

Statewide Standard Treatment Protocol

Delaware

Basic Life Support

Standing Orders

For

Prehospital and Interfacility Patients



Approved by State EMS Medical Directors: July 16, 2008

Approved by ALS Standards Committee: August 6, 2008

Approved by the State Fire Prevention Commission: September 16, 2008

Approved by the Delaware Board of Medical Practice: October 7, 2008

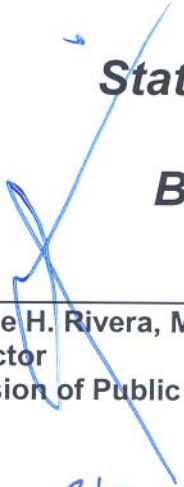
Effective: November 1, 2008

**State of Delaware
Department of Health and Social Services
Division of Public Health
Office of Emergency Medical Services,**

in conjunction with the

State Fire Prevention Commission

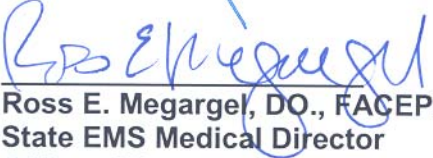
**Statewide Standard Treatment Protocols
and
Basic Life Support Standing Orders**



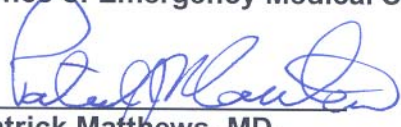
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Introduction

Delaware Emergency Medical Technician – Basic Protocols

Issued by the State of Delaware EMS Medical Directors In cooperation with the Delaware State Fire Prevention Commission and The Office of Emergency Medical Services

The Delaware Emergency Medical Technician – Basic (EMT-B) protocols and the standing orders contained within have been developed as an adjunct to the standards of care as contained in the United States Department of Transportation EMT-B curriculum and verified through the National Registry of Emergency Medical Technicians certification process.

These protocols are not all-inclusive. They address in particular those patients for which EMT-Bs may assist with previously prescribed medications such as nitroglycerin, invasive procedures such as automatic external defibrillation, and complex clinical situations such as refusal of treatment which the EMS medical directors have chosen to address through protocols as a reinforcement to standard EMT-B training.

Deviation from standing orders may be undertaken only by direct order from an approved base station physician serving as Medical Control Physician within a Delaware Office of EMS approved facility or by a State of Delaware EMS medical director directly involved in the care of the patient. All devices listed as “approved” require the approval of the state EMS medical directors.

Minimum skills and procedures:

1. Patient assessment (primary and secondary surveys)
2. Obtaining vital signs
3. Airway control (manual)
4. Use of airway adjuncts (nasopharyngeal and oropharyngeal airways)
5. Spine immobilization/stabilization
6. Cardio-pulmonary resuscitation
7. Bleeding control
8. Splinting of fractures and dislocations
9. Use of suction equipment
10. Application of oxygen delivery devices (includes use of CPAP for approved agencies)
11. Vaginal delivery
12. Use of tourniquets and approved hemostatic agents
13. Use of approved mechanical chest compression device
14. Assist with nitroglycerin
15. Assist with bronchodilator
16. Assist with epinephrine autoinjector
17. Measurement of blood glucose and administration of oral glucose
18. Administration of defibrillation
19. Measurement of blood oxygenation
20. Monitor IV fluids
21. Use of an approved CPR assist devices
22. Use of an approved continuous positive airway pressure devices (CPAP)
23. Use of an approved carbon monoxide detector

General Patient Care

INDICATIONS: Any patient requiring pre-hospital medical evaluation by a pre-hospital health care provider in the State of Delaware.

People who have no complaint or signs of illness or injury, no acute altered mental status, and no acute mental illness are not considered to be patients.

The General Patient Care protocol will be followed in conjunction with all other applicable protocols.

- Respond using lights and sirens in accordance with Priority Medical Dispatch® (PMD®) protocols currently approved by Delaware EMS Medical Directors.
- Perform scene survey. Delaware EMS Medical Directors recommend that all EMS crews carry “room” carbon monoxide detectors with an audible alert on their first- in bag for provider and patient protection.
- Observe universal precautions.
 - Follow your agency’s infection control policy.
 - Delaware EMS Medical Directors recommend wearing masks when caring for patients with active coughing. Consider masking the patient pending respiratory status.
- Consider the need for additional resources.
- Determine responsiveness using AVPU.
- Evaluate **A**irway, **B**reathing, **C**irculation, and **D**isability, **E**xposing the patient as necessary.
- Secure a patent airway as needed.
- Manage cervical spine as needed. Consider entry into a selective spinal immobilization algorithm.
- Treat all life threatening conditions as necessary.
- Obtain SAMPLE history (signs/symptoms, allergies, medications, pertinent history, last oral intake, events leading up to illness/injury).
- Perform primary physical assessment.
- Assess pertinent body systems as appropriate.
- Monitor the patient via the use of a pulse oximeter as appropriate.*
- Administer oxygen as per appropriate protocol.

