Prehospital Standing Orders and Treatment Protocols

County of Volusia

Effective February 1, 2018

Table of contents

Overview **7**
Authorization **7**
Section 100.00: General protocols **9**
Section 100.01: General principles 11
Section 100.02: Offer of assistance by a physician or nurse 13
Section 100.03: Assistance during transport 15
Section 100.04: Initiating cardiopulmonary resuscitation and determination of death 17
Section 100.05: Emergency department resource at capacity 21
Section 100.06: Refusal of medical care/transport 23
Section 200.00: Transport protocols **27**
Section 200.01: Transport protocols, general 29
Section 200.02: Transport protocols, cardiac 31
Section 200.03: Transport protocols, Florida Mental Health Act (Baker Act) 33
Section 200.04: Transport protocols, obstetrical 35
Section 200.05: Transport protocols, stroke 37
Section 200.06: Transport protocols, therapeutic hypothermia 39
Section 200.07: Transport protocols, trauma 41
Section 300.00: Provider protocols **49**
Section 300.01: Scope of practice 51
Section 300.02: Reporting requirements to the EMS medical director 53
Section 300.03: Certification and educational requirements 55
Section 300.04: Communications with medical control 59
Section 300.05: Reserved 61
Section 400.00: Adult protocols **63**
Section 400.01: Abdominal pain/Gastrointestinal hemorrhage 65
Section 400.02: Adrenal insufficiency 67
Section 400.03: Airway management 69
Section 400.04: Allergic reactions 71
Section 400.05: Altered mental status 73
Section 400.06: Behavioral 75
Section 400.07: Carbon monoxide exposure and toxic inhalations 77
Section 400.08: Cardiac dysrhythmia 79
Section 400.09: Cardiopulmonary arrest 83
Section 400.10: Chest pain/Acute coronary syndrome 87
Section 400.11: Decompression sickness/Dysbarism 89
Section 400.12: Dyspnea 91
Section 400.13: Hypertension 95
Section 400.14: Hyperthermia 97
Section 400.15: Hypothermia 99
Section 400.16: Nausea 101
Section 400.17: Near-drowning 103
Section 400.18: Obstetrical 105
Section 400.19: Ophthalmic 109

Section 400.20: Overdose/Poisoning 111
Section 400.21: Pain management 117
Section 400.22: Seizure 120
Section 400.23: Snake bite 122
Section 400.24: Stroke 124
Section 400.25: Syncope 126
Section 400.26: Systemic inflammatory response syndrome 128
Section 400.27: Trauma 130
Section 400.28: Vaginal hemorrhage 134
Section 500.00: Pediatric protocols 136
Section 500.01: Adrenal insufficiency 138
Section 500.02: Allergic reactions 140
Section 500.03: Altered mental status 143
Section 500.04: Cardiac dysrhythmia 145
Section 500.05: Cardiopulmonary arrest 149
Section 500.06: Dyspnea 151
Section 500.07: Nausea 153
Section 500.08: Near-drowning 155
Section 500.09: Newborn care and resuscitation 157
Section 500.10: Overdose/Poisoning 159
Section 500.11: Pain management 161
Section 500.12: Seizure 163
Section 500.13: Trauma 165
Section 600.00: Procedural protocols 169
Section 600.01: Automatic external defibrillator (AED) 171
Section 600.02: Blood glucose measurement 173
Section 600.03: Continuous positive airway pressure (CPAP) 175
Section 600.04: Cricothyrotomy 177
Section 600.05: Defibrillation (manual) and synchronized cardioversion 179
Section 600.06: Dual lumen airway (Combitube) 181
Section 600.07: Electrocardiogram, 12 lead 183
Section 600.08: EMT assistance with medication delivery 185
Section 600.09: EMT intravenous access 187
Section 600.10: Endotracheal intubation 189
Section 600.11: Epi-Pen administration 191
Section 600.12: Blood draw 193
Section 600.13: Gastric intubation 195
Section 600.14: Immunization administration (community health) 197
Section 600.15: Immunization administration (EMS staff at risk of exposure) 201
Section 600.16: Intraosseous access 205
Section 600.17: Medication administration 209
Section 600.18: Nebulization of bronchodilators 213
Section 600.19: Needle thoracostomy 215
Section 600.20: Patient restraint 217
Section 600.21: Taser removal 219
Section 600.22: Total spine immobilization 221

Section 600.23: Traction splint 223
Section 600.24: Transcutaneous pacing 225
Section 600.25: Venous cannulation 227
Section 700.00: Medication resume 229
Section 700.01: Adenosine (Adenocard) 231
Section 700.02: Albuterol sulfate solution, 0.083% (Proventil) 233
Section 700.03: Amiodarone (Cordarone) 235
Section 700.04: Antibiotic ointment (non-sulfa) 237
Section 700.05: Aspirin, chewable 239
Section 700.06: Atropine sulfate 241
Section 700.07: Calcium chloride 243
Section 700.08: Dextrose 245
Section 700.09: Diltiazem (Cardizem) 247
Section 700.10: Diphenhydramine (Benadryl) 249
Section 700.11: Dopamine hydrochloride (Intropin) 251
Section 700.12: Epinephrine, 1:1,000 253
Section 700.13: Epinephrine, 1:10,000 255
Section 700.14: EpiPen and EpiPen Jr auto-injector 257
Section 700.15: Etomidate (Amidate) 259
Section 700.16: Furosemide (Lasix) 261
Section 700.17: Glucose paste 263
Section 700.18: Hydroxocobalamin (Cyanokit) 265
Section 700.19: Ipratropium bromide (Atrovent) 267
Section 700.20: Ketamine (Ketalar) 269
Section 700.21: Lidocaine, 2% 271
Section 700.22: Lidocaine, 20% 273
Section 700.23: Magnesium sulfate, 50% 275
Section 700.24: Methylprednisolone sodium succinate (Solu-Medrol) 277
Section 700.25: Midazolam (Versed) 279
Section 700.26: Morphine sulfate 281
Section 700.27: Naloxone (Narcan) 283
Section 700.28: Nitroglycerin 285
Section 700.29: Ondansetron (Zofran) 287
Section 700.30: Sodium bicarbonate 289
Section 700.31: Succinylcholine succinate (Anectine) 291
Section 700.32: Tetracaine (Pontocaine) 293

This page left blank intentionally.

Overview

The *Volusia County Prehospital Standing Orders and Treatment Protocols* contained within this document are developed in an effort to ensure uniform treatment for all patients who receive prehospital care within the county. These protocols apply exclusively to emergency medical service (EMS) providers operating in the out-of-hospital setting who are working under the oversight of the Volusia County EMS medical director. While attempts have been made to cover all patients who access our system, the medical director realizes that unforeseen scenarios or situations may arise. He or she suggests that for such instances, medical personnel follow all appropriate protocols, exercise sound medical judgment, and contact the emergency department medical control physician (EDMCP) should any questions or problems arise. The EDMCP is designated as the emergency physician at the receiving facility.

Our goal is to provide care when appropriate, relieve pain and suffering, and do no harm. The patient's best interest should be the final determinant for all decisions.

Authorization

These protocols were developed under the authorization of the below-signed medical director in accordance with chapter 401, Florida Statute and chapters' 64J-1 and 64J-2, Florida Administrative Code. Changes to these protocols can be made only with the expressed written authorization of the Volusia County EMS medical director.

Peter C. Springer, MD, FACEP
Volusia County EMS Medical Director

This page left blank intentionally.

Section 100.00: General protocols

This section contains general protocols that address instances in which field providers may interact with that are not covered under standing orders located throughout this manual.

This page left blank intentionally.

Section 100.01: General principles

The following measures shall be applied to help promote speed and efficiency when rendering emergency medical care to the ill or injured. They were developed for the use of the personnel in the field and the emergency department medical control physician (EDMCP).

1. The safety of EMS personnel is paramount to quality patient care. Each scene should be properly evaluated for scene safety and assess the need for additional EMS support.
2. The first arriving EMS provider is responsible for the assessment of the patient and conveying to subsequent responding units if the response mode should be reduced or the unit cancelled. Communication of the reduction or cancellation, if necessary, should occur as soon as possible through the communications center.
3. The first agency on the scene of an accident or illness shall establish command. Responsibility for management of the overall scene and medical command will be transferred to representatives of the authority having jurisdiction upon arrival as defined by state and national incident management system (NIMS) guidelines. Fire-rescue departments shall routinely maintain responsibility for controlling incident scenes. It is the responsibility of the scene commander to ensure the proper and timely utilization of resources to meet the goals of scene safety, quality patient care, and rapid movement to medical facilities.
4. The goal of the EMS system is to provide optimal patient care on scene and if requested, or otherwise appropriate, transport to definitive care. Patient care may require transfer to other EMS providers to accomplish this mission.
    - 4.1. The EMT or paramedic first “on scene” will assume responsibility for patient care until such care is transferred to another provider.
    - 4.2. A prehospital provider certified at the basic life support level will transfer care to a provider certified at the advanced life support level.
    - 4.3. A prehospital provider certified at the advanced life support level working with a non-transport agency will transfer care to an advanced life support level provider working with an air or ground transport agency. As it pertains to municipal transport partners, transports shall occur consistent with agreements between the county and participating municipality.
    - 4.4. A prehospital provider certified at the advanced life support level working with a ground transport agency will transfer care to an advanced life support level provider working with an air transport agency.
    - 4.5. Unless provided for elsewhere in this manual, care may not be transferred from a higher level care provider to a lower level care provider.
    - 4.6. There are no medical conditions where delays on the scene benefit the patient. Transfer of patient care should begin in an effective and efficient manner upon arrival of the transporting agents. Patients will be removed from hazardous situations as quickly as possible. Transfer of care in no way removes the obligation of initial responders to continue to act as integral members of the prehospital care team under the direction of the supervising provider.

4.7. If disagreement exists between prehospital care providers of any level regarding patient treatment or transport, the EDMCP at the intended destination facility should be contacted for physician orders and conflict resolution.

5. Proper body substance isolation must be utilized at all times.
6. For all calls, be prepared for immediate basic life support and advanced life support interventions upon initial patient contact and patient transfer, as appropriate.
7. Document the patient contact time for all calls, the time of initial defibrillation, patient care transfer between field providers; and patient care transfer to emergency department staff.
8. Try to always obtain verbal consent prior to treatment. Respect the patient's right to privacy and dignity. Courtesy and concern are expected at all times.
9. The initial assessment and initial therapy should be completed within the first ten minutes after patient contact. Except for extensive extrication, or other significantly atypical situations, the trauma alert patient should be enroute to a receiving facility within ten minutes and the medical patient should be enroute to the receiving facility within twenty minutes. Additional therapy, if indicated, should be continued during transport.
10. All patients who are evaluated or receive treatment are to be transported by EMS to a receiving facility for further evaluation unless the refusal process is executed.
11. For all calls where EMT's and paramedics are involved in patient care, the paramedic is responsible for all patient care and shall be considered each agency's lead care provider. Patient care should be effectively and efficiently transferred to the transport agency.
12. Unless otherwise specified, patients should be continued on intravenous fluids, medications, and therapeutic devices initiated by referring agencies and institutions.
13. Orders communicated directly from the EDMCP to the paramedics caring for the patient may supersede established protocol.
14. Complications, problems, or requests for additional orders during care will be directed toward the EDMCP. If orders are given that supersede protocol, the name and hospital location of the EDMCP issuing the orders must be documented on the run report. The signature of the ordering physician is not required.

History: 01-2018; 07-2012; 07-2009; 02-2008.

Section 100.02: Offer of assistance by a physician or nurse

1. The control of the scene of an emergency should be the responsibility of the individual in attendance who is the most appropriately trained in providing prehospital stabilization and transport. As an agent of the Volusia County EMS medical director, the EMT or paramedic represents that individual.
2. Occasions will arise when a physician on the scene will desire to direct pre-hospital care. A standardized method for dealing with these contingencies will optimize the care given to the patient.
3. The physician desiring to assume care of the patient must:
   - 3.1. Be presented with the Volusia County EMS Card.
   - 3.2. Provide documentation of his or her status as a physician to practice medicine in Florida (MD or DO).
   - 3.3. Assume care of patient and allow documentation of his or her assumption of care on the patient care report.
   - 3.4. Agree to accompany the patient during transport.
4. Contact with the emergency department medical control physician (EDMCP) must be established as soon as possible. The EDMCP must relinquish control of the patient to the physician on scene for the scene physician to take control.
5. Orders provided by the physician assuming responsibility for the patient should be followed as long as they do not, in the judgment of the paramedic, endanger patient well-being. The paramedic may request the physician to attend to the patient during transport if the suggested treatment varies significantly from standing orders.
6. If the care, instructions or requests by a physician desiring to assume care of the patient is judged by the paramedic to be potentially harmful to the patient, the paramedic should:
   - 6.1. Politely voice his or her objections.
   - 6.2. Immediately place the physician on the scene in contact with the EDMCP for resolution of the problem.
   - 6.3. When conflicts arise between the physician on the scene and the EDMCP, EMS personnel should:
     - 6.3.1. Follow the directives of the EDMCP.
     - 6.3.2. Offer no assistance in carrying out the order in question, but provide no resistance to the physician performing this care.
     - 6.3.3. If the physician on scene continues to carry out the order in question, enlist aid from law enforcement.
7. All interactions with physicians on the scene must be completely documented in the patient care report with the physician signing the run sheet.
8. Should a Registered Nurse be present at an emergency scene and wish to participate in administering care for the patient, he or she must function within the realm of Chapters' 401 and 464, Florida Statute.
9. See Volusia County EMS Card at the end of this section:

History: 01-2018; 02-2008.

This page left blank intentionally.

Section 100.03: Assistance during transport

The provision of emergency medical care is dynamic and often unpredictable. Circumstances for any given call dictate when more than one provider should accompany the patient during transport. In the interest of the patient, if either first response or transporting personnel feel an additional provider is warranted, an additional provider will accompany the patient during transport.

History: 02-2008.

This page left blank intentionally.

Section 100.04: Initiating cardiopulmonary resuscitation and determination of death

1. EMT's and paramedics are responsible for the medical judgment as to whether a patient is obviously dead or resuscitation efforts should be initiated. This determination should be made by a paramedic, if on scene. Otherwise, the senior field EMT can make this decision.
2. If an EMT or paramedic has a question as to how to proceed with any situation involving the decision to initiate or terminate resuscitation:
   - 2.1. Initiation: begin resuscitative measures and contact the emergency department medical control physician (EDMCP). Provide the physician with a concise but comprehensive assessment of the situation, without compromise of patient care.
   - 2.2. Termination: contact the EDMCP. Provide the physician with a concise but comprehensive assessment of the situation.
3. All patients found in cardiopulmonary arrest by EMS personnel will receive cardiopulmonary resuscitation with the following exceptions.
   - 3.1. A patient who has injuries incompatible with life.
   - 3.2. The patient who is apneic and pulseless, who exhibits no response to stimuli, no respiratory effort, is asystolic in two or more leads (confirming asystole with monitor does not mandate initiation of asystole protocol), and is not hypothermic, provided that one of the following is present::
     - 3.2.1. Rigor mortis.
     - 3.2.2. Decomposition of body tissues.
     - 3.2.3. Dependent lividity.
     - 3.2.4. Other obvious signs of death
   - 3.3. The victim of blunt trauma who is pulseless, apneic, and without a palpable blood pressure or heart tones upon arrival of BLS or ALS providers.
   - 3.4. The victim of a multi-casualty incident in cardiopulmonary arrest where use of prehospital care resources would jeopardize the care, health, or well-being of other critically ill or injured patients or the EMS providers at the scene.
   - 3.5. The patient who, upon arrival of EMS personnel, is attended by a physician licensed in the State of Florida; and where the physician is willing to write a statement of his relationship to the patient, a "do not resuscitate" order, and a rationale for this order on the run report. EMS personnel must attempt to verify the identity of the physician before withholding cardiopulmonary resuscitation.
   - 3.6. A patient whose personal physician communicates via telephone that resuscitative effort should not be initiated or resuscitative efforts should be discontinued. The physician must agree to accept the responsibility for pronouncing the patient dead to at least two (2) emergency personnel (EMT, paramedic, and law enforcement) via the telephone. The witnesses must sign the patient care report.
4. Do not resuscitate order (DNRO):
   - 4.1. A patient who has in his or her possession, or at the bedside, a completed Florida prehospital DNRO (DH Form 1896 or equivalent) or the appropriate DRNO patient identification device ("wallet card") will have the order honored by EMS personnel unless revoked or contested by the patient or legal representative.
   - 4.2. In order to be valid, a DNRO must contain:
     - 4.2.1. A statement indicating "do not resuscitate".

4.2.2. Have an effective date.
4.2.3. Include the patient's full typed or printed legal name.
4.2.4. Be signed by the patient's attending physician, and include the physician's medical license number, telephone number and date completed.
4.2.5. Be signed and dated by the patient, patient's health care surrogate, or proxy (as appropriate).

4.3. EMS personnel must verify the identity of the patient with a DNRO through a driver's license, other photo identification, or from a witness in the presence of the patient.

4.4. If a witness is used to identify the patient, documentation in the run report must include the full name of the witness, address, telephone number and relationship to the patient.

4.5. A DNRO may be revoked at any time by the patient, if signed by the patient, or the patient's health care surrogate, or proxy or court appointed guardian or person acting pursuant to a durable power of attorney established pursuant to section 709.08, Florida Statutes. Pursuant to section 765.104, Florida Statutes, the revocation may be in writing, by physical destruction, by failure to present it, or by orally expressing a contrary intent. If any doubt exists as to the applicability or validity of a DNRO, EMS personnel will initiate resuscitation measures.

4.6. Law enforcement officers do not have the right to refuse resuscitative attempts for the patient.

4.7. The presentation of a DNRO does not preclude comforting, pain relieving, and other medically indicated care short of resuscitative measures.

5. A patient with a living will:

5.1. A patient with a living will shall have this document honored unless invalidated by a suitable party. A living will may be revoked at any time by the patient, the patient's durable power of attorney or designated health care surrogate. If any doubt exists as to the applicability or validity of a living will, EMS personnel will initiate full treatment measures.

5.2. If a family member not designated as a durable power of attorney or health care surrogate contests the living will, EMS personnel shall initiate resuscitative measures and contact the EDMCP as soon as possible.

6. Once initiated by EMS personnel, cardiopulmonary resuscitation may be halted when:

6.1. Effective spontaneous ventilation and circulation have been restored.

6.2. Resuscitation efforts have been transferred to persons of no less skill than the initial providers.

6.3. The rescuer is exhausted and physically unable to continue resuscitation.

6.4. A patient in asystole who has received care, including: endotracheal intubation or placement of a dual lumen airway; cardiopulmonary resuscitation; ventilation with supplemental oxygen via positive pressure ventilation device (PPVD); and administration of two appropriate doses of epinephrine; exhibits no hypothermia; and demonstrates continuous asystole and no response to care.

6.4.1. An EDMCP must authorize the termination of resuscitation efforts once they have been initiated.
6.4.2. The patient care report must indicate the name of the EDMCP authorizing termination of resuscitative efforts and the time of death.

7. When prehospital personnel pronounce a patient dead on-scene, they must remain with the deceased until the arrival of appropriate law enforcement agencies.
    - 7.1. All invasive apparatus must be left in place, and the body and scene not further disturbed.
    - 7.2. In cases of possible homicide or suicide, do not remove or cut clothing unless absolutely necessary. Do not disturb the death scene unless absolutely required to do so. Do not dispose of clothing that has been removed.
8. As a general guideline, patients in public settings should have resuscitative efforts continued and should be transported to the nearest receiving facility.

