

**Middlesex Hospital  
EMS Department  
Basic Life Support Guidelines**



July 1, 2014

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## **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 more than 35 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. Middlesex Hospital maintains final authority relative to interpretation of this manual.

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

Manager, Emergency Medical Service  
Middlesex Hospital  
28 Crescent St  
Middletown, CT 06457

Phone: 860-358-6081  
Fax: 860-358-4444

## 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 service authorization levels, not all interventions described are appropriate for all providers. Rather, some interventions are reserved for personnel operating in services 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 (if you are in a town serviced by 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 (if you are in a town serviced by 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 (if you are in a town serviced by 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”.
  - C. The current Medical Director is David Antman MD



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 Manager, Emergency Medical Services, who also functions as the Emergency Medical Services Coordinator.
  - C. The current Manager, Emergency Medical Services is Jim Santacroce, Paramedic



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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 John Connelly, Paramedic



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	<b>EMR</b>	<b>EMT</b>	<b>EMT Service EPI Pen Authorized</b>
<b>AED</b>	Standing order	Standing order	Standing order
<b>Epinephrine Auto-Injector (prescribed)</b>	May not administer	On-line medical control	No relative contraindications Standing order
<b>Epinephrine Auto-Injector (non-prescribed)</b>	May not administer	May not administer	No relative Contraindications Standing order
<b>Oral Glucose</b>	May not administer	Standing order	Standing order
<b>Nitroglycerin (prescribed)</b>	May not administer	Standing order	Standing order
<b>Metered Dose Inhaler (prescribed)</b>	May not administer	Standing order	Standing order
<b>Hemostatic Agents</b>	Standing order	Standing order	Standing order
<b>Tourniquet</b>	Standing order	Standing order	Standing order
<b>Aspirin</b>	May not administer	Standing order	Standing order
<b>SpO2 Monitoring</b>	May not assess	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.
- F. Crisis evaluation. Whenever possible, patients presenting with a mental health crisis should be transported to a facility with admissions, crisis, and security services available.
- G. Patient requests a more distant hospital. It is not required to contact on-line medical control 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. Consider the medical appropriateness of the requested destination as well as impact on service area coverage if the requested facility is located a significant distance away. Unstable patients are to be transported to the closest Emergency Receiving Facility unless above section II A, B and/or C apply

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. 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.

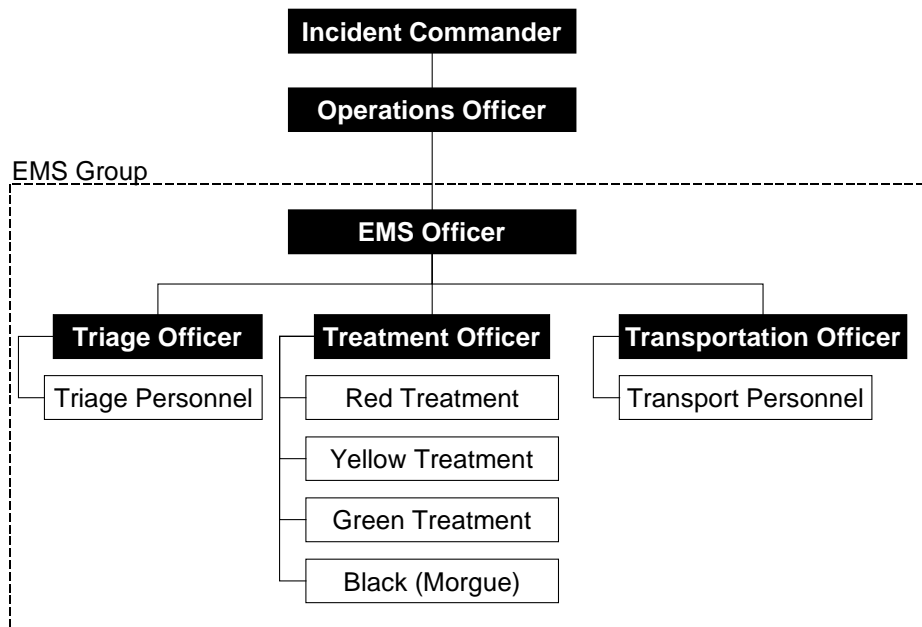
- I. Basic life support assessment consists of the following five components: (1) scene size-up, (2) initial assessment, (3) focused history and physical exam, (4) detailed physical exam and (5) ongoing assessment. These components are organized in order of importance and are typically performed sequentially. 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.
- III. 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 Circulation, Airway, and Breathing. Based on mechanism of injury, consider the need to provide manual c-spine stabilization if indicated.
    1. Circulation
    2. Airway – assess for and maintain an open airway.
    3. Breathing – assess for and maintain breathing.
    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.

- IV. 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
- V. Detailed Physical Exam - Perform a patient/injury specific detailed physical exam to gather additional information
- VI. 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

- I. For the purpose of these guidelines, the term Mass Casualty Incident (MCI) refers to an event declared as such by the Incident Commander. Declaration of an MCI should be considered for any incident in which the number of patients and/or the severity of their injuries exceed the capacity of the local EMS system.
- II. Command – EMS Personnel at an MCI shall function within the established Incident Command System (ICS). The EMS provider’s role at an MCI shall be determined by the Incident Commander or his/her designee. Typically, an EMT or Paramedic will be assigned to either an EMS command or clinical position.
  - A. EMS Command positions include EMS Officer, Triage Officer, Treatment Officer or Transportation Officer.
  - B. Clinical positions include triage and treatment.
- III. EMS Command Positions
  - A. EMS Officer – The EMS Officer is appointed by and reports to the Operations Officer. If an Operations Officer has not been appointed, the EMS Officer reports to the Incident Commander. The EMS Officer’s responsibilities include the following:
    1. Establishing and supervising the EMS Group.
    2. Ensuring early notification of the nearest hospital that an MCI has been declared and providing an estimate of the number and type of patients.
    3. Estimating the number of additional BLS and ALS units that will be necessary to manage the incident and requesting those resources through the incident command system.
    4. Requesting that dispatch notify area hospitals that an MCI has been declared and ascertain the ability of those hospitals to take patients of various levels of severity. Ideally this should be handled by a dispatch center other than the one primarily responsible for handling the MCI.
    5. Consulting with the Operations Officer as to the location of the treatment and patient loading areas. If possible, these areas should be located near one another.
    6. Appointing and supervising the following individuals
      - a. Triage Officer
      - b. Treatment Officer
      - c. Transportation Officer
    7. Providing periodic updates to the Incident Commander or Operations Officer.

- B. Triage Officer - The Triage Officer is appointed by and reports to the EMS Officer. Roles and responsibilities of the Triage Officer include:
1. Assigning a sufficient number of rescuers to the task of performing triage. If additional rescuers are not available, the Triage Officer initiates triage until personnel are available to assume that task. **DO NOT DELAY TRIAGE TO AWAIT ADDITIONAL PERSONNEL.**
  2. Supervising the rescuers who are performing triage.
  3. Utilizing triage tag stubs to determine the number of patients in the various triage categories.
  4. Providing periodic updates to the EMS Officer.
- C. Treatment Officer – The Treatment Officer is appointed by and reports to the EMS Officer. Roles and responsibilities of the Treatment Officer include:
1. Establishing a treatment area in the location so designated by the EMS Officer.
  2. Establishing clearly identifiable RED, YELLOW and GREEN treatment sections within the treatment area. If necessary, a BLACK (Morgue) area may be established as well.
  3. Ensuring appropriate sorting of all patients arriving in the treatment area.
  4. Overseeing the prioritization of patients to be taken from the treatment area for transportation.
  5. Coordinating with Transportation Officer to prepare for loading the patients for transportation.
  6. Communicating with on-line medical control as necessary.
  7. Providing periodic updates to the EMS Officer.
  8. Requesting additional supplies and personnel as needed through the EMS Officer.
- D. Transportation Officer – The Transportation Officer is appointed and reports to the EMS Officer. The responsibilities of the Transportation Officer include:
1. Establishing a patient loading area in the location so designated by the EMS Officer.
  2. Coordinating the movement of ambulances through the loading area.
  3. Overseeing patient loading operations, ensuring appropriate distribution of patients among basic life support and advanced life support transport ambulances.
  4. Communicating and documenting
    - a. Instructing ambulance personnel not to contact hospitals unless medical control is required for condition change.

- b. Recording departure times, hospital notification times, patient ID#, destination of transporting vehicles and identity of EMS crews.
  - c. Notifying receiving hospitals of inbound patients and estimated time of arrival.
5. Providing periodic updates to the EMS Officer.
- E. Organization of EMS Group – The organization chart below depicts the typical structure of the EMS Group at an MCI. Non-EMS organizational relationships involving the Incident Commander and Operations Officer are excluded for clarity.



- IV. Triage – Triage entails the sorting of patients based on the severity of their injuries. Initial triage of patients shall be performed using the SMART triage system for all patients. The SMART triage system is described in **Figures 1-4**.

- V. Handling Human Remains – Handling human remains is generally not the responsibility of EMS personnel.
  - A. In most cases human remains should be left where they are found.
  - B. Remains may be relocated in the following circumstances.
    - 1. They are blocking rescuer access to viable patients.
    - 2. They are in imminent danger of being destroyed (e.g. impinging fire)
  - C. If it becomes necessary to relocate remains, rescuers should make a reasonable effort to mark the location where they were found (e.g. using the appropriate corner of a triage tag) and a BLACK (morgue) area should be established as a collection point.



