Statewide Standard Treatment Protocol

Delaware Basic Life Support Protocols, Guidelines and Standing Orders

For

Prehospital and Interfacility Patients

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State of Delaware

Department of Health and Social Services

Division of Public Health

Office of Emergency Medical Service

Statewide Standard Treatment Protocols

And

Basic Life Support Standing Orders

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This treatment protocol for basic life support has been adopted and is enacted by the State Fire Prevention Commission pursuant to Delaware Code, Title 16, Chapter 98, Section 9802 (24).

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INTRODUCTION AND EMT STANDARD OF CARE

Delaware Emergency Medical Technician (EMT) 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 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 Educational Standards and verified through the National Registry of Emergency Medical Technicians certification process.

All Delaware certified EMS providers administering patient care are doing so under the provisions of the State EMS Medical Director's medical license in accordance with Del Code Title 16, Chapter 98 Section 9802.

These protocols are not all-inclusive. They address in particular those patients for which EMTs 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 reinforcement to standard EMT 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.

"Any person, agency, organization or entity who knows or in good faith suspects child abuse or neglect shall make a report in accordance with § 904 of this title (Title 16 of Delaware Code). For purposes of this section, "person" shall include, but shall not be limited to, any physician, any other person in the healing arts including any person licensed to render services in medicine, osteopathy or dentistry, any intern, resident, nurse, school employee, social worker, psychologist, medical examiner, hospital, health care institution, the Medical Society of Delaware or law enforcement agency." Child Abuse Reporting Phone Contact: 1-800-292-9582

Any person having reasonable cause to believe that an adult person is infirm or incapacitated as defined in § 3902 of this title (Title 31 of Delaware Code) and is in need of protective services as defined in § 3904 of this title shall report such information to the Department of Health and Social Services. Division of Services for Aging and Adults with Physical Disabilities (DSAAPD): 1-800-223-9074.

All certified EMS providers involved with patient care shall adhere to all federal and state HIPAA laws and regulations (45 CFR 160, 162, and 164 & DEL CODE 16, CH12 §1212).
Providers should use due caution when using social media in order to comply with HIPAA laws and regulations.

All certified EMS providers, involved with patient care, are equally responsible for assuring the patient(s) receives appropriate medical care.

Patient - A patient is an individual who is sick, injured, wounded or otherwise incapacitated or helpless and/or seeks immediate medical attention for whom EMS has been activated.

Patient Priority:

Priority I Patient suffering from an immediate life or limb threatening injury or illness.

Priority II Patients suffering from an injury or illness that if left untreated could potentially threaten life or limb.

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

EMT Minimum skills and procedures:

1. Patient assessment (primary and secondary surveys)
2. Patient assessment - using the pediatric assessment triangle for general impression
3. Use of body substance isolation (BSI)
4. Obtaining vital signs including temperatures
5. Scene assessment and notification responsibilities in suspected abuse cases
6. Airway control (manual)
7. Use of airway adjuncts (nasopharyngeal, oropharyngeal airways and other devices approved for BLS by the State EMS Medical Director)
8. Spine immobilization/stabilization
9. Cardio-pulmonary resuscitation
10. Bleeding control and shock management
11. Splinting of fractures and dislocations
12. Use of suction equipment
13. Application of oxygen delivery devices
14. Vaginal delivery
15. Use of tourniquets and approved hemostatic agents
16. Assist with nitroglycerin
17. Assist with bronchodilator
18. Assist with Aspirin
19. Assist with patient's medication auto-injectors
20. Measurement of blood glucose and administration of oral glucose
21. Administration of defibrillation
22. Pulse oximetry and CO-oximetry
23. Monitor IV fluids
24. Use of a length based color coded resuscitation tape for age appropriate treatments (Broselow Tape®)
25. VAD support and emergency procedures

Optional EMT Skills and Procedures:

1. Use of an approved carbon monoxide detector
2. Use of an approved continuous positive airway pressure devices (CPAP).
3. Use of Intranasal Naloxone
4. Use of approved mechanical chest compression device
5. Administer EMS supplied EpiPen or EpiPen Jr.
6. Administer EMS supplied Naloxone
7. Administer EMS supplied Aspirin
8. Administer EMS supplied Albuterol

Requesting Advanced Life Support (ALS) Requirements:

If at any time during contact the patient begins to show signs of worsening, an Advanced Life Support (ALS) unit should be considered.

Basic Life Support (BLS) should request an ALS provider when the patient's needs exceed their capabilities. These conditions may include but are not limited to:

- Altered level of consciousness
- Allergic reaction with difficulty breathing or swallowing, altered level of consciousness, or known previous reaction; hives within 5 minutes of exposure
- Cardiac symptoms
- Cardiac arrest
- Diabetic problem (not alert and/or abnormal breathing)
- Multi-system trauma or severe single system trauma
- OB/GYN (imminent delivery, 2nd or 3rd trimester bleeding or miscarriage)
- Overdose/poisoning (associated with any other categories on this list)
- Respiratory distress
- Respiratory arrest/failure
- Sudden Unexplained Infant Death (SUID)
- Seizures/convulsions (Status or trauma related)
- Entrapment with injuries that meet trauma triage criteria
- Severe blood loss
- Shock (Hypoperfusion)
- Stroke/CVA symptoms
- Syncope (associated with any other categories on this list or cardiac history)
- Unconsciousness
- Abnormal vital signs for that particular patient

If transport by BLS to an appropriate receiving facility can be accomplished before ALS can initiate care, then the BLS service should transport immediately.

BLS services should not delay patient care or transport while waiting for ALS personnel. If ALS arrival at scene is not anticipated before initiation of transport, arrangements should be made to rendezvous with the ALS service. If the rendezvous will delay transport greater than the transport time to the hospital, continue transport and advise the hospital of patient condition and lack of ALS on board.

Transport Requirements:

Respond to EMS call in accordance with the currently approved Priority Medical Dispatch (PMD) Protocols.

Transport shall be made in a safe manner as to prevent further injury. Utilize lights and sirens as appropriate based on patient condition.

- It is the consensus of the EMS medical directors that during transport to the hospital, the use of lights and sirens is *not medically indicated* for the majority of EMS patients.

- It is in the best interest of patient care that the highest medically trained on duty practitioner should determine the appropriate mode of transport based on patient condition.

Transfer patient to ambulance using the most appropriate means necessary while not exacerbating the patient(s) symptoms.

Secure patient in ambulance using appropriate equipment per ambulance and stretcher design. Agency standard operating procedures should meet or exceed manufacturers' recommendations and any applicable Delaware State Fire Prevention regulations and Delaware law.

The medical directors encourage providers to use safety restraints while the ambulance is in motion.

Transport patient to the most appropriate medical facility via appropriate mode of transportation without delay.

- When possible, patient care is enhanced by transport to a facility of prior treatment and the patient's, families, or personal physician's choice should be strongly considered.

- If the patient's wishes are in conflict with existing protocol (e.g., trauma, OB, NICU, or stroke/STEMI) the appropriate destination should be chosen. The medical control physician is the final determinant if assistance is needed.

- EMS providers should consider diversion status when determining destination. Patients shall be advised conditions for treatment may exceed their expectation when a facility is on divert. Priority I patients shall be transported to the closest appropriate facility; unless the facility is closed.

- Patient care does not end until transfer of care of the patient to appropriately trained health care provider.

- EMT's may use onsite medical control and alternate patient care locations during events deemed as Mass Gatherings by the Office of EMS and approved by the State EMS Medical Director.

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

Documentation Requirements:

An essential part of prehospital medical care is the completion of a Patient Care Report (PCR). The PCR provides written documentation of patient condition and treatment for medical and legal purposes. EMS personnel shall be responsible for providing clear, concise, complete and accurate documentation.

EMS providers must complete, without exception, a State of Delaware PCR on each patient contact, and shall document all relevant findings, and treatments.

Every attempt shall be made to complete the PCR prior to leaving the receiving facility.

- In the absence of extraordinary circumstances a PCR should be submitted to the receiving facility within four (4) hours of patient disposition.
- EMS providers must complete and submit a PCR to the receiving facility prior to going off duty.
- Only EMS calls that are originally dispatched as "service call or public assist" can be entered into the PCR system as such.
- A PCR entry is not needed for any Good Samaritan occurrences. Providers are encouraged to leave their information with the transporting agency.

A completed PCR is also necessary to identify EMS providers in the event of a potential infectious disease exposure.

Use of Quality Assurance/Quality Improvement (QA/QI) Requirements:

Quality Assurance/Quality Improvement (QA/QI) measures must be compliant with the established Delaware State Fire Prevention Commission QA/QI Committee detailed in the State of Delaware's Ambulance Regulations and approved by the State BLS EMS Medical Director and State EMS Medical Director.

EMT/TELEPHONE REPORT GUIDELINES

The EMT report to medical control should be brief and concise. The goal is to provide enough vital information to medical control so that they may provide informed direction for the patient's continued care and plan for the patient's disposition. Reports generally should not exceed thirty (30) seconds in duration in order to provide economical use of time by the EMT, the medical control physician, and nursing personnel.

For Priority I patients call online medical control utilizing the following report format:

- BLS unit number
- Specific notification (Trauma, Cardiac Arrest, Stroke, CPAP, etc.)
- Estimated time of arrival.
- Priority.
- Patient age.
- Patient sex.
- Chief complaint and related past medical history (i.e., patient with chest pain, history of MI and CABG or patient with altered mental status and history of insulin dependent diabetes).
- Vital signs.
- Significant physical findings (i.e., patient with shortness of breath found to have wheezing and to be hot to the touch, or the patient complaining of leg pain who has deformity of the mid-thigh without distal pulses).
- Care rendered.
- Response to care.

For hospitals that prefer radio reports regarding BLS patients who are a Priority of II or III and are being treated by standing orders with no anticipated requests for orders, the following brief report format is acceptable:

- BLS unit number.
- Priority.
- Patient age.
- Patient sex.
- Chief complaint
- Standing Order being followed
- Estimated time of arrival

The above information should be more than adequate for most BLS runs. When additional information is felt to be important for patient care or disposition, the medical control physician is well within their jurisdiction to request more information.

GENERAL PATIENT CARE (ADULT)

INDICATIONS: Any patient, who is greater than or equal to the age of 15 years, requiring prehospital medical evaluation by a prehospital health care provider in the State of Delaware.

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

A patient is an individual who is sick, injured, wounded or otherwise incapacitated or helpless and/or seeks immediate medical attention for whom EMS has been activated. A person that denies the need for EMS but any reasonable EMS provider can see that a person(s) has an obvious injury or illness, should be considered a patient and treated as such.

The most current version of the American Heart Association Guidelines for Cardiopulmonary Resuscitation is considered the standard for CPR within these protocols.

- Scene Safety, Observe body substance isolation (BSI) precautions.
- Identify the number of patients; perform Triage if necessary. See Triage Protocol.
- Consider the need for additional resources.
- Manage cervical spine as needed.
- Complete patient assessment; Level of consciousness (AVPU, Determine GCS).
- Assess and manage the airway.
- Assess breathing rate, rhythm, quality and oxygenation.
- Assess and manage circulation.
- Obtain vital signs. Monitor Blood Glucose as appropriate.
- Obtain SAMPLE history and OPQRST history if patient can speak (**O**nset, **P**rovocation/**P**alliation, **Q**uality, **R**ate, **S**everity**, **T**ime)
- Assess pertinent body systems as appropriate.
- Assess and record pain severity, if applicable.
- Assign treatment priority and make a transport decision.
- For transport consider closest appropriate medical facility, keeping in mind patient (family) requests and diversion status.
- Victims of sexual assault should be transported to a facility staffed with a Sexual Assault Nurse Examiner (SANE). If patient has significant trauma transport to appropriate trauma facility.
- On scene direction of medical care is provided by the on duty Delaware EMS provider

with the highest level of licensure and/or certification. Rescue operations and control of the scene remains under the direction of the Fire Officer in Charge.

- Contact medical control as needed.
- Monitor and reassess as appropriate.
- Responsibility of care does not end until transfer of care of the patient to an appropriately trained health care provider is completed.

Any person having reasonable cause to believe that an adult person is infirm or incapacitated as defined in § 3902 of this title (Title 31 of Delaware Code) and is in need of protective services as defined in § 3904 of this title shall report such information to the Department of Health and Social Services.

Division of Services for Aging and Adults with Physical Disabilities (DSAAPD): 1-800-223-9074.

GENERAL PATIENT CARE (PEDIATRIC)

INDICATIONS: Any patient, who is less than the age of 15 years (neonates are considered birth - 30 days old), requiring prehospital medical evaluation by a prehospital health care provider in the State of Delaware.

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

A patient is an individual who is sick, injured, wounded or otherwise incapacitated or helpless and/or seeks immediate medical attention for whom EMS has been activated. A person that denies the need for EMS but any reasonable EMS provider can see that a person(s) has an obvious injury or illness, should be considered a patient and treated as such.

The most current version of the American Heart Association Guidelines for Cardiopulmonary Resuscitation is considered the standard for CPR within these protocols.

- Scene Safety, Observe body substance isolation (BSI) precautions.
- Identify the number of patients; perform Triage if necessary. See Triage Protocol.
- Consider the need for additional resources.
- Manage cervical spine as needed.
- General assessment should be done using the pediatric assessment triangle (PAT).
  - Appearance
  - Work of breathing
  - Circulation
- After using the PAT, proceed to a primary assessment:
  - Airway for patency.
    - If epiglottitis or croup is suspected, transport sitting straight upright to assist with clearing of respiratory secretions. Do not attempt to examine upper airway or otherwise aggravate the patient.
    - Manage the airway as required.
  - Breathing for respiratory effort and quality; use of a Pulse Oximeter as appropriate.
    - Administer oxygen as appropriate.
  - Circulation for pulse rate, skin temperature and capillary refill.
    - CO-oximetry may be performed as an option by agencies carrying CO monitoring equipment.