History: 01-2018; 07-2012; 02-2008.

This page left blank intentionally.

Section 100.05: Emergency department resource at capacity

1. Emergency department diversion
   - 1.1. Hospital request
     - 1.1.1. Hospitals desiring to be placed on diversion status shall make this request to the Volusia County EMS medical director, or designee, through the Volusia County Sheriff's Office communications center.
       - 1.1.1.1. The requesting hospital shall provide the basis of the request and a contact person with contact telephone number at the hospital for the EMS medical director, or designee, to contact.
       - 1.1.1.2. The Volusia County Sheriff's Office communications center shall contact the medical director, or designee, who will then contact the hospital representative.
       - 1.1.1.3. If the diversion status is approved, the medical director, or designee, shall contact the Volusia County Sheriff's Office communications center and authorize of the hospital's diversion status and projected length of the diversion.
       - 1.1.1.4. No pre-hospital provider shall honor a hospital diversion status unless informed of such by the medical director, or designee, through the Volusia County Sheriff's Office communications center.
   - 1.2. Medical Director initiated
     - 1.2.1. The EMS medical director, or designee, may place an emergency department on diversion status when he or she believes the patients serviced by the EMS system would be best served by bypassing the specific emergency department. Examples may include:
       - 1.2.1.1. Extensive delays in offloading patients from ambulances into the emergency department.
       - 1.2.1.2. Challenges to or failure of critical infrastructure within the emergency department (i.e., computerized tomography capability, cardiac monitor availability, etc.).
     - 1.2.2. The EMS medical director, or designee, shall contact the emergency department physician at the emergency department being considered for diversion status and discuss the current capabilities and limitations.
     - 1.2.3. If sufficient cause exists, the hospital shall be placed on diversion status and the medical director, or designee, shall communicate this to the Volusia County Sheriff's Office communications center, including the anticipated duration of the diversion status.
     - 1.2.4. Should the facility to which the patient would be transported be on diversion, identify patient wishes for transport.
       - 1.2.4.1. Explain nature and reason for hospital bypass.
       - 1.2.4.2. Explain potential wait times and wait status to patient.
       - 1.2.4.3. Explain risks of potential delays in medical attention due to facility congestion or lack of resources including a verbatim or summary recital of the following: "The hospital you have

requested to be transported to has informed us that they are on a diversionary status. Diversions are initiated when hospital emergency department facilities are considered to be overwhelmed by excessive patient volume or by critical resource shortages to the extent where such volume or shortage may potentially compromise patient care. You may go to another hospital of your choice, where you may receive faster treatment. What do you choose to do?"

1.2.4.4. Identify patient's ability to make informed decisions regarding transport destination.

1.2.4.5. Re-inquire of patient's desire for transport to facility on diversion status.

1.2.4.6. Identify closest appropriate facility for patient destination.

1.2.5. Should patient opt to continue to destination facility:

1.2.5.1. Inform on-line medical control at receiving facility of patient's decision.

1.2.5.2. Document explanations of risks and benefits of transport to facility wishing to divert patient.

1.2.6. Should patient opt for diversion:

1.2.6.1. Provide patient report to new receiving facility, including notice of diversion.

1.2.6.2. Document explanations of risks and benefits of bypass to patient.

1.2.7. Hospitals on diversion status will continue to accept the unstable, critically ill, or injured patient who requires transport to the closest facility to preserve life or limb.

1.2.8. In the event of a mass casualty incident within Volusia County, all diversions may be nullified on direction of the EMS medical director, or designee.

History: 07-2012 (reorganized, formerly emergency department diversion under 100.05).

Section 100.06: Refusal of medical care/transport

1. For all calls whereby a basic or advanced life support unit is dispatched in response to activation of the 9-1-1 system, all patients will be offered transport to the nearest appropriate hospital. In determining the necessity of acquiring a patient refusal, a patient is defined as:
    - 1.1. Any individual who activates EMS for themselves;
    - 1.2. Any individual with an illness or injury;
    - 1.3. Any individual with a medical or traumatic complaint;
    - 1.4. Any individual with a new altered level of consciousness; or
    - 1.5. Any individual where the EMT/paramedic suspects injury due to mechanism.
2. Eligibility to decline care and/or transport.
    - 2.1. Competent adult or emancipated minors are permitted to decline care and/or transport, providing they do not fall under another category within this section. Competent adult or emancipated minors include:
        - 2.1.1. Persons eighteen years of age, or greater.
        - 2.1.2. Emancipated minors:
            - 2.1.2.1. Mother of a child; or
            - 2.1.2.2. A married minor of either sex regardless of current marital status.
    - 2.2. Competent guardian refusing on behalf of another adult (i.e., durable power of attorney, health care surrogate, etc.).
        - 2.2.1. An individual appointed by a court as durable power of attorney may decline care and/or transport on behalf of the individual providing:
            - 2.2.1.1. The power of attorney can produce documentation demonstrating their authority.
            - 2.2.1.2. If the field provider feels that the decision is not in the best interest of the patient, contact the EDMCP.
        - 2.2.2. An individual designated as a health care surrogate may decline care and/or transport on behalf of the individual providing:
            - 2.2.2.1. The healthcare surrogate can produce documentation demonstrating their designation as such.
            - 2.2.2.2. If the field provider feels that the decision is not in the best interest of the patient, contact the EDMCP.
    - 2.3. Competent adult refusing on behalf of a minor.
        - 2.3.1. Consent:
            - 2.3.1.1. Serious or critical medical condition or injury:
                - 2.3.1.1.1. Field personnel will render all necessary care and transport to minors when seeking consent would delay and potentially compromise the medical condition or injury.
            - 2.3.1.2. Non-serious or non-critical medical condition or injury:
                - 2.3.1.2.1. In situations where a delay in delivering care or transport would not result in a deterioration of a medical condition or injury, field personnel will make

every reasonable effort to contact a parent or guardian to obtain consent.

2.3.1.2.2. If the parent or guardian refuses care, he or she must sign the patient refusal. If the declination of treatment and/or transport is obtained over a telephone or other means in which a signature cannot be captured, the conversation must be documented in the patient care report and a witness (preferably from another agency) must sign the patient refusal as a witness.

2.3.2. If a parent or guardian refuses treatment and/or transport on behalf of a minor and the field provider disagrees, the field provider shall:

2.3.2.1. Clearly state his or her concern to the parent or guardian.

2.3.2.2. Contact the EDMCP for his or her recommendation.

2.3.2.3. Enlist the aid of law enforcement.

2.3.3. Persons eligible to sign a declination of care and/or transport on behalf of a minor include the following, providing they are free from alcohol intoxication, drug intoxication or other condition that would prevent them from making an informed decision:

2.3.3.1. Parent of minor;

2.3.3.2. Step parent of minor;

2.3.3.3. Grand parent of the minor;

2.3.3.4. An adult brother or sister of the minor;

2.3.3.5. An adult aunt or uncle of the minor; or

2.3.3.6. Other person granted such authority by a parent.

2.4. Incompetent adult

2.4.1. Persons not capable of declining care or transport on behalf of themselves or another include:

2.4.1.1. Individuals declared so by a judicial process;

2.4.1.2. An individual with suicidal ideations;

2.4.1.3. An individual with a psychiatric illness; or

2.4.1.4. An individual under the influence of drugs or alcohol.

2.4.2. Chapter 401.445, Florida Statute allows for emergency medical services personnel to examine and treat an individual without informed consent providing:

2.4.2.1. At the time of the examination and treatment, the individual is under the influence of alcohol or drugs, or otherwise incapable of providing informed consent;

2.4.2.2. At the time of the examination and treatment, the individual is experiencing an emergency medical condition; and

2.4.2.3. The patient would, under all of the surrounding circumstances, reasonably undergo such examination and treatment if he or she were advised to do such.

2.4.3. The custodian of the person in custody is responsible for access to and allowance of medical care. Therefore, the accompanying law enforcement officer or correctional officer may decline treatment and/or transport on behalf of the patient.

2.4.3.1. The law enforcement officer or correctional officer must sign the declination of care and/or transport.

2.4.3.2. If the law enforcement officer or correctional officer refuses to sign, document the refusal to sign in the patient care report. Have a witness sign the refusal.

3. Procedure for executing refusal.

3.1. Each of the elements below must be addressed and documented in the patient care report. Alternatively, an explanation of why this information was not obtained should be documented in the uncooperative patient.

3.1.1. All complaints expressed by the patient that precipitated the response, to include improvement, resolution or worsening of problem;

3.1.2. Patient's mental status to include alertness to person, place, time and events;

3.1.3. Assessment of vital signs;

3.1.4. Patient is free from impairment; including alcohol and drug intoxication, suicidal ideations and other psychological conditions; that may limit their ability to understand risks associated with refusal of treatment and/or transport or make an informed decision;

3.1.5. Patient has been offered treatment and/or transport;

3.1.6. Patient acknowledges the risks associated with the declination of treatment and/or transport and accepts those risks;

3.1.7. The patient should be encouraged to call on EMS to respond again or seek other medical assistance if the problem persists or worsens.

3.1.8. Obtain signature of patient or legal guardian.

3.2. Patient's refusing treatment and/or transport should be left with another competent adult, if possible.

History: 07-2012; 02-2008.

This page left blank intentionally.

Section 200.00: Transport protocols

This page left blank intentionally.

Section 200.01: Transport protocols, general

1. General considerations
   - 1.1. In the absence of any specific state-mandated criteria, or as allowed elsewhere in this document, no pre-hospital care provider is to influence the choice of hospital by the patient in any way; nor is any pre-hospital care provider to assume that any hospital cannot offer its usual range of services and preferentially divert patients to selected facilities.
   - 1.2. If non-life threatening:
     - 1.2.1. Transport the patient to hospital of the patient's choice.
     - 1.2.2. If the patient is unable to make such a judgment (minors, etc.), transport the patient to the hospital of choice of an appropriate party acting on behalf of the patient (parent, et al).
     - 1.2.3. If the patient expresses no choice and if no other appropriate party is available or has reason to act on behalf of the patient, transport the patient to the closest appropriate facility.
   - 1.3. If life threatening:
     - 1.3.1. Transport the patient to the closest appropriate facility.
     - 1.3.2. If the closest appropriate facility conflicts with the choice of the patient or the party acting of behalf on the patient, contact the emergency department medical control physician (EDMCP) at the hospital of choice and request orders to transport the patient to the closest appropriate facility. Provide the receiving hospital with a complete patient report as soon as possible. Do not delay patient transport to the closest appropriate facility while waiting for a physician order to change destinations.
     - 1.3.3. If the patient insists on transport to an emergency department other than the closest, discussion with the patient should include a verbatim or summary recital of the following: "Based on the prehospital assessment that has been performed there is a possibility the hospital you are selecting may not have the ability to perform certain procedures your medical condition may require. It is my recommendation that you be transported to a different facility for evaluation of your medical condition; however, the final choice of hospital destination remains yours."
     - 1.3.4. The EDMCP's authorization to bypass closer emergency departments, divert to a closer emergency department or the patient's decision to choose an emergency department contrary to the recommendation of the EDMCP and transporting crew must be documented in the patient care report.
   - 1.4. The transport paramedic reserves the right to determine which facility is closest considering mileage, transport times, traffic patterns and density, and zone where incident occurred.
   - 1.5. The transporting paramedic will document specifics about this hospital destination selection in the patient care report, to include the EDMCP's authorization or refusal to bypass closer hospital(s).
   - 1.6. If any prehospital provider communicates a patient designation that dictates transport to a hospital outlined under specific transport protocols (i.e., STEMI,

stroke, trauma, etc.), the designation shall not be negated by another prehospital provider without the approval of the receiving emergency department physician or the EMS medical director.

1.7. Emergency interfacility transfer procedures

1.7.1. Any Volusia County receiving emergency department may declare a "STEMI alert", "stroke alert", or "trauma alert" based upon either initial assessment or subsequent deterioration when the patient meets criteria.

1.7.2. When such a condition exists, the emergency department physician, or his or her designee, shall contact the Volusia County Sheriff's Office communications center and initiate an emergency transfer. The patient shall be identified as a "STEMI alert", "stroke alert", or "trauma alert" to the communications center staff.

1.7.3. The responsible transporting agency will assign such transfers an "emergency" status.

1.7.4. When trauma alert patients are diverted to non-trauma centers for stabilization (i.e., airway management, etc.), the agency responsible for the initial transport shall make every reasonable effort to remain at the emergency department in order to facilitate a prompt transfer of the patient to a trauma center following stabilization. Only prehospital emergency calls will take priority over emergency transfers of trauma alert patients.

1.8. Volusia County Receiving Facilities:

1.8.1. Central Florida Regional Hospital: 1401 West Seminole Boulevard, Sanford

1.8.2. Florida Hospital DeLand: 701 West Plymouth Avenue, DeLand

1.8.3. Florida Hospital Fish Memorial: 1055 Saxon Boulevard, Orange City

1.8.4. Florida Hospital Flagler: 60 Memorial Medical Parkway, Palm Coast

1.8.5. Florida Hospital Memorial Medical Center: 301 Memorial Medical Parkway, Daytona Beach

1.8.6. Florida Hospital New Smyrna: 401 Palmetto Avenue, New Smyrna Beach

1.8.7. Halifax Health Emergency Department of Deltona: 3300 Halifax Crossing Boulevard, Deltona

1.8.8. Halifax Health Medical Center: 303 North Clyde Morris Boulevard, Daytona Beach

1.8.9. Halifax Health Medical Center of Port Orange: 1041 Dunlawton Avenue, Port Orange

1.8.10. Parrish Medical Center: 951 North Washington Avenue, Titusville

History: 01-2018; 07-2012; (reorganized)

Section 200.02: Transport protocols, cardiac

1. STEMI (ST elevation myocardial infarction) Alert
   - 1.1. Any patient meeting a single criterion outlined below will be declared a "STEMI alert" and be transported to a STEMI center.
     - 1.1.1. ST elevation of at least one millimeter in at least two anatomically contiguous limb leads or two millimeters in at least two anatomically contiguous precordial leads, or
     - 1.1.2. Signs and symptoms of myocardial ischemia in the presence of left bundle branch block.
   - 1.2. Communications with the emergency department :
     - 1.2.1. Transmit the 12 lead ECG to the receiving emergency department as soon as feasible;
     - 1.2.2. Communicate the applicable field interpretation to the emergency department:
       - 1.2.2.1. In the presence of ST elevation or left bundle branch block with signs and/or symptoms of myocardial ischemia:
         - 1.2.2.1.1. Verbalize that the patient is a "STEMI alert";
         - 1.2.2.1.2. Communicate the specific STEMI criteria;
         - 1.2.2.1.3. Treatment provided;
         - 1.2.2.1.4. Vital signs;
         - 1.2.2.1.5. If available, the name of the patient's cardiologist. If the patient does not have a cardiologist, the name of the patient's primary care physician; and
         - 1.2.2.1.6. Estimated time of arrival.
       - 1.2.2.2. If the subtlety of the changes prevents the field provider from determining the presence or absence of ST changes:
         - 1.2.2.2.1. Request the receiving physician review the 12 lead ECG;
         - 1.2.2.2.2. Treatment provided;
         - 1.2.2.2.3. Vital signs;
         - 1.2.2.2.4. If available, the name of the patient's cardiologist. If the patient does not have a cardiologist, the name of the patient's primary care physician; and
         - 1.2.2.2.5. Estimated time of arrival.
       - 1.2.2.3. In the absence of ST elevation or left bundle branch block with signs and/or symptoms of myocardial ischemia:
         - 1.2.2.3.1. Treatment provided;
         - 1.2.2.3.2. Vital signs;
         - 1.2.2.3.3. If available, the name of the patient's cardiologist. If the patient does not have a cardiologist, the name of the patient's primary care physician; and
         - 1.2.2.3.4. Estimated time of arrival.
   - 1.3. Appropriate transport destinations.

1.3.1. Due to the potential definitive benefit of care available, patients meeting "STEMI alert" criteria with profound cardiovascular compromise, including those that deteriorate into cardiopulmonary arrest, should be transported to the closest STEMI center.

1.3.2. STEMI receiving facilities: Any hospital capable of providing percutaneous coronary intervention (PCI) on a continual basis; whether through in house staff or through an on call team able to assemble within thirty minutes of patient arrival in the emergency department. Cardiothoracic surgical services are not required of a STEMI center, providing transfer agreements exist and adequate hospital staff is available to accompany the patient during transport.

1.3.2.1. Central Florida Regional Hospital: 1401 West Seminole Boulevard, Sanford

1.3.2.2. Florida Hospital DeLand: 701 West Plymouth Avenue, DeLand

1.3.2.3. Florida Hospital Memorial Medical Center: 301 Memorial Medical Parkway, Daytona Beach

1.3.2.4. Florida Hospital New Smyrna: 401 Palmetto Avenue, New Smyrna Beach

1.3.2.5. Halifax Health Medical Center: 303 North Clyde Morris Boulevard, Daytona Beach

1.3.3. Initial receiving emergency departments that are not designated as STEMI receiving centers.

1.3.3.1. Florida Hospital Fish Memorial: 1055 Saxon Boulevard, Orange City

1.3.3.2. Florida Hospital Flagler, 60 Memorial Medical Parkway, Palm Coast

1.3.3.3. Halifax Health Emergency Department of Deltona: 3300 Halifax Crossing Boulevard, Deltona

1.3.3.4. Halifax Health Medical Center of Port Orange: 1041 Dunlawton Avenue, Port Orange

1.3.3.5. Parrish Medical Center, 951 North Washington Avenue, Titusville

2. Cardiac Alert

2.1. All patients with presentation suspicious of myocardial ischemia and in the absence of clinically relevant ST changes will be declared a "cardiac alert" and transported to the nearest emergency department.

History: 01-2018; 07-2014; 07-2012 (reorganized, formerly 100.05)

Section 200.03: Transport protocols, Florida Mental Health Act (Baker Act)

1. Definitions
   - 1.1. Co-morbid condition means any obvious or suspected emergency medical condition regardless of whether the condition is directly or indirectly related to the underlying mental health condition. Such conditions include, but are not limited to: suspected or known overdose, injuries resulting from self-harm, altered mental status, and chest pain. The presence of relative past medical history without the manifestation of signs or symptoms does not support the determination of a co-morbid condition.
   - 1.2. Intellectual disability means significantly subaverage general intellectual functioning existing concurrently with deficits in adaptive behavior which manifests before the age of 18 and can reasonably be expected to continue indefinitely. For the purposes of this definition, the term:
     - 1.2.1. Adaptive behavior means the effectiveness or degree with which an individual meets the standards of personal independence and social responsibility expected of his or her age, cultural group, and community.
     - 1.2.2. Significantly subaverage general intellectual functioning means performance that is two or more standard deviations from the mean score on a standardized intelligence test specified in the rules of the agency.
   - 1.3. Involuntary examination means an examination performed under the applicable laws of the State of Florida to determine if an individual qualifies for involuntary inpatient treatment or involuntary outpatient treatment.
   - 1.4. Mental illness means an impairment of the mental or emotional processes that exercise conscious control of one's actions or of the ability to perceive or understand reality, which impairment substantially interferes with a person's ability to meet the ordinary demands of living, regardless of etiology. For the purposes of this section, the term does not include intellectual disability, intoxication, or conditions manifested only by antisocial behavior or substance abuse impairment.
2. Criteria for involuntary examination
   - 2.1. Involuntary examination requires that there is reason to believe the individual has a mental illness and because of the mental illness:
     - 2.1.1. The person has refused voluntary examination after conscientious explanation and disclosure of the purpose of the examination; or
     - 2.1.2. The person is unable to determine for himself or herself whether examination is necessary

       and

     - 2.1.3. Without care or treatment, the person is likely to suffer from neglect or refuse to care for himself or herself; such neglect or refusal poses a real and present threat of substantial harm to his or her well-being; and it is not apparent that such harm may be avoided through the help of willing family members or friends or the provision of other services; or

2.1.4. There is a substantial likelihood that without care or treatment the person will cause serious bodily harm to himself or herself or others in the near future, as evidenced by recent behavior.