Figure 1

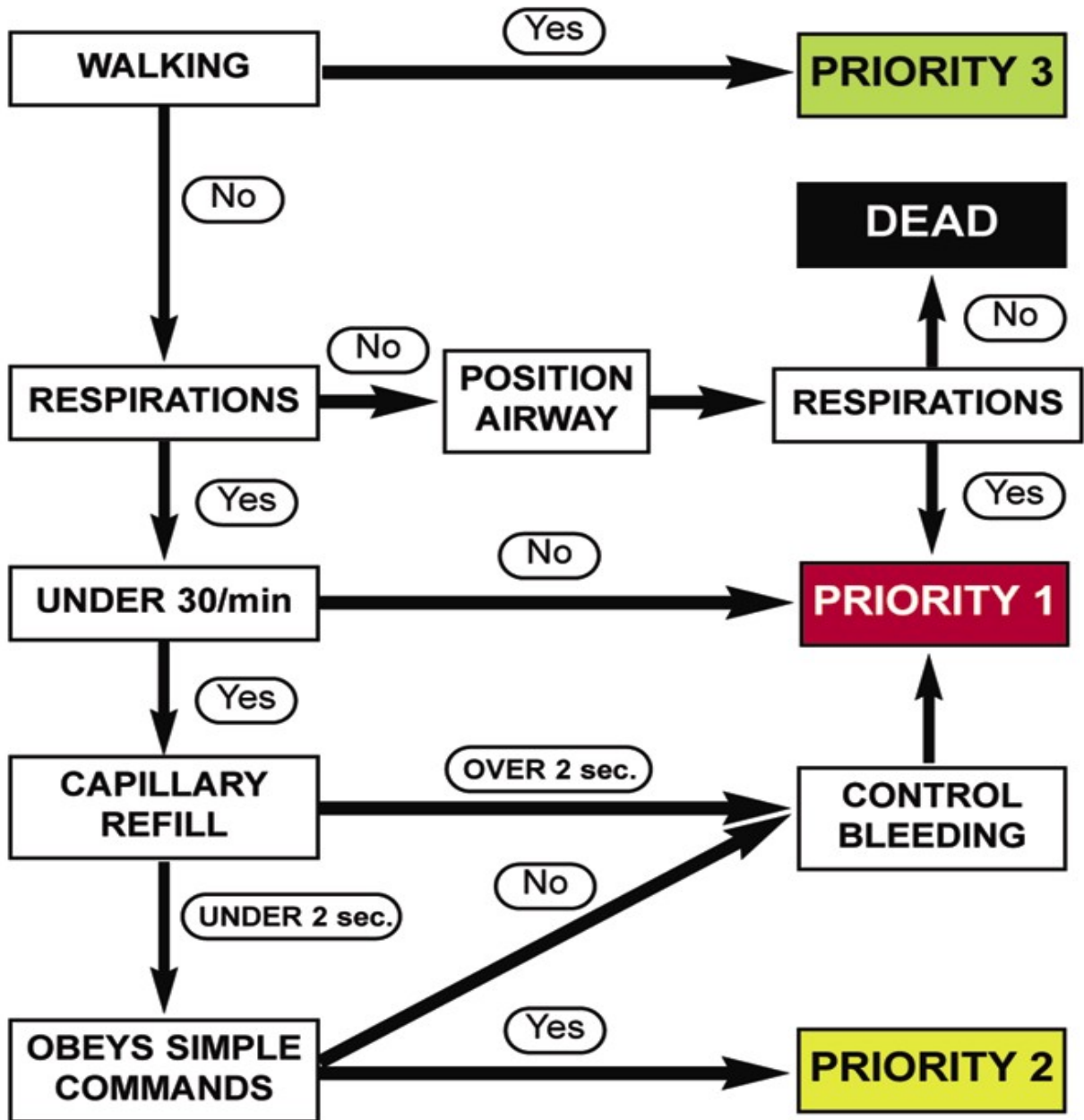


Figure 2

Pediatric SMART Triage System  
(20-32in, 6-22 lbs)

**50-80 cm or 3-10 kg**

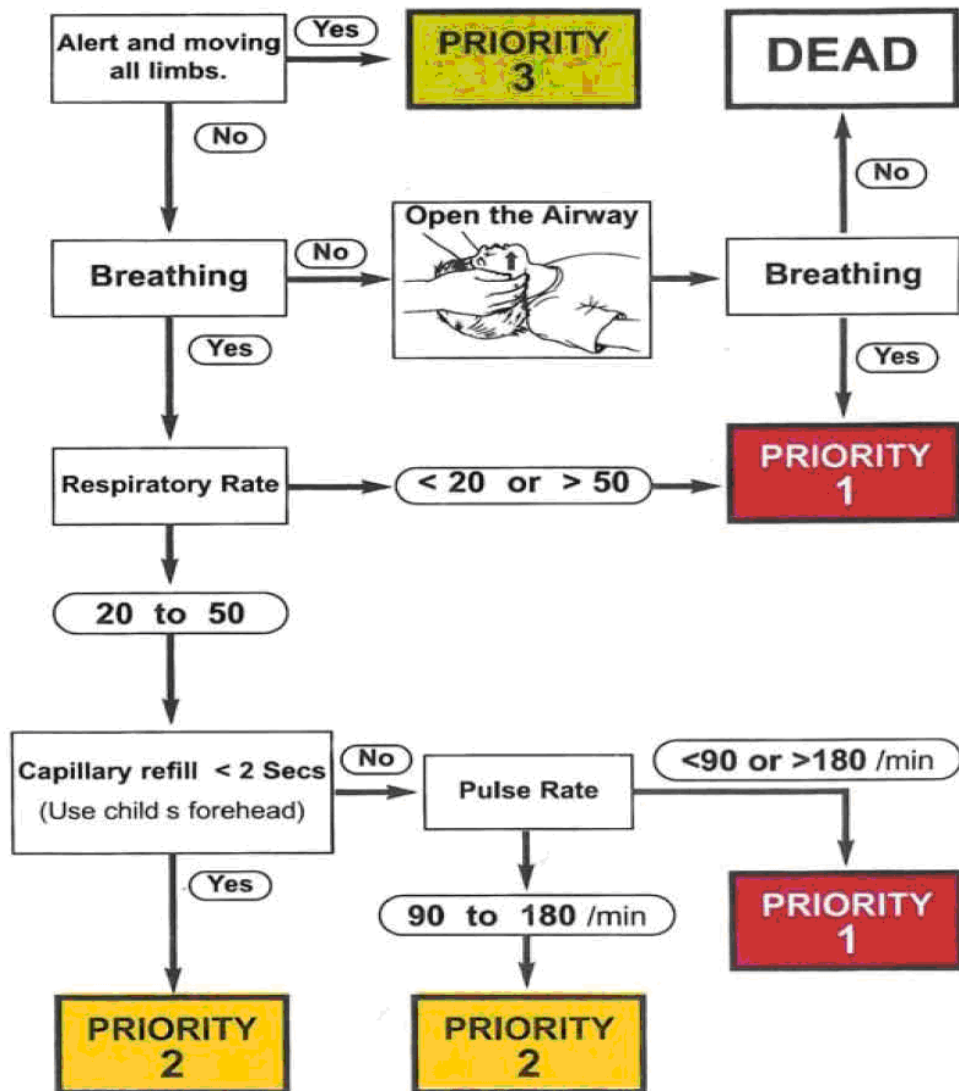


Figure 3

Pediatric SMART Triage System  
(32-40 in, 22-40 lbs)

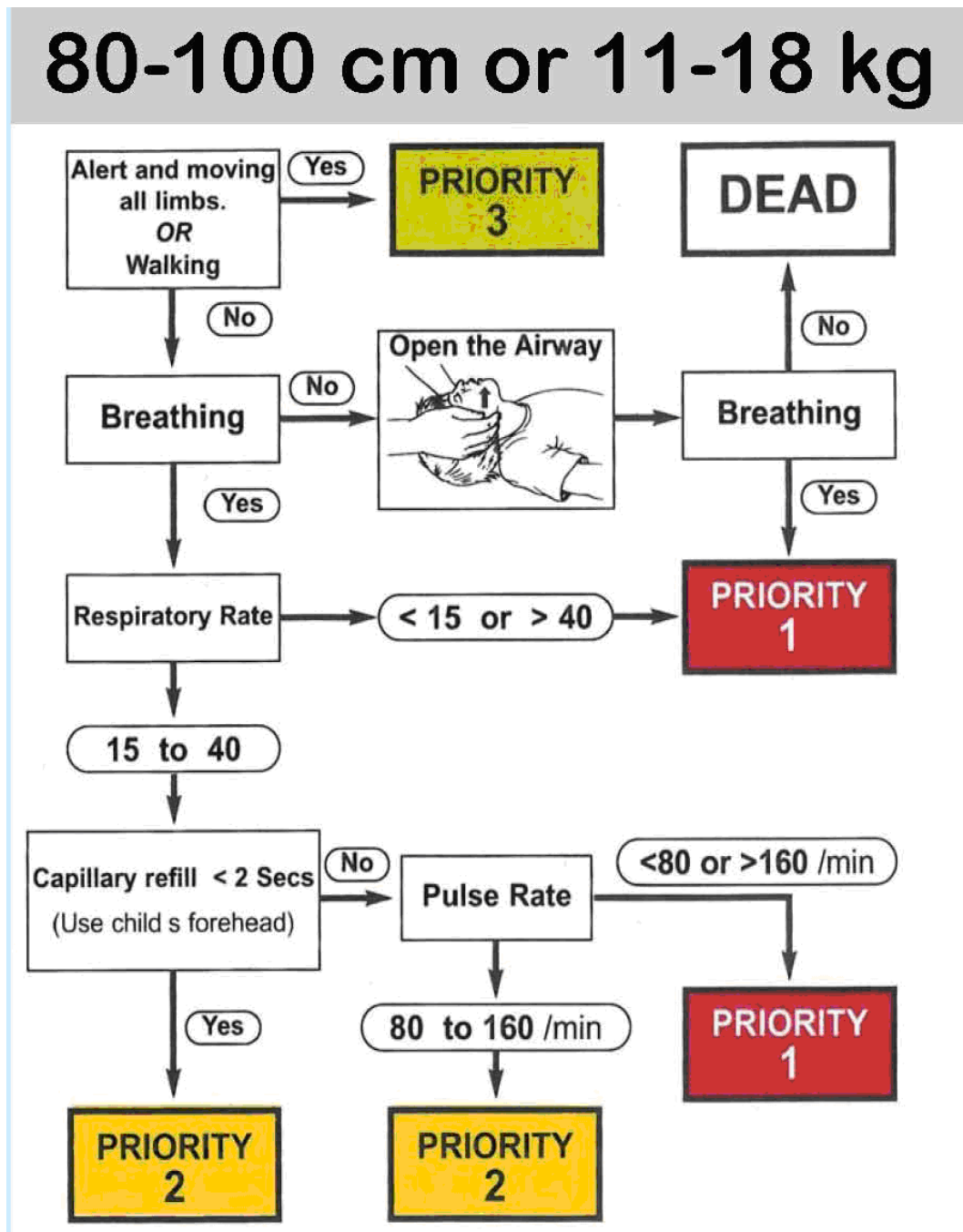
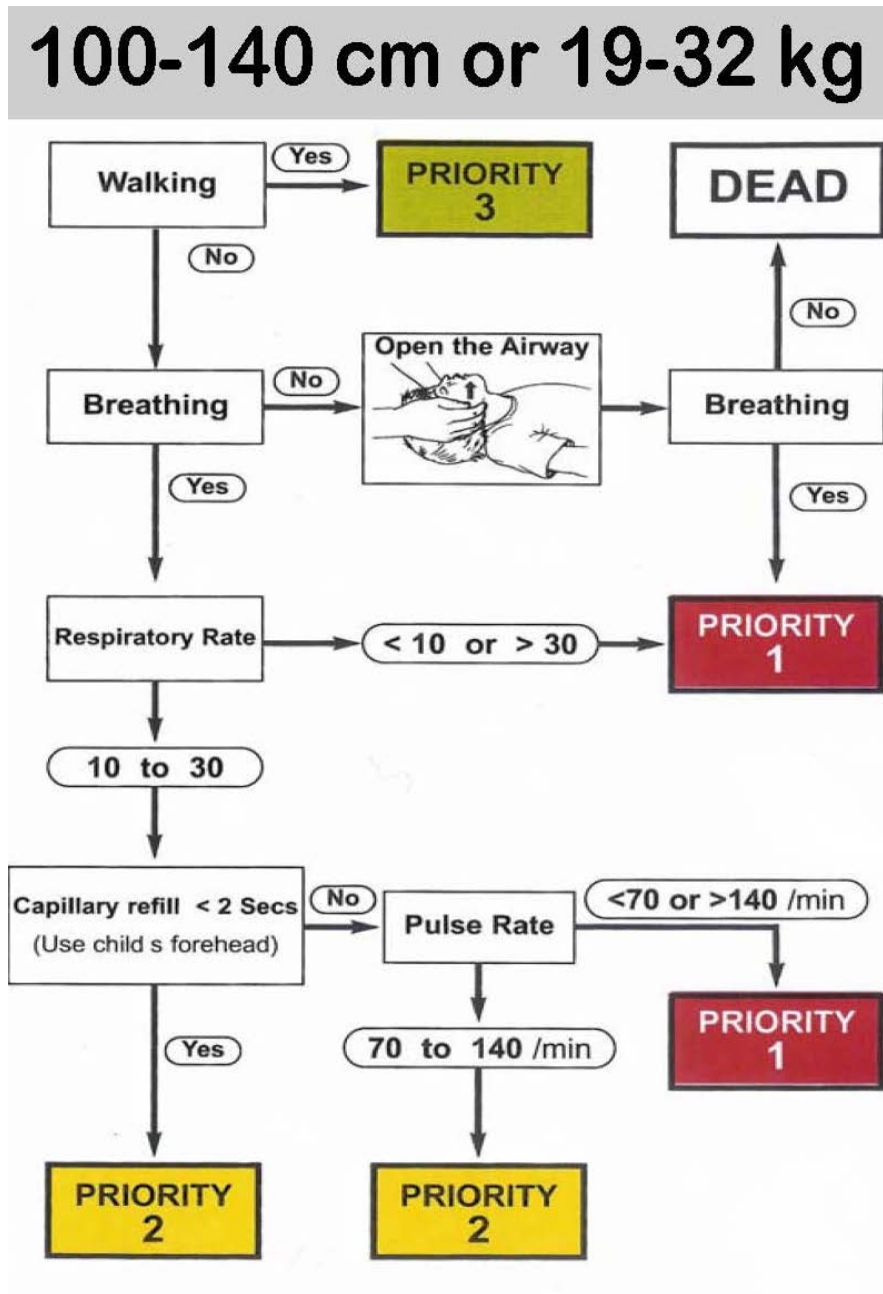


