

Middlesex Hospital
EMS Department
Basic Life Support Guidelines

June 15, 2006

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General Clinical

Introduction

Middlesex Hospital is a subsidiary of the Middlesex Health System, the mission of which is to improve the health of the people and communities it serves and to manage illness with skill and compassion. Toward the fulfillment of that mission, Middlesex Hospital serves as a sponsor hospital for several EMS services that operate in and around Middlesex County. The Connecticut Department of Public Health has established the roles and responsibilities of sponsor hospitals in Sections 19a-179-12 of its Administrative Regulations. One of these responsibilities is to ensure the appropriateness of the current operating protocols of its sponsored services. The Middlesex Hospital EMS Department Basic Life Support Guidelines comprise the clinical operating protocols for the services sponsored by Middlesex Hospital at the mobile intensive care (MIC) AED and EPI levels. The Middlesex Hospital maintains final authority relative to interpretation of this manual.

Any questions regarding sponsorship or the requirements thereof should be directed to:

EMS Manager
Middlesex Hospital
28 Crescent St
Middletown, CT 06457

Phone: 860-344-6081
Fax: 860-343-4444

Medical Control

- I. The term *medical control* refers to active physician involvement in, and oversight of, an EMS system. As a sponsor hospital, Middlesex Hospital provides both off-line and on-line medical control.
 - A. Off-line Medical Control entails the appointment of an EMS medical director under whose medical license sponsored EMS personnel shall function. Other components of off-line medical control include the development and implementation of protocols, policies, training programs and quality improvement programs to ensure that the care provided by the sponsored EMS services is clinically appropriate.
 - B. On-line (concurrent) Medical Control entails direct communication between a physician and a pre-hospital provider who is in the process of providing patient care. On-line medical control is typically utilized to provide EMS personnel with advice, instructions or to receive authorization to perform certain medical interventions.
- II. Authorization
 - A. These guidelines apply to all EMS services and personnel sponsored by Middlesex Hospital and functioning at the MIC-AED and MIC-EPI levels. Because they apply to providers with a range of potential certification and authorization levels, not all interventions described are appropriate for all providers. Rather, some interventions are reserved for personnel with specific levels of authorization.
 - B. Sponsored personnel are authorized to perform the interventions contained in these guidelines either by direct order or by standing order.
 1. Interventions that are authorized by direct order may only be performed after receiving authorization through on-line medical control.
 2. When clinically indicated, interventions that are authorized on standing order may be performed without on-line medical control authorization.
 - C. Whenever a specific intervention requires on-line medical control authorization or is reserved for a specific level of authorization, the guidelines contain verbiage to that effect. No sponsored EMS provider may perform an intervention that exceeds his/her level of MIC authorization or that of the service for which he/she is working. A medical control authorization matrix is provided below for further clarification.

- III. Contacting on-line medical control – On line medical control may be obtained from any of Middlesex Hospital's emergency departments. Med radio or telephone via the dispatch centers are the preferred method of contact, as these communications are taped. Please note you must be in the VSECI service area to contact medical control via 911.
- A. Middlesex Hospital
 - 1. Med Radio – Via Colchester Emergency Communications (KX) or Valley Shore Emergency Communications (VSECI)
 - 2. Telephone – (860) 537-0883 (KX) or 911 (VSECI) - request medical control from the Hospital ED
 - B. Middlesex Hospital – Shoreline Medical Center
 - 1. Med Radio – Via Valley Shore Emergency Communications
 - 2. Telephone – (860) 537-0883 (KX) or 911 (VSECI) - request medical control from the Shoreline ED
 - C. Middlesex Hospital – Marlborough Medical Center
 - 1. Med Radio – Via Colchester Emergency Communications (KX)
 - 2. Telephone – (860) 537-0883 (KX) or 911 (VSECI) - request medical control from the Marlborough ED
- IV. Emergency Medical Services Medical Director
- A. Per the Connecticut Public Health code, "MIC personnel shall be under the supervision and direction of a physician at the sponsor hospital from which they are receiving medical direction".
 - B. Middlesex Hospital titles its supervising physician "Medical Director, Emergency Medical Services and Disaster Preparedness".
 - C. The current Medical Director is Phillip Brewer, MD, FACEP



Contact Information

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V. Emergency Medical Services Coordinator

- A. Per the Connecticut Public Health Code, "MIC services shall be under the control of the MIC medical director, or his or her designee, such as an on-line emergency department staff member".
- B. Middlesex Hospital delegates this responsibility to the Emergency Medical Services Manager, who also functions as the Emergency Medical Services Coordinator.
- C. The current Emergency Medical Services Manager is Craig Rogoff, MBA, EMT-P



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VI. Emergency Medical Services Quality Coordinator

- A. Middlesex Hospital augments its Sponsor Hospital program with the position of Emergency Medical Services Quality Coordinator.
- B. The responsibilities of the EMS Quality Coordinator include BLS and ALS quality assurance monitoring, and continuing medical education planning / implementation.
- C. The current Emergency Medical Services Quality Coordinator is Jim Santacroce, EMT-P



Contact Information

Shoreline Medical Center
260 Westbrook Rd.
Essex, CT 06426

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Medical Control Authorization Matrix

	MRT	MRT AED Authorized	EMT	EMT AED Authorized	EMT EPI Authorized
AED	May not administer	Standing order	On-line medical control	Standing order	Standing order
Epinephrine Auto-Injector (prescribed)	May not administer	May not administer	On-line medical control	On-line medical control	<u>No Relative Contraindications</u> Standing order <u>Relative Contraindications</u> On-line medical control
Epinephrine Auto-Injector (non-prescribed)	May not administer	May not administer	May not administer	May not administer	On-line medical control
Oral Glucose	May not administer	May not administer	On-line medical control	Standing order	Standing order
Nitroglycerin (prescribed)	May not administer	May not administer	On-line medical control	Standing order	Standing order
Metered Dose inhaler (prescribed)	May not administer	May not administer	On-line medical control	Standing order	Standing order
Activated Charcoal	May not administer	May not administer	On-line medical control	On-line medical control	On-line medical control
PASS	May not utilize	May not utilize	On-line medical control	Standing order	Standing Order

I. Background

It is common for Ambulances to have several transport destination choices, and to encounter both patient and physician requests for transport to a specific facility. The Connecticut Public Health Code addresses the field triage of trauma patients. In addition, reference VI of the Connecticut Office of Emergency Medical Service's policy and procedures manual addresses appropriate patient transport destination. The following guidelines are consistent with Connecticut statutes and the OEMS policy and procedures manual. The following guideline also recognizes:

- A. The limitations of prehospital diagnostic capabilities.
- B. That there is no Connecticut statute or regulation in place allowing the closest Emergency Receiving Facility to be bypassed for any patients other than those meeting Level I or II trauma center transport criteria.
- C. The limited number of Basic Life Support Ambulances in each community, necessitating Ambulances return to service as soon as possible.

II. Closest Emergency Receiving Facility

All patients are to be transported to the closest Emergency Receiving Facility. The only exceptions are **ONE** of the following:

- A. A paramedic is either on-scene or has intercepted the BLS ambulance, is assuming patient care, and is directing transport to a more distant facility.
- B. An on-line medical control physician directs transport to another Emergency Receiving Facility.
- C. Connecticut Trauma Regulations mandates transport to a Level I or II trauma center. In the absence of section IIA, on-line medical direction must be contacted for a destination decision if:
 - a. such transport is going to be greater than 20 minutes; and/or
 - b. the patient meets trauma guidelines for transport to a Level I or II center and is going to be transported by Basic Life Support ambulance. This includes those situations in which BLS transport is initiated and an ALS intercept is requested but has not been confirmed as available. Medical Control is to be made aware of the possibility of a BLS level transport of a trauma patient. Transports to air ambulance (e.g. Lifestar, Lifeflight) landing zones are excluded.
- D. Patient requests transport to Middlesex Hospital. If the patient is stable (stable vital signs, no suspected coronary syndrome, no suspected CVA, no respiratory distress), and has a suspected injury or illness that will require admission to Middlesex Hospital (e.g. hip fracture, obstetrics, etc.), the patient may be transported directly to the Middletown Emergency Department without contacting medical control. This applies specifically to situations in which a Middlesex satellite Emergency Department (either the Marlborough or Shoreline Medical Centers) is the closest Emergency Receiving Facility.
- E. Patient has signs and symptoms of a stroke: refer to the Stroke Guideline.

III. Equidistant Emergency Receiving Facilities

If a patient is equidistant from a Middlesex Hospital Emergency Receiving Facility and another facility, the patient is to be transported to the Middlesex facility.

IV. Patient requests a more distant hospital.

On-line medical control is to be contacted for a destination decision if a stable patient (stable vital signs, no suspected coronary syndrome, no suspected CVA, no respiratory distress), patient's family, and/or patient's private physician request transport to a more distant Emergency Receiving Facility that requires that the closest Emergency Receiving Facility be bypassed. Unstable patients are to be transported to the closest Emergency Receiving Facility unless above section II A, B and/or C apply. Patients may only be transported to Emergency Receiving Facilities that are within a 25-mile radius of the call location.

V. Documentation

When a patient is transported to a facility other than the closest Emergency Receiving Facility, the EMT shall follow routine documentation procedures, including documentation of the medical direction physician's name and the transport destination order received.

Assessment

- I. Basic life support assessment consists of the following five components: (1) scene size-up, (2) initial assessment, (3) focused history and physical exam, (4) detailed physical exam and (5) ongoing assessment. These components are organized in order of importance and are typically performed sequentially. Every effort should be made to perform as complete an assessment as possible on all patients. However, in some cases, particularly those involving life-threatening conditions, treatment and must be performed concurrently with assessment. In such cases, appropriate management of serious problems during the initial phases of assessment may delay or preclude progression to the subsequent assessment phases.
- II. Scene size-up – Perform an assessment of the scene and surroundings to identify and mitigate hazardous situations and to ensure that appropriate resources are requested given the scope of the incident.
 - A. Determine scene safety and take appropriate body substance isolation precautions
 - B. Evaluate responder's and patient's safety
 - C. Determine mechanism of injury/nature of illness.
 - D. Determine number of patients and request additional resources as necessary.
- II. Initial assessment – The initial patient assessment is performed in order to identify and correct any immediately life-threatening problems.
 - A. Assess the patient's mental status (AVPU)
 - B. Assess for and address immediate problems with airway, breathing and circulation. Based on mechanism of injury, consider the need for spinal immobilization and provide manual c-spine stabilization if indicated.
 1. Airway – Assess for and maintain an open airway.
 2. Breathing – assess for and maintain breathing.
 3. Circulation
 4. Assess for pulses
 5. Assess for and control any serious bleeding
 6. Assess skin color and temperature
 - C. Based on the initial assessment, make a determination as to the need for immediate intervention, rapid transport and/or ALS. If the patient's condition deteriorates at any point hereafter, reconsider these needs.
- III. Focused history and physical exam
 - A. Trauma
 1. Consider potential for serious injury based on mechanism
 2. If the mechanism of injury is significant,

- a) Perform a rapid trauma assessment with spinal precautions.
 - b) Assess baseline vital signs and obtain history.
 3. If the mechanism of injury is not significant (e.g. cut finger)
 - a) Perform focused history and physical exam
 - b) Assess vital signs and obtain history.
- B. Medical
 1. Assess complaints, signs and symptoms
 2. If patient is unresponsive
 - a) Maintain airway
 - b) Perform rapid head-to-toe assessment
 3. Assess baseline vital signs and obtain history
- IV. Detailed Physical Exam - Perform a patient/injury specific detailed physical exam to gather additional information
- V. Ongoing Assessment
 - A. Repeat and record initial assessment at least every 15 minutes for stable patients and at least every 5 minutes for unstable patients (more frequently if necessary).
 - B. Reassess vital signs
 - C. Repeat focused assessment regarding complaint or injuries
 - D. Check interventions

Foreign Body Airway Obstruction

MRT and EMT Intervention

- I. Adult Patient (> 8 years of age)
 - A. Conscious patient
 1. If patient cannot speak but is coughing, encourage strong, forceful coughing
 2. If patient cannot speak and is unable to produce an effective cough, perform Heimlich maneuver.
 3. Continue Heimlich maneuver until obstruction is cleared or patient becomes unresponsive.
 - B. Unresponsive patient
 1. Open the airway and look for an object in the pharynx. If object is visible, perform a finger sweep to remove it.
 2. Attempt to perform rescue breaths. If breaths are not effective, initiate CPR.
 3. Continue CPR, reassessing airway prior to each ventilation. If object is visible, perform finger sweep to remove it. If airway remains obstructed, repeat sequence of CPR, assessment of airway and ventilations until obstruction is cleared.
 4. Request ALS response
 5. If obstruction is cleared, reassess patient
 - a) Maintain airway, breathing and circulation
 - b) Provide supplemental oxygen
- II. Child patient (1-8 years of age)
 - A. Conscious patient
 1. If patient cannot speak but is coughing, encourage strong, forceful coughing
 2. If patient cannot speak and is unable to produce an effective cough, perform abdominal thrusts.
 3. Continue abdominal thrusts until obstruction is cleared or patient becomes unresponsive.
 - B. Unresponsive patient
 1. Open the airway and look for an object in the pharynx. If object is visible, perform a finger sweep to remove it.
 2. Attempt to perform rescue breaths. If breaths are not effective, initiate CPR.
 3. Continue CPR, reassessing airway prior to each ventilation. If object is visible, perform finger sweep to remove it. If airway remains obstructed, repeat sequence of CPR, assessment of airway and ventilations until obstruction is cleared.

