

ALS MEDICAL PROTOCOLS
FOR ADULT PATIENTS
HENNEPIN COUNTY EMS SYSTEM

Effective: March 1, 2000

Approved December 9, 1999
By the Hennepin County EMS Advisory Council

TABLE OF CONTENTS

ADULT PROTOCOLS

Page

- Suspected MI8
- Suspected Pulmonary Edema..... 10
- Cardiogenic Shock/Pump Failure 11

Arrhythmias Associated with Myocardial Ischemia:

- PVC's 12
- Bradyarrhythmias 12
- Narrow-Complex Tachycardia..... 14
- Ventricular Tachycardia – Perfusing..... 15

Cardiac Arrest States:

- Ventricular Fibrillation and Tachycardia..... 16
- Asystole 18
- All Other Pulseless Electrical Activity (PEA) 19
- Special Situations/Considerations 20

Part III:

MEDICAL EMERGENCIES

- Non-Traumatic Shock..... 21
- Anaphylaxis 21
- Asthma Attack..... 22
- COPD – Acute Exacerbation 24**
- All Other Respiratory Distress 24
- Status Seizures 24
- Unconsciousness – Unknown Etiology 25
- Symptomatic Known Diabetic 25
- Drug Overdose 26
- Suspected CVA 26
- Suspected Carbon Monoxide Poisoning 27
- Symptomatic Renal Patient..... 27

continued next page

TABLE OF CONTENTS (Continued)

	<u>Page</u>
Part IV:	TRAUMATIC EMERGENCIES
	Standing Orders for All Trauma Patients28
	General Trauma/Traumatic Shock29
	Head and Spine Injuries.....30
	Amputations.....30
Part V:	OTHER EMERGENCIES
	Hypothermia31
	Hyperthermia31
	Burns32
	Chemical Eye Injuries33
	Behavioral Emergencies33
	Severe Nausea or Vomiting33
Part VI:	OBSTETRICS
	Normal Labor and Delivery33
	Obstetric Complications34
PEDIATRIC PROTOCOLS (see separate table of contents)	
APPENDICES:	Appendix A: ALS Procedures, Equipment and Drug Lists
	Appendix B: Endotracheal Intubation
	Appendix C: Rapid Sequence Intubation
	Appendix D: Surgical Airways
	Appendix E: Nitronox Administration
	Appendix F: DNR Guidelines Document and Standard Form
	Appendix G: ICD Emergency Management
	Appendix H: Transcutaneous/External Cardiac Pacing
	Appendix I: Intraosseous Infusion
	Appendix J: System Plan for Multiple Casualty Incident

PART I. GENERAL GUIDELINES

1. These Medical Protocols apply to adult patients age 18 and over.
2. Remember: Courtesy to the patient, the patient's family and other emergency care personnel is of utmost importance.
3. A Hennepin County EMS System ambulance report form must be completed on all patients and a copy left with the patient at the hospital. Specific prehospital care information must also be recorded on all patient contacts as part of the System data collection program.
4. The specific conditions listed for treatment in this document, although frequently stated as medical diagnoses, are merely operational diagnoses to guide the paramedic in initiating appropriate treatment. The medical control physician, when consulted, will either concur or further evaluate the paramedic's clinical findings and suggest an alternate diagnosis and treatment.
5. In all circumstances, physicians have latitude in the care they give and may deviate from these Medical Protocols if it is felt such deviation is in the best interest of the patient. Nothing in these protocols shall be interpreted as to limit the range of treatment modalities available to medical control physicians to utilize, other than the modalities and the medications used must be consistent with the paramedic's training.
6. **MEDICAL CONTROL:** A medical control physician should be contacted as specified in these protocols. Whenever possible, medical control should be obtained from the hospital of destination requested by the patient. Medical control as required by protocol for cardiac and other non-trauma patients should be established without delay upon completion of necessary ALS procedures. If no request for medical control has been made before three minutes from hospital arrival, patient information only should be communicated (for hospital notification) in lieu of medical control. Except for load-and-go situations with short transport times, any such delay in establishing medical control will be explained in a System Incident Report submitted by paramedics to their medical director and to the ~~System Quality Improvement Officer~~ Community Health Department. This policy in no way precludes establishment of medical control at any time during the run to obtain physician advice or assistance.
7. **MEDICAL CONTROL COMMUNICATIONS FAILURE:** In the occurrence of communication failure, paramedics may perform those orders outlined in the ALS Medical Protocols under "After Obtaining Verbal Orders" for patients with life-threatening or potentially life-threatening conditions. Initiation and performance of these orders must be in accordance with the paramedic's training and must be carried out as written in these Medical Protocols. Any instance of communications failure where procedures are carried out without a physician's verbal order must be reported in a System Incident Report within 48 hours to the paramedic's medical director and to ~~the System Quality Improvement Officer~~ Community Health Department.

8. **PHYSICIAN PRESENCE AT THE EMERGENCY SCENE:**

- A. If the patient's personal physician is present and wishes to assume responsibility for the patient's care:
- 1) The paramedic should defer to the orders of the personal physician as long as those orders are appropriate and not in conflict with ALS Medical Protocols. (Paramedics should establish radio medical control any time they are uncomfortable with carrying out orders from a patient's physician.)
 - 2) Orders given by the personal physician should be written on the EMS report form and signed by the physician.
 - 3) The paramedic should contact the medical control physician during transport to report treatment given and to obtain further orders if the personal physician does not accompany the patient.
- B. If a System ALS Medical Director or medical control physician is present and wishes to assume responsibility for the patient's care, the same guidelines apply as in (A) above.
- C. If any other intervening physician wishes to assume responsibility for the patient when no radio medical control exists, the paramedics should relinquish responsibility for patient management if the physician:
- 1) can show appropriate identification (or is known to the paramedics); and
 - 2) agrees in advance to accompany the patient to the hospital (exception: major multiple casualty incident); and
 - 3) signs the EMS report form assuming responsibility and verifying orders.
- If radio medical control exists, the intervening physician should be allowed to communicate with the medical control physician prior to the paramedics accepting orders. If there is any disagreement between the two physicians, the paramedics will follow the orders of the medical control physician and allow the physicians to continue their communication.
 - In the case of multiple intervening physicians at the scene, the paramedics should request the physicians designate one physician to direct patient care.
- D. An intervening physician not wishing to assume responsibility for care and accompanying the patient to the hospital may be asked to assist the paramedics and/or act as a medical consultant to them and to the medical control physician.

9. **PATIENT CONSENT AND REFUSAL:** Whenever an ambulance is requested for a patient, it is the responsibility of the EMS system to treat and transport that patient with his/her consent. Transport by ambulance should always be offered to a patient. If a competent patient or parents of a minor refuse treatment or transportation, they should sign the refusal statement on the ambulance report form. If they refuse to sign, this should be documented, including witnesses' names if possible. In general, a person is mentally competent if he/she:

- 1) is capable of understanding the nature and consequences of the proposed treatment; and,
- 2) has sufficient emotional control, judgment, and discretion to manage their own affairs.

Emergency care for life-threatening conditions should never be delayed or withheld to carry out legal consent procedures. Any time contact with the patient occurs and the patient is not transported, the run is a "left," not a "cancel," and requires full documentation of all sections of the ambulance report form including what the patient (or parent) was told at the scene regarding non-transport and any other follow-up advice or information given at the scene.

