may be performed by EMTs who have been trained in its use and are certified and authorized by the Program or Service Medical Director.

II. Purpose: To establish control of the patient's airway and to facilitate ventilation for the listed indications.

III. Indications.

A. Cardiac arrest.
B. Respiratory arrest.
C. Unconscious patient with inadequate ventilation and no gag reflex and inability to adequately assist ventilations with a bag-valve-mask.

IV. Contraindications: **DO NOT use on patient if...**

A. Under five (5) feet tall (the Combitube SA® can be used in patients four to five [4 to 5] feet tall).
B. Less than sixteen (16) years of age.
C. Have a gag reflex.
D. Have known esophageal disease.
E. Have ingested caustic substance.
F. Have a laryngectomy or tracheostomy stoma.
G. Have a foreign body obstruction (remove first).

V. Medical Control.

A. May be inserted without on-line Medical Control as a "standing order" in patients with:

1. Cardiac arrest.
2. Respiratory arrest (the patient is apneic, unconscious, and has no gag reflex).

B. **ON-LINE MEDICAL CONTROL IS REQUIRED prior to attempting to insert the Combitube® IN ANY PATIENT WITH SPONTANEOUS BREATHING**.

VI. Preparation.

A. Put on protective eyewear, mask, and gloves.

B. Prepare equipment.

1. While maintaining ventilatory support, assemble and check equipment. Ensure all necessary components and accessories are at hand.
2. Lubricate tip of the tube and the cuffs with water-soluble lubricant.

C. Prepare the patient.

1. The rescuer should be positioned at the head of the patient.
2. Inspect upper airway for visual obstructions (patient’s dentures, bridge work/plates, broken teeth, etc.) and remove.
3. Position the patient’s head in a neutral position.

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VII. Airway insertion.

A. While compressions are being administered, attempt to insert the device using a jaw-lift maneuver. Grasp the patient's tongue and lower jaw between the index finger and thumb and lift upward. **Pass the Combitube® following the natural curvature of the throat, in the midline, to the depth indicated by the markings.** (The patient's teeth should be positioned between the black rings on the tube.)

1. **DO NOT USE FORCE**. If tube doesn't insert easily, withdraw and reattempt.

a) Maximum of three attempts (three 30-second attempts).

B. Once the Combitube® is in place, inflate the pharyngeal cuff (#1 blue pilot balloon) with 100 ml of air. (85 ml. in the Combitube SA®).

C. Inflate the distal cuff (#2: white balloon) with 15 ml of air (12 ml in the Combitube SA®).

D. Check inflation of both cuffs by gently squeezing the "pilot balloons" at the free ends of the tubing of both cuffs. These balloons should feel firm.

E. Begin ventilation through the longer blue connector (tube #1).

F. Stop compressions for a moment in order to auscultate both lungs and the stomach and observe for chest rise.

1. If bilateral breath sounds are heard instead of gastric sounds, continue ventilation through the longer blue connector (tube #1).
2. If gastric sounds are heard instead of bilateral breath sounds, begin ventilation through the shorter clear connector (tube #2). Confirm bilateral breath sounds and absent gastric sounds after switching to tube #2.

G. Continue ventilation with high-flow oxygen. Reassess airway frequently.

H. If breath sounds and epigastric sounds are <u>both absent</u> while attempting to ventilate through the blue connector, there may be obstruction of the glottic opening by the large cuff.

1. Withdraw tube one inch while continuing to bag-ventilate through the longer blue connector. If breath sounds are heard following this maneuver, continue ventilation with high-flow oxygen. Reassess airway frequently.
2. If breath sounds and epigastric sounds are still absent, immediately deflate cuffs (large cuff first) and extubate.
3. Resume ventilation with bag-valve-mask.

VIII. Removal of the Combitube®.

A. Reasons for Removal:

1. Patient regains consciousness.
2. Protective gag reflex returns.
3. Ventilations using the Combitube® are inadequate.

B. Procedure for Removal of Combitube®:

1. Have suction equipment ready.
2. Turn patient onto side. (If cervical spine precautions are required, turn patient as a unit.)
3. Deflate blue pilot balloon (100 ml) first, then deflate the smaller white balloon (15 ml).
4. Smoothly, but steadily, remove the Combitube®, following the natural curvature of the throat and suction airway as needed.
5. Monitor patient's airway and ventilation closely.
6. Place patient on high-flow oxygen. Assist ventilation with a bag-valve-mask as required.

IX. Miscellaneous information.

A. The manufacturer recommends checking the integrity of the airway cuffs prior to use. When this is completed, be sure that the cuffs are returned to their initial state of deflation and that the syringes are again filled with their designated volumes of air (100 ml, 15 ml). It is recommended that this testing procedure be done at the time the equipment is stocked in the ambulance. At this time, a small package of lubricant can be added to the package. The package should be taped closed and the date of testing and initials of person testing should be written on the package.

B. **Combitubes® outside of the trays are <u>NOT</u> to be stored in other bags or "jump-kits". This will deform the tube and cause it to malfunction during use. Use Combitubes® packaged in soft packs for placement in "jump-kits".**

C. During insertion attempts, the total time for insertion, from positioning the patient through verification of placement, should not exceed 30 seconds. If insertion cannot be achieved in 30 seconds, discontinue the attempt.

D. If an initial attempt to pass the Combitube® is unsuccessful, up to three attempts may be made prior to contacting Medical Control.

E. If attempts to intubate the patient are unsuccessful, try repositioning the patient, use other adjunctive airway devices, and attempt to ventilate with a bag-valve-mask or other prehospital ventilator. Contact Medical Control for additional advice.

F. Total time spent at the scene, in a critical patient requiring a nonvisualized advanced airway, should rarely exceed 10 minutes.

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PNEUMATIC ANTISHOCK GARMENT (PASG)

Refer to the Dane County PASG protocol and other training sources for detailed information on application and inflation.

I. Inflation of the PASG continues to require an order from Medical Control. The PASG may be applied (but not inflated) without an order if it is believed the patient may need PASG.

II. Possible indications.

A. Suspected posterior pelvic fracture (unstable iliac bone "wings").

B. Shock (e.g., systolic BP in an adult of 90-100 or less, with other signs of shock).
1. Hypovolemic shock unresponsive to I.V. fluids
2. Shock with suspected ruptured Abdominal Aortic Aneurysm.

III. Contraindications.

A. Pulmonary edema.

B. Suspected cardiogenic shock.

C. Penetrating chest injuries.

IV. Contraindications to inflation of abdominal compartment.

A. Abdominal evisceration.

B. Abdominal impaled object.

C. Advanced pregnancy (third trimester).

D. Severe COPD or other cause of respiratory dysfunction.

V. Procedural notes.

A. Inflate all three compartments simultaneously, unless the leg segments only are being inflated.

B. Never inflate the abdominal compartment alone.

C. Do not deflate in the field unless there is deterioration in the patient's condition thought to be directly related to trouser inflation (in this case, deflate the abdominal compartment cautiously until adverse effects have resolved).

VI. Record on the ambulance report form:

A. Results of patient assessment.

B. Treatment performed.

C. Name of EMT-Basic/Intermediate Technician performing treatments

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DEXTROSE SOLUTION, 50%

I. Available form.

A. 50% Dextrose (25 Gm) in 50 cc. prefilled syringes (D_{50}).

II. Indication.

A. Hypoglycemia (blood sugar less than 60 mg/dl) with altered consciousness.

III. Contraindications.

A. Not to be used in patients with normal or elevated blood sugar.
B. Not to be used unless patient has a secure, patent I.V. site (avoid risking extravasation).

IV. Clinical effects.

A. Improved level of consciousness in patients with coma or confusion due to hypoglycemia (some patients do not respond immediately even if blood sugar is raised).

V. Adverse effects.

A. Tissue damage if solution extravasates into tissues around a leaking I.V. site.
B. Hyperglycemia.

VI. Principles of use.

A. Dextrose may be used to treat symptomatic hypoglycemia (confusion or coma) when a patient is unable to take sugar by mouth. Hypoglycemia is usually seen in diabetic patients who have taken too much insulin, have skipped meals, or have exercised more than usual. (Less commonly, it is also seen in non-diabetic patients in a variety of situations.)

B. Hypoglycemia can be effectively treated by a rapid infusion of D_5W (200 cc of D5W will deliver 10 Gm of glucose). This will be adequate in most cases and may be the preferred way of administering sugar when I.V. administration is necessary. The changes in blood sugar occur more gradually, more gently, and there is no risk of tissue damage from extravasation of 50% Dextrose, which is a hypertonic solution. In a majority of cases, treatment will be administered with D5W. However, in some instances, particularly patients with profound hypoglycemia (blood sugar less than 30 mg/dl), Glugagon may be administered. If this is not effective, 50% Dextrose may be administered.

VII. Procedure.

A. Assure that there is a patent, secure I.V. line, and that fluid is flowing freely through it.
B. Administer Dextrose through the medication administration port in the I.V. tubing, while pinching off the tubing proximal to the port.
C. Stop administration if there is resistance or signs of tissue infiltration are seen.

VIII. Record on the ambulance report form:

A. Results of patient assessment.
B. Treatment performed / medications administered with dose and route.
C. Name of EMT-Basic Intermediate Technician performing treatments.

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NALOXONE (Narcan)

I. Available form.
   A. 2 mg in 2 cc prefilled syringes.

II. Indications.
   A. Suspected narcotic drug overdose.
   B. Coma of unknown cause.

III. Contraindications—none.

IV. Clinical effects—a narcotic "antagonist."
   A. Increased rate and depth of respirations and improvement in blood pressure in patients with narcotic overdose.
   B. Increased level of consciousness in patients with coma due to narcotic overdose.

V. Adverse effects
   A. No expected adverse effects in patients who are not addicts.
   B. Can precipitate withdrawal syndrome with agitation and combativeness in patients who are addicted to narcotics.
   C. Rarely; may cause pulmonary edema.

VI. Principles of Naloxone use.
   A. Naloxone is used primarily when narcotic overdose is suspected (known history of overdose, very small pupils, very slow respirations) and vital signs are depressed. If the patient has adequate ventilations and blood pressure, there is no advantage simply to "wake up" a narcotic overdose patient in the back of the ambulance. Use of Naloxone may precipitate the withdrawal syndrome resulting in a violent, unmanageable patient, and can rarely cause pulmonary edema. A candidate for Naloxone use would be a patient with suspected narcotic overdose and depressed respirations, a systolic BP under 90, or a heart rate over 110.
   B. In the past, Naloxone was commonly used routinely in patients with coma of unknown cause. Medical opinion has changed, and now, it is recommended to be used more "selectively." EMT-Basic Intermediate Technician may, however, still receive orders to use it in coma of unknown cause.