- Expose the patient as needed for assessment needs.
    - Keep in mind that pediatric patients are prone to hypothermia faster than their adult counterparts. Maintain a warm environment and keep exposure to a minimum.
- Treat life-threatening conditions as necessary.
- Evaluate blood pressure, pulses, respiratory rate, GCS (Glasgow Coma Scale) and tactile temperature: if available use thermometer to take an accurate temperature. Refer to normal vital signs chart for pediatrics, or a Broselow tape.
- Monitor and reassess the patient as appropriate.
- Monitor blood glucose level as appropriate.
- If no life threat has been determined in the primary survey, proceed to a secondary survey that will include a focused medical history using the SAMPLE mnemonic and thorough physical exam.
- Assess and record pain severity, if applicable, using age appropriate pain scale.
- Assign treatment priority and make transport decision.
- For transport consider closest appropriate medical facility, keeping in mind patient (family) requests and diversion status.
- If at all possible, do not separate the parent/caregiver and the child.
- Patients should be taken to the approved facility's emergency department, labor and delivery area or to an inpatient bed if arranged prior to arrival at the facility. If there are questions or doubts as to the appropriate facility or point of delivery, the medical control physician will be the arbitrator. All unstable patients should be transported directly to an emergency facility.
- Victims of sexual assault should be transported to a facility staffed with a Sexual Assault Nurse Examiner (SANE). If patient has significant trauma transport to appropriate trauma facility.
- Patients are to be transported to Delaware Office of EMS approved facilities within the EMS agency's usual operations area.
- On scene direction of medical care is provided by the Delaware EMS provider with the highest level of licensure and/or certification.

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

"Any person, agency, organization or entity who knows or in good faith suspects child abuse or neglect shall make a report in accordance with§ 904 of this title (Title 16 of Delaware Code). For purposes of this section, "person" shall include, but shall not be limited to, any physician, any other person in the healing arts including any person licensed to render services in medicine, osteopathy or dentistry, any intern, resident, nurse, school employee, social worker, psychologist, medical examiner, hospital, health care institution, the Medical Society of Delaware or law enforcement agency."

Child Abuse Reporting Phone Contact: 1-800-292-9582.

DRAFT

REFUSAL OF SERVICE

INDICATIONS: EMTs respond to various scenes where 911 or emergency services are activated due to a person(s)/patient(s) that appears to be in some sort of distress and may be in need of Emergency Medical assistance. It is important that the EMT obtains the patient's informed consent before leaving the scene; otherwise the EMT might be exposed to legal liability for abandonment of the patient

A patient is an individual who is sick, injured, wounded or otherwise incapacitated or helpless and/or seeks immediate medical attention for whom EMS has been activated. A person that denies the need for EMS but any reasonable EMS provider can see that a person(s) has an obvious injury or illness, should be considered a patient and treated as such.

- Follow General Patient Care Protocols and any other appropriate protocols that may be required based on the patient condition, complaint, or your assessment.

- Discussion of refusal should be initiated by the patient and/or their guardian.

- If patient and/or patient's guardian wishes to refuse treatment and/or transport to a medical facility:
  - Inform the patient about the needed treatment and possible outcomes including verbalizing the possibility of disability and death.
  - Every effort should be made to persuade the patient to consent to treatment and/or transport.
  - Consider involving family, medical control and law enforcement as needed.

- Coercing a patient or family into a Refusal of Services will lead to loss of EMS provider privilege by the State Fire Prevention Commission.

- Contact medical control for patients presenting or having originally presented with:
  - Suspicion of intoxication by drugs or alcohol
  - Past medical history or suspicion of dementia
  - Any intervention performed by any other healthcare provider
  - A summons of EMS to a health care facility or call initiated by a healthcare provider
  - Suspicion of acute mental disease or suicidal or homicidal ideation
  - Suspicion of a significant head injury
  - Respiratory distress
  - Abnormal vital signs (normal vital signs are defined as a heart rate between 60-100 bpm, systolic blood pressure >100mmHg, respiratory rate 12-20, and a SaO2 reading >92% on room air)
  - Altered mental status
  - An age less than 18 years
  - Any time ALS is dispatched and recalled by BLS prior to ALS arrival

Obtain a signed *Refusal of Service form* and document the informed consent process, concerns, and if applicable the physician number on the appropriate reports.

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 Protocol.
- Provide appropriate supplemental oxygen. Obtain a Pulse Oximeter reading.
- Do not administer aspirin if the patient reports an allergy to aspirin or other NSAIDs.
- Administer/assist the patient with taking uncoated Aspirin up to 325mg. This dose includes any dispatcher directed or patient administered doses prior to EMS arrival.
- Withhold nitrates and contact medical control if the patient relates taking sildenafil (Viagra®/Revatio®) or vardenafil (Levitra®) within the last 24 hours or tadalafil (Cialis®, Adcirca® for pulmonary hypertension), or any other prescription erectile dysfunction drugs within the last 48 hours.
- 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 is prescribed to the patient and has not expired.
- 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. Consider paramedic unit intercept route. Do not delay transport.
- Contact medical control directly with questions regarding nitroglycerin therapy or if medication is administered without a paramedic.

ACUTE RESPIRATORY DISTRESS (ADULT)

INDICATIONS: Signs and symptoms of acute exacerbations of asthma, emphysema, reactive airway disease and allergic reactions may include wheezing, cough, shortness of breath, diminished breath sounds, retractions, tachypnea, and/or air hunger.

Providers will be able to identify the need for albuterol, levalbuterol and Combivent medication treatments and administer it as appropriate.

- Follow General Patient Care Protocol.
- Provide appropriate supplemental oxygen. Obtain a Pulse Oximeter reading. Consider obtaining a carbon monoxide reading, if greater than 5, apply oxygen.
- Assess lung sounds.

MDI

  - If a patient has a bronchodilator meter dose inhaler prescribed by their physician, assist the patient as prescribed. The inhaler may be used again in fifteen minutes, if pulse is less than 150 beats per minute, for a total of 4 puffs. Contact medical control before assisting with additional doses or if the patient took more than 4 puffs within one hour of EMS arrival.

NEBULIZER

  - If patient's heart rate is less than 150 beats per minute, and if appropriate, assist the patient with their own nebulizer as prescribed by the patient's physician, up to a 2 unit dose. Connect nebulizer to an oxygen source at 8 liters per minute.
  - If upon arrival patient is currently taking prescribed nebulizer, it is appropriate to transport the patient while finishing the treatment with EMS provided oxygen. Once complete continue appropriate oxygen therapy.

- 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. Consider paramedic unit intercept route. Do not delay transport.
- Contact medical control directly with any questions or concerns regarding medication therapy as needed or if medication administered without a paramedic.

ACUTE RESPIRATORY DISTRESS/FAILURE (PEDIATRIC)

INDICATIONS: Signs and symptoms of acute exacerbations of asthma, reactive airway disease and allergic reactions may include wheezing, cough, shortness of breath, diminished breath sounds, retractions, tachypnea, stridor and/or air hunger.

Acute Respiratory Distress: a clinical state characterized by abnormal respiratory rate, and an increased effort represented by nasal flaring, retractions and accessory muscle use. Respiratory distress can be associated with changes in airway sounds, skin color, and mental status.

Acute Respiratory Failure/Arrest: a clinical state of inadequate oxygenation, ventilation, or both. It may be characterized by signs of distress or inadequate respiratory effort.

Providers will be able to identify the need for albuterol, levalbuterol and Combivent medication treatments and administer it as appropriate

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- Follow Pediatric General Patient Care Protocol.
- Perform an initial assessment using the pediatric assessment triangle.
- Keep patient warm.
- Consider Complete Airway Obstruction (Foreign body).
- Consider Partial Airway Obstruction (Upper airway).
  - Do not attempt an invasive airway maneuver (Oropharyngeal and Nasopharyngeal Airway adjuncts). Avoid any agitation, place child in position of comfort.
- Provide appropriate supplemental oxygen, as appropriate. Obtain a pulse oximeter reading. Consider obtaining a carbon monoxide reading, if greater than 5, apply oxygen via non-rebreather.
- Consider Reactive Airway Disease (lower airway).
  - Wheezing, grunting, retractions, tachypnea, diminished respirations, decreased breath sounds, tachycardia/bradycardia, and/or decreased level of consciousness.
  - Place patient in position of comfort.

MDI

- If a patient has a bronchodilator meter dose inhaler prescribed by their physician, assist the patient as prescribed. The inhaler may be used again in fifteen minutes for a total of 4 puffs. Contact medical control before assisting with additional doses or if the patient took more than 4 puffs within one hour of EMS arrival (use spacer if available).
- If the patient's pulse rate is over 180 beats per minute, contact medical control prior to a second dose of bronchodilator.

NEBULIZER

- If patient's heart rate is less than 180 beats per minute, and if appropriate, assist the patient with their own nebulizer as prescribed by the patient's physician. These include albuterol, levalbuterol and Combivent. Connect nebulizer to an oxygen source at 8 liters per minute.

- If upon arrival patient is currently taking his prescribed nebulizer, it is appropriate to transport the patient while finishing the treatment with EMS provided oxygen. Once complete continue appropriate oxygen therapy.

- 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. Consider paramedic unit intercept route. Do not delay transport.

- Contact medical control directly with any questions or concerns regarding medication therapy as needed or if medication administered without a paramedic.

RESPIRATORY FAILURE/ARREST

- Manage Airway as appropriate.

- Nasal airways are contraindicated in infants and small children. Assess the size of the nares and the proper length of the adjunct, as not to occlude the airway.

- Place in the appropriate airway adjunct to assist in patency.

- Administer appropriate oxygen therapy.

- Monitor cardiac status and be prepared to begin CPR.

Note: A high-risk infant is an infant who is on an apnea monitor or who has been identified as having an "apparent life-threatening event" (ALTE). These infants include those who have experienced periods of apnea (cessation of breathing), or are at risk of prolonged apnea. When you arrive at the scene of an incident involving this type of baby, no matter how well the baby may look, transport to the ED is always advised.

ALBUTEROL (OPTIONAL)

INDICATIONS: Signs and symptoms of acute exacerbations of asthma, emphysema, reactive airway disease and allergic reactions may include wheezing, cough, shortness of breath, diminished breath sounds, retractions, tachypnea, and/or air hunger. Providers will be able to identify the need for Albuterol medication treatments and administer them as appropriate.

- Follow General Patient Care Protocol.
- Consider use of the Allergic Reaction Protocol.
- Request ALS. 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. Consider paramedic unit intercept route. Do not delay transport.
- If patient is less than 1 year, contact medical control immediately.
- If patient's pulse is less than 150 beats per minute for adult or 180 beats per minute for pediatric and the patient has a known history of Asthma or COPD; or signs of Asthma, COPD, or Allergic reaction are present, administer Albuterol as follows:
    - For patients 6 years of age and above: administer 5mg Albuterol via nebulizer with oxygen flow set at 8LPM.
    - For patients 1-5 years of age: administer 2.5mg Albuterol via nebulizer with oxygen flow set at 8LPM.
- Reassess patient, especially lung sounds, vitals, and oxygen saturation.
- If signs and symptoms of respiratory distress persist, repeat dose as follows:
    - For patients 6 years of age and above: administer 5mg Albuterol via nebulizer with oxygen flow set at 8LPM*.
    - For patients 1-5 years of age: administer 2.5mg Albuterol via nebulizer with oxygen flow set at 8LPM*.
- Contact medical control with any questions or concerns. 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 doses, and pulse rate before administration.

** If respiratory status worsens, stop Albuterol treatment and begin CPAP or BVM for adults. Utilize BVM for pediatric patients.*

CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP) (OPTIONAL)

INDICATIONS: Respiratory distress or failure, due to cardiogenic pulmonary edema (CHF), asthma, chronic obstructive pulmonary disease (COPD), or emphysema in which the patient demonstrates spontaneous respirations and a patent, self-maintained airway.

VITAL SIGNS AND ASSESSMENT CRITERIA:

- 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%
- Labored breathing that results in the patient being unable to complete a full sentence

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 trauma

- Follow General Patient Care Protocol.
- Assure a patent airway.
- Administer 100% 02 via appropriate delivery system.
- Perform appropriate patient assessment including obtaining vital signs, pulse oximeter (Sp02) reading, and cardiac rhythm *(regular or irregular).*
- Apply CPAP device per manufacturer's instructions.*
- Monitor continuous pulse oximetry.
- Albuterol nebulizers may be kept in-line with CPAP. This may require the nebulizer flow rate to increase based on CPAP manufacturer's recommendations.
- Contact the medical control as soon as possible to allow for prompt availability of hospital CPAP / BiPAP equipment and respiratory personnel.

**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.*

ALLERGIC REACTION

INDICATIONS: Generalized allergic manifestations such as urticaria, swelling, respiratory distress, or a known allergen exposure.

Severe Allergic Reactions include: Airway obstruction (partial or complete), swelling of the tongue, face, or neck areas, clinical evidence of shock including altered mental status, confusion, hypotension (systolic <90mmHg), delayed capillary refill, and cool, clammy, or mottled skin.

- Follow General Patient Care Protocol.
- Assess lung sounds.
- Consider Respiratory Distress Protocol.

SEVERE ALLERGIC REACTIONS (ANAPHYLAXIS)

- If a patient has epinephrine via auto-injector (Epi-Pen®, Epi-Pen Jr.®, or Twinjet®) prescribed by their physician, assist the patient with their epinephrine auto-injector. Otherwise, utilize the BLS agency auto-injector if available.
- Administer one dose of epinephrine via auto-injector (Epi-Pen®, Epi-Pen Jr.®, or Twinjet®) as indicated. **Use cautiously in patients 35 years and older.***
- EpiPen® Auto-injector (adult >30kg / 66lbs) delivers a single 0.3 mg epinephrine dose.
- EpiPen Jr® Auto-injector (children 15-30kg / 33-66lbs) delivers a single 0.15 mg epinephrine dose.
- Check the auto-injector to ensure the medication is not expired, has not become discolored, does not contain particulates, or sediments.
- Medical control should be contacted before an additional dose of epinephrine via auto-injector is administered if symptoms continue after 10 minutes.
- 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. Consider paramedic unit intercept route. Do not delay transport.
- Contact medical control directly with any questions or concerns regarding medication therapy as needed or if medication administered without a paramedic.