4. Request ALS response.
 5. If airway is cleared, reassess patient
 - a) Maintain airway, breathing and circulation
 - b) Provide supplemental oxygen
- III. Infant patient
- A. Conscious patient, unable to cough
 1. Deliver up to five back blows
 2. Deliver up to five chest thrusts
 3. Repeat the sequence of five back blows and five chest thrusts until the obstruction is cleared or the patient becomes unresponsive.
 - B. Unresponsive patient
 1. Open the airway and look for an object in the pharynx. If object is visible, perform a finger sweep to remove it.
 2. Attempt to perform rescue breaths. If breaths are not effective, initiate CPR.
 3. Continue CPR, reassessing airway prior to each ventilation. If object is visible, perform finger sweep to remove it. If airway remains obstructed, repeat sequence of CPR, assessment of airway and ventilations until obstruction is cleared.
 4. Request ALS response.
 5. If airway is cleared, reassess patient
 - a) Maintain airway, breathing and circulation
 - b) Provide supplemental oxygen

Airway Management

- I. Airway Management is among the most important BLS skills. Proper assessment of the airway and rapid identification and management of airway compromise have a dramatic impact on patient outcome.
- II. For cases involving foreign body airway obstruction, refer to Foreign Body Airway Obstruction Guideline.
- III. Airway management maneuvers
 - A. Initial maneuvers – the following maneuvers should be used as the initial steps for managing a patient's airway. As soon as available, appropriate airway adjuncts should be employed to further aid in airway management.
 1. Head-tilt-chin lift – this maneuver should be used as the initial method for opening the airway of a patient who is unable to maintain a patent airway and is not suspected of having a spinal injury.
 2. Modified jaw thrust – this maneuver should be used as the initial method for opening the airway of a patient who may have a spinal injury and is unable to maintain a patent airway. Utilize the head-tilt-chin lift maneuver if unable to deliver ventilations using the modified jaw thrust.
 - B. Airway adjuncts – The following airway adjuncts should be used to aid in airway management.
 1. Suction – should be utilized to clear the airway of liquid foreign matter such as secretions, blood, or emesis.
 2. Oropharyngeal airway – for use in patients who have no gag reflex.
 3. Nasopharyngeal airway – for use in patients who are unable to maintain a patent airway and have an intact gag reflex.

Altered Mental Status

- I. Altered mental status can occur for a variety of reasons and can range from subtle personality or memory disturbances to unresponsiveness.
- II. A finding of altered mental status should be considered the result of a potentially life threatening condition until proven otherwise.
- III. Management of altered mental status
 - A. If trauma is suspected, perform appropriate spinal stabilization
 - B. Ensure airway breathing and circulation
 - C. Perform assessment, including Glasgow Coma Scale (see below)
 - D. Provide high concentration supplemental oxygen
 - E. Treat for possible shock
 - F. Request ALS response
 - G. If hypoglycemia is suspected consider administration of oral glucose.
 - H. Initiate transport as soon as possible
 - I. Consider possible causes of altered mental status (see below)

Glasgow Coma Scale			
	Adult/Child	Infant	Score
Eye Opening	Spontaneous	Spontaneous	4
	To voice	To voice	3
	To pain	To pain	2
	None	None	1
Best Verbal Response	Oriented	Coos or babbles	5
	Confused	Irritable/Cries	4
	Inappropriate words	Cries to pain	3
	Incomprehensible sounds	Moans to pain	2
	None	None	1
Best Motor Response	Obeys commands	Spontaneous Movement	6
	Localizes pain	Withdraws from touch	5
	Withdraws from pain	Withdraws from pain	4
	Flexion	Flexion	3
	Extension	Extension	2
	None	None	1

Common Causes of Altered Mental Status AEIOU-TIPS	
A	- Alcohol
E	- Epilepsy (seizures)
I	- Insulin (diabetic emergency)
O	- Overdose
U	- Uremia
T	- Trauma
I	- Infection
P	- Psychiatric
S	- Stroke/Shock

Shock

- I. Shock is a condition in which the body's vital organs are receiving an insufficient supply of oxygenated blood. Shock can result from a variety of medical and traumatic conditions. Common causes of shock include:
 - Significant bleeding (internal or external)
 - Sepsis
 - Myocardial infarction
 - Arrhythmias
 - Dehydration
 - Anaphylaxis
 - Pulmonary embolism
 - Overdose
- II. Signs and symptoms of shock
 - A. Central Nervous System (CNS)
 1. Restlessness
 2. Anxiety
 3. Altered mental status
 - B. Circulatory
 1. Capillary refill > 2 seconds in ambient temperature
 2. Weak, thready or absent peripheral pulses
 3. Tachycardia
 4. Hypotension (late sign)
 5. Pallor and/or cyanosis
 - C. Other
 1. Thirst
 2. Dilated pupils
 3. Nausea/vomiting
- III. MRT/EMT treatment
 - A. Maintain airway, breathing and circulation
 - B. Administer high concentration supplemental oxygen
 - C. Unless contraindicated, position the patient supine with legs elevated 12-18 inches.
 - D. Maintain patient's body temperature.
 - E. Request ALS response
 - F. Initiate rapid transport to the hospital
 - G. Provide appropriate treatments for the given presenting illness or injury

- H. Perform frequent ongoing assessment, at least every five minutes.
- IV. EMT Treatment – If signs of shock are present and the lower abdomen is tender and pelvic injury is suspected, with no evidence of chest injury, contact on-line medical control for permission to apply and inflate the pneumatic antishock garment.¹

¹ EMTs who are trained and authorized by Middlesex Hospital at the MIC-Epi level, and who are functioning with a Middlesex Hospital sponsored MIC-Epi level service may perform this intervention on standing order.

Refusal of Medical Assistance

I. Background

In most cases, patients have a legal right to refuse medical care and transportation to a hospital. However, there are many situations in which a patient's refusal of medical assistance (RMA) may not be legally valid and there is a significant risk of civil liability associated with an invalid RMA. It has been estimated that between 50% and 90% of all litigation against prehospital EMS providers results from cases involving refusal of medical assistance. These guidelines have been developed to provide a standardized process for dealing with RMA cases that minimizes clinical risk to patients and legal risk to EMS providers.

II. Components of a Valid RMA

There are three components to a valid RMA. Absence of any of these components will most likely result in an invalid RMA. The three components are as follows:

- A. Competence: Competence is a legal determination that is ultimately made by a court. However, in general, however, a patient who is an adult or a legally emancipated minor is considered legally competent to refuse care. A parent or legal guardian who is on-scene may refuse care on his or her minor children's behalf.
- B. Capacity: Capacity is a medical determination that is made by medical providers. In order to refuse medical assistance a patient must have the capacity to understand the nature of his or her medical condition, the risks and benefits associated with the proposed treatment, and the risks associated with refusal of care.
- C. Informed Refusal: A patient must be fully informed about his or her medical condition, the risks and benefits associated with the proposed treatment and the risks associated with refusing care.

III. Guidelines

The MRT/EMT must make every reasonable effort to convince a reluctant patient to accept medically indicated care and transportation to a hospital before accepting a patient's RMA as a final disposition. This includes assessing the patient, advising the patient about the situation and attempting to persuade him/her to accept care and transportation.

- A. Assess the patient - Perform a complete clinical assessment of the patient, including the following:
 - 1. chief complaint and associated complaints
 - 2. history of present illness
 - 3. past medical history
 - 4. thorough physical exam, including assessment of mental status and vital signs.
 - 5. To the extent possible, assess the patient's legal competence to refuse care.
 - 6. Assess the patient's capacity to comprehend the implications of the refusal.

- B. Advise the patient.
 - 1. Explicitly advise the patient of his/her medical condition, the proposed treatment and the risks associated with refusing care.
 - 2. Avoid the use of complex medical terminology.
 - 3. Explain the limitations of a prehospital clinical assessment.
 - 4. Assess the patient's understanding of the situation as you have explained it. Ask the patient to repeat back to you, in his/her own words, what you have just explained to them.

- C. Attempt to persuade the patient.
 - 1. Attempt to convince the patient of the necessity for treatment and/or transport. Candidly reiterate the potential consequences of the RMA. Exploit any uncertainty on the patient's part.
 - 2. Contact on-line medical control if indicated or mandated. On-line medical control is a resource that may be accessed at any time to assist in preventing an RMA or in determining the need for protective custody as an option.
 - 3. Contact police if appropriate. Patients who refuse medical assistance but do not meet the criteria for a valid RMA can be problematic. Consider involving law enforcement in such situations.

- D. Document

When dealing with patients who are refusing treatment and/or transportation, thorough documentation is especially critical in avoiding significant liability. Using the appropriate report form, the following information should be documented for every RMA case:

- 1. accurate patient information, times of occurrence and date.
- 2. a complete physical assessment, including vital signs.
- 3. the patient's chief complaint, associated complaints, history of present illness and past medical history.
- 4. evidence of the patient's capacity to refuse medical assistance.
- 5. the patient's signature on the RMA statement.
- 6. the signature of a police officer or other reliable witness to the refusal should be obtained on the RMA statement. If possible, the witness should be from an agency other than the agency obtaining the RMA.
- 7. Itemized refusals (i.e. refusing spinal immobilization, but accepting transport) should be documented clearly on the patient care report.

- IV. Mandatory On-Line Medical Control - Several situations require the use of on-line medical control to determine disposition. These involve refusal of medical care or transportation by:

- A. patients who have had advanced life support initiated or would require advanced life support intervention based on their chief complaint and assessment,

- B. patients who have suicidal ideation resulting in any gesture or attempt at self-harm, or any verbal or written expression of suicidal ideation regardless of any apparent ability to complete a suicide,
 - C. patients who are unemancipated minors (under the age of 18 years) not accompanied by parents,
 - D. patients who, for any reason, have an impaired capacity from making informed decisions,
 - E. patients who present with an altered mental status or diminished mental capacity, or who present a threat to themselves.
 - F. The MRT/EMT must provide the on-line medical control physician with all relevant information and should allow the physician to converse directly with the patient by radio or telephone if necessary. The physician may determine if protective custody is to be pursued via police department. If the patient is allowed to RMA, then the MRT/EMT will document the on-line medical control physician's name on the cancellation or run form.
- V. Optional On-Line Medical Control – In cases that do not fall into any of the above categories, the EMS Provider is faced with the decision of whether or not to seek medical control. In such circumstances, any concerns about potential adverse consequences resulting from the patient's refusal of medical assistance should result in contacting medical control.

Documentation of Patient Care

- I. Documentation is an essential part of the patient care process that serves several important purposes, including the following:
 - A. Continuity of care – A patient care report provides hospital staff with valuable information as to the patient's condition and treatment prior to arrival at the emergency department. When left at the hospital this report becomes part of a patient's medical record.
 - B. Quality assurance – Patient care reports are essential tools for retrospectively reviewing EMS system performance as a means to identify strengths, weaknesses and opportunities for improvement of the EMS system.
 - C. Medicolegal – A patient care report is a legal document. In the event of legal action this document serves as a record of the patient's condition and care rendered by EMS personnel.
- II. It is important that EMS personnel thoroughly document all patient encounters. At a minimum, the following information should be documented if available:
 - A. Chief complaint – The patient's chief complaint and associated complaints
 - B. Medical History
 1. Patient demographic information – Includes the patient's name, sex, age and date of birth.
 2. History of present illness (HPI) – this is the history of the current incident and includes the events leading up to the EMS system being activated.
 3. Past medical history (PMH) – this included the patient's previous medical conditions, medications and medication allergies.
 - C. Assessment – All clinical assessment findings including vital signs should be documented.
 - D. Treatment – All prehospital treatment should be documented.
 - E. Disposition- Refers to the status of the patient upon termination of contact with a particular EMS organization. This might include a statement regarding transfer of care to another EMS organization or other healthcare provider, a refusal of medical assistance, etc.
 - F. Times – Each EMS organization shall document time of dispatch, time en route to scene, and time of arrival at scene for all EMS dispatches. Transporting agencies shall also document time en route to hospital and time of arrival at hospital.
- III. Transporting EMS agencies shall leave a copy of their patient care report at the receiving emergency department immediately following delivery of the patient.
- IV. Verbal report to Emergency Department staff shall, at a minimum, consist of:
 - A. Patient Name
 - B. Patient Age
 - C. Chief Complaint
 - D. Past Medical History

- E. Current Medications
- F. Known Allergies
- G. Vital Signs
- H. Treatment administered
- I. Any changes in the patient's condition since your initial contact
- J. Patient's primary care physician
- K. Name and phone number for a contact person (if the patient is not capable of providing information themselves)
- L. DNR/Living Will status

Withholding Resuscitation

- I. The following conditions are the ONLY exceptions to initiating and maintaining resuscitative measures in the field on a clinically dead patient:
 - A. Traumatic injury or body condition clearly indicating biological death (irreversible brain death), limited to:
 1. Decapitation: the complete severing of the head from the remainder of the patient's body.
 2. Decomposition or putrefaction: the skin is bloated or ruptured, with or without soft tissue sloughed off, or there is the odor of decaying flesh. The presence of at least one of these signs indicated death occurred at least 24 hours previously.
 3. Transection of the torso: the body is completely cut across below the shoulders and above the hips through all major organs and vessels. The spinal column may or may not be severed.
 4. Incineration: ninety percent of body surface area full thickness burn as exhibited by ash rather than clothing and complete absence of body hair with charred skin.
 5. Dependent lividity with rigor
 - a) when clothing is removed, there is a clear demarcation of pooled blood within the body, and
 - b) major joints are immovable.
 - c) This finding requires additional confirmation as found below under "General Procedures" (Section II, B)
 - B. Presumption of death at the scene, of a patient age 17 or older, when:
 1. On-line Medical Control physician orders withholding resuscitative measures, or
 2. On-line Medical Control physician orders resuscitative measures to be stopped, or
 3. A physician or authorized registered nurse at the scene in person, in consultation with the on-line Medical Control determines that resuscitative measures be stopped or withheld.
 - C. A valid DNR bracelet is present, when it:
 1. Is on the wrist or ankle, is intact, and has not been cut or broken; and
 2. Has the correct logo (stylized hand in "stop" position and words "EMS ALERT"), and is the correct color (orange) if it is a standard plastic bracelet, or
 3. Has the correct logo embossed if it is a state-approved metal bracelet offered through the Connecticut College of Emergency Physicians.