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- 1 • Evaluate blood pressure, pulses, and respiratory rate. Reassess with a
2 frequency indicated by patient condition.
3
- 4 • Use CPR assist devices as appropriate**
5
- 6 • Assign treatment priority and make a transport decision.
7
- 8 • Transport patient to an appropriate medical facility via appropriate mode of
9 transportation without delay.
- 10 ○ Patient care is enhanced by transport to a facility of prior treatment and
11 the patient's, family's, or personal physician's choice should be strongly
12 considered.
- 13 ○ If the patient's wishes are in conflict with existing protocol (e.g., trauma,
14 OB, or stroke/STEMI) the appropriate destination should be chosen. The
15 medical control physician is the final determinant if assistance is needed.
16
- 17 • Transport should be made safely and in a manner as to prevent further injury
18 through the appropriate use of lights and sirens or no lights and sirens. **The**
19 **highest medically trained practitioner engaged in patient care will**
20 **determine the medically appropriate mode of transportation based upon**
21 **the patient's presenting medical condition. This practitioner will**
22 **communicate with the transporting EMS vehicle's operator and advise**
23 **him/her as to the transport mode to be utilized.**
- 24
- 25 • Contact medical control as needed. Document medical control physician number
26 and any orders on the patient care report.
27
- 28 • During transport continue with secondary assessment and note any changes in
29 the patient's condition.
30
- 31 • If at any time during the emergency the patient begins to show signs of
32 worsening a medic unit should be considered.
33
- 34 • Responsibility of care does not end until transfer of care of the patient to an
35 appropriately trained health care provider.
- 36
- 37 • Document all relevant findings, and treatments.
38
- 39 **Priority I Patient suffering from an immediate life or limb threatening**
40 **injury or illness.**
- 41 **It is the consensus of the EMS medical directors that during**
42 **transport to the hospital lights and sirens are not medically**
43 **indicated for many Priority I patients.**
- 44 **Priority II Patients suffering from an injury or illness that if left**
45 **untreated could potentially threaten life or limb.**
- 46 **It is the consensus of the EMS medical directors that during**
47 **transport to the hospital, lights and sirens are not medically**

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1 indicated for Priority II patients and should only be
2 considered when paramedics are not present.

3 **Priority III Patient suffering from an injury or illness that requires**
4 **medical attention but does not threaten life or limb.**

5 **It is the consensus of the EMS medical directors that during**
6 **transport to the hospital, lights and sirens are not medically**
7 **indicated for Priority III patients.**

- 8
- 9 • **It should be noted that the protocol above is a guideline to be followed in**
10 **as much as it aids in providing appropriate and timely medical care. The**
11 **EMT-Basic provider may change the order or omit steps listed above as**
12 **dictated by sound judgment of the care provider and/or presentation of the**
13 **patient(s).**

14

15 **CO-oximetry may be performed as an option by agencies carrying CO monitoring*
16 *equipment.*

17

18 ***CPR assist device must be an FDA approved device approved for use by the*
19 *Delaware Office of Emergency Medical Services and coordinated with the county EMS*
20 *medical director and county paramedic service.*

21

22 *At the time of patient delivery to an approved healthcare facility, the EMT-B must give a*
23 *verbal report to a physician or nurse at the patient's bedside (a triage desk report is*
24 *appropriate if patient's disposition is to hallway or waiting room).*

25

26 *Patient care is not finished until a patient care report (PCR) is completed. EMS*
27 *providers must complete, without exception, an appropriate State of Delaware report on*
28 *each patient contact.*

29

30 *The PCR must be completed prior to the EMS provider leaving the facility to which the*
31 *patient is transported. The only exception to this policy is to provide care for another*
32 *patient when other EMS provider units are not readily available. Should the EMS*
33 *provider unit be dispatched prior to completing the PCR, every attempt should be made*
34 *to complete the report as soon as possible. All PCRs should be completed and*
35 *submitted to the receiving facility within four (4) hours of patient delivery. Without*
36 *exception, a PCR must be completed and submitted to the receiving facility before an*
37 *EMS provider goes off duty.*

38

39 *The Quality Assurance Audit will be set to flag all charts printed more than four hours*
40 *after patient arrival at the receiving facility*

41

REFUSAL OF SERVICE

INDICATIONS: *Paramedics and EMT-B's will often respond to scenes where the patient wishes to decline service. It is important that the provider obtains the patient's informed consent before leaving the scene; otherwise the provider might be exposed to legal liability for abandonment of the patient.*

People who have no complaint or signs of illness or injury, no acute altered mental status, and no acute mental illness are not considered to be patients.

- Follow general patient care guidelines.
- Take a SAMPLE history. Perform and document a primary and secondary survey. Document that the patient's mental status and vital signs. If the provider assessment is refused, document this clearly.
- **Patients with the following conditions DO NOT have the capacity to refuse service without medical control**, and every effort should be made to persuade the patient to consent to needed health care. Consider involving family, police, and paramedics. Consider using the physician over the radio. Contact medical control for such patients. Document the informed consent process, concerns, and if applicable, physician number and any orders on the run sheet and complete a refusal of service form.
 - Suspicion of intoxicated by drugs (prescription or legal) or alcohol, as evidenced by admission of use, odor of alcohol, unsteady gait, slurred speech, or altered mentation;
 - Suspicion of suffering acutely from mental disease or have suicidal or homicidal ideation, as evidenced by hallucinations, delusions, agitation, admission or evidence of wish to do harm to self or others, or a concern from others of intention to do harm to self or others;
 - Appear to be suffering from a significant head injury as evidenced by loss of consciousness, head trauma, or altered mental status;
 - Appear to be suffering from hypoxia or acute respiratory distress as evidenced by abnormal vital signs, increased work of breathing, low oxygen saturation, abnormal lung sounds, or altered mental status;
 - Appear to be suffering from hypoglycemia as evidenced by altered mental status, agitation, or unstable vital signs;
 - Patients who are disoriented, have abnormal vital signs, or are uncooperative with for any reason;
 - The patient is less than 18 years old, unless he/she is an emancipated minor.