3. Who may initiate
   3.1. Florida Statutes provides a mechanism for initiating involuntary examination for the following professions: a court through an ex parte order; a law enforcement officer; or a physician, clinical psychologist, psychiatric nurse, mental health counselor, marriage and family therapist, or clinical social worker.
4. Transport requirements
   4.1. Ambulance transport of persons subject to involuntary examination is appropriate in the following circumstances:
      4.1.1. There is an emergency medical condition requiring assessment and/or treatment (ambulance transport is required).
      4.1.2. Upon request from a law enforcement officer when such assistance is needed for the safety of the officer or the person in custody. Such instances may include, but are not limited to: the elderly, frail or otherwise infirmed persons, persons who may not be best suited for transport in a patrol car.
      4.1.3. Law enforcement shall be requested to attend during ambulance transport if the transporting crew is of the opinion that their safety is jeopardized.
5. Appropriate transport destinations.
   5.1. In the absence of an acute co-morbid condition or conditions, transport the patient to Halifax Health Medical Center, 301 North Clyde Morris Boulevard, Daytona Beach.
   5.2. If there is reasonable suspicion that an acute co-morbid condition or conditions exist, transport the patient to the closest emergency department.

History: 01-2018; 07-2014 (700.02)

Section 200.04: Transport protocols, obstetrical

1. Gravid patients experiencing a pregnancy-related problem who are less than twenty weeks gestation are considered gynecological patients due to the lack of maturation of the fetus. These patients may be transported to a Volusia County receiving facility of their choice.
2. Gravid patients experiencing a pregnancy-related problem who are twenty weeks gestation or greater must be transported to an obstetrical receiving facility unless one of the exceptions below are identified. In either of the instances outlined below, the patient should be transported to the closest emergency department for emergent delivery.
   - 2.1. Birth is imminent (i.e., crowning is present); or
   - 2.2. Birth has taken place and a potentially life-threatening situation arises with the mother or neonate.
3. Appropriate transport destinations.
   - 3.1. Obstetrical receiving facilities
     - 3.1.1. Central Florida Regional Hospital: 1401 West Seminole Boulevard, Sanford
     - 3.1.2. Florida Hospital DeLand: 701 West Plymouth Avenue, DeLand
     - 3.1.3. Florida Hospital Memorial Medical Center: 301 Memorial Medical Parkway, Daytona Beach
     - 3.1.4. Halifax Health Medical Center: 303 North Clyde Morris Boulevard, Daytona Beach
   - 3.2. Initial receiving emergency departments that are not designated as obstetrical receiving centers. Obstetrical patients may be transported to these facilities only when exceptions outlined in this obstetrical transport protocol exists.
     - 3.2.1. Florida Hospital Fish Memorial: 1055 Saxon Boulevard, Orange City
     - 3.2.2. Florida Hospital Flagler, 60 Memorial Medical Parkway, Palm Coast
     - 3.2.3. Florida Hospital New Smyrna: 401 Palmetto Avenue, New Smyrna Beach
     - 3.2.4. Halifax Health Emergency Department of Deltona: 3300 Halifax Crossing Boulevard, Deltona
     - 3.2.5. Halifax Health Medical Center of Port Orange: 1041 Dunlawton Avenue, Port Orange
     - 3.2.6. Parrish Medical Center, 951 North Washington Avenue, Titusville

History: 01-2018; 07-2012 (reorganized, formerly 100.05)

This page left blank intentionally.

Section 200.05: Transport protocols, stroke

1. All patients suspected of experiencing a stroke will be assessed utilizing the Florida Bureau of Emergency Medical Services Stroke Alert Checklist, or substantially similar form.
2. Patients meeting the criteria below shall be declared a "stroke alert" and be transported to the closest appropriate stroke center unless otherwise directed by this document or the EDMCP at the stroke center. Patient weight, when necessary, shall be used as a determinate when selecting a stroke center based upon the limitations identified below under appropriate transport destinations.
   - 2.1. Time of onset is less than six (6) hours;
   - 2.2. Any abnormal finding consistent with the clinical presentation of stroke;
   - 2.3. Deficit not likely caused by head trauma; and
3. Blood glucose greater than fifty (50) milligrams per deciliter.
4. Communications with the emergency department.
   - 4.1. When declaring a "stroke alert" the following must be included in the communication.
     - 4.1.1. Providers must verbalize that the patient is a "stroke alert".
     - 4.1.2. A brief description of the clinical presentation.
     - 4.1.3. Vital signs, to include pulse, respiratory rate, blood pressure, blood glucose level and itemized Glasgow Coma Score.
     - 4.1.4. Estimated time of arrival.
   - 4.2. Field providers shall not differentiate between primary and comprehensive stroke centers. Patients meeting stroke alert criteria will be transported to the closest stroke center, regardless of designation.
5. Appropriate transport destinations.
   - 5.1. Stroke receiving facilities (maximum weight capacity of computerized axial tomography (CT) scanner)
     - 5.1.1. Central Florida Regional Hospital: 1401 West Seminole Boulevard, Sanford (450 pounds)
     - 5.1.2. Florida Hospital DeLand: 701 West Plymouth Avenue, DeLand (500 pounds)
     - 5.1.3. Florida Hospital Fish Memorial: 1055 Saxon Boulevard, Orange City (450 pounds)
     - 5.1.4. Florida Hospital Flagler, 60 Memorial Medical Parkway, Palm Coast
     - 5.1.5. Florida Hospital Memorial Medical Center: 301 Memorial Medical Parkway, Daytona Beach (450 pounds)
     - 5.1.6. Florida Hospital New Smyrna: 401 Palmetto Avenue, New Smyrna Beach (450 pounds)
     - 5.1.7. Halifax Health Medical Center: 303 North Clyde Morris Boulevard, Daytona Beach (650 pounds)
     - 5.1.8. Halifax Health Medical Center of Port Orange: 1041 Dunlawton Avenue, Port Orange
     - 5.1.9. Parrish Medical Center, 951 North Washington Avenue, Titusville

5.2. Initial receiving emergency departments that are not designated as stroke centers. Stroke alert patients may be transported to these facilities only when Florida Stroke Alert criteria are not met.

5.2.1. Halifax Health Emergency Department of Deltona: 3300 Halifax Crossing Boulevard, Deltona

History: 01-2018; 07-2014; 05-2013 (memorandum); 07-2012 (reorganized, formerly 100.05)

Section 200.06: Transport protocols, therapeutic hypothermia

1. Any patient meeting all of the below criteria shall be declared a "Code Cool" and be transported to a therapeutic hypothermia receiving facility.
   - 1.1. Witnessed, non-traumatic cardiopulmonary arrest, and;
   - 1.2. Patient has a return of spontaneous circulation.
2. If any prehospital provider communicates a designation of code cool, the designation shall not be negated by another prehospital provider without the approval of the receiving emergency department physician or the EMS medical director.
3. Communications with the therapeutic hypothermia center:
   - 3.1. When declaring a "code cool", prehospital providers will include the following in their communication:
     - 3.1.1. Verbalize that the patient is a "code cool".
     - 3.1.2. Summary of treatment provided.
     - 3.1.3. Vital signs.
     - 3.1.4. Estimated time of arrival.
   - 3.2. If a patient is identified by field providers as a STEMI alert either before of following arrest, "code cool" patients shall be transported to a receiving facility with both therapeutic hypothermia and STEMI center capabilities.
4. Appropriate transport destinations.
   - 4.1. Therapeutic hypothermia receiving facilities
     - 4.1.1. Central Florida Regional Hospital: 1401 West Seminole Boulevard, Sanford
     - 4.1.2. Florida Hospital DeLand: 701 West Plymouth Avenue, DeLand
     - 4.1.3. Florida Hospital Fish Memorial: 1055 Saxon Boulevard, Orange City
     - 4.1.4. Florida Hospital Memorial Medical Center: 301 Memorial Medical Parkway, Daytona Beach
     - 4.1.5. Florida Hospital New Smyrna: 401 Palmetto Avenue, New Smyrna Beach
     - 4.1.6. Halifax Health Medical Center: 303 North Clyde Morris Boulevard, Daytona Beach
   - 4.2. Initial receiving emergency departments that are not designated as therapeutic hypothermia receiving centers.
     - 4.2.1. Florida Hospital Flagler, 60 Memorial Medical Parkway, Palm Coast
     - 4.2.2. Halifax Health Emergency Department of Deltona: 3300 Halifax Crossing Boulevard, Deltona
     - 4.2.3. Halifax Health Medical Center of Port Orange: 1041 Dunlawton Avenue, Port Orange
     - 4.2.4. Parrish Medical Center, 951 North Washington Avenue, Titusville

History: 01-2018; 07-2014; 02-2013 (corrected); 01-2013 (new).

This page left blank intentionally.

Section 200.07: Transport protocols, trauma

1. Trauma Transport Protocol
   - 1.1. Receipt and dispatch
     - 1.1.1. Persons in Volusia County seeking access to emergency medical services, including access for trauma care and transport, may do so through the countywide enhanced 9-1-1 system by way of any land line or cellular telephone. Conventional and published seven-digit telephone access is also available for each public safety answering point (PSAP).
     - 1.1.2. While circumstances may preclude the gathering of complete information in every instance, the communications center shall make every effort to gather the following information, at a minimum, and relay such information to responding agencies.
       - 1.1.2.1. Location of the incident;
       - 1.1.2.2. The extent and severity of reported injuries; and
       - 1.1.2.3. Number of patients.
     - 1.1.3. By way of interagency cooperation and closest unit response, the communications center will ensure timely dispatch of the most readily available and appropriately staffed and equipped emergency medical service vehicle(s). The communication center will be responsible for initiating the response of additional units within the scope of their policies, based upon information garnered from the caller(s).
     - 1.1.4. The initial arriving unit shall assess the scene and communicate the need for any additional resources (additional fire units, technical rescue, additional ground or air ambulances, etc.) that are needed to the communications center.
   - 1.2. Assessment of the trauma patient
     - 1.2.1. If any prehospital provider communicates a designation of trauma alert, the designation shall not be negated by another prehospital provider without the approval of the receiving emergency department physician or the EMS medical director.
     - 1.2.2. Differentiating adult and pediatric patients.
       - 1.2.2.1. Adult patients will be those having the anatomical and physical characteristics of a person sixteen years of age, or older.
       - 1.2.2.2. Pediatric patients will be those having the anatomical and physical characteristics of a person fifteen years of age, or younger.
       - 1.2.2.3. If question exists as to whether a patient should be assessed under the adult or pediatric scorecard criteria, measure the patient utilizing the Broselow™ Pediatric Emergency Care tape. If the patient falls within the maximum parameter as established by the length-based measuring device, assess the patient utilizing the pediatric criteria.
     - 1.2.3. Adult trauma scorecard methodology.

1.2.3.1. Any adult patient meeting a single criteria outlined below will be declared a "trauma alert" and be transported to the nearest trauma center, providing no other exceptions exist in this section.

1.2.3.1.1. The patient receives active airway assistance beyond the administration of oxygen.

1.2.3.1.2. The patient lacks a radial pulse and has a sustained heart rate greater than 120 beats per minute.

1.2.3.1.3. The patient's systolic blood pressure is less than 90 millimeters of mercury.

1.2.3.1.4. The patient's best motor response component of the Glasgow Coma Score is four or less.

1.2.3.1.5. The patient exhibits the presence of paralysis.

1.2.3.1.6. There is suspicion of spinal cord injury.

1.2.3.1.7. The patient sustains second or third degree burns to fifteen percent of the total body surface area, or greater.

1.2.3.1.8. The patient has an amputation proximal to the wrist or ankle.

1.2.3.1.9. The patient has a penetrating injury to the head, neck or torso when the wound is not readily identifiable as superficial.

1.2.3.1.10. There are signs or symptoms of two or more long bone fracture sites. Fracture sites include: 1) humerus, 2) radius and/or ulna, 3) femur, and 4) tibia and/or fibula.

1.2.3.1.11. The total sustained Glasgow Coma Score is twelve or less, unless the depressed Glasgow Coma Score can be attributed to a preexisting medical condition.

1.2.3.2. Any adult patient meeting any two of the criteria outlined below will be termed a "trauma alert" and be transported to a trauma center, providing no other exceptions exist in this section.

1.2.3.2.1. The patient exhibits a sustained respiratory rate of thirty, or greater.

1.2.3.2.2. The patient has a sustained heart rate of 120 beats per minute, or greater.

1.2.3.2.3. The patient's best motor response component of the Glasgow Coma Score is five.

1.2.3.2.4. Major degloving injury.

1.2.3.2.5. Major flap avulsion greater than five inches.

1.2.3.2.6. Gunshot wound to an extremity.

1.2.3.2.7. Long bone fracture resulting from a motor vehicle collision.

1.2.3.2.8. Long bone fracture resulting from a fall from an elevation of ten feet, or greater.

1.2.3.2.9. Patient is age fifty-five or greater.

1.2.3.2.10. Ejection from a motor vehicle; excluding motorcycles, all-terrain vehicles, open bed of a pick up truck, etc.

1.2.3.2.11. Steering wheel deformity as a result of impact by the driver.

1.2.3.3. When no objective criteria is met from either category above and the EMT or paramedic feels that the patient would best be served by being evaluated at a trauma center, a Florida-certified emergency medical technician or paramedic may declare a "trauma alert" based solely upon judgment. When judgment is used as the sole parameter, the emergency medical technician or paramedic shall comprehensively document objective and subjective decision points that resulted in the judgment determination.

1.2.3.4. Patients meeting neither objective nor subjective Florida trauma scorecard criteria will further be assessed for local "high index of suspicion" criteria. Patients meeting any of the criteria below shall be transported to the trauma center, but are not designated as a "trauma alert".

1.2.3.4.1. Electrocution injuries with evidence of an exit wound;

1.2.3.4.2. Falls of twenty feet or greater;

1.2.3.4.3. Lightning injuries;

1.2.3.4.4. Pedestrians struck by a motor vehicle and thrown greater than twenty feet; or

1.2.3.4.5. EMT or paramedic discretion.

1.2.4. Pediatric trauma scorecard methodology.

1.2.4.1. Any pediatric patient meeting a single criteria outlined below will be termed a "trauma alert" and be transported to a trauma center, providing no other exceptions exist in this section.

1.2.4.1.1. Effort is required to maintain an open airway. Such effort may include continuous suctioning, jaw-thrust maneuver or basic or advanced airway management.

1.2.4.1.2. The patient exhibits an altered mental status that includes drowsiness, lethargy, inability to follow commands, or unresponsiveness.

1.2.4.1.3. The patient exhibits paralysis.

1.2.4.1.4. There is suspicion of spinal cord injury.

1.2.4.1.5. There is loss of sensation.

1.2.4.1.6. The patient has either faint or non-palpable femoral or carotid pulses.

1.2.4.1.7. The patient's systolic blood pressure less than 50 millimeters of mercury.

1.2.4.1.8. There are signs or symptoms of a single open long bone fracture. Fracture sites include 1) humerus, 2) radius and/or ulna, 3) femur, and 4) tibia and/or fibula.

1.2.4.1.9. There are signs or symptoms of multiple long bone fractures (excluding isolated wrist and ankle fractures).

1.2.4.1.10. There are signs or symptoms of multiple dislocations (excluding isolated wrist and ankle dislocations).

1.2.4.1.11. Major degloving injury.

1.2.4.1.12. Major flap avulsion.

1.2.4.1.13. The patient sustains second or third degree burns to ten percent of the total body surface area, or greater.

1.2.4.1.14. The patient has an amputation at, or proximal to, the wrist or ankle.

1.2.4.1.15. The patient has a penetrating injury to the head, neck or torso when the wound is not readily identifiable as superficial.

1.2.4.2. Any pediatric patient meeting any two of the criteria outlined below will be termed a "trauma alert" and be transported to a trauma center, providing no other exceptions exist in this section.

1.2.4.2.1. The patient exhibits symptoms of amnesia.

1.2.4.2.2. There is loss of consciousness.

1.2.4.2.3. Carotid or femoral pulses are palpable, but the radial or pedal pulses are not palpable.

1.2.4.2.4. The patient's systolic blood pressure less than 90 millimeters of mercury.

1.2.4.2.5. Evidence of a single closed long bone fracture (excluding isolated wrist or ankle fractures).

1.2.4.2.6. Patient weighs eleven kilograms or less or the body length is equivalent to this weight on the Broselow™ Pediatric Emergency Care tape.

1.2.4.3. When no objective criteria is met from either category above and the EMT or paramedic feels that the patient would best be served by being evaluated at a trauma center, a Florida-certified emergency medical technician or paramedic may declare a "trauma alert" based solely upon judgment. When judgment is used as the sole parameter, the emergency medical technician or paramedic shall comprehensively document objective and subjective decision points that resulted in the judgment determination.

1.2.4.4. Patients meeting neither objective nor subjective Florida trauma scorecard criteria will further be assessed for local "high index of suspicion" criteria. Patients meeting any of the criteria below shall be transported to the trauma center, but are not designated as a "trauma alert".

1.2.4.4.1. Electrocution injuries with evidence of an exit wound;

1.2.4.4.2. Falls of twenty feet or greater;

1.2.4.4.3. Lightning injuries;

1.2.4.4.4. Pedestrians struck by a motor vehicle and thrown greater than twenty feet; or

1.2.4.4.5. EMT or paramedic discretion.

1.3. Trauma Destination Requirements

1.3.1. Adult and pediatric patients meeting Florida trauma scorecard methodology shall be transported to the nearest trauma center, unless the distance is not relevant to the length of time for transport due to the use of an air ambulance, unless otherwise provided for in this section. The determination of the "nearest" trauma center shall be determined by the transporting paramedic. Factors effecting the decision may include, but are not limited to, distance, anticipated transport time, traffic patterns and density, and any other relevant factors.

1.3.2. "Trauma alert" patients meeting any one of the below criteria shall be transported to the closest emergency department for stabilization.

1.3.2.1. Patients experiencing airway complications that cannot be adequately managed in the field.

1.3.2.2. Patients with uncontrollable, external hemorrhage.

1.3.2.3. Patients in cardiopulmonary arrest.

1.3.3. Additional allowances for diverting "trauma alert" patients to a non-trauma center include:

1.3.3.1. Mass casualty situations when dispersal of patients is necessary in order to prevent overwhelming the trauma center.

1.3.3.2. Unavailability of trauma services at the local trauma center. Such instances (a number of trauma alert patients that exhaust internal resources at the trauma center, unavailability of CT, internal catastrophe, etc.) are anticipated to rarely occur and will be validated by the EMS Medical Director.