Adults: A mentally competent adult has the right to refuse treatment and/or transport; however, the paramedic and/or medical control physician (by phone or radio) should explain thoroughly the alternatives and potential consequences of this action. A medical control physician should always be consulted if in doubt as to the mental competency of a patient, or if the paramedic feels it is detrimental to leave the patient.

Minors: Consent or refusal of treatment/transport of minors (less than 18 years) must be given by the child's parent or legal guardian. Although less desirable, consent or refusal may be given by a responsible adult (over 18) caretaker if the parent has deliberately left the minor in the care of this adult, and the adult is competent and capable. If unsure whether it is appropriate to allow someone to give consent or refuse treatment of a minor, a medical control physician should be consulted.

10. **EQUIPMENT:** All equipment appropriate to the nature of the call for assessment, treatment and transport should be taken to the site of the patient at the time of initial patient contact. A list of required and optional permitted equipment for the Hennepin County EMS System is found in Appendix A.

11. **AIRWAY MANAGEMENT:**

A. Airway Devices:

Oropharyngeal or nasopharyngeal airway insertion should be attempted on all unconscious patients for airway maintenance.

Esophageal obturator airways and Combitubes are to be inserted **only** in apneic patients unless ordered verbally by the medical control physician or, if authorized by the ALS medical director, in patients with Glasgow Coma Score <8 who cannot be endotracheally intubated. The EOA should be used with caution in trauma patients (see Traumatic Emergencies section).

Endotracheal intubation is not a required procedure but is sanctioned in the Hennepin County EMS System for various categories of patients. Endotracheal intubation is to be performed only by paramedics trained and authorized to intubate and only for those types of patients specified by the ALS Medical Director. Endotracheal intubation shall be performed in accordance with the information and protocol contained in Appendix B and consistent with other protocols in this document.

Other airway interventions not required but sanctioned by the System are rapid sequence endotracheal intubation and the establishment of surgical airways (i.e., transtracheal needle ventilation and cricothyrotomy) for patients that cannot be ventilated by any other means. These interventions must be authorized by a service's ALS Medical Director and shall be performed in accordance with the information and protocols contained in Appendices C and D.

B. Adjunctive Airway Equipment:

- End-tidal CO₂ monitoring: An end-tidal carbon dioxide (CO₂) detector may be used (but is not required) to accomplish confirmation of endotracheal tube placement and is most reliable in patients with spontaneous circulation. This device often is not able to detect CO₂ in cardiac arrest patients due to extremely low blood flow to the lungs.

- Pulse oximetry: A pulse oximeter may be used (but is not required) for any patient with suspected hypoxemia, in respiratory distress, or whenever sedating medications are administered. Obtaining a normal pulse oximetry reading does not negate the need for oxygen therapy as specified in these protocols.

C. Drug Administration By Inhalation or Via the Airway:

Nitronox, oxygen and albuterol sulfate are the prehospital drugs administered by inhalation. Of the three, Nitronox is not a required drug, but is sanctioned for use in the Hennepin County EMS System. It may be used to treat pain of many varieties including non-traumatic headache, back pain, isolated musculoskeletal trauma, burns not involving the face or respiratory tract and other medical conditions such as kidney stones and third trimester labor. Paramedics trained and authorized by their ALS Medical Director to administer Nitronox shall do so in accordance with the information and protocol contained in Appendix E of this document.

Oxygen therapy should be administered in accordance with the following guidelines:

- If patient has no history of COPD, oxygen should be administered by mask at a minimum of 10 liters per minute or, if intolerant of mask, by nasal cannula at 4-6 liters per minute.
- If patient has a history of COPD, use a nasal cannula at 2-3 liters per minute initially. Oxygen may need to be increased if the patient's respiratory status worsens.
- Patients with suspected pulmonary burns or CO toxicity should receive oxygen by partial rebreather mask for the highest possible oxygen delivery.

Drugs that may be administered via the tracheobronchial tree by injection into an endotracheal tube are narcan, atropine, epinephrine and lidocaine. This drug administration route may be used in cardiac arrest whenever an endotracheal tube has been placed and venous access is delayed or impossible. Medications via the ET route should be administered at twice the IV dose and should be diluted with sterile normal saline or water to a volume of at least 10 ml. A suction catheter should be passed beyond the tip of the endotracheal tube, chest compressions stopped and the drug solution quickly injected into the catheter. This should be followed by several quick ventilations to aerosolize the medication before resuming chest compressions.

12. **IV THERAPY:** If IV access cannot be established rapidly at the scene (in two attempts) in patients with non-traumatic problems, begin transport to the hospital. Further IV attempts can be made during transport, provided all other necessary treatment is being done. There should be no delay at the scene for IV attempts on trauma patients or patients in shock--these IV's should be started during transport.

For most patients, the paramedic has the option of either running fluids through the IV or capping the catheter with a saline lock. However, as specified in these protocols, IV fluids must always be hung in situations:

- 1) when the administration of multiple IV medications is anticipated; and
- 2) whenever it is likely the patient will require fluid volume replacement.

At the paramedic's discretion, a saline lock may be established any time it is felt IV access will be needed.

13. **LIMITING RESUSCITATION**: Cardiopulmonary resuscitation will be promptly instituted for all patients found in cardiac arrest unless a) reliable criteria for the determination of death are present, or b) a valid DNR or No CPR order exists.

A. Reliable criteria for the determination of death include:

- lividity
- rigor
- obviously fatal trauma
- absence of vital signs in a trauma victim upon arrival of EMS personnel despite a patent airway

B. Do Not Resuscitate (DNR, No CPR) orders are orders issued by a patient's physician to refrain from initiating resuscitative measures in the event of a cardiopulmonary arrest. Patients with DNR orders may receive vigorous medical support, including all interventions specified in the ALS Medical Treatment Protocols, up to the point of cardiopulmonary arrest.

In the nursing home, a DNR order is valid if it is written in the order section of the patient chart (or on a transfer form) and is signed by a physician. Copies of the order are valid. In a private home, the standard DNR form (See Appendix F) must be signed by the patient or proxy, the physician, and a witness in order to be valid. No validation stamp or notarization is necessary, and a legible copy is acceptable.

If possible, the DNR order or copy should accompany the patient to the hospital. Pertinent documentation should be included on the ambulance report form for the run. In the event of confusion or questions regarding the DNR order, resuscitation should be initiated and a medical control physician should be consulted.

Living wills should not be interpreted at the scene, but conveyed to the physicians in the receiving Emergency Department.

Complete DNR guidelines for ambulance services operating within Hennepin County are found in this document in Appendix F.

14. **PATIENT DISPOSITION**: Patients should be transported to the hospital of their choice (or family's or physician's choice) unless the gravity of the patient's condition warrants transport to the nearest hospital capable of immediately handling the emergency. The decision to transport to the nearest facility or the decision to change destination en route is ultimately the responsibility of the medical control physician. However, in the case of critical trauma, the paramedic may independently decide to divert to the nearest hospital appropriate for major trauma* if the patient meets the following trauma triage criteria:

- systolic blood pressure less than 85; or
- Glasgow motor score less than 5 (no purposeful movement in response to pain); or
- penetrating trauma to head, neck or trunk.

Whenever circumstances are such that the paramedic must make a diversion decision independently, a medical control physician must be advised of the action as soon as possible. Paramedics will communicate all orders/decisions to divert to the MRCC operator who will notify the hospital not receiving the patient. The medical control physician is still responsible for explaining the medical rationale for the diversion to the non-receiving hospital.