NOTE: On-line Medical Control is to be contacted if there is any question regarding a DNR order and/or a DNR bracelet.

 - D. At a mass casualty incident, if clinical death is determined prior to patient's arrival in the treatment area.

II. General Procedures

- A. In cases of decapitation, decomposition, transection of the torso, or incineration, the condition of clinical death must be determined by noting the nature and extent of the condition of the body as defined above. No CPR need be performed and Medical Control need not be notified.
- B. In cases of dependent lividity with rigor, the condition of clinical death must be confirmed by observation of the following:
 - 1. Reposition the airway and look, listen, and feel for at least 30 seconds for spontaneous respirations; respirations are absent.
 - 2. Palpate the carotid pulse for at least 30 seconds; pulse is absent.
 - 3. Auscultate with a stethoscope for lung sounds and visualize for chest movement for at least 30 seconds; lung sounds are absent.
 - 4. Auscultate with a stethoscope for heart sounds for at least 30 seconds; heart sounds are absent.
 - 5. Examine the pupils of both eyes with a light; both pupils are non-reactive.
 - 6. Electrocardiographic monitoring by paramedic; finding of asystole OR an order from on-line medical control to withhold resuscitation.
 - 7. If any of the findings are different than those described above, clinical death is NOT confirmed and resuscitative measures must be immediately initiated.
- C. In all other patients age 17 years or older, not described above, the following will take place:
 - 1. If the field technician arrives at the scene of a clinically dead patient before a medical order not to start resuscitative measures had been given, resuscitation will be initiated while communication is established, assessment information is gathered, and a medical decision is being made, except in cases of decapitation, decomposition, transection of the torso, or incineration.
 - 2. Medical control must be established early to reduce delay as resuscitative measures cannot be withheld until ordered by the physician. The on-line Medical Control physician will be given information about early assessment, findings, and procedures initiated. The physician may then order withholding resuscitation before complete resuscitative efforts have been initiated
 - 3. The on-line Medical Control physician may order that resuscitative measures underway by an EMT-Paramedic be stopped upon verification that no vital signs exist. Once an Advanced Cardiac Life Support resuscitative cycle has been completed, by an EMT-Paramedic on scene directing patient care, the patient will be assessed for absence of clinical response and the persistence of asystole. If these are present, contact may be made with an on-line Medical Control physician who may then order the EMT-Paramedic to stop resuscitative measures that are underway.
- D. When a valid DNR bracelet is present, the Connecticut College of Emergency Physicians (CCEP) guidelines will be followed. Once a patient has been found not to be breathing, examination for a valid DNR bracelet will take place. If there is a valid bracelet, no mouth-to-mouth or other means of artificial respirations will be administered, and no external cardiac

compressions will be initiated. If previously initiated, resuscitative measures will be discontinued.

- E. A complete documentation of the initial examination, findings and resulting procedures (if any) will be entered on the EMS patient care record. (See page 7.)
- F. If EMS personnel are delayed or precluded from making an appropriate physical examination by law or fire officials protecting the integrity of the scene, they shall so note on their patient care form. If subsequent access to the patient is allowed, then EMS personnel shall proceed according to this protocol. EMS personnel are required to provide documentation of the patient's physical condition only to the extent of the physical examination they performed.

III. Special Procedures

- A. In all cases when there is any suspicion of an unnatural death, local police authorities will be notified. Removal of the body will be done only after the police officer authorizes this.
- B. A private physician at the scene who has an on-going relationship with the patient must produce identification showing the physician's name and the Connecticut license number (MD or DO). That physician may pronounce death on a clinically dead patient even if EMS personnel are present. The physician's pronouncement relieves the emergency personnel of the responsibility to begin or continue resuscitative measures. If the patient is not pronounced and the physician wishes to assume care of the patient, the physician must agree to assume responsibility for the patient's care and accompany the patient to the hospital in the ambulance if the patient is to be transferred to the hospital. The Medical Control hospital will be notified and the information will be documented on the EMS patient care form.
- C. A registered Nurse from a home health care or hospice agency at the scene, who has an ongoing relationship with the patient, and who is operating under orders from the patient's private physician and is authorized by law to pronounce death, may pronounce a clinically dead patient dead even if EMS personnel are present. The nurse's pronouncement relieves the emergency personnel of the responsibility to begin or continue resuscitative measures. The Medical Control hospital will be notified and the information will be documented on the EMS patient care form.

IV. Disposition of Remains

- A. Disposition of dead bodies is not the responsibility of EMS personnel, but efforts must be taken to insure that there is a proper transfer of responsibility for scene security. However, to be helpful to family, police, and others, EMS personnel may assist those who are responsible.
- B. When a decision has been made to withhold or withdraw resuscitation, the body may be removed in one of the following ways:
 - 1. When the body is in a secure environment (where it is protected from view by the public, from being disturbed or moved by unauthorized people) and police are not or should not be involved, the body may be removed by a funeral hearse. The attending physician should be notified if available and EMS personnel may leave. Example: a DNR patient at home.
 - 2. When the body is in a secure environment and police are or should be involved, notify the police and the attending physician. If the attending physician is not available, the police may contact the office of the Chief Medical Examiner (860-679-3980 or 1-800-842-8820) for authorization to move the body by hearse, or the Medical Examiner may send a

- vehicle for the body. EMS personnel may leave. Example: an apparent overdose or injury at home.
3. When the body is not in a secure environment and police are not or should not be involved, contact Medical Control for permission to transport the body to the hospital morgue. Example: on the street with an unruly crowd of people.
 4. When the body is not in a secure environment and police are or should be involved, notify the police and the attending physician. If the attending physician is not available, the police may contact the Office of the Chief Medical Examiner (860-679-3980 or 1-800-842-8820) for authorization to move the body by hearse, or the medical Examiner may elect to send a vehicle for the body. EMS personnel may leave after turning the scene over to other appropriate authority. Example: on the street.
- C. The Office of the Chief Medical Examiner (860-679-3980 or 1-800-842-8820) must be notified of any death which may be subject to investigation by the Chief Medical Examiner (CG 19a-407), which includes almost all deaths which occur outside health care institutions. EMS personnel should determine that such notification has been made by the police, otherwise EMS personnel should make the notification and document on the patient care record.
- D. At other times the EMT feels the circumstances warrant, contact Medical Control for permission to transport the body to the hospital morgue.
- E. When Medical Control feels the circumstances warrant, Medical Control may request that the body be transported to the hospital morgue.
- V. Documentation
- A. A patient care record will be completed for each clinically dead patient who has resuscitation performed and for whom resuscitation was discontinued or was withheld. All Medical Control orders will be noted on the patient care record.
 - B. In cases of decapitation, decomposition, transection of the torso, or incineration, when resuscitation was discontinued or not initiated, detailed findings consistent with these conditions will be entered on the patient care record.
 - C. In cases of dependent lividity with rigor, when resuscitation was discontinued or not initiated, the following detail will be documented on the patient care record:
 1. Breathing absent when airway was repositioned and assessed for at least 30 seconds.
 2. Carotid pulse was absent upon palpation for at least 30 seconds.
 3. There were no audible lung sounds after examining the patient's chest with a stethoscope for at least 30 seconds.
 4. There were no audible heart sounds after examining the patient's chest with a stethoscope for at least 30 seconds.
 5. The pupils of both eyes are non-reactive.
 6. A view of an EKG in at least two (2) leads, for at least 12 seconds, which shows asystole.

Medical

Respiratory Distress

- I. MRT/EMT Intervention
 - A. Perform and document patient assessment.
 - B. Provide high concentration supplemental oxygen.
 - C. Request ALS response.
 - D. Initiate transport to hospital emergency department as soon as possible.
- II. Additional EMT Interventions
 - A. Monitor oxygen saturation if pulse oximetry is available.
 - B. If the patient is alert and has a prescribed bronchodilator metered dose inhaler administer, contact on-line medical control for permission to administer 1 to 2 inhalations, repeated once in 15 minutes as necessary. ²

² EMTs who are trained and authorized by Middlesex Hospital at the MIC-Epi level, and who are functioning with a Middlesex Hospital sponsored MIC-Epi level service may perform these interventions on standing order.

Respiratory Arrest

- I. Open airway
- II. Initiate positive pressure ventilation
- III. If ventilation is absent or inadequate, establish an airway
- IV. Support ventilation by using the most appropriate technique listed (in order of preference) below:
 - A. Pocket mask for a single rescuer
 - B. Two person bag-valve-mask
 - C. Oxygen-powered flow-restricted device (adult patients only)
 - D. One person bag valve mask.
 - E. Provide high flow supplemental oxygen. If oxygen is not immediately available, start ventilation and supplement oxygen when available.
- V. Insert oropharyngeal or nasopharyngeal airway.
- VI. Assess patient for rise and fall of chest wall, if little or no chest wall motion, re-establish airway and try a different ventilation technique.
- VII. Request ALS response.
- VIII. Initiate transport as soon as possible.