Figure 4

Pediatric SMART Triage System  
(40-45 in, 40-71 lbs)



## EMS OFFICER

Reports To: Operations Officer

### Immediate

- \_\_\_\_\_ Receive appointment, review this Job Action Sheet and locate supplies required for this role, including vests or other identification markers, forms and writing implements.
- \_\_\_\_\_ Identify the type of incident; estimate the number of victims and their injuries. From this anticipate any need for mutual aid and any hazards or unique requirements for operations.
- \_\_\_\_\_ Coordinate with the Operations Officer for traffic and EMS access, including location of any staging areas.
- \_\_\_\_\_ Obtain authority from Operations Officer to enter the scene and establish the medical operations.
- \_\_\_\_\_ Communicate an estimate of casualties to both the dispatch center and the primary receiving hospital. Request that dispatch ascertain the capacity of area hospitals to receive casualties.
- \_\_\_\_\_ Appoint a Triage Officer.

### Intermediate

- \_\_\_\_\_ Direct incoming EMTs to assist in back boarding and other activities needed.
- \_\_\_\_\_ Coordinate with the Operations Officer for proper location of treatment and patient loading areas.
- \_\_\_\_\_ Appoint and supervise a Treatment Officer. Provide him/her with appropriate Job Action Sheet.
- \_\_\_\_\_ Appoint and supervise a Transportation Officer. Provide him/her with appropriate Job Action Sheet.
- \_\_\_\_\_ Obtain a patient count from the Triage Officer.
- \_\_\_\_\_ Communicate with on-line medical control as necessary.

### Extended

- \_\_\_\_\_ Identify and address operational problems within the EMS Group.
- \_\_\_\_\_ Reassign resources as needed.
- \_\_\_\_\_ Give periodic reports with appropriate information to Operations Officer.

\_\_\_\_\_ Using subordinates, supervise the various triage steps, patient care and packaging and the loading of patients for transportation to an appropriate destination hospital.

\_\_\_\_\_ When operations are under control, recommend to Operations Officer that the MCI response be terminated - or declared "under control."

## TRIAGE OFFICER

Reports To: EMS Officer

### Immediate

- \_\_\_\_\_ Receive appointment from EMS Officer. Receive appointment, review this Job Action Sheet and locate supplies required for this role including vests or other identification markers, and a supply of gloves.
  
- \_\_\_\_\_ Appoint an individual to the task of performing primary triage. Provide him/her with the appropriate Job Action Sheet. **DO NOT DELAY PRIMARY TRIAGE.** If there are no additional EMS personnel on scene to whom this task can be delegated, initiate primary triage yourself and continue until additional help arrives.
  
- \_\_\_\_\_ Appoint an individual to the task of performing secondary triage. If no additional EMS personnel are available to perform this task, initiate secondary triage yourself and continue until additional help arrives. (Primary and secondary triage may be combined using the START Triage method)

### Intermediate

- \_\_\_\_\_ Supervise the triage activities.
  
- \_\_\_\_\_ Give periodic reports with appropriate information to the EMS Officer.
  
- \_\_\_\_\_ Collect the triage tag stubs from the individual(s) performing secondary triage and using the worksheet below, determine the number of patients. Convey that information to the EMS Officer.
  
- \_\_\_\_\_ Stand down when requested to do so by the EMS Officer when all patients have been either removed to the treatment area, or released to go home.

## TREATMENT OFFICER

Reports To: EMS Officer

### Immediate

- \_\_\_\_\_ Receive appointment, review this Job Action Sheet and locate supplies required for this role including vests or other identification markers, colored tape with anchors to mark boundaries of treatment area, colored flags or markers for use inside the area, forms and writing implements.
- \_\_\_\_\_ Receive from the EMS Officer the authorized location for the treatment area to be set up.
- \_\_\_\_\_ Set up the treatment area. Include a demarcation within the boundary lines set for the red tagged and the yellow tagged patients to be located. Identify the entry to the treatment area and clearly mark (as with traffic cones) to channel all arriving patients through a single check-in point.
- \_\_\_\_\_ Directly or by use of designated subordinates, assume command and control over all personnel in the treatment area. Supervise all patient care by assigning personnel with advanced medical training to appropriate areas. Provide for required security arrangements.
- \_\_\_\_\_ Directly or by use of designated subordinates, receive and review the condition of all patients as they arrive in the treatment area.

### Intermediate

- \_\_\_\_\_ Supervise treatment function in treatment areas. If the incident size warrants doing so, appoint subordinates to supervise the RED, YELLOW and GREEN treatment areas respectively.
- \_\_\_\_\_ Directly or by use of designated subordinates, maintain an inventory of supplies and equipment, requesting additional as needed through the EMS Officer.
- \_\_\_\_\_ Determine the order by which patients will be sent to the loading area.
- \_\_\_\_\_ Give periodic reports to the EMS Officer.

### Extended

- \_\_\_\_\_ Continue until all patients have been seen in the treatment area.



- \_\_\_\_\_ Complete and turn in a final written report on the number and color categories of patients seen in the treatment area.
  
- \_\_\_\_\_ Stand down when requested to do so by the EMS Officer.

## TRANSPORTATION OFFICER

Reports To: EMS Officer

### Immediate

- \_\_\_\_\_ Receive appointment, review this Job Action Sheet and locate supplies required for this role including vests or other identification markers, forms and writing implements.
- \_\_\_\_\_ Establish the loading area in the location so designated by the EMS Officer. Request available ambulance vehicles and drivers into this area in an organized way that permits rapid loading of more than one ambulance at a time.
- \_\_\_\_\_ Assign patients cleared by the treatment officer to ambulances and the ambulances to the hospitals.
- \_\_\_\_\_ Maintain a written record of the patients loaded including tag numbers, hospitals to which they were taken, name of transporting ambulance company and vehicle, and time of departure from the loading area.
- \_\_\_\_\_ As necessary, provide drivers with routing instructions and maps if available.

### Intermediate

- \_\_\_\_\_ Either directly or through dispatch, communicate the following patient information to the receiving hospitals: triage tag number and color, approximate age and gender, and anticipated departure time. Receive the name of the destination hospital.
- \_\_\_\_\_ Give periodic reports to the EMS Officer.

### Extended

- \_\_\_\_\_ Continue until all patients have been transported.
- \_\_\_\_\_ Complete and turn in a final written report on the patients loaded.
- \_\_\_\_\_ Stand down when requested to do so by the EMS Officer

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 EMR/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. 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 EMR/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 EMR/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.

I. **INTRODUCTION**

- A. All Clinically dead patients will receive all available resuscitative measures including cardiopulmonary resuscitation (CPR) unless contraindicated by one of the exceptions defined below. A clinically dead patient is defined as any unresponsive patient found without respirations and without a palpable carotid pulse.
- B. The provider who has the highest level of currently valid EMS certification or licensure (above EMR level), has active medical control, has direct voice communications for medical orders and who is affiliated with an EMS Organization present at the scene will be responsible for, and have the authority to direct, resuscitative activities.
- C. This guideline is for use in non-mass causality situations.
- D. This guideline applies only to adults age 18 and over.

II. The following conditions are the ONLY exceptions to initiating and maintaining resuscitative measures in the field on a clinically dead patient (Sections A1 – A4 are applicable to EMR level providers):

- 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 third degree burn as exhibited by ash rather than clothing and complete absence of body hair with charred skin.
- B. Sections B1-B2 require additional assessment and/or confirmation found under "General Procedures" (section IV)
  - 1. Dependent lividity with rigor: when clothing is removed, there is a clear demarcation of pooled blood within the body, and the body is generally rigid. DOES NOT APPLY TO VICTIMS OF LIGHTNING STRIKES, DROWNING OR HYPOTHERMIA.
  - 2. Injuries incompatible with life, such as massive crush injury, complete exsanguination, and severe displacement of brain matter.
- C. Pronouncement of death at the scene by a licensed Connecticut physician or authorized registered nurse.

III. **Do Not Resuscitate**

- A. A valid DNR bracelet is present, when it:
  - 1. Conforms to the state specifications for color and construction.
  - 2. Is intact: it has not been cut, broken, or shows signs of being repaired.
  - 3. Is on the wrist or ankle.
  - 4. Displays the patient's name and the physician's name.
- B. DNR Transfer Form
  - 1. Used to transmit a DNR order during transport by an EMS provider between healthcare institutions. The DNR order shall be documented on the DNR transfer form.
  - 2. The DNR transfer form must be signed by a licensed physician or a registered nurse and shall be recognized by such and followed by EMS providers.
  - 3. The DNR remains in place during the transport as well as to the point of admission to the receiving facility.

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

- C. Revocation of the DNR
  - 1. A patient or authorized representative may revoke a DNR order by removing a DNR bracelet from a patient's extremity or by telling the EMS provider.
  - 2. In the event that EMS providers cannot verify the DNR status, the patient should be transported with normal care per Middlesex Hospital prehospital guidelines.

IV. **General Procedures**

- A. In cases of dependent lividity **with** rigor mortis, and in cases of injuries incompatible with life, 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. Examine the pupils of both eyes with a light; both pupils are non-reactive.
  - 4. Absence of a shockable rhythm with an AED (if available) for 30 seconds.
  - 5. Contact On-Line Medical Control to discuss findings and record time of death.
- B. If the components defined above in section A1-A4 are confirmed, no CPR need be performed.

- C. If CPR has been initiated but all components defined above in section A1-A4 have been subsequently confirmed, CPR may be discontinued and medical direction contacted to confirm field presumption/cessation of resuscitative efforts.
- D. Special Consideration: For scene safety and/or family wishes, BLS providers may decide to implement CPR even if all the criteria for clinical death are met.
- E. If any of the findings differ from those described above, clinical death is NOT confirmed and resuscitative measures must be immediately initiated or continued.

**V. Do Not Resuscitate (DNR) with Signs of Life**

- A. If there is a DNR bracelet or DNR transfer form and there are signs of life (pulse and respiration), EMS providers should provide standard appropriate treatment using the BLS guideline appropriate for the patient's condition.