1.3.4. When the initial assessment does not indicate an immediate life threat and field providers feel there may be benefit in exploring alternate transport destinations for discipline-specific care, the field provider may contact the emergency department medical control physician (EDMCP) at the local trauma center for consultation. Such discipline-specific care may include burn care, hyperbaric medicine, and comprehensive pediatric services. The decision to bypass the local trauma center for specialized services rests solely with the EDMCP and is based on information provided from field providers.

1.4. Communications with the emergency department.

1.4.1. Means of communicating with the trauma center.

1.4.1.1. The primary means for contacting the trauma center shall be through the countywide 800 megahertz system.

1.4.1.2. The statewide hailing channel, MED 8 (UHF), provides an alternate means of radio communication with the trauma center. Local communication centers will acknowledge the hail and assign a designated channel to the prehospital unit.

1.4.1.3. Field personnel may utilize the communication center to relay information to the trauma center under unusual circumstances and if the two options above are not available.

1.4.1.4. Alternatively, field personnel may contact the trauma center directly by telephone. Personnel must speak directly to the EDMCP or the charge nurse.

1.4.2. Regardless of the means utilized to contact the trauma center, when declaring a "trauma alert" the following must be included in the communication.

1.4.2.1. Providers must verbalize that the patient is a "trauma alert".

1.4.2.2. Indicate the specific trauma alert criteria.

1.4.2.3. A brief description of the sustained and suspected injuries and the mechanism of injury.

1.4.2.4. Vital signs, to include pulse, respiratory rate, blood pressure, oxyhemoglobin saturation and itemized Glasgow Coma Score.

1.4.2.5. Estimated time of arrival and method of transport.

1.4.3. Trauma patient transport

1.4.3.1. Assistance during transport.

1.4.3.1.1. Patient condition, any anticipated decline in patient condition and patient care complications will be used in determining the need for additional assistance during transport.

1.4.3.1.2. All responding emergency medical service providers will be available to assist transporting agencies, if patient condition warrants.

1.4.3.2. Aeromedical services

1.4.3.2.1. The determination as to whether a patient will be transported by ground or air must take many factors into consideration. Those factors include, but are not limited to: patient acuity and the anticipated time-sensitive need for services, proximity to the trauma center, traffic patterns, necessity of a remote landing zone, weather, remote destinations offering discipline-specific care and the number of patients requiring transport. Regardless of the factors involved, the method of transport should be determined by the means that will best and most effectively serve the patient.

1.4.3.2.2. The Volusia County Sheriff's Office maintains helicopter service in order to respond to medical emergencies. Public safety organizations may request this service through the Volusia County Sheriff's Office communications center. Priority dispatch is given to trauma or medically related calls.

1.4.3.2.3. Regardless of the incident location, the Volusia County Sheriff's Office helicopter (Air-1) is the

primary aeromedical resource in Volusia County. If the need for additional air ambulances is anticipated or determined, requests for such resources will be made in coordination with Air-1 in order to coordinate response, safe air operations on scene, and to allow for the most appropriate air ambulance to be selected based upon location to scene and availability.

1.4.3.2.4. Only the incident commander may cancel a responding air transport unit. If the incident commander is not a paramedic, it is recommended that they consult with the lead transport paramedic on scene.

1.4.3.2.4.1. Under a unified command system, the Medical Commander will maintain sole discretion for utilization of aeromedical transport services.

1.5. Transfer of patient care information

1.5.1. Following transfer of the trauma patient to emergency department staff, the transporting agency will complete the appropriate documentation outlined in Chapter 64J-1, Florida Administrative Code and provide the required documentation to the emergency department staff.

1.6. Appropriate transport destinations.

1.6.1. Trauma center

1.6.1.1. Central Florida Regional Hospital: 1401 West Seminole Boulevard, Sanford

1.6.1.2. Halifax Health Medical Center: 303 North Clyde Morris Boulevard, Daytona Beach

1.6.2. Initial receiving emergency departments that are not designated as trauma centers. Trauma alert patients may be transported to these facilities only when exceptions outlined in these trauma transport protocols exist.

1.6.2.1. Florida Hospital DeLand: 701 West Plymouth Avenue, DeLand

1.6.2.2. Florida Hospital Fish Memorial: 1055 Saxon Boulevard, Orange City

1.6.2.3. Florida Hospital Flagler, 60 Memorial Medical Parkway, Palm Coast

1.6.2.4. Florida Hospital Memorial Medical Center: 301 Memorial Medical Parkway, Daytona Beach

1.6.2.5. Florida Hospital New Smyrna: 401 Palmetto Avenue, New Smyrna Beach

1.6.2.6. Halifax Health Emergency Department of Deltona: 3300 Halifax Crossing Boulevard, Deltona

1.6.2.7. Halifax Health Medical Center of Port Orange: 1041 Dunlawton Avenue, Port Orange

1.6.2.8. Parrish Medical Center, 951 North Washington Avenue, Titusville

2. Mass casualty incidents

2.1. Field personnel will notify the Volusia County Sheriff's Office Communications Center of all situations involving multiple casualty scenarios. Notification will include:
   2.1.1. Total number of critical (i.e., tagged as "red") patients.
   2.1.2. Total number of serious (i.e., tagged as "yellow") patients.
   2.1.3. Total number of non-critical/serious (i.e., tagged as "green") patients.
   2.1.4. Total number of deceased (i.e., tagged as "black") patients.

2.2. The Volusia County Sheriff's Office Communications Center will contact area hospitals to determine:
   2.2.1. Present bed availability, and
   2.2.2. Quantities of the above patients which can be cared for.

2.3. No single emergency department should be inundated with multiple patients. Bed availability and hospital resources at the time of the event should be utilized to make a determination regarding how many patients any hospital should receive.

History: 01-2018; 05-2015; 07-2014; 07-2012 (reorganized, formerly 100.05); 07-2011 (memorandum 700.08); 07-2009 (memorandum 700.05); 07-2009 (memorandum 700.01); 07-2009; 01-2009 (memorandum (700.04); 02-2008.

Section 300.00: Provider protocols

This section contains prehospital standing orders and treatment protocols for adult patients.

This page left blank intentionally.

Section 300.01: Scope of practice

1. Prehospital personnel working with Volusia County prehospital agencies may, in the course of duty, be required to participate in patient care at locations outside of Volusia County.
   1.1. Participation in patient care outside of Volusia County may occur as a result of disaster responses, inter-county transports or mutual aid agreements.
   1.2. Volusia County prehospital providers are authorized to perform within the scope of the Volusia County EMS medical protocols under these circumstances. Authorization is extended only to Volusia County paramedics working for a Volusia County agency during duty time.
2. Providers working with Volusia County prehospital agencies may happen upon or be requested to assist at the scene of injury or illness outside of duty hours.
   2.1. Prehospital providers are authorized to perform within the scope of the Volusia County EMS medical protocols if the scene of illness or injury is fully within the confines of Volusia County.
   2.2. ALS certified providers responding as a volunteer for a BLS agency are authorized only to perform at the BLS level.
3. Prehospital providers working with prehospital agencies external to Volusia County may, in the course of duty, be required to participate in patient care at locations within Volusia County.
   3.1. External prehospital providers may perform within the scope of EMS medical protocols established for their employing agency. This authorization is extended only for prehospital providers working within Volusia County during duty time.
   3.2. Prehospital providers from outside of Volusia County who are not on duty are not authorized to practice prehospital care within Volusia County.
4. EMT's that are enrolled in a paramedic program are expressly prohibited from performing paramedic-level skills outside of sanctioned and designated clinical hours established by his or her respective EMS program.
5. EMT's and paramedics are strictly prohibited from working under the authorization of the Volusia County EMS medical director or these protocols for employment opportunities not sanctioned by a recognized Volusia County emergency medical services provider.
6. Pursuant to Chapter 64J-1, Florida Administrative Code, emergency medical technicians may be authorized to perform certain advanced procedures. Procedures authorized by the Florida Department of Health, Bureau of Emergency Medical Services and the Volusia County EMS medical director include blood glucose monitoring, dual lumen airway insertion, administration of epinephrine using an auto-injector, assistance with patient self-administration of nitroglycerin and inhaled bronchodilators, and initiation, monitoring, and maintenance of non-medicated intravenous lines under the supervision of a paramedic affiliated with their agency. EMT's may be authorized to perform the above procedures after any prerequisites have been satisfied and qualified individuals are approved in writing by the Volusia County EMS medical director.
7. All community health programs (i.e., community paramedicine, mobile integrated health care, etc.) outside of conventional prehospital response and transport and interfacility

transport must have the written approval of the EMS medical director prior to implementation.

History: 01-2018; 07-2012; 02-2008.

Section 300.02: Reporting requirements to the EMS medical director

1. The medical director recognizes that on occasion the out-of-hospital environment presents challenges in delivering patient care that may result in: deviations from care, complications resulting from care delivered with the best of intentions and the utilization of certain invasive skills. It is the aim of this section to identify these deviations so efforts can be made to prevent like recurrences and effectively review performance measures on skills.
2. The following matters will dictate a cursory notification to the medical director's office by the agency's administration immediately upon learning of the occurrence.
    - 2.1. Reporting requirements:
        - 2.1.1. Deviations, or perceived deviations, by field providers from current prehospital standing orders, including deviations from established transport protocols;
        - 2.1.2. Complications in patient care resulting from treatment rendered by field providers;
        - 2.1.3. Unauthorized possession, dispensing, utilization, or any irregularities of prescription fluids, medications, devices or controlled substances.
        - 2.1.4. Any and all matters involving known or suspected irregularities surrounding controlled substances;
        - 2.1.5. Any other unusual or atypical clinical events not specified above.
        - 2.1.6. Any lapse in state or locally required medical credentials by a field provider.
    - 2.2. A completed copy of the patient care report and any other internal documentation pertinent to clinical events further detailing the occurrence will be provided to the medical director within twenty-four hours of the initial report, or the next business day.
    - 2.3. It is the responsibility of the employing agency to immediately report to the medical director's office any certified emergency medical technician or paramedic that is suspected of violating standards established under Chapter 401, Florida Statute. While the disciplinary process remains under the control of the employing agency, the medical director reserves the right to independently review clinically-related matters involving his or her medical license.
    - 2.4. All documents provided under this section are requested under a quality assurance review process and should be clearly marked as such. All such documentation is considered privileged under section 401.425, Florida Statute.
    - 2.5. Documents required above shall be sent directly to the Volusia County Emergency Medical Administration division office physical address.
    - 2.6. In addition to the above reporting criteria, the medical director will provide a written memorandum outlining routine quality assurance review parameters.
3. Quality assurance review committee
    - 3.1. Quality assurance review will be performed by an emergency medical review committee:
        - 3.1.1. Members:
            - 3.1.1.1. Volusia County EMS Medical Director
            - 3.1.1.2. Volusia County Deputy EMS Medical Director or Directors'
            - 3.1.1.3. Volusia County Emergency Medical Administration director

3.1.2. The Volusia County EMS Medical Director will chair this committee.

3.1.3. This emergency medical review committee will operate under the parameters established under section 401.425, Florida Statute.

3.2. Review process:

3.2.1. The committee will convene as dictated by the frequency of matters requiring such review. It is the intent of this committee to impartiality and objectively review all such matters submitted for review.

3.2.2. All documentation will be reviewed and, if necessary, interviews will be conducted with persons on scene to determine the facts and timeline surrounding the event.

3.2.3. The medical director reserves the right to seek input from other persons as necessary in order to gain a comprehensive understanding of the event.

3.3. Disposition

3.3.1. The disposition of all reviews is solely the decision of the medical director and may include recommendations or action up to, and including, revocation of a field provider's ability to function under the medical director's license.

3.3.2. The medical director will render a written decision to the individual within ten business days from the date in which all incident relevant material has been compiled. The correspondence will be addressed to the individual or individuals at their department's address.

3.3.3. A representative from the agency employing the individual will be copied on correspondences.

3.4. Appeal

3.4.1. The field provider involved will have five business days to make a written request to the medical director if he or she feels the severity of the EMS medical director's decision is too severe.

3.4.2. The medical director will respond with a final position on the matter within five business days.

History: 01-2018; 07-2012; 07-2009; 02-2008.

Section 300.03: Certification and educational requirements

1. First Responder
   - 1.1. First Responders within Volusia County working under the auspices of the Volusia County Medical Director will be required to meet certain educational and certification requirements.
     - 1.1.1. Certified First Responders
       - 1.1.1.1. First responders working with a fire/rescue agency will be considered as "certified first responders." Certified First Responders will be required to complete fourteen (14) hours of continuing education every two (2) years in order to maintain the ability to work within the Volusia County EMS system. The content of these hours will consist of:
         - 1.1.1.1.1. Four (4) hours of CPR training including use of an AED.
         - 1.1.1.1.2. Two (2) hours of training in HIV/AIDS and bloodborne pathogens.
         - 1.1.1.1.3. Four (4) hours of medical assessment and management.
         - 1.1.1.1.4. Four (4) hours of trauma assessment and management.
       - 1.1.1.2. The medical and/or trauma modules will include training regarding the theory and practice of oxygen therapy. The Volusia County Medical Director must certify continuing education programs in order to be credited to this total.
     - 1.1.2. Non-Certified First Responders
       - 1.1.2.1. Non-certified first responders are those working with agencies whose primary function is not the provision of fire/rescue services, but whose medical operations fall under the auspices of the EMS Medical Director. Non-Certified First Responders will be required to complete ten (10) hours of continuing education every two (2) years in order to maintain the ability to work within the Volusia County EMS system. The content of these hours will consist of:
         - 1.1.2.1.1. Four (4) hours of CPR training including use of an AED.
         - 1.1.2.1.2. Two (2) hours of training in HIV/AIDS and bloodborne pathogens.
         - 1.1.2.1.3. Two (2) hours of medical assessment and management.
         - 1.1.2.1.4. Two (2) hours of trauma assessment and management.
       - 1.1.2.2. The medical and/or trauma modules will include training regarding the theory and practice of oxygen therapy. Modules may include other material as required by agency needs. The Volusia County Medical Director must certify continuing education programs in order to be credited to this total.

2. Emergency Medical Technician
   - 2.1. Emergency Medical Technicians (EMT's) working within Volusia County under the auspices of the Medical Director will be required to meet the following certification requirements.
     - 2.1.1. Maintain current EMT-B certification issued by the Florida Department of Health.
     - 2.1.2. Maintain current CPR credential as allowed by the Medical Director and the Florida Department of Health.
     - 2.1.3. Attain a score of no less than 80% correct on a test of current basic life support EMS protocols administered as part of the initial employment process and periodically as dictated by individual and systemic needs. If a score of less than 80% is received, the EMT may be retested upon request.
   - 2.2. Emergency Medical Technicians (EMT's) working within Volusia County under the auspices of the Medical Director will be required to meet the following educational requirements every two years.
     - 2.2.1. 24 hours of EMT or EMT-P refresher curriculum according to United States Department of Transportation standards, or equivalent as approved by the Volusia County EMS Medical Director.
3. Paramedic
   - 3.1. Paramedics working within Volusia County under the auspices of the Medical Director will be required to meet the following certification requirements.
     - 3.1.1. Maintain a current Paramedic certification issued by the Florida Department of Health.
     - 3.1.2. Maintain current CPR credential as allowed by the Medical Director and the Florida Department of Health.
     - 3.1.3. Maintain a current Advanced Cardiac Life Support credential as allowed by the Medical Director and the Florida Department of Health.
     - 3.1.4. Attend a 16-hour trauma course International Trauma Life Support (ITLS) or Prehospital Trauma Life Support (PHTLS) within one year from the date of new employment, or demonstrate certification in ITLS or PHTLS attained during paramedic training. Eight (8) hours of refresher training leading to recertification is required every two years.
     - 3.1.5. Attend a 16-hour pediatric course Pediatric Advanced Life Support (PALS) or Pediatric Education for the Prehospital Professional (PEPP) within one year from the date of new employment, or demonstrate certification in PALS or PEPP attained during paramedic training. Eight (8) hours of refresher training leading to recertification is required every two years.
     - 3.1.6. Attend a medical director-approved four-hour Paramedic Procedure Course within one year from the date of new employment, or demonstrate competency in these skills as attained during paramedic training. Such procedural course or laboratory attendance is required every two years.
     - 3.1.7. Attain a score of no less than 80% correct on a test of current advanced life support EMS protocols administered as part of the initial employment process and periodically as dictated by individual and/or systemic needs. If a score of less than 80% is received, the Paramedic may be retested upon request.

3.1.8. Flight paramedics working on Air-1 must complete a 32-hour Air Medical Crew Curriculum Course prior to assuming air medical duties.

3.2. Paramedics working within Volusia County under the auspices of the Medical Director will be required to meet the following educational requirements every two years.

3.2.1. 16 hours of EMT-P refresher curriculum according to DOT standards or equivalent as approved by the Volusia County Medical Director.

4. Special Considerations

4.1. If any First Responder, EMT, or Paramedic is not in compliance with the above regulations, the Paramedic or EMT shall not practice under the auspices of the Volusia County EMS Medical Director until such time as these requirements are met. The Medical Director reserves the right to waive any or all regulations due to extenuating circumstances.

4.2. Instructors for EMT and EMT-P refresher courses, or other continuing education activities, must be approved for teaching by the EMS Medical Director and the EMS officer of the appropriate agency. Whenever possible, within the structure of an agency, instructors should be certified at a higher level than the students (i.e. EMT's should receive instruction from and EMT-P as possible).

4.3. An EMT may receive credit for attendance at a combined EMT/EMT-P refresher course, in congruence with the system philosophy of viewing EMS as a continuum of care and not as two separate BLS and ALS systems. An EMT-P may not receive credit for attendance at an EMT refresher course.

4.4. All EMS agencies within Volusia County are encouraged to consider the use of nationally certified courses as a primary option to meet these requirements, and to utilize the resources of local EMS educational institutions to fulfill these needs.

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 300.04: Communications with medical control

1. Communications with medical control shall be made via a recorded radio communication on the 800 MHz system. Utilization of cellular telephones and other "off-line" communication is prohibited, barring extenuating circumstances. This is for the benefit of the patient, prehospital provider, and their respective agency.
2. Communications with medical control shall be comprehensive and brief.
3. Radio report format
   - 3.1. EMS unit identification;
   - 3.2. Patient age, sex and chief complaint;
   - 3.3. Brief history of the present illness or injury;
   - 3.4. Pertinent past medical history and pertinent medications
   - 3.5. Vital signs, to include: level of consciousness, pulse, respirations, blood pressure, oxygen saturation; and ECG rhythm, if appropriate;
   - 3.6. If pediatric patient, appropriate color from Broselow™ Pediatric Emergency Care tape;
   - 3.7. Care provided; and
   - 3.8. Request for orders, if necessary.
     - 3.8.1. All orders provided to field providers must be repeated to the EDMCP.

History: 01-2018 (reorganized); 07-2012; 02-2008.

This page left blank intentionally.

Section 300.05: Reserved

This page left blank intentionally.

Section 400.00: Adult protocols

This section contains prehospital standing orders and treatment protocols for adult patients.

This page left blank intentionally.