VII. Naloxone administration.
   A. Naloxone requires a voice order from Medical Control. (Exception: No Medical Control voice order is required for Naloxone use in the Respiratory Arrest protocol.) Naloxone is most safely administered in small, titrated doses by "stepwise progression." Start with 0.5 cc Naloxone I.V., wait 2 to 3 minutes to see any effect. If no adequate effect, give another 0.5 cc Naloxone I.V. and wait another 2 to 3 minutes. If no adequate effect, give the remaining 1.0 cc I.V. The objective is not to fully awaken the patient but only to lessen the narcotic effect, particularly allowing deeper respirations and improved vital signs.
   B. If I.V. access is not available and Naloxone is to be given, it can be administered Intramuscularly (IM) in the lateral thigh. The usual dose in this situation would be 2 cc (2 mg).

VIII. Following administration of Naloxone, monitor the patient's respirations, blood pressure, and level of consciousness.

IX. Record on the ambulance report form:
   A. Results of patient assessment.
   B. Treatment performed / medications administered with dose and route.
   C. Name of EMT-Basic Intermediate Technician performing treatments.

Paul M. Stiegler, M.D. Dane County EMS Medical Director

Approved by Medical Advisory Sub-Committee March 12, 2007
Approved by State of Wisconsin EMS May 2007

USE OF THE BLOOD GLUCOSE MONITOR

A blood glucose test may be performed on any person who is found unconscious or with a decreased level of consciousness, whether a person is known to be a diabetic or not.

I. Policy

A. The Accu-Chek Blood Glucose Monitor must be calibrated at the beginning of each shift or each time a new lot number of test strips is opened. Use the procedure identified by Boehringer Mannheim Corporation in the *Users Manual* or in each box of new test strips.

B. Because of the nature of the procedure, the EMT must wear proper PPE (disposable gloves and eye protection) when collecting blood sample specimens and performing the test procedures. Single-use lancets must retract into the device after use in order to reduce the risk of accidental needle-stick injuries.

C. Test strips must be stored at room temperature. Do not expose to temperature extremes. Test strips are to be stored in the same capped vial in which they were received. The strips are good until expiration date on vial. The vial cap is to be immediately replaced after removal of a test strip.

D. Outdated test strips are to be discarded.

E. Only fresh capillary blood should be used with Accu-Chek Monitor. (Venous blood may also be used.)

F. If blood is visible on the outside of the device, it is to be wiped clean with fresh 1:9 bleach solution or 70% isopropyl alcohol.

G. Quality Control testing of the glucometer must be performed weekly using glucose control solutions (high/low). Document results.

DO NOT SOAK GLUCOMETER.

II. Procedure

A. Equipment needed: Accu-Chek Glucose Monitor, test strips, self-sheathing lancets, alcohol swabs, gauze pad for wiping finger after stick, Band-Aids, disposable latex or vinyl gloves, and eye protection.

B. Remove a test strip from the vial; immediately replace the cap on the vial.

C. Turn on the Accu-Chek Monitor by inserting the test strip.

D. Check the code number on the display to be sure it matches the code on the test strip vial label.

E. Using an alcohol sponge, disinfect the lateral side of the patient's finger. Obtain a blood sample with a single-use lancet. Hold finger next to the edge of test strip until the yellow target area is completely filled with blood. Do not place the blood drop on top of the yellow target area. If you see any yellow color in the target area after you have applied the initial drop, a second drop of blood may be applied to the strip within 15 seconds of the first drop.

F. When the blood is applied correctly to the strip, small circles will flash around in the display area. In approximately 10 seconds, the blood glucose value will appear.

G. Turn the Accu-Chek Monitor off by pressing the on/off button.

H. Discard the used test strip, lancet and used alcohol sponge in a biohazard sharps container.

I. Remove gloves and wash hands thoroughly.

J. Document the blood glucose result on the ambulance report form with name of EMT performing test.

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UTILIZING MEDICAL CONTROL

I. The following hospitals have agreed to provide on-line Medical Control:
   A. University Hospitals and Clinics
   B. St. Marys Hospital Medical Center
   C. Meriter Hospital
   D. Stoughton Hospital
   E. Fort Atkinson Memorial Hospital
   F. Columbus Community Hospital
   G. Sauk Prairie Memorial Hospital
   H. The Monroe Clinic

II. An EMS provider may enact and follow any of these protocols until they reach:

CONTACT MEDICAL CONTROL

At this point in the protocol, the EMT must make verbal contact via radio (or cellular phone) to advise on-line Medical Control of the situation. Based on the information provided, Medical Control may order an intervention listed after the "CONTACT MEDICAL CONTROL" line in the protocol. At his/her discretion the Medical Control physician may also deny any further intervention or order another intervention. Even if ordered by Medical Control, at no time may an EMT exceed the level of his/her training or licensure.

III. When consulting with Medical Control, the EMT shall:
   A. Give a brief report including:
      1. History of present illness/chief complaint
      2. Age, gender
      3. Pertinent past medical history (i.e. diabetes, cardiac. asthma)
      4. Intervention already started (i.e. oxygen) and patient's response
      5. Vital signs/pertinent physical findings
      6. Estimated time of arrival at hospital or ALS intercept
      7. Procedure or medication order the EMT is requesting

   B. Medical Control will approve or deny the order requested
   C. Repeat the order back to the Medical Control physician
   D. Document all contact with Medical Control, even if order is denied

IV. On-line Medical Control should be sought from the hospital to which it is anticipated that the patient will be transported. However, it is also permissible to get Medical Control from one hospital and transport the patient to another, depending on the circumstances.

V. If a patient is to be transported to a hospital different from that at which Medical Control was provided, the Medical Control physician should contact the Medical Control physician at the second hospital to discuss the care, if the case is complex.

VI. EMT-Basic Intermediate Technician skills can be used without voice Medical Control according to EMT-Basic Intermediate Technician protocols, up to the point where the protocols indicate voice Medical Control is required.

VII. In the event of radio communications breakdown, ALS procedures can be used according to the EMT-Basic Intermediate Technician protocols up to the point where the protocols require voice Medical Control. Prompt transport, as always, is advised.

VIII. Indicate on the ambulance run report which hospital gave Medical Control. Have physician sign form for orders given.

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Paul M. Stiegler, M.D. Dane County EMS Medical Director

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TRIAGE GUIDELINES FOR MAJOR TRAUMA

The following are guidelines for Emergency Medical Services and Medical Control Physicians for the triage of *major trauma patients* to the trauma center.

Patients with *major trauma*, with one or more of the following conditions, should be transported to the trauma center.

Patient unresponsive to voice
Systolic blood pressure <90
Respiratory rate <10, or >30
Penetrating injuries to head, neck, torso, or extremities proximal to the elbow or knee
Flail chest
Trauma with significant burns
Two or more proximal long bone fractures (humerus, femur)
Unstable pelvic fractures
New onset paralysis
Amputation injuries proximal to the wrist or ankle

CONTACT MEDICAL CONTROL and *consider* transport to the trauma center for patients with the following mechanisms of injury or concomitant medical conditions. *The decision will be made by Medical Control.*

Ejection from an automobile during a motor vehicle crash
Death of another patient in the same auto
Extrication time >20 minutes
Falls >20 feet
Victim of a rollover auto crash
Victim of a high-speed auto crash (Impact speed >40 mph, major auto deformity, intrusion of auto damage into the passenger compartment)
Auto/pedestrian – auto/bicycle injury with significant impact.
Pedestrian thrown or run over
Motorcycle crash >20 mph, or separation of rider from bike
Patient with major trauma and age <5, or >55
Patient with major trauma who has cardiac or respiratory disease
Pregnant patient with major trauma or unstable vital signs
Major trauma patient with immunosuppression.
Major trauma patient with bleeding disorder, or on anticoagulant medication.

Adopted by the Dane County Medical Advisory Subcommittee March 8, 1999

Paul M. Stiegler, M.D. Dane County EMS Medical Director

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DETERMINATION OF HOSPITAL DESTINATION

I. Critical/unstable patients should be transported to the nearest categorized hospital.

II. In stable patients, the following guidelines can be used:
   A. Hospital of patient's choice.
   B. Hospital of family's choice (assuming the patient is unable to state a choice).
   C. Hospital where patient's physician practices.
   D. Hospital contracted with patient's HMO, if applicable.
   E. If none of the above are known, transport to the nearest categorized hospital.

III. Patients with severe burn injury (third degree greater than 10% or second degree greater than 20%) should be transported to University Hospital.

IV. Patients who are evaluated as a major trauma victim should be transported to the nearest designated Level I trauma center (University Hospital). [See Triage Guidelines for major trauma.]

V. Patients with amputations should often be transported to University Hospital for consideration of replantation (discuss this with the Medical Control physician, as not all patients with amputations are candidates).

VI. On occasion, the Medical Control physician may divert an ambulance to another hospital, based on the patient's needs, current facility capability, or other pertinent medical considerations.

VII. Patients in labor/childbirth are transported to Meriter Hospital or St. Marys Hospital Medical Center.

VIII. Record which hospital Medical Control was obtained from and which hospital was the actual destination.

Paul M. Stiegler, M.D. Dane County EMS Medical Director

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INTERACTION WITH PHYSICIANS AT SCENE

I. Ask the physician to identify himself/herself. The EMT will accept orders only from a physician licensed in the State of Wisconsin. The individual must provide identification verifying that he/she is a physician and they he/she is willing to assist and provide Medical Control to the EMT. [The I.D. must be a State of Wisconsin license to Practice Medicine and Surgery.]

II. Allow the physician to assist if he/she does not interfere with, or attempts to alter, your protocol or procedure.

III. If the scene physician attempts to alter your field procedure in any unacceptable way, explain that you are operating under EMS system guidelines and Medical Control.

IV. **CONTACT MEDICAL CONTROL**.

V. If necessary, have the scene physician speak with the Medical Control physician.

VI. If a scene physician insists on directing the care of the patient (contrary to established protocol or the orders of Medical Control), inform the physician that he/she must accompany the patient to the hospital and assume full responsibility for his/her care.

VII. Record on the ambulance report form:

A. Results of patient assessment.
B. Treatment performed / medications administered with dose and route.
C. Name of EMT-Basic Intermediate Technician performing treatments.

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PATIENTS WHO REFUSE TRANSPORT

I. Attempt to assess the patient as you would any other.

II. Explain to the patient the possible risks, as you see them, to not seeking medical evaluation and care.

III. Any patient with whom the EMT has made verbal or physical contact who later decides against treatment or transport to the hospital, must sign a Refusal of Care/Transport Release.