**1. Mandatory On-Line Medical Control**

- a) **Contact on-line Medical Control to if presented with a request to withhold treatment for patients with a valid DNR and signs of life.**

**VI. 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. 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 a health care institution. Normally the police make this notification; otherwise EMS personnel should make the notification and document the conversation with the Medical Examiner on the patient care record. You will also be given a case number by the Medical Examiner, which also should be documented on the patient care record. Consultation with your local or state law enforcement agency to create a plan of action for these situations is strongly encouraged.
  - 2. If the body is in a secure environment (where it is protected from view by the public, from being disturbed or moved by unauthorized people), the police should be contacted if not present already. The personal or covering physician must be notified if at all possible and EMS personnel may leave when the patient has been turned over to one of the following: police, Medical Examiner, or funeral home staff. Example: a death at home.
  - 3. If the body is not in a secure environment notify the police. The police may contact the Office of the Chief Medical Examiner 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: death occurring on the street.



**VII. Determination of Death/Discontinuation of Resuscitation Notes**

- A. Consider the needs of the survivors when considering the discontinuation of resuscitation, especially if crisis management services may be needed.
- B. Scene management and safety of the crew and public may prevent withholding/discontinuation of resuscitative efforts. In general, do not cease resuscitative efforts in public places/establishments.
- C. If the patient is deemed a medical examiner's case, all IV lines, endotracheal and other tubes must be left in place.
- D. If the patient is being picked up by a funeral home, IV lines, endotracheal and other tubes may be removed.

**VIII. 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.
- B. All Medical Control orders will be noted on the patient care record including time of death and the name of the physician giving the order.
- C. All encounters with the patient's family, personal physician, on-scene physician, on-scene nurse, medical examiner, law enforcement will be noted on the patient care record.
- D. 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.
- E. 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 pre hospital cardiac arrest report, AED printed record, and copy of all PCR documenting pre-hospital deaths must be provided to medical direction within 24 hours.

- I. In some instances when treating an agitated, aggressive or combative patient, reassurance, calming measures do not adequately allow control of the patient. Physical Restraints may be necessary to relieve the patient's agitation and ensure the safety of both the EMS providers and the patient.
  
- II. Statement  

Use of a physical restraint on patients is permissible if the patient poses a danger to himself or others. Only reasonable force<sup>1</sup> is permitted. Restraint use is limited to the patient's extremities.
  
- III. Connecticut EMS Regulation notes:
  - A. **Per section 19a-179-18 (a) (2) (R)**, EMS providers may only utilize "restraint devices of sufficient strength to restrain a violent adult and sufficiently padded to prevent chafing or injury to the patient."
  
  - B. **Per section 19a-179-9 (b)**, "No person acting as an emergency medical service provider shall possess or carry handcuffs. Nor shall any person possess or carry any other restraint devices except those approved by OEMS in accordance with subsection 19a-179-18 (a) (2) (R) of these regulations. This provision shall not apply to sworn law enforcement officers while on duty as such."
  
  - C. **Per Section 19a-179-18. Minimum vehicle standards**  
(a) Basic ambulance vehicles shall be inspected at least annually by OEMS and shall conform to the following design and equipment standards
    - (2) Equipment
      - (R) Restraint devices of sufficient strength to restrain a violent adult and sufficiently padded to prevent chafing or injury to patient
  
  - D. On March 24, 2011, DPH Operations Branch Chief, Leonard, H. Guercia, Jr. issued administrative guidance regarding EMS use of handcuffs. The directive reads as follows: **"If a patient has been handcuffed by law enforcement and the removal of the handcuffs presents a danger to the patient or crew, it is recommended that the police officer either accompany the EMS crew in the ambulance or follow directly behind the ambulance enroute to the hospital. It is recommended that you consult with your local Police Department or Commander of the State Police Troop which covers your community to discuss any additional operational concerns and to assure everyone is acting in the best interest of patient care."**
  
- IV. Indications
  - A. A patient whose medical or mental condition warrants immediate ambulance transport and who is exhibiting behavior that the pre-hospital provider feels may or will endanger the patient or others.
  
  - B. The pre-hospital provider reasonably believes the patient's life or imminent health is in danger and that the delay in the treatment and transport of this patient would further endanger the patient's life.

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<sup>1</sup> The minimum amount of force necessary to control the patient and prevent harm to the patient or others in the presence of that patient.

- C. The patient is being transferred to a receiving (emergent or tertiary) facility with a medical order for restraint. This order **MUST** be either a written order by the nursing/chronic care facility ordering the transfer or an on-line Medical Direction order allowing the restraints to be utilized.
  - D. The patient is being transported in the custody of the Police Department, a law enforcement officer is in the presence of the patient, and an officer will be following the ambulance to the Emergency Department.
- V. Precautions
- A. Restraints shall be used only when necessary to prevent a patient from seriously injuring him/herself or others. They **MUST NOT** be used as a punishment or for the convenience of the ambulance crew, but for the provision of safe transportation and treatment.
  - B. Any attempt to restrain a patient involves risk to the patient and the pre-hospital provider. Efforts to restrain a patient shall be done only when there is adequate assistance present.
  - C. Patients must have a Physical examination performed (if permitted) prior to applying restraints. They should be assessed for extremity injury and for any neurological, metabolic or traumatic injury resulting in decompensation.
  - D. Ensure that the patient has been searched for weapons.
  - E. In the case of a violent or threatening patient, immediately contact the local Police Department for assistance.
- VI. Procedure
- EMS providers should assess the scene and dispatch other resources as necessary. If a patient is volatile and requires physical restraint, contact the local Police Department and do not attempt to restrain unless absolutely necessary without Police presence. When you approach a volatile patient:
- A. Approach at a 45-degree angle from front rear or side.
  - B. Keep your body towards an escape means. **DO NOT BECOME TRAPPED.**
  - C. Keep your arms in a defensive position.
  - D. If approaching with more than one person, work in unison.
  - E. Familiarize yourself with recommended takedowns and physical escort positions. **PATIENTS MAY NOT BE RESTRAINED IN THE PRONE POSITION.**
- VII. Potential Complications
- A. Aspiration. It is the responsibility of the EMS provider to continually monitor the patient's airway and level of consciousness.
  - B. Nerve injury or soft tissue damage may occur from restraints that are applied tightly

- VIII. Documentation shall include restraint device utilized, distal motor sensory evaluation of extremity part directly distal to the area restrained. Capillary Refill and palpable distal pulses must be diligently documented.

- 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 2 sets of 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 / Date of Birth

- C. Chief Complaint
- D. Past Medical History
- E. Current Medications
- F. Known Allergies
- G. Vital Signs
- H. Treatment administered and time of administration
- 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
- M. Documentation is a critical part of the patients care and the first hand perspective of EMS can have a major impact on the continuing treatment and safety of the patient throughout their visit. For this reason it is expected that all patient care reports should be left at the receiving facility at the time the patient is transported. It is understandable that on a rare occasion when this is not possible due to a pending emergency. In those situations the ePCR should be delivered within eight hours.

- 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 becomes unresponsive, perform chest compressions.
  - B. Unresponsive patient
    1. Initiate CPR
    2. Do not perform blind finger sweeps in children because sweeps may push the foreign body back into the airway. If object is visible and you can easily remove it, remove it..
    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 slaps
2. Deliver up to five quick downward chest thrusts
3. Repeat the sequence of five back slaps and five chest thrusts until the obstruction is cleared or the patient becomes unresponsive.

B. Unresponsive patient

1. Stop giving back slaps and Initiate CPR
2. Do not perform blind finger sweeps in infants because sweeps may push the foreign body back into the airway.
3. Continue CPR, reassessing airway prior to each ventilation. If object is visible and you can easily remove it, 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



- 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 life 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.

- I. EMR/EMT Intervention
  - A. Perform and document patient assessment.
  - B. Provide supplemental oxygen.
  - C. Consider 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. If SpO<sub>2</sub> is less than 94% provide supplemental oxygen.
  - B. If the patient is alert and has a prescribed bronchodilator metered dose inhaler, assist with administration of 1 to 2 inhalations, repeated once in 15 minutes as necessary.

- I. Open airway
- II. Ensure airway is clear of obstructions
- III. Initiate positive pressure ventilation by using the most appropriate technique listed below:
  - A. Pocket mask for a single rescuer (if bag-valve-mask is not available)
  - B. Bag-valve-mask with supplemental oxygen. If oxygen is not immediately available, start ventilation and supplement oxygen when available.
  - C. Ventilate adult patients approximately 10 -12 ventilations per minute and pediatric patients 18-20, do not hyperventilate.
- IV. If ventilation is inadequate, establish either an oropharyngeal or nasopharyngeal airway.
- V. 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.
- VI. Request ALS response.
- VII. Initiate transport as soon as possible.

- I. EMR/EMT Interventions
  - A. Perform and document patient assessment.
  - B. Provide supplemental oxygen.
  - C. Request ALS response.
  - D. Initiate rapid transport to hospital emergency department.
  
- II. Additional EMT Interventions
  - A. Administer baby Aspirin PO 324mg (81mg x 4) for cardiac related chest pain or chest discomfort if not contraindicated (refer to contraindications in Aspirin guideline).
  
  - B. Should the patient have their own Nitroglycerine, is conscious, has a systolic blood pressure greater than 100 mmHg, and the chest pain is believed to be cardiac in nature following the patient assessment, assist with administration of the patient's prescribed nitroglycerine if not contraindicated (refer to contraindications in Nitroglycerine guideline).
    1. Ensure the patient's prescription has not expired
    2. Administer the patient's usual prescribed dose
    3. Provide supplemental oxygen if SpO2 is less than 94% or if accurate SpO2 is not known.
    4. Reassess vital signs three minutes after administration
  
  - C. Repeat nitroglycerine administration at three to five minute intervals to a maximum of three doses if:
    1. The patient's chest pain / discomfort persists, and
    2. The patient's systolic blood pressure remains greater than 100 mmHg, and
    3. The patient remains alert

- I. Rapid delivery of high quality chest compressions (CPR) and defibrillation are the most critical and potentially lifesaving aspects of cardiac arrest management. Incorporate the steps listed under the General Approach to Cardiac Arrest Management as soon as possible and follow the Cardiac Arrest/AED Algorithm. While the Biphasic AED is preferred, Middlesex Hospital recognizes that not every BLS service has replaced all of their monophasic AED's with biphasic AED's. Therefore, if a monophasic unit is used, deliver all defibrillations at 360 joules and follow the instructions as dictated by the audible prompts of the device.
- II. General Approach to Cardiac Arrest Management.
  - A. Initiate CPR in accordance with American Heart Association Guidelines.
  - B. Deploy AED while CPR is being performed by additional personnel (if possible). Once applied, the AED should be left in place and should remain on unless and until an ALS provider attaches a monitor/defibrillator.
    1. Adult AED pads are to be applied to patients that weigh over 55 lbs (25kg).
    2. Pediatric AED pads
      - a) Biphasic - Patients from one year of age until a weight of 55 lbs (25 kg).
      - b) Monophasic – Follow device manufacture recommendations
  - 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 supplemental oxygen:
    1. pocket mask with a one-way valve and oxygen port
    2. bag valve mask with oxygen reservoir
  - F. **EMS Providers should provide aggressive resuscitation on scene for at least 20 minutes prior to consideration of transport or termination. Consider if transport will have a benefit for the patient.**
  - G. Attempt to ascertain the patient's medical history to the extent this can be accomplished without delaying care.
  - H. Initiate transport to the nearest emergency department, when appropriate or indicated.
- 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
  - A. Biphasic AED use is contraindicated in patients less than one year of age.
  - B. Monophasic AED use: Follow device manufacture recommendations

V. Hypothermic Cardiac Arrest

Severely hypothermic patients may be successfully resuscitated after prolonged periods of time. For this reason, hypothermic cardiac arrest patients should not be presumed dead in the prehospital setting.