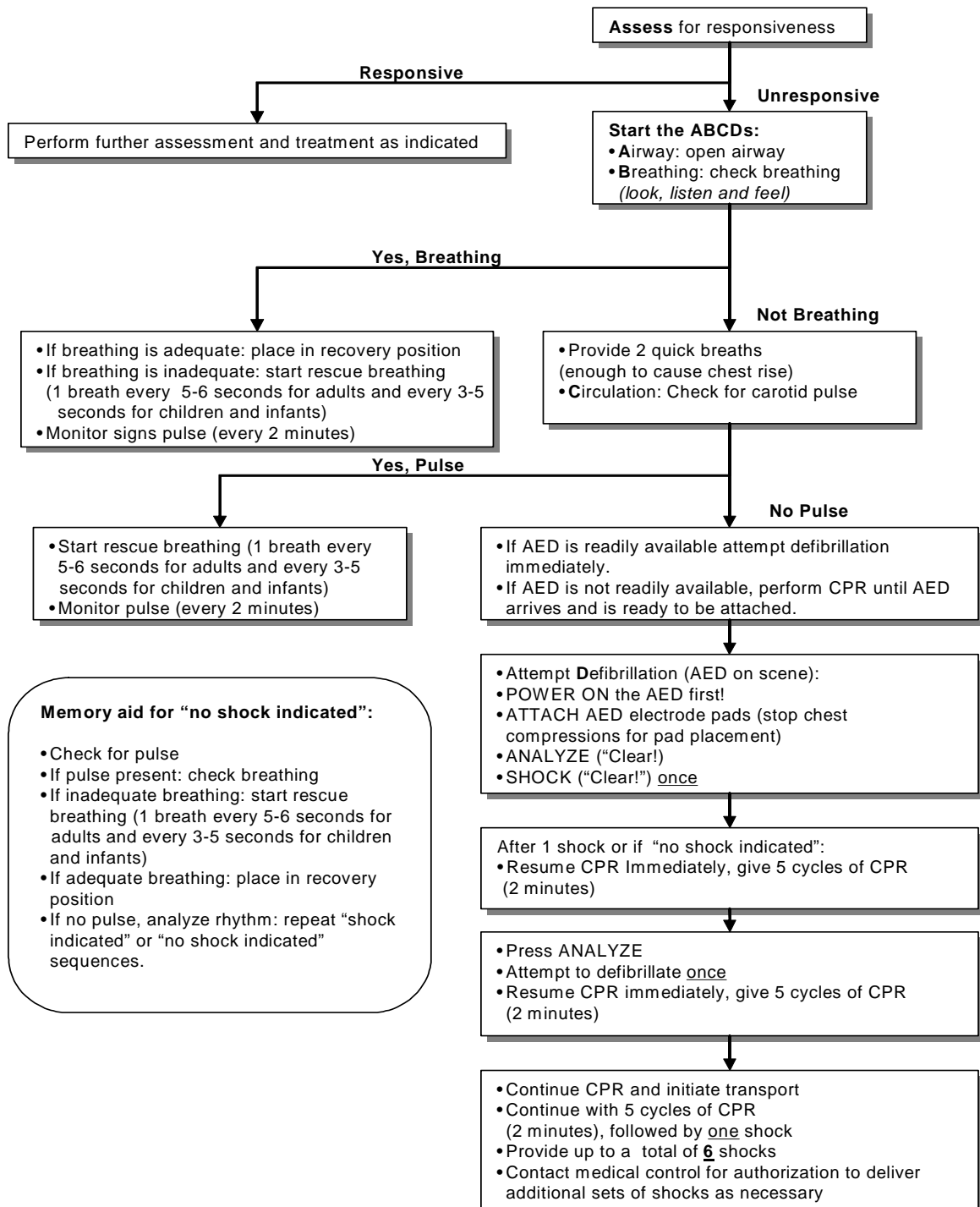
Chest Pain

- I. MRT/EMT Interventions
 - A. Perform and document patient assessment.
 - B. Provide high concentration supplemental oxygen.
 - C. Request ALS response.
 - D. Initiate rapid transport to hospital emergency department.
- II. Additional EMT Interventions
 - A. If the patient is conscious and has a systolic blood pressure greater than 100 mmHg, contact medical control for the following:³
 1. Administer the patient's prescribed nitroglycerine if not contraindicated (refer to contraindications in Nitroglycerine guideline).
 - a) Administer the patient's usual prescribed dose
 - b) Reassess vital signs three minutes after administration
 - c) Repeated administration at three to five minute intervals to a maximum of three doses provided,
 - (i) Chest pain persists
 - (ii) The patient's systolic blood pressure remains greater than 100 mmHg,
 - (iii) The patient remains alert

³ EMTs who are trained and authorized by Middlesex Hospital at the MIC-Epi level, and who are functioning with a Middlesex Hospital sponsored MIC-Epi level service may perform these interventions on standing order.

Cardiac Arrest

Cardiac Arrest/AED Algorithm



- I. Rapid delivery of defibrillation is frequently the most critical and potentially lifesaving aspect of cardiac arrest management. If AED use is not contraindicated immediately proceed according to the AED Algorithm, incorporating the steps listed under the General Approach to Cardiac Arrest Management as soon as possible. **NOTE: Escalating energy level defibrillation has been replaced by a constant setting: Biphasic 200J, Monophasic 360J.**
- II. General Approach to Cardiac Arrest Management.
 - A. Deploy AED while CPR is being performed by additional personnel (if possible). Adult AED pads are to be applied to patients that weigh over 55lbs (25kg). Pediatric AED pads are to be used on patients from one year of age until a weight of 55 lbs (25 kg). Once applied, the AED should be left in place and should remain on unless and until an ALS provider attaches a monitor/defibrillator.
 - B. Initiate CPR in accordance with American Heart Association guidelines.
 - C. Request ALS response.
 - D. Manage the patient's airway.
 1. Suction the patient's upper airway as necessary.
 2. Insert an appropriately sized oropharyngeal airway.
 - E. Provide ventilation using one of the following devices and high flow supplemental oxygen:
 1. pocket mask with a one-way valve and oxygen port
 2. flow restricted, oxygen powered ventilation device (adult patients only)
 3. bag valve mask with oxygen reservoir
 - F. Attempt to ascertain the patient's medical history to the extent this can be accomplished without delaying care and transport of the patient.
 - G. Initiate transport to the nearest emergency department as soon as possible.
- III. DNR Patients – If a patient with a valid DNR order is in cardiac arrest, resuscitative efforts should be withheld in accordance with the Connecticut Department of Public Health DNR Regulations.
- IV. Pediatrics – AED use is contraindicated in patients less than one year of age.

Stroke

MRT/EMT Interventions

- I. Ensure airway breathing and circulation
- II. Assess patient, including Glasgow Coma Scale
- III. Administer oxygen
- IV. Request ALS response
- V. Perform rapid neurological exam and record deficits, utilizing the Middlesex Hospital Stroke Screen form. If patient meets the criteria, and is being transported to:
 - A. **A Middlesex Hospital Emergency Department: immediately contact the receiving ED and initiate a “Stroke Team Activation”**
 - B. A non-Middlesex Emergency Department with stroke capabilities: immediately notify the receiving ED that you are transporting a stroke patient
 - C. A non-Middlesex Emergency Department without stroke capabilities: contact Middlesex Hospital Medical Direction for a destination decision.
- V. Transport to emergency department
 - A. Scene time is to be kept to a minimum, remaining long enough to collect the required information and to package the patient for transport. Only interventions critical to patient survival are to be performed on-scene, all other treatment to be performed enroute. **Time is of paramount importance, rapid transport is indicated.**
 - B. Position patient with head elevated to 30 degrees unless contraindicated
 - C. Protect paralyzed or weak extremities
- VI. Perform ongoing assessment All of the following criteria must be met to establish eligibility for thrombolytic therapy:
 - A. Exact time of sign/symptom onset
 - B. Duration of signs/symptoms <2 hours since onset
 - C. Absence of seizure activity
 - D. No history of hemorrhagic stroke
 - E. Absence of both stroke and trauma within the past 3 months
 - F. No anticoagulant use or bleeding diathesis
 - G. No know or suspected pregnancy
 - H. No surgery in the past 14 days
 - I. No GI or urinary track bleeding in past 3 weeks.

Allergic Reaction

- I. Mild allergic reaction – Hives and/or itching without respiratory distress or signs of shock.
 - A. MRT/EMT Treatment
 1. Ensure airway, breathing and circulation
 2. Perform assessment
 3. Administer oxygen
 4. Consider request for ALS response
 5. Transport to emergency department
- II. Severe allergic reaction – Hives and/or itching with respiratory distress and/or signs of shock.
 - A. MRT/EMT Treatment
 1. Ensure airway, breathing and circulation
 2. Perform assessment
 3. Administer high concentration supplemental oxygen
 4. Request ALS response
 5. Provide rapid transport to emergency department
 - B. Additional EMT Treatment
 1. If the patient has a prescribed epinephrine auto-injector, contact on-line medical control for permission to administer the patient's prescribed epinephrine auto-injector.⁴
 2. If the patient does not have a prescribed epinephrine auto injector, and EMT who is trained and authorized by Middlesex Hospital at the MIC-Epi level, and who is functioning with a Middlesex Hospital sponsored MIC-Epi level service may contact on-line medical control for permission to administer a "non-prescribed" epinephrine auto-injector.

⁴ If there are no relative contraindications, an EMT who is trained and authorized by Middlesex Hospital at the MIC-Epi level, and who is functioning with a Middlesex Hospital sponsored MIC-Epi level service may administer an epinephrine auto-injector on standing order.

Diabetic Emergency

- I. MRT/EMT treatment for altered mental status with a history of diabetes.
 - A. Ensure airway, breathing and circulation
 - B. Perform assessment
 - C. Administer supplemental oxygen.
 - D. Request ALS response
 - E. Initiate transport to hospital.
- II. Additional EMT treatment - If patient is conscious and able to swallow administer one tube of oral glucose.⁵

⁵ If oral glucose is not available, consider having the patient drink fruit juice with 1 tablespoon of table sugar added.

Seizures

- I. Maintain airway, breathing and circulation.
- II. Perform assessment.
- III. Position patient on side if no possibility of cervical spine trauma.
- IV. Administer high concentration supplemental oxygen.
- V. Have suction ready.
- VI. If cyanotic, assure airway and artificially ventilate.
- VII. Request ALS response
- VIII. Transport patient to the hospital.

Overdose/Poisoning

- I. MRT/EMT treatment for overdoses and poisonings.
 - A. Maintain airway, breathing and circulation
 - B. Perform assessment.
 - C. Document the following information if available.
 1. Substance(s) involved
 2. Amount/doses
 3. Time of exposure
 - D. Administer supplemental oxygen.
 - E. Request ALS response
 - F. Be alert for vomiting.
 - G. Contact the Connecticut Poison Control Center at 1-800-222-1222.
 - H. Transport to the hospital.
 - I. Bring all containers, bottles, labels, etc. of poison agents to receiving facility.
- II. Ingested poisons
- III. Additional EMT treatment - Consider contacting on-line medical control for permission to administer activated charcoal if:
 - A. The patient is alert and able to swallow
 - B. The toxin ingested was not a corrosive substance or hydrocarbon (e.g. gasoline, solvent, etc.)
- IV. Absorbed poisons
 - A. Remove contaminated clothing while protecting oneself from contamination.
 - B. Powder - brush powder off patient, then continue as for other absorbed poisons.
 - C. Liquid - irrigate with clean water continually for at least 20 minutes.
 - D. Eye - irrigate with clean water away from affected eye for at least 20 minutes and continue en route to facility if possible.

Abdominal Pain (Non-Traumatic)

- I. Ensure airway, breathing and circulation.
- II. Perform assessment.
- III. Consider need for ALS.
- IV. Give nothing by mouth.
- V. Allow patient to assume position of comfort unless contraindicated.
- VI. Transport to emergency department.

Childbirth

- I. Predelivery precautions and considerations
 - A. It is best to transport an expecting mother, unless delivery is expected within a few minutes.
 - B. Use body substance isolation.
 - C. Administer oxygen to the mother.
 - D. Request ALS response
 - E. Do not touch vaginal areas except during delivery and when your partner is present.
 - F. Do not let the mother go to bathroom.
 - G. Do not hold mother's legs together.
 - H. Recognize your own limitations and transport even if delivery must occur during transport.
 - I. If delivery is eminent with crowning, contact medical direction for decision to commit to delivery on site. If delivery does not occur within 10 minutes, contact medical direction for permission to transport.
- II. Normal Delivery – MRT/EMT Procedures
 - A. Apply gloves, mask, gown, eye protection for infection control precautions.
 - B. Have mother lie with knees drawn up and spread apart.
 - C. Elevate buttocks - with blankets or pillow.
 - D. Create sterile field around vaginal opening with sterile towels or paper barriers.
 - E. When the infant's head appears during crowning, place fingers on bony part of skull (not fontanelle or face) and exert very gentle pressure to prevent explosive delivery. Use caution to avoid fontanel.
 - F. If the amniotic sac does not break, or has not broken, use a clamp to puncture the sac and push it away from the infant's head and mouth as they appear.
 - G. As the infant's head is being born, determine if the umbilical cord is around the infant's neck; slip over the shoulder or clamp, cut and unwrap.
 - H. After the infant's head is born, support the head, suction the mouth two or three times and the nostrils. Use caution to avoid contact with the back of the mouth.
 - I. As the torso and full body are born, support the infant with both hands.
 - J. As the feet are born, grasp the feet.
 - K. Wipe blood and mucus from mouth and nose with sterile gauze, suction mouth and nose again.
 - L. Wrap infant in a warm blanket and place on its side, head slightly lower than trunk.

- M. Keep infant level with vagina until the cord is cut.
 - N. Assign partner to monitor infant and complete initial care of the newborn.
 - O. Clamp, tie and cut umbilical cord (between the clamps) as pulsations cease approximately 4 fingers width from infant.
 - P. Observe for delivery of placenta while preparing mother and infant for transport.
 - Q. When delivered, wrap placenta in towel and put in plastic bag; transport placenta to hospital with mother.
 - R. Place sterile pad over vaginal opening, lower mother's legs, help her hold them together. Gently massage uterus to reduce postpartum hemorrhage.
 - S. Record time of delivery and transport mother, infant and placenta to hospital.
- III. Vaginal bleeding following delivery
- A. Up to 500 cc of blood loss following delivery is common and is well tolerated by the mother.
 - B. With excessive blood loss, massage the uterus.
 - 1. Hand with fingers fully extended.
 - 2. Place on lower abdomen above pubis.
 - 3. Massage (knead) over area.
 - C. Bleeding continues - check massage technique and transport immediately, providing oxygen and ongoing assessment.
 - D. Regardless of estimated blood loss, if mother appears in shock, treat as such and transport prior to uterine massage. Massage en route.
- IV. Abnormal Deliveries
- A. Prolapsed Cord
 - 1. Perform assessment
 - 2. Administer high concentration supplemental oxygen to mother
 - 3. Position the mother supine with head down and buttocks raised on pillows or blankets, thus allowing gravity to lessen pressure in birth canal.
 - 4. Insert sterile gloved hand into vagina pushing the presenting part of the fetus away from the pulsating cord.
 - 5. Rapidly transport, keeping pressure on presenting part and monitoring pulsations in the cord.
 - B. Breech birth presentation
 - 1. Delivery may be prolonged, prolapsed cord is more common and newborn is at great risk for trauma during delivery.