IV. The patient must sign the form in front of a witness, which should be in the following preferential order:
- A. Law enforcement officer (if on scene)
- B. Family member or friend
- C. EMS crew member

V. Informed refusal must be accomplished which means the EMT or on-line Medical Control physician, has explained and advised the following:
- A. Consequences of refusing further treatment or transport.
- B. Where to get help if needed in the future.
- C. May call 9-1-1 if condition changes.

VI. If you feel that the patient's judgment is impaired (by drugs, alcohol, illness, or obvious psychiatric disturbance) and refuses care or transport, law enforcement assistance should be obtained.

VII. Document on ambulance report form carefully:
- A. The reason you were called, i.e., the patient's or bystander's "chief complaint."
- B. The patient's signs and symptoms
- C. Whether the patient allowed assessment.
- D. Competency of patient and how competency was established
- E. Treatment and transport offered
- F. Instructions given to the patient
- G. Attempt at enlisting help from family/friend
- H. That you explained possible consequences of not seeking medical care.

VIII. You are encouraged to CONTACT MEDICAL CONTROL for advice in situations where there is the slightest question regarding refusal of care of transport.
- A. Sexually transmitted disease (STD) or pregnancy–related
- B. Safe haven for newborns

IX. Some persons under the age of 18 years are considered adults and should be treated as such:
- A. Emancipated minor
- B. Minor is married
- C. Minor is in the Armed Forces

X. Persons under the age of 18 years are not legally considered competent and therefore cannot refuse care. All minors should be transported to the hospital if deemed necessary.

XI. **Note: These cases are high risk for the patient and high-liability risk for the EMTs and the system. These cases must be documented thoroughly**.

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USE OF RESTRAINTS

Any mechanism used to physically confine a patient is restraining the patient. There must be a specific reason to restrain and this must be clearly documented. This is to insure crew safety from a belligerent patient or to keep a combative patient from causing further injury to himself/herself.

I. Document the event leading to the necessary use of restraints. Attempts to control the patient before resorting to physical restraining must be clearly documented. Use two (2) or four (4) point restraints depending on the situation.

II. Document the method of restraint and the position of the patient. NEVER RESTRAIN A PATIENT IN THE PRONE POSITION.

III. In the event the patient is spitting, place a soft surgical mask over their mouth and provide supplemental oxygen.

IV. Soft restraints should be used whenever possible.

V. Always inform the patient as to why the restraints are being used.

VI. Allow for limited movement of extremities. Do not bind the chest.

VII. As soon as possible, remove all sharp objects from the patient.

VIII. Continually reassess the distal (limb) circulation and airway of any restrained patient.

IX. If the patient is so combative or belligerent that the crew feels in danger, contact law enforcement for assistance. Stay away from dangerous patients until appropriate backup is on the scene.

X. If law enforcement has placed the patient in protective custody, he/she must accompany the patient.

XI. Contact the hospital so they are aware of the impending arrival of such a patient.

Mandatory Physical Restraint Documentation

- Why the restraints were applied (including a description of the threat to self or others)
- The time the restraints were applied, and the time(s) of restraint removal (if done before hospital arrival)
- Who (which agency) applied the restraints
- What kind of restraints
- Vital signs and observations about patient status every five minutes
- Evidence that distal neurovascular function was not impaired by the restraints
- The position of the patient after restraints were applied
- Medication(s) used and their effects, including adverse effects

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- **GUIDELINES FOR TERMINATION OF RESUSCITATION IN THE FIELD**

I. INTRODUCTION

Most pulseless, nonbreathing patients should have full resuscitative efforts, consisting of CPR, defibrillation when applicable, Advanced Life Support tiered response, and transport to the hospital. Resuscitation may be waived or terminated with the adult patient (18 years of age or older) when certain conditions apply, as outlined in these guidelines.

II. GENERAL GUIDELINES

A. **Obvious signs of death**
Resuscitation may be waived in situations where there are obvious signs of death such as rigor mortis, dependent lividity, decomposition, or injuries incompatible with life such as decapitation. (With rigor mortis and/or dependent lividity perform a 4-Lead rhythm strip to determine asystole, leave the strip at the patient's side)

B. **The patient has a Wisconsin DNR bracelet**
If a patient is found to be wearing a Wisconsin "Do-Not-Resuscitate" (DNR) bracelet, no resuscitative measures should be undertaken, to include CPR, artificial ventilation, defibrillation, or the use of advanced airways.

Emergency Provider as appropriate will provide		**Emergency Provider will NOT provide**
Clear Airway	Control Bleeding	Perform Chest Compressions
Administer Oxygen	Provide Pain Medication	Insert advanced airways
Position for comfort	Provide Emotional Support	Administer cardiac resuscitation drugs
Splint		Provide ventilatory assistance
Contact Hospice, Home Health Agency if either has been involved in patients care, or patients attending Physician		Defibrillate

Taken from State of Wisconsin Ch. 154 Revised (1/05)

C. **A qualified physician orders that resuscitation be waived or stopped**.
An EMS System physician, or the patient's personal physician, may order a resuscitation waived or stopped based on medical judgment and guidelines such as are listed below. In the absence of obvious signs of death or a DNR bracelet, EMTs shall not waive or cease resuscitation without a direct order from a qualified physician. The ordering physician assumes responsibility for the order.

1. The patient's personal physician is available in person or by telephone, and personally directs the rescuers not to resuscitate, based on his/her knowledge of the patient's medical condition.

2. The patient has an unwitnessed cardiac arrest, no bystander CPR has been started, and the patient has a flat line on the cardiac monitor. (This is not applicable if exposure, hypothermia, drowning, or drug overdose appears to play a role in the arrest).

3. The patient has cardiac arrest due to blunt trauma, has no signs of life upon EMS arrival (no pulse, no breathing, no pupil reactivity) has a flat line on the cardiac monitor, and doesn't respond to a trial of airway management and ventilation.

   a) Some patients with cardiac arrest due to penetrating torso trauma may be salvageable with emergent surgery, even with no signs of life, especially if the event was witnessed. If penetrating trauma is witnessed, immediate transport is advised. If the injury event and cardiac arrest are not witnessed, CONTACT MEDICAL CONTROL for a decision whether to stop resuscitation in the field.

4. Other situations not listed in these guidelines may be appropriate for waiving or stopping resuscitation in the field, as determined by the judgment of a Medical Control physician, upon receipt of the radio report.

III. PROCEDURE

A. Upon arrival at the scene of a patient in cardiac arrest, the EMT should perform an initial patient assessment.

B. If the patient has obvious signs of death such as rigor mortis, dependent lividity, etc., do not start CPR. It is appropriate to apply the monitor to verify a flat line. There is no need to call Medical Control. The Coroner's office may be contacted immediately.

C. Check to see if the patient is wearing a DNR bracelet. If this is the case, do not start CPR. The Coroner's office may be contacted immediately.

D. In all other cases begin CPR and attach the cardiac monitor. Obtain history from the family or bystanders. Determine if a flat line is present on the cardiac monitor.

E. **CONTACT MEDICAL CONTROL** and describe the facts of the case and the cardiac rhythm. After evaluating the patient's history and assessment information, the physician may decide to order the resuscitation stopped.

F. If resuscitative efforts are stopped, request the Public Safety Communications Center to notify law enforcement and/or the Coroner's office. Remain at the scene until relieved by a law enforcement officer or the Coroner.

G. Provide support to family members as needed until law enforcement or others can assume this role.

IV. DOCUMENTATION

A. An ambulance run report and Dane County EMS defibrillation data sheet will be completed. Documentation will include care provided, time of death (time resuscitation stopped), support personnel contacted, and the name of the physician giving the order to stop.

B. Submit written documents to the Dane County EMS Office.

INITIAL PATIENT ASSESSMENT (TRAUMA PATIENT)

I. Scene "size up."
- A. Is the scene safe?
- B. Are all victims accounted for?
- C. Note mechanism of injury.
- D. Don appropriate personal protective equipment.
- E. Request additional resources as needed:
  1. Additional ambulances
  2. Fire suppression
  3. HAZMAT team
  4. Extrication
  5. ALS intercept or Aero medical evacuation

II. Initial patient assessment. [*Perform in less that two minutes.*]
- A. **Airway**. Assure airway patency using modified jaw thrust. Maintain C Spine control. Assess responsiveness at same time. Use airway adjuncts if necessary.
- B. **Breathing**. Assess rate and depth of ventilations. Assist ventilations as needed. Administer oxygen. Suction as necessary.
- C. **Circulation**. Check carotid and radial pulses. Check capillary refill, skin temperature. Look for and stop major bleeding using direct pressure or pressure dressing.
- D. **Disability (Neurologic assessment)**. Describe as **A**lert, responding to **V**oice, responding to **P**ain, or **U**nresponsive (**AVPU**).
- E. Check neck for tenderness, tracheal deviation, neck vein distention or flatness.
- F. Examine chest for flail segments, penetrating wounds, contusion. Palpate for crepitation, or tenderness. Listen for presence of bilateral breath sounds. Seal sucking chest wound if found. Stabilize flail segment.
- G. Examine the abdomen for tenderness. Check the pelvis for stability. Palpate the lower extremities for evidence of fractures.

III. Special Notes:
- A. If the patient is found to be critically injured during the initial patient assessment with shock, respiratory distress, or altered level of consciousness, he/she should be immediately packaged and transported. (See protocol for multi-system trauma.) Follow "Triage Guidelines for Major Trauma".
- B. Scene time goal should be ten minutes.
- C. Secondary focused trauma assessment can be performed en route.

IV. Perform focused history and physical exam. (Done in transit in critical patients; can be done at the scene in stable patients.)
- A. **SAMPLE** history (**S**igns & Symptoms, **A**llergies, **M**edications, **P**ast history, **L**ast meal, and **E**vents of injury).
- B. Vital signs.
- C. Head-to-toe exam.
  1. Head. Examine for contusions, lacerations. Check pupils. Look for drainage from ears or nose, intraoral injuries, facial fractures.
  2. Neck. Check for deformity, tenderness, tracheal deviation. Assess neck veins.
  3. Chest. Inspection for flail, contusion, wounds, palpation for crepitation, rib fractures, auscultation for bilateral breath sounds.
  4. Abdomen. Examine for contusion, wounds, evisceration, distention. Palpate for tenderness.
  5. Pelvis. Examine and palpate (gently) for pain, instability.

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6. Lower extremities. Examine for wounds, contusions, signs of fracture, ability to move, distal circulation, sensation.
7. Upper extremities. Palpate clavicles. Check extremities for wounds, contusions, signs of fracture, ability to move, distal circulation, sensation.
8. Back. Examine for wounds. Palpate spine for deformity, tenderness.