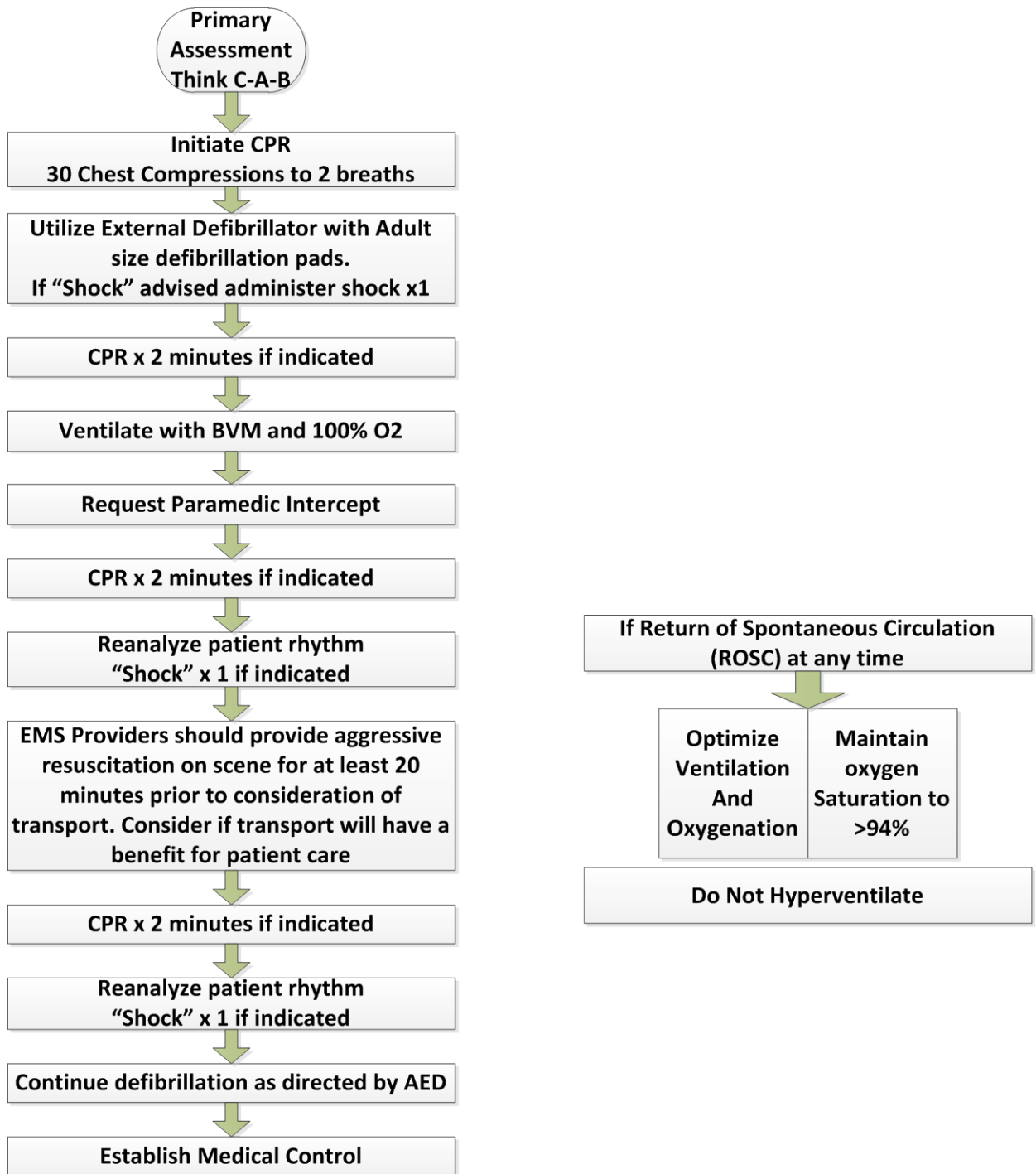
- A. Deploy AED while high quality chest compressions (CPR) being performed by additional personnel (if possible). Once applied, the AED should be left in place and should remain on unless and until an ALS provider attaches a monitor/defibrillator.
- B. Deliver one AED shock. If no response,
- C. Continue high quality chest compressions (CPR)
- D. Request ALS response
- E. Follow Hypothermia Guideline
- F. Initiate transport to the nearest emergency department as soon as possible.
- G. Contact on-line medical control for further instructions. Do not deliver additional shocks unless directed to do so by medical control.

VI. CPR Assist Devices

The current data does not reflect an increase in better patient outcomes when using CPR assist devices vs. manual CPR. They do offer steady, uninterrupted compressions and can enhance safety for emergency personnel. For those reasons, the use of CPR assist devices has been approved by Middlesex Hospital. The deployment and proper use of these devices should be guided by the manufactures recommendations, depending on the brand that was purchased. If a service is going to purchase and deploy a CPR assist device, the following criteria must be followed:

- A. The device must be FDA approved
- B. Middlesex Sponsor Hospital must be notified in writing
- C. All service members of the department who are CPR certified must receive initial and annual training on the device
- D. All training records will be maintained by the service and subject to audit by Middlesex Sponsor Hospital
- E. Document each use of the CPR assist device, including any adverse events associated with its use.

### Cardiac Arrest / AED Algorithm



- 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. **Consider the patient's past medical history and ascertain their normal mental baseline.**
- 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 supplemental oxygen if SpO2 is less than 94% or if accurate SpO2 is not known
  - 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)

<b>Glasgow Coma Scale</b>			
	<b>Adult/Child</b>	<b>Infant</b>	<b>Score</b>
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

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



- I. EMR/EMT treatment for altered mental status with a history of diabetes.
  - A. Ensure circulation, airway, and breathing
  - B. Perform assessment
  - C. Administer supplemental oxygen.
  - D. Consider ALS response
  - E. Initiate transport to hospital.
  
- II. Additional EMT treatment
  - A. If patient is conscious and able to swallow, administer one tube of oral glucose. If oral glucose is not available, consider having the patient drink fruit juice with 1 tablespoon of table sugar added.
  - B. Provide supplemental oxygen if SpO<sub>2</sub> is less than 94% or if accurate SpO<sub>2</sub> is not known.
  - C. Consider ALS response if the patient's mental status is not rapidly improving after glucose administration

- I. Mild allergic reaction – Hives and/or itching without respiratory distress or signs of shock.
  - A. EMR/EMT Treatment
    1. Ensure circulation, airway, and breathing
    2. Perform assessment
    3. Transport to emergency department
  
- II. Severe allergic reaction – Hives and/or itching with respiratory distress and/or signs of shock.
  - A. EMR/EMT Treatment
    1. Ensure circulation, airway, and breathing
    2. Perform assessment
    3. Administer 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* and does not have relative contraindications (refer to contraindications in Epinephrine guideline)<sup>1</sup>
      - a) EMT is functioning with a Middlesex Hospital sponsored MIC-Epi Service: administer epinephrine auto-injector on standing order
      - b) EMT is not functioning with a Middlesex Hospital sponsored MIC-Epi service: Contact on-line medical control for permission to administer the patient's prescribed epinephrine auto-injector.
  
    2. If the patient *does not have a prescribed epinephrine auto-injector* and does not have relative contraindications:
      - a) EMT is functioning with a Middlesex Hospital sponsored MIC-Epi Service: administer epinephrine auto-injector on standing order
      - b) EMT is not functioning with a Middlesex Hospital sponsored MIC-Epi service: **MAY NOT** administer a non-prescribed epinephrine auto injector.
  
    3. Provide supplemental oxygen if SpO2 is less than 94% or if accurate SpO2 is not known.

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<sup>1</sup> EpiPen for use in patients over 30kg/66lbs  
EpiPen, Jr for us in patients under 30kg/66lbs

- I. Management of a Seizure
  - A. Maintain circulation, airway, and breathing
  - B. Perform assessment.
  - C. Position patient on side if no possibility of cervical spine trauma.
  - D. Provide supplemental oxygen if SpO<sub>2</sub> is less than 94% or if accurate SpO<sub>2</sub> is not known.
  - E. Be prepared to suction patient airway as needed.
  - F. If cyanotic, assure airway and artificially ventilate.
  - G. Request ALS response if the patient has no history of seizures, and/or has had multiple seizures, is pregnant, or has ineffective breathing.
  - H. Transport patient to the hospital.

- I. EMR/EMT treatment for overdoses and poisonings.
  - A. Maintain circulation, airway, and breathing
  - 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 if patient is unconscious , has respiratory distress or SpO<sub>2</sub> is less than 94% or accurate SpO<sub>2</sub> is not known
  - E. Consider 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. 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.

- I. Ensure circulation, airway, and breathing
- II. Assess patient, including Glasgow Coma Scale
- III. Provide supplemental oxygen if SpO<sub>2</sub> is less than 94% or if accurate SpO<sub>2</sub> is not known.
- IV. Request ALS response
- V. Perform rapid neurological exam and record deficits, utilizing the Middlesex Hospital Stroke Screen form (refer to Stroke Screen Form guideline). If patient meets the criteria, and is being transported to:
  - A. A Middlesex Hospital Emergency Department: immediately contact the receiving ED Physician 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
  - D. **Nothing by mouth – nothing given or allowed to be taken orally**
- 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 <3 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 known bleeding disorder
  - 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.

- I. Ensure circulation, airway, and breathing.
- II. Perform assessment, particularly noting if patient's abdomen is rigid, distended, or discolored. Also note the nature of the patient's pain, if it is localized, and/or if the pain extends beyond the patient's abdomen (referred pain).
- III. Consider need for ALS if the patient is either unstable, is suspected to have or has a history of aortic aneurysm, has had syncope or near syncope, is >35 years old and is experiencing pain above the navel.
- IV. Administer nothing by mouth. Do not permit patient to eat, drink or self-administer medication.
- V. Allow patient to assume position of comfort unless contraindicated.
- VI. Transport to emergency department.

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. EMR/EMT treatment

- A. Ensure circulation, airway, and breathing
- B. Provide supplemental oxygen if SpO<sub>2</sub> is less than 94% or if accurate SpO<sub>2</sub> is not known.
- C. Maintain patient's body temperature.
- D. Request ALS response
- E. Initiate rapid transport to the hospital

- F. Provide appropriate treatments for the given presenting illness or injury
- G. Perform frequent ongoing assessment, at least every five minutes.



- 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. Provide supplemental oxygen if SpO<sub>2</sub> is less than 94% or if accurate SpO<sub>2</sub> is not known.
  - 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
  - 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 then 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, place cap on head, and place on its side, head slightly lower than trunk. Let mother hold newborn during transport.

- 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.
  - T. Assess infant's APGAR score at 1 and 5 minutes post delivery using reference in figure 1
- 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 if the SpO<sub>2</sub> is less than 94% or if SpO<sub>2</sub> is not known 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. Provide supplemental oxygen if SpO<sub>2</sub> is less than 94% or if accurate SpO<sub>2</sub> is not known.
    - 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.
    - a) Immediate rapid transportation upon recognition of breech presentation.
    - b) Provide supplemental oxygen if SpO<sub>2</sub> is less than 94% or if accurate SpO<sub>2</sub> is not known.
    - c) Place mother in head down position with pelvis elevated.
- C. Limb presentation
  - 1. Immediate rapid transportation upon recognition.
  - 2. Provide supplemental oxygen if SpO<sub>2</sub> is less than 94% or if accurate SpO<sub>2</sub> is not known.
  - 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.