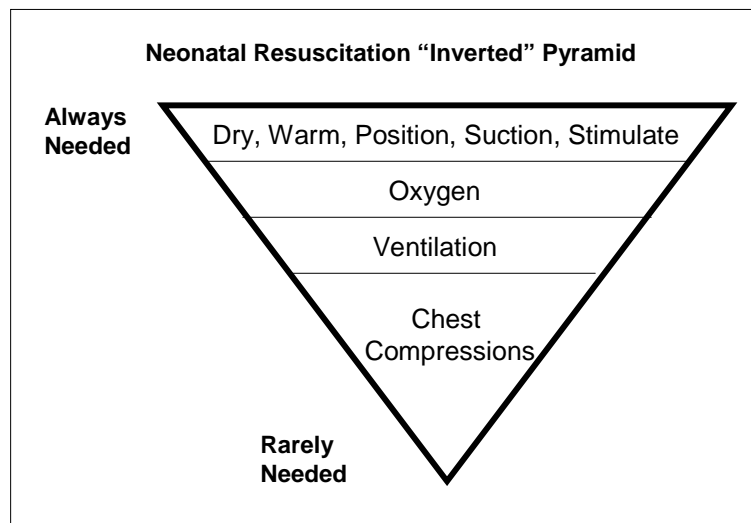
2. Emergency medical care
 - a) Immediate rapid transportation upon recognition of breech presentation.
 - b) Place mother on oxygen.
 - c) Place mother in head down position with pelvis elevated.
- C. Limb presentation
 1. Immediate rapid transportation upon recognition.
 2. Place mother on oxygen.
 3. Place mother in head down position with pelvis elevated.
- D. Multiple births
 1. Be prepared for more than one resuscitation.
 2. Call for assistance.
- E. Meconium
 1. Do not stimulate before suctioning oropharynx.
 2. Suction.
 3. Maintain airway.
 4. Transport as soon as possible.

Neonatal Resuscitation

- I. Initial care of the newborn
 - A. Position, dry, wipe, and wrap newborn in blanket and cover the head.
 - B. Repeat suctioning.
 - C. Assessment of infant - normal findings
 - D. Assess APGAR Score at 1 minute post delivery. Repeat APGAR score at 5 minutes post delivery.
 - E. Stimulate newborn if not breathing.
 - F. Flick soles of feet.
 - G. Rub infant's back.
- II. Resuscitation of the newborn follows the inverted pyramid (see below) after assessment, if signs and symptoms require either cardiac or pulmonary resuscitation, do the following when appropriate:
 - A. Breathing effort - if shallow, slow or absent provide artificial ventilations:
 1. 60/min
 2. Reassess after 30 seconds.
 3. If no improvement, continue artificial ventilations and reassessments.
 - B. Heart rate
 1. If less than 100 beats per minute provide artificial ventilations:
 - a) 60/min
 - b) Reassess after 30 seconds.
 - c) If no improvement continue artificial ventilations and reassessments.
 2. If less than 80 beats per minute and not responding to bag-valve-mask, start chest compressions.
 3. If less than 60 beats per minute, start compressions and artificial ventilations.
 - C. Color - if central cyanosis is present with spontaneous breathing and an adequate heart rate administer free flow oxygen –administer oxygen (10-15L) using oxygen tubing held as close as possible to the newborn's face.

APGAR SCORE

Sign	0	1	2	Score at 1 Min	Score at 5 Min
Appearance (skin color)	Blue, pale	Body pink, extremities blue	Completely pink		
Pulse (heart rate)	Absent	Below 100	Above 100		
Grimace (irritability)	No response	Grimaces	Cries		
Activity (muscle tone)	Limp	Some flexion of extremities	Active motion		
Respiratory Effort	Absent	Slow and irregular	Strong cry		
				TOTAL SCORE =	



Trauma

Field Triage of Trauma Patients

- I. In accordance with the Connecticut Trauma Regulations, this guideline provides criteria to categorize trauma patients and determine destination hospitals with resources appropriate to meet the patient's needs.
- II. Assess the physiologic signs. Trauma patients with any of the following physiologic signs shall be taken to a level I or level II trauma facility:
 - A. Glasgow Coma Score of ≤ 12
 - B. Systolic blood pressure <90 mmHg
 - C. Respiratory rate <10 or >29
- III. Assess the anatomy of the injury. Trauma patients with any of the following injuries are to be transported to a level I or level II trauma facility.
 - A. Gunshot wound to chest, head, neck, abdomen or groin
 - B. Full thickness burns covering $>15\%$ of the body or full thickness burns of face, or airway involvement
 - C. Evidence of spinal cord injury
 - D. Amputation, other than digits
 - E. Two or more proximal long bone fractures.
- IV. Assess the mechanism of injury and other factors and, if any of the following is present, determination of destination hospital shall be made in accordance with on-line medical control:
 - A. Mechanism of Injury
 1. Adult fall from height > 20 feet or pediatric fall > 3 times the patient's height.
 2. Apparent high speed impact
 3. Ejection from vehicle
 4. Death of same vehicle occupant
 5. Pedestrian struck by car traveling faster than 20 mph.
 6. Rollover MVC
 7. Significant vehicle deformity, especially steering wheel
 - B. Other factors
 1. Age < 5 years or > 55 years
 2. Known cardiac or respiratory disease
 3. Penetrating injury to thorax, abdomen, neck or groin other than gunshot wounds.

- V. Severely injured patients less than thirteen (13) years of age should be taken to a level 1 or level 2 facility with pediatric resources including a pediatric ICU.
- VI. When transport to a level I or II trauma facility is indicated but the ground transport time to that hospital is judged to be greater than twenty (20) minutes, determination of destination hospital shall be made in accordance with on-line medical control.
- VII. If, despite therapy, the trauma patient's carotid or femoral pulses cannot be palpated, airway cannot be managed, or external bleeding is uncontrollable, determination of destination hospital shall be made in accordance with on-line medical control.
- VIII. When in doubt as to the appropriate destination for a trauma patient, contact on-line medical control for direction.

Bleeding

- I. External Bleeding – MRT/EMT treatment
 - A. Maintain airway, breathing and circulation.
 - B. Perform assessment.
 - C. Treat for shock as necessary.
 - D. Consider ALS response depending on the severity of the patient's condition.
 - E. Bleeding control
 1. Apply direct pressure to the point of bleeding.
 2. Elevation of a bleeding extremity may be used secondary to and in conjunction with direct pressure.
 3. Larger wounds may require sterile gauze dressing in conjunction with direct pressure if direct finger tip pressure fails to control bleeding.
 4. If bleeding does not stop, remove dressing and assess for bleeding point to apply direct pressure. If diffuse bleeding is discovered, apply additional pressure.
 5. Pressure points may be used in upper and lower extremities.
 - F. Methods to control external bleeding if direct pressure fails
 1. Splints
 - a) Reduction of motion of bone ends will reduce the amount and aggravation of tissue damage and bleeding associated with a fracture.
 - b) Splinting may allow prompt control of bleeding associated with a fracture.
 2. Pressure Splints
 - a) The use of air pressure splints can help control severe bleeding associated with lacerations of soft tissue or when bleeding is associated with fractures.
 - b) Pneumatic anti-shock garment may be used as an effective pressure splint to help control severe bleeding due to massive soft tissue injury to the lower extremities (leg compartments only) or traumatic pelvic hemorrhage (all compartments).
 3. Tourniquet
 - a) Use as a last resort to control bleeding of an amputated extremity when all other methods of bleeding control have failed.
 - b) Application of a tourniquet can cause permanent damage to nerves, muscles and blood vessels resulting in the loss of an extremity.
 - c) Procedures for applying a tourniquet - Use a bandage 4 inches wide and 6 to 8 layers deep. Wrap it around the extremity twice at a point proximal to the bleeding but as distal on the extremity as possible.

- d) A continuously inflated blood pressure cuff may be used as a tourniquet until bleeding stops.
- e) If a tourniquet is applied, mark "TK" and the time of application on a piece of adhesive tape and apply it to the patient's forehead.
- f) Upon arrival at the hospital, notify receiving personnel that a tourniquet has been applied.

II. Internal bleeding – MRT/EMT Treatment

- A. Maintain airway, breathing and circulation.
- B. Request ALS response.
- C. Treat for shock.
- D. Immediate transport is critical for patient with signs and symptoms of shock.

Spinal Trauma

- I. MRT/EMT Treatment
 - A. Maintain airway, breathing and circulation with manual c-spine stabilization.
 - B. Perform assessment.
 - C. Treat for shock as necessary.
 - D. Consider ALS response depending on the severity of the patient's condition.
- II. Additional EMT Treatment (MRT's may assist with the following interventions under the supervision of an EMT)
 - A. Full spinal immobilization will be applied to all patients who are suspected to have a spinal injury based on mechanism of injury, history or signs and symptoms.
 - B. Full spinal immobilization consists of the following:
 1. Immediate manual stabilization of the cervical spine,
 2. Application of an appropriately sized cervical collar,
 3. Application of a short spine immobilization device (KED, XP-1, short board, etc) if the patient is seated and rapid extrication is not indicated,
 4. Application of a long backboard,
 5. Application of a head immobilization device.
 - C. Rapid Extrication
 1. Rapid extrication is a technique which may be utilized in life threatening situations to expedite extrication and immobilization of a seated patient without the use of a short spine immobilization device.
 2. Indications
 - a) The scene is unsafe (e.g. impinging fire)
 - b) Unstable patient condition warrants immediate movement and transport.
 - c) The patient being extricated is blocking EMS personnels' access to another, more seriously injured, patient.
 3. The decision to perform rapid extrication is based on time and the patient, not the EMT's preference.

Head Trauma

- I. Maintain airway, breathing and circulation
- II. Perform assessment
- III. Consider ALS response based on patient condition
- IV. If mechanism of injury, history or signs/symptoms suggest potential for significant head trauma
 - A. Administer high concentration supplemental oxygen.
 - B. Immobilize the spine.
 - C. Request ALS response.
 - D. Closely monitor the airway, breathing, pulse, and mental status for deterioration.
 - E. Do not apply pressure to an open or depressed skull injury.
 - F. Dress and bandage open wound as indicated in the treatment of soft tissue injuries.
 - G. Be prepared for changes in patient condition.
 - H. Immediately transport the patient.

Chest and Abdominal Trauma

- I. Ensure airway, breathing and circulation.
- II. Perform assessment.
- III. Treat for shock as necessary
- IV. Consider ALS response
- V. Transport
- VI. Special Considerations
 - A. Sucking chest wounds - apply occlusive dressing taped on three sides
 - B. If injury is due to a gunshot, consider entrance and exit wounds.
- VII. Evisceration (organs protruding through the wound)
 - A. Do not touch or try to replace the exposed organ.
 - B. Cover exposed organs and wound with a sterile dressing, moistened with sterile water or saline, and secure in place.
 - C. Flex the patient's hips and knees, if uninjured.
- VIII. Impaled objects
 - A. Do not remove an impaled object, unless:
 1. it has impaled only the cheek, or
 2. it would interfere with chest compressions, or
 3. it interferes with transport (in this case cutting the object should be considered before removing it).
 - B. Manually secure the object.
 - C. Expose the wound area.
 - D. Control bleeding.
 - E. Stabilize the object with bulky dressings.