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 Protocol.
- Determine the appropriate response of the patient based on the developmental expectations of each age group. Enlist the assistance of the parent/caregiver or family member to determine what is "normal" for this patient.*
- Contact Medical Control if the patient is less than the age of 15 years of age for guidance with appropriate blood sugar level and medication dosages.
- Provide appropriate supplemental oxygen. Obtain a pulse oximeter reading. Manage the airway appropriately.
- Obtain a blood sugar level. If the blood sugar is less than 60mg/dl and the patient is alert and able to protect their airway, use oral glucose 15-24 grams. 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.
- Monitor and record vital signs. If patient's blood pressure drops below 100 mmHg systolic, treat for shock.
- If after 10 minutes the patient continues to be symptomatic, re-determine blood glucose level and administer a second dose of oral glucose 15-24 grams if glucose is still below 60mg/dl and patient is alert and able to protect their own airway.
- 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. Consider paramedic unit intercept route. Do not delay transport.
- If a paramedic unit is not available, initiate transportation to a CT capable, stroke certified** medical facility and provide a radio report to the emergency department advising them of the ETA and patient's condition.
- Contact medical control directly with any questions or concerns regarding medication therapy as needed or if medication administered without a paramedic.
- Consider alternative causes of altered mental status.
- If an insulin dependent diabetic with documented hypoglycemia due to missed meal or increased physical activity, who is not on any oral hypoglycemics and is with family/friends with the capability to consume a meal, fully awakens with EMS treatment, he (she) may refuse transport to a medical facility.

- For suspected narcotic overdose:
    - Refer to Suspected Opiate Overdose Protocol.

*Special Considerations for causes of Altered Mental Status:

A	Alcohol and abuse	**T**	Trauma, temperature
E	Epilepsy, electrolytes, encephalopathy	**I**	Infection
I	Insulin	**P**	Poison, Psychogenic
O	Opiates, overdose	**S**	Shock, seizure, stroke, space occupying lesions, SAH
U	Uremia		

***Stroke Certified by the State of Delaware or The Joint Commission (TJC), formerly the Joint Commission on Accreditation of Healthcare Organizations (JCAHO). Refer to the county EMS Medical Director's current list of stroke certified medical facilities.*

SUSPECTED OPIATE OVERDOSE (OPTIONAL)

INDICATIONS: Incomprehensible speech, inappropriate verbal responses, inability to follow verbal commands, decreased responsiveness, or unresponsiveness, respiratory distress or apnea. This protocol will allow BLS to treat patients with a history based on bystanders, provider's prior knowledge of the patient, or suspicion of potential narcotic overdose as evidenced by nearby medications or drug paraphernalia.

- Follow General Patient Care Protocol.
- Manage airway, breathing, and circulation.
- Provide appropriate supplemental oxygen. Obtain a pulse oximeter reading.
- If patient is < 15 years old, contact medical control immediately for guidance.

INTRANASAL

- Consider the administration 1mg Naloxone (Narcan®) IN (intranasal via the LMA MAD Nasal™ device) to provide for a patent, self-maintained airway and adequate respirations. If no improvement in the patient's respiratory status after two (2) minutes, a second dose of 1mg of Naloxone may be given in the opposite nare.

INTRAMUSCULAR (AUTO-INJECTOR)

- Consider the administration 0.4 mg naloxone (Narcan®) IM (intramuscular via the auto-injector device) to provide for a patent, self-maintained airway and adequate respirations. If no improvement in the patient's respiratory status after two (2) minutes, a second dose of 0.4 mg of Naloxone IM may be given in the opposite thigh.
- **Caution:** patients with near complete reversal of a narcotic overdose may become very agitated and combative.
- It is not safe to allow a narcotic overdose patient to refuse service after receiving Naloxone – contact medical control prior to a refusal of service.
- Continue to manage the patient's airway until they are breathing adequately and are able to protect their airway from aspiration.
- Do not delay safe transport to await results of treatment.
- If there is no response to Naloxone (Narcan®) within five minutes, consider other causes of altered mental status and proceed to alternative standing orders.
- 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. Consider paramedic unit intercept route. Do not delay transport.
- Contact medical control directly with any questions or concerns regarding medication therapy as needed or if medication administered without a paramedic.

SEPSIS (Adult)

INDICATIONS: Sepsis is the life threatening manifestation of severe infection.

- Follow General Patient Care Protocol.
- Provide appropriate supplemental oxygen. Obtain a pulse oximeter reading.
- Monitor blood glucose level as appropriate.
- Consider sepsis in patients presenting with:
  - Suspicion of infection*
  - 2 or more systemic inflammatory response syndrome (SIRS) criteria:
    - Temperature greater than 38 C (100.4 F) or less than 36 C (96.8 F)
    - Heart rate greater than 90
    - Respiratory rate greater than 20
    - Hypotension (Systolic BP less than 90)
- Consider requesting paramedics
- Contact medical control directly with any questions or concerns.
- Notify receiving hospital upon arrival of potentially septic patient

*Risk factors for infection:

- Elderly patients with altered mental status from baseline
- Nursing home patients
- Chronic disease (e.g. diabetes, renal failure/dialysis)
- Immunosuppression (e.g. cancer with chemotherapy, HIV+, transplant)
- Indwelling catheters and central lines

SUSPECTED STROKE

INDICATIONS: Abnormality in RACE Stroke Scale, Altered mental status, seizure, speech deficit, facial droop, headache, paresthesia, and hemiparesis in the absence of trauma, weakness, ataxia, visual disturbances, nausea, vomiting, general malaise, abnormal pupillary function, or other symptoms of suspected cerebral ischemia or hemorrhage.

- Follow General Patient Care Protocol.
- Administer oxygen via nasal cannula, to maintain oxygen saturation equal to 94%.
- Place patient in a semi to high-fowler's position.
- Obtain a blood sugar.
- Consider ALS.
- Determine onset of symptoms (Onset is defined as last time the patient was verified as not having a neurological deficit or last know well).
- **Contact Local Medical Control** for all suspected stroke patients.
- Obtain family contact information.
- Transport to nearest appropriate CT-capable, Certified Stroke Center* without delay**

For patients with a RACE stroke scale ≥ 5 and a last known well time of < 6 hours contact **Local Medical Control** for consideration of transport to a comprehensive stroke center capable of emergency revascularization.

- Communicate to receiving facility the use of anticoagulants.
- For suspected hemorrhagic stroke:
    - Discuss with Local Medical Control for suspected stroke destination.
- Early notification of "Stroke Alert" to receiving hospital is paramount with stroke patients. Stroke alert is normally activated if onset of symptoms is less than 4.5 hours.

Changes in hospital fibrinolytic protocols and the addition of interventional therapy may occur which could result in an interval change to this standing order.

**Certified Stroke Center by the State of Delaware or The Joint Commission (TJC), formerly the Joint Commission on Accreditation of Healthcare Organizations (JCAHO)*

***The Office of Emergency Medical Services (OEMS) will periodically compile and publish a list of approved receiving facilities based on the receiving facilities level of certification and available types of care. This list should be considered when determining the most appropriate destination for patients.*

STROKE ASSESSMENT TOOL

Rapid Arterial oCclusion Evaluation (RACE) Scale is the most recent scale developed and is gaining popularity. RACE takes slightly more time to perform than the CPSS and LAMS, with the goal of more accurately identifying stroke severity and localizing the area affected by the stroke. RACE includes:

- Facial palsy - weakness on one side of face with smile.
  - Absent = 0
  - Mild (some facial movement) = 1
  - Moderate to severe (little to no facial movement) = 2

- Arm motor function - the same test as Cincinnati and Los Angeles scales.
  - Normal to mild = 0
  - Moderate (able to lift arm, but unable to hold it for 10 seconds) = 1
  - Severe (unable to raise arm) = 2

- Leg motor function - ask the patient to lift each leg.
  - Normal to mild (able to lift leg and hold for five seconds) = 0
  - Moderate (able to lift, but unable to hold for five seconds) = 1
  - Severe (unable to lift one leg off of bed at all) = 2

- Head and gaze deviation - if the patient's head or eyes are towards one side, ask them to look towards the other side.
  - Absent = 0
  - Present (unable shift gaze past midline) = 1

- If a right-side deficit is found, check for aphasia (inability to say or hear words correctly). Ask the patient to close their eyes and make a fist.
  - Performs both tasks correctly = 0
  - Performs 1 task correctly = 1
  - Performs neither task = 2

- If a left-side deficit is found, check for agnosia (an inability to process sensory information). Touch their arm and ask "whose arm is this?" Then ask them to raise both hands and clap.
  - Patient recognizes his/her arm = 0
  - Does not recognize his/her arm or the impairment = 1
  - Does not recognize his/her arm nor the impairment = 2

A stroke is likely with a score above 1, and Emergent Large Vessel Occlusion (ELVO) is likely if the cumulative score is above 5.

INITIATION OF RESUSCITATIVE EFFORTS

INDICATIONS: For initiation of cardiopulmonary resuscitation (CPR) for patients in cardiac arrest.

- Follow General Patient Care Protocol.
- For patients with Ventricular Assist Devices (VAD's) reference VAD protocol.
- CPR (use of mechanical chest compression device is recommended for adults) 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)
- Presentation of any legal document to withhold life-saving efforts requires immediate contact with medical control.
- For patients who do not meet the criteria for initiation of cardiopulmonary resuscitation, withhold resuscitation and have paramedics continue in non-emergent for a death pronouncement.

**At no time should BLS cancel paramedics. ALS must make pronouncement in the field.*

CARDIAC ARREST (ADULT)

INDICATIONS: Current AHA guidelines reflect the importance of compressions for survival from cardiac arrest. EMS practice must evolve to address this important change.

- Compressions should begin as soon as possible following EMS arrival.
- Treating the patient where they are found allows compressions to be started without delay. Only provider safety issues should prompt patient movement.
- High Quality CPR
  - Mechanical chest compression device*, if available, should be set to continuous.
  - If mechanical chest compression device is not available, crews should perform continuous compression PIT CREW HIGH PERFORMANCE CPR.
    - No pauses for ventilations
    - Ventilations on the upstroke of CPR
  - No procedure should slow or stop compressions
  - Interruption for defibrillation should be minimal and compressions should resume AS SOON AS shock delivery is complete.
  - Frequently switch providers performing chest compressions to maintain peak performance.
- Compressions should be FAST, HARD, and DEEP at a rate of 100-120 compressions per minute and to a depth of at least 2 inches.
  - Ensure complete recoil of the chest wall prior to the next compression
- Ventilations
  - Ventilate at 8-10 breaths per minute to decrease intra-thoracic pressure
  - Ventilations should be just enough to see chest rise
- Complete a minimum of 10 minutes of compressions before moving patients off scene or initiating transport unless the use of a mechanical chest compression device has been established and is providing effective compressions.
  - Patient movement on stretchers prevents effective CPR
  - Effective CPR cannot be safely performed in a moving ambulance**

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

***For patient care and provider safety, the EMS medical directors advocate the use of an optional mechanical chest compression device.*

VENTRICULAR ASSIST DEVICE (VAD OR LVAD)

INDICATIONS: A ventricular assist device is a surgically implanted mechanical pump that is used to support blood flow and heart function in people who have weakened hearts. The device pumps blood from the lower chamber of the heart to the body and vital organs. This protocol applies to any medical emergency where the patient has one of these devices.

- Follow General Patient Care Protocol.
- The patient and family are trained on this device. Listen to and document their guidance.
- Listen to heart sounds. In a functioning device, you should hear a continuous whirling sound.
- Locate the device, usually found at the patient's waist. Look at the controller and identify which device is being used. Contact the emergency number provided if your patient is unstable, alarms are activated, or the device is off.
- If patient has altered mental status, refer to the Altered Mental Status Protocol.
- Consider Respiratory Distress Protocol.
- Find their backup bag and keep it with the patient.
- Vitals
  - Pulse may not be palpable in these patients.
  - Manual blood pressure may not be obtainable. Utilize an automated cuff to determine blood pressure.
  - Pulse oximetry may not be accurate due to continuous flow from VAD.
- Refer to color code on the VAD to the color on the guidance chart.
- Consider closest appropriate VAD/LVAD facility within geographic operational area.

LVAD Guidance Chart

	HeartMate II	HeartWare	Jarvik 2000 Flowmaker	HeartMate XVE	Thoratec PVAD/IVAD
Can I perform CPR?	Only if absolutely necessary	Yes, but risk of dislodging device is high	Yes	No	No
Is there a hand pump or external device?	No	No	No	Yes Pump @ 60-90 bpm	Yes Blue & Red bulbs
If the device slows down, will an alarm go off?	Yes Audible & flashing light	Yes Audible & flashing light	Yes Audible & solid red light	Yes Audible & solid red light	Yes
Can I speed up the rate of the device?	No	No	Indicator dial	No	No
Can I use an AED?	Yes	Yes	Yes	No	Yes
Does the patient have a pulse with this device?	May be weak or non-palpable	No	Yes	Yes	Yes
What is an acceptable Mean arterial pressure?	70-90 mmHg	75-90 mmHg	65-75 mmHg	Normal BP 110/80-140/80	Normal BP readings
What color is the battery alarm?	Yellow to red	Solid yellow to flashing red	Battery light yellow to red	Solid Yellow - Solid Red battery light	Blinking yellow light
What color is the low flow hazard alarm?	Red heart flashing	Yellow triangle flashing	Red Solid Red Stop Sign with bell on the interior	Solid Red Heart	Solid Red Light
Are there any trasport limitations?	No	Ground transport only	No	10,000 feet elevation maximum	10,000 feet elevation maximum
How long do batteries last?	Black-3 Hours Gray-8-10 Hours	4-6 Hours Charge indicator light present on battery	10 Hours	8 Hours	2 1/2 Hours

CARDIAC ARREST (PEDIATRIC)

INDICATIONS: Current AHA guidelines reflect the importance of compressions for survival from cardiac arrest. EMS practice must evolve to address this important change.