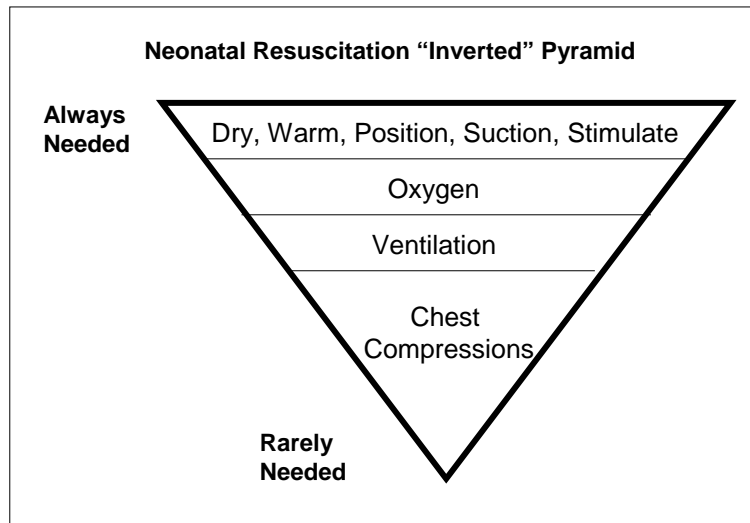
Figure 1 – APGAR SCORE

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 =					

- I. Initial care of the newborn
  - A. Position, dry, wipe, and wrap newborn in blanket and cover the head.
  - B. Repeat suctioning as needed.
  - 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.
  - H. A fetus has an oxygen saturation of approximately 60%, and it may take up to 10 minutes for a healthy newborn to increase saturation to the normal range of over 90%.
  - I. Administer supplemental oxygen only as needed.
- 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. Normal breathing - HR >100 continue to observe the patient
  - B. Normal breathing and HR >100 but cyanotic – administer supplemental oxygen. After 30 seconds if cyanosis persists, administer positive pressure ventilations via BVM.
  - C. Apneic or HR <100 – Administer positive pressure ventilations via BVM. After 30 seconds if HR <60, continue with positive pressure ventilations and initiate chest compressions.
  - D. Breathing effort - if shallow, slow or absent, provide positive pressure ventilations via BVM:
    1. 60/min
    2. Reassess after 30 seconds.
    3. If no improvement, continue positive pressure ventilations and reassessments.
    4. If less than 80 beats per minute and not responding to bag-valve-mask, start chest compressions according to AHA Guidelines.
    5. If less than 60 beats per minute, start compressions and artificial ventilations according to AHA Guidelines.
  - E. Color - if central cyanosis is present with spontaneous breathing and an adequate heart rate administer free flow oxygen –administer supplemental oxygen 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 =					



- 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. 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.
  - B. Ensure circulation, airway, and breathing.
  - C. Perform assessment.
  - D. Request ALS response
  - E. Perform High Quality CPR as needed.
  - F. Suction as needed.
  - G. Provide supplemental oxygen if SpO<sub>2</sub> is less than 94% or if accurate SpO<sub>2</sub> is not known.
  - H. Relieve gastric distention only if it interferes with artificial ventilation.
  - I. Transport

- I. Generalized hypothermia
  - A. Remove the patient from the environment - protect the patient from further heat loss.
  - B. Ensure circulation, airway, and breathing..
  - C. Perform assessment.
  - D. Remove wet clothing and cover with blanket.
  - E. Handle the patient extremely gently. Avoid rough handling.
  - F. Do not allow the patient to walk or exert themselves.
  - G. Provide supplemental oxygen if SpO2 is less than 94% or if accurate SpO2 is not known.- oxygen administered should be warmed and humidified, if possible.
  - H. Assess pulses for 30-45 seconds before starting CPR.
  - I. 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 to highest setting in the patient compartment of the ambulance.
    2. Transport
  - J. If the patient is unresponsive or not responding appropriately, request ALS response
    1. Rewarm passively:
      - a) Warm blankets
      - b) Turn heat up to highest setting 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. Localized cold injuries
  - A. Ensure circulation, airway, and breathing.
  - B. Perform assessment.
  - C. Remove the patient from the environment.
  - D. Protect the cold injured extremity from further injury.



- E. Administer supplemental oxygen if the SpO<sub>2</sub> is less than 94% or if accurate SpO<sub>2</sub> is not known.
- F. Remove wet or restrictive clothing.
- G. 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.
- H. 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

- I. Patient with moist, pale, normal to cool temperature skin.
  - A. Ensure circulation, airway, and breathing.
  - B. Perform assessment.
  - C. Remove the patient from the hot environment and place in a cool environment (e.g. shaded area or back of air conditioned ambulance).
  - D. Provide supplemental oxygen if SpO<sub>2</sub> is less than 94% or if accurate SpO<sub>2</sub> is not known.
  - E. Loosen or remove clothing.
  - F. Cool patient by fanning.
  - G. Put in supine position with legs elevated.
  - H. If patient is responsive and is not nauseated, have the patient drink water.
  - I. If the patient is unresponsive or is vomiting, transport to the hospital with patient on his left side.
  
- II. Patient with hot, dry or moist skin.
  - A. Ensure circulation, airway, and breathing.
  - B. Remove the patient from the hot environment and place in a cool environment (example: patient compartment of ambulance with air conditioner on highest setting).
  - C. Remove patient's clothing.
  - D. Perform assessment.
  - E. Request ALS response
  - F. Provide supplemental oxygen if SpO<sub>2</sub> is less than 94% or if accurate SpO<sub>2</sub> is not known.
  - 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.
  - J. Transport immediately with air conditioning set to highest setting in the patient compartment of the ambulance.

- 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  $<$  or  $=$  12
  - B. Systolic blood pressure  $<$ 90mmHg
  - 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 trauma 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.

- I. External Hemorrhage
  - A. Maintain circulation, airway, and breathing.
  - 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 bleeding source.
    2. Do not elevate extremity or use pressure points.
    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.
  - F. Methods to control external hemorrhaging 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.
    3. Tourniquet
      - a) The use of a tourniquet must be considered in severe hemorrhage if direct pressure fails.
      - b) If a tourniquet is applied it should be just proximal to site of hemorrhage & tightened until bleeding stops. Mark time of application on tourniquet and leave site exposed for visual monitoring of hemorrhage.
      - c) A continuously inflated blood pressure cuff may be used as a tourniquet until bleeding stops.
      - d) Upon arrival at the hospital, notify receiving personnel that a tourniquet has been applied.
    4. Hemostatic Agents
      - a) Approved for EMS Pre-hospital use:

- (i) Kaolin impregnated hemostatic dressings (Ie: QuickClot Emergency Dressing) for external use in trauma patients. Their mechanism of action is physical, not chemical, and therefore the risk of an exothermic reaction which is associated with other products is not an issue.

**\*\*Kaolin impregnated dressings are the only hemostatic agents that are approved by Middlesex Hospital for pre-hospital use. Sprays, powders, granules or other formulations are NOT approved.\*\***

- II. Internal Hemorrhage/bleeding
  - A. Maintain circulation, airway, and breathing
  - B. Request ALS response.
  - C. Treat for shock.
  - D. Provide supplemental oxygen if SpO2 is less than 94% or if accurate SpO2 is not known.
  - E. Immediate transport is critical for patient with signs and symptoms of shock.

- I. EMR/EMT Treatment
  - A. Maintain circulation, airway, and breathing 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 (EMR'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. **\*\* EXEMPTION\*\* Patients who are ambulatory on scene, but who require cervical immobilization based on our regional immobilization guidelines, will have a cervical collar applied and then be placed in the position of comfort on the stretcher, limiting movement of the neck during the process.**
  - D. 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 personnel's' access to another, more seriously injured, patient.
      - d) Paramedic is on-scene and requests rapid extrication of the patient.
    3. **The decision to perform rapid extrication is based only on the above indications, not the EMT's preference.**

- I. Maintain circulation, airway, and breathing
- II. Perform assessment
- III. Provide supplemental oxygen if SpO<sub>2</sub> is less than 94% or if accurate SpO<sub>2</sub> is not known.
- IV. Consider ALS response based on patient condition
- V. If mechanism of injury, history or signs/symptoms suggest potential for significant head trauma
  - A. Immobilize the spine.
  - B. Request ALS response.
  - C. Closely monitor the airway, breathing, pulse, and mental status for deterioration.
  - D. Do not apply pressure to an open or depressed skull injury.
  - E. Dress and bandage open wound as indicated in the treatment of soft tissue injuries.
  - F. Be prepared for changes in patient condition.
  - G. Immediately transport the patient.
- VI. **\*\* EXEMPTION\*\* Patients who are ambulatory on scene, but who require cervical immobilization based on our regional immobilization guidelines, will have a cervical collar applied and then be placed in the position of comfort on the stretcher, limiting movement of the neck during the process.**



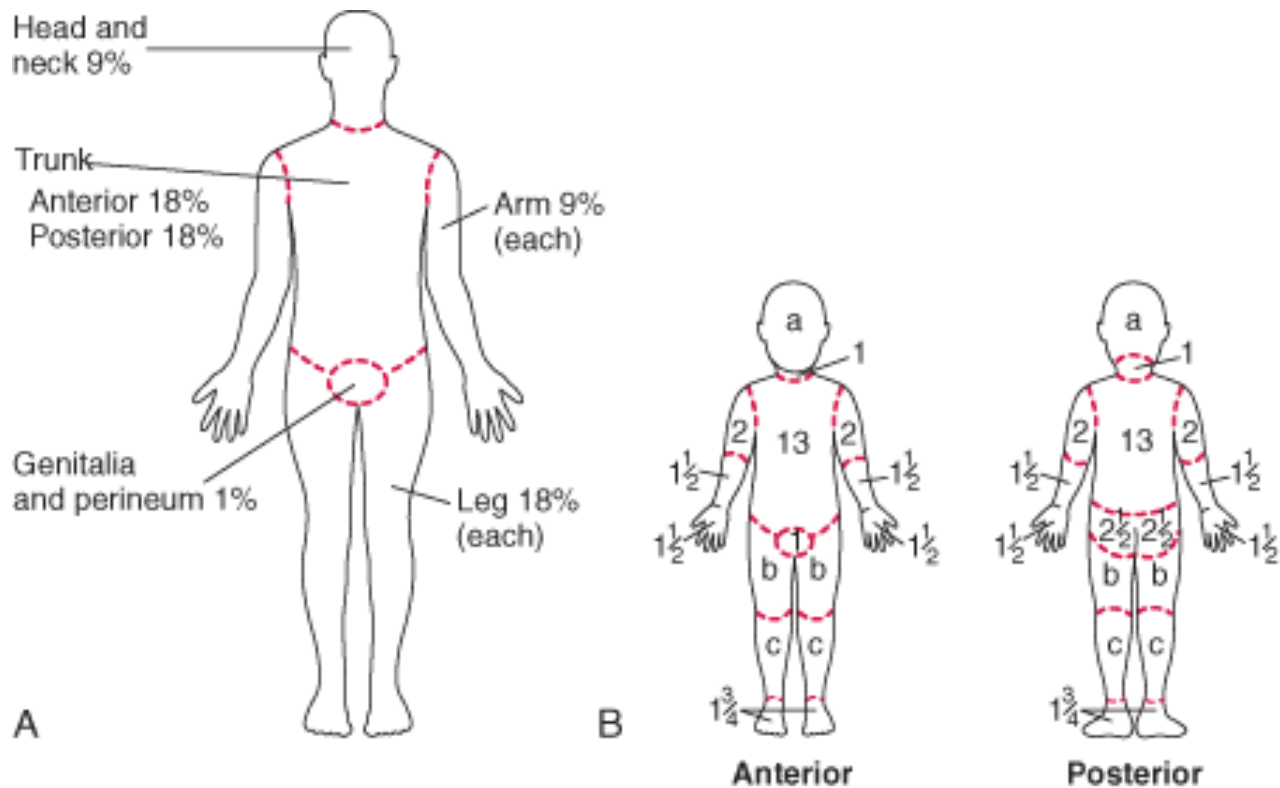
- I. Ensure circulation, airway, and breathing.
- II. Perform assessment.
- III. Treat for shock as necessary  
Provide supplemental oxygen if SpO2 is less than 94% or if accurate SpO2 is not known.
- IV. Consider ALS response
- V. Transport
- VI. Special Considerations
  - A. Penetrating injury "Sucking 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. the object has impaled only the cheek, or
    2. the object would interfere with chest compressions, or
    3. the object 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 hemorrhaging.
  - E. Stabilize the object with bulky dressings.