*Major trauma receiving hospitals are Fairview Southdale Hospital, Hennepin County Medical Center, Mercy Medical Center, **Methodist Hospital**, North Memorial Medical Center, Ridgeway Medical Center, St. Francis Medical Center, and Unity Medical Center.

15. **INFECTIOUS DISEASE PRECAUTIONS:**

A. Exposure to blood should be minimized.

When the possibility of exposure to blood or other body fluid exists, gloves are required. During extrication, or when broken glass is present, leather gloves or fire fighter gloves should be used. If hands accidentally become contaminated with blood, they should be washed thoroughly as soon as possible.

When there is risk of eye or mouth contamination (for example, the patient is vomiting bloody material or there is arterial bleeding), protective eye wear and masks are required.

- B. Needles and other sharp objects should be considered as potentially infective and be handled with extraordinary care. Needles should not be recapped. If it is absolutely necessary to recap a needle, use the appropriate technique prescribed by local EMS policies. Needles, syringes and broken glass vials should be immediately placed in puncture-proof containers after use.
- C. Pocket masks with one-way valves or positive pressure ventilators should be used for artificial respiration whenever possible. Masks should be worn by the paramedic or patient (See D) for those infectious agents known to be transmitted by the airborne route (i.e., tuberculosis, chicken pox, measles, etc.).
- D. Sufficient information should be obtained to determine if a patient may have active tuberculosis (TB), recent history of TB, HIV infection, fever, recent weight loss or cough. If there is a history suggestive of active TB, paramedics should wear masks compatible with OSHA guidelines and take other specific precautions in accordance with their individual ambulance service Respiratory Protection Plan. Albuterol nebulizations should not be administered in the ambulance to patients with a history or symptoms suggestive of active TB; subcutaneous terbutaline or epinephrine should be considered instead. Ventilation should be maximized in the patient compartment during transport of patients known to have active tuberculosis.
- E. Equipment should be thoroughly cleaned per protocol after each use. Disposable equipment should be considered for use whenever appropriate.
- F. In the event of significant exposure to blood or body fluids, supervisory personnel should be promptly informed.
- G. Significant exposure is defined as follows:
- Any puncture of the skin by a needle or other sharp object that has had contact with patient's blood or body fluids or with fluids infused into the patient.
 - Blood spattered onto mucous membranes (e.g. mouth) or eyes.
 - Contamination of open skin (cuts, abrasions, blisters, open dermatitis) with blood, vomitus, saliva, amniotic fluid or urine. Bite wound to providers would be included in this category.
- H. Local ambulance service policies should define a plan of action in the event of a significant exposure of an emergency responder to blood or body fluids.

16. **HAZARDOUS MATERIALS RESPONSE:**

- A. When working at a Hazardous Materials Incident, Hennepin County EMS System paramedics should station themselves in the Haz Mat cold zone. Paramedics should operate in the cold zone unless they have adequate training and personal protective equipment for operation in the warm zone.
- B. Patients who have been exposed to a hazardous material should be appropriately decontaminated by qualified personnel. Considerations during decontamination should include:
 - 1) Weather and other limiting elements.
 - 2) The patient's level and severity of exposure.
 - 3) Condition of the victim. Transport those patients who cannot wait for a complete decontamination due to life-threatening injuries or condition.
 - 4) No invasive procedures without medical control orders, unless the patient is critical.
 - 5) Contaminated patients being transported for further evaluation or treatment need to be appropriately cocooned to contain any remaining contaminants, and paramedics should limit exposure to themselves using appropriate available protective equipment.
- C. Early hospital notification is important to allow appropriate preparation for the patient.

17. **RESPONSE TO MULTIPLE CASUALTY INCIDENTS:** In special incidents with potential for multiple casualties, resources of the EMS System may be temporarily overwhelmed or extended to their limits. A System Plan for EMS Response to Multiple Casualty Incidents establishes a framework for coordinating resources during incidents requiring various ambulance providers, hospitals and public safety agencies to work together to optimize patient care and transportation with the given resources of the community. The goals of the system plan are to:
- 1) Recognize and maintain operations of ambulance providers, hospitals, and other agencies as close to normal as possible;
 - 2) Utilize the incident command structure to allow flexibility for effective response to a variety of hazards most likely to occur within the County, including natural disaster, hazardous material exposure, urban fire, air crash, civil unrest or any incident with actual or potential multiple casualties; and
 - 3) Set system standards to aid individual agencies when developing policies and procedures.

See Appendix J for details of the System Plan for Multiple Casualty Incidents.

18. **PEER COUNSELING AND CRITICAL INCIDENT STRESS DEBRIEFING:** Paramedics and other EMS personnel are encouraged to familiarize themselves with the causes and contributing factors of critical incident and cumulative stress, and learn to recognize the normal stress reactions that can develop from providing emergency medical services.

A Metro Region CISD/Peer Counseling Program is available to paramedics and other EMS personnel. The program consists of mental health professionals, chaplains and trained peer support personnel who develop stress reduction activities, provide training, conduct debriefings, and assist EMS personnel in locating available resources. The team will provide voluntary and confidential assistance to those wanting to discuss conflicts or feelings concerning their work or how their work affects their personal lives.

PART II. CARDIAC EMERGENCIES

A. STANDING ORDERS FOR ALL CARDIAC PROBLEMS:

1. Talk to patient and reassure to decrease anxiety. Place at rest on stretcher with head elevated 30 degrees or in position of comfort.
2. Elicit patient history*, i.e., chief complaint, history of present illness, pertinent past medical history, medications, allergies, pacemaker or automatic implantable cardiac defibrillator (ICD).

** History-taking to be done concurrently with the following steps:*

3. Begin oxygen therapy per general guidelines:
4. Perform the following expeditiously:
 - Obtain vital signs and estimate of patient's weight;
 - Perform appropriate physical exam to include lung auscultation and observation for jugular vein distention and dependent edema.
 - Establish IV access using intracath needle connected to either a saline lock or a 250 ml bag of normal saline with minidrip administration set, run to keep vein open (TKO). If IV cannot be started after two attempts, begin transport.
 - Attach ECG chest leads and obtain tracing of initial rhythm.
5. If indicated, assess patient for proper functioning of pacemaker or ICD (See Appendix G).
6. When medical control indicated, establish ASAP.

B. SPECIFIC CONDITIONS:

1. Suspected MI:

Patients with any of the following chief complaints or presenting problems should be treated as a suspected MI unless ordered otherwise. If in doubt, contact physician and discuss case:

Chest pain or pressure in any patient over age 30

Syncopal episode in any patient over age 50 (without suspicion of stroke)

Atypical cardiac pain, i.e., shoulder, arm, or jaw pain in absence of chest pain (especially in patient with past cardiac history)

Acute onset fatigue, SOB or diaphoresis in patient with past cardiac history (especially elderly)

Unexplained respiratory distress

(continued next page)

STANDING ORDERS	AFTER OBTAINING VERBAL ORDERS
-----------------	-------------------------------

Suspected MI (continued):

- a) Begin standing orders for cardiac problems. Do not delay nitro to establish IV access.
- b) For cardiac pain, administer nitroglycerin 0.4 mg S.L. tablet or spray if patient's systolic BP 110 or greater. Check BP immediately prior to and after administration.
- c) If symptoms completely relieved by O₂, by one nitro or by interventions of PMD at scene, may proceed with transport without med control physician contact.
- d) For any suspected MI, **even in absence of chest pain**, administer a 325 mg aspirin if no history of allergy.
- e) Establish IV access. If patient has been loaded in the ambulance without IV access, begin transport promptly, with IV and all other interventions performed en route.
- f) If no relief from nitro and patient's SBP remains 110 or greater, may repeat nitro every five minutes X2. Recheck BP before and after administration.
- g) Establish med control physician contact after second nitro. May administer third nitro while awaiting contact.
- h) Expedite interventions and transport if patient unresponsive to nitro and potential candidate for thrombolytic therapy.