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- **All patients with the following circumstances require contact with medical control for refusal of service unless paramedics are also present and have obtained a refusal.** Document the physician control number and any orders on the run sheet.

- ;
- BLS cancels ALS prior to ALS arrival
- BLS personnel encounter a patient meeting the criteria for ALS care but no ALS is responding;
- Medical calls dispatched as a Delta or Echo response;
- Patients who suffer the same mechanism of injury as a Delta or Echo level trauma patient;
- The provider feels the patient is being physically or emotionally coerced into making a decision against the patients best interests;

- Patients, who **do not meet** the criteria above, may consent to refusal of service. Each patient who refuses service must be fully informed about needed treatment and possible outcomes including possible disability or death, and should verbalize understanding of the risks associated with refusing the needed care. If the patient is felt to need treatment, every effort should be made to persuade the patient to consent to needed health care. Consider involving family, police, paramedics, and physician at the hospital. Strongly consider contacting medical control if the provider has any concerns regarding the welfare of the patient. Document the informed consent process, concerns, and if applicable, physician number and any orders on the run sheet and complete a refusal of service form.

CHEST PAIN

Non-traumatic- Possible Cardiac Origin

INDICATIONS: *The pattern of pain suggestive of cardiac origin is highly variable. Chest or epigastric pain associated with shortness of breath, sweating, nausea, vomiting, radiating or non-radiating pain of the neck, jaw, left arm, or back. Patients with chest pain of suspected cardiac etiology require rapid stabilization and transport.*

- Follow general patient care guidelines.
- Provide appropriate supplemental oxygen. Consider obtaining a pulse oximeter reading (see pulse oximeter protocol).
- If the patient has their own aspirin, assist the patient with taking the medication up to 325mg. Patients with allergies to aspirin or non-steroidal anti-inflammatory drugs (NSAIDs i.e., Aleve, Motrin, ibuprofen, etc.) may not receive aspirin.
- If the patient has their prescribed nitroglycerin and their systolic blood pressure is greater than 100mm Hg, assist or give the patient nitroglycerin as prescribed. Assess the patient's blood pressure before each dose. The patient should not take nitroglycerin if the systolic blood pressure falls below 100mm Hg. Do not exceed 3 doses given 3 to 5 minutes apart. Further orders must come from medical control.
- Make sure that the medication prescribed to the patient and has not expired.
- A paramedic unit must assist with patient care unless the nearest appropriate hospital is closer than the paramedic unit.
- If a paramedic unit is not available, radio a report to the emergency department advising of the estimated time of arrival (ETA) and patient status.
- Contact medical control directly with any questions or concerns regarding nitroglycerin therapy as needed.
- Document on the EMS patient care report the name of the medication, the time(s) of the administration, the number doses taken and document the blood pressure readings before administration.

Please refer to a current EMT-Basic textbook for a full review of the chest pain patient and assisting with nitroglycerin.

Withhold nitroglycerin and contact medical control if the patient relates taking sildenafil (Viagra[®] or Revatio[®]) or vardenafil (Levitra[®]) within the last 24 hours or tadalafil (Cialis[®]) within the last 48 hours.

Packaging and safe transport should not be delayed significantly for nitroglycerin therapy.

ACUTE RESPIRATORY DISTRESS

INDICATIONS: *Symptoms of acute exacerbations of asthma, emphysema, reactive airway disease, and allergic reactions include cough, shortness of breath, wheezing, and/ or air hunger.*

Signs of exacerbations of asthma, emphysema, reactive airway disease and allergic reactions include wheezing, diminished breath sounds, retractions, and tachypnea. Providers will be able to identify the need for albuterol, levalbuterol and Combivent medication treatments and administer it as appropriate.

- Allow the patient to maintain a position of comfort (usually sitting).
- Follow general patient care guidelines.
- Provide appropriate supplemental oxygen. Consider obtaining a pulse oximeter reading (see pulse oximeter protocol). Consider obtaining a carbon monoxide reading, if greater than 5, apply oxygen via non-rebreather.
- Eligible agencies should consider CPAP when appropriate.
- Assess lung sounds during the physical examination.
- If the patient's heart rate is over 150 beats per minute, contact medical control.
- If patient's heart rate is less than 150 beats per minute, and if appropriate, assist the patient with the administration of their own nebulizer. These include albuterol, levalbuterol and Combivent. Adult dosage: pour 2 unit dose nebulas into nebulizer. Connect nebulizer to an oxygen source at 8 liters per minute and place the nebulizer mouth piece in their mouth or face mask in to position so that the patient is breathing the misted medication.
- Dosage for children who have a home nebulizer and are age 8 years or younger is one unit dose nebule into nebulizer. Connect to oxygen source at 8 liters per minute. Consider using blow by mask on younger patients.
- If upon arrival patient is currently taking his prescribed nebulizer it is appropriate to transport the patient while finishing the treatment.
- Restart patient on oxygen therapy at appropriate concentration.
- Reassess patient, especially lung sounds, vitals, and oxygen saturation after each treatment. If minimal relief is obtained, treatment may be repeated once.
- If the patient's heart rate is over 150 beats per minute, contact medical control prior to a second dose of bronchodilator.

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- A paramedic unit must assist with patient care unless the nearest appropriate hospital is closer than the paramedic unit.
- If a paramedic unit is not available, radio a report to the emergency department advising of ETA and patient status.
- Contact medical control with any questions or concerns regarding the use of Albuterol (Proventil, Ventolin) therapy as needed. Document medical control physician number and any orders on the patient care report.
- Document on the EMS patient care report the name of the medication, the time(s) of administration, the number of nebulizer treatments, and pulse rate before administration.

Please refer to a current EMT-Basic textbook for a full review of acute respiratory distress and administering Albuterol, Proventil, Ventolin treatments.

Packaging and safe transport should not be delayed significantly by bronchodilator administration.

**Delaware's Office of Emergency Medical Services Pilot Project for BLS:
Requires OEMS Written Approval Prior to Participation**

CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP)

Indications:

- *Respiratory distress or failure, due to cardiogenic pulmonary edema (CHF) in which the patient demonstrates spontaneous respirations and a patent, self-maintained airway.*

Vital Signs Criteria: *(a majority of vital sign criteria should be present)*

- Tachypnea = Respiratory Rate greater than or equal to 24 bpm
- Tachycardia = Heart Rate greater than or equal to 100 bpm
- Hypertension = Systolic Blood Pressure greater than or equal to 120mmHg
- Hypoxia = Pulse Oximetry reading less than or equal to 90%
- Verbal Impairment = Labored breathing that results in the patient being unable to complete the alphabet in a single breath

Contraindications:

- *Circumstances in which endotracheal intubation or a surgical airway is preferred or necessary to secure a patent airway*
 - *Circumstances in which the patient does not improve or continues to deteriorate despite CPAP administration*
 - *Patients with respiratory distress secondary to asthma or COPD (may be allowed with on-line medical control approval)*
 - *Patients with respiratory distress secondary to trauma*
-
- Assure a patent airway
 - Administer 100% O₂ via appropriate delivery system
 - Perform appropriate patient assessment including obtaining vital signs, pulse oximeter (SpO₂) reading, and cardiac rhythm (*regular or irregular*).
 - Apply CPAP device per manufacturer's instructions
 - Continuously reassess the patient
 - Monitor continuous pulse oximetry
 - Follow the appropriate set of standing orders for continued treatment
 - Contact the medical control as soon as possible to allow for prompt availability of hospital CPAP / BiPAP equipment and respiratory personnel
 - A patient care report **must** be completed and left with the patient's caregivers before leaving the medical facility.

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For circumstances in which the patient does not improve or continues to deteriorate despite CPAP and/or medical therapy, terminate CPAP administration and perform BVM ventilation.

CPAP may be considered for non-cardiogenic pulmonary edema, COPD and "do not intubate" patients by medical control

SEVERE ALLERGIC REACTION

INDICATIONS: *Severe generalized allergic reactions manifest as urticaria (hives) with respiratory distress, partial or complete airway obstruction (sensation of throat closing), hypotension or evidence of shock. Urticaria (hives) alone with a history of life threatening allergic reaction may signal the onset of a severe allergic reaction. Some patients with severe asthma may manifest their allergic reaction primarily as an asthma attack.*

- Provide appropriate supplemental oxygen. Consider obtaining a pulse oximeter reading (see pulse oximeter protocol).
- Assess lung sounds during the physical examination.
- If a patient has an epinephrine autoinjector (one common trade name is Epi-Pen®) prescribed by their physician, assist the patient with their epinephrine.
- Medical control should be contacted before a pregnant patient uses epinephrine due to the possible effect on the fetus.
- Make sure that the medication is in the patient's name, the doctor's name is on the prescription label, and the medication is dated and not expired.
- A paramedic unit must assist with patient care unless the nearest appropriate hospital is closer than the paramedic unit.
- If a paramedic unit is not available, radio a report to the emergency department advising of ETA and patient status.
- Contact the medical control with any questions or concerns regarding epinephrine therapy if needed. Document medical control physician number and any orders on the patient care report.
- Document on the EMS patient care report the name of the medication, the prescribing physician, and the time of administration.

Please refer to a current standard EMT-Basic textbook for a full review of allergic reactions and assisting with prescribed epinephrine autoinjectors.

Packaging and safe transport should not be delayed significantly by epinephrine administration.

ALTERED MENTAL STATUS

INDICATIONS: *Incomprehensible speech, inappropriate verbal responses, inability to follow verbal commands, decreased responsiveness, or unresponsiveness.*

If a patient is known to have Diabetes Mellitus and has altered mental status, the cause of the altered mental status may be low blood sugar.

- Follow general patient care guidelines.
- Provide appropriate supplemental oxygen. Consider obtaining a pulse oximeter reading (see pulse oximeter protocol).
- Be alert to signs of trauma on physical exam. Patients with altered mental status due to trauma should not be given anything by mouth in case their condition worsens unexpectedly or the patient requires surgery.
- Obtain a blood sugar level if a glucometer is available (see BLS glucose testing policy). If the blood sugar is less than 80mg/dl and the patient is alert and able to protect their airway, use oral glucose. Make sure that the oral glucose has not expired.
- If the patient is unresponsive or not alert enough to protect their own airway, paramedics or hospital personnel will need to administer intravenous glucose in order to avoid aspiration.
- Document on the EMS patient care report the time of administration of oral glucose and any change in the patient's condition.
- A paramedic unit must assist with patient care unless the nearest appropriate hospital is closer than the paramedic unit.
- If a paramedic unit is not available, radio a report to the emergency department advising them of the ETA and patient's condition.
- Contact medical control directly with any questions or concerns regarding oral glucose therapy if needed. Document the medical control number of the physician and any orders on the patient care report.

Do not delay safe transport in order to obtain a blood glucose level.

PATIENT RESTRAINT GUIDELINES

- Patient care remains the primary responsibility of the EMS provider. The method of restraint shall not restrict the adequate monitoring of vital signs, ability to protect the patient's airway, compromise peripheral neurovascular status or otherwise prevent appropriate and necessary therapeutic measures. It is recognized that evaluation of many patient parameters requires patient cooperation and thus may be difficult or impossible.
- Soft restraints are to be used only when necessary in situations where the patient is potentially violent and may be of danger to themselves or others. Patients who are clinically competent retain a right to refuse transport. EMS providers must remember that aggressive violent behavior may be a symptom of medical conditions such as but not limited to:
 - Head trauma
 - Alcohol/drug related problems
 - Metabolic disorders (i.e., hypoglycemia, hypoxia, etc.)
 - Psychiatric/stress related disorders
- All restraints should have the ability to be quickly released, if necessary in an emergency.
- In the interest of the patient's safety, the person who was responsible for applying a restraining device that requires a key or special releasing device must physically remain with the patient regardless of the vehicle of transport. This policy is not intended to negate the need for law enforcement personnel to use appropriate restraint equipment to establish scene control or allow safe transport of patients who are in the custody of law enforcement.
- Patients should be transported in the supine position to ensure adequate respiratory and circulatory monitoring and management.
- The prone position should be a position of last resort and rarely used. This position carries a higher risk of patient injury or death.
- All restrained patients should be placed on a stretcher with adequate foam padding particularly underneath the head. Extremity restraints should be secured to the stationary portion of the stretcher frame.
- Stretcher straps should still be placed on all patients as these are similar to seatbelts during transport.
- Restraints that use multiple knots or that may restrict chest wall motion are unacceptable.
- Restrained extremities should be monitored for color, sensory and motor function, pulse quality, and capillary refill at the time of application and frequently thereafter. The patient's respiratory status and pulse oximetry should be monitored during transport.

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- Consider requesting paramedics for the administration of sedation.
- Restraint documentation on the EMS report shall include:
 - Reason for restraint
 - Agency responsible for restraint application (i.e., EMS, Police)
 - Documentation of serial cardio-respiratory status and peripheral neurovascular status
- Medical control must be contacted if a patient is deemed too violent or uncooperative to be safely transported using the restraint methods and devices permitted by their prehospital protocols.

This policy is not intended for the interfacility transport of medically cleared involuntarily committed psychiatric patients.

INITIATION OF RESUSCITATIVE EFFORTS

INDICATIONS: *For initiation of cardiopulmonary resuscitation for patients in cardiac arrest*

- Follow general patient care guidelines
- CPR shall be initiated for all patients **unless** one or more of the following criteria apply:
- Resuscitation would place the rescuer at significant risk of physical injury
- Injuries which are obviously incompatible with life.
 - decapitation
 - body fragmentation
 - severe crush injury to head (without vital signs)
 - severe crush injury to chest (without vital signs)
 - severe thermal burns (without vital signs)
 - gunshot wounds to the head with lateral entrance wound and an opposite side exit wound (without vital signs)
- Decomposition of the body.
 - skeletalization
 - severe bloating (without vital signs)
 - skin slough (without vital signs)
- The rescuer is presented with a valid Pre-Hospital Advanced Care Directive (PACD). Presentation of any other advance directive type documents requires immediate contact with medical control.
- For patient's who do not meet the criteria for initiation of cardiopulmonary resuscitation, withhold resuscitation and have paramedics continue in at a reduced rate for a death pronouncement.

At no time should BLS cancel paramedics to make a pronouncement as BLS providers can not make pronouncements in the field.

The only exception would be that if the patient met the criteria for the obvious death circumstances per Priority Medical Dispatch®

GUIDELINES REGARDING DO NOT RESUSCITATE ORDERS

Living Will:

- Living wills do not apply to out-of-hospital care.
- A living will has no impact on the decision of whether or not to initiate or continue resuscitative efforts or any other care.

Do Not Resuscitate Order (DNR):

- Contact medical control immediately.

Prehospital Advance Care Directive (PACD):

- A PACD is a Pre-Hospital Advanced Care Directive that allows terminally ill patients the right to elect to either receive full, limited, or no type of resuscitative efforts performed upon them by EMS field responders.
- In order for a PACD to be valid and for an EMS field responder to be legally able to adhere to its contents, the following must apply:
 - The patient must have an official PACD form, issued by the State of Delaware Division of Public Health.
 - The patient must have a terminal illness, and proof of this must be documented by the patient's primary care physician.
- The official PACD form must be signed by both the patient and the patient's primary care physician.
- The PACD must denote the type of care (Option A, B, or C) the patient has elected to have.
 - **Option A:** Advanced Life Support (Maximal Restorative Care Before Arrest), then Do Not Resuscitate.

Under this option, the patient shall receive the full scope of restorative interventions by the EMS field responder(s) permissible under the Delaware Statewide Advanced Life Support (ALS) treatment protocol prior to cardiac arrest.

- **Option B:** Basic Life Support (BLS-Limited Palliative Care Only Before Arrest), then Do Not Resuscitate.

Under this option, the patient shall receive comfort care for control of signs and symptoms only.

- **Option C:** Do Not Resuscitate-No Care Administered Of Any Kind.

With this option in place, no form of comfort care or life saving efforts of any kind will be administered by EMS personnel, unless the patient provides some form of communication such as verbally, eye blink, finger tap, or some other similar form of communication to indicate the desire to revoke the existing PACD order in place.

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- The wallet identification card, a wrist bracelet, or any other form of PACD identification mechanism is only secondary, and not valid for EMS field responder personnel to honor without the presence of the physician and patient/surrogate signed PACD form.
- The purpose of wallet cards, bracelets, or other similar identification mechanisms is to alert emergency field personnel to the fact that a signed PACD form exists, and every feasible effort should be made to locate the form in an expedient manner.
- Should the PACD form be located and presented to emergency field responder personnel once life saving efforts have commenced, emergency field responder personnel will alter their course of action immediately, in response to the patient option number appearing on the signed PACD form.
- EMS field response personnel, upon witnessing and verifying a signed PACD order, shall note said order in writing to ensure its inclusion in the patient's medical record. Said order shall also be noted and documented on the trip record sheet.
- EMS field response personnel, upon witnessing and verifying the revocation of the PACD order by the patient, shall note said revocation-and the method of communication used by the patient for said revocation-in writing to ensure its inclusion in the patient's medical record. Said order shall also be noted and documented on the trip record sheet.
- In any situation where EMS field responders have a good faith basis to doubt the validity of a signed PACD form, the responder should resuscitate.

If a question should arise regarding DNR's, PACDs or living wills at any time during treatment, medical control should be contacted

AUTOMATIC EXTERNAL DEFIBRILLATOR (AED)

INDICATIONS: *Adult medical patients in cardiopulmonary arrest.*

- For patients 8 years of age and older
 1. Assess scene safety.
 2. Determine if the patient is unresponsive, pulseless, and apneic.
 3. Assure an open airway by ventilation with bag valve mask.
 4. If pulseless, begin CPR.
 5. In the absence of effective CPR on arrival and when response time is greater than four (4) minutes, perform 2 minutes of chest compressions prior to first defibrillation.
 6. If cardiac arrest is unwitnessed or of greater than 4 minutes duration, do 2 minutes of CPR first.
 7. Stop CPR and Analyze (not in moving vehicle or while moving patient).

- **For Biphasic Defibrillators:**
 1. **Deliver a single shock. Quickly assess for return of spontaneous circulation. If none, begin compressions for 2 minutes and then analyze with the AED delivering a single shock if recommended.**
 - A. **If shock indicated:**
 - AED will charge- **clear everyone from patient** and deliver shock
 - After 6 minutes of resuscitative effort consider transport and / or meet paramedics en route if they are not already on scene.
 - B. **If no shock indicated:**
 - Check pulse, perform CPR and reanalyze every two minutes.
 - C. **If patient regains pulse:**
 - Support respirations with BVM if rate <10 or too shallow. If respirations are adequate- provide oxygen via non-rebreather mask.
 - D. **If patient regains pulse and losses it:**
 - Reanalyze and begin protocol again.

The AED is generally not indicated in obvious cases of traumatic arrest resulting from severe multi-system injury. However, if an older patient is in cardiac arrest after relatively minor trauma, considering using the AED in case an episode of ventricular fibrillation led to the traumatic event (for example, the patient collapses while driving a car and hits a tree).

Please refer to current EMT-Basic textbook for a full review of cardiac arrest and AED

AUTOMATIC EXTERNAL DEFIBRILLATOR (AED) PEDIATRIC

INDICATIONS: Pediatric medical patients in cardiopulmonary arrest.

- **Note that cardiac arrest in children is often due to respiratory failure. Aggressive airway management and adequate ventilation are paramount to resuscitation.**
- For patients 1-8 years of age.
 1. Assess scene safety.
 2. Determine if the patient is unresponsive, pulseless, and apneic
 3. Assure an open airway by ventilation with bag valve mask.
 4. In the absence of effective CPR on arrival and when response time is greater than four (4) minutes, perform 2 minutes of chest compressions prior to first defibrillation.
 5. Stop CPR and Analyze (not in moving vehicle or while moving patient).
- **Apply AED making sure to apply the proper pediatric supplied pads.**
- **Stop CPR and analyze (not in moving vehicle or while moving patient).**
- **For Biphasic Defibrillators, a single shock should be delivered, followed quickly by compressions if there is no return of spontaneous circulation.**
 - A. If shock indicated:**
 - AED will charge- **clear everyone from patient** and deliver shock
 - Do 2 minutes of CPR followed by rhythm reanalysis of rhythm with the AED.
 - After 6 minutes consider transport and meet paramedics en route if they are not already on scene.
 - B. If no shock indicated:**
 - Check pulse, perform CPR and reanalyze every two minutes.
 - C. If patient regains pulse:**
 - Support respirations with BVM if rate <10 or too shallow. If respirations are adequate- provide oxygen via a pediatric non-rebreather mask.
 - D. If patient regains pulse and losses it:**
 - Reanalyze and begin protocol again.

*Be sure that you are using the correct pads for pediatric patients. **Do not use the adult pads on pediatric patients.** AEDs should have high specificity for recognizing pediatric shockable rhythms and a dose attenuating system for delivering a pediatric dose. Also be aware with the pediatric AED pads you can not use the extension cable along with the pediatric pads. The AED is generally not indicated in obvious traumatic arrest resulting from severe multi system injury.*

PEDIATRIC AND ADULT TRAUMA

INDICATIONS: This Trauma Protocol applies to patients with any of the following field triage criteria:

If the patient meets the criteria for initiation of the trauma protocol, and ground transport is expected to exceed 10 minutes, air medical transport is to be requested at once.

Mechanism:

- Ejection from vehicle.
- Death of passenger in same vehicle.
- Extrication > 20 minutes.
- Falls > two and one-half times the patient's height.
- Vehicle telemetry consistent with high risk injury

Obvious injury:

- Penetrating injury to the chest, abdomen, head, neck, proximal extremities or groin.
- Major burns, inhalation injury, or trauma with burns.
- More than one proximal long bone fracture.
- Suspected spinal column or cord injury or limb paralysis.
- Pelvic fracture (suspected on clinical grounds).
- Flail chest, multiple rib fractures, or subcutaneous emphysema.
- Major external bleeding.
- Amputated limb.
- Crush, de-gloving or mangled extremity
- Open or depressed skull fracture

Vital sign abnormalities:

- Adults:
 - Coma Scale < 14.
 - Systolic BP < 90 mmHg.
 - Respiratory rate < 10 or >29.
 - Heart rate < 50 or > 120 bpm.
- Pediatrics:
 - Pediatric Glasgow Coma Scale < 14.
 - Refer to the **Abnormal Vital Signs** section of the Broselow[™] tape.

Note: Patients with GCS \leq 8 or exhibiting new onset paralysis or paresis; direct transport to a trauma center with neurosurgical capabilities.

Note: If transport times to trauma centers are relatively equal; transport patient to the higher level of care trauma center.

Extenuating circumstances:

(Not stand alone criteria for the initiation of trauma protocol or helicopter transport.)

- Pregnancy
- Age < 15 or > 55 years

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- *Known significant cardiac or respiratory disease*
- *Rollovers with vehicle impact*
- *High-speed crash: > 25 mph, auto deformity > 20" or inner intrusion >12"*
- *Auto-pedestrian / auto-bicycle injury with significant impact*
- *Motorcycle > 20 mph or rider thrown*
- *Renal dialysis*
- *Anticoagulation (Coumadin, Lovenox, heparin, Plavix) and bleeding disorders (Factor deficiencies, ITP)*

Note: If **YES** to extenuating circumstances, contact medical control and consider transport to closest trauma center.

Note: If **NO** to all above, routine transport.

- Assure scene safety and a safe rescue environment.
- Establish manual cervical spine control- consider entry into selective spinal immobilization algorithm.
- Perform a rapid trauma assessment.
- Establish and maintain a patent airway.
 1. Manual maneuvers while protecting the C-spine.
 2. Suction.
 3. Oropharyngeal or nasopharyngeal airway.
- Evaluate presence and quality of breathing.
 1. Rate.
 2. Tidal volume.
 3. Tracheal deviation.
- If the airway is patent and breathing is adequate, obtain a pulse oximeter reading (SaO₂) (correlate with heart rate), and place the patient on the proper oxygen breathing device.
- If breathing is inadequate, assist ventilation using bag-valve-mask with 100% oxygen.
- Determine presence of frank hemorrhage and assess cardiac output
 1. Skin color and temperature.
 2. Capillary refill.
 3. Presence of peripheral pulses.
- **External Bleeding Protocol:**
 - Apply direct pressure to the hemorrhaging wound
 - If direct pressure is not adequate to control hemorrhage, a provider may use a tourniquet for hemorrhage that is anatomically amenable to tourniquet application and note time of application.
 - For hemorrhage that cannot be controlled with above, apply approved hemostatic agent with direct pressure.
 - When bleeding controlled, may substitute an adequate pressure dressing

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- for direct pressure.
 - Contact medical control, in addition to a standard report, provide information on hemostatic agent and tourniquet as appropriate.
 - On arrival to health care facility, a report to the medical staff must include the type of bleeding, the methods used to control the bleeding, the name of the hemostatic agent used to control the bleeding, the number of hemostatic agent dressings used, whether any dressings were lost en route. If a tourniquet was applied to control hemorrhage, when it was applied and if medical control requested an attempt to release the tourniquet, what occurred at the bleeding site.
 - A patient care report must be completed at the receiving facility and left at the patient's bedside before the EMS crew returns to service.
- Splint obvious long bone fractures and provide full spinal immobilization according to selective spinal immobilization algorithm.
 - Initiate transport to an appropriate trauma facility. Scene time should be kept under ten (10) minutes unless extenuating circumstances exist.
 - Complete the detailed trauma assessment and expose (as appropriate) while en route.
 - Reassess patient every five minutes unless otherwise indicated by patient's condition.
 - Transport to the nearest appropriate medical facility without delay. If history, rapid, and detailed trauma assessment are consistent with an isolated head or spinal column injury, consider rapid direct transportation to a medical facility with immediate neurosurgical capabilities. Physical presentation consistent with significant head/spinal trauma are:
 - *New onset paralysis or paresis.*
 - *Isolated head trauma with altered mental status.*
 - *Projectile vomiting.*
 - *Blood/cerebral spinal fluid draining from ears, eyes, nasal/oral airway*
 - *Abnormal papillary function.*
 - *Obvious signs of a skull fracture, battle signs, raccoon eyes.*
 - *Priapism.*

Trauma scene times should be less than 10 minutes unless there are extenuating circumstances. Reasons for scene times over ten minutes should be documented on the chart. Appropriate reasons for prolonged trauma scene times include extrication, awaiting BLS, securing scene safety, presence of multiple victims, etc.

BURNS

INDICATIONS: *This Burn Protocol applies to patients with any of the following field triage criteria:*

- Isolated Burns - consider direct transportation to the nearest appropriate specialty burn facility via helicopter or ground without delay for patients with 2nd or 3rd degree burns greater than or equal to:
 - 20% BSA in adults
 - 10% BSA in ages less than 10 and over 50 years
 - 5% BSA in infants
 - 5% BSA of third degree burn in any patient
 - Circumferential burns or burns of the airway, neck, face, head, hands, feet, major joints or perineum
 - Patients with serious underlying medical conditions
 - Chemical burns with serious threat to functional or cosmetic impairment

- Bandage burned areas using a dry or wet sterile dressing for burns <10% body surface area (BSA). For burns greater than or equal to 10% BSA, use dry sterile dressings only. Cover the patient and provide for an appropriate warm environment to prevent heat loss.

- All patients meeting criteria for transport to a burn center will require paramedic care.

- If a paramedic unit is not available, radio a report to the emergency department advising of ETA and patient status. Provide information on mechanism of injury and pertinent physical findings to the receiving medical facility prior to arrival as long as patient care is not jeopardized). Document medical control physician number and any orders on the patient care report.

Trauma scene times should be less than 10 minutes unless there are extenuating circumstances. Reasons for scene times over ten minutes should be documented on the patient care report. Appropriate reasons for prolonged trauma scene times include extrication, securing scene safety, presence of multiple victims, etc.

Remember to consider air medical transport for a patient that may have a transport time lasting longer than twenty (20) minutes. If air medical transport was not dispatched on the initial call, consider activating air transport as soon as possible.

General philosophy is to prevent further injury, provide rapid transportation to an appropriate facility, notify the receiving facility, and initiate definitive treatment.

On the following page you will find the decision algorithm for selective spinal immobilization.

Please refer to a current EMT-Basic textbook for a full review of pediatric and adult trauma.

SPINAL IMMOBILIZATION GUIDELINE

INDICATIONS: *Apply this guideline to all patients involved in known or suspected blunt trauma.*

Implement spinal immobilization in the following circumstances:

- Significant multiple system trauma.
- Severe head or face trauma.
- If altered mental status (including drugs, alcohol and trauma) and:
 - o No history available
 - o Found in setting of possible trauma (e.g., lying at the bottom of stairs or in street); or
 - o Near drowning with a history or probability of diving.
- Loss of consciousness after trauma.
- Spinal pain or tenderness, including any neck pain with a history of trauma.
- Numbness or weakness in any extremity after trauma
- Patient with significantly painful distracting injury.

Modifiers:

High risk:

- *Age > 64 years*
- *Dangerous mechanism (fall > 5 stairs, axial load, high speed MVC with ejection and / or rollover)*
- *motorized recreation vehicles*
- *bicycle collision*

Low Risk:

- *Simple low speed rear-end MVC without being pushed into oncoming traffic, without rollover, without being struck by a large vehicle or high speed vehicle*
- *Ambulatory at any time*

PULSE OXIMETRY

INDICATIONS: *Pulse oximetry is an adjunctive technique that can help to detect hypoxia and to assess the impact of oxygen therapy. The EMT-B assessment and treatment of the patient is much more important than the pulse oximeter reading. The pulse oximeter supplies one additional small piece of information. A pulse oximeter is not mandated equipment on BLS units in Delaware. This protocol is provided for those agencies that have chosen to acquire a pulse oximeter and for those EMT-B's who have completed a pulse oximetry module either in their EMT-B course or in their EMT-B refresher course.*

- Provide appropriate supplemental oxygen. Consider obtaining a pulse oximeter reading. The pulse oximeter reading can be assessed prior to giving oxygen if this does not significantly delay oxygen therapy. A reading taken after oxygen has been administered can be compared to the first reading for signs of improvement or deterioration of oxygenation.
- Always treat the patient, not the pulse oximeter reading. Do not let the pulse oximeter delay other assessment or treatment.
- Certain medical conditions will give a falsely high pulse oximeter reading. The most common condition is carbon monoxide poisoning. Do not rely on a pulse oximeter reading if carbon monoxide toxicity is a consideration.

Please refer to a current EMT-Basic textbook for a full review of pulse oximetry and oxygen therapy.

INTRAVENOUS FLUID TRANSPORT PROTOCOL

INDICATIONS: *This protocol is only intended for use for patients that otherwise meet basic life support transport criteria.*

- All patients with an established intravenous (IV) access.
- IV access may be in the form of IV fluids or heparin/saline locks.
- The destination facility shall be an inpatient facility no more than 60 minutes from the facility of origin if IV fluids are hanging. If a saline/heplock is in place, no time constraint applies.*
- Patients with IV fluids shall have only standard IV fluids (normal saline, ½ normal saline, ringers lactate, or dextrose 5% and water) hanging at the time of transport. The fluids will be set at a Keep Vein Open (KVO) rate by the sending facility and will have no medications or supplements added to the fluid.
- All fluids shall have at least 500 cc remaining in the bag at the onset of transport.*
- The EMT-B shall not alter the flow rate of the IV fluids unless it is to shut them off in the event of an emergency. IV fluids should be shut down for the following reasons:
 - Swelling, redness, or increased pain.
 - Fluids in the bag have emptied.
 - The IV catheter is inadvertently dislodged from the site.
- Medical control shall be contacted and paramedic intervention considered if the patients condition deteriorates en route as evidenced by unstable vital signs, change in mental status or onset respiratory distress, chest pain, or neurological changes. The EMT-B is encouraged to contact medical control any time questions or concerns arise.

Definitions:

- Unstable vital signs: Heart rate \leq 60 BPM or \geq 120 BPM; respiratory rate \leq 10 BPM or \geq 20 BPM; systolic blood pressure \leq 90 mmHg; Glasgow Coma Scale (GCS) \leq 14.
- KVO rate: 1 drop per minute.

The goal is to not have the bag of IV fluids empty prior to arrival at the destination facility. In the event this happens, the IV will be shut off for the remainder of the transport