Section 400.01: Abdominal pain/Gastrointestinal hemorrhage

1. History
   - 1.1. Onset and duration
   - 1.2. Location and radiation
   - 1.3. Quality (sharp, intermittent, etc.)
   - 1.4. Menstrual history
   - 1.5. Previous trauma
   - 1.6. Surgery
   - 1.7. Abnormal ingestion
2. Symptoms
   - 2.1. Nausea
   - 2.2. Vomiting
   - 2.3. Constipation
   - 2.4. Melena
   - 2.5. Urinary problems
   - 2.6. Fever
   - 2.7. Diarrhea
3. Signs
   - 3.1. Gastrointestinal: abdominal tenderness, guarding, distention, pulsatile mass, emesis
   - 3.2. Skin: diaphoresis, pallor
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
   - 4.3. Obtain and record blood glucose measurement, if appropriate.
   - 4.4. Nothing by mouth.
5. Advanced life support
   - 5.1. Advanced airway/ventilatory management, if appropriate.
   - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
     - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
       - 5.2.1.1. Acquire right precordial leads in the presence of inferior wall injury.
   - 5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
   - 5.4. Establish vascular access, if appropriate.
     - 5.4.1. If clinical signs of hypoperfusion are evident, administer 250-500 milliliter fluid boluses of 0.9% sodium chloride. Repeat as necessary until signs resolve or two liters of crystalloid solution have been infused.
6. EDMCP contact and special considerations
   - 6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 02-2008.

Section 400.02: Adrenal insufficiency

1. History
    - 1.1. Onset and duration
    - 1.2. Past medical history
    - 1.3. Recent illness or trauma
    - 1.4. Stress event (i.e., medical procedure, pregnancy, etc.)
    - 1.5. Corticosteroid treatment by others prior to EMS arrival
2. Symptoms
    - 2.1. Weakness
    - 2.2. Nausea
    - 2.3. Vomiting
    - 2.4. Sudden/Severe lower back, abdominal, or leg pain
    - 2.5. Dehydration
    - 2.6. Diarrhea
3. Signs
    - 3.1. Vital signs: outside of normal parameters
    - 3.2. Neurological: altered mental status
4. Basic life support
    - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
    - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
    - 4.3. Obtain and record blood glucose measurement, if appropriate.
    - 4.4. Nothing by mouth.
5. Advanced life support
    - 5.1. Advanced airway/ventilatory management, if appropriate.
    - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
        - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
            - 5.2.1.1. Acquire right precordial leads in the presence of inferior wall injury.
    - 5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
    - 5.4. Establish vascular access, if appropriate.
        - 5.4.1. If clinical signs of hypoperfusion are evident, administer 250-500 milliliter fluid boluses of 0.9% sodium chloride. Repeat as necessary until signs resolve or two liters of crystalloid solution have been infused.
6. EDMCP contact and special considerations
    - 6.1. Contact the EDMCP with the above assessment and inquire whether methylprednisolone (Solu-Medrol), 2 milligrams per kilogram of body weight to a maximum dose of 125 milligrams, is desired.

History: 01-2018; 11-3-2016 (700.12).

This page left blank intentionally.

Section 400.03: Airway management

1. History
   - 1.1. Onset
   - 1.2. Duration
   - 1.3. Exacerbating or alleviating factors
   - 1.4. Oral exposure, including foreign bodies
   - 1.5. Previous trauma
   - 1.6. Environmental exposure
   - 1.7. Smoking
2. Symptoms
   - 2.1. Respiratory distress
3. Signs
   - 3.1. Neurological: altered mental status
   - 3.2. Respiratory: insufficient ventilatory effort, apnea, paradoxical chest wall movement
   - 3.3. Skin: cyanosis
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. Administer supplemental oxygen; maintain saturation of ninety-four percent, or greater (≥94%). The following sequence of interventions should be followed with the achievement of adequate ventilation and oxygenation as an acceptable stopping point:
     - 4.2.1. Bag-mask ventilation with oropharyngeal or nasopharyngeal airway.
     - 4.2.2. Non-cardiopulmonary arrest
       - 4.2.2.1. Continue bag-mask ventilation
     - 4.2.3. Cardiopulmonary arrest
       - 4.2.3.1. Dual lumen airway
       - 4.2.3.2. Continuous end-tidal carbon dioxide detection must occur in all instances of subpharyngeal airway adjunct placement. Utilization of a colorimetric device is acceptable for basic life support providers.
   - 4.3. Obtain and record blood glucose measurement, if appropriate.
5. Advanced life support
   - 5.1. Advanced airway/ventilatory management as needed. The following sequence of interventions should be followed with the achievement of adequate ventilation and oxygenation as an acceptable stopping point:
     - 5.1.1. Orotracheal intubation
       - 5.1.1.1. Only one attempt at orotracheal intubation may be made per patient (not per provider) in cardiopulmonary arrest. An attempt is defined as insertion of the laryngoscope blade past the patient's incisors.
       - 5.1.1.2. Only two attempts at orotracheal intubation may be made per patient (not per provider) in non-cardiopulmonary arrest. An

attempt is defined as insertion of the laryngoscope blade past the patient's incisors.

5.1.2. Dual lumen airway

5.1.3. Cricothyrotomy

5.1.4. Continuous end-tidal carbon dioxide monitoring must occur in all instances of subpharyngeal airway adjunct placement. Utilization of waveform capnography is required of all advanced life support providers.

5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.

5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.

5.2.1.1. Acquire right precordial leads in the presence of inferior wall injury.

5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography.

5.3.1. Continuous end-tidal carbon dioxide monitoring is required in all instances of subpharyngeal airway adjunct placement, including dual lumen airway placement, endotracheal intubation, and cricothyrotomy.

5.4. Establish vascular access, if appropriate.

5.4.1. If clinical signs of hypoperfusion are evident, administer 250-500 milliliter fluid boluses of 0.9% sodium chloride. Repeat as necessary until signs resolve or two liters of crystalloid solution have been infused.

5.5. Premedicate with lidocaine, 1.5 milligrams per kilogram intravenously or intraosseously, in the presence of cerebral insult.

5.5.1. Midazolam (Versed), 2-4 milligrams intravenously or intraosseously.

5.6. Etomidate (Amidate), 0.3 milligram per kilogram intravenously or intraosseously. Maximum dose is 20 milligrams.

5.7. Prehospital personnel that have written approval from the EMS medical director may utilize:

5.7.1. Succinylcholine (Anectine), 1.5 milligrams per kilogram intravenously or intraosseously.

6. EDMCP contact and special considerations

6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 07-2009; 05-2008 (memorandum 700.02); 03-2008 (memorandum 700.01); 02-2008.

Section 400.04: Allergic reactions

1. History
   - 1.1. Exposure, ingestion or contact (stings, drugs, foods, etc.)
   - 1.2. Prior allergic history
   - 1.3. Current medications
2. Symptoms
   - 2.1. Itching
   - 2.2. Rash
   - 2.3. Swelling
   - 2.4. Respiratory distress
   - 2.5. Abdominal pain
   - 2.6. Nausea, vomiting
   - 2.7. Syncope
   - 2.8. Weakness
   - 2.9. Anxiety
   - 2.10. Choking sensation
   - 2.11. Cough
3. Signs
   - 3.1. HEENT: tongue or upper airway (uvula) edema
   - 3.2. Respiratory: wheezing, stridor , hoarseness, cough, upper airway noise
   - 3.3. Skin: rash, redness, urticaria (hives), generalized or local edema
   - 3.4. Vital signs: hypotension
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
   - 4.3. Obtain and record blood glucose measurement, if appropriate.
   - 4.4. In the presence of a moderate allergic reaction or severe systemic reaction:
     - 4.4.1. Epi-Pen, 0.3 milligram intramuscularly, in patients greater than thirty (30) kilograms.
   - 4.5. In the presence of marine envenomation, irrigate affected area with vinegar.
5. Advanced life support
   - 5.1. Advanced airway/ventilatory management, if appropriate.
   - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
     - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
       - 5.2.1.1. Acquire right precordial leads in the presence of inferior wall injury.
   - 5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
   - 5.4. Establish vascular access, if appropriate.

5.4.1. If clinical signs of hypoperfusion are evident, administer 250-500 milliliter fluid boluses of 0.9% sodium chloride. Repeat as necessary until signs resolve or two liters of crystalloid solution have been infused.

5.4.2. If hypoperfusion does not respond to volume resuscitation, initiate dopamine infusion, 5-20 micrograms per kilogram per minute and titrate to effect.

5.5. Mild Reaction (Itching/Hives)

5.5.1. Diphenhydramine (Benadryl) 1 milligram per kilogram intravenously or intramuscularly (maximum 50 milligrams)

5.5.1.1. May be administered intramuscularly if no venous access available.

5.6. Moderate Reaction (Dyspnea, Wheezing, Chest tightness)

5.6.1. Epinephrine (1:1,000) 0.3 milligram intramuscularly.

5.6.2. Albuterol (Proventil) 2.5 milligrams nebulized. Ipratropium bromide (Atrovent), 0.5 milligram, may be added to the first albuterol nebulizer treatment.

5.6.2.1. Albuterol (Proventil) may be repeated to a total of three (3) treatments.

5.6.3. Diphenhydramine (Benadryl) 1 milligram per kilogram intravenously or intramuscularly (maximum 50 milligrams)

5.6.3.1. May be administered intramuscularly if no venous access available.

5.6.4. Methylprednisolone (Solu-Medrol) 125 milligrams intravenously.

5.7. Severe systemic reaction (BP <90 mmHg, stridor, severe respiratory distress)

5.7.1. Epinephrine (1:1,000) 0.3 milligram intramuscularly.

5.7.1.1. If patient does not show immediate improvement or continues to deteriorate, epinephrine (1:10,000) 0.5 milligram intravenously or intraosseously.

5.7.2. Albuterol (Proventil) 2.5 milligrams nebulized. Ipratropium bromide (Atrovent), 0.5 milligram, may be added to the first albuterol nebulizer treatment.

5.7.2.1. Albuterol (Proventil) may be repeated to a total of three (3) treatments.

5.7.3. Methylprednisolone (Solu-Medrol) 125 milligrams intravenously or intraosseously.

5.7.4. Diphenhydramine (Benadryl) 1 milligram per kilogram intravenously or intramuscularly (maximum 50 milligrams)

6. EDMCP contact and special considerations

6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 07-2009; 02-2008.

Section 400.05: Altered mental status

1. History
   - 1.1. Onset (acute vs. gradual)
   - 1.2. Duration
   - 1.3. History of trauma
   - 1.4. Description of scene (pills found, notes, syringes, etc.)
   - 1.5. Unusual odor in residence or at scene
   - 1.6. Recent emotional trauma or crisis (including suicidal or homicidal ideation)
   - 1.7. Drug or alcohol ingestion
   - 1.8. Toxic exposure
   - 1.9. Exertion or heat exposure
   - 1.10. Psychiatric disorders
   - 1.11. Medical illnesses (diabetes, seizures, etc.)
   - 1.12. Head trauma
   - 1.13. Drug overdose
   - 1.14. Seizures
   - 1.15. CVA
   - 1.16. Diabetes
   - 1.17. Other metabolic disorders, such as kidney or liver failure
   - 1.18. Sepsis
   - 1.19. Psychiatric illness
2. Symptoms
   - 2.1. Abrupt or bizarre behavior changes
3. Signs
   - 3.1. HEENT: breath odor (alcohol, ketones), pupil size and reactivity
   - 3.2. Neck: suspect c-spine injury in the presence of head trauma; nuchal rigidity (stiff neck)
   - 3.3. Neurological: decreased level of consciousness, abnormal pupil size, abnormal pupil symmetry and reactivity, seizures, focal deficits, hallucinations
   - 3.4. Other: evidence of trauma, medical alert tag
   - 3.5. Respiratory: abnormal breathing patterns
   - 3.6. Skin: needle tracks, cyanosis, diaphoresis
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
   - 4.3. Obtain and record blood glucose measurement.
   - 4.4. Nothing by mouth, unless patient is a known diabetic and is able to self-administer glucose paste, orange or apple juice
5. Advanced life support
   - 5.1. Advanced airway/ventilatory management, if appropriate.
   - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.

5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.

5.2.1.1. Acquire right precordial leads in the presence of inferior wall injury.

5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.

5.4. Establish vascular access, if appropriate.

5.4.1. If clinical signs of hypoperfusion are evident, administer 250-500 milliliter fluid boluses of 0.9% sodium chloride. Repeat as necessary until signs resolve or two liters of crystalloid solution have been infused.

5.4.2. If hypoperfusion does not respond to volume resuscitation, initiate dopamine infusion, 5-20 micrograms per kilogram per minute and titrate to effect.

5.5. Blood glucose <60 milligrams per deciliter.

5.5.1. Dextrose, 25 grams intravenously or intraosseously.

5.6. Blood glucose >300 milligrams per deciliter.

5.6.1. 0.9% sodium chloride, 250-500 milliliters fluid bolus.

5.6.2. Fluid bolus should be repeated if serial blood glucose reading remain >300 milligrams per deciliter.

6. EDMCP contact and special considerations

6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 02-2008.

Section 400.06: Behavioral

1. History
   - 1.1. Onset
   - 1.2. Duration
2. Symptoms
   - 2.1. Agitation
3. Signs
   - 3.1. CNS: bizarre behavior
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
   - 4.3. Obtain and record blood glucose measurement, if appropriate.
   - 4.4. Restrain as needed for patient and crew safety.
     - 4.4.1. EMS personnel are responsible for ensuring that the patient has an adequate airway and sufficient ventilatory effort during the application of restraint and throughout care.
5. Advanced life support
   - 5.1. Advanced airway/ventilatory management, if appropriate.
   - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
     - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
       - 5.2.1.1. Acquire right precordial leads in the presence of inferior wall injury.
   - 5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
   - 5.4. Establish vascular access, if appropriate.
     - 5.4.1. If clinical signs of hypoperfusion are evident, administer 250-500 milliliter fluid boluses of 0.9% sodium chloride. Repeat as necessary until signs resolve or two liters of crystalloid solution have been infused.
     - 5.4.2. If hypoperfusion does not respond to volume resuscitation, initiate dopamine infusion, 5-20 micrograms per kilogram per minute and titrate to effect.
   - 5.5. In the presence of excited delirium and if patient and crew safety dictate:
     - 5.5.1. Ketamine, 4 milligrams per kilogram, intramuscularly, to a maximum of 500 milligrams.
     - 5.5.2. Administration of ketamine requires continuous assessment, including pulse oximetry and waveform capnography.
6. EDMCP contact and special considerations
   - 6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

6.2. Field personnel are responsible for ensuring that all underlying medical problems are appropriately addressed and vigilant monitoring of the patient occurs to prevent positional asphyxia.

6.3. All chemically sedated patients require ambulance transport to an emergency department.

History: 01-2018; 07-2012; 07-2009; 05-2008 (memorandum 700.01); 02-2008.

Section 400.07: Carbon monoxide exposure and toxic inhalations

1. History
    - 1.1. Description of scene (enclosed space, broken containers, distinctive odors, signs of fire or smoke, poor ventilation)
    - 1.2. Nature of inhalant or combustible material
    - 1.3. Duration of exposure
    - 1.4. Time since exposure
    - 1.5. Medical illnesses (especially prior cardiac or respiratory disease)
2. Symptoms
    - 2.1. Burning sensation in mouth, nose, throat, or chest
    - 2.2. Eye irritation or burning
    - 2.3. Cough/wheezing
    - 2.4. Dyspnea/labored breathing
    - 2.5. Loss of consciousness
    - 2.6. Nausea and vomiting
    - 2.7. Headache
    - 2.8. Dizziness
    - 2.9. Weakness
3. Signs
    - 3.1. HEENT: singed nasal/facial hair, soot in mouth or sputum, pharyngeal inflammation
    - 3.2. Neurological: decreased level of consciousness, seizures, behavior changes
    - 3.3. Respiratory: laryngeal edema (stridor, hoarseness, brassy cough), rales, rhonchi, wheezing
    - 3.4. Skin: thermal burns, particularly of face, mouth, throat, and chest, cyanosis (cherry-red skin not reliable sign of CO poisoning)
4. Basic life support
    - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
    - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
    - 4.3. Obtain and record blood glucose measurement, if appropriate.
5. Advanced life support
    - 5.1. Advanced airway/ventilatory management, if appropriate.
    - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
        - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
            - 5.2.1.1. Acquire right precordial leads in the presence of inferior wall injury.
    - 5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
    - 5.4. Monitor and record carboxyhemoglobin levels, if available.
    - 5.5. Establish vascular access, if appropriate.

5.5.1. If clinical signs of hypoperfusion are evident, administer 250-500 milliliter fluid boluses of 0.9% sodium chloride. Repeat as necessary until signs resolve or two liters of crystalloid solution have been infused.

5.5.2. If hypoperfusion does not respond to volume resuscitation, initiate dopamine infusion, 5-20 micrograms per kilogram per minute and titrate to effect.

5.6. Cyanide poisoning (intended only for patients in cardiopulmonary arrest secondary to toxic inhalation in structure fires)

5.6.1. Hydroxocobalamin (Cyanokit) infusion, 5 grams over 15 minutes, if available.

6. EDMCP contact and special considerations

6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

6.2. Oxygen saturation readings may be falsely high in the presence of significantly elevated carbon monoxide levels. Don't be misled by "normal" SaO2 readings. Apply 100% oxygen if any indication of toxic inhalation, significant flame or smoke exposure, or respiratory distress noted).

6.3. Inhalation of toxic products of combustion or chemical irritants produces varying damage, depending on nature and duration of exposure.

6.4. Signs and symptoms may be minimal or absent initially; fatal burns to respiratory tract may occur with little or no external evidence; non-cardiogenic pulmonary edema may develop as late as 24 to 72 hours after inhalation of some irritant substances.

6.5. Suspect airway injury for burns sustained in confined space, if facial burns or singeing are present. Airway edema usually does not become severe until after the first hour, but it may develop rapidly in respiratory burns.

6.6. Many irritant gases (ammonia, nitrogen oxide, sulfur dioxide, sulfur trioxide) combine with water to form corrosive acid or alkali that cause burns of the upper respiratory tract with potential early upper airway compromise.

History: 01-2018; 07-2012; 02-2008.

Section 400.08: Cardiac dysrhythmia

1. History
   - 1.1. Onset (acute, gradual)
   - 1.2. Duration
   - 1.3. Precipitating events
   - 1.4. Medical illnesses (especially cardiac and respiratory disease)
2. Symptoms
   - 2.1. Chest pain/discomfort
   - 2.2. Dyspnea
   - 2.3. Nausea
3. Signs
   - 3.1. Cardiovascular: dysrhythmias
   - 3.2. Extremity: peripheral edema
   - 3.3. Neck: flat or distend neck veins.
   - 3.4. Neurological: anxiousness, decreased level of consciousness.
   - 3.5. Respiratory: rales, rhonchi, respiratory distress
   - 3.6. Skin: cool, diaphoretic, pallor, cyanosis.
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
   - 4.3. Obtain and record blood glucose measurement, if appropriate.
5. Advanced life support
   - 5.1. Advanced airway/ventilatory management, if appropriate.
   - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
     - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
       - 5.2.1.1. Acquire right precordial leads in the presence of inferior wall injury.
   - 5.3. Establish vascular access, if appropriate.
     - 5.3.1. If clinical signs of hypoperfusion are evident, administer 250-500 milliliter fluid boluses of 0.9% sodium chloride. Repeat as necessary until signs resolve or two liters of crystalloid solution have been infused.
     - 5.3.2. If hypoperfusion does not respond to volume resuscitation, initiate dopamine infusion, 5-20 micrograms per kilogram per minute and titrate to effect.
   - 5.4. Ventricular ectopy (>6 premature ventricular complexes per minute, couplets, multi-formed premature ventricular complexes, runs of ventricular tachycardia and symptomatic)
     - 5.4.1. Assess patient for chest pain, dyspnea, hypotension or other symptoms of ischemic cardiac disease. If asymptomatic, observe frequency of ventricular ectopy and patient status.
     - 5.4.2. Lidocaine, 1-1.5 milligrams per kilogram, intravenously.