9. Neurologic. Reassess level of consciousness, distal movement, and sensation.

V. Continue monitoring patient's condition en route to hospital. Follow "Triage Guidelines for Major Trauma".

EMT BASIC INTERMEDIATE TECHNICIAN -- Start a large bore I.V. NS wide open to maintain a SBP > 90. If possible, start a second I.V. NS TKO. (I.V.s should be started en route to the hospital, unless transportation is delayed by extrication or unusual circumstances.)

VI. **CONTACT MEDICAL CONTROL** to prepare the receiving hospital and obtain any additional orders.

VII. Record on the ambulance report form:
A. Results of patient assessment.
B. Treatment performed / medications administered with dose and route.
C. Name of EMT-Basic Intermediate Technician performing treatments.

MULTI-TRAUMA PROTOCOL / ASSESSMENT

I. Perform initial patient assessment. Treat life-threatening problems as they are discovered.

II. If patient is critical (shock, respiratory distress, or head injury with decreased level of consciousness), package the patient with the spine immobilized. If posterior pelvis fracture is suspected, e.g. "open book laxity" on pelvic wing exam. Apply PASG. Transport immediately.

EMT BASIC INTERMEDIATE TECHNICIAN -- Start a large bore I.V. NS wide open to maintain a SBP > 90. If possible, start a second I.V. NS TKO. (I.V.s should be started en route to the hospital, unless transportation is delayed by extrication or unusual circumstances.) Titrate to patient's condition.

III. CONTACT MEDICAL CONTROL to prepare the receiving hospital and obtain additional orders.

Refer to Triage Guidelines for Major Trauma—page 19

IV. Inflate PASG with physician order (if it has been applied for pelvic fracture).

V. Perform focused history and physician exam. (This may be done earlier at the scene and before transport in stable patients.

VI. Dress external wounds

VII. Splint fractures.

VIII. Monitor patient's condition en-route to the hospital and report any changes to the Medical Control physician.

IX. Record on the Ambulance report form:
- A. Results of patient assessment
- B. Treatment preformed / medications administered with dose and route.
- C. Name of EMT-Basic Intermediate Technician performing treatments.

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INITIAL PATIENT ASSESSMENT (MEDICAL PATIENT)

I. Initial patient assessment.
   A. Check for patency of **airway**.
   B. Check adequacy of **breathing**.
   C. Check **circulation** (rate and quality of pulse, skin temperature, capillary refill).
   D. **Neurologic assessment**; level of consciousness ("**AVPU**").
   E. Listen to chest; assess lung sounds.

Note: If patient is found to be critically ill during the initial patient assessment, contact Medical Control as needed and initiate treatment and/or transport immediately depending on circumstances and direction from Medical Control. Consider ALS-tiered aid with paramedics.

II. Focused history and physical exam.
   A. **History**.
      1. Chief complaint.
      2. Description of present illness and pertinent other symptoms.
      3. Onset.
      4. Duration.
      5. Severity.
      6. Location of pain, if applicable.
      7. Past medical history.
      8. Medications.
      9. Allergies/hypersensitivities to medications.
      10. Name of personal physician (and HMO if applicable).

   B. **Vital signs.**

   C. **Head-to-toe exam** with attention to common signs of medical problems.

      1. General appearances, skin color, skin temperature, level of consciousness.
      2. Head. Pupils, facial asymmetry, jaundice.
      3. Neck. Tracheal deviation, neck vein distention.
      4. Chest and lungs. Breath sounds (normal, wheezes, crackles).
      5. Heart exam. Regularity of rhythm.
      6. Abdomen. Distention, tenderness.
      7. Extremities. Edema, distal pulses, tenderness.
      8. Neurologic. Paralysis, distal sensation. [Cincinnati Stroke Scale]

III. Continue monitoring en route to hospital.

IV. Record on ambulance report form:
   A. Results of assessment.
   B. Treatment given.
   C. Name of EMT performing assessment/treatments.

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TREATMENT PROTOCOL -- ABDOMINAL PAIN

I. Transport patient in position of comfort.

II. Nothing to eat or drink for the patient.

III. Oxygen if necessary.

IV. Consider applying PASG for hypotension and /or suspected abdominal aneurysm [Medical Control required for inflation.]

V. Consider ALS intercept for abdominal pain with unstable vital signs, i.e. systolic BP less that 90 with signs of shock.

VI. Cardiac monitor as needed

EMT BASIC INTERMEDIATE TECHNICIAN -- Start a large bore I.V. NS wide open to maintain a SBP > 90. If possible, start a second I.V. NS TKO. (I.V.s should be started en route to the hospital, unless transportation is delayed by extrication or unusual circumstances.) Titrate to patient's condition. *In suspected abdominal aortic aneurysm do not increase BP above 100 mm Hg.*

VII. CONTACT MEDICAL CONTROL to prepare the receiving hospital and obtain additional orders for inflation of PASG.

Note: Abdominal pain may be a sign of internal bleeding (abdominal aortic aneurysm in older patients, ectopic pregnancy in young women). Think of these and monitor for signs of shock.

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TREATMENT PROTOCOL -- ALTERED LEVEL OF CONSCIOUSNESS

This protocol includes patients with altered consciousness of unknown cause. Patients with head injuries, known diabetics, and known drug ingestions are covered in other specific protocols.

I. Perform initial patient assessment. Assess for trauma, drugs, diabetes, breath odor or medical alert tags.

II. Protect the airway. Use protected side position if spine trauma not suspected. Use airway adjuncts and assist ventilations if needed.

III. Administer oxygen.

IV. Apply cardiac monitor, apply 12 Lead EKG monitor once enroute to the hospital.

V. Check blood glucose using blood glucose monitor.

EMT BASIC INTERMEDIATE TECHNICIAN -- *If blood glucose is less than 60*, be prepared to start I.V. and run in 200 cc., or administer Glucagon I.M. 1mg. for adult, 0.5 mg for child less than 1 year or administer 50% Dextrose in the I.V. solution. CONTACT MEDICAL CONTROL to report results. Recheck blood glucose in 10 to 15 minutes. *If blood glucose is 60 or more*, start I.V. NS. If systolic BP under 90, run in 200 cc NS, recheck BP, then titrate I.V. rate to patient's condition (see discussion of "Rates of I.V. fluids" in the Intravenous Lines protocol).

VI. CONTACT MEDICAL CONTROL. Give report. Obtain orders to administer Glucagon. Recheck blood glucose in 10 to 15 minutes.

EMT BASIC INTERMEDIATE TECHNICIAN -- CONTACT MEDICAL CONTROL .If there is reason to suspect narcotic overdose (and assuming patient's altered consciousness was not due to hypoglycemia and improved by glucose administration), consider administration of Naloxone. (See principles of Naloxone use in the Naloxone protocol.)
If ordered, administer Naloxone in small, titrated doses of 0.5 cc (see discussion of Naloxone administration in the Naloxone protocol.)
If I.V. access not available and Naloxone is to be given, give all 2 cc IM all at once in anterolateral thigh.

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TREATMENT PROTOCOL -- ANAPHYLAXIS

I. Perform Patient Assessment
   A. Initial patient assessment
      1. Difficulty breathing, including airway obstruction/edema, stridor, or wheezing
      2. Signs of shock in association with airway distress
         a. Mental confusion, anxiousness
         b. Thready pulse
         c. Cool, clammy skin
   A. Focused history and physical exam
   B. Note etiology of anaphylaxis
   C. Administer oxygen per protocol
   D. Assess for age less that 65 years
   E. Remove allergen (stinger if indicated) or patient from environment

EMT BASIC INTERMEDIATE TECHNICIAN – Administer Epi-Pen® for severe reaction with respiratory distress and airway swelling only. Administer Epi-Pen Jr.® if patient weight is < 60 lbs. Administer nebulized Albuterol 2.5 mg. CONTACT MEDICAL CONTROL to report results. If patient is greater than 65 years, consult with MEDICAL CONTROL. Start I.V. of NS at TKO (refer to hypotension protocol as needed).

II. CONTACT MEDICAL CONTOL and report result of findings.

III. Administer Epi-Pen® or Epi-Pen Jr® (if patient weighs less that 60 lbs.) as directed by physician for severe reaction including respiratory distress and airway swelling only. May repeat in 10-20 minutes if ordered by physician.

EMT BASIC INTERMEDIATE TECHNICIAN - If the patient's major problem is hypotension and there is no response, start second I.V.

IV. Monitor vital signs en route and report any change to the emergency department

V. MISCELLANEOUS
   A. Epinephrine will usually be administered only to patients with serious anaphylaxis. A patient who is not wheezing and is not hypotensive should not be given epinephrine unless ordered by Medical Control.
   B. If a patient has a prescribed Epipen® auto-injector (or other form of prescribed epinephrine) the EMT should use the ambulance service's Epipen® rather than the patient's (it is less likely to be outdated or deteriorated).
   C. Avoid self-injection with epinephrine by never placing thumb or finger over the "needle" end of the Epipen®. If self-injection does occur, seek immediate treatment in the hospital emergency department.
   D. Avoid needlestick injuries by proper handling of the used Epipen®. Dispose of used Epipen® in an appropriate sharps container.

VI. Consider ALS intercept.

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TREATMENT PROTOCOL -- ASTHMA, CHRONIC LUNG DISEASE (COPD)

This protocol is applicable to patients who have respiratory distress, have known asthma or chronic lung disease (chronic bronchitis and/or emphysema), and who are wheezing. Any patient who uses an inhaler as a prescribed medication is an appropriate candidate for treatment with Albuterol/Atrovent.

I. Perform initial patient assessment.

II. Administer oxygen continuously, e.g., at 4-6 liters/minute per nasal cannula, from an oxygen source different from the nebulization unit. Increase oxygen concentration if needed based on patient's condition.

III. Place patient in position of comfort.

IV. Assist patient taking his or her own bronchodilator inhalers, if indicated.

V. Administer an initial dose of Albuterol 2.5 mg with/ or without Atrovent 0.5 mg (based on local protocol) via nebulizer while en route to the hospital.

EMT BASIC INTERMDIATE TECHNICIAN- May also start an I.V. of NS at TKO.

VI. CONTACT MEDICAL CONTROL; give report.

VII. A second dose of Albuterol may be administered if the orders are obtained from Medical Control to do so. If patient is not improving after nebulizer treatment is given or if patient seems to worsen at any time, consider ALS intercept.

EMT BASIC INTERMEDIATE TECHNICIAN – If patient is in extremis and under the age of 65 years, Medical Control may authorize Epinephrine 0.3 mg via Epi-Pen® (1:1000).

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TREATMENT PROTOCOL -- BURN INJURY-SEVERE (CHEMICAL OR THERMAL)

Severe burn injury includes patients with second-degree burns greater than 20% of body surface, third-degree burns greater than 10%, significant electrical burns, chemical burns and burns associated with multiple trauma.