- 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 circulation, airway, and breathing.
    2. Treat for shock
    3. Request ALS response
    4. Provide supplemental oxygen if SpO2 is less than 94% or if accurate SpO2 is not known.
    5. Initiate rapid transport to appropriate hospital.
  
- II. Amputation
  - A. Ensure circulation, airway, and breathing.
  - 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

- I. All burns
  - A. Take appropriate safety precautions
  - B. Ensure circulation, airway, and breathing.
  - C. Perform assessment. Attempt to estimate total burn surface area using the "Rule of Nines" (refer to figure 1 in this guideline).
  - D. Provide supplemental oxygen if SpO2 is less than 94% or if accurate SpO2 is not known.
  - E. 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. Phosphorus burns should not be irrigated.
  - 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. Monitor the patient closely for respiratory and cardiac arrest (consider need for AED).
- D. Request ALS response.
- E. Treat the soft tissue injuries associated with the burn.
- F. Look for both an entrance and exit wound.
- G. Consider potential for severe internal injury even if external burns appear minor.
- H. Transport

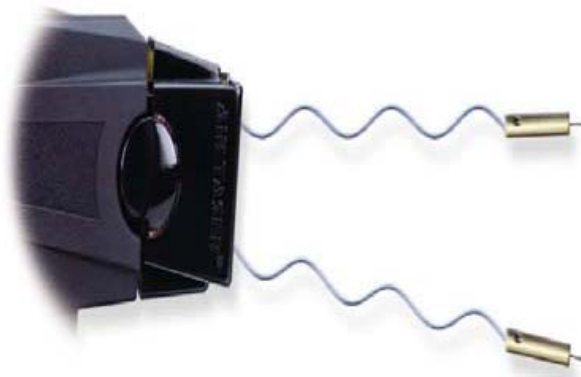
FIGURE 1 – RULE OF NINES



Relative percentage of body surface area (% BSA) affected by growth

Body Part	Age				
	0 yr	1 yr	5 yr	10 yr	15 yr
a = 1/2 of head	9 1/2	8 1/2	6 1/2	5 1/2	4 1/2
b = 1/2 of 1 thigh	2 3/4	3 1/4	4	4 1/4	4 1/2
c = 1/2 of 1 lower leg	2 1/2	2 1/2	2 3/4	3	3 1/4

- I. **Before touching any patient who has been subdued with a Taser, ensure that the police officer has disconnected the probe wires from the hand-held unit**
- II. Perform assessment.
- III. Identify the location of the probes on the patient's body
- IV. Confer with the police officer to determine the patient behavior that lead to the Taser discharge.
- V. If the precipitating or post-taser behavior, signs and/or symptoms may warrant ALS care, consider an ALS response
- VI. Per OEMS, taser probes may only be removed by a trained police officer. EMS providers **MAY NOT** remove taser probes that are embedded in the patient's skin – embedded probes are to be treated as impaled objects
- VII. If the taser probe is no longer embedded, cleanse the sites and bandage as appropriate.
- VIII. **Patients who have been subdued with a Taser must be transported to the Emergency Department for evaluation.**
- IX. Any adverse post-taser effects (e.g. respiratory difficulty, seizures, etc.) should be treated according to the appropriate Guideline(s)



- 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. 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 supplemental oxygen:
    1. pocket mask with a one-way valve and oxygen port
    2. 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.

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. While the Biphasic AED is preferred, Middlesex Hospital recognizes that not every BLS service has replaced all of their monophasic AED's with biphasic AED's.

A. Adult Cardiac Arrest

1. Adult AED pads are to be applied to patients that weigh over 55 lbs (25 kg)

II. Pediatric Cardiac Arrest

A. Biphasic AED: 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. Operate according to manufacture recommendations

B. Monophasic AED use: Operate according to manufacture recommendations.

III. Contraindications

A. 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.

B. 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.

C. Pediatric

1. Biphasic AED use is contraindicated in patients less than one year of age.
2. Monophasic AED use: Operate according to manufacture recommendations.

IV. 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.



- 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 6-8 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.
    - 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 6-8 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

- I. Special assessment needs for patients wearing helmets.
  - A. Ensure circulation, 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 circulation, airway or breathing problems.
  - C. Removal would cause further injury to the patient.
  - D. Proper spinal immobilization, **only if indicated**, 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 circulation, airway and breathing.
  - B. Restriction of adequate management of the airway.
  - C. Improperly fitted helmet allowing for excessive patient head movement within the helmet.
  - D. Proper spinal immobilization, **only if indicated**, 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, **only if indicated**.

I. Indications

Nasopharyngeal airways are useful in helping to maintain a patent airway in a patient with an intact gag reflex.

II. Contraindications

- A. Head or facial injuries.
- B. Signs of a basilar skull fracture
  - 1. Ecchymosis about eyes.
  - 2. Mastoid Ecchymosis (bruising behind the ears).
  - 3. Cerebrospinal fluid and/or blood from the ears or nose.

III. 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.

- 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.

- I. If available, attach supplemental 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 6-8 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.
- XII. When available, insert appropriate airway adjunct.
  - A. Oral airway
  - B. Nasal airway

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 94% - 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. Contraindications

- A. Carbon Monoxide exposure

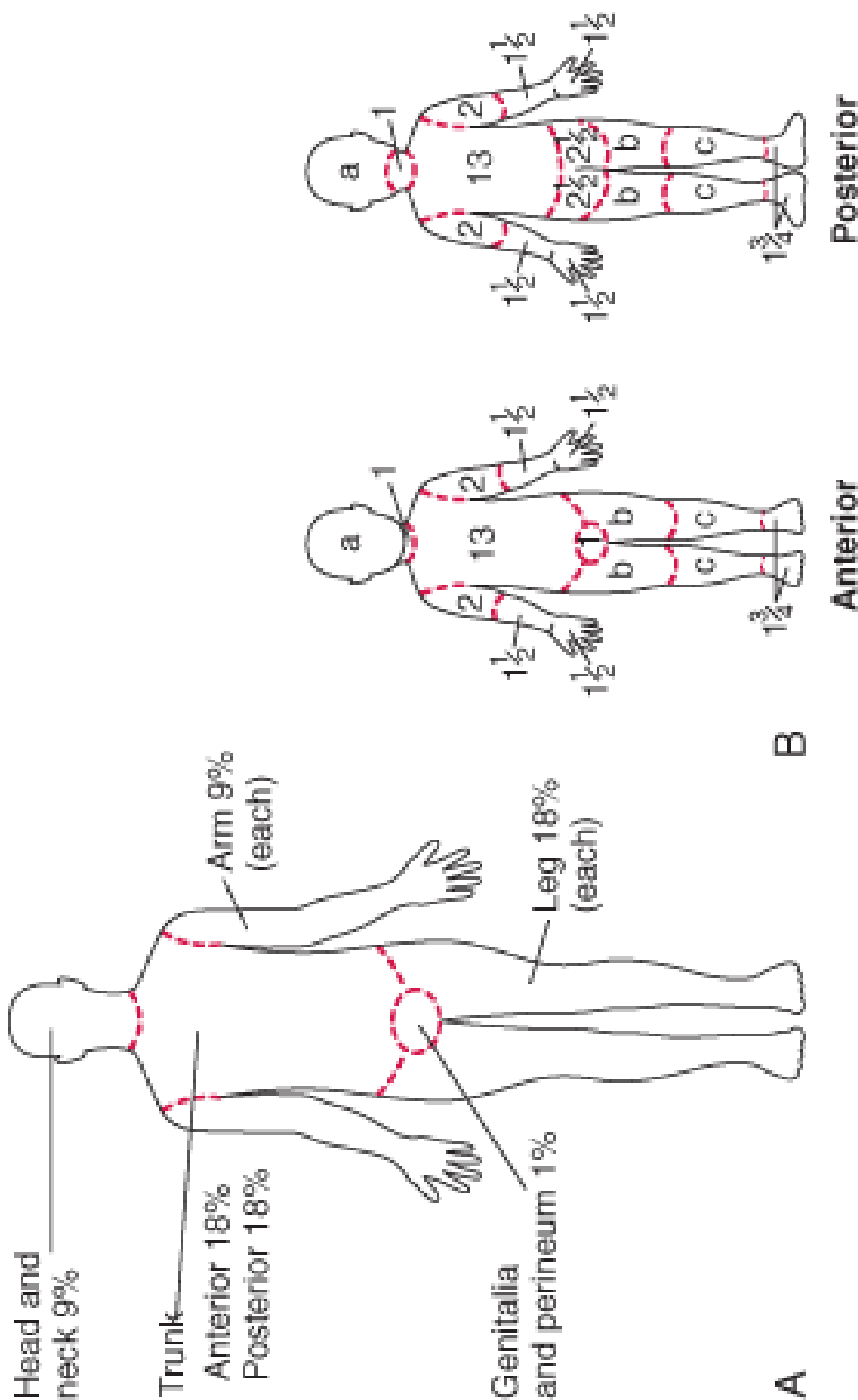
Carbon monoxide not only bonds to hemoglobin more readily than oxygen, it will displace oxygen from the hemoglobin molecule. This will result in an inaccurate pulse oximetry reading, as the oxygen saturation level will read within the normal range despite the fact that the patient is hypoxic.

IV. 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. Pulse oximetry readings can not be considered accurate unless the displayed heart rate and patient's pulse correlate. A pulse oximeter **may not** be used to take a patient's pulse.
- C. 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)

- I. Authorization – Rapid extrication is an EMT level skill. However, under the direct supervision of an EMT, an EMR 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. Paramedic is on-scene and requests rapid extrication of the patient.
  - E. **Rapid extrication is based only on indications, not the EMT'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 his/her back is in the open doorway and their 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





Relative percentage of body surface area (% BSA) affected by growth

Body Part	Age				
	0 yr	1 yr	5 yr	10 yr	15 yr
a = 1/2 of head	9 1/2	8 1/2	6 1/2	5 1/2	4 1/2
b = 1/2 of 1 thigh	2 3/4	3 1/4	4	4 1/4	4 1/2
c = 1/2 of 1 lower leg	2 1/2	2 1/2	2 3/4	3	3 1/4

- 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 EMR 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 for non-ambulatory patients.
  - 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.
  
- III. Short spine immobilization device (short board, KED, XP-1, etc)
  - A. Indication – To immobilize non-critical non-ambulatory 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 for non-ambulatory patients
- 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, sensation, and record
- V. **\*\* EXEMPTION\*\* Patients who are ambulatory on scene, but who require cervical immobilization based on our regional immobilization guidelines, will have a cervical collar applied and then be placed in the position of comfort on the stretcher, limiting movement of the neck during the process**

- 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. Remove or cut away clothing
  - C. Immobilize the joint above and below the injury.
  - D. Cover open wounds with a sterile dressing.
  - E. If there is a severe deformity **and** 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.