5.4.2.1. Repeat lidocaine, 0.5-0.75 milligram per kilogram intravenously, bolus every eight to ten minutes if rhythm persists to a maximum of 3 milligrams per kilogram.

5.4.3. If dysrhythmia resolves, begin lidocaine infusion, 2-4 milligrams per minute, titrating to effect.

5.5. Bradycardias (sinus bradycardia, junctional rhythms, and heart blocks):

5.5.1. Hemodynamically stable

5.5.1.1. Observe for deterioration.

5.5.2. Hemodynamically unstable

5.5.2.1. Atropine, 0.5-1 milligram. Repeat atropine, 0.5-1 milligram intravenously, bolus every three to five minutes if rhythm persists to a maximum of 3 milligrams.

5.5.2.2. Transcutaneous pacemaker.

5.5.2.2.1. Midazolam (Versed), 2 milligrams intravenously or intraosseously.

5.5.2.2.2. May repeat Midazolam (Versed) once for a maximum of 4 milligrams.

5.5.2.2.3. If unable to obtain vascular access, midazolam (Versed), 2 milligrams, intramuscularly.

5.5.2.3. Pacing should be considered as first line therapy in the presence of overt hemodynamic instability.

5.5.2.4. Epinephrine (1:1,000) infusion, 2-10 micrograms per minute. Titrate to effect.

5.6. Tachycardias with a narrow complex (atrial fibrillation, atrial flutter, and paroxysmal supraventricular tachycardia (PSVT)).

5.6.1. Hemodynamically stable (awake and oriented x 4; lack of chest pain, hypotension or other signs of shock). Observe for deterioration.

5.6.2. Atrial fibrillation or atrial flutter: hemodynamically unstable

5.6.2.1. Diltiazem (Cardizem), 20 milligrams intravenously.

5.6.2.2. Synchronized cardioversion

5.6.2.2.1. Midazolam (Versed), 2 milligrams intravenously or intraosseously.

5.6.2.2.1.1. May repeat Midazolam (Versed) once for a maximum of 4 milligrams.

5.6.2.2.1.2. If unable to obtain vascular access, midazolam (Versed), 2 milligrams, intramuscularly.

5.6.2.2.2. Cardiovert at manufacturer recommended joule setting for specific device.

5.6.2.2.3. If dysrhythmia unresolved, perform all subsequent cardioversions at manufacturer recommended joule setting for specific device.

5.6.3. Paroxysmal supraventricular tachycardia (PSVT) : hemodynamically unstable

5.6.3.1. Adenosine (Adenocard), 6 milligrams intravenously.

5.6.3.1.1. Adenosine (Adenocard), 12 milligrams intravenously, if initial dose fails to control rate.

5.6.3.2. Diltiazem (Cardizem), 20 milligrams intravenously.

5.6.3.3. Synchronized cardioversion

5.6.3.3.1. Midazolam (Versed), 2 milligrams intravenously or intraosseously.

5.6.3.3.1.1. May repeat Midazolam (Versed) once for a maximum of 4 milligrams.

5.6.3.3.1.2. If unable to obtain vascular access, midazolam (Versed), 2 milligrams, intramuscularly.

5.6.3.3.2. Cardiovert at manufacturer recommended joule setting for specific device.

5.6.3.3.3. If dysrhythmia unresolved, perform all subsequent cardioversions at manufacturer recommended joule setting for specific device.

5.7. Tachycardias with a wide complex

5.7.1. Wide-complex tachycardic dysrhythmias include:

5.7.1.1. Wide complex tachycardia of unknown origin

5.7.1.2. Ventricular tachycardia (with a pulse)

5.7.2. Hemodynamically stable

5.7.2.1. Amiodarone (Cordarone), 150 milligrams infused over ten minutes.

5.7.2.2. If dysrhythmia persists or reoccurs after ten minutes, lidocaine, 1-1.5 milligrams per kilogram intravenously.

5.7.2.2.1. Repeat doses of lidocaine, 0.5-0.75 milligram per kilogram intravenously, every eight to ten minutes if rhythm persists to a maximum of 3 milligrams per kilogram.

5.7.2.2.2. If dysrhythmia resolves, begin lidocaine infusion, 2-4 milligrams per minute, titrating to effect.

5.7.3. Hemodynamically unstable

5.7.3.1. Synchronized cardioversion

5.7.3.1.1. Midazolam (Versed), 2 milligrams intravenously or intraosseously.

5.7.3.1.1.1. May repeat Midazolam (Versed) once for a maximum of 4 milligrams.

5.7.3.1.1.2. If unable to obtain vascular access, midazolam (Versed), 2 milligrams, intramuscularly.

5.7.3.1.2. Cardiovert at manufacturer recommended joule setting for specific device.

5.7.3.1.3. If dysrhythmia unresolved, perform all subsequent cardioversions at manufacturer recommended joule setting for specific device.

5.7.3.1.4. If dysrhythmia resolves, administer lidocaine, 1-1.5 milligrams per kilogram intravenously.

5.7.3.1.4.1. Begin lidocaine infusion, 2-4 milligrams per minute, titrating to effect.

6. EDMCP contact and special considerations

6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 07-2009; 03-2008 (memorandum 700.01); 02-2008.

Section 400.09: Cardiopulmonary arrest

1. History
    - 1.1. Onset (acute, gradual)
    - 1.2. Duration
    - 1.3. Precipitating events
    - 1.4. Medical illnesses (especially cardiac and respiratory disease)
2. Symptoms
    - 2.1. None
3. Signs
    - 3.1. Respiratory: absent
    - 3.2. Vital Signs: absent
4. Basic life support
    - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
    - 4.2. Witnessed arrest
        - 4.2.1. If arrest is witnessed by prehospital personnel, apply automatic external defibrillator and defibrillate, if indicated.
        - 4.2.2. Begin cardiopulmonary resuscitation.
            - 4.2.2.1. Mechanical CPR devices are an acceptable alternative to manual compressions. Use of these devices is encouraged if they are available during transport.
            - 4.2.2.2. Interruption of chest compressions should be limited to the performance of therapies that require doing so.
    - 4.3. Unwitnessed arrest
        - 4.3.1. Begin cardiopulmonary resuscitation.
            - 4.3.1.1. Mechanical CPR devices are an acceptable alternative to manual compressions. Use of these devices is encouraged if they are available during transport.
            - 4.3.1.2. Interruption of chest compressions should be limited to the performance of therapies that require doing so.
        - 4.3.2. Provide positive pressure ventilation with supplemental oxygen.
    - 4.4. Apply automatic external defibrillator and defibrillate, if indicated.
    - 4.5. Obtain and record blood glucose measurement, if appropriate.
5. Advanced life support
    - 5.1. Advanced airway/ventilatory management, if appropriate.
    - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip.
    - 5.3. Establish vascular access, if appropriate.
    - 5.4. Asystole
        - 5.4.1. Confirm asystole in two leads.
        - 5.4.2. Epinephrine (1:10,000), 1 milligram intravenously or intraosseously.
            - 5.4.2.1. Repeat epinephrine (1:10,000), 1 milligram intravenously or intraosseously every three to five minutes so long as rhythm persists.
        - 5.4.3. Consider:

5.4.3.1. Transcutaneous pacemaker.
5.4.3.2. Calcium chloride (10%), 1 gram intravenously or intraosseously, if suspicious of calcium channel blocker overdose or hyperkalemia.
5.4.3.3. Dextrose, 25 grams intravenously or intraosseously, bolus if blood glucose is <60 milligrams per deciliter.
5.4.3.4. Naloxone (Narcan), 2 milligrams intravenously or intraosseously, if opiate overdose suspected. Naloxone (2 milligrams intravenously or intraosseously) may be repeated once.
5.4.3.5. Sodium bicarbonate, 1 milliequivalent per kilogram intravenously or intraosseously.
5.4.3.6. Consider termination of resuscitative efforts.

5.5. Pulseless Electrical Activity
5.5.1. Epinephrine (1:10,000), 1 milligram intravenously or intraosseously.
5.5.1.1. Repeat epinephrine (1:10,000), 1 milligram intravenously or intraosseously every three to five minutes if rhythm persists.
5.5.2. Consider underlying etiology:
5.5.2.1. Cardiogenic shock or pericardial tamponade
5.5.2.1.1. Establish second vascular access site and provide volume resuscitation in 500 milliliter increments.
5.5.2.1.2. Consider dopamine infusion, 5-20 micrograms per kilogram per minute infusion.
5.5.2.2. Tension pneumothorax
5.5.2.2.1. Perform needle thoracostomy
5.5.2.3. Hypovolemia
5.5.2.3.1. Provide adequate volume resuscitation
5.5.2.4. Hypoxemia
5.5.2.4.1. Ensure adequate ventilation and oxygenation
5.5.2.5. If suspicious of calcium channel blocker toxicity or hyperkalemia:
5.5.2.5.1. Calcium chloride (10%), 1 gram intravenously or intraosseously.
5.5.2.6. Other:
5.5.2.6.1. Dextrose, 25 grams intravenously or intraosseously, if blood glucose is <60 milligrams per deciliter.
5.5.2.6.2. Naloxone (Narcan), 2 milligrams intravenously or intraosseously. Naloxone (Narcan), 2 milligrams intravenously or intraosseously, may be repeated once.
5.5.2.6.3. Sodium bicarbonate, 1 milliequivalent per kilogram, intravenously or intraosseously.

5.6. Ventricular Fibrillation
5.6.1. Defibrillate.
5.6.1.1. Defibrillate at manufacturer recommended joule setting for specific device.

5.6.1.2. If dysrhythmia unresolved, perform all subsequent defibrillations at manufacturer recommended joule setting for specific device.

5.6.1.3. A pharmaceutical intervention should be delivered between defibrillations.

5.6.2. Epinephrine (1:10,000), 1 milligram intravenously or intraosseously.

5.6.2.1. Repeat epinephrine (1:10,000), 1 milligram intravenously or intraosseously every three to five minutes if rhythm persists.

5.6.3. Antidysrhythmic

5.6.3.1. Amiodarone (Cordarone), 300 milligrams intravenously.

5.6.3.1.1. Repeat amiodarone (Cordarone), 150 milligrams intravenously once after ten minutes, if unresolved.

5.6.3.2. If dysrhythmia persists or reoccurs after ten minutes, lidocaine, 1.5 milligrams per kilogram.

5.6.3.2.1. Repeat lidocaine, 0.75 milligram per kilogram intravenously or intraosseously every eight to ten minutes if rhythm persists to a maximum of 3 milligrams per kilogram.

5.6.3.2.2. If dysrhythmia resolves, begin lidocaine infusion, 2-4 milligrams per minute, titrating to effect.

5.6.4. In the presence of recurrent or refractory ventricular fibrillation:

5.6.4.1. Dextrose, 25 grams intravenously or intraosseously if blood glucose is <60 milligrams per deciliter.

5.6.4.2. Magnesium sulfate, 2 grams intravenously or intraosseously. Consider early if torsades de pointes is identified.

5.6.4.3. Naloxone (Narcan), 2 milligrams intravenously or intraosseously. Naloxone (Narcan), 2 milligrams intravenously or intraosseously, may be repeated once.

5.6.4.4. Sodium bicarbonate, 1 milliequivalent per kilogram intravenously or intraosseously.

5.6.5. If suspicious of calcium channel blocker toxicity or hyperkalemia:

5.6.5.1. Calcium chloride (10%), 1 gram intravenously or intraosseously.

5.7. Ventricular tachycardia without pulses

5.7.1. Refer to ventricular fibrillation protocol.

6. EDMCP contact and special considerations

6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 10-2011 (memorandum 700.09); 06-2010 (memorandum 700.03); 07-2009; 02-2008.

This page left blank intentionally.

Section 400.10: Chest pain/Acute coronary syndrome

1. History
   - 1.1. Onset and duration
   - 1.2. Location and radiation
   - 1.3. Quality (pleuritic, heavy, crushing, etc.)
   - 1.4. Precipitating (rest, exercise, emotional stress, etc.) and relieving factors (nitro, antacids, etc.)
   - 1.5. Medical illnesses (especially cardiac and respiratory disease)
   - 1.6. Smoking
   - 1.7. Recent cardiac-related surgery
2. Symptoms
   - 2.1. Diaphoresis
   - 2.2. Shortness of breath
   - 2.3. Cough and sputum production
   - 2.4. Nausea, vomiting
   - 2.5. Fever
   - 2.6. Chills
3. Signs
   - 3.1. Cardiac: neck vein distention, irregular pulse
   - 3.2. Respiratory: rales, rhonchi, wheezing, chest wall tenderness
   - 3.3. Skin: diaphoresis, cyanosis, peripheral edema
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
   - 4.3. Nitroglycerin, as prescribed to the patient, assist patient in self-administering.
     - 4.3.1. Repeat patient assisted nitroglycerin administration every three to five minutes as needed in the presence of continued chest pain.
     - 4.3.2. Nitroglycerin is contraindicated:
       - 4.3.2.1. Systolic blood pressure is less than 90 mmHg;
       - 4.3.2.2. Heart rate is less than 50;
       - 4.3.2.3. Patient has taken an agent used in the treatment of erectile dysfunction:
         - 4.3.2.3.1. Sildenafil citrate (Viagra), tadalafil (Cialis), or vardenafil (Levitra) within twenty-four hours.
   - 4.4. Aspirin (chewable), 324 milligrams, chewed and swallowed. If patient has taken a lesser dose of an aspirin product in the previous twelve hours, administer balance to achieve a total dose of 324 milligrams. Contraindicated if the patient has taken any of the following within the past twelve hours:
     - 4.4.1. Warfarin (Coumadin);
     - 4.4.2. Clopidigel (Plavix);
     - 4.4.3. Ticlopidine (Ticlid); or

4.4.4. Dipyridamole (Aggrenox).

5. Advanced life support
   - 5.1. Advanced airway/ventilatory management, if appropriate.
   - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
     - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
       - 5.2.1.1. Acquire right precordial leads in the presence of inferior wall injury.
   - 5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
   - 5.4. Establish vascular access, if appropriate.
     - 5.4.1. If clinical signs of hypoperfusion are evident, administer 250-500 milliliter fluid boluses of 0.9% sodium chloride. Repeat as necessary until signs resolve or two liters of crystalloid solution have been infused.
     - 5.4.2. If hypoperfusion does not respond to volume resuscitation, initiate dopamine infusion, 5-20 micrograms per kilogram per minute and titrate to effect.
   - 5.5. Nitroglycerin, 0.4 milligram sublingually.
     - 5.5.1. Nitroglycerin may be repeated every three to five minutes as needed in the presence of continued chest pain.
     - 5.5.2. Nitroglycerin is contraindicated:
       - 5.5.2.1. Systolic blood pressure is less than 90 mmHg;
       - 5.5.2.2. Heart rate is less than 50;
       - 5.5.2.3. Patient has taken an agent used in the treatment of erectile dysfunction:
         - 5.5.2.3.1. Sildenafil citrate (Viagra), tadalafil (Cialis), or vardenafil (Levitra) within twenty-four hours.
       - 5.5.2.4. Use with caution in the presence of right ventricular wall injury or suspected unstable angina.
   - 5.6. Morphine sulfate, 2 milligrams intravenously.
     - 5.6.1. May be repeated every five minutes to a maximum of 10 milligrams.
       - 5.6.1.1. Contraindicated in the presence of:
         - 5.6.1.1.1. Systolic blood pressure is less than 90 mmHg;
         - 5.6.1.1.2. Use with caution in the presence of right ventricular wall injury.
6. EDMCP contact and special considerations.
   - 6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 10-2011 (memorandum 700.09); 07-2009; 02-2008.

Section 400.11: Decompression sickness/Dysbarism

1. History
   - 1.1. Scuba Diving: Air tank failure; rapid ascent; prolonged/repetitive dive profile
   - 1.2. Altitude: Depressurization or inadequate pressurization while flying at high altitude; high altitude exposure after scuba diving.
2. Symptoms
   - 2.1. Chest pain
   - 2.2. Dyspnea
   - 2.3. Cough
   - 2.4. Joint pain
   - 2.5. Cramps
   - 2.6. Headache
   - 2.7. Dizziness
   - 2.8. Fatigue
   - 2.9. Nausea & vomiting
   - 2.10. Paralysis
3. Signs
   - 3.1. Neurological: confusion, coma, seizures, spinal deficits (hemi/para/multiplegias)
   - 3.2. Respiratory: cough, respiratory distress without pneumothorax (decompression illness), pneumothorax, tension pneumothorax (air embolism)
   - 3.3. Skin: tenderness, mottling, rash from bubble emboli, subcutaneous emphysema
   - 3.4. Vital signs: hypotension (severe cases)
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
   - 4.3. Obtain and record blood glucose measurement, if appropriate.
   - 4.4. Maintain patient in a supine position.
5. Advanced life support
   - 5.1. Advanced airway/ventilatory management, if appropriate.
   - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
     - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
       - 5.2.1.1. Acquire right precordial leads in the presence of inferior wall injury.
   - 5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
   - 5.4. Establish vascular access, if appropriate.
     - 5.4.1. If clinical signs of hypoperfusion are evident, administer 250-500 milliliter fluid boluses of 0.9% sodium chloride. Repeat as necessary until signs resolve or two liters of crystalloid solution have been infused.

5.4.2. If hypoperfusion does not respond to volume resuscitation, initiate dopamine infusion, 5-20 micrograms per kilogram per minute and titrate to effect.

5.5. Observe for signs of tension pneumothorax.

5.5.1. Pleural decompression as needed.

6. EDMCP contact and special considerations

6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 02-2008.

Section 400.12: Dyspnea

1. History
    - 1.1. Onset (acute or gradual)
    - 1.2. Duration
    - 1.3. Exacerbating or alleviating factors
    - 1.4. Oral exposure/foreign bodies (toys, drugs, alcohol, food, chemicals, etc.)
    - 1.5. Trauma
    - 1.6. Environmental exposure
    - 1.7. Smoking
    - 1.8. Medical illnesses (especially COPD, asthma, diabetes, CHF, thrombophlebitis)
    - 1.9. Home oxygen
    - 1.10. Drug or alcohol use
2. Symptoms
    - 2.1. Chest pain (location, quality, position)
    - 2.2. Dyspnea
    - 2.3. Cough
    - 2.4. Sputum production or change
    - 2.5. Paresthesia in hands or mouth
    - 2.6. Calf pain (Homan's Sign)
    - 2.7. Fever
3. Signs
    - 3.1. Cardiovascular: neck vein distention, dysrhythmias
    - 3.2. HEENT: upper airway, facial edema, drooling, nasal flaring
    - 3.3. Neurological: decreased level of consciousness, restlessness, slurred speech
    - 3.4. Respiratory: stridor, rales, rhonchi, wheezing, decreased breath sounds, crepitus, subcutaneous emphysema, accessory muscle usage
    - 3.5. Skin: cyanosis, peripheral edema, hives, evidence of neck or chest trauma
4. Basic life support
    - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
    - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
    - 4.3. Obtain and record blood glucose measurement, if appropriate.
    - 4.4. Assist with self-administration with bronchodilators.
5. Advanced life support
    - 5.1. Advanced airway/ventilatory management, if appropriate.
    - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
        - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
            - 5.2.1.1. Acquire right precordial leads in the presence of inferior wall injury.
    - 5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
    - 5.4. Establish vascular access, if appropriate.