Musculoskeletal Trauma

- I. Swollen, painful, and/or deformed extremity
 - A. Stable patient – Isolated injury, no signs of shock.
 1. Perform assessment.
 2. Remove and secure any jewelry distal to injury.
 3. Splint affected extremities.
 4. Transport
 - B. Unstable patient – If the patient is unstable (e.g. shock, multisystem trauma)
 1. Ensure airway, breathing and circulation
 2. Treat for shock
 3. Request ALS response
 4. Align extremities in normal anatomical position
 5. Apply long backboard as a total body immobilization device.
 6. Initiate rapid transport to appropriate hospital.
- II. Amputation
 - A. Ensure airway, breathing and circulation
 - B. Control bleeding and manage open soft tissue injuries.
 - C. Treat for shock as necessary
 - D. Request ALS response if patient exhibits signs of shock or amputation is proximal to the digits.
 - E. Apply a dry, sterile dressing and bandage to stump and immobilize extremity to prevent further injury.
 - F. Wrap amputated part in a sterile dressing, then wrap or bag it in plastic, keep it cool and transport it with the patient.
 - G. Transport to appropriate hospital

Traumatic Cardiac Arrest

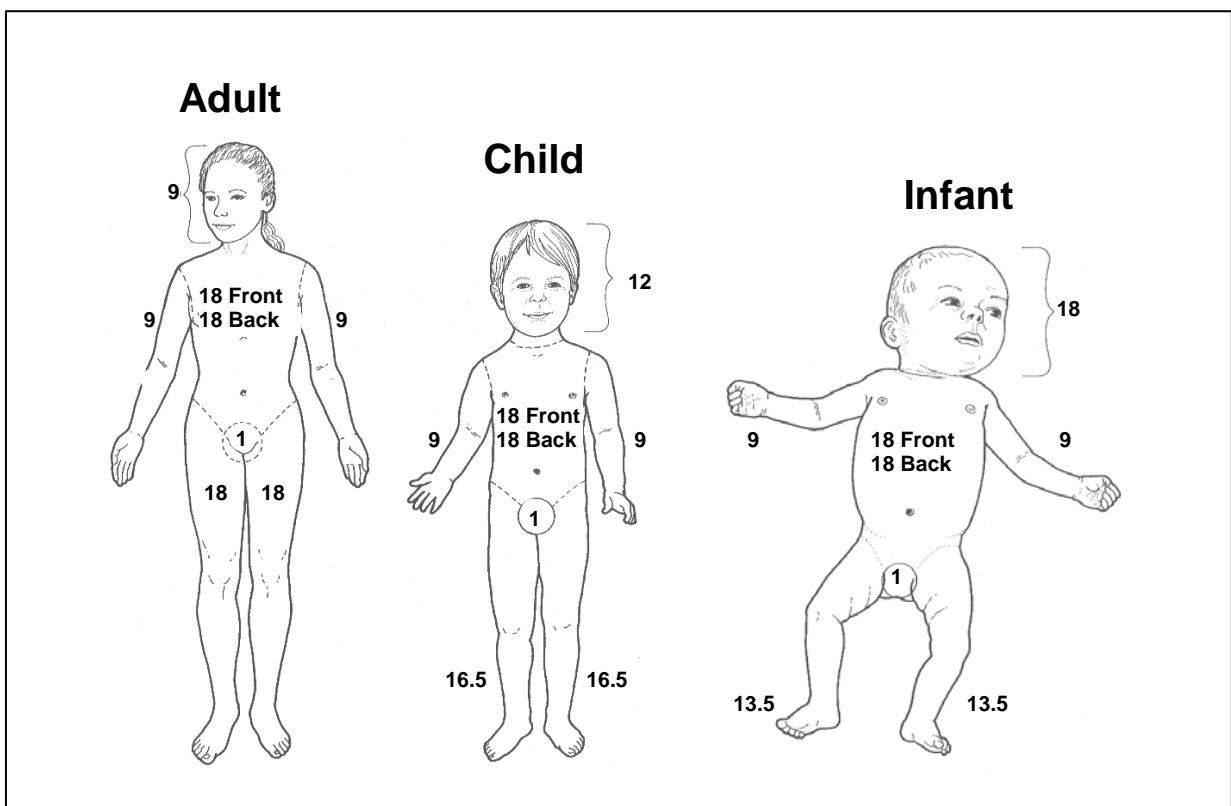
- I. Defibrillation is rarely indicated in cases of traumatic cardiac arrest. The need to minimize scene time and ensure rapid transport to definitive care takes precedence over AED application.
- II. MRT/EMT Treatment – The following should be performed as a rapid, coordinated manner in order to minimize scene time.
 - A. Manually stabilize cervical spine and initiate CPR as soon as possible.
 - B. Request ALS response.
 - C. Manage the patient's airway.
 1. Suction the patient's upper airway as necessary.
 2. Insert an appropriately sized oropharyngeal airway.
 - D. Provide ventilation using one of the following devices and high flow supplemental oxygen:
 1. pocket mask with a one-way valve and oxygen port
 2. flow restricted, oxygen powered ventilation device (adult patients only)
 3. bag valve mask with oxygen reservoir
- III. If the patient requires extrication, apply a cervical collar and perform rapid extrication while maintaining manual spinal stabilization.
- IV. Apply spinal immobilization
- V. Initiate rapid transport to a medical facility to be determined accordance with the Connecticut Trauma Regulations.

Burns

- I. All burns
 - A. Take appropriate safety precautions
 - B. Ensure airway, breathing and circulation
 - C. Perform assessment. Attempt to estimate total burn surface area using the "Rule of Nines."
 - D. Consider ALS response depending on severity of burn and patient condition.
- II. Thermal
 - A. Stop the burning process, initially with water or saline.
 - B. Remove smoldering clothing and jewelry.
 - C. Body substance isolation
 - D. Continually monitor the airway for evidence of closure.
 - E. Prevent further contamination.
 - F. Cover the burned area with a dry sterile dressing.
 - G. Do not use any type of ointment, lotion or antiseptic.
 - H. Do not break blisters.
 - I. Transport to appropriate hospital.
- III. Chemical burns
 - A. Take the necessary scene safety precautions to protect rescuers from exposure to hazardous materials.
 - B. Dry powders should be brushed off prior to flushing.
 - C. Immediately begin to flush with large amounts of water.
 - D. Continue flushing the contaminated area when en route to the receiving facility
 - E. Do not contaminate uninjured areas when flushing.
 - F. Transport to appropriate hospital.
- IV. Electrical burns
 - A. Do not attempt to remove patient from the electrical source unless trained to do so.
 - B. If the patient is still in contact with the electrical source or you are unsure, do not touch the patient.
 - C. Administer oxygen if indicated.

- D. Monitor the patient closely for respiratory and cardiac arrest (consider need for AED).
- E. Request ALS response.
- F. Treat the soft tissue injuries associated with the burn.
- G. Look for both an entrance and exit wound.
- H. Consider potential for severe internal injury even if external burns appear minor.
- I. Transport

The Rule of Nines



Environmental

Heat Exposure

- I. Emergency medical care - patient with moist, pale, normal to cool temperature skin.
 - A. Ensure airway, breathing and circulation.
 - B. Perform assessment.
 - C. Consider ALS response
 - D. Remove the patient from the hot environment and place in a cool environment (e.g. shaded area or back of air conditioned ambulance).
 - E. Administer oxygen if not already done during the initial assessment.
 - F. Loosen or remove clothing.
 - G. Cool patient by fanning.
 - H. Put in supine position with legs elevated.
 - I. If patient is responsive and is not nauseated, have the patient drink water.
 - J. If the patient is unresponsive or is vomiting, transport to the hospital with patient on his left side.
- II. Emergency medical care - patient with hot, dry or moist skin.
 - A. Ensure airway, breathing and circulation.
 - B. Remove the patient from the hot environment and place in a cool environment (back of air conditioned ambulance with air conditioner running on high).
 - C. Remove patient's clothing.
 - D. Perform assessment.
 - E. Request ALS response
 - F. Administer oxygen if not already done during the initial assessment.
 - G. Apply cool packs to neck, groin and armpits.
 - H. Keep the skin wet by applying water by sponge or wet towels.
 - I. Fan aggressively.
- A. Transport immediately.

Cold Exposure

- I. Emergency medical care for generalized hypothermia
 - A. Remove the patient from the environment - protect the patient from further heat loss.
 - B. Ensure airway, breathing and circulation.
 - C. Perform assessment.
 - D. Consider ALS response
 - E. Remove wet clothing and cover with blanket.
 - F. Handle the patient extremely gently. Avoid rough handling.
 - G. Do not allow the patient to walk or exert himself.
 - H. Administer oxygen if not already done as part of the initial assessment - oxygen administered should be warmed and humidified, if possible.
 - I. Assess pulses for 30-45 seconds before starting CPR.
 - J. If the patient is alert and responding appropriately,
 1. Actively rewarm.
 - a) Warm blankets
 - b) Heat packs or hot water bottles to the neck, groin and armpits.
 - c) Turn the heat up high in the patient compartment of the ambulance.
 2. Transport
 - K. If the patient is unresponsive or not responding appropriately,
 1. Rewarm passively:
 - a) Warm blankets
 - b) Turn the heat up high in the patient compartment of the ambulance.
 2. Transport
 3. Do not allow the patient to eat or drink stimulants.
 4. Do not massage extremities.
- II. Emergency medical care for local cold injuries
 - A. Ensure airway, breathing and circulation.
 - B. Perform assessment.
 - C. Consider ALS response

- D. Remove the patient from the environment.
- E. Protect the cold injured extremity from further injury.
- F. Administer supplemental oxygen.
- G. Remove wet or restrictive clothing.
- H. If early or superficial injury
 - 1. Splint extremity.
 - 2. Cover the extremity.
 - 3. Do not rub or massage.
 - 4. Do not re-expose to the cold.
- I. If late or deep cold injury
 - 1. Remove jewelry.
 - 2. Cover with dry clothing or dressings.
 - 3. Do not:
 - a) Break blisters
 - b) Rub or massage area
 - c) Apply heat or rewarm
 - d) Allow the patient to walk on the affected extremity

Near Drowning

- I. Ensure the safety of the rescue personnel.
- II. Suspect possible spine injury if diving accident is involved or unknown.
- III. Resuscitation should be initiated on any pulseless, non-breathing patient who has been submerged in cold water.
 - A. Emergency medical care:
 - B. Remove the patient from the water
 1. If spinal injury is suspected and the patient is unresponsive, provide in-line immobilization and remove from the water. Use a backboard if available.
 2. If spinal injury is suspected and the patient is responsive, provide in-line immobilization and remove from water with backboard.
 3. If spinal injury is not suspected, place patient on left side to allow water, vomitus and secretions to drain from upper airway.
 - C. Ensure airway, breathing and circulation.
 - D. Perform assessment.
 - E. Request ALS response
 - F. Perform CPR as needed.
 - G. Suction as needed.
 - H. Administer oxygen.
 - I. Relieve gastric distention only if it interferes with artificial ventilation.
 - J. Transport

Pharmacology

Activated Charcoal

- I. Generic name - activated charcoal
- II. Trade names – SuperChar; InstaChar; Actidose; LiquiChar; Others
- III. Actions – Binds to certain poisons and prevents them from being absorbed into the body.
- IV. Indications - poisoning by mouth
- V. Contraindications
 - A. Altered mental status
 - B. Ingestion of acids or alkalis
 - C. Unable to swallow
- VI. Side effects
 - A. Black stools
 - B. Some patients, particularly those who have ingested poisons that cause nausea, may vomit.
- VII. Precautions - Be prepared for the patient to vomit or further deteriorate.
- VIII. Authorization – Administration of activated charcoal is an EMT level skill that requires authorization from on-line medical control.
- IX. Medication form
 - A. Pre-mixed in water, frequently available in plastic bottle containing 12.5 grams activated charcoal.
 - B. Powder - should be avoided in field.
- X. Dosage
 - A. Adults and children: 1 gram activated charcoal/kg of body weight.
 - B. Adult dose: 25 - 50 grams
 - C. Infant/child dose: 12.5 - 25 grams
- XI. Administration
 - A. Obtain order from on-line medical direction
 - B. Shake container thoroughly.
 - C. Since medication looks like mud, patient may need to be persuaded to drink it.
 - D. A covered container and a straw may improve patient compliance since the patient cannot see the medication this way.

- E. If patient takes a long time to drink the medication, the charcoal will settle and will need to be shaken or stirred again.
- F. Record administration time.

Bronchodilator Metered Dose Inhalers

- I. Medication name
 - A. Generic - albuterol, isoetharine, metaproteranol, etc.
 - B. Trade - Proventil, Ventolin, Bronkosol, Bronkometer, Alupent, Metaprel, etc.
- II. Actions - Beta agonist bronchodilators - dilates bronchioles reducing airway resistance.
- III. Side effects
 - A. Increased pulse rate
 - B. Tremors
 - C. Nervousness
- IV. Indications - meets all of the following criteria:
 - A. Exhibits signs and symptoms of respiratory emergency,
 - B. Has physician prescribed handheld inhaler
- V. Contraindications
 - A. Patient unable to use the device.
 - B. Inhaler is not prescribed for the patient.
 - C. No permission from medical control.
 - D. Patient has already met maximum prescribed dose prior to EMT-Basic arrival.
- VI. Authorization
 - A. An EMT who is not authorized at the MIC-AED level may only administer a bronchodilator metered dose inhaler with authorization from on-line medical control.
 - B. An EMT who is authorized at the MIC-AED level may administer a bronchodilator metered dose inhaler on standing order.
- VII. Medication form - handheld metered dose inhaler
- VIII. Dosage - number of inhalations based upon medical direction's order or physician's order based upon consultation with the patient.
- IX. Administration
 - A. Contact medical control if no standing orders.
 - B. If patient has a spacer device for use with his inhaler, it should be used. A spacer device is an attachment between inhaler and patient that allows for more effective use of medication.
 - C. Assure right medication, right patient, right route, patient alert enough to use inhaler.

- D. Check the expiration date of the inhaler.
- E. Determine the number of doses the patient has already taken.
- F. Assure the inhaler is at room temperature or warmer.
- G. Shake the inhaler vigorously several times.
- H. Remove oxygen adjunct from patient.
- I. Have the patient exhale deeply.
- J. Have the patient put his lips around the opening of the inhaler.
- K. Have the patient depress the handheld inhaler as he begins to inhale deeply.
- L. Instruct the patient to hold his breath for as long as he comfortably can (so medication can be absorbed).
- M. Replace oxygen on patient.
- N. Allow patient to breathe a few times and repeat second dose if necessary.