- Compressions should begin as soon as possible following EMS arrival.
- Treating the patient where they are found allows compressions to be started without delay. Only provider safety issues should prompt patient movement.
- **High-quality CPR**
  - Crews should perform continuous compression PIT CREW HIGH PERFORMANCE CPR.
    - No pauses for ventilations
    - Ventilations on the upstroke of CPR
  - No procedure should slow or stop compressions
  - Interruption for defibrillation should be minimal and compressions should resume AS SOON AS shock delivery is complete.
  - Frequently switch providers performing chest compressions to maintain peak performance

  Compressions should be FAST and HARD at a rate of 100-120 compressions per minute and with sufficient force to depress at least one third the anterior posterior (AP) diameter of the chest, as follows:

  - 1 ½ inches (4cm) in infants
  - 2 inches (5cm) in children
  - Ensure complete recoil of the chest wall prior to the next compression
- Ventilations
  - Ventilate at 8-10 breaths per minute to decrease intra-thoracic pressure
  - Ventilations should be just enough to see chest rise
  - Avoid excessive ventilation
- Complete a minimum of 10 minutes of compressions before moving patients off scene or initiating transport.
  - Patient movement on stretchers prevents effective CPR
  - Effective CPR cannot be safely performed in a moving ambulance

DO NOT RESUSCITATE ORDERS

INDICATIONS: Current guidelines for 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)

- Contact medical control immediately.

Delaware Medical Orders for Life-Sustaining Treatment (DMOST)

- A DMOST form is a medical order sheet based on the person's current medical condition and wishes.
- The DMOST form will clearly indicate the patient's wishes concerning life-sustaining treatment and CPR.
- ***Any section not complete implies full treatment for that section.***
- DMOST is used for patients with serious illness or frailty whose death within the next year would not be considered an unexpected event.
- The DMOST form may be voided at any time by a patient with decision making capacity or by their designated representative in cases where the patient lacks this capacity.

  Treatment Guidelines: No matter what is chosen, the patient will be treated with dignity and respect, and health care providers will offer comfort measures.

  Section A: Goals of Care
  - Outlines specific goals to be achieved through the use of this treatment plan

  Section B: Cardiopulmonary Resuscitation (CPR)
  - If the patient does not have a pulse and is not breathing
  - "Attempt resuscitation/CPR" – provide full care
  - "Do not attempt resuscitation/CPR" – no CPR, no defibrillation/AED, no ACLS

  Section C: Medical Interventions
  - If the patient has a pulse and is breathing
  - **"Full Treatment"** – provide all appropriate medical interventions including intubation and mechanical ventilation. Transfer to a hospital if necessary.
  - **"Limited Treatment"** – use appropriate medical treatment such as IV fluids and oxygen. Do not use intubation or mechanical ventilation. May use noninvasive positive airway pressure (CPAP)
    - Under the "Limited Treatment" option the patient may also elect to indicate their desire for transport

        - **Transfer to hospital for medical interventions**
        - **Transfer to hospital only if comfort need cannot be met in current setting**
    - **"Treatment of Symptoms Only/Comfort Measures"** - use medications, including pain medications, by any route, positioning, wound care, and other measures to keep clean, warm, dry, and comfortable. Use oxygen, suctioning, and manual treatment of airway obstruction as needed for comfort. Transfer only if comfort needs cannot be met in current setting.
    - **"Other Orders"** – outlines any other specific treatment wishes. Patients already receiving long-term mechanical ventilation or other interventions may indicate treatment limitations here.

Section D: Artificially Administered Fluids and Nutrition

- Generally does not impact pre-hospital care

Section E: Review of Orders with Patient

- Documents that orders were reviewed with patient or their representative
- Identifies who is authorized to act as a representative for patients lacking capacity to do so on their own behalf
- Specifies if the authorized representative may not change or void the DMOST form

Section F: Signatures

- EMS provider must review this section to ensure it is signed by the patient (or their authorized representative) and the healthcare provider

*If a question should arise regarding DNR's, PACDs, DMOST or living wills at any time during treatment, contact medical control.

DELAWARE MEDICAL ORDERS FOR SCOPE OF TREATMENT (DMOST)

- FIRST, follow the orders below. THEN contact physician or other health care practitioner for further orders, if indicated.
- The DMOST form is voluntary and is to be used by a patient with serious illness or frailty whose health care practitioner would not be surprised if the patient died within next year.
- Any section not completed requires providing the patient with the full treatment described in that section.
- Always provide comfort measures, regardless of the level of treatment chosen.
- The Patient or the Authorized Representative has been given a plain-language explanation of the DMOST form.
- The DMOST form must accompany the patient at all times. It is valid in every health care setting in Delaware.

_____ /____/ _____

Print Patient's Name (last, first, middle) | Date of Birth | last four digits of SSN

A

(see reverse for instructions. This section does not constitute a medical order.)

Goals of Care

B

Cardiopulmonary Resuscitation (CPR)

Patient has no pulse and/or is not breathing

☐ Attempt resuscitation/CPR. ☐ Do not attempt resuscitation/DNAR.

C

Medical Interventions: *Patient is breathing and/or has a pulse.*

☐ **Full Treatment:** Use all appropriate medical and surgical interventions, including intubation and mechanical ventilation in an intensive care setting, if indicated to support life. Transfer to a hospital, if necessary.

☐ **Limited Treatment:** Use appropriate medical treatment, such as antibiotics and IV fluids, as indicated. May use oxygen and noninvasive positive airway pressure. Generally avoid intensive care.

- ☐ Transfer to hospital for medical interventions.
- ☐ Transfer to hospital only if comfort needs cannot be met in current setting.

☐ **Treatment of Symptoms Only/Comfort Measures:** Use any medications, including pain medication, by any route, positioning, wound care, and other measures to keep clean, warm, dry, and comfortable. Use oxygen, suctioning, and manual treatment of airway obstruction as needed for comfort.

Use antibiotics only to promote comfort. Transfer only if comfort needs cannot be met in current location.

☐ Other Orders: _____

D

Artificially Administered Fluids and Nutrition: *Always offer food/fluids by mouth if feasible and desired.*

☐ Long-term artificial nutrition

☐ Defined trial period of artificial nutrition: Length of trial: _____ Goal: _____

☐ No artificial nutrition ☐ hydration only ☐ none *(check one box)*

E

Orders Discussed With: ☐ Patient _____ ph.# _____

☐ Guardian ☐ Surrogate (per DE Surrogacy Statute) Printed Name & phone number

☐ Other ☐ Agent under healthcare POA/or AHCD _____

☐ Parent of a minor Signature

_____

Print Name of Authorized Representative | Relation to Patient | Address | Phone #

If I lose capacity, my Authorized Representative may not change or void this DMOST _____

Patient Signature

F

SIGNATURES: Patient/Authorized Representative/ Parent (mandatory) *I have discussed this information with my Physician / APRN / PA*

_____

Signature | Date

If Authorized Representative signs, the medical record must document that a physician has determined the patient's incapacity & the Authorized Representative's authority, in accordance with DE law.

Physician / APRN / PA (mandatory)

_____

Signature | Date | Time

_____

Print Name

_____

Print Address

_____

License Number | Phone #

DIRECTIONS FOR HEALTH CARE PROFESSIONALS

COMPLETING A DMOST FORM

- Must be signed by a Licensed Physician, Advance Practice Registered Nurse, or Physician Assistant.
- Use of original form is highly encouraged. Photocopies and faxes of signed DMOST forms are legal and valid.
- Any incomplete section of a DMOST form indicates the patient should get the full treatment described in that section.

REVIEWING A DMOST FORM – It is recommended that a DMOST form be reviewed periodically, especially when:

- The patient is transferred from one care setting or care level to another,
- There is a substantial change in the patient's health status, or
- The patient's treatment preferences change.

MODIFYING AND VOIDING INFORMATION ON A COMPLETED DMOST FORM

A patient with decision-making capacity can void a DMOST form at any time in any manner that indicates an intent to void.

Any modification to the form voids the DMOST form. A new DMOST form may be completed with a health care practitioner.

Forms are available online at www.delaware.gov.

SECTION A This section outlines the specific goals that the patient is trying to achieve by this treatment plan. Health care professionals shall share information regarding prognosis with the patient in order to assist the patient in setting achievable goals. Examples may include:

- Longevity, cure, remission or better quality of life
- To live long enough to attend an important event (wedding, birthday, graduation)
- To live without pain, nausea, shortness of breath or other symptoms
- Eating, driving, gardening, enjoying time with family, or other activities

SECTION B This is a medical order. Mark a selection for the patient's preferences regarding CPR.

SECTION C This is a medical order. When "limited treatment" is selected, also indicate whether the patient prefers or does not prefer transfer to a hospital for additional care.

- IV medication to enhance comfort may be appropriate treatment for a patient who has indicated "symptom treatment only."
- Non-invasive positive airway pressure includes continuous positive airway pressure (CPAP) and bi-level positive airway pressure (Bi-PAP).
- The patient will always be provided with comfort measures.
- Patients who are already receiving long-term mechanical ventilation may indicate treatment limitations on the "Other Orders" line.

SECTION D This is medical order. Mark a selection for the patient's preferences regarding nutrition and hydration. Check one box.

- Oral fluids and nutrition should always be offered if feasible and consistent with the goals of care.

SECTION E This section documents with whom the medical orders were discussed, the name of any health care professional who assisted in the completion of the Form, the name of any authorized representative and if the authorized representative may not modify/ void the form.

SECTION F To be valid, all information in this section must be completed.

HIPAA PERMITS DISCLOSURE OF DMOST TO OTHER HEALTH CARE PROFESSIONALS AS NECESSARY FOR TREATMENT.

SEND FORM WITH PATIENT WHENEVER MOVED TO A NEW SETTING
Faxed, Copied, or Electronic Versions of the Form are legal and valid.

Delaware Medical Orders for Scope of Treatment (DMOST)

DMOST is a process for documenting treatment choices. The DMOST form is voluntary. It is a portable, standardized Medical Order that will be recognized and followed by Delaware health care providers.

The DMOST conversation is an opportunity to understand the likely course of your health and medical condition, so that you may make informed choices that are appropriate and reflect what you want. If you choose, you may invite loved ones to join this conversation.

Q. What is DMOST?

A. The Delaware Medical Orders for Scope of Treatment (DMOST) form is a portable medical order form. It allows you to make choices about life-sustaining treatments, including among other treatments, CPR (resuscitation) and artificial nutrition. You may request full treatment, limited treatment, or comfort care only.

Q. Who is it for?

A. A DMOST form can be used by a person with a serious illness or frailty, whose health-care practitioner would not be surprised if they died within the next year.

Q. When should it be discussed and signed? Who signs it?

A. A DMOST form is completed after a conversation you have with a health care practitioner. It is signed by you and a physician (MD or DO), an advanced practice registered nurse (APRN), or a physician assistant (PA). The physician/APRN/PA signature makes the choices into portable medical orders.

Q. Who is required to follow the wishes documented on the DMOST form?

A. These orders will be followed by health care providers in any setting (ambulance, long-term care facility, emergency room, hospital, hospice, home, assisted living facility, etc.). It travels with you and is honored when you move to a new setting.

Q. Can someone else make DMOST decisions for me?

A. You make health-care decisions for yourself as long as you have decision-making capacity. You have the right to change your authorized representative at any time while you have decision-making capacity.

If a physician determines that a person lacks decision-making capacity, an authorized representative can sign a DMOST form on behalf of that person. A DMOST form does not change the decision-maker designated by an Advance Health Care Directive, a Health Care Power of Attorney document, a guardian of person appointed by a Court, or Delaware law on health care surrogates.

If you have capacity and complete a DMOST form, you can sign on the form saying that if you lose capacity, your authorized representative cannot void the form you signed.

Q. What if I change my mind?

A. If your condition or your choices change, you or your authorized representative should void (cancel) your DMOST form and request a new DMOST be completed with your new choices. You can void a DMOST form if you change your mind but do not want to create a new one. You may not make any changes to the content of the DMOST form. If you want to change your DMOST form you must void your previous form and complete a new one with your health-care practitioner. If your DMOST form does not agree with your advance directive, the most recent document will be followed.

Q. Must I do this?

A. The DMOST form is always voluntary and can be voided at any time. A Health care organization is prohibited from requiring you to complete a DMOST form for any reason, including as part of a person's admission to a health care facility.

It is important to understand that this form contains medical orders. It will be followed by health care providers. For example, if you choose "Do Not Attempt Resuscitation", and your heart stops, no attempt will be made to restart your heart. If you choose "Intubate/Use Artificial ventilation", then you may be placed on a breathing machine with a tube in your throat and transferred to an intensive care setting in a hospital.

Q. What will happen to my choices if I travel out of state?

A. Many states, including all the states in our region, currently use a form similar to the DMOST form. Forms from those states which are valid under the Delaware Law will be honored in Delaware. DMOST forms will be honored in other states which have reciprocity.

PEDIATRIC AND ADULT TRAUMA

INDICATIONS: This Trauma Protocol applies to patients with any of the following field triage criteria. If any of the conditions in abnormalvital signs, obvious injury are present or mechanism of injury/ evidence of high energy impact, transport to a Trauma Center. Consider air medical transport.

Vital Signs:

Adults: Glasgow Coma Scale ≤13.
Systolic BP < 90 mmHg.
Respiratory rate < 10 or >29.

Pediatrics: Pediatric Glasgow Coma Scale ≤13
Refer to the Abnormal Vital Signs section of the Broselow[tm] tape.

Patients with abnormal vital signs should be transported to the highest level trauma center.

Patients with GCS ≤13 or exhibiting new onset paralysis or paresis: consider direct transport to a Trauma Center with neurosurgical capabilities.

If NO for all elements in Vital Signs, proceed to Obvious Injury.