5.4.1. If clinical signs of hypoperfusion are evident, administer 250-500 milliliter fluid boluses of 0.9% sodium chloride. Repeat as necessary until signs resolve or two liters of crystalloid solution have been infused.

5.4.2. If hypoperfusion does not respond to volume resuscitation, initiate dopamine infusion, 5-20 micrograms per kilogram per minute and titrate to effect.

5.5. If acute bronchospasm/asthma (excluding CHF and COPD)

5.5.1. Albuterol (Proventil), 2.5 milligrams, nebulized. Ipratropium bromide (Atrovent), 0.5 milligram, may be added to the first albuterol nebulizer treatment.

5.5.1.1. Albuterol (Proventil) may be repeated to a total of three (3) treatments.

5.5.2. Methylprednisolone (Solu-Medrol), 125 milligrams, intravenously.

5.5.3. In severe or refractory cases: epinephrine (1:1,000) 0.3 milligram, intramuscuarly.

5.5.4. In the presence of a deteriorating or non-responding asthmatic, magnesium sulfate, 2 grams in 50 milliliters of 0.9% sodium chloride, infused over twenty to thirty minutes.

5.6. If bronchospasm/COPD

5.6.1. Albuterol (Proventil), 2.5 milligrams, nebulized. Ipratropium bromide (Atrovent), 0.5 milligram, may be added to the first albuterol nebulizer treatment.

5.6.1.1. Albuterol (Proventil) may be repeated to a total of three (3) treatments.

5.6.2. Continuous positive airway pressure (CPAP).

5.6.2.1. Utilize 7.5 cm H2O valve.

5.6.2.2. Adjust oxygen flow as necessary; maintain saturation between of ninety-four percent, or greater (≥94%) in the adequately breathing patient.

5.6.3. Methylprednisolone (Solu-Medrol), 125 milligrams, intravenously.

5.7. If acute pulmonary edema

5.7.1. Nitroglycerin, 0.4 milligram, sublingually.

5.7.1.1. Nitroglycerin may be repeated every three to five minutes as needed in the presence of chest pain.

5.7.1.2. Nitroglycerin is contraindicated:

5.7.1.2.1. Systolic blood pressure is less than 90 mmHg;

5.7.1.2.2. Patient has taken an agent used in the treatment of erectile dysfunction:

5.7.1.2.2.1. Sildenafil citrate (Viagra), tadalafil (Cialis), or vardenafil (Levitra) within twenty-four hours.

5.7.1.2.3. Use with caution in the presence of right ventricular wall injury.

5.7.2. Continuous positive airway pressure (CPAP).

5.7.2.1. Utilize 7.5 cm H2O valve.

5.7.2.2. Adjust oxygen flow as necessary; maintain saturation between of ninety-four percent, or greater (≥94%) in the adequately breathing patient.

5.7.3. Furosemide (Lasix), 1 milligram per kilogram intravenously or intraosseously. Minimum dose is 40 milligrams. Maximum dose not to exceed 100 milligrams.

5.7.4. Morphine sulfate, 2 milligrams intravenously. May be repeated every five minutes to a maximum of 10 milligrams.

5.7.4.1. Contraindicated in the presence of:

5.7.4.1.1. Systolic blood pressure is less than 90 mmHg;

5.7.4.1.2. Use with caution in the presence of right ventricular wall injury.

5.7.5. Albuterol (Proventil), 2.5 milligrams, nebulized. Ipratropium bromide (Atrovent), 0.5 milligram, may be added to the first albuterol nebulizer treatment.

5.7.5.1. Albuterol (Proventil) may be repeated to a total of three (3) treatments.

6. EDMCP contact and special considerations

6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 400.13: Hypertension

1. History
    - 1.1. Onset and duration
    - 1.2. History of hypertension
    - 1.3. Seizures
    - 1.4. Medical illnesses (especially DM, respiratory and cardiac disease, CVA, TIA)
    - 1.5. Pre-eclampsia
    - 1.6. Drug or alcohol use
    - 1.7. Head trauma
2. Symptoms
    - 2.1. Headache
    - 2.2. Nose bleed
    - 2.3. Dizziness
    - 2.4. Syncope
    - 2.5. Weakness
    - 2.6. Speech difficulties
    - 2.7. Abdominal pain
    - 2.8. Visual disturbances
    - 2.9. Projectile vomiting
3. Signs
    - 3.1. Cardiovascular: distended neck veins, extremity edema, pulmonary edema
    - 3.2. Neurological: decreased level of consciousness, impaired movement, symmetry of face and extremities, seizures, unequal pupils
    - 3.3. Skin: flushed, diaphoresis, pallor
4. Basic life support
    - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
    - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
    - 4.3. Obtain and record blood glucose measurement, if appropriate.
5. Advanced life support
    - 5.1. Advanced airway/ventilatory management, if appropriate.
    - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
        - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
            - 5.2.1.1. Acquire right precordial leads in the presence of inferior wall injury.
    - 5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
    - 5.4. Establish vascular access, if appropriate.
6. EDMCP contact and special considerations
    - 6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 02-2008.

Section 400.14: Hyperthermia

1. History
    - 1.1. Onset and duration
    - 1.2. Patient age
    - 1.3. Patient attire
    - 1.4. Activity level (exercise induced?)
    - 1.5. Air temperature, humidity
    - 1.6. Drug or alcohol use
    - 1.7. Trauma
    - 1.8. Past medical history
    - 1.9. Obesity
2. Symptoms
    - 2.1. Chills
    - 2.2. Weakness
    - 2.3. Loss of consciousness, behavioral changes, delirium
    - 2.4. Sweats
    - 2.5. Muscle cramps
    - 2.6. Headache
    - 2.7. Thirst
    - 2.8. Nausea/vomiting
    - 2.9. Visual disturbances
3. Signs
    - 3.1. Neck: stiff
    - 3.2. Neurological: restlessness, confusion, delirium, psychosis, coma, seizures
    - 3.3. Respiratory: rales, wheezing
    - 3.4. Skin: warm to hot, pallor or flushing, moist or dry
4. Basic life support
    - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
    - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
    - 4.3. Obtain and record blood glucose measurement, if appropriate.
    - 4.4. Move patient to cooler environment
    - 4.5. Heat Cramps
        - 4.5.1. Oral fluids as tolerated.
        - 4.5.2. Apply cold packs, sponge with cool water and fan.
    - 4.6. Heat exhaustion
        - 4.6.1. Keep patient supine
        - 4.6.2. Remove outer clothing
        - 4.6.3. Apply cold packs, sponge with cool water and fan.
    - 4.7. Heat Stroke
        - 4.7.1. Semi-Fowlers, with head elevated 15-30 degrees.
        - 4.7.2. Apply cold packs, sponge with cool water and fan.

5. Advanced life support
    - 5.1. Advanced airway/ventilatory management, if appropriate.
    - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
        - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
            - 5.2.1.1. Acquire right precordial leads in the presence of inferior wall injury.
    - 5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
    - 5.4. Establish vascular access, if appropriate.
        - 5.4.1. If clinical signs of hypoperfusion are evident, administer 250-500 milliliter fluid boluses of 0.9% sodium chloride. Repeat as necessary until signs resolve or two liters of crystalloid solution have been infused.
6. EDMCP contact and special considerations
    - 6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 02-2008.

Section 400.15: Hypothermia

1. History
   - 1.1. Length of exposure
   - 1.2. Wet or dry
   - 1.3. Air/water temperature
   - 1.4. Wind
   - 1.5. History and timing of changes in mental status
   - 1.6. Drug or alcohol use
   - 1.7. Medical illnesses (cirrhosis, epilepsy, diabetes)
2. Symptoms
   - 2.1. Extremity pain
   - 2.2. Paresthesia (frostbite)
   - 2.3. Shivering
3. Signs
   - 3.1. Neurological: decreased level of consciousness, coma
   - 3.2. Skin: evidence of local trauma (blanching, blistering) erythema of extremities, ears, nose
   - 3.3. Vital Signs: bradycardia, hypotension, decreased respiratory rate
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
   - 4.3. Obtain and record blood glucose measurement, if appropriate.
   - 4.4. Remove wet garments and protect from further heat loss.
   - 4.5. Avoid rough handling and excessive agitation.
5. Advanced life support
   - 5.1. Advanced airway/ventilatory management, if appropriate.
   - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate. Dysrhythmias may not respond to treatment in the presence of hypothermia.
   - 5.3. Acquire and evaluate 12 lead ECG, if appropriate.
   - 5.4. Acquire right precordial leads in the presence of inferior wall injury.
   - 5.5. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
   - 5.6. Establish vascular access, if appropriate.
     - 5.6.1. If clinical signs of hypoperfusion are evident, administer 250-500 milliliter fluid boluses of 0.9% sodium chloride. Repeat as necessary until signs resolve or two liters of crystalloid solution have been infused
     - 5.6.2. Make reasonable efforts to warm 0.9% sodium chloride before administration.
       - 5.6.2.1. If hypoperfusion does not respond to volume resuscitation, initiate dopamine infusion, 5-20 micrograms per kilogram per minute and titrate to effect.

5.7. For pain associated with localized injury (frostbite):
5.7.1. Morphine sulfate, 2 milligrams intravenously.
5.7.1.1. May be repeated every five minutes to a maximum of 10 milligrams.

6. EDMCP contact and special considerations
6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 07-2009; 02-2008.

Section 400.16: Nausea

1. History
   - 1.1. Isolated nausea.
   - 1.2. Nausea following the administration of prehospital medications.
2. Symptoms
   - 2.1. Nausea
3. Signs
   - 3.1. Gastrointestinal: vomiting
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
   - 4.3. Obtain and record blood glucose measurement, if appropriate.
5. Advanced life support
   - 5.1. Advanced airway/ventilatory management, if appropriate.
   - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
     - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
       - 5.2.1.1. Acquire right precordial leads in the presence of inferior wall injury.
   - 5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
   - 5.4. Establish vascular access, if appropriate.
     - 5.4.1. If clinical signs of hypoperfusion are evident, administer 250-500 milliliter fluid boluses of 0.9% sodium chloride. Repeat as necessary until signs resolve or two liters of crystalloid solution have been infused
     - 5.4.2. If hypoperfusion does not respond to volume resuscitation, initiate dopamine infusion, 5-20 micrograms per kilogram per minute and titrate to effect.
   - 5.5. In patients greater than forty kilograms, administer ondansetron (Zofran), 4 milligrams intravenously over two to five minutes or intramuscularly if intravenous access cannot be obtained.
6. EDMCP contact and special considerations
   - 6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012 (new).

This page left blank intentionally.

Section 400.17: Near-drowning

1. History
   - 1.1. Length of submersion
   - 1.2. Fresh or salt water
   - 1.3. Warm or cold water
   - 1.4. Water depth
   - 1.5. Water contamination
   - 1.6. Trauma (diving accident, scuba diving, child abuse)
2. Symptoms
   - 2.1. Cough
   - 2.2. Dyspnea
   - 2.3. Pleuritic chest pain
   - 2.4. Vomiting
3. Signs
   - 3.1. Cardiovascular: dysrhythmias
   - 3.2. HEENT: head or neck trauma
   - 3.3. Neurological: seizures, decreased level of consciousness
   - 3.4. Respiratory: rales, rhonchi, wheezing, frothy sputum, respiratory distress, airway obstruction
   - 3.5. Skin: cyanosis, pallor, cold
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
   - 4.3. Obtain and record blood glucose measurement, if appropriate.
   - 4.4. Spinal immobilization, if suspicion of trauma exists.
   - 4.5. Protect from heat loss
5. Advanced life support
   - 5.1. Advanced airway/ventilatory management, if appropriate.
   - 5.2. Continuous positive airway pressure (CPAP), in the presence of pulmonary edema.
     - 5.2.1. Utilize 7.5 cm H_2O valve.
     - 5.2.2. Adjust oxygen flow as necessary; maintain saturation between of ninety-four percent, or greater (≥94%) in the adequately breathing patient.
   - 5.3. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
     - 5.3.1. Acquire and evaluate 12 lead ECG, if appropriate.
       - 5.3.1.1. Acquire right precordial leads in the presence of inferior wall injury.
   - 5.4. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
   - 5.5. Establish vascular access, if appropriate.

5.5.1. If clinical signs of hypoperfusion are evident, administer 250-500 milliliter fluid boluses of 0.9% sodium chloride. Repeat as necessary until signs resolve or two liters of crystalloid solution have been infused.

5.5.2. If hypoperfusion does not respond to volume resuscitation, initiate dopamine infusion, 5-20 micrograms per kilogram per minute and titrate to effect.

5.6. If evidence of pulmonary edema:

5.6.1. Furosemide (Lasix), 40 milligrams intravenously, in the absence of hypotension.

6. EDMCP contact and special considerations

6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 02-2008.

Section 400.18: Obstetrical

1. History
   - 1.1. Due date
   - 1.2. Ruptured membranes
   - 1.3. Vaginal bleeding
   - 1.4. Prenatal care
   - 1.5. Age
   - 1.6. Number of prior pregnancies (gravida), number of live births (para), number of miscarriages (abortion)
   - 1.7. Problems with current pregnancy
   - 1.8. Problems with previous pregnancies
   - 1.9. Last menstrual period
2. Symptoms
   - 2.1. Location of pain
   - 2.2. Regularity and timing of contractions
   - 2.3. Urge to push
   - 2.4. Bleeding
   - 2.5. Swelling of face or extremities
3. Signs
   - 3.1. Genitourinary: contraction and relaxation of uterus, vaginal bleeding or fluid (color, odor), crowning, abnormal presentation (foot, arm, cord)
   - 3.2. Skin: facial, extremity edema
   - 3.3. Vital Signs: routine, hypertension (pre-eclampsia)
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
   - 4.3. Obtain and record blood glucose measurement, if appropriate.
   - 4.4. Prolapsed cord
     - 4.4.1. Place mother in knee-chest position or supine with pillows under buttocks.
     - 4.4.2. Wrap the cord in a saline moistened dressing. Saline should be warm, if possible.
     - 4.4.3. Palpate the cord for a pulse.
       - 4.4.3.1. If pulse is palpable, transport immediately and reassess for the presence of a pulse regularly.
       - 4.4.3.2. If no pulse is palpable, insert gloved hand in to vagina and lift the presenting part of the fetus off of the cord. Simultaneously, indirectly displace the fetus by applying pressure cephalically on the outer and lower abdominal wall.
   - 4.5. Limb presentation
     - 4.5.1. Place mother in knee-chest position or supine with pillows under buttocks.
     - 4.5.2. Transport immediately.

5. Advanced life support
    - 5.1. Advanced airway/ventilatory management, if appropriate.
    - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
        - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
            - 5.2.1.1. Acquire right precordial leads in the presence of inferior wall injury.
    - 5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
    - 5.4. Establish vascular access, if appropriate.
    - 5.5. Pregnancy-induced hypertension (pre-eclampsia, eclampsia)
        - 5.5.1. If patient is actively seizing:
            - 5.5.1.1. Midazolam (Versed), 2 milligrams intravenously or intraosseously.
                - 5.5.1.1.1. May repeat midazolam (Versed) once for a maximum of 4 milligrams.
                - 5.5.1.1.2. If unable to obtain vascular access, midazolam (Versed), 2 milligrams, intramuscularly.
            - 5.5.1.2. Magnesium sulfate, 4 grams in 50 milliliters 0.9% sodium chloride, infused over twenty to thirty minutes following management of seizure.
        - 5.5.2. For Systolic BP >160 mmHg on two readings,
            - 5.5.2.1. Magnesium sulfate, 4 grams in 50 milliliters 0.9% sodium chloride, infused over twenty to thirty minutes.
6. EDMCP contact and special considerations
    - 6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.
    - 6.2. Pre-Eclampsia: Hypertension, edema and proteinuria developing during pregnancy. Occurs in about five percent of gravid patients. Usually develops after twentieth week of pregnancy.
        - 6.2.1. Mild Pre-eclampsia
            - 6.2.1.1. Blood pressure greater than 140 systolic.
            - 6.2.1.2. Blood pressure greater than 90 diastolic.
            - 6.2.1.3. Non-dependent edema (facial or hand edema). Edema is not a reliable sign as it is often not present in pre-eclampsia/eclampsia.
            - 6.2.1.4. Persistent or recurring headache.
            - 6.2.1.5. Vision changes (flashing lights, dots before eyes, dimming or blurring of vision).
            - 6.2.1.6. Abdominal pain.
            - 6.2.1.7. Diminished or infrequent urination (oliguria).
            - 6.2.1.8. Weight gain >2 pounds per week.
        - 6.2.2. Severe pre-eclampsia
            - 6.2.2.1. Blood pressure greater than 160/110.
            - 6.2.2.2. Generalized edema.
            - 6.2.2.3. Weight gain >6 pounds per week.
            - 6.2.2.4. Persistent or recurring headache.

6.2.2.5. Vision changes (flashing lights, dots before eyes, dimming or blurring of vision).

6.2.2.6. Abdominal pain.

6.2.2.7. Diminished or infrequent urination (oliguria).

6.2.3. Complications

6.2.3.1. Complications of pre-eclampsia include early delivery and fetal complications due to prematurity as well as progression to eclampsia. Treatment of pre-eclampsia is bed rest and delivery.

6.3. The occurrence of grand mal seizures, coma or pre-eclampsia can occur several weeks postpartum.

History: 01-2018; 07-2012; 07-2009 (formerly Pregnancy-induced Hypertension); 03-2008 (memorandum 700.01); 02-2008.

This page left blank intentionally.

Section 400.19: Ophthalmic

1. History
   - 1.1. Mechanism of injury: blunt, penetrating, traumatic
   - 1.2. Description of scene
   - 1.3. Force involved
   - 1.4. Treatment prior to arrival
2. Symptoms
   - 2.1. Visual problems
3. Signs
   - 3.1. Eyes: lid laceration, blood anterior to pupil, pupil abnormalities
   - 3.2. Head: evidence of trauma
   - 3.3. Neurological: decreased level of consciousness
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
   - 4.3. If direct trauma:
     - 4.3.1. Patch both eyes without pressure to globes; place shield over affected eye.
     - 4.3.2. If blood noted in anterior chamber (hyphema), transport with head of bed elevated at least 60 degrees.
   - 4.4. If chemical trauma:
     - 4.4.1. Irrigate affected eye with 0.9% sodium chloride for duration of transport or as tolerated.
   - 4.5. If atraumatic:
     - 4.5.1. Patch both eyes gently; apply raised cover (shield, styrofoam cup, etc.) to affected eye.
   - 4.6. If patient is being transported for treatment of diagnosed central retinal artery occlusion:
     - 4.6.1. Administer 100% oxygen via non-rebreathing mask.
     - 4.6.2. Place patient in trendelenburg position.
5. Advanced life support
   - 5.1. If oleum capsicum, "tear gas" or other like chemical irritant:
     - 5.1.1. Tetracaine ophthalmic solution, two drops per eye, following irrigation, if available.
       - 5.1.1.1. Tetracaine ophthalmic solution may be repeated once.
     - 5.1.2. If patient is in custody of law enforcement officers, request authorization to treat from the law enforcement officer in charge of patient.
6. EDMCP contact and special considerations
   - 6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.
   - 6.2. Remove contact lenses, if possible.