Date: \_\_\_\_\_ Time: \_\_\_\_\_ MH ED account # \_\_\_\_\_

Patient name: \_\_\_\_\_ MR# \_\_\_\_\_

Information gathered from: \_\_\_\_\_ Relation to pt: \_\_\_\_\_

(Retain witness for questioning by ED Staff)

**Step 1; Initial field examination:**

A. Language-Repeat "Today is a sunny day"

- Appropriate       Not Appropriate

B. Facial Strength-Show teeth

- Normal, symmetric     Weak LEFT       Weak RIGHT

C. Arm Strength-Raise arm for 10 sec

- Normal, no drift       Drift or weak LEFT     Drift or weak RIGHT

**Step 2; If patient has abnormal finding to any of the above, ascertain the following;**

A. Time: (date if applicable) pt last seen normal \_\_\_\_\_

Duration of symptom (s) \_\_\_\_\_ min

Symptoms longer than 180 minutes?                  Y          N

B. Questions in field:

Any report of seizure(s)?                                  Y          N

Any Head Trauma?    Y          N

Loss of consciousness?                                        Y          N

Recent Surgery or GI Bleed (in past 2-3 weeks?)    Y          N

History of cerebral hemorrhage?                          Y          N

C. If ALS Unit: Glucose: \_\_\_\_\_ Time: \_\_\_\_\_

Glucose less than 50, or greater than 400                  Y          N

**Step 3; IF ALL ABOVE QUESTIONS "NO",** contact the medical control physician at a Middlesex ED (Middletown or Shoreline, not Marlborough) and request **"STROKE TEAM PHASE I ACTIVATION"**. Follow directions from the ED physician.

Time Stroke Team Activation requested: \_\_\_\_\_:\_\_\_\_\_

ED physician's name: \_\_\_\_\_

Your name: \_\_\_\_\_

Service affiliation: \_\_\_\_\_

Please Scan into Medical Record

- 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 sterile water to prevent obstruction of the tubing from dried material.

I. Indications

- A. A tourniquet should be used to control hemorrhagic wounds that have not responded adequately to direct pressure or in situations of significant extremity bleeding with the need for additional interventions. I.e. Significant extremity bleeding with airway compromise. A tourniquet should be used to quickly control bleeding, freeing up personnel to concentrate on airway issues.

II. Precautions

- A. Use BSI
- B. A tourniquet applied incorrectly can increase blood loss and lead to death.
- C. Applying a tourniquet can cause nerve and tissue damage whether applied correctly or not. Proper patient selection is of the utmost importance.
- D. Damage is unlikely if the tourniquet is removed within 2 hours. Low risk to tissue is acceptable over death secondary to hypovolemic shock.
- E. Tourniquets should never be covered up by patient clothing or packaging.

III. Technique

- A. Attempt to control hemorrhage with direct pressure or pressure dressing.
- B. If unable to control hemorrhage using above means, apply tourniquet, using the procedure noted below.
  - a. Select commercially manufactured tourniquet, blood pressure cuff, or improvised "Spanish Windlass" as applied to the extremity proximal to the wound, preferably on single-bone structures (humerus and femur) above wound. **\*\*Do not place over joints\*\***
  - b. Tighten tourniquet until bleeding stops.
  - c. The time and date of application ("TK 20:30") should be documented on a piece of tape and secured to the tourniquet with a permanent marker.
  - d. The tourniquet should be left uncovered so that the site can be monitored for recurrent assessment of further hemorrhage.
  - e. Keep tourniquet on throughout transport – a correctly applied tourniquet should only be removed by the receiving hospital.
  - f. Continue to monitor the patient's vital signs and the wound.
  - g. Ensure receiving facility personnel are aware of tourniquet placement.

# Middlesex Hospital Prehospital Cardiac Arrest Outcome Form

Patient Initials: \_\_\_\_\_ Age: \_\_\_\_\_ Date of Birth: \_\_\_\_\_ Sex: F  M   
Date of Service: \_\_\_\_\_ Town of call: \_\_\_\_\_ Mutual Aid Required: Yes  No   
Name of receiving facility: \_\_\_\_\_

Defibrillator used: Manual  Monophasic AED  Biphasic AED  Public Access Defib  Unknown   
Defib Service: \_\_\_\_\_  
First responder Service: \_\_\_\_\_ Dispatch Center: \_\_\_\_\_  
Transport Service: \_\_\_\_\_ Dispatch Log #: \_\_\_\_\_  
Paramedic Service: \_\_\_\_\_ Pre-Arrival Instructions: Yes  No

Location of Patient: Home  Work  Car  Public Site  \_\_\_\_\_  
Nursing Home  Ambulance

Precipitating Event: Acute Cardiac  Trauma  Suicide  Drowning  Other  \_\_\_\_\_

## Times (Military)

N = Not applicable U = Unknown

Last seen alive: \_\_\_\_\_ Ambulance on scene: \_\_\_\_\_  
CPR started: \_\_\_\_\_ Paramedic on scene: \_\_\_\_\_  
911 Contacted: \_\_\_\_\_ Ambulance leaves scene: \_\_\_\_\_  
First responder on scene: \_\_\_\_\_ Arrival at hospital: \_\_\_\_\_  
First rhythm analysis: \_\_\_\_\_ Return of pulse: \_\_\_\_\_  
Analysis: Non-shock  Shock  Number given: \_\_\_\_\_  Pulse present before arrival of 1<sup>st</sup> responder

Presumption of death in field: DNR  ACLS Terminated  Obvious Death   
Was arrest witnessed? No  Yes  by: Police  Fire  EMS  bystander   
Who initiated CPR? Police  Fire  EMS  bystander   
Was bystander CPR performed correctly? Yes  No  Inadequate: Ventilation  Compression

Airway device used: Intubated ET  Combitube  Bag Valve Mask   
IV Access: Peripheral  Intraosseous  Unsuccessful   
Medications administered: Epi  Lido  Atropine  Amiodarone   
Procainamide  Vasopressin

Defibrillator or Airway Problem: \_\_\_\_\_

This form is to be completed by the **first responder, transporting service and paramedic**. Give this form with a legible copy of your AED printout, rhythm strip and run form to your **Sponsor Hospital EMS Coordinator**. If the patient was pronounced on scene the **presuming service** may fax this form to the EMS coordinator.

## To Be Completed By The Receiving Hospital

Medical Record # \_\_\_\_\_

Initial Rhythm on scene: VF  VT  Asystole  PEA  Not known

Patient Outcome: Pronounced in: ED  Expired in Hospital within 24 hours   
Expired in Hospital after 24 hours  Transfer to another Hospital  \_\_\_\_\_

Discharged from hospital  Cause of Death/Discharge Diagnosis: \_\_\_\_\_

Cerebral Performance Category Upon Discharge: 1  2  3  4

Problem with clock synchronization: Yes  No

Comments: \_\_\_\_\_



**Medication**

Aspirin

**Class**

Potent inhibitor of platelet aggregation (blood thinner)

**Indications**

Acute Coronary Syndrome, chest pain or discomfort suggestive of an ACS event

**Contraindications**

Patients with known allergies to Aspirin or NSAIDs (Nonsteroidal anti-inflammatory drugs), patients with active GI ulceration or bleeding.

**Precautions**

Hemophilia or other bleeding disorders, during pregnancy, and children under 2 years of age. Approximately 3-5% of persons with asthma, aspirin can cause asthma to worsen, often in the form of a severe and sudden attack.

**Dosing**

Baby Aspirin 81 mg X 4 pills 324mg PO for chest pain or chest discomfort with suspected cardiac etiology

**Adverse Effects**

Anaphylaxis, bronchospasm, dysrhythmias, hypotension, tachycardia, agitation, cerebral edema, intracranial hemorrhage, dehydration, hyperkalemia and renal failure.

- I. Medication name
  - A. Generic - Epinephrine
  - B. Trade – Adrenalin, EpiPen, EpiPen Jr.
- II. Actions
  - A. Dilates the bronchioles.
  - B. Constricts blood vessels.
- III. Side effects
  - A. Increases heart rate and blood pressure
  - B. Pallor
  - C. Dizziness
  - D. Chest pain
  - E. Headache
  - F. Nausea/Vomiting
  - G. Excitability, anxiousness
- IV. Indications - Suspected allergic reaction with either of the following:
  1. Respiratory distress
  2. Signs of shock
- V. 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

- VI. Authorization.
- A. An EMT who is not functioning with an authorized MIC-Epi level service 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. If the EMT is not functioning with an authorized MIC-Epi level service, and the patient does not have a prescribed epinephrine auto-injector, the EMT may not administer an epinephrine auto-injector.
  - B. An EMT functioning with an authorized MIC-Epi level service may, on standing order, administer a prescribed<sup>1</sup> epinephrine auto-injector for severe allergic reaction with hives and/or itching with respiratory distress and/or signs of shock.
  - C. An EMT functioning with an authorized MIC-Epi level service may, on standing order, administer a non-prescribed<sup>2</sup> epinephrine auto-injector for severe allergic reaction with hives and/or itching with respiratory distress and/or signs of shock.
- VII. Medication form - liquid administered via an automatically injectable needle and syringe system.
- VIII. Dosage
- A. Adult (over 30kg / 66lbs) - one adult auto-injector (0.3 mg)
  - B. Infant and child (under 30kg/66lbs) - one infant/child auto-injector (0.15 mg)
- IX. 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

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<sup>1</sup> For the purpose of these guidelines, the term "prescribed auto-injector" means an auto-injector that has been prescribed to a specific patient but is carried by the EMS service per authorization of the EMS medical director.

<sup>2</sup> 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.

- I. Medication name
  - A. Generic - albuterol, isoetharine, metaproteranol, etc.
  - B. Trade - Proventil, Ventolin, Bronkosol, Bronkometer, Alupent, Combivent, 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. The patient has a physician-prescribed handheld inhaler in their name
- V. Contraindications
  - A. Patient unable to use the device.
  - B. Inhaler is not prescribed for the patient.
  - C. Patient has already met maximum prescribed dose prior to EMT arrival.
- VI. Authorization
  - A. EMT 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 on-line medical control if EMT does not recognize the inhaler medication.
  - 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 (EMT may have to remove the medication canister from the plastic dispenser to view the medication expiration date)
  - 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.
- O. Document the procedure noting the time, medication, dose, and patient response.

- 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. Medication Forms
  - A. Sublingual tablets
  - B. Sublingual spray
- V. Indications - must have all of the following criteria:
  - A. Exhibits signs and symptoms of Acute Coronary Syndrome, chest pain or discomfort suggestive of an ACS event
  - B. Has physician prescribed sublingual nitroglycerine
- VI. Contraindications
  - A. Patient has taken erectile dysfunction medications (Viagra, Cialis, etc.) within the past 24 hours – combining with nitroglycerine may result in rapid, profound hypotension
  - 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.
- VII. Authorization
  - A. An EMT who is functioning with a Sponsor Hospital authorized service may administer nitroglycerin on standing order.
- 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 any questions exist.
  - D. Assure right medication, right patient, right route, right dose, right time, and patient is 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, time, dose, and patient response to the medication, as well as the person who administered the medication.
  - K. Reassess patient

- 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.
- V. Contraindications
  - A. Unresponsive.
  - B. Unable to swallow.
- VI. Authorization
  - A. EMT level may administer oral glucose on standing order.
  - B. EMR level may not administer oral glucose.
- 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.



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. SpO<sub>2</sub> is less than 94% or if accurate SpO<sub>2</sub> is not known
- F. 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. SpO<sub>2</sub> is less than 94% or if accurate SpO<sub>2</sub> is not known
- G. 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 hypoxia 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 and bag-valve-masks. 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