Obvious injury:

Penetrating injury to the torso, axilla, abdomen, head, neck, proximal extremities or groin.
Major burns, inhalation injury, or trauma with burns.
More than one proximal long bone fracture.
Pelvic fracture (suspected on clinical grounds).
Flail chest or other major chest injury
Limb paralysis
Major external hemorrhage.
Amputation above wrist or ankle
Crushed, degloved or mangled extremity
Open or depressed skull fracture
AVPU scale: does not respond to voice

Patients with obvious injury should be transported preferentially to the highest level trauma center practical.

After evaluation of injuries proceed to the Mechanism.

Mechanism:

Patient ejection (partial or complete) from vehicle
Motorcycle crash > 20 mph or rider thrown
Death of passenger in same vehicle compartment
Falls > 20 feet (adult)
Falls > 10 feet (child) or 2-3 times the height of the child
Auto-pedestrian/ auto-bicycle injury-thrown, run over or with significant (>20 mph) impact
Vehicle telemetry consistent with high risk injury
High risk auto crash: inner intrusion > 12" occupant/>18" anywhere

If NO for all elements in Mechanism, proceed to Extenuating Circumstances.

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

Pregnancy > 20 weeks
Renal dialysis
Age < 15 or > 55 years
Other significant medical conditions- discuss with medical control
Time Sensitive extremity injuries
Required by patient condition in the judgment of the prehospital provider
Anticoagulation medications and bleeding disorders (Factor deficiencies, ITP).

If YES to extenuating circumstances, contact medical control and consider transport to a specific trauma hospital with necessary resources.

If NO to all above, routine transport. When in doubt, transport to a trauma center.

Consider Pediatric and Adult airway management protocol.

For suspected unstable pelvic fractures, apply pelvic compression device per manufacturer instructions.

Bandage burned areas using dry clean dressings only. Cover the patient and provide for an appropriate warm environment to prevent heat loss.

In cases of severe hemorrhage:

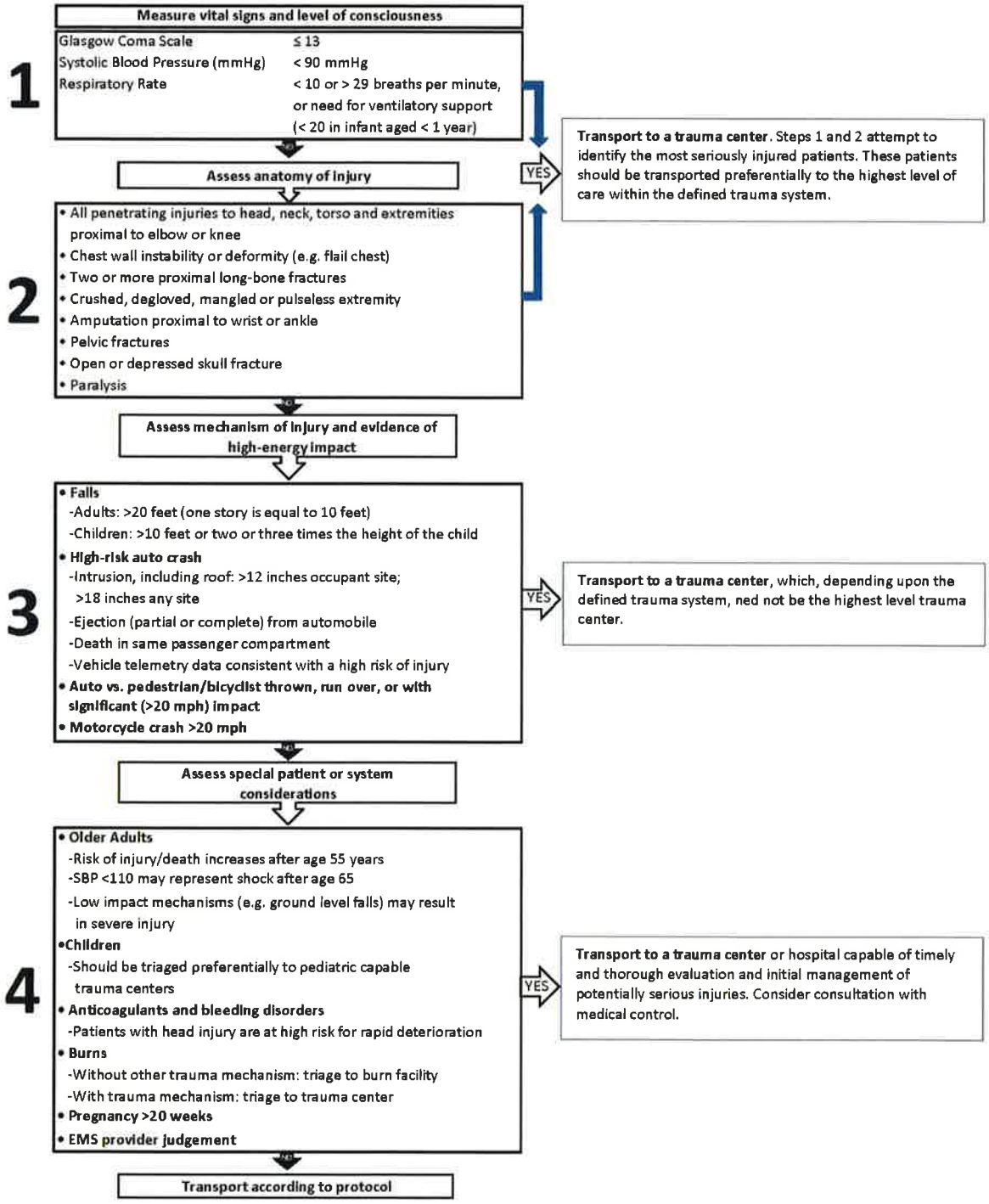
- Apply direct pressure to the hemorrhaging wound
- If direct pressure is not adequate to control hemorrhage, a provider may use a tourniquet for hemorrhage that is anatomically amenable to tourniquet application and note time of application.

For hemorrhage that cannot be controlled with above, apply approved hemostatic agent with direct pressure, or through packing of the wound with gauze either impregnated with hemostatic agent or not. If packing the wound, gauze must be inserted deeply and fully and can include multiple rolls of gauze.

- Patients with hemorrhagic shock should be taken to the closest trauma center, without delay.
- Head or spinal trauma patients with GCS <13 or exhibiting new onset paralysis or paresis; direct transport to a trauma center with neurosurgical capabilities is preferred.
- Patients who are <15 years of age should be transported to a pediatric trauma center when patient condition, time and distance allow.
- Burn patients should be evaluated at the nearest trauma center.
- Consider helicopter transport if ground transport to the appropriate hospital is expected to exceed 10 minutes.
- Unstable penetrating trauma patients should go directly to the closest trauma center.
- Patients in shock with deteriorating vital signs or ongoing airway compromise should be transported to the closest trauma center.

Trauma scene times should be less than 10 minutes unless there are extenuating circumstances. Reasons for scene times over ten minutes should be documented in the chart. Appropriate reasons for prolonged trauma scene times include extrication, awaiting BLS, securing scene safety, presence of multiple victims, awaiting helicopter touch down for transport to a higher level trauma center, etc.

2011 Guidelines for Field Triage of Injured Patients



When in doubt, transport to a trauma center.

SELECTIVE SPINAL MOTION RESTRICTION

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

Implement spinal motion restriction (rigid collar) in the following circumstances:

- Significant multiple system trauma.
- Severe head or face trauma.
- If altered mental status (including drugs, alcohol and trauma) and:
  - No history available
  - Found in setting of possible trauma (e.g., lying at the bottom of stairs or in street)
- Loss of consciousness after trauma.
- Any fall with evidence of striking head.
- 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.

For Patient transport:

- If ambulatory, allow patient to move to stretcher mattress with minimal spinal motion
- If non-ambulatory, Use backboard, scoop/orthopedic stretcher, vacuum mattress, or other device to move patient to stretcher with minimal spinal motion
- Use CID may be used to further restrict spinal motion
- Transport on stretcher mattress without backboard if patient ambulatory or if scoop/orthopedic stretcher and be removed with minimal patient motion.
- Use of a scoop/orthopedic stretcher, backboard or Reeves stretcher is required for patients being transported by pre-hospital aviation.

Note: Penetrating trauma to the extremities or core (below the clavicles) without neurologic deficit does not require board or collar.

In certain situations the long backboard will still be used as an extrication/moving device, but plays no significant role in restricting spinal motion. If a backboard is utilized during extrication, the EMS crew may, at its discretion, remove the board prior to transport.

BURNS

INDICATIONS: A patient who has been exposed to radiation, thermal, electrical, environmental, or chemical reactions that cause burns.

- Follow Pediatric and Adult Trauma Protocols.
- Stop the burning process. If safe to do so:
  - Decontaminate if chemical or radiological burn.
  - Ensure patient is not energized if electrical or lightning burn prior to entering the area.*
- If patient is in cardiac arrest, utilize cardiac arrest protocol.
- Request ALS if appropriate. Consider pain management.
- Monitor for airway burns; if any of the following signs or symptoms are present, request ALS:
  - Singed facial or nasal hairs
  - Hoarse voice or stridor
  - Difficulty breathing
  - Carbonaceous sputum
  - Burns on face.
- Remove jewelry and clothing; completely expose burned area.
- Assess burn percentage using the "Rule of Nines"
- Bandage burned areas using clean, dry sheets.
- **Do NOT** pop/ lance any blisters that form.
- Cover the patient and provide for an appropriate warm environment to prevent heat loss.

TRIAGE FOR MASS CASUALTY

INDICATIONS: If a victim appears to be a young adult, use START. If a victim appears to be a child, use Jump START.

Simple Triage And Rapid Treatment (START)

Step 1:
Triage officer announces that all patients that can walk should get up and walk to a designated area for eventual secondary triage. All ambulatory patients are initially tagged as Green.

Step 2:
- Triage officer assesses patients in the order in which they are encountered
- Assess for presence or absence of spontaneous respirations
- If breathing, move to Step 3
- If apneic, open airway
- If patient remains apneic, tag as Black
- If patient starts breathing, tag as Red

Step 3:
- Assess respiratory rate
- If ≤30, proceed to Step 4
- If > 30, tag patient as Red

Step 4:
- Assess capillary refill
- If ≤ 2 seconds, move to Step 5
- If > 2 seconds, tag as Red

Step 5:
- Assess mental status
- If able to obey commands, tag as Yellow
- If unable to obey commands, tag as Red

Jump START

Step 1:
Identify and direct all ambulatory patients to designated Green area for secondary triage and treatment. Begin assessment of non-ambulatory patients as you come to them.

Step 2:
- If breathing spontaneously, go on to the next step, assessing respiratory rate.
- If apneic or with very irregular breathing, open the airway using standard positioning techniques.
- If positioning results in resumption of spontaneous respirations, tag the patient immediate and move on.

Step 3: Jump
If no breathing after airway opening, check for peripheral pulse. If no pulse, tag patient deceased/non-salvageable and move on.
If there is a peripheral pulse, give 5 mouth to barrier ventilations. If apnea persists, tag patient deceased/non-salvageable and move on.

- If breathing resumes after the "jumpstart", tag patient immediate and move on.

Step 4:
- If respiratory rate is 15-45/min, proceed to assess perfusion.
- If respiratory rate is <15 or >45/min or irregular, tag patient as immediate and move on.

Step 5:
- If peripheral pulse is palpable, proceed to assess mental status.
- If no peripheral pulse is present (in the least injured limb), tag patient immediate and move on.

Step 6:
- Use AVPU scale to assess mental status.
- If Alert, responsive to Verbal, or appropriately responsive to Pain, tag as delayed and move on.
- If inappropriately responsive to Pain or Unresponsive, tag as immediate and move on.

Modification for non-ambulatory children
- Infants who normally can't walk yet
- Children with developmental delay
- Children with acute injuries preventing them from walking *before* the incident
- Children with chronic disabilities

Step 7:
- Evaluate using the Jump START algorithm
- If any RED criteria, tag as RED.
- If pt. satisfies YELLOW criteria:
  - YELLOW if significant external signs of injury are found (i.e. deep penetrating wounds, severe bleeding, severe burns, amputations, distended tender abdomen)
  - GREEN if no significant external injury

Step 8:
Unless clearly suffering from injuries incompatible with life, victims tagged in the BLACK category should be reassessed once critical interventions have been completed for RED and YELLOW patients.

TASER PROBE REMOVAL

INDICATIONS: Patient with uncomplicated probes from a conducted electrical weapon (Taser®) embedded into non-sensitive areas of the skin.

CONTRAINDICATIONS:

Patients with probe penetration in vulnerable areas of the body (female breast, genitalia, or above the level of the clavicles) or suspicion that the probe is imbedded into bone, blood vessels, or other sensitive area; should be transported for evaluation and probe removal at the receiving medical facility.

- Follow General Patient Care Protocol.
- Ensure wires are disconnected from the weapon.
- Stabilize skin around probe using non-dominant hand. Grasp the probe by metal body using your dominant hand. Remove probe in a single and quick motion.
- Dispose of taser probe in sharps container.
- Clean the wound with antiseptic wipe and apply an appropriate dressing.

WATER RELATED EMERGENCIES

INDICATIONS: Victims of drowning or near drowning, history of diving or breathing compressed air. Symptoms include altered mental status, numbness, pain in extremities, joint pain, blurred vision, blood from nose ears and mouth, seizures, unresponsiveness.

- Consider Pediatric and Adult Trauma Protocols.
- Remove wet clothing. Keep patient warm and dry.
- Any near drowning patient should be transported for evaluation regardless of current assessment findings.
- Be alert for vomiting.
- If a Dive Emergency
    - Consider aviation for transport to hyperbaric chamber facility

BITES AND ENVENOMATION

INDICATIONS: Bite by a suspected poisonous snake or spider with puncture marks to the skin and accompanied by swelling, pain, warm skin around bite area. A rash, wound, oozing blood, evidence of infection, difficulty breathing, wheezing, shortness of breath, hives, itching, hypotension or other signs of shock may be present. Animal bites or human bites received where the skin is broken. Human bites to a provider should be treated as an infectious disease exposure.