History: 01-2018; 07-2012; 07-2009; 02-2008.

Section 400.20: Overdose/Poisoning

1. History
   - 1.1. Route, type, time, quantity of exposure
   - 1.2. Accidental, intentional
   - 1.3. Bystander action prior to arrival
   - 1.4. Emesis (induced, spontaneous)
   - 1.5. Any antidote given
   - 1.6. Depression or suicidal
   - 1.7. Previous overdoses/poisonings
   - 1.8. History of drug/alcohol abuse
2. Symptoms
   - 2.1. Mouth or throat pain
   - 2.2. Burns around the mouth
   - 2.3. Eye irritation/burning
   - 2.4. Dyspnea
   - 2.5. Sleepiness
   - 2.6. Nausea, vomiting
   - 2.7. Abdominal pain
   - 2.8. Diarrhea
   - 2.9. Headache
   - 2.10. Itching
   - 2.11. Chest pain
   - 2.12. Depression
3. Signs
   - 3.1. Cardiovascular: dysrhythmias
   - 3.2. Gastrointestinal: vomiting, abdominal tenderness
   - 3.3. HEENT: abnormal breath odor, increased salivation, eye redness, excessive tearing
   - 3.4. Neurological: decreased level of consciousness, coma, seizures
   - 3.5. Respiratory: abnormal breathing patterns, labored respirations, wheezing
   - 3.6. Skin: cyanosis, rash, diaphoresis
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
   - 4.3. Obtain and record blood glucose measurement, if appropriate.
   - 4.4. Naloxone (Narcan), 4 milligrams, intranasally, in the presence of hypoventilation secondary to suspected opiate overdose.
   - 4.5. Decontaminate the patient in the presence of poisoning, if appropriate.
5. Advanced life support
   - 5.1. Advanced airway/ventilatory management, if appropriate.
   - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
     - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.

5.2.1.1. Acquire right precordial leads in the presence of inferior wall injury.

5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.

5.4. Establish vascular access, if appropriate.

5.4.1. If clinical signs of hypoperfusion are evident, administer 250-500 milliliter fluid boluses of 0.9% sodium chloride. Repeat as necessary until signs resolve or two liters of crystalloid solution have been infused.

5.4.2. If hypoperfusion does not respond to volume resuscitation, initiate dopamine infusion, 5-20 micrograms per kilogram per minute and titrate to effect.

5.5. Anticholingeric (Organophosphate), symptomatic

5.5.1. Atropine, 0.5-1 milligram, bolus.

5.5.1.1. Repeat atropine, 0.5-1 milligram intravenously, every five minutes so long as symptoms persist.

5.6. Antipsychotic/Acute dystonic reaction

5.6.1. Diphenhydramine (Benadryl), 50 milligrams intravenously or intramuscularly.

5.6.1.1. Diphenhydramine (Benadryl), 25 milligrams, may be repeated once in ten minutes if dystonic reaction persists.

5.7. Beta blocker, symptomatic (chest pain, syncope or hypotension in the presence of bradycardia or heart block)

5.7.1. Atropine, 0.5-1 milligram, intravenously.

5.7.2. Transcutaneous pacemaker, if symptoms persist.

5.7.2.1. Midazolam (Versed), 2 milligrams intravenously or intraosseously.

5.7.2.1.1. May repeat midazolam (Versed) once for a maximum of 4 milligrams.

5.7.2.1.2. If unable to obtain vascular access, midazolam (Versed), 2 milligrams, intramuscularly.

5.7.2.2. Pacing should be considered as first line therapy in the presence of overt hemodynamic instability.

5.8. Calcium channel blocker, symptomatic (chest pain, syncope or hypotension in the presence of bradycardia or heart block)

5.8.1. Atropine, 0.5-1 milligram intravenously.

5.8.1.1. Repeat atropine, 0.5-1 milligram intravenously, every three to five minutes if rhythm persists to a maximum of 3 milligrams.

5.8.2. Calcium chloride, 1 gram intravenously, if symptoms persist.

5.8.2.1. Calcium chloride, 1 gram intravenously, may be repeated if symptoms persist.

5.8.3. Transcutaneous pacemaker.

5.8.3.1. Midazolam (Versed), 2 milligrams intravenously or intraosseously.

5.8.3.1.1. May repeat midazolam (Versed) once for a maximum of 4 milligrams.

5.8.3.1.2. If unable to obtain vascular access, midazolam (Versed), 2 milligrams, intramuscularly.

5.8.3.2. Pacing should be considered as first line therapy in the presence of overt hemodynamic instability.

5.9. Cyanide poisoning (intended for patients in cardiopulmonary arrest secondary to toxic inhalation in structure fires)

5.9.1. Hydroxocobalamin (Cyanokit) infusion, 5 grams over 15 minutes, if available.

5.9.2. A single repeat dose may be administered with concurrence of the EDMCP.

5.10. Opiate, symptomatic

5.10.1. Naloxone (Narcan). 0.4 milligram intravenously.

5.10.1.1. Naloxone (Narcan), 0.4 milligram, may be repeated every three minutes to a maximum dose of 4 milligrams.

5.10.1.2. Naloxone (Narcan), 2 milligrams, may be administered intramuscularly in the absence of venous access.

5.10.1.3. Notwithstanding nasally administered naloxone by lay person or basic life support responders, intravenous naloxone shall be administered in the presence of continued respiratory depression.

5.10.1.4. If intravenous administration is available, intravenous administration shall be utilized in lieu of nasal administration.

5.11. Sympathomimetic (Cocaine), symptomatic (hypertension, tachycardia, agitation)

5.11.1. Midazolam (Versed), 2 milligrams intravenously or intraosseously.

5.11.1.1. May repeat Midazolam (Versed) once for a maximum of 4 milligrams.

5.11.1.2. If unable to obtain vascular access, midazolam (Versed), 2 milligrams, intramuscularly.

5.12. Tricyclic and tetracyclic antidepressant

5.12.1. In the presence of wide complex (QRS >0.12 second), hypotension or any dysrhythmia:

5.12.1.1. Sodium bicarbonate, 1 milliequivalent per kilogram intravenously.

5.12.2. In the presence of torsades de pointes:

5.12.2.1. Magnesium sulfate, 2 grams intravenously.

6. EDMCP contact and special considerations

6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

6.2. The following list provides a sampling of the various medications field providers may encounter. It is not inclusive of all medications and is intended solely as a reference.

6.2.1. Central nervous system agents

6.2.1.1. Sedatives:

6.2.1.1.1. Barbituates: Seconal, Nembutal, Tuinal

6.2.1.1.2. Non-barbituates: Quaalude, Sopors, Dalmane, Chloral hydrate, Placidyl

6.2.1.2. Analgesics:

6.2.1.2.1. Opiates: Heroin, Morphine, Demerol, Codeine, Percodan, Paregoric, Methadone, Lortab
6.2.1.2.2. Non-narcotics: Talwin, Darvon, Acetaminophen, Salicylates, Phenylbutazone, Phenacetin
6.2.1.2.3. Tranquilizers: Valium, Librium, Meprobamate, Vistaril, Thorazine

6.2.1.3. Alcohols:
6.2.1.3.1. Ethanol, Methanol, Isopropyl alcohol

6.2.1.4. Hallucinogenics:
6.2.1.4.1. Marajuana, Lyseric acid diethylamide (LSD), Cocaine, STP, Hashish

6.2.1.5. Amphetamines:

6.2.1.6. Diet pills, Benzedrine, “Speed”

6.2.1.7. Antidepresants:
6.2.1.7.1. Amitriptyline (Elavil, Endep, Etrafon, Vanatrip, Levate), Clomipramine (Anafranil), Doxepin (Sinequan, Zonalon, Triadapin), Imipramine (Tofranil, Impril), Nortriptyline (Aventyl;Pamelor, Norventyl), Desipramine (Norpramin), Protriptyline (Vivactil), Trimipramine (Surmontil), (Limbitrol) Amitriptyline + chlordiazepoxide
6.2.1.7.2. Maprotiline (Ludiomil), Amoxapine (Asendin), Bupropion (Wellbutrin), Trazodone (Desyrel, Trazorel)
6.2.1.7.3. Citalopram (Celexa), Fluoexitine (Prozac), Fluvoxamine (Luvox), Paroxetine (Paxil), Sertraline (Zoloft)
6.2.1.7.4. Prochlorperazine (Compazine), Promethazine (Phenergan), Thorazine, Prolixin, Haloperidol

6.2.2. Cardiac medications
6.2.2.1. Digitalis, Quinidine
6.2.2.2. Beta Blockers: Propranolol (Inderal), Atenolol (Tenormin), Metroprolol (Lopressor), Nadolol (Corgard), Timolol (Blocadren), Labetolol (Trandate), Esmolol (Brevibloc), Acebatolol (Sectral)
6.2.2.3. Other medications combined with beta blockers: Corzide (Nadolol/bendroflumethlazide), Inderide (Propranolol/HCTZ), Inderide LA) Propranolol/HCTZ), Lopressor HCT (Metoprolol/HCTZ), Tenoretic (Atenolol/Chlorthalidone), Timolide (Timolol/HCTZ), Ziac (Bisoprolol/HCTZ)
6.2.2.4. Calcium channel blockers: Amlodipine (Norvasc), Felodipine (Plendil, Renedil), Isradipine (DynaCirc), Nicardipine (Cardene), Nifedipine (Procardia, Adalat), Verapamil (Calan), Diltiazem (Cardizem)

6.2.3. Hypoglycemic agents

6.2.3.1. Orinase, Diabinese, Dymelor, Metformin, Glipizide, Glyburide, Amaryl, Avandia, Actos, Byetta

6.2.4. Anticoagulants

6.2.4.1. Coumadin, Heparin

6.2.5. Antibiotics

6.2.5.1. Amoxil, Ceclor, Cefobid, Cleocin, Erythromycin, Geocillin, Ultracef, Vibramycin, Duricef, Keflex, Penicillin, Tetracycline

6.2.6. Common poisons:

6.2.6.1. Parathion, Arsenic, Lead, Strychnine, Hydrocarbons, Acids and Alkalis

History: 01-2018; 07-2012; 07-2009; 03-2008 (memorandum 700.01); 02-2008.

This page left blank intentionally.

Section 400.21: Pain management

1. History
    - 1.1. Chest pain associated with myocardial ischemia
    - 1.2. Dyspnea associated with pulmonary edema
    - 1.3. Isolated musculoskeletal injury
    - 1.4. Burns, in the absence of cardiopulmonary compromise, including localized cold injuries
    - 1.5. Sickle Cell Anemia
2. Symptoms
    - 2.1. Pain
3. Signs
    - 3.1. Skin: pallor, diaphoresis
    - 3.2. Vitals: tachycardia, tachypnea
4. Basic life support
    - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
    - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%)
    - 4.3. Obtain and record blood glucose measurement, if appropriate.
5. Advanced life support
    - 5.1. Advanced airway/ventilatory management, if appropriate.
    - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
        - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
    - 5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
    - 5.4. Establish vascular access, if appropriate.
        - 5.4.1. If clinical signs of hypoperfusion are evident, administer 250-500 milliliter fluid boluses of 0.9% sodium chloride. Repeat as necessary until signs resolve or two liters of crystalloid solution have been infused.
    - 5.5. Morphine sulfate, 2 milligrams intravenously, for pain associated with: isolated extremity injury; burns, excluding those with accompanying cardiopulmonary compromise; chest pain suspicious of myocardial ischemia; or Sickle Cell crisis.
        - 5.5.1. Morphine sulfate may be repeated in 2 milligram increments every five minutes to a maximum dose of 10 milligrams.
    - 5.6. Following administration of an analgesic:
        - 5.6.1. Assess and record changes in discomfort.
        - 5.6.2. Assess and document ventilation and perfusion status.
        - 5.6.3. Assess and document oxygen saturation and end-tidal carbon dioxide, as appropriate.
6. EDMCP contact and special considerations
    - 6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 400.22: Seizure

1. History
   - 1.1. Onset
   - 1.2. Duration
   - 1.3. Type (grand-mal, focal, petit mal)
   - 1.4. Recovery of consciousness
   - 1.5. Incontinence
   - 1.6. Medical illnesses (especially prior seizures, diabetes, CVA, fever)
   - 1.7. Drug or alcohol withdrawal
   - 1.8. Head trauma
   - 1.9. Pregnancy
2. Symptoms
   - 2.1. Aura (visual or auditory hallucinations)
   - 2.2. Metallic taste in mouth
3. Signs
   - 3.1. Cardiovascular: check for pulses post seizure, as seizure may be first indication of cardiac arrest or serious dysrhythmia
   - 3.2. Genitourinary: incontinence
   - 3.3. HEENT: head trauma, tongue biting/oral trauma
   - 3.4. Neurological: seizures, decreased level of consciousness (postictal), focal neurological signs
   - 3.5. Skin: cyanosis, pallor, clammy children - rash, hot
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
   - 4.3. Obtain and record blood glucose measurement.
5. Advanced life support
   - 5.1. Advanced airway/ventilatory management, if appropriate.
   - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
     - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
   - 5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
   - 5.4. Establish vascular access, if appropriate.
     - 5.4.1. If clinical signs of hypoperfusion are evident, administer 250-500 milliliter fluid boluses of 0.9% sodium chloride. Repeat as necessary until signs resolve or two liters of crystalloid solution have been infused.
   - 5.5. If seizure activity is present:
     - 5.5.1. Midazolam (Versed), 2 milligrams intravenously or intraosseously.
       - 5.5.1.1. May repeat midazolam (Versed) once for a maximum of 4 milligrams.

5.5.1.2. If unable to obtain vascular access, midazolam (Versed), 2 milligrams, intramuscularly.

6. EDMCP contact and special considerations.

6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 07-2009; 03-2008 (memorandum 700.01); 02-2008.

Section 400.23: Snake bite

1. History
   - 1.1. Type of snake
   - 1.2. Time of bite
   - 1.3. Age and size of patient
   - 1.4. Location of injury
   - 1.5. Treatment provided prior to EMS arrival
   - 1.6. Medical illnesses
2. Symptoms
   - 2.1. Paresthesia
   - 2.2. Local pain
   - 2.3. Peculiar or metallic taste in mouth
   - 2.4. Chills
   - 2.5. Nausea, vomiting
   - 2.6. Headache
   - 2.7. Dysphagia
3. Signs
   - 3.1. Skin: bite wound location, configuration (1, 2, or 3 fang marks, entire jaw imprint, none), local edema, discoloration
   - 3.2. Vital Signs: hypotension, fever
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
   - 4.3. Obtain and record blood glucose measurement, if appropriate.
   - 4.4. Irrigate wound with 0.9% sodium chloride.
   - 4.5. Apply dry, sterile dressing.
   - 4.6. Mark initial edematous area with pen and note time.
   - 4.7. Immobilize affected part and remove distal jewelry.
   - 4.8. Attempt to identify what caused bite and bring to emergency department, if this can be done safely.
   - 4.9. If constricting bands in place upon arrival, remove.
5. Advanced life support
   - 5.1. Advanced airway/ventilatory management, if appropriate.
   - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
     - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
   - 5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
   - 5.4. Establish vascular access, if appropriate.
     - 5.4.1. If clinical signs of hypoperfusion are evident, administer 250-500 milliliter fluid boluses of 0.9% sodium chloride. Repeat as necessary until signs resolve or two liters of crystalloid solution have been infused.

5.4.2. If hypoperfusion does not respond to volume resuscitation, initiate dopamine infusion, 5-20 micrograms per kilogram per minute and titrate to effect.

5.5. See Allergic Reaction protocol if signs or symptoms of allergic reaction.

6. EDMCP contact and special considerations

6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 02-2008.

Section 400.24: Stroke

1. History
   - 1.1. Onset and duration
   - 1.2. Where found
   - 1.3. Sequence of deficits
   - 1.4. Head or neck trauma
   - 1.5. Seizures
   - 1.6. Medical illnesses (especially diabetes, cardiovascular disease)
2. Symptoms
   - 2.1. Headache
   - 2.2. Confusion
   - 2.3. Seizures
3. Signs
   - 3.1. Neurological: decreased level of consciousness, impaired movement and symmetry of face and extremities, tremors, sensation changes
   - 3.2. Skin: diaphoresis, pallor
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
   - 4.3. Obtain and record blood glucose measurement.
   - 4.4. Maintain patient in semi-Fowler's position with head elevated approximately thirty degrees, in the absence of trauma.
   - 4.5. Assess patient using the Florida Bureau of EMS Stroke Alert Checklist.
5. Advanced life support
   - 5.1. Advanced airway/ventilatory management, if appropriate.
   - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
     - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
   - 5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
   - 5.4. Establish vascular access, if appropriate.
     - 5.4.1. If clinical signs of hypoperfusion are evident, administer 250-500 milliliter fluid boluses of 0.9% sodium chloride. Repeat as necessary until signs resolve or two liters of crystalloid solution have been infused.
   - 5.5. Acquire the appropriate blood laboratory specimens for patients designated as meeting stroke alert criteria: light green/heparin (2); lavender/EDTA (1); and light blue/coagulation (1).
   - 5.6. Blood glucose <50 milligrams per deciliter.
     - 5.6.1. Dextrose, 25 grams intravenously or intraosseously.
6. EDMCP contact and special considerations
   - 6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 02-2008.

Section 400.25: Syncope

1. History
    - 1.1. Onset (gradual or abrupt)
    - 1.2. Duration
    - 1.3. Position (sitting, standing, lying down)
    - 1.4. Seizure activity
    - 1.5. Trauma
    - 1.6. Pregnancy
    - 1.7. Precipitating factors
    - 1.8. Medical illnesses (previous syncope, cardiac, CVA)
2. Symptoms
    - 2.1. Palpitations
    - 2.2. Chest pain
    - 2.3. Abdominal pain
    - 2.4. Back pain
    - 2.5. Nausea, vomiting
    - 2.6. Hematemesis, melena
    - 2.7. Headache
    - 2.8. Vertigo
3. Signs
    - 3.1. Abdominal: tenderness, possible pulsatile mass
    - 3.2. Cardiovascular: dysrhythmias
    - 3.3. HEENT: evidence of head trauma
    - 3.4. Neurological: decreased level of consciousness, coma
4. Basic life support
    - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
    - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
    - 4.3. Obtain and record blood glucose measurement, if appropriate.
    - 4.4. Place patient in trendelenburg position in the presence of shock.
5. Advanced life support
    - 5.1. Advanced airway/ventilatory management, if appropriate.
    - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
        - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
            - 5.2.1.1. Acquire right precordial leads in the presence of inferior wall injury.
    - 5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
    - 5.4. Establish vascular access, if appropriate.
        - 5.4.1. If clinical signs of hypoperfusion are evident, administer 250-500 milliliter fluid boluses of 0.9% sodium chloride. Repeat as necessary until signs resolve or two liters of crystalloid solution have been infused.

5.4.2. If hypoperfusion does not respond to volume resuscitation, initiate dopamine infusion, 5-20 micrograms per kilogram per minute and titrate to effect.

6. EDMCP contact and special considerations

6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 02-2008.

Section 400.26: Systemic inflammatory response syndrome

1. History
    - 1.1. Onset
    - 1.2. Duration
    - 1.3. Recent illness or trauma
2. Symptoms
    - 2.1. Chills
    - 2.2. Nausea, vomiting
3. Signs
    - 3.1. General: fluctuations in temperature, infection
    