- i) For persistent pain, give morphine sulfate 4-10 mg IV **slowly**. Administer enough to obtain pain relief. (Use caution in presence of COPD)
- j) Consider magnesium sulfate 1 Gm diluted to 10 ml with N.S. or sterile H₂O and given IV push over 1 min.
- k) Treat arrhythmias as needed. (See Part C- Arrhythmias Associated with Myocardial Ischemia.)

(continued next page)

STANDING ORDERS	AFTER OBTAINING VERBAL ORDERS
<p>Suspected MI (continued):</p> <p>1) If patient potential candidate for thrombolytic therapy, assure following info has been communicated to receiving E.D. prior to arrival:</p> <ul style="list-style-type: none"> • patient age/sex • vital signs • pain - time of onset & response to nitro • any Hx recent surgery or trauma • any Hx bleeding problems • any CNS disease • Hx of previous lytic therapy • Pregnancy <p>Consider requesting diversion if difference in transport times to requested hospital vs. closest hospital is >30 minutes.</p>	<p>m) If patient potential candidate for thrombolytic therapy, consider diversion if difference in transport times to requested hospital vs. closest hospital is > 30 minutes.</p>
<p>2. Suspected Pulmonary Edema:</p>	
<p>Condition characterized by tachypnea, labored respirations, anxiety and agitation, fatigue, rales, JVD, possible peripheral edema, frothy sputum and/or cyanosis. Condition attributed to cardiac pump problem versus heart rate problem, volume problem or respiratory disease.</p>	
<p>a) Begin standing orders for cardiac problems. Do not delay nitro to establish IV access.</p> <p>b) Keep head elevated at all times. Begin oxygen therapy. If respiratory distress severe, consider positive pressure ventilatory assist if patient able to tolerate. Consider ET intubation, if authorized, if patient's ventilations ineffective or Glasgow Coma Score < 8.</p> <p>c) Monitor ECG closely for dysrhythmias secondary to hypoxia.</p> <p>(continued next page)</p>	

STANDING ORDERS	AFTER OBTAINING VERBAL ORDERS
<p>Suspected Pulmonary Edema (continued)</p> <p>d) Give nitroglycerin 0.4 mg S.L. tablet or 1 spray if systolic BP 140 or greater. (Consult with med control physician if SBP <140 and check BP immediately prior to and after each nitro administration.</p> <ul style="list-style-type: none"> • 2 minutes after initial dose, repeat nitroglycerin 0.4 mg S.L. or 1 spray if patient still has signs of pulmonary edema and systolic BP remains 140 or greater. • 5 minutes after second dose, repeat nitroglycerin 0.4 mg S.L. or 1 spray if patient still has signs of pulmonary edema and systolic BP 140 or greater. <p>e) Contact med control physician for further orders.</p>	<p>f) Consider additional doses of nitroglycerin as drug of choice.</p> <p>g) Consider Lasix 40 mg IV.</p> <p>h) Consider nebulized albuterol 2.5 mg en route for bronchospasm.</p>
<p>3. Cardiogenic Shock/Pump Failure:</p> <p>a) Suspect when myocardial ischemia symptoms accompanied by hypotension/shock symptoms in the absence of major dysrhythmias.</p> <p>b) Begin standing orders for cardiac problems.</p> <p>c) Contact med control physician for orders.</p>	<p>d) Treatment based on patient history and physical exam findings.</p>

STANDING ORDERS	AFTER OBTAINING VERBAL ORDERS
-----------------	-------------------------------

C. ARRHYTHMIAS ASSOCIATED WITH MYOCARDIAL ISCHEMIA:

1. PVC's:

- a) Always consider a treatable cause such as bradycardia or hypoxia.
- b) If PVC's thought to be secondary to myocardial ischemia, contact med control physician.

- c) Give Lidocaine 1.0-1.5 mg/kg (70 kg = 70 - 100 mg) IV over two minutes (assuming adequate sinus rate). Repeat 0.5-0.75 mg/kg (70 kg = 35- 50 mg) slowly IV every 5-10 min. to a total dose of 3 mg/kg (70 kg = 200 mg). Use 1/2 Lidocaine dose (0.5-0.75 mg/kg) if patient's age over 70 or if CHF or hepatic failure present.

2. Bradyarrhythmias (primary pacemaker rate less than 60):

- a) Always consider a treatable cause such as hypoxia.
- b) Assess for the following signs or symptoms related to bradycardia:
 - systolic BP less than 90 or other evidence of shock
 - altered level of consciousness
 - dyspnea
 - chest pain
 - ventricular escape beats or rhythm
- c) If patient asymptomatic:
 1. Perform standing orders for cardiac problems.
 2. Monitor BP and ECG closely during transport.
 3. Continue to assess patient for symptomatic bradycardia.
 4. (continued next page)

STANDING ORDERS	AFTER OBTAINING VERBAL ORDERS
<p>Bradyarrhythmias (continued):</p> <p>d) If patient symptomatic (including a systolic BP<90):</p> <ol style="list-style-type: none"> 1. Give atropine 0.5 mg IV while preparing transcutaneous pacer, if available. 2. If patient also has decreased LOC, begin transcutaneous pacing as soon as ready - do not delay for IV. (See Appendix H) <ul style="list-style-type: none"> • Set initial rate at 80. • Increase milliamp setting slowly up from zero until capture evident – usually between 40-80 mA. • If sedation necessary and IV access already established, may give Versed up to 3 mg IV. <p>e) If patient is pulseless and bradycardic, treat according to cardiac arrest protocol for PEA.</p> <p>f) Contact med control physician for further orders on all symptomatic patients.</p>	<p>g) Repeat atropine 0.5-1.0 mg as necessary, up to total of 3 mg.</p> <p>h) For bradycardia unresponsive to Atropine, consider:</p> <ul style="list-style-type: none"> • Transcutaneous pacing, if available and not already initiated; • Epinephrine 1:10,000 titrated in 0.05-0.1 mg/min. (0.5-1 ml) increments to increase rate, BP.