Epinephrine Auto-Injector

- II. Medication name
 - A. Generic - Epinephrine
 - B. Trade – Adrenalin, Epi-Pen, Epi-Pen Jr.
- III. Actions
 - A. Dilates the bronchioles.
 - B. Constricts blood vessels.
- IV. Side effects
 - A. Increases heart rate and blood pressure
 - B. Pallor
 - C. Dizziness
 - D. Chest pain
 - E. Headache
 - F. Nausea/Vomiting
 - G. Excitability, anxiousness
- V. Indications - Suspected allergic reaction with either of the following:
 - 1. Respiratory distress
 - 2. Signs of shock
- VI. Contraindications
 - A. There are no absolute contraindications when used in a life-threatening allergic reaction.
 - B. Relative Contraindications – If any relative contraindications exist, administration of epinephrine must be authorized by on-line medical control.
 - 1. Patient greater than 60 years of age
 - 2. Pregnancy
 - 3. History of hypertension, myocardial infarction, or angina
 - 4. Chest pain

- VII. Authorization.
 - A. An EMT who is not authorized at the MIC-Epi level may administer an epinephrine auto-injector that has been prescribed to the patient, but may do so only with authorization from on-line medical control.
 - B. An EMT who is authorized at the MIC-Epi level may, on standing order, administer an epinephrine auto-injector that has been prescribed to the patient.
 - C. An EMT who is authorized at the MIC-Epi level may administer a non-prescribed⁶ epinephrine auto-injector, but may do so only with authorization from on-line medical control.
- VIII. Medication form - liquid administered via an automatically injectable needle and syringe system.
- IX. Dosage
 - A. Adult - one adult auto-injector (0.3 mg)
 - B. Infant and child - one infant/child auto-injector (0.15 mg)
- X. Administration
 - A. Obtain order from medical direction either on-line or off-line.
 - B. Ensure that
 - 1. the medication is not discolored (if able to see).
 - 2. the medication is not expired.
 - C. Remove safety cap from the auto-injector.
 - D. Place tip of auto-injector against the lateral aspect of the patient's thigh, midway between the waist and the knee.
 - E. Push the injector firmly against the thigh for ten seconds.
 - F. Hold the injector in place until the medication is injected.
 - G. Record activity and time.
 - H. Dispose of injector in biohazard container.

⁶ For the purpose of these guidelines, the term "non-prescribed auto-injector" means an auto-injector that has not been prescribed to a specific patient but is carried by the EMS service per authorization of the EMS medical director.

Glucose

- I. Medication Name
 - A. Generic - Glucose, Oral
 - B. Trade - Glucose, Insta-glucose
- II. Actions - increases blood sugar
- III. Side effects
 - A. None when given properly.
 - B. May be aspirated by the patient without a gag reflex.
- IV. Indications - Patient with altered mental status and known history of diabetes controlled by medication.
- V. Contraindications
 - A. Unresponsive.
 - B. Unable to swallow.
- VI. Authorization
 - A. An EMT who is not authorized at the MIC-AED level may only administer oral glucose with authorization from on-line medical control.
 - B. An EMT who is authorized at the MIC-AED level may administer oral glucose on standing order.
- VII. Medication form - Gel, in toothpaste type tubes
- VIII. Dosage - one tube
- IX. Administration
 - A. Assure signs and symptoms of altered mental status with a known history of diabetes.
 - B. Assure patient is conscious and can swallow and protect their airway.
 - C. Contact medical control if no standing orders.
 - D. Administer glucose between cheek and gum.
 - E. Perform ongoing assessment.

Nitroglycerin

- I. Medication name
 - A. Generic - nitroglycerin
 - B. Trade - Nitrostat
- II. Actions
 - A. Relaxes blood vessels
 - B. Decreases workload of heart
- III. Side effects
 - A. Hypotension
 - B. Headache
 - C. Pulse rate changes
- IV. Indications - must have all of the following criteria:
 - A. Exhibits signs and symptoms of chest pain,
 - B. Has physician prescribed sublingual tablets, and
- V. Contraindications
 - A. Patient has taken Viagra within the past 24 hours
 - B. Hypotension or blood pressure below 100 mmHg systolic.
 - C. Head injury
 - D. Infants and children
 - E. Patient has already met maximum prescribed dose prior to EMS arrival.
- VI. Authorization
 - A. An EMT who is not authorized at the MIC-AED level may only administer nitroglycerin with authorization from on-line medical control.
 - B. An EMT who is authorized at the MIC-AED level may administer nitroglycerin on standing order.
- VII. Medication form - tablet, sub-lingual spray
- VIII. Dosage - one dose, repeat in 3-5 minutes if no relief, BP > 100, and authorized by medical direction up to a maximum of three doses.

- IX. Administration
 - A. Perform focused assessment for cardiac patient.
 - B. Take blood pressure - above 100 mmHg systolic.
 - C. Contact medical control if no standing orders.
 - D. Assure right medication, right patient, right route, patient alert.
 - E. Check expiration date of nitroglycerin.
 - F. Question patient on last dose administration, effects, and assures understanding of route of administration.
 - G. Ask patient to lift tongue and place tablet or spray dose under tongue (while wearing gloves) or have patient place tablet or spray under tongue.
 - H. Have patient keep mouth closed with tablet under tongue (without swallowing) until dissolved and absorbed.
 - I. Recheck blood pressure within 2 minutes.
 - J. Record activity and time.
 - K. Perform reassessment.

Oxygen

I. Indications

The decision to administer supplemental oxygen should be made based on an assessment of the patient, including the following:

- A. Mental status
- B. Skin color
- C. Respiratory rate, depth and quality
- D. Lung sounds
- E. Nature of illness/mechanism of injury. Conditions in which supplemental oxygen should be administered include, but are not limited to, the following:
 - 1. altered mental status
 - 2. respiratory distress
 - 3. severe trauma
 - 4. signs of shock
 - 5. chest pain
 - 6. Pulse oximetry (if available)
- F. If in doubt as to whether or not the patient requires supplemental oxygen, oxygen should be administered.

II. Contraindications – there are no contraindications to the administration of oxygen in the emergency setting.

III. Precautions

- A. Oxygen supports combustion and poses a severe fire danger in the presence open flame. Never administer oxygen near an open flame. Never permit a patient to smoke while receiving oxygen.
- B. When exposed to compressed oxygen, petroleum products can spontaneously and explosively combust. Never apply oil to the components of an oxygen delivery system.

IV. Delivery devices - the following devices may be used for administration of supplemental oxygen:

- A. Non-rebreather face mask
 - 1. For patients with adequate respiratory rate and depth who require high concentration supplemental oxygen.
 - 2. CAUTION – If the reservoir bag does not fully reinflate between breaths, the oxygen flow rate is insufficient and can result. Never leave a non-rebreather facemask on a patient without flowing oxygen.

- B. Nasal cannula
 - 1. For use when patients will not tolerate a face mask
 - 2. When high concentration supplemental oxygen is not indicated
 - 3. Used with flow rates from 2 to 6 lpm.
- C. Positive pressure ventilation devices – include pocket masks, bag-valve-masks and flow-restricted oxygen-powered ventilation devices. These devices are to be used when patients are apneic or whose respiratory rate and/depth is insufficient to maintain adequate oxygenation.
- D. Pocket masks
- E. Bag valve masks
- F. Flow restricted oxygen-powered ventilation device

Procedures

Automatic External Defibrillator (AED)

I. Indications

Cardiac Arrest – Immediate application of the AED is indicated in all cardiac arrest patients, unless one or more of the following contraindications exists. Pediatric AED pads are to be used on patients from one year of age until a weight of 55 lbs (25 kg), adult pads are used thereafter.

NOTE: Escalating energy level defibrillation has been replaced by a constant setting: Biphasic 200J, Monophasic 360J.

II. Contraindications

- A. Presumption of Death – The AED is not to be used as a tool for the presumption of death. If a patient meets the criteria for presumption of death, the AED should not be applied. If the AED is applied, it is assumed that resuscitation is being attempted.
- B. DNR – The AED should not be applied to a patient who has a valid DNR order.
- C. Non-Cardiac Arrest Patients – The AED is not to be applied to a patient who has not suffered cardiac arrest. Application of an AED in “anticipation” of cardiac arrest is not an acceptable practice. However, an AED should remain attached to a patient who has regained a pulse after being resuscitated from cardiac arrest.
- D. Danger to Rescuer – The AED should not be utilized in any situation which would place the rescuer at risk of injury (e.g. explosive atmospheres, patient lying in water or on a metal surface, etc.) Efforts should be focused on removing the patient from the dangerous environment as soon as possible. Once the danger has been mitigated, the AED may be utilized. When a patient has been removed from water, the AED may be applied once his/her chest has been quickly dried.
- E. Pediatric – The AED is not to be applied to a patient that is less than one year of age.

III. Considerations

- A. Electrical Hazard – An AED delivers an electrical shock to a patient that can inadvertently be conducted through rescuers and bystanders who are in contact with the patient. For this reason, it is the responsibility of the operator of the defibrillator to ensure that no one is in contact with the patient when a shock is delivered. This may be accomplished verbalizing “I’m clear, you’re clear, we’re all clear,” while at the same time performing a visual check to ensure that no one is in contact with the patient.
- B. Excessive Chest Hair – Excessive chest hair interferes with the application of the AED pads. In such situations, chest hair should be removed from the areas where the pads are to be placed using a surgical prep razor.
- C. Transdermal Medication Patches – Some patients wear transdermal medication patches, which can interfere with the application of AED pads or cause electrical arcing during defibrillation. Medication patches, if applied in an area that interferes with AED pad application, should be removed and the area wiped clean prior to application. Care should be taken to ensure that rescuers do not come into contact with the medications (i.e. wear gloves).
- D. Implanted medical devices – Some patients have implanted medical devices such as pacemakers or defibrillators. These generally appear as a hard lump under the skin, usually with a small overlying scar. AED pads should not be placed directly over implanted devices. Pads should be placed at least one inch to the side of an implanted device.

Bag-Valve-Mask

- I. Use when no trauma is suspected.
 - A. After opening airway, select correct mask size (adult, infant or child).
 - B. Position thumbs over top half of mask, index and middle fingers over bottom half.
 - C. Place apex of mask over bridge of nose, then lower mask over mouth and upper chin. If mask has large round cuff surrounding a ventilation port, center port over mouth.
 - D. Use ring and little fingers to bring jaw up to mask.
 - E. Connect bag to mask if not already done.
 - F. Have assistant squeeze bag with two hands until chest rises.
 - G. If alone, form a "C" around the ventilation port with thumb and index finger; use middle, ring and little fingers under jaw to maintain chin lift and complete the seal.
 - H. Repeat every 5-6 seconds for adults and every 3-5 seconds for children and infants.
 - I. If chest does not rise and fall, re-evaluate.
 - J. If chest does not rise, reposition head.
 - K. If air is escaping from under the mask, reposition fingers and mask.
 - L. Check for obstruction.
 - M. If chest still does not rise and fall, use alternative method of artificial ventilation, e.g., pocket mask, manually triggered device.
 - N. If necessary, consider use of adjuncts.
 1. Oral airway
 2. Nasal airway
- II. Use with suspected trauma
 - A. After opening airway, select correct mask size (adult, infant or child).
 - B. Immobilize head and neck, e.g., have an assistant hold head manually or use your knees to prevent movement.
 - C. Position thumbs over top half of mask, index and middle fingers over bottom half.
 - D. Place apex of mask over bridge of nose, then lower mask over mouth and upper chin. If mask has large round cuff surrounding a ventilation port, center port over mouth.
 - E. Use ring and little fingers to bring jaw up to mask without tilting head or neck.
 - F. Connect bag to mask if not already done.
 - G. Have assistant squeeze bag with two hands until chest rises.

- H. Repeat every 5-6 seconds for adults and every 3-5 seconds for children and infants, continuing to hold jaw up without moving head or neck.
- I. If chest does not rise, re-evaluate.
- J. If abdomen rises, reposition jaw.
- K. If air is escaping from under the mask, reposition fingers and mask.
- L. Check for obstruction.
- M. If chest still does not rise, use alternative method of artificial ventilation, e.g., pocket mask.
- N. When available, insert appropriate airway adjunct.
 - 1. Oral airway
 - 2. Nasal airway

Flow Restricted Oxygen Powered Ventilation Device

- I. Use flow restricted, oxygen-powered ventilation devices in adults only, never in infants or children.
- II. Procedure when no neck injury is suspected
 - A. After opening airway, insert correct size oral or nasal airway and attach adult mask.
 - B. Position thumbs over top half of mask, index and middle fingers over bottom half.
 - C. Place apex of mask over bridge of nose, then lower mask over mouth and upper chin.
 - D. Use ring and little fingers to bring jaw up to mask.
 - E. Connect flow restricted, oxygen-powered ventilation device to mask if not already done.
 - F. Trigger the flow restricted, oxygen-powered ventilation device until chest rises. Repeat every 5-6 seconds.
 - G. If necessary, consider use of adjuncts.
 - H. If chest does not rise, re-evaluate.
 - I. If abdomen rises, reposition head.
 - J. If air is escaping from under the mask, reposition fingers and mask.
 - K. If chest still does not rise, use alternative method of artificial ventilation, e.g., pocket mask.
 - L. Check for obstruction.
- III. Procedure when there is suspected neck injury.
 - A. After opening airway, attach adult mask.
 - B. Immobilize head and neck, e.g., have an assistant hold head manually or use your knees to prevent movement.
 - C. Position thumbs over top half of mask, index and middle fingers over bottom half.
 - D. Place apex of mask over bridge of nose, then lower mask over mouth and upper chin.
 - E. Use ring and little fingers to bring jaw up to mask without tilting head or neck.
 - F. Connect flow restricted, oxygen-powered ventilation device to mask, if not already done.
 - G. Trigger the flow restricted, oxygen-powered ventilation device until chest rises.
 - H. Repeat every 5-6 seconds.
 - I. If necessary, consider use of adjuncts.
 - J. If chest does not rise and fall, re-evaluate.
 - K. If chest does not rise and fall, reposition jaw.