- Follow General Patient Care Protocol.
- Request Animal Control if needed
- Obtain a description of the insect/animal in question
  - Picture or adequate description
- **Do Not** transport insect/animal in question with you to the hospital.

Venomous Bites

- Contact Medical Control
- Transport to closest facility for further evaluation
- Note the time, location size of bite/sting
- Mark the area of swelling lightly with a pen or marker to assist with ongoing evaluation
- Immobilize the area of injury at the level of the heart if possible. Remove any constricting clothing or jewelry near the bite area.
- **Do Not** use ice on the wound
- Place a constriction band proximal to the bite. The band should only restrict superficial venous and lymphatic flow while maintaining distal pulses and capillary refill. The band should be snug enough that 2 fingers still fit underneath the band.

HEAT EMERGENCIES

INDICATIONS: Exposure to high temperatures, hot skin, tachycardia, altered mental status, dizziness, nausea, headache, mild hypotension, weakness/fatigue, thirst, or muscle cramps. Consider patient's clothing or uniform in relation to ambient temperature.

- Follow General Patient Care Protocol.
- Place patient in a cool environment
- Remove excess clothing
- If skin is normal to the touch: apply cool compresses. Dampen towel and apply to the head & neck areas.

Heat Stroke (Life Threatening Emergency)

- Request ALS
- Perform active cooling of patient.
- If patient begins to shiver, slow the cooling process

Heat Exhaustion

- Allow oral intake of cool fluids (water or sports drink only) if the patient is alert and oriented and has patent airway.

Heat Cramps

- Allow oral intake of cool fluids (water or sports drink only) if the patient is alert and oriented and has patent airway.

COLD EMERGENCIES

INDICATIONS: Patient exposed to cold environmental conditions. This may be acute or over a period of time. Body temperature < 96.8° F (36° C), frostbite, submersion in cold water.

- Follow General Patient Care Protocol.
- Remove wet clothing and replace with warm blankets. Handle the patient gently and avoid excess movement. Utilize heat packs on the exterior of blankets in the neck, arm pit and groin areas.
- **Do Not** place heat packs, hot water bottles, IV bags, or other heat-retaining devices directly on the patient's skin.
- Utilize cardiac arrest protocol if needed. Measure pulse for 60 seconds to determine if one is present when dealing with severe hypothermia.
- If patient is in cardiac arrest from drowning or hypothermia; do **not** perform active re-warming.

Frostbite

- Keep patient warm while exposing the affected part.
- **Do Not** rub the affected part, permit the patient to use the affected part, puncture blisters, expose part to dry heat, or immerse part in hot water.
- Remove jewelry if near the affected area.
- Apply loose sterile dressing to the affected area.

OBSTETRICS

INDICATIONS: Patients for whom delivery is imminent as evidenced by crowning, bloody show, breach or limb presentation. OB patients not to full gestation (40 weeks) should be transported to the closest appropriate facility.

- Follow General Patient Care Protocol.
- Gather obstetrical history
  - number of times pregnant (gravida)
  - number of living children (para)
  - estimated due date
  - any known problems, # of children in current pregnancy (twins, triplets, etc.)
  - assess length of contractions and amount of time between contractions
- If delivery is not imminent, transport patient in a left lateral recumbent position to prevent undue pressure from being exerted on the lower vena cava by the gravid uterus.
- If delivery is imminent, remove clothing below the mother's waist; check for crowning as appropriate.
- Create a clean field for the delivery area utilizing OB kit.
- If patient is experiencing urge to push or to have a bowel movement, prepare to deliver.
- Assist with delivery.
- If complications arise, request ALS and contact medical control immediately.
- If meconium staining is present, request ALS.
- Suction mouth with bulb syringe then nose when head presents.
- **Do Not** pull on infant or put traction on umbilical cord. Guide & control the infant out.
- Maintain newborn's body temperature. If mother capable place infant skin to skin to preserve body temperature. Consider emergency blanket, silver swaddler, or other heat retaining device. If mother not capable of skin to skin contact the use of the above blankets to preserve warmth. Ensure the head is covered, but do not cover the newborn's face.
- Stimulate the infant to cry by rubbing the back; unless meconium was present.
- Dry the newborn with a clean towel.
- Clamp and the umbilical cord after newborn is dry; 6 inches away from the newborn's navel area and second clamp 2 inches farther. Cut cord between the clamps.

- Monitor newborn's heart rate, respirations, and oxygen saturation. Consider blow-by oxygen 5-6LPM. Normal pulse is 120-160/minute and normal respiratory rate is 40-60/minute.

- If heart rate <100 beats per minute, gasping or apnea, provide BVM ventilation with oxygen at a rate of 40-60 breaths/minute; Request ALS.

- If heart rate <100 beats per minute and the newborn is cyanotic or has labored breathing, clear the airway, check for anatomical issues to BVM compliance.

- If heart rate is <60 beats/ minute perform CPR; Request ALS

- Obtain APGAR scores at 1 minute and 5 minutes after delivery

- Re-assess newborn every 30 seconds for change in heart rate or respiratory status. If no change at 1 minute, provide BVM ventilation and request ALS.

- Obtain a blood glucose reading via heel stick from the newborn. If reading is less than 40mg/dl, request ALS for hypoglycemia.

- Transport to the hospital. Consider safe transport methods.

Treating the Mother after Delivery

- Place mother in a position of comfort following the delivery. Prepare for placenta.

- Apply direct pressure to any external bleeding only.

- If placenta delivers, place in a red bag, seal it, and keep it with the mother.

- Perform fundal massage if cramping or bleeding persists.

- Utilize bulky gauze dressing to absorb any bleeding. **Do not** insert these into the vagina or anus.

- If the mother's BP drops below 90mmHg systolic during the delivery, place her in a left lateral recumbent position if possible and re-assess BP.

Limb Presentation

- If a limb presents, treat as a life threatening emergency.

- Request ALS

- Place the mother in a knee to chest position on the stretcher

- Transport emergently to the hospital.

Breech Delivery

Deliver newborn as above with the following change: After chest has delivered, place a gloved hand in the vaginal opening to create an airway for the newborn, providing a V-shaped area around the infant's mouth. Ensure the cord is not wrapped around the newborn's head.

Cord Prolapse

- Place the mother in a knee to chest position on the stretcher.
- Keep cord moist with saline soaked gauze.
- Attempt to relieve pressure on the cord by gently lifting the presenting part off the cord.
- Ensure a pulse can still be felt in the cord.

Nuchal Cord

If the cord is around the newborn's neck, it must be released from the neck immediately. Slip cord over newborn's delivered head or shoulder. If unable to slip the cord free, clamp and cut the cord.

** It is normal for a newborn to have an oxygen saturation of 60-65% in the first minute of life; 65-70% in the second minute of life; the oxygen saturation at 5 minutes is 80-85%; at ten minutes oxygen saturation is 85-95%.*

PATIENT RESTRAINT

INDICATIONS: 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 have clinical capacity retain a right to refuse transport. Soft restraints are padded or leather wrist or ankle straps. Plastic ties, ropes, and handcuffs are not considered soft restraints. 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.
- Any patient in handcuffs shall be considered in police custody and require police presence to maintain custody of that individual. It is medically acceptable to have a police officer follow a restrained patient's ambulance to the hospital in their police vehicle, as long as they maintain a position and contact with the transporting ambulance that will allow the officer to quickly release any restraining device that requires a key or special releasing device that they have applied in the event of a sudden deterioration in a restrained patient's condition.
- 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 at least every 15 minutes thereafter. The patient's respiratory status and pulse oximetry should be monitored during transport.

- Consider requesting ALS for chemical sedation if patient is in continued agitated state.
- Restraint documentation on the EMS PCR shall include:
  - Reason for restraint
  - Agency responsible for restraint application (i.e., EMS, Police)
  - Documentation of vital signs, pulse ox, capillary refill and peripheral neurovascular status (motor/sensory).
- 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.*

FIRE GROUND REHABILITATION

INDICATIONS: The intent of rehabilitation (Rehab) is to provide a structured, consistent method for the evaluation and remediation of common ailments associated with the activities at fire / hazardous materials and incident scenes; including but not limited to: overexertion, dehydration, metabolic disturbances, and exposure to temperature extremes. This protocol shall be used in a rehabilitation area/sector or during medical monitoring of personnel at an incident scene.

- Remove member from climactic conditions.
  - Rest area should be free of smoke and sheltered from extreme heat or cold.

- Provide rest and recovery period.
  - Member should be afforded the ability to rest for at least 10 minutes or as long as needed to recover work capacity.

- Provide cooling or rewarming as required.
  - Remove PPE if warm. Provide blankets if cold. Assess for environmental emergencies.

- Provide fluid replacement.
  - On scene, potable fluids should be provided so members can satisfy thirst.

- Provide calorie and electrolyte replacement when appropriate (extended operations).
  - Whenever food is available, means for members to wash their hands and face must be provided.

- Provide medical monitoring. Evaluation should include, but not limited to:
  - Presence of chest pain, dizziness, shortness of breath, weakness, nausea or headache.
  - General complaints such as cramps or aches and pains.
  - Symptoms of heat or cold related stress.
  - Changes in gait, speech or behavior.
  - Alertness and orientation to person, place and time.
  - Baseline vital signs. Should be established when the member first enters the rehabilitation area. Vital signs should include pulse, respirations, blood pressure, pulse oximetry and carbon monoxide assessment. Prior to exiting the rehabilitation area, another set of vital signs should be obtained. These vital signs should show evidence of improvement over the baseline set of vital signs.

- Treat abnormal findings in accordance with local protocols.
  - When EMS treatment or transport is provided, a patient care report must be generated.

- Member accountability.
  - Accountability should be maintained to track members as they enter and leave rehabilitation.

- Release
  - Prior to leaving rehabilitation, the member, as well as EMS, should agree that the member is adequately rested and able to safely perform full duty if released.

DEVICE DEPENDENT TRANSPORT

INDICATIONS: To provide emergency medical services safely and without delay to the patients requiring transfer from one medical facility to another medical facility, for patients being discharged from a medical facility to a home residence, patients that are direct admissions to the hospital that bypass the Emergency Department, or for patients being transported to and from a routine medical appointment.

These protocols are not intended to indemnify the medical sender or receiving facilities from their obligations under the EMTALA statutes.

This protocol is only intended for use for patients that otherwise meet basic life support transport criteria. Transport personnel are not authorized and **will not** provide services beyond their scope of care. Should services beyond scope be required, a person qualified in its performance shall accompany the patient during transport.

Providers dispatched for a non-emergency transport that encounter a patient experiencing an acute emergency are responsible for providing patient care or transferring the patient to a higher level provider, if needed, and transporting the patient to an emergency department.

Temporary intravenous medications like antibiotics, intravenous drip medication that require frequent monitoring and maintenance, or intravenous pumps that are not part of the patient's long-term care plan are **excluded** from this protocol. **These excluded medications require advanced personnel for transport.**

- BLS personnel may transport patients who meet the criteria of this protocol.
- Non-emergency Interfacility transports shall not compromise the local 911/EMS resources of the community. It is the responsibility of the ambulance service to determine whether adequate resources are available to maintain appropriate EMS coverage to their community before committing to such transport.
- All Interfacility transports will be documented using the approved prehospital EMS PCR.

Intravenous Fluid Transport

- All patients with an established intravenous (IV) access.
- 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, time constraints do not apply *
- 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 not have 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 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 need to be shut down for the following reasons:

- Swelling, redness, or increased pain at the site of the IV insertion.
- Fluids in the bag have emptied.
- The IV catheter is inadvertently dislodged from the site.

- Paramedic intervention considered if the patient's 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 is encouraged to contact medical control any time questions or concerns arise.

**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.*

Definitions:

Pumps used by home-bound patients are considered patient administered medication. Home-bound is defined as a residence, rehabilitation unit, or nursing home. These patients may be transported providing the EMT does not have to manipulate or operate the pump and the administration route is through an intravenous line or parenteral nutrition line. If a malfunction arises with the pump or administration line, unplug the pump, turn the power off, and contact medical control.

Interfacility transport of patients on medication must be accompanied by an ALS provider (Paramedic, RN, RRT, NP, PA, or MD). This does not apply to home-bound patients receiving patient or family administered medication through an IV or parenteral nutrition line.

Implanted/ Invasive Device List

AICD (Automatic Internal Cardiac Defibrillator): approved for transport only and may not be manipulated by BLS personnel.

Chest Tube: approved for transport only and may not be manipulated by EMS personnel. If tube is accidently dislodged, cover wound with occlusive dressing taped on three sides, monitor for development of pneumothorax and contact medical control.

Completely Implantable Venous Access Port (Porta-cath, PICC): Used for infusion or long-term medication therapy (antibiotic, chemotherapy, etc.). These may not be accessed by EMT's. Transport of patients receiving medication requires ALS to accompany the patient.

Epidural Catheters: are approved for transport only and may not be manipulated by EMS personnel. If it dislodges apply sterile pressure dressing contact medical control.

Foley Catheter: are approved for transport only and may not be manipulated by EMS personnel. If the catheter dislodges contact medical control.

Gastrointestinal Tubes: Approved for transport only and may not be manipulated by EMS personnel. If it dislodges, apply dressing over the site and contact medical control.

Implantable Central Venous Catheters (Hickman, Broviac): These are surgically implanted for patients requiring long term venous access for meds or dialysis. These may have more than one lumen.

- EMT's may transport IV fluids in place only (no medications).

KVO rate: 1 drop per minute.

Percutaneous Drainage Tubes or Surgical Drains (Vacuum Drains): are approved for transport only and may not be manipulated by EMS personnel. If it dislodges, apply dressing over the site and contact medical control.

Peritoneal Dialysis Catheters: approved for transport only. If it dislodges, apply sterile pressure dressing and contact medical control.

Ventricular Assist Device (VAD, LVAD): are approved for transport and may not be manipulated by EMS personnel except in the event of a device failure. EMS providers should be briefed on the procedures of the specific device before transporting. Request ALS in the event of a device failure and contact the emergency number listed on the device. Follow guidance given and contact medical control.