STANDING ORDERS	AFTER OBTAINING VERBAL ORDERS
<p>3. Narrow -Complex Tachycardia: Includes the following rhythms:</p> <ul style="list-style-type: none"> • PSVT • Atrial Fibrillation • Atrial Flutter <p>a) Assess for the following signs or symptoms related to tachycardia:</p> <ul style="list-style-type: none"> ▪ Palpitations and anxiety ▪ Chest pain ▪ Dyspnea ▪ Systolic BP less than 90 or other evidence of shock ▪ Pulmonary congestion or CHF ▪ Decreased capillary refill <p>b) If heart rate <150 and/or patient without serious signs and symptoms, monitor BP and ECG closely and transport.</p> <p>c) If heart rate 150 or greater and patient has decreased LOC, systolic BP less than 90 or evidence of shock, perform synchronized cardioversion at 50 joules. Note: If patient alert and IV access already established, may give midazolam HCL (Versed) up to 3 mg for sedation. Contact med control physician for further orders.</p> <p>d) For PSVT only:</p> <ul style="list-style-type: none"> ▪ May attempt Valsalva's maneuver while recording rhythm strip. ▪ If heart rate 150 or greater and patient has signs and/or symptoms of cardiac ischemia or poor perfusion, give adenosine 6 mg RAPID IV push (over 1-3 sec.) followed by a normal saline flush. <p>e) If PSVT and no response to initial adenosine, may repeat at dose of 12 mg RAPID IV push followed by a normal saline bolus.</p> <ul style="list-style-type: none"> ▪ Contact med control physician for further orders for symptomatic PSVT. 	<p>f) For significant or progressive decompensation, consider synchronized cardioversion at 50/100/200/300/360 joules. May premedicate with Versed or Morphine if patient conscious.</p>

STANDING ORDERS	AFTER OBTAINING VERBAL ORDERS
-----------------	-------------------------------

4. **Ventricular Tachycardia - Perfusing (intermittent or sustained):**

If patient conscious:

- a) Administer Lidocaine 100 mg (1.0-1.5 mg/kg) IV over 2 min. while contacting med control physician. (Use 1/2 dose, i.e., 50 mg if patient's age over 70 or if CHF or hepatic failure present.)
- b) Contact med control physician for further orders.

- c) If converted with Lidocaine, repeat 0.5-0.75 mg/kg (70 kg = 35-50 mg) every 5 min to total dose of approximately 3mg/kg (70 kg = 200 mg). Use 1/2 Lidocaine dose if patient's age over 70 or if CHF or hepatic failure present.
- d) If not converted and patient deteriorating, consider synchronized cardioversion at 100 joules initially. May premedicate with Versed or Morphine if patient conscious.

If patient unconscious or SBP <90:

- a) Perform cardioversion (synchronized or unsynchronized) at 100 joules. **Note:** If patient alert and IV access already established, may give midazolam HCL (Versed) up to 3 mg IV for sedation. Do not delay cardioversion for IV.
- b) Administer Lidocaine 100 mg (1.0-1.5 mg/kg) IV (use 1/2 dose, i.e., 50 mg if appropriate).
- c) Contact med control physician for further orders

- d) Further cardioversion at higher energy and further Lidocaine as indicated.

D. CARDIAC ARREST STATES:

General Guidelines:

- ◆ *The following three protocols outline interventions for cardiac arrest based on the patient's ECG rhythm. Sections of more than one protocol may need to be utilized for the patient who changes ECG rhythms during the course of resuscitation.*
- ◆ *If at any time during resuscitation a patient develops ventricular fibrillation, the VF/VT protocol should be initiated.*
- ◆ *After multiple rhythm changes and appropriate standing order interventions, medical control physician contact should be established.*
- ◆ *In the absence of extenuating circumstances, medical control contact should be made prior to transporting a patient in continued arrest.*

1. Ventricular Fibrillation and Tachycardia:

STANDING ORDERS	AFTER OBTAINING VERBAL ORDERS
<p>a) Institute or continue CPR.</p> <p>b) Immediately defibrillate up to 3 times in rapid succession at 200 J, 200 J, and 360 J.</p> <p>c) If defibrillation results in perfusing rhythm:</p> <ol style="list-style-type: none"> 1. Obtain IV access and perform other cardiac standing orders. 2. If ECG normal sinus rhythm or sinus tachycardia, may administer Lidocaine 100 mg (1.5 mg/kg) IV over 2 min. or 200 mg ET while contacting med control physician. Use 1/2 dose (i.e., 50 mg) if patient's age over 70 or if CHF or hepatic failure present. <p>e) If defibrillation results in asystole or PEA, proceed with respective protocols for these rhythms (pages 18 & 19).</p> <p>f) If patient fibrillates again after successful rhythm conversion, resume protocol for ventricular fibrillation.</p> <p>g) If patient remains in VF after initial defib attempts, perform CPR and:</p> <ol style="list-style-type: none"> 1. Insert EOA, Combitube, or ET tube. 2. Obtain IV access and hang N.S. 3. Give 1 mg Epinephrine 1:10,000 IV or 2 mg ET if no IV possible. 4. Defibrillate X1 at 360 J. <p>(continued next page)</p>	<p>d) If sinus rate adequate, repeat Lidocaine 0.5-0.75 mg/kg (70 kg = 35-50 mg) every 5 min. to total dose of approximately 3 mg/kg (70 kg = 200 mg). Use 1/2 Lidocaine dose if patient's age over 70 or if CHF or hepatic failure present.</p>

STANDING ORDERS	AFTER OBTAINING VERBAL ORDERS
<p>(VF/VT Continued)</p> <p>5. If VF persists:</p> <ul style="list-style-type: none"> • administer Lidocaine 100 mg (1.5 mg/kg) IV or 200 mg ET and defib again X1 at 360 J.; • may repeat Lidocaine 100 mg IV or 200 mg ET followed by defib; <u>and</u> • may give bretylium 5 mg/kg (70 kg = 350 mg) IV followed by defib. <p>6. Contact med control physician for further orders for refractory VF. If elapsed time since epi > 5 min., may give additional epi 1 mg while awaiting med control contact.</p>	<p>h) Consider sodium bicarbonate 50 mEq (1 amp) or 1 mEq/kg if arrest interval long or upon return of spontaneous circulation after prolonged resuscitation.</p> <p>i) Consider additional Epinephrine (1:1000) in one of the following dosing regimens:</p> <ul style="list-style-type: none"> • Intermediate: 2-5 mg IV every 3-5 min. • Escalating: 1 mg - 3 mg - 5 mg IV - 3 min. apart. • High: 0.1 mg/kg (70 kg = 7 mg) IV every 3-5 min. (Double all doses for ET route) <p>j) Consider additional bicarb, bretylium 10 mg/kg (70 kg = 700 mg) and defibrillation as indicated.</p> <p>k) Consider magnesium sulfate for refractory or recurrent VF/VT. Give 1-2 Gm (8-16 mEq) diluted to 10 ml with N.S. or sterile H₂O and given IV push over 1 min.</p> <p>l) If no response to interventions, consider termination of efforts.</p>

STANDING ORDERS	AFTER OBTAINING VERBAL ORDERS
<p>2. Asystole:</p> <ul style="list-style-type: none"> a) Institute or continue CPR. b) Check rhythm in second lead to verify asystole. c) Insert EOA, Combitube or ET tube. d) Obtain IV access and hang N.S. e) While starting IV, consider transcutaneous pacing, if available. (See Appendix H) f) Give 1 mg Epinephrine 1:10,000 IV or 2 mg ET if no IV possible. g) If asystole persists, give atropine 1 mg IV or 2 mg ET. h) Contact med control physician. If elapsed time since epi > 5 min., may give additional epi 1 mg while awaiting med control contact. 	<ul style="list-style-type: none"> i) Consider additional Epinephrine and Atropine IV or ET every 3 min. and defibrillation if indicated. j) Consider sodium bicarbonate 50 mEq (1 amp) or 1 mEq/kg if arrest interval long. k) If no response to interventions, consider termination of efforts.