- L. If air is escaping from under the mask, reposition fingers and mask.
- M. If chest still does not rise, use alternative method of artificial ventilation, e.g., pocket mask.
- N. Check for obstruction.

Helmet removal

- I. Special assessment needs for patients wearing helmets.
 - A. Airway and breathing.
 - B. Fit of the helmet and patient's movement within the helmet.
 - C. Ability to gain access to airway and breathing.
- II. Indications for leaving the helmet in place
 - A. Good fit with little or no movement of the patient's head within the helmet.
 - B. No impending airway or breathing problems.
 - C. Removal would cause further injury to the patient.
 - D. Proper spinal immobilization could be performed with helmet in place.
 - E. Does not interfere with assessment and reassessment of airway and breathing.
- III. Indications for removing the helmet
 - A. Inability to assess and/or reassess airway and breathing.
 - B. Restriction of adequate management of the airway or breathing.
 - C. Improperly fitted helmet allowing for excessive patient head movement within the helmet.
 - D. Proper spinal immobilization cannot be performed due to helmet.
 - E. Cardiac arrest.
- IV. General rules for removal of a helmet.
 - A. The technique for removal of a helmet depends on the actual type of helmet worn by the patient.
 - B. Take eyeglasses off before removal of the helmet.
 - C. Rescuer #1 stabilizes the helmet by placing his hands on each side of the helmet with the fingers on the mandible to prevent movement.
 - D. Rescuer #2 loosens the strap.
 - E. The Rescuer #2 places one hand on the mandible at the angle of the jaw and the other hand posteriorly at the occipital region.
 - F. Rescuer #1 pulls the sides of the helmet apart and gently slips the helmet halfway off the patient's head then stops.
 - G. Rescuer #2 repositions, sliding his posterior hand superiorly to secure the head from falling back after complete helmet removal.
 - H. The helmet is removed completely.
 - I. Rescuers proceed with spinal immobilization.

Nasopharyngeal Airway

- I. Nasopharyngeal airways are useful in helping to maintain a patent airway in a patient with an intact gag reflex.
- II. Procedure
 - A. Select the proper size: Measure from the tip of the nose to the tip of the patient's ear. Also consider diameter of airway in the nostril.
 - B. Lubricate the airway with a water soluble lubricant.
 - C. Insert it posteriorly. Bevel should be toward the base of the nostril or toward the septum.
 - D. If the airway cannot be inserted into one nostril, try the other nostril.

Oropharyngeal Airway

- I. Oropharyngeal airways may be used to assist in maintaining an open airway on unresponsive patients without a gag reflex.
- II. Procedure
 - A. Select the proper size: Measure from the corner of the patient's lips to the bottom of the earlobe or angle of jaw.
 - B. Open the patient's mouth.
 - C. In adults, to avoid obstructing the airway with the tongue, insert the airway upside down, with the tip facing toward the roof of the patient's mouth.
 - D. Advance the airway gently until resistance is encountered. Turn the airway 180 degrees so that it comes to rest with the flange on the patient's teeth.
 - E. Another method of inserting an oral airway is to insert it right side up, using a tongue depressor to press the tongue down and forward to avoid obstructing the airway. This is the preferred method for airway insertion in an infant or child.

Pneumatic Anti-Shock Garment (PASG)

- I. Indications - The pneumatic antishock garment (PASG) can be used as an effective pressure splint to help control severe bleeding in the following situations:
 - A. Massive soft tissue injury to the lower extremities (inflate leg sections only)
 - B. Traumatic pelvic hemorrhage - If signs of shock are present, the lower abdomen is tender and pelvic injury is suspected (inflate all sections)
- II. Contraindications
 - A. evidence of chest injury
 - B. evidence of pulmonary edema
- III. Precautions
 - A. Do not delay transport in order to apply PASG
 - B. If applied too high on the patient, PASG may interfere with respiration.
- IV. Authorization - Use of PASG is an EMT level skill that requires on-line medical control authorization. However, under the direct supervision of an EMT, an MRT may assist with this process.⁷
- V. Pediatric considerations
 - A. Only use PASG if they fit the child, do not place infant in one leg of garment.
 - B. Do not inflate abdominal compartment.
- VI. Procedure
 - A. Assess patient's lung sounds. If crackles are heard, do not apply PASG.
 - B. Obtain authorization from on-line medical control.
 - C. Remove all clothing from the lower body. If clothing cannot be removed for environmental reasons, remove all bulky items from clothing.
 - D. Apply PASG so that access to the genitals is possible
 - E. Inflate leg sections until Velcro crackles.
 - F. If indicated, inflate abdominal section until Velcro crackles.

⁷ EMTs who are trained and authorized by Middlesex Hospital at the MIC-AED level, and who are functioning with a Middlesex Hospital sponsored MIC-AED level service may perform this intervention on standing order.

Pocket Mask

- I. If available, attach high flow oxygen to the pocket mask.
- II. Apply head tilt and place the mask on the patient's face.
- III. With the thumb side of the palms of both hands, apply pressure to the sides of the mask.
- IV. Apply upward pressure to the mandible just in front of the ear lobes to open the airway.
- V. Blow through the opening of the mask, observing rise and fall of the chest.
- VI. Repeat a minimum of every 5-6 seconds for adults and every 3-5 seconds for children and infants.
- VII. If chest does not rise and fall, re-evaluate.
- VIII. If chest does not rise, reposition head.
- IX. If air is escaping from under the mask, reposition fingers and mask.
- X. Check for obstruction.
- XI. If chest still does not rise and fall, use alternative method of artificial ventilation, e.g., bag-valve-mask, manually triggered device.
- XII. When available, insert appropriate airway adjunct.
 - A. Oral airway
 - B. Nasal airway

Pulse Oxymetry

- I. Pulse oximetry provides continuous, accurate, and non-invasive measurement of oxygen saturation levels and can provide an early warning for respiratory or circulatory deterioration. Normal pulse oximetry levels for a healthy adult are 95-100% saturation. A low or falling reading indicates that the ventilatory or respiratory status may be compromised.
- II. Indications
 - A. Respiratory distress
 - B. Shock
 - C. Patient requiring ventilatory assistance.
- III. Precautions
 - A. Pulse oximetry is not a substitute for patient assessment. It is one of several assessment parameters that must be considered in determining the appropriate course of patient care.
 - B. Several factors may contribute to inaccurate pulse oximetry readings, including the following:
 1. excessive motion
 2. hypotension
 3. hypothermia
 4. carbon monoxide exposure
 5. smoke inhalation
 6. vasoconstrictive drugs
 7. nail polish
 8. severe jaundice
 9. IV dyes
 10. dyshemoglobinemias
 11. optical interference (ambient light)

Spinal Immobilization

- I. Authorization - Spinal immobilization using cervical collars, short spine immobilization devices and long backboards is an EMT level skill. However, under the direct supervision of an EMT, an MRT may assist with this process.
- II. Cervical Collar
 - A. Indications
 1. Any suspected injury to the spine based on mechanism of injury, history or signs and symptoms.
 2. Use in conjunction with short and long backboards.
 - B. Sizing and application
 1. Various types of rigid cervical immobilization devices exist, therefore, sizing and application procedures are based on the specific design of the device. Follow the manufacturer's instructions for sizing and application.
 2. An improperly sized immobilization device has a potential for further injury.
 3. Do not obstruct the airway with the placement of a cervical immobilization device.
 4. If it doesn't fit use a rolled towel and tape to the board and manually support the head. An improperly fit device will do more harm than good.
 - C. Precautions
 1. Cervical immobilization devices alone do not provide adequate in-line immobilization.
 2. Manual immobilization must always be used with a cervical immobilization device until the head is secured to a board.
- III. Short spine immobilization device (short board, KED, XP-1, etc)
 - A. Indication – To immobilize non-critical sitting patients with suspected spinal injuries.
 - B. General application
 1. Start manual in-line immobilization.
 2. Assess pulses, motor and sensory function in all extremities.
 3. Assess the cervical area.
 4. Apply a cervical collar.
 5. Position short board immobilization device behind the patient.
 6. Secure the device to the patient's torso.
 7. Evaluate torso and groin fixation and adjust as necessary without excessive movement of the patient.

8. Evaluate and pad behind the patient's head as necessary to maintain neutral in-line immobilization.
 9. Secure the patient's head to the device.
 10. Release manual immobilization of head.
 11. Rotate or lift the patient to the long spine board.
 12. Immobilize patient to long spine board.
 13. Reassess pulses, motor and sensory function in all extremities.
- IV. Long backboards - General application
- A. Start manual in-line immobilization.
 - B. Assess pulses, motor and sensory function in all extremities.
 - C. Assess the cervical area.
 - D. Apply a cervical immobilization device.
 - E. Position the device.
 - F. Move the patient onto the device by log roll, suitable lift or slide, or scoop stretcher.
 - G. Pad voids between the patient and the board.
 1. Adult – pad under the head or torso as needed
 2. Infant and child - pad under the shoulders to the toes to establish a neutral position.
 - H. Immobilize torso to the board by applying straps across the chest and pelvis and adjust as needed.
 - I. Immobilize the patient's head to the board.
 - J. Fasten legs, proximal to and distal to the knees.
 - K. Reassess pulses, motor and sensation and record.

Splinting

- I. There are a variety of splints in use, each of which is applied differently. Follow the manufacturer's instructions regarding the specifics of splint application.
- II. General guidelines for splinting
 - A. Assess pulse, motor, and sensation distal to the injury prior to and following splint application and record findings.
 - B. Immobilize the joint above and below the injury.
 - C. Remove or cut away clothing.
 - D. Cover open wounds with a sterile dressing.
 - E. If there is a severe deformity or the distal extremity is cyanotic or lacks pulses, align with gentle traction before splinting.
 - F. Do not intentionally replace the protruding bones.
 - G. Pad each splint to prevent pressure and discomfort to the patient.
 - H. Splint the patient before moving when feasible and no life threats.
 - I. When in doubt, splint the injury when feasible and no life threats.

Rapid Extrication

- I. Authorization – Rapid extrication is an EMT level skill. However, under the direct supervision of an EMT, an MRT may assist with this process.
- II. Rapid extrication is a technique that may be utilized in life threatening situations to expedite extrication and immobilization of a seated patient without the use of a short spine immobilization device.
- III. Indications
 - A. Unsafe scene
 - B. Unstable patient condition warrants immediate movement and transport.
 - C. Patient blocks EMS providers' access to another, more seriously injured, patient.
 - D. Rapid extrication is based on time and the patient, and not the EMT-Basic's preference.
- IV. Procedure
 - A. Rescuer #1 is positioned behind patient and provides manual immobilization.
 - B. Rescuer #2 applies a cervical collar as Rescuer #3 places a long backboard near the door and then moves to the passenger seat.
 - C. Rescuer #2 supports the thorax as Rescuer #3 frees the patient's legs from the pedals.
 - D. At the direction of Rescuer #2, the patient is rotated in several short, coordinated moves until the his/her back is in the open doorway and his feet are on the passenger seat.
 - E. At this point, a fourth rescuer should temporarily assume responsibility for stabilizing the patient's head as Rescuer #1 exits the vehicle to resume support of the head outside of the vehicle.
 - F. The end of the long backboard is placed on the seat next to the patient's buttocks.
 - G. Assistants support the other end of the board as the Rescuers #1 and #2 lower the patient onto it.
 - H. Rescuer #2 and Rescuer #3 slide the patient into the proper position on the board in short, coordinated moves.
 - I. Finally, the backboard is lowered to the ground and the patient is secured to it.

Suction

- I. Attach a catheter.
- II. Insert the catheter into the oral cavity without suction, if possible.
- III. Insert only to the base of the tongue.
- IV. Apply suction. Move the catheter tip side to side.
- V. Suction for no more than 15 seconds at a time.
- VI. In infants and children, shorter suction time should be used.
- VII. If the patient has secretions or emesis that cannot be removed quickly and easily by suctioning, the patient should be log rolled and the oropharynx should be cleared.
- VIII. If necessary, rinse the catheter and tubing with water to prevent obstruction of the tubing from dried material.