Ventilators: Mechanical ventilation is a method to mechanically assist or replace spontaneous breathing. A vent patient is anyone who is dependent on a ventilator to sustain life.

- A vent dependent patient must have someone trained in the operation of the ventilator in use, who is also familiar with the monitoring and management of a patient with ventilator failure. This person may be an ALS provider (Paramedic, RN, NP, RRT, PA, MD) or a family member that has been trained on the device. BLS services are encouraged to check with their insurance agent before providing a transport with a family member in the patient compartment of the ambulance.

- Medical control shall be contacted and ALS intervention considered if the patient's condition deteriorates during transport. Deterioration is evidenced by unstable vital signs, change in mental status, or onset of respiratory distress, chest pain, or neurologic changes.

ORGANOPHOSPHATE POISONING/ NERVE AGENTS

INDICATIONS: Individuals exposed to suspected nerve agents or organophosphates that exhibit signs of SLUDGEM or DUMBBELS. Common names for nerve agents include Tabun (GA), Sarin (GB), and Soman (GD), GF and VX. Included in the organophosphate group are disulfoton, phorate, dimethoate, ciodrin, dichlorvos, dioxathion, ruelene, carbophenothion, supona, TEPP, EPN, HETP, parathion, malathion, ronnel, coumaphos, diazinon, trichlorfon, paraoxon, potasan, dimefox, mipafox, schradan, sevin, chlorpyrifos and dimeton.

S	Salivation	**D**	Diarrhea
L	Lacrimation	**U**	Urination
U	Urination	**M**	Miosis
D	Defecation (diarrhea)	**B**	Bronchospasm
G	Gastric emptying (vomiting)	**B**	Bradycardia
E	Emesis	**E**	Emesis
M	Miosis	**L**	Lacrimation
		S	Salivation

- Ensure proper decontamination has occurred. Remove patient's clothing. Be cautious of any off-gassing of chemical from under the clothing that may occur in this process.
- Administer Duo Dote Auto-Injector Intra-Muscular
- For Severe Symptoms (unresponsiveness, seizure, severe respiratory distress) administer 3 Duo Dote Auto-Injector Intra-Muscular

Hydrocarbon Exposure

Indications: Anyone doused in gasoline, diesel fuel, kerosene, paint thinner, or other ignitable liquid. These chemicals are absorbed through the skin and harm the liver. The largest hazard is fire.

- Decontaminate the patient. Remove contaminated clothing. In stable patients consider scrubbing skin with soap and water.
- Consider utilizing a hazardous materials decontamination unit.
- Notify the receiving hospital of the exposure and request direction on their decontamination area prior to entering the hospital.

Biological Agents

- Ensure all providers wear N95 masks to protect from inhalation exposure.
- Refer to Medical Control for guidance.

APPENDIX A

EMT PHARMACOLOGY INFORMATION

ANAPHYLACTIC PRECAUTIONS

Anaphylaxis:
A generalized reaction occurring with dramatic suddenness (usually within a few minutes) after a patient has been exposed to some foreign material.

Cause:
Any drug has the potential to precipitate anaphylaxis. Generally those administered intravenously or parenterally are more likely to result in life-threatening or fatal anaphylaxis than those ingested or applied to the skin or mucous membranes.

Clinical features:
The patient with anaphylaxis may develop laryngeal edema and bronchospasm which cause respiratory distress and anoxia. The sooner the symptoms develop after the initiating stimulus the more intense the reaction. The symptoms include the following: generalized flush, urticaria, pruritus, anxiety, dyspnea, wheezing, choking, orthopnea, vomiting, cyanosis, paresthesia, shock, and loss of consciousness. Anoxia, shock, and death may occur within 5-10 minutes.

Prevention:
Know the patient's allergy history by asking the patient or family before giving a new medication. Know the precautions listed for each drug.

Treatment:
See Allergic Reaction protocol.

INTRAVENOUS INFILTRATION PRECAUTIONS

Before transporting any patient with an intravenous (IV) access catheter with a solution running, the EMT must check the IV site for patency and signs of infiltration and/or phlebitis. If infiltration occurs, stop the IV fluid do not remove the IV device. Contact the medical control physician immediately for orders.

Factors that increase the risk of infiltration:

- Sclerotic vascular disease
- Venous obstruction in the arm (check for edema)
- Radiation treatment near the site of injection
- High drug concentration
- Limited choice for vein selection
- Multiple venipunctures
- Elderly or debilitated
- Superior vena cava syndrome

- Specific characteristics of the drug
- Uncooperative/irrational individual

Symptoms of an infiltration:

If pain, burning or stinging occurs at the injection site, evaluate the site for swelling, redness, and inflammation. The presence of a blood return or absence of edema does not negate the possibility of the infusate being spread outside the vein to surrounding tissue. Drug leakage may occur at the site of a previous vessel injury while the needle/catheter is still in the vein.

ALBUTEROL SULFATE /IPRATROPIUM BROMIDE (COMBIVENT)

Pharmacology:

- Combination of ipratropium (an anticholinergic bronchodilator) and Albuterol (a beta-2 adrenergic bronchodilator)
- Ipratropium antagonizes the actions of the neurotransmitter acetylcholine, especially at the muscarinic receptor sites in bronchial smooth muscle
- Albuterol stimulates beta-2 adrenergic receptors of the bronchioles

Pharmacokinetics:

- Bronchodilation
- Onset of action approximately 15 minutes
- Peak effect attained within 1 hour
- Duration of action 4- 5 hours

Indications:

- To reverse bronchospasm (wheezing)

Adverse Effects:

- Tachycardia, palpitations, peripheral vasodilation, tremor, headache and nervousness may be seen infrequently

Precautions:

- Paradoxical bronchospasm often with firsts use of new canister
- Use with caution in patients with cardiovascular disease

Contraindications:

- Known hypersensitivity

Dosage:

- **Adults:** 2 puffs by metered dose inhaler

ALBUTEROL SULFATE PROVENTIL, VENTOLIN, AEROLIN, VENTORUN, ASTHAUN,

ProAIR)

Pharmacology:

- Synthetic sympathomimetic amine (a type of stimulant)
- Stimulates beta-2 adrenergic receptors of the bronchioles
- Little effect on blood pressure
- Little cardiac effects
- Main effect is bronchodilation
- It may cause some vasodilation as evidenced by headache or flushing

Pharmacokinetics:

- Bronchodilation begins within 5 to 15 minutes after inhalation
- Peak effect occurs in 30 minutes to 2 hours
- Duration of action is usually 3-4 hours

Indications:

- To reverse bronchospasm (wheezing)

Adverse Effects:

- Tachycardia, palpitations, peripheral vasodilation, cough, headache, dizziness, tremor, and nervousness may be seen infrequently

Precautions:

- Bronchospasm may worsen in rare situations due to patient tolerance or hypersensitivity
- If respirations worsen, discontinue use.
- Should be used with caution in patients with hyperthyroidism or coronary artery disease

Contraindications:

- Known hypersensitivity

Dosage:

- **Adults:** 2.5- 5.0 mg by nebulized aerosol or 2 puffs by metered dose inhaler.
- **Children:** Age 1-5 2.5mg , Age 6 and higher 5.0 mg by nebulized aerosol or 2 puffs by metered dose inhaler.

ASPIRIN

Pharmacology:

- Inhibits platelet aggregation and prostaglandin synthesis

Pharmacokinetics:

- Inhibits platelet aggregation by irreversibly inhibiting prostaglandin cycle-oxygenase for the life of the platelet
- This prevents the formation of the platelet aggregating factor thromboxane A2.
- Onset of action is 1-2 hours
- Duration of action is 6 hours

Indications:

- Acute coronary syndrome- acute myocardial infarction, angina pectoris

Adverse Effects:

- Adverse reactions may include anaphylaxis, bronchospasm, dysrhythmias, hypotension, tachycardia, agitation, cerebral edema, intracranial hemorrhage, dehydration, hyperkalemia and renal failure.

Precautions:

- By inhibiting platelet function, aspirin may lead to an increase in bleeding for patients with bleeding disorders

Contraindications:

- Known allergy to aspirin or non-steroidal, anti-inflammatory drugs (NSAIDS) (i.e. Motrin, Aleve, Ibuprofen, etc.)
- Active GI ulcerations or bleeding, hemophilia or other bleeding disorders
- Pregnancy
- Children under 2 years of age

Dosage:

- Up to 325 mg uncoated PO even if the patient is pain-free

How supplied:

- Aspirin:chewable - 81 mg / tablet or Aspirin - 325 mg / tablet

DUODOTE

Pharmacology:

- Duo Dote is an auto injector that provides a single intramuscular dose of atropine and pralidoxime chloride. It is used as a self-administered therapy for symptomatic exposure to anticholinergic nerve agents and organophosphate pesticides.

Pharmacokinetics Atropine:

- Competitively blocks the effects of acetylcholine at muscarinic receptors on smooth muscle, cardiac muscle and secretory gland cells

Pharmacokinetics Pralidoxime:

- Reactivates acetylcholinesterase which has been inactivated by phosphorylation due to some organophosphorus nerve agents or pesticides.
- Does not reactivate phosphorylated acetylcholinesterase that has undergone the aging process

Indications:

- Poisoning by organophosphorus nerve agents and pesticides

Adverse Effects:

- Temporary headache caused by pralidoxime

Precautions:

- Pralidoxime is excreted in the urine – impaired renal function may result in higher blood levels

Contraindications:

- None in the presence of life-threatening organophosphorus poisoning

Dosage:

- Moderate symptoms: Administer 1 Duo Dote IM
- Severe symptoms: Administer 3 Duo Dotes IM

How supplied:

Auto-injector containing 2.1 mg. of Atropine Sulfate and 600 mg. of Pralidoxime Chloride

EPINEPHRINE

Pharmacology:

The administration of epinephrine causes increases in:

- Systemic vascular resistance
- Systemic arterial pressure
- Heart rate
- Contractile state
- Myocardial oxygen requirement
- Cardiac automaticity

Pharmacokinetics:

- Intravenously administered epinephrine has an extremely rapid onset of action
- Is rapidly inactivated by the liver.
- Subcutaneous administration of epinephrine results in slower absorption due to local vasoconstriction.
- Local massage will hasten absorption

Indications:

- Epinephrine selectively improves regional blood flow to the heart and brain
- The primary drug for the treatment of cardiac arrest
- Intravenous epinephrine may also be given to patients suffering true anaphylactic shock with impending cardiac arrest
- Patients suffering from severe allergic reactions may be given subcutaneous epinephrine
- Intravenous epinephrine may be an extremely dangerous drug when given intravenously to a person with normal circulatory status
- Its use should be reserved for cardiac arrest or for impending cardiac arrest due to anaphylactic shock

Precautions:

- Do not mix with sodium bicarbonate as this inactivates epinephrine
- Epinephrine causes a dramatic increase in myocardial oxygen consumption
- Its use in the setting of an acute MI should be restricted to cardiac arrest

Side Effects:

- The individual may complain of increased heart rate, pale skin (pallor), dizziness, chest

pain, headache, nausea, vomiting, excitability and anxiousness after administration of epinephrine

Dosage:

Anaphylactic shock:

- **Adults-0.5** mg(O.5 ml of 1:1000 solution) Intramuscular (EpiPen)
- **Children-0.01** mg/kg(maximum 0.15 mg of 1:1000 solution) Intramuscular (EpiPen Jr)

GLUCOSE, ORAL (Insta-Giucose, Glutose)

Pharmacology:

- Carbohydrate gel

Pharmacokinetics Atropine:

- Provides source of carbohydrate for cellular metabolism

Indications:

- Altered mental status with a history of medication controlled diabetes
- Hypoglycemia

Adverse Effects:

- Transient increase in blood glucose level

Precautions:

- Patient must be able to maintain the patency of their own airway and effectively swallow the medication

Contraindications:

- Unresponsive patient
- Inability to swallow

Dosage:

- 1 tube =15 - 24 grams of glucose

How supplied:

- Carbohydrate gel
- Tube contains 15-24 grams of glucose (note; check tube labeling for exact amount, may vary slightly between manufacturers)

HEMOSTATIC AGENT

Indications:

- An agent used to reduce bleeding from minute vessels by hastening the clotting of blood or by the formation of an artificial clot.

Usage:

- Life-threatening bleeding may need to apply tourniquets and pressure points to slow such bleeding enough to apply the agent. Once you slow the high-pressure blood loss, you must still get the agent into contact or close proximity to the source of the bleeding. Some hemostatic agents, such as bandages and sponges, may prove difficult to insert deeply enough to contact the affected artery or organ. Once applied, most hemostatic agents require you to maintain direct pressure on the wound for 2-5 minutes, giving the agent the opportunity to work.

How supplied:

- For use in Delaware, the hemostatic agent must include the composition of X-ray detectable, granular beads of clotting agent contained in a porous mesh netting resembling a sponge/bandage.

Adverse Effects:

- CELOX: Individuals allergic to shellfish might risk an allergic reaction to chitosan based ChitoGauze.

- QuikClot: If incorrectly applied, the zeolite can quickly reach an extremely high temperature, causing burns and tissue damage.

LEVALBUTEROL (XOPENEX, LEVOLIN)

Pharmacology:

- Beta adrenergic receptor agonist
- Stimulates beta-2 adrenergic receptors of the bronchioles

Pharmacokinetics:

- Bronchodilation begins within 5 to 15 minutes after inhalation
- Peak effect occurs in 30 minutes to 2 hours
- Duration of action is usually 3-5 hours

Indications:

- To reverse bronchospasm (wheezing)

Adverse Effects:

- Tachycardia, palpitations, peripheral vasodilation, tremor, headache, dizziness, and nervousness may be seen infrequently

Precautions:

- Bronchospasm may worsen in rare situations due to patient tolerance or hypersensitivity
- If respirations worsen, discontinue use.

Contraindications:

- Known hypersensitivity

Dosage

- **Adults:** 0.63 = 1.25 mg by nebulized aerosol
- **Children:** Age 6-11 years: 0.31 to 0.63mg by nebulized aerosol

(NARCAN®)

Description:

- Naloxone is an opioid antagonist.