I. Insure rescuer safety.

II. Move patient to a safe environment. Remove burned or smoldering clothing from the patient, if possible.

III. Perform patient assessment. Stabilize any spinal injuries.

IV. Administer 100 % oxygen via non-rebreather mask (away from fire and after smoldering clothes removed).

V. Cool acute burns (including chemical burns) using profuse irrigation with sterile water. Prevent hypothermia. Maintain patient's body temperature.

VI. Estimate Body Surface Area (BSA) using the Rule of Nines. Determine type and thickness of burns.

EMT BASIC INTERMEDIATE TECHNICIAN – May start I.V. of NS using large bore needle at wide-open rate. If there is time, establish a second site with a large bore needle with NS. Titrate I.V. rate to patient's condition to maintain BP greater then 90-100 systolic.

VII. Apply sterile dressings and bandages or burn sheet. If the burn is less that 10% BSA, dress wet. Dress all other burns dry.

VIII. Apply cardiac monitor.

IX. Monitor pulse oximeter.

X. CONTACT MEDICAL CONTROL and report.

XI. Consider ALS intercept when the patient has:
- A. Second or third degree burns 20% BSA (>10%BSA in patients <12 or >60 years)
- B. Facial burns
- C. Respiratory compromise
- D. Pain management

Note: Burn patients with the following should be transported to the University Hospitals Burn Center:
1. Burns associated with significant traumatic injury
2. Burns involving complex body areas:
   a. Hands
   b. Face with nasal or oropharyngeal burns with possible respiratory compromise
   c. Feet
   d. Genitalia
3. Second and third degree burns involved greater then 20% BSA
4. All significant chemical or electrical burns
5. All significant pediatric burns

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TREATMENT PROTOCOL -- CARBON MONOXIDE POISONING

I. Remove the patient from the toxic environment (be aware of danger to yourself).

II. Perform patient assessment.
   A. Ensure patent airway. If the patient is comatose and has no gag reflex, consider insertion of the Combitube®.

III. Administer 100% oxygen via a non-rebreathing mask.

IV. If altered mental status, check blood sugar with blood glucose monitor. If blood sugar is less than 60, treat for hypoglycemia according to Altered Level of Consciousness Protocol.

EMT BASIC INTERMEDIATE TECHNICIAN – May start I.V. of NS. Titrate I.V. rate to patient's condition to maintain BP greater then 90-100 systolic.

V. CONTACT MEDICAL CONTROL; give report.

VI. Perform cardiac monitoring and transport.

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TREATMENT PROTOCOL -- CARDIAC ARREST (MEDICAL)

I. Perform initial patient assessment.

II. Start CPR and continue with basic airway and oxygen adjuncts initially.

III. Initiate defibrillation protocol (see Dane County Defibrillation Protocol).

IV. Insert Combitube® at appropriate point in protocol. Ventilate with 100% oxygen.

EMT BASIC INTERMEDIATE TECHNICIAN – May start I.V. of NS. Titrate I.V. rate to patient's condition to maintain BP greater then 90-100 systolic. If time permitting, consider second I.V., preferably in the same arm.

V. CONTACT MEDICAL CONTROL. Give report; receive further orders.

VI. Administer additional defibrillatory shocks if indicated and so ordered by the physician.

VII. Transport or terminate resuscitation if ordered by Medical Control.

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TREATMENT PROTOCOL -- CARDIAC ARREST DUE TO TRAUMA OR HYPOVOLEMIA

I. Perform scene survey. Do not approach the patient until the scene is safe.

II. Perform initial patient assessment.

III. Start and continue CPR. Stabilize spine.

IV. Apply cardiac monitor. Follow defibrillation procedure if necessary.

EMT BASIC INTERMEDIATE TECHNICIAN – May start I.V. of NS using large bore needle. Titrate I.V. rate to patient's condition to maintain BP greater than 90-100 systolic. If time permitting, consider second I.V, preferably in the same arm. DO NOT DELAY TRANSPORT. I.V.s should be established while en route to the designated trauma center.

V. CONTACT MEDICAL CONTROL. If patient is without signs of life following blunt trauma and the monitor shows a flat line after Combitube® insertion and two minutes of CPR, ask Medical Control if resuscitation efforts should be terminated at the scene.

VI. Some patients with cardiac arrest due to penetrating torso trauma may be salvageable with emergent surgery, even with no signs of life, especially if the event was witnessed. If penetrating trauma is witnessed, immediate transport is advised. If the injury event and cardiac arrest are not witnessed, CONTACT MEDICAL CONTROL for a decision whether to stop in the field.

***Note:** Rarely, an accident with trauma may be the result of unsuspected ventricular fibrillation as the primary event, and there is a chance of reviving such a patient with defibrillation. Ventricular fibrillation also occurs as a secondary result of exsanguination, asphyxia, etc., from trauma. This later type of patient will not be revived in the field with typical treatment of a "medical arrest." After performing a trial of the defibrillation protocol (with a strict limit of two shocks), transport rapidly to a prepared hospital without delay. If fibrillation is identified while en route, stop the ambulance briefly to defibrillate.

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TREATMENT PROTOCOL – SUSPECTED CARDIAC ISCHEMIA (Chest Pain)

This protocol is for treatment of a patient who has been previously diagnosed as having heart disease, has prescribed nitroglycerin (NTG), and/or is having chest pain.

I. Perform initial patient assessment.

II. Perform focused history and physical exam

A. History of chest pain.
B. Onset of chest pain, and progression since onset. Level of pain on a scale of 1-10.
C. Prescribed NTG. How many doses and at what intervals.

III. Administer oxygen.

IV. With patient experiencing chest pain or anginal equivalents (dyspnea, palpitations, syncope, general weakness/dizziness, hypotension/hypertension, or bradycardia) thought to be of cardiac origin, apply cardiac monitor. Run initial six-second cardiac strip for E.R. use or if approved for use, perform 12 Lead EKG.

A. Explain the Procedure to the patient
B. Place the patient into a hospital gown
C. Prep the skin, dry and shave if necessary
D. Apply the 10 electrodes
E. Enter patient's first initial of their first name, space, and first three letters of their last name.
F. Instruct patient to lie as still as possible during the acquisition
G. Acquire EKG
H. Transmit the 12 Lead EKG
I. Inform ER of transmission through radio report, report should inform ED of which transmission method is being used (Receiving station vs. fax) and confirm ER has received EKG
J. Give ER staff 12 Lead printout once at the hospital

EMT INTERMEDIATE TECHNICIAN – May start IV of NS using large bore needle. Titrate IV rate to patient's condition to maintain BP greater than 90-100 systolic. If time permitting, consider second IV, preferably in the same arm. DO NOT DELAY TRANSPORT. May administer Nitroglycerin* 0.4 mg spray/tablet (sublingual) if SBP > 100 mm/hg for a total of four doses including prior usage.

V. Administer 324 mg of chewable baby aspirin (four tablets) as soon as possible without impeding EKG acquisition.

VI. *Assess males and females for usage of Viagra, Cyalis, Levitra (or similar substance) within past 48 hours. If the patient has own NTG, has not taken Viagra, Cyalis, Levitra (or similar substance), and SBP is > 100, the EMT may assist the patient in taking one sublingual tablet every 5 minutes PRN until pain free or for a total of three doses including prior usage or if SBP falls below 100.

VII. CONTACT MEDICAL CONTROL, report. Relay any information about Viagra, Cyalis, Levitra (or similar substance) usage.

VIII. Recheck vital signs including blood pressure at five-minute intervals.

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TREATMENT PROTOCOL – DIABETIC EMERGENCIES

This protocol may be used for the treatment of patients who have been previously diagnosed with diabetes and are currently experiencing an altered mental status.

I. Perform initial patient assessment. Look for medical alert tags.

II. Perform focused history and physical exam
   A. Determine last meal, last medication dose (including insulin type(s), number of units, time of administration and oral hypoglycemic medications)
   B. Any related illness

III. Administer oxygen.

IV. Perform blood sugar reading using a glucometer.
   A. If blood sugar is less that 60 mg/dl and if:
      1. Patient is awake enough to protect own airway. Administer oral sugar/glucose by mouth.
      2. Patient is semi-conscious but still has a gag reflex. Place a small amount of oral glucose between the patient's cheek and gum.
      3. Patient has an altered level of consciousness. Follow protocol for Altered Level of Consciousness.

EMT INTERMEDIATE TECHNICIAN -- *If blood glucose is less than 60*, be prepared to start I.V. D5W, and run in 200 cc D5W or administer Glucagon I.M. 1mg. for adult, 0.5 mg for child less that 1 year or administer 50% Dextrose through the I.V. CONTACT MEDICAL CONTROL to report results. Recheck blood glucose in 10 to 15 minutes.
***If blood glucose is 60 or more*, start I.V. NS. If systolic BP under 90, run in 200 cc NS, recheck BP, then titrate I.V. rate to patient's condition (see discussion of "Rates of I.V. fluids" in the Intravenous Lines protocol).**

V. CONTACT MEDICAL CONTROL. Obtain order to administer Glucagon.
   A. Adult/Child - Glucagon 1 mg. I.M.
   B. Child less than 1 year-Glucagon 0.5 mg I.M. in anterolateral thigh.

VI. Repeat testing of blood sugar in 15-20 minutes. REPORT TO MEDICAL CONTROL. Glucagon may be repeated in 20 minutes with physician authorization.

Treat and Release Protocol (Medical Control Authorization ONLY)

Consider no transport with medical control authorization of patients who have received the treatment noted above and have met ALL the following criteria:

- Blood Sugar greater than 70 mg/dl
- Patient is able to eat a meal
- Patient is in the company of responsible adult(s) who will stay with him/her for at least 12 hours or ensure that somebody else does.
- Patient agrees to contact their primary health care provider within 24 hours
- Patient has the capability of measuring their own blood sugar and adjusting their medications (i.e. insulin) accordingly.
- There are no other acute medical issues involved (i.e. suspected stroke, MI, trauma, drugs, alcohol, use of oral hypoglycemic medications or serious infections.

VII. Transport. Consider ALS intercept for hypoglycemic patients unresponsive to initial treatment.

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TREATMENT PROTOCOL -- EMERGENCY MEDICAL CARE OF THE PULSELESS NON-BREATHING PATIENT USING AUTOMATED EXTERNAL DEFIBRILLATION (AED)

I. AED CONSIDERATIONS

A. Consider ALS backup.

B. Preparation for transport of patient should begin immediately as staffing allows.

C. Assuming no on-scene ALS, the patient should be transported when one of the following occurs:

1. The patient regains a pulse.
2. Two (2) shocks are delivered ***(in addition to shocks delivered by Public Access Defibrillator or PAD)***
3. The machine gives three consecutive messages (separated by two minutes of cardiopulmonary resuscitation (CPR)) that no shock is advised.

D. *For adult patients* if no bystander CPR had been started and EMS arrival is >4 minutes, EMS personnel should provide two (2) minutes of CPR before defibrillation. If bystander CPR is being performed, one (1) shock may be given followed by two (2) minutes of CPR before reanalyzing. ***For pediatric patients, two (2) minutes of CPR should be performed before defibrillation.***

E. All contact with patient must be avoided during analysis of rhythm and/or delivery of shock(s).

F. Automated external defibrillation can be used in cardiac arrest ***in children ages one to " age of puberty" or anyone weighing less than 55 lbs. The preferred method is to utilize an AED with "Pediatric Capabilities".*** If ONLY a standard AED is available it may be applied with patches placed anterior and posterior.

G. Automated external defibrillators cannot analyze rhythm properly when emergency vehicle is in motion. It is not safe to defibrillate in a moving vehicle.

II. USE OF AUTOMATED EXTERNAL DEFIBRILLATORS DURING RESUSCITATION ATTEMPTS

A. Operational steps - multiple rescuer resuscitation of a pulseless non-breathing (PNB) patient

1. Take body substance isolation precautions - en route to scene.
2. Arrive on scene and perform initial assessment.
3. Stop CPR if in progress.
4. Verify pulselessness and apnea.
5. Have a partner resume CPR.
6. ***Adult: If Public Access Defibrillation (PAD) is utilized prior to your arrival, switch from PAD to your defibrillator.***
   Pediatrics: If EMS AED is not pediatric capable, then continue the use of PAD-pediatric capable device. (Or, if no pediatric capable device is available, then use a standard AED with anterior/posterior patch positioning.)
7. Turn on defibrillator power and attach pads.
8. Stop CPR.
9. Clear patient.
10. Initiate analysis of rhythm.
    a. Machine advises shock.
       1) Deliver shock.
       2) Resume CPR for two minutes.
          a) Consider insertion of an advanced airway. INSERT WHILE DOING COMPRESSIONS, artificially ventilate with high concentration oxygen
       3) Stop CPR.
          a) Re-analyze rhythm.
          b) If shock advised, repeat one shock.
          c) Resume CPR for two minutes.
          d) Contact Medical Control if two total shocks have been given.
          e) Transport promptly.

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b. If, after any rhythm analysis, the machine advises no shock, **quick pulse check**

1) Resume CPR for two minutes.

a) Consider insertion of an advanced airway here. INSERT WHILE DOING COMPRESSIONS, artificially ventilate with high concentration oxygen.

2) Stop CPR.

a) Re-analyze rhythm.
b) If shock advised, repeat one shock.
c) Resume CPR for two minutes.
d) Contact Medical Control if two total shocks have been given.
e) Transport promptly

B. Persistent ventricular fibrillation and no available ALS backup

1. After a maximum of two shocks on scene, transport patient promptly. If transport is impossible [i.e. ambulance not at scene] continue the sequence of one shock followed by two minutes of CPR for as long as a shockable rhythm persists or until transport becomes possible.
2. Contact ON-LINE MEDICAL CONTROL with radio report.

C. Operational steps - single rescuer with an automated external defibrillator

1. Follow sequence.
   a. Perform initial assessment.
   b. Assure pulselessness and apnea.
   c. Turn on AED power.
   d. Attach device.
   e. Initiate analysis of rhythm.
   f. Deliver shock as advised.
   g. Follow protocol.

III. PEDIATRIC CONSIDERATIONS

A. If rescuer is alone, perform CPR for two minutes, before applying the AED.

B. All certified First Responders and licensed EMTs must now also be trained on the defibrillation of children less than the age of puberty. Every effort must be made to purchase "pediatric capable" devices. If the prehospital responder does not have a "pediatric capable" device and they arrive on the scene where a "pediatric capable" device is being utilized, they should continue with the use of that device for treatment and transport of the child.

C. Pediatric pads is the preferred method, but standard AED may be used with patches placed anterior and posterior.

D. AED should not be used on anyone less than one year old.

Notes:

1. Time is valuable. Rapid defibrillation with airway placement when necessary must be accomplished as rapidly as possible. Initiate transport early.

2. If you are transporting a patient who is in or develops cardiac arrest, you must pull over and stop the vehicle to analyze. Use common sense. Do not stop so often that it takes a lengthy period of time to get to the hospital.

3. If you successfully resuscitated a patient from V-fib and the patient subsequently reverts back to a shockable rhythm, you may re-institute the entire protocol without verbal command. This may be done a third time if necessary. **Medical Control must be attempted after a third sequence.**

4. Pulse checks should be done carefully for 5-10 seconds. No CPR can be done while the machine is analyzing.

5. The EMT shall shock one time as necessary, then place the Combitube®/Advanced Airway according to the airway protocol. After a two-minute period of CPR, one more shock may be given, if indicated. If no conversion, move to the ambulance and begin transport.

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6. The compression rate should be at least 100 per minute. Ventilatory rate should be one breath every 6-8 seconds.

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TREATMENT PROTOCOL – CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP)

Continuous Positve Airway Pressure has been shown to rapidly improve vital signs, gas exchange, reduce the work of breathing, decrease the sense of dyspnea, and decrease the need for endotracheal intubation in patients who suffer from shortness of breath from COPD, pulmonary edema, CHF, and pneumonia. In patients with CHF, CPAP improves hemodynamics by reducing left ventricular preload and afterload.

I. Perform initial patient assessment.

Assess for:

INDICATIONS:

A. Any patient who is in respiratory distress with signs and symptoms consistent with COPD, pulmonary edema, CHF, or pneumonia **and** who is
   1) Awake and able to follow commands
   2) Is over 12 years old and is able to fit the CPAP mask
   3) Has the ability to maintain an open airway
   4) **And** exhibits two or more of the following;
      1. A respiratory rate greater than 25 breaths per minute
      2. SPO2 of less than 94% at any time
      3. Use of accessory muscles during respirations

CONTRAINDICATIONS:

A. Patient is in respiratory arrest/apneic
B. Patient is suspected of having a pneumothorax or has suffered trauma to the chest
C. Patient has a tracheostomy
D. Patient is actively vomiting or has upper GI bleeding

II. PROCEDURE

A. Receive permission from medical control for applying CPAP
B. EXPLAIN THE PROCEDURE TO THE PATIENT
C. Ensure adequate oxygen supply to ventilation device
D. Place the patient on continuous pulse oximetry
E. Place the patient on cardiac monitor and record rhythm strips with vital signs
F. Place the delivery device over the mouth and nose
G. Secure the mask with provided straps or other provided devices
H. Start at 5 cm. H2O of PEEP valve, further increase per medical control.
I. Check for air leaks
J. Monitor and document the patient's respiratory response to treatment
K. Check and document vital signs every 5 minutes
L. Administer appropriate medication as certified (continuous nebulized Albuterol with Atrovent if able for COPD/Asthma)
M. Continue to coach patient to keep mask in place and readjust as needed
N. Contact medical control through radio report to advise them of CPAP initiation
O. Consider ALS intercept if available
P. If respiratory status deteriorates, remove device and consider intermittent positive pressure ventilation via BVM and/or placement of non-visualized airway or endotracheal intubation

III. REMOVAL PROCEDURE

A. CPAP therapy needs to be continuous and should not be removed unless the patient can not tolerate the mask or experience respiratory arrest or begins to vomit.
B. Intermittent positive pressure ventilation with a Bag-Valve-Mask, **with permission from Medical Control,** placement of the Combitube® should be considered if the patient is removed from CPAP therapy and the patient does not have a gag reflex.

IV. SPECIAL NOTES

A. Do not remove CPAP until hospital therapy is ready to be placed on the patient.
B. Watch patient for gastric distention, which can result in vomiting
C. Procedure may be performed on patient with Do Not Resuscitate Order
D. Due to changes in preload and afterload of the heart during CPAP therapy, a complete set of vital signs must be obtained every 5 minutes.

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TREATMENT PROTOCOL –EYE IRRIGATION

I. Perform initial assessment.

II. Perform focused history and physical exam.

III. Assess the need for irrigation of one or both eyes—i.e. exposure to toxic chemicals (acid or base).

IV. Tilt head forward and brush eyelid/lashes if dry chemical present.

V. Remove contact lenses if present.

VI. Irrigate with sterile NSS continuously during entire transport.

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TREATMENT PROTOCOL – GYNECOLOGICAL EMERGENCIES

I. PREDELIVERY EMERGENCIES—ADVISE MEDICAL CONTROL EARLY

A. Pre-eclampsia/Eclampsia (seizures as a result of toxemia during pregnancy)-

1. Ensure patent airway; administer high flow oxygen. Suction if necessary
2. Check blood pressure (hypertension is significant)
3. Obtain brief history including sudden weight gain, swelling in extremities, decreased urine output, severe/persistent headache, persistent vomiting, altered mental status, blurred vision or spots before eyes
4. Observe for seizure activity—provide quiet, non-stimulating environment Request ALS intercept if any seizure activity.

EMT BASIC INTERMEDIATE TECHNICIAN – May start I.V. of NS. Titrate I.V. rate to patient's condition.

5. Transport to hospital in position of comfort, left lateral recumbent if tolerated.

B. Vaginal Bleeding

1. Administer high flow oxygen.
2. Assess amount of vaginal bleeding; place sterile obstetrical pads loosely over vaginal opening.

EMT BASIC INTERMEDIATE TECHNCIAN – May start I.V. of NS. Titrate I.V. rate to patient's condition to maintain BP greater then 90-100 systolic.

3. Place in supine position. Elevate legs if possible.
4. Transport immediately to hospital.

TREATMENT PROTOCOL -- HEAD INJURY

I. Perform initial patient assessment.
   A. **Airway**. Secure the airway maintaining cervical spine control.
   B. **Breathing**. Assess adequacy of breathing. Assist ventilations if necessary. Administer 100 % oxygen per NRB.
   C. **Circulation**. Assess circulation. Control external hemorrhage.
   D. **Disability**. Assess neuro status by "**AVPU**" terminology; include Glasgow Coma Scale.

II. If patient is critical, package with the spine immobilized and transport immediately.

III. If patient is deeply unconscious with no gag reflex, insert Combitube® and ventilate moderately, e.g., 15 breaths per minute.

EMT BASIC INTERMEDIATE TECHNICIAN -- Start a large bore I.V. of NS. If the patient is hypotensive, run in 200 cc NS and recheck BP. Then titrate I.V. rate to patient's condition.

IV. Do focused history and physical exam en route to the hospital.

V. Dress wounds.

VI. Splint fractures.

VII. CONTACT MEDICAL CONTROL and report.

VIII. Monitor the patient's condition en route noting any serial change in the level of consciousness. Keep Medical Control updated.

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TREATMENT PROTOCOL -- HEAT ILLNESS

I. Remove patient from hot environment if safe and possible.

II. Perform patient assessment. Determine severity of problem.

III. Remove clothing and cool patient as appropriate.

IV. Apply oxygen as needed.

V. Patient is to have Nothing By Mouth (NPO). Monitor vital signs.

EMT BASIC INTERMEDIATE TECHNICIAN – May start I.V. of NS. CONTACT MEDICAL CONTROL and consult about infusion rate. Use caution with older adults.

VI. CONTACT MEDICAL CONTROL and give report.

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TREATMENT PROTOCOL – HYPOTHERMIA

Regardless of etiology, hypothermic patients can be graded into three categories:
[*Clinical estimates only if temperature is unable to be taken]*

1. ***Mild/Moderate***—conscious patients with some degree of depressed level of consciousness including slowed motor responses, slurred speech and confusion. These patients have an intact shivering mechanism. Temperature is usually at 90 degrees F. or above.
2. ***Severe***—patients with severely depressed LOC or coma, who often display some degree of rigidity. Temperature is usually under 90 degrees F.
3. ***Arrested***—patients in cardio-respiratory arrest. Temperature is usually above 77 degrees F.

I. Perform scene survey. Remove all wet clothing from the patient and cover with blankets.

II. Perform initial patient assessment. Note that pulses and respiration may be slow and much harder that normal to assess. Feel for a carotid pulse for at least one minute before assuming there is no pulse. Listen carefully for respirations. Patients with a perfusing rhythm should prevent further heat loss, warm blankets and have the heat turned up in the ambulance as warm as possible. Handle patient gently. [Hypothermia predisposes the patient to ventricular fibrillation, which can be precipitated by rough handling.]

III. Administer 100% oxygen using a NRB or ventilate PRN.

IV. Apply cardiac monitor.

V. Initiate passive re-warming by placing hot packs in the groin area, axillae, on chest and abdomen. Use caution as the patient's skin may be desensitized and may burn easily.

EMT BASIC INTERMEDIATE TECHNICIAN – May start I.V. of NS using large bore needle. Titrate I.V. rate to patient's condition to maintain BP greater then 90-100 systolic. If time permitting, consider second I.V, preferably in the same arm. DO NOT DELAY TRANSPORT.

VI. CONTACT MEDICAL CONTROL and report.

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Note: The protocol that follows refers to EXPOSED CREW MEMBERS ONLY.

TREATMENT PROTOCOL -- MASS EXPOSURE TO NERVE AGENTS

Terrorism involving weapons of mass destruction (WMD) is a realistic threat that all EMS providers must be prepared to manage. One of the more common weapon types is a chemical release. Be prepared and understand your limitations.

I. If the potential exists for exposure to Chemical Agents that affect the nervous system.
- A. Assess scene and number of victims. Notify Communication Center.
- B. Refer to "Response Protocols for (Dane County) Emergency Decontamination Trailers".
- C. Protect self by donning personal protective equipment (Level A) before going into the *hot zone*.
- D. While working in the *warm zone*, don Level B attire to receive patient(s).
- E. Protect victim from further exposure
  - a. remove from source if possible
  - b. remove all clothing and decontaminate if liquid exposure (follow decontamination procedure per hazmat response protocol)

II. Inhalation Nerve Gas Exposure
- A. If dyspnea, constricted pupils and rhinorrhea are exhibited, establish an airway, provide positive pressure ventilation at 12 ventilations per minute, suction as necessary and administer a Mark 1 autoinjector kit IM, into the anteriolateral thigh.
  1. 2 mg of Atropine (never give IV)
  2. 600 mg. of 2PAMCL
- B. If dyspnea, constricted pupils and rhinorrhea continue for ten minutes, administer an additional Mark 1 Kit
- C. If dyspnea, constricted pupils and rhinorrhea PLUS unconsciousness, seizure and/or apnea occur, administer a third Mark 1 kits plus 10 mg. of Diazepam (Valium) IM using an autoinjector
- D. If seizure activity continues, administer an additional 10 mg. of Diazepam (Valium) 10 mg IM using an autoinjector

III. Nerve Agent on Skin
- A. If localized twitching and/or diaphoresis, establish an airway, provide positive pressure ventilation at 12 ventilations per minute, suction as necessary and administer a Mark 1 autoinjector kit IM, into the anteriolateral thigh
  1. 2 mg. of Atropine (never give IV)
  2. 600 mg. of 2PAMCL
- B. If localized twitching and/or diaphoresis PLUS nausea and vomiting continue after ten minutes, administer an additional Mark 1 kit
- C. If symptoms continue, administer a third Mark 1 kit.
- D. If seizure activity and/or apnea occur, administer 10 mg. of Diazepam (Valium) IM using an autoinjector
- E. If seizure activity continues, administer an additional 10 mg. of Diazepam (Valium) 10 mg IM using an autoinjector
- D. If no symptoms after liquid exposure observe for at least 18 hours

IV. If received 4 mg or more of Atropine and is now recovering; observe for redevelopment of symptoms for at least 18 hours.

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TREATMENT PROTOCOL -- MEDICINE OVERDOSE / POISONING

I. Ensure scene safety. If HAZMAT situation suspected, notify the local fire department immediately.

II. Determine chemical agent or name of medications, if possible.

III. Move patient to safe environment. Take appropriate precautions to protect self from contamination (dust, fumes). Use appropriate PPE.

IV. Ensure patent airway. Administer high-flow oxygen as needed.

V. If HAZMAT situation, remove patient's contaminated clothing, and decontaminate the patient by brushing off or rinsing off substances with copious amounts of water PRN.

VI. Obtain information about names, descriptions, and amounts of item(s) ingested. Bring bottles and containers, etc., of ingested materials to hospital. CONTACT MEDICAL CONTROL EARLY to advise them of situation and request specific interventions. Consider contacting Poison Control.

VII. Apply cardiac monitor.

EMT BASIC INTERMEDIATE TECHNICIAN – May start I.V. of NS. Titrate I.V. rate to patient's condition to maintain BP greater then 90-100 systolic. If patient has altered level of consciousness, check blood glucose and take appropriate action.

VIII. If normal level of consciousness, ensure patent airway and administer high flow oxygen.

IX. If altered level of consciousness:

A. Protect the airway. Use protected side position if spine trauma not suspected. Use airway adjuncts and assist ventilations if needed.

B. Administer high flow oxygen.

X. Consider ALS intercept for the patient with unstable vital signs, cyclic antidepressant overdose or organophosphate poisonings.

EMT BASIC INTERMEDIATE TECHNICIAN - If there is reason to suspect narcotic overdose, consider use of Naloxone, after consulting with MEDICAL CONTROL (see discussion of Naloxone use in the Naloxone Protocol).

XI. If patient hypotensive, not improving with I.V. NS, and blood sugar is above 60 and Naloxone not given or not effective, PASG can be considered with MEDICAL CONTROL.

XII. Periodically update Medical Control regarding patient's status while en route.

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TREATMENT PROTOCOL – OBSTETRICS / CHILDBIRTH

Childbirth is a natural event and usually is uncomplicated. If you suspect an uncomplicated delivery and imminent birth is not present, transport the patient positioned on the left side. If birth is impending, follow the protocol. If you suspect a complicated delivery, refer to the appropriate section and request additional resources.

I. NORMAL DELIVERY
- A. Administer oxygen
- B. Place patient in position of comfort. Assess frequency of contractions.
- C. Wear eye protection. Open O.B. pack and don sterile gloves and create a sterile field around the vaginal opening.
- D. Determine if the infant's head is crowning.
- E. Assist with delivery of infant's head by applying gentle pressure with your gloved hands to prevent an explosive delivery. Tear the amniotic sac if it is not already ruptured.
- F. Feel around the neck for the umbilical cord; if present, gently slip the cord around the infant's head.
- G. Suction the infant's mouth, oropharynx then nostrils with bulb syringe
- H. Support the infant's head and assist in rotating the shoulders thru the vaginal opening. The rest of the infant's body will follow.
- I. Hold the baby level with the mother's vagina until the umbilical cord is cut. Place a clamp on the cord 7" from the body and the second one at 10 " from the body. Cut between the two clamps with a sterile scissors.
- J. Suction the baby again and dry. Inspect the cord for bleeding. Wrap the baby in a warmed blanket and place it on its side next to the mother.
- K. Inspect the mother's vaginal area for any tears that might cause excessive bleeding.
- L. Observe for the delivery of the placenta, which usually occurs within 20 minutes. DO NOT DELAY TRANSPORT WHILE WAITING FOR THE DELIVERY OF THE PLACENTA. Let the placenta deliver normally. Do NOT pull on umbilical cord. Place placenta and cord into plastic bag, tie and transport to hospital with mother and infant.
- M. After placenta delivers, massage the top of the uterus by rubbing the mother's abdomen firmly.
- N. Place sterile sanitary napkins/sterile dressings over vaginal opening.
- O. Record the time of delivery of infant and placenta and transport to hospital.

EMT BASIC INTERMEDIATE TECHNICIAN – May start I.V. of NS. Titrate I.V. rate to patient's condition to maintain BP greater then 90-100 systolic.

- P. CONTACT MEDICAL CONTROL and report.

II. VAGINAL BLEEDING (Post Delivery)
- A. Administer high-flow oxygen.
- B. Massage the fundus of the uterus by using a kneading or circular motion with fingertips. It should feel like a hard grapefruit.
- C. Allow the infant to suckle on the mother's breast.
- D. Continue transporting mother and infant to hospital.
- E. CONTACT MEDICAL CONTROL and report.

III. PROLAPSED CORD—ADVISE MEDICAL CONTROL EARLY
- A. Elevate hips by raising buttocks with pillows or position the patient with her head down in a "knee-chest" position.
- B. Administer high flow oxygen and keep patient warm. May apply cardiac monitor.

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C. Keep baby's head away form cord by inserting sterile, gloved hand into the vagina and gently pushing the presenting part of the fetus back and away from the pulsating cord.
D. Cover the umbilical cord with a sterile dressing moistened with a sterile saline solution. DO NOT ATTEMPT TO PUSH THE CORD BACK.

E. Transport the patient rapidly while maintaining pressure on the presenting part to keep pressure off the cord; monitor pulsations in the cord. (Pulsations should be present.)

EMT BASIC INTERMEDIATE TECHNICIAN – May start I.V. of NS. Titrate I.V. rate to patient's condition to maintain BP greater then 90-100 systolic.

IV. BREACH PRESENTATION –ADVISE MEDICAL CONTROL EARLY
A. Position the patient with her head down in a "knee-chest" position, if at all possible.
B. Administer high flow oxygen and keep patient warm. May apply cardiac monitor.
C. If field delivery is unavoidable—
1. Support presenting part of infant.
2. If infant's face is pressed against the vaginal wall, place a sterile gloved hand in the vagina with the palm toward the infant's face. Form a "V" with the index and middle finger on either side of the infants' nose; and push the vagina away form the infant's face to allow unrestricted respiration.
D. Transport the patient rapidly while maintaining vaginal pressure.

EMT BASIC INTERMEDIATE TECHNICIAN – May start I.V. of NS. Titrate I.V. rate to patient's condition to maintain BP greater then 90-100 systolic.

TREATMENT PROTOCOL – NEONATAL EMERGENCY

I. Following delivery, suction the infant's airway (mouth, oropharynx and then nostrils) before drying the infant.

II. Dry infant by gently rubbing to provide stimulation and to prevent chilling. Keep infant warm.

III. If infant is not breathing or is breathing but has poor color or muscle tone, perform tactile stimulation (rub back or flick the soles of the infant's feet). If infant still does not have adequate respirations or a heart rate > 100, provide assisted ventilation at a rate of 40-60 breaths per minute.

IV. For a heart rate < 60, ventilate with 100 % oxygen and begin chest compressions.

V. CONTACT MEDICAL CONTROL and report.

VI. Consider ALS intercept.

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TREATMENT PROTOCOL—PAIN MANAGEMENT

May consider for any patient suffering from pain.

I. Assess ABC's

II. Place patient in position of comfort

III. Consider applying cold packs

IV. Administer oxygen per cannula/mask

V. CONSULT WITH MEDICAL CONTROL.

VI. Consider ALS for severe pain control—i.e. isolated severe extremity injuries, sickle cell crisis, flank pain consistent with renal colic, back pain from strains.

EMT BASIC INTERMEDIATE TECHNICIAN – May start I.V. of NS at TKO.

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TREATMENT PROTOCOL – PSYCHIATRIC EMERGENCIES

Treat all calls with caution and respect. Speak in a low and calm tone; do not yell. Focus on feelings more that the situation. Do not judge the patient. One EMT should try to stay with the patient at all times. You may want to separate the patient from family or companions.

I. Assess the scene

II. Protect yourself and others (refer to Restraint protocol)

III. Call for law enforcement, if needed

IV. Observe the scene, e.g. hazards used in attempted suicide, weapons or routes of escape

V. Perform primary and secondary assessment
   A. Consider drugs, overdose diabetes, or suicide attempt
   B. Medical history

VI. Treat any injuries according to protocol

VII. Do not leave the patient alone

VIII. Transport in position of comfort with no light or sirens

IX. Involve police if the question arises of patient refusal or need of restraints. Police can place the patient in protective custody if necessary.

X. Be alert for dangers of aspiration with restrained patients, frequently reassess ABCs and mental status.

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TREATMENT PROTOCOL -- PULMONARY EDEMA

This protocol applies to patients in respiratory distress with presumed pulmonary edema of cardiac origin (acute congestive heart failure). This can usually be identified by a combination of patient history and physical exam factors. The patient usually has a history of past heart disease, "heart failure," "fluid in the lungs," etc. These patients commonly have prescribed cardiac medications such as nitroglycerin and furosemide (Lasix®). On physical exam, they are usually in severe respiratory distress, diaphoretic, have a rapid pulse, elevated blood pressure, and typically have obvious rales (crackles) in their lungs. These patients are often critically ill and can rapidly develop respiratory and cardiac arrest. Rapid efficient treatment and prompt transport are a must!

I. Perform initial patient assessment.

II. Position patient in an upright, sitting position or position of comfort.

III. Administer oxygen using a non-rebreather mask. Assist ventilations as necessary.

IV. Apply cardiac monitor. Obtain pulse oximeter reading. Check B/P.

V. Consider referencing CPAP (Continuous Positive Airway Pressure) protocol. Page 43.

EMT BASIC INTERMEDIATE TECHNICIAN – May start I.V. of NS using small bore (18-20) gauge needle at TKO. DO NOT DELAY TRANSPORT.

EMT BASIC INTERMEDIATE TECHNICIAN - Administer Nitroglycerin 0.4 mg spray/tablet sublingual [if SBP > 100 mm/hg] and Aspirin 324 mg. per "Treatment Protocol -- Chest Pain". Recheck B/P in 10 minutes.

VI. CONTACT MEDICAL CONTROL and report.

VII. Consider ALS intercept if patient's condition deteriorates. Recheck blood pressure at five-minute intervals.

VIII. Transport immediately to hospital.

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TREATMENT PROTOCOL -- RESPIRATORY ARREST

I. Perform initial patient assessment. If cardiac arrest, go to Cardiac Arrest protocol.

II. Look for signs of airway obstruction including choking, absent breath sounds, cyanosis, tachypnea, bradycardia, intercostals retractions, stridor or drooling. Remove foreign body obstruction of airway if suspected and if patient is conscious.

III. Open airway with head tilt/chin lift method if no spinal trauma is suspected, or use the modified jaw thrust if spinal trauma is suspected if patient is unconscious. Remove obstruction if present and attempt ventilations using a pocket mask or bag-valve-mask with supplemental oxygen. If no gag reflex present, insert an oropharyngeal or nasapharyngeal airway adjunct.

IV. If patient is apneic (no respirations) and ventilation not effective with bag-valve-mask and patient has tolerated an oral airway, insert Combitube®, ventilate with 100% oxygen.

EMT-BASIC INTERMEDIATE TECHNICIAN - If narcotic overdose suspected (e.g., bystanders give such a history), administer 2 mg of Naloxone (2 cc.) as outlined in the Naloxone protocol.

Check blood sugar with blood glucose monitor. If blood sugar less then 60, treat hypoglycemia with I.V. D5W, IM Glucagon or 50% Dextrose, as outlined in the Altered Level of Consciousness protocol.

V. CONTACT MEDICAL CONTROL, REPORT AND OBTAIN FURTHER ORDERS

VI. Consider ALS intercept.

VII. Transport to hospital immediately, monitoring patient closely.

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TREATMENT PROTOCOL -- RESPIRATORY DISTRESS
CROUP/EPIGLOTTIS IN INFANT/CHILD

An infant or child who presents with acute respiratory distress accompanied by fever, drooling, hoarseness, stridor and tripod positioning may have a partial airway obstruction. **Do nothing to upset the child.** Do not attempt any procedures or maneuvers (including examination of oropharynx) which may increase the child's anxiety and thereby cause laryngospasm, unless absolutely necessary to preserve the airway. **Consider keeping the child on care provider's lap.**

I. Perform critical assessment only. Do not upset the infant/child. Let care provider handle child.

II. Ensure patent airway, when assessing the ABC's.

III. Administer blow-by oxygen. Can be done by care provider.

IV. Have care provider place in position of comfort.

V. **Do not attempt vascular assess.**

VI. Transport immediately if suspected epiglottis or severe respiratory distress is evident. Consider no "red lights and sirens".

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TREATMENT PROTOCOL – SEIZURES

I. Ensure patient airway. **Do not place anything in patient's mouth.**

V. Administer 100% oxygen via NRM and/or ventilate PRN.

VI. Observe seizure activity and note length of time of seizure, body parts that are included and type of activity of motion. Note and record any other signs of seizure activity including length of tonic phase, tonic-clonic phase and post-ictal phase. If a seizure lasts for more than 10 minutes, consider inserting a nasopharyngeal airway and begin positive pressure ventilation with positive pressure breathing with supplemental oxygen. If patient is still seizing protect them from injury; do not attempt to restrain.

VII. Apply cardiac monitor if possible, apply 12 lead EKG enroute if able and then transmit.

VIII. If seizure is finished, place patient in left lateral recumbent position.

IX. Perform spinal immobilization as necessary.

X. Perform blood glucose test. Follow protocol for Altered Level of Consciousness.

EMT BASIC INTERMEDIATE TECHNICIAN – May start I.V. of NS at TKO.

VIII. CONTACT MEDICAL CONTROL AND REPORT.

IX. Consider ALS intercept for two or more successive seizures without patient waking up between or seizures lasting greater than five minutes.

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TREATMENT PROTOCOL – SHOCK, HYPOTENSION AND HEMORRHAGE

This protocol includes patients with nontraumatic hemorrhage and includes GI bleeding, significant hemoptysis, major nosebleeds, etc.

I. Perform initial patient assessment.

II. Ensure patent airway. Administer 100 % oxygen via NRB.

III. Assess LOC, peripheral pulses and capillary refill.

IV. Apply cardiac monitor.

V. Control hemorrhage if able.

VI. Monitor pulse oximeter.

VII. Place patient in Trendelenburg position if possible.

EMT BASIC INTERMEDIATE TECHNICIAN – Start I.V. of NS using large bore needle. Titrate I.V. rate to patient's condition to maintain BP greater then 90-100 systolic. If time permitting, consider second I.V, preferably in the same arm. DO NOT DELAY TRANSPORT.

VIII. Consider PSAG.

IX. CONTACT MEDICAL CONTROL and consult.

X. Consider ALS intercept for patients with SBP < 90 or demonstrating signs of decompensated shock (i.e. elevated pulse rate above 130 and cool moist skin)

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TREATMENT PROTOCOL – STROKE/CEREBRAL VASCULAR ACCIDENT

I. Ensure patent airway. Administer oxygen per protocol.

II. Determine any history of hypoglycemia, seizure or migraine that may have preceded this event.

III. Perform Cincinnati Pre-Hospital Stroke Scale:
- A. Assess for facial droop: have the patient show teeth or smile
  1. Normal—Both sides of face move equally
  2. Abnormal—One side of face does not move at all
- B. Assess for arm drift: have the patient close eyes and hold both arms straight out for 10 seconds.
  1. Normal—Both arms move equally or not at all
  2. Abnormal—One arm drifts compared to the other
- C. Assess for abnormal speech: have the patient say, "you can't teach an old dog new tricks"
  1. Normal—Patient uses correct words with no slurring
  2. Abnormal—Slurred or inappropriate words or mute

IV. ALERT MEDICAL CONTROL OF SITUATION, so stroke team can be notified. Relay results of Cincinnati Pre-Hospital Stroke Scale evaluation and how long ago event occurred.

V. Perform blood glucose test. Follow protocol for Altered Level of Consciousness.

EMT BASIC INTERMEDIATE TECHNICIAN – May start I.V. of NS at TKO.

VI. Transport as expeditious as possible. May transport with head elevated 15° if not precluded by other injuries or hypotension. Protect paralyzed limbs.

VII. Record results of Cincinnati Pre-Hospital Stroke Scale on ambulance report form.

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