STANDING ORDERS	AFTER OBTAINING VERBAL ORDERS
<p>3. All Other Pulseless Electrical Activity (PEA):</p> <ul style="list-style-type: none"> a) Institute or continue CPR. b) Insert EOA, Combitube or ET tube. Give special attention to ventilation. c) Look for underlying cause, i.e., hypovolemia, cardiac tamponade, tension pneumothorax, hypoxia, hypothermia, hyperkalemia, drug-induced. d) Obtain IV access and hang N.S. e) Give 1 mg epinephrine 1:10,000 IV or 2 mg ET if no IV possible. f) If heart rate less than 60/min., give atropine 1 mg IV or 2 mg ET. g) If heart rate less than 60/min, and unresponsive to atropine, consider transcutaneous pacing, if available. (See Appendix H) h) Contact med control physician for further orders. If elapsed time since epi > 5 min., may give additional epi 1 mg while awaiting med control contact. 	<ul style="list-style-type: none"> i) Drug therapy as appropriate to arrhythmia, i.e., consider: <ul style="list-style-type: none"> 1. Repeat Epinephrine (1:1000) by one of the following dosing regimens: <ul style="list-style-type: none"> • Intermediate: 2-5 mg IV every 3-5 min. • Escalating: 1mg - 3mg - 5mg IV - 3 min. apart. • High: 0.1 mg/kg (70 kg = 7 mg) IV every 3-5 min. (Double all doses for ET route). 2. Repeat Atropine 1 mg IV or 2 mg ET up to total of 0.04 mg/kg IV (70 kg = 3 mg) or 0.08 mg/kg ET (70 kg = 5.5 mg). j) Consider sodium bicarbonate 50 mEq (1 amp) or 1 mEq/kg if arrest interval long or upon return of spontaneous circulation after prolonged resuscitation. k) Consider pneumatic compression trousers (PCT) and/or volume challenge if rate adequate but no perfusion.

STANDING ORDERS	AFTER OBTAINING VERBAL ORDERS
-----------------	-------------------------------

E. **SPECIAL SITUATIONS/CONSIDERATIONS IN CARDIAC ARREST::**

1. For renal patients in cardiac arrest, contact medical control physician for consideration of treatment for hyperkalemia.

2. Consider drug therapy for hyperkalemia:

- calcium chloride 10 ml (1 gm) IV
- sodium bicarbonate 50 mEq IV

3. May consider use of pneumatic compression trousers (PCT) for any cardiac arrest patient.

STANDING ORDERS	AFTER OBTAINING VERBAL ORDERS
-----------------	-------------------------------

PART III. MEDICAL EMERGENCIES

A. SHOCK, NON-TRAUMATIC:

1. Begin oxygen therapy and quickly complete patient assessment.
2. Place patient in pneumatic compression trousers (PCT):
 - a) For suspected ruptured AAA, **inflate** irrespective of blood pressure;
 - b) For suspected ruptured ectopic pregnancy, inflate if systolic BP <90;
 - c) For all other hemorrhagic and non-hemorrhagic conditions, **do not inflate without verbal orders.**
3. Begin transport immediately
4. Obtain IV access en route and hang N.S.
5. Contact med control physician for further orders.

6. Consider volume loading for hypotension.

B. ANAPHYLAXIS:

1. Begin oxygen therapy; assist respirations with PPV as needed; ET intubate, if authorized, for severe respiratory distress and/or ineffective ventilation.
2. Consider placing venous tourniquet proximal to sting or injection site, and/or ice pack at sting or injection site.
3. May administer Epinephrine 0.3 mg 1:1000 SC if patient was exposed to commonly recognized allergen and has respiratory distress OR systolic BP <90.
4. Obtain IV access and hang N.S.
5. If patient meets criteria in #3 above, may also administer diphenhydramine HCL (Benadryl) 25 mg IV or, if unable to start IV, 50 mg IM while contacting med control physician.

Anaphylaxis continued

STANDING ORDERS	AFTER OBTAINING VERBAL ORDERS
<p>Anaphylaxis continued</p>	<ol style="list-style-type: none"> 6. Epinephrine 0.05-0.1 mg 1:10,000 solution (0.5-1 ml) IV. If no IV line, 0.3 mg 1:1000 Epinephrine (0.3 ml) may be given subcutaneously or injected into the base of the tongue (unconscious patient only). 7. If patient ET intubated and becomes agitated from increased consciousness, consider: Versed 1-2 mg IV, or Droperidol titrated up to 2.5 mg IV/IM (may repeat). 8. Consider pneumatic compression trousers (PCT) and/or volume loading for hypotension.
<p>C. <u>ASTHMA ATTACK:</u></p> <ol style="list-style-type: none"> 1. If patient breathing: <ol style="list-style-type: none"> a) Begin oxygen therapy. b) For patients in moderate-to-severe respiratory distress, may administer on-site Terbutaline 0.25 mg SC if patient <60 years AND no history of cardiac disease. c) Consider ECG monitoring in older asthmatics receiving parenteral meds. d) Move patient to ambulance and begin transport. e) En route to hospital, may give nebulized albuterol 2.5 mg with Atrovent 0.5 mg added. May repeat neb of albuterol 2.5 mg with Atrovent 0.5 mg X1. f) Contact med control physician for patients with continued moderate-to-severe respiratory distress after two nebs. <p>Asthma continued</p>	<ol style="list-style-type: none"> g) Consider meds if not already given: <ul style="list-style-type: none"> • Nebulized albuterol 2.5 mg with Atrovent 0.5 mg added. May repeat immediately if no relief; • Terbutaline 0.25 mg SC. h) Consider 0.3 mg Epinephrine 1:1000 (0.3 ml) SC.

STANDING ORDERS	AFTER OBTAINING VERBAL ORDERS
<p>D. <u>COPD – ACUTE EXACERBATION</u></p> <ol style="list-style-type: none"> 1. If history of COPD and symptomatic (presence of wheezing alone does not indicate COPD) <ol style="list-style-type: none"> a) En route to hospital, may give nebulized albuterol 2.5 mg with Atrovent 0.5 mg added. May repeat neb of albuterol 2.5 mg with Atrovent 0.5 mg x1. b) Contact med control physician for patients with continued moderate-to-severe respiratory distress after two nebs. <p>E. <u>ALL OTHER RESPIRATORY DISTRESS:</u></p> <ol style="list-style-type: none"> 1. Begin appropriate oxygen therapy. ET intubate, if authorized, for severe distress and/or ineffective ventilation. 2. If respiratory distress severe or unexplained, either initiate cardiac standing orders or consult with med control physician regarding interventions. 	<ol style="list-style-type: none"> c) Treatment based on patient history and physical exam findings. <ol style="list-style-type: none"> 3. If patient ET intubated and becomes agitated from increased consciousness, consider: Versed 1-2 mg IV, or Droperidol titrated up to 2.5 mg IV/IM, or Morphine Sulfate 2-10 mg IV titrated for effect (may repeat). 4. Treatment based on patient history and physical exam findings.
<p>F. <u>STATUS SEIZURES:</u></p> <ol style="list-style-type: none"> 1. Position patient to maintain airway maximally. Begin oxygen therapy. 2. If seizure ongoing >5 minutes and IV access already established, administer midazolam HCL (Versed) IV, titrated 1 mg at a time up to a max dose of 10 mg. 3. If seizure ongoing >5 minutes and no IV access, give midazolam HCL (Versed) 10 mg IM prior to starting IV. 4. Contact med control physician for further orders. 	

G. UNCONSCIOUSNESS – UNKNOWN ETIOLOGY:

1. Begin oxygen therapy.
2. Obtain IV access.
3. Attempt to obtain blood sample for reading by blood glucose determination device.
4. If blood glucose <60, may give 50 ml D₅₀W IV. If IV access difficult or impossible, may give glucagon 1 mg IM.
5. Contact med control physician for orders.
9. Immobilize on backboard prior to transport unless trauma can definitely be ruled out.

6. If suspected narcotics overdose consider 2 mg Narcan IV.
7. Give or repeat 50 ml D₅₀W IV as appropriate.
8. Consider additional Narcan up to 10 mg IV.

H. SYMPTOMATIC KNOWN DIABETIC:

1. If conscious, give sugar, 50 ml of D₅₀W or 80 Gm of Reactose orally.
2. If patient unable to take oral fluids due to altered level of consciousness:
 - a) Obtain IV access.
 - b) May use blood glucose determination device to confirm clinical suspicion.
 - c) Give 50 ml D₅₀W IV.
 - d) May give glucagon 1 mg IM if IV access difficult or impossible.
3. Contact med control physician for:
 - a) patients with poor response to glucose administration;
 - b) all patients refusing transport following response to treatment with oral glucose or parenteral meds.

STANDING ORDERS	AFTER OBTAINING VERBAL ORDERS
<p>I. <u>DRUG OVERDOSE:</u></p> <ol style="list-style-type: none"> 1. Begin oxygen therapy. 2. Tricyclic O.D.'s requiring ventilatory support should be hyperventilated. 3. For any patient with respiratory rate <8, or history, or physical findings consistent with narcotics overdose assist ventilation and may give 2 mg Narcan IV. 4. For all significant overdoses, obtain IV access and contact med control physician for orders. 5. For all suspected tricyclic overdoses, also monitor ECG. 	<ol style="list-style-type: none"> 6. Consider additional Narcan up to 10 mg. 7. Consider Na Bicarbonate 50 mEq IV in tricyclic ingestions. 8. Consider glucagon 1 mg IV for known beta blocker overdose. 9. Consider calcium chloride 1 Gm for known calcium channel blocker overdose with hypotension or bradycardia.
<p>J. <u>SUSPECTED CVA:</u></p> <ol style="list-style-type: none"> 1. Position patient to assure patent airway. 2. Begin oxygen therapy. If clinical evidence of increased intracranial pressure, hyperventilate with positive pressure oxygen. 3. If patient's symptom onset <4 hours: <ul style="list-style-type: none"> • Expedite transport; • Obtain IV access en route; • Notify receiving hospital of potential candidate for thrombolytic therapy. 4. For all other patients, obtain IV access if patient has: <ul style="list-style-type: none"> • unresponsiveness (recent onset) • dysrhythmias, • unstable vital signs, or • severe dehydration. 	<p>(continued next page)</p>

STANDING ORDERS	AFTER OBTAINING VERBAL ORDERS
<p>SUSPECTED CVA (continued)</p> <p>5. Contact med control physician for any patient who is newly unresponsive.</p>	<p>6. If patient newly unresponsive, consider hypoxia, hypoglycemia or other metabolic problems.</p>
<p>K. <u>SUSPECTED CARBON MONOXIDE POISONING:</u></p>	
<p>1. Begin oxygen therapy. If patient unconscious, use partial rebreathing mask or assist respirations with positive pressure oxygen.</p> <p>2. Obtain IV access - draw blood tube for CO level.</p> <p>3. Monitor ECG.</p> <p>4. Contact med control physician to discuss need for transport directly to HCMC for hyperbaric oxygen therapy.</p>	
<p>L. <u>SYMPTOMATIC RENAL PATIENT (SBP <90) WITH KNOWN OR SUSPECTED HYPERKALEMIA:</u></p>	
<p>1. Begin oxygen therapy.</p> <p>2. Monitor ECG.</p> <p>3. Obtain IV access. If fluids hung, keep flow rate minimal.</p> <p>4. Contact med control physician.</p>	<p>5. Consider calcium chloride 10 ml (1 Gm) IV or more if indicated.</p> <p>6. Consider sodium bicarbonate 50 mEq IV.</p> <p>7. Other treatments based on patient history and physical exam findings.</p>

PART IV. TRAUMATIC EMERGENCIES

A. STANDING ORDERS FOR ALL TRAUMA PATIENTS:

1. Begin oxygen therapy as early as possible in all traumatic emergencies.
2. Insert oral or nasal airway in all unconscious patients. Do **not** insert EOA in apneic patients with bleeding from facial, mouth, or throat trauma. May ET intubate, if authorized, patients with severe respiratory distress and/or ineffective ventilation or Glasgow Coma Score <8.
3. Except in unusual circumstances, spine immobilization should be performed if a trauma patient:
 - a. complains of pain in the spinal area;
 - b. has experienced head trauma or a mechanism of injury that may be associated with spinal column injury, including penetrating injury to the neck or trunk, and has any of the following findings:
 - altered level of consciousness or Hx of loss of consciousness;
 - any abnormal neurological findings;
 - evidence of alcohol or other drug ingestion;
 - multiple facial lacerations or maxillofacial injuries or evidence of scalp hemorrhage or hematoma.
4. The pneumatic compression trousers (PCT) may be used for the splinting of lower extremity fractures only when it is indicated for other injuries; otherwise, extremity splints (especially traction splints) are more appropriate.
5. If authorized and no contraindications present, may allow patient to self-administer Nitronox for pain relief from isolated musculoskeletal trauma. (See Appendix E)
6. All intravenous lines, whether started on standing orders or physician's verbal orders, should be started **in transit** to the hospital. (The only exception is when there is an unavoidable delay moving the patient from the scene, i.e., trapped in auto, etc.) IV fluids should be hung whenever IV access is established for trauma.
7. Under no circumstances should transport of critical trauma patients be delayed for detailed physical examination and/or treatment of non-life-threatening injuries. Set priorities and expedite transport.
8. Attempt to notify the receiving hospital as soon as possible when transporting a critical trauma patient.

STANDING ORDERS	AFTER OBTAINING VERBAL ORDERS
<p>B. <u>SPECIFIC CONDITIONS:</u></p> <p>1. General Trauma/Traumatic Shock:</p> <p>a) Begin oxygen therapy.</p> <p>b) Spinal immobilization as appropriate.</p> <p>c) Consult med control physician immediately if tension pneumothorax suspected.</p> <p>e) Apply pneumatic compression trousers (PCT) on any patient with significant trauma:</p> <ol style="list-style-type: none"> 1. Do <u>not</u> inflate without verbal orders if patient has chest injury or penetrating injury of neck. 2. Inflate if evidence of intra-abdominal and/or pelvic hemorrhage. 3. Inflate for external hemorrhage that can be controlled if systolic BP less than 90. 4. Inflate if attempting resuscitation of a traumatic arrest. 5. For all other patients, inflate if systolic BP less than 90 or (if BP not practical) if clinical evidence of shock. <p>f) Transport.</p> <p>g) Obtain IV access and hang N.S. when en route on any patient with severe trauma. If SBP <90, run wide open until BP reaches 90, then TKO.</p>	<p>d) If strong evidence of tension pneumothorax, perform thoracostomy at 2nd intercostal space, midclavicular line of affected side using 12-14 gauge needle.</p>

STANDING ORDERS	AFTER OBTAINING VERBAL ORDERS
<p>2. Isolated Head and Spine Injuries:</p> <ul style="list-style-type: none"> a) Spinal immobilization as appropriate. b) Monitor spine injury patients closely for neurogenic shock and/or respiratory problems. c) If clinical evidence of increased intracranial pressure, hyperventilate with positive pressure oxygen. d) If patient unconscious, obtain IV access en route, hang N.S. and run TKO if BP > 90. If BP < 90, treat per Traumatic Shock protocol. 	
<p>3. Amputations:</p> <p>Patient:</p> <ul style="list-style-type: none"> a) Control hemorrhage and cover stump with sterile dressing saturated with saline; b) Treat as per protocol for General Trauma/Traumatic Shock; c) Do not spend excessive time looking for amputated part if patient unstable. <p>Amputated Part:</p> <ul style="list-style-type: none"> a) Wrap part in sterile gauze; b) Moisten with saline; c) Place in plastic bag; d) Place on ice, if available, or cold packs (do not freeze). 	

PART V. OTHER EMERGENCIES**A. HYPOTHERMIA - MODERATE-TO-SEVERE:**

Standing orders for all hypothermic patients:

- Remove wet garments;
 - Protect against further heat loss;
 - Maintain horizontal position;
 - Do pulse check for 30-45 sec. (clinical signs of death may be misleading).
1. For perfusing patients:
 - a) Begin oxygen therapy.
 - b) Begin transport immediately.
 - c) Obtain IV access en route.
 - d) Monitor ECG.
 - e) Warm packs, if available, should be applied only to truncal areas (neck, armpits, groin).
 - f) Contact MRCC with patient info.
 2. For pulseless patients, with or without organized ECG rhythm:
 - a) Begin CPR.
 - b) For VF/VT, defibrillate up to 3 times at 200, 200 and 360 J.
 - c) Withhold drugs and further shocks and transport immediately.
 - d) Obtain IV access en route and hang N.S.
 - e) Contact med control physician en route.
 - f) Warm packs should not be used.

- g) Consider sodium bicarbonate 50 mEq (1 amp) or 1 mEq/kg.

NOTE: May consider other cardiac arrest drugs and defibrillation but they are usually not effective until hypothermia is corrected.

B. HYPERTHERMIA:

1. Begin oxygen therapy.
2. Begin cooling measures. Apply cool packs, if available, to head and truncal areas. Suspend cooling measures if shivering occurs.
3. If patient confused or unconscious, obtain IV access and hang N.S. May infuse up to 300 ml without further orders.
4. Transport Code 3, monitoring ECG en route.
5. Contact MRCC with patient info.

STANDING ORDERS	AFTER OBTAINING VERBAL ORDERS
<p>C. <u>BURNS:</u></p> <ol style="list-style-type: none"> 1. For any significant burn: <ol style="list-style-type: none"> a) Begin oxygen therapy. Use positive pressure ventilatory assist as needed. b) Obtain IV access. 2. If less than 20% of body surface, apply sterile dressings and saturate with cool water (leave Gel-pack in place if applied by first responders). Do not allow any burn patient to become chilled and shiver. 3. More than 20% of body surface: <ol style="list-style-type: none"> a) Remove any non-adherent burned clothing and cover patient with sterile sheet. b) Do not cool down with water (exception: presence of smoldering clothes, articles or material adhering to skin that would continue burning process, i.e., hot tar, etc.). c) Begin rapid transport and contact med control physician for further orders and destination decision. 4. Electrical burns: monitor ECG for any high voltage burn, including lightning strike, or if extensive low voltage injury present. 5. If authorized, may allow patient to self-administer Nitronox for pain relief if burn does not involve face or respiratory tract and no other contraindications present. (See Appendix E) 	<ol style="list-style-type: none"> d) Consider direct transport to burn center for major burns. e) Consider morphine sulfate intravenously for pain relief.

D. CHEMICAL EYE INJURIES - STANDING ORDERS:

1. Attempt to remove contact lenses, if present.
2. Immediately and continuously flush the affected eye(s) with normal saline solution for a minimum of 20 minutes, continuing en route to hospital. May insert Morgan lenses for irrigation if authorized.
3. Begin transport.
4. If patient is agitated or unable to hold eyelid open for irrigation, instill Proparacaine HCL, 0.5% solution, 1-2 drops, into the affected eye(s). May be repeated only once.

STANDING ORDERS	AFTER OBTAINING VERBAL ORDERS
-----------------	-------------------------------

E. BEHAVIORAL EMERGENCIES

- | | |
|---|---|
| <ol style="list-style-type: none">1. If patient is severely agitated and combative, may contact med control physician to request medication order | <ol style="list-style-type: none">2. Consider Droperidol 2.5-5 mg IV/IM.3. Consider Versed 1-2 mg IV/IM. |
|---|---|

F. SEVERE NAUSEA OR VOMITING

- | | |
|---|---|
| <ol style="list-style-type: none">1. If patient has severe nausea or vomiting, may start IV and contact med control physician for medication order. | <ol style="list-style-type: none">2. Consider Droperidol 1.25 mg IV/IM. |
|---|---|

PART VI. OBSTETRICS

A. NORMAL LABOR AND DELIVERY - STANDING ORDERS:

1. Obtain pertinent history and perform physical exam.
2. If no imminent delivery, transport patient in position of comfort, usually on left side.
3. If authorized, may consider patient self-administration of Nitronox for pain relief if no contraindications present. (See Appendix E)
4. If question of imminent delivery, observe briefly, then transport unless delivery in progress. Be prepared to stop ambulance if delivery occurs en route.

Continued next page

Normal Labor And Delivery continued

5. If delivery in progress:
 - a) Assist delivery using clean or sterile technique.
 - b) Suction infant and protect from heat loss. (**see Pediatric Protocols – Newborn Emergencies**)
 - c) Double clamp and cut cord 8-10 in. from infant.
 - d) Give infant to mother and allow to nurse.
 - e) Transport; do not wait for or attempt delivery of placenta.
 - f) Closely observe infant for distress and mother for excessive postpartum bleeding.
 - g) Contact med control physician.

B. OBSTETRIC COMPLICATIONS – STANDING ORDERS:

1. Begin oxygen therapy for any complications.
2. Immediate transport for:
 - a) prepartum or postpartum hemorrhage (moderate-heavy),
 - b) limb presentation,
 - c) prolapsed umbilical cord,
 - d) known multiple fetuses,
 - e) previous cesarean section.
3. Obtain IV access and hang N.S. en route.
4. If hypotensive, position patient on left side.
5. For postpartum hemorrhage:
 - a) Oxygen therapy.
 - b) Massage uterus gently.
 - c) Consult med control physician regarding use of pneumatic compression trousers (PCT).
6. For prolapsed umbilical cord:
 - a) Oxygen therapy.
 - b) Place mother in knee-chest position or Trendelenburg.
 - c) Insert gloved finger into vagina and hold presenting part off cord.
 - d) Do not touch or attempt to replace cord.
7. For infant distress: **see Pediatric Protocols - Newborn Emergencies.**
8. Contact med control physician for further orders for any complication.