Pharmacology:

- Naloxone is a competitive narcotic antagonist, which reverses all effects of opioids (i.e. morphine), such as respiratory depression and central and peripheral nervous system effects.

Indications:

- Naloxone is indicated to reverse respiratory and central nervous system depression induced by opioids.

Onset/Duration:

- The onset of action is within a few minutes following an intravenous dose, whereas intramuscular and endotracheal/intranasal administration results in a slower onset of action. The duration of action is approximately 30-60 minutes.

Contraindications:

- Naloxone is contraindicated in hypersensitivity.

Warnings:

- Naloxone may induce opiate withdrawal in patients who are physically dependent. Certain drugs such as propoxyphene (Darvon) may require much higher doses of naloxone for reversal than we currently carry.

Drug Interactions:

- Naloxone is incompatible with bisulfate and alkaline solutions.

Adverse Reactions:

- Adverse reactions may include tachycardia, hypotension, dysrhythmias, nausea, vomiting, and diaphoresis.

Dosage and Routes of Administration:

- 1 mg intranasal (IN). Repeat 1mg IN in opposite nare if no respiratory status change after 2 minutes.

- For pediatric patients, contact medical control before administration for guidance on dose.

Storage:

- Store at 20-25 °C (68-77° F). Protect from light.

NITROGLYCERINE

Pharmacology:

- Vasodilator-effect on veins more than arteries

Pharmacokinetics Nitro paste:

- Absorbed through the skin
- For antianginal effects the onset is 30 minutes, while duration is 3 hours
- For vasodilation the onset is within 1 hour and duration is 3 to 6 hours.
- Half-life is 1-4 minutes.

Pharmacokinetics Nitro tabs and Nitro Spray:

- Absorbed through oral mucosa
- Antianginal and vasodilation effects within minutes
- Duration of action is less than 5 minutes

Indications:

- For treatment of angina
- Congestive heart failure
- Not to be used for asymptomatic hypertension

Adverse Effects:

- Dose-related
- Headache, hypotension, and dizziness

Precautions:

- May cause hypotension

Contraindications:

- Known hypersensitivity

Dosage:

- One-half to one inch every 6-8 hours
- 0.4 mg sublingual every 5 minutes
- DO NOT USE IN CHILDREN

How supplied:

- Nitrol ointment 2%
- Tablets 0.4 mg

OXYGEN

Pharmacology:

- Elevates oxygen tension in the blood
- Increases oxygen content of the blood
- Improves tissue oxygenation

Pharmacokinetics:

- Changing the percentage of inspired oxygen will result in blood and tissue equilibration within 5 to 20 minutes.

Indications:

- Acute chest pain
- Suspected hypoxemia of any etiology

  Cardiopulmonary arrest
- Trauma

Precautions:

- The main precaution is not administering enough oxygen to patients who need it. Never withhold oxygen from those in obvious need.
- Oxygen should be given with caution to patients with emphysema

Appendix B

Adult GCS

	Eyes	Verbal	Motor
1	No Response	No Response	No Response
2	To Pain	Incomprehensible	Extension (Decerebrate)
3	To Verbal	Inappropriate	Flexion (Decorticate)
4	Spontaneous	Confused	Withdraws to Pain
5		Oriented	Localizes Pain
6			Obeys Commands
Total:		Minimum Score: 3/15	Maximum Score 15/15

Pediatric GCS

	Eyes	Verbal	Motor
1	No Response	No Response	No Response
2	To Pain	Inconsolable, Agitated	Extension (Decerebrate)
3	To Speech	Inconsistently Consolable/Moans	Flexion (Decorticate)
4	Spontaneous	Consolable Cry	Withdraws to Pain
5		Coos, Babbles	Withdraws to touch
6			Normal spontaneous movement
Total:		Minimum Score: 3/15	Maximum Score 15/15

Normal Vital Signs For Age of Patient

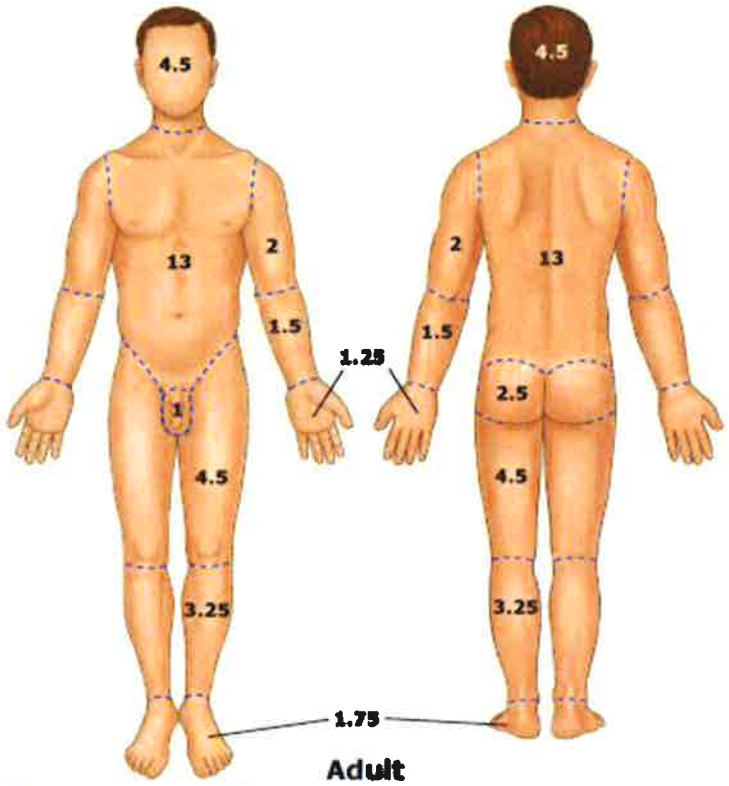
Age	Heart Rate	Respiratory Rate	Systolic Blood Pressure (mmHg)	Diastolic Blood Pressure (mmHg)
Newborn	100-180	25-66	60-90	20-60
Infant	90-175	22-64	87-105	53-66
1-5 years	70-156	17-53	90 + 2 x age in years	2/3 systolic
5-14 years	47-120	12-30	90 + 2 x age in years	2/3 systolic
14+ years	60-100	8-24	90-140	60-85

The lower limit (5th percentile) of systolic blood pressure can be estimated with this formula: 70m m Hg + (2 x age in years).A low systolic blood pressure should prompt an immediate evaluation for additional signs of inadequate perfusion, such as diminished mental status, prolonged capillary refill, and tachycardia.

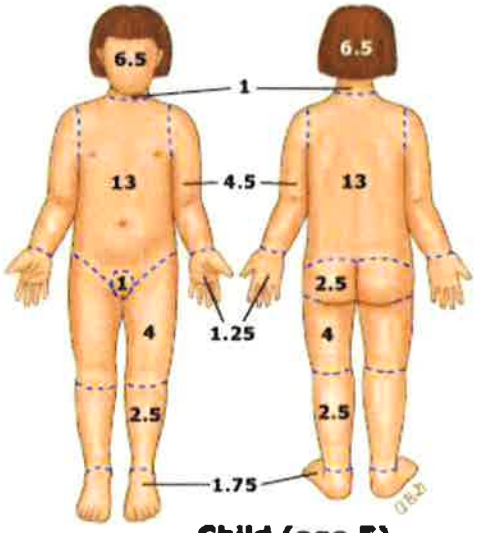
Burn Scale

Recommendation is to use the Patients palm as 1%.

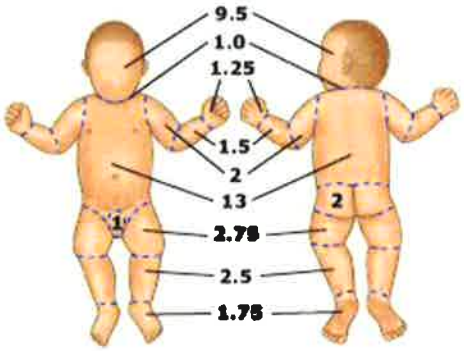
Modified Lund- Browder chart for reference



Adult



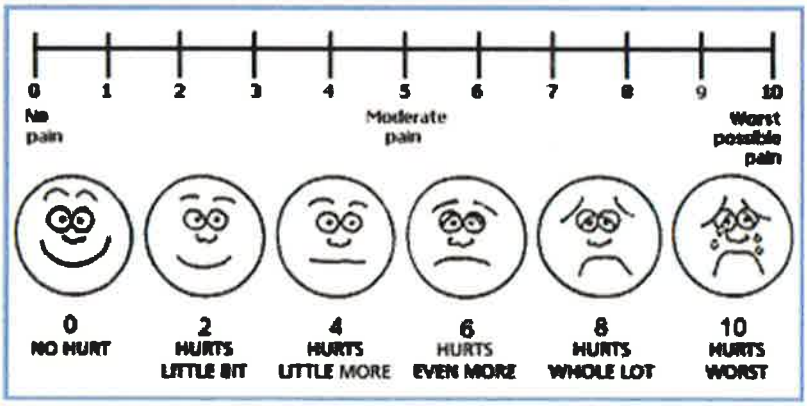
Child (age 5)



Infant

Pediatric Assessment Triangle (PAT)

Wong-Baker Faces Pain Rating Scale



Apgar Scoring System

Points	0	1	2
Appearance (skin color)	Blue or pale all over	Pink body, but blue extremities	Pink body and extremities
Pulse (heart rate)	Absent	<100	≥100
Grimace (reflex/irritability)	No response to stimulation	Grimace/feeble cry when stimulated	Cry or pull away when stimulated
Activity (muscle tone)	None	Some flexion	Flexed arms and legs that resist extension
Respiration (breathing)	Absent	Weak, irregular, gasping	Strong, lusty cry

Appendix C

INFECTION CONTROL

INDICATIONS: These guidelines should be used whenever contact with patient body substances is anticipated and/or when cleaning areas or equipment contaminated with blood or other body fluids.

These guidelines provide general information related to body substance isolation and the use of universal precautions. These guidelines are not designed to supersede an Emergency Medical Service's Infection Control Policy; but should be a resource for their creation. It will serve as policy in the absence of a service's policy.

These guidelines do not comprehensively cover all possible situations, and EMS practitioner judgment should be used when the Emergency Medical Service's Infection Control Policy does not provide specific direction.

Nothing in this guideline shall be construed to authorize the disclosure of confidential medical information by the health facility or any of the EMS practitioners except as otherwise authorized by law.

- Wear gloves on all calls where contact with blood or body fluid is anticipated or when handling items or equipment that may be contaminated with blood or other body fluids.
- Wash hands as often as possible and after every call.
- Keep all open cuts and abrasions covered with adhesive bandages that repel liquids.
- Use goggles or glasses when spraying or splashing of body fluids is possible.
- Respiratory precautions should be used when caring for any patient with a known or suspected infectious disease that is transmitted by respiratory droplets or with someone who has a productive cough.
- A mask should be placed upon the patient if his/her respiratory condition permits.
- If an EMS practitioner has a potential exposure to blood, body fluids, or airborne pathogens; the practitioner must follow Delaware Law Title 16 Chapter 12A and the Emergency Medical Service's Infection Control Policy. The incident must be immediately reported to the service's Infection Control Officer.
- EMS practitioners should clean their wound with soap and water; flush mucous membranes with water/saline; or treat any other wound as dictated by severity of the wound.
- EMS practitioners who have a confirmed exposure (as confirmed by the service's Infection Control Officer or Receiving Medical Facility) should be evaluated at the receiving facility. If the patient is not transported, contact the infection control officer for guidance on a facility to be evaluated.
- A State of Delaware Infectious Control Form *"Report of Potential Exposure"* should be

filled out at the receiving hospital or forwarded to the Chief Medical Examiner/Coroner as soon as possible.

- EMS practitioners who have been treated for a confirmed exposure should follow through with post-exposure medical care and/or prescribed treatment.

- Thoroughly clean and disinfect equipment after each use following service guidelines that are consistent with the Center for Disease Control recommendations.

- Place all disposable equipment and contaminated trash in a clearly marked plastic biohazard bag and dispose of appropriately.

- Contaminated uniforms and clothing should be removed, placed in an appropriately marked biohazard bag and laundered/ decontaminated.

- All needles and sharps must be disposed of in a sharps receptacle unit and disposed of appropriately.

Appendix D

NON-INVASIVE GAS MONITORING
PULSE OXIMETRY and CO-OXIMETRY

INDICATIONS: Pulse oximetry and CO-oximetry is an adjunctive technique that can help to detect hypoxia and to assess the impact of oxygen therapy. The EMT assessment and treatment of the patient is much more important than the pulse oximeter or CO-oximeter reading. The pulse oximeter and CO-oximeter supplies one additional small piece of information.

"Room" Carbon monoxide monitoring: is an adjunctive technique that can help to detect the presence of carbon monoxide in the air that would pose a threat to the patient and EMS crews.

- "Room" Carbon monoxide monitoring:*
  - If audible alert sounds suspect the presence of carbon monoxide.
  - Consider scene safety and additional resources
  - As soon as practical, remove patient to non-contaminated area
- Pulse oximetry and CO-oximetry:
  - Provide appropriate supplemental oxygen.
  - Obtain a pulse oximeter reading (Sa02). **
    - 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.
    - Make sure the pulse-ox reading correlates with the patient's palpated pulse rate
- Obtain CO-oximeter reading, if available ***
  - If carboxyhemoglobin is <5%, consider other possible causes of symptoms.
  - If carboxyhemoglobin is >5%, and patient has suffered a loss of consciousness or altered mental status, suspect CO poisoning
- Continue appropriate oxygen therapy utilizing non-rebreather mask or BVM and transport
- Always treat the patient, not the pulse oximeter or CO-oximeter reading. Do not let the pulse oximeter or CO-oximeter delay other assessment or treatment.

**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.*

***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.*

****CO oximetry may be performed as an option by agencies carrying CO monitoring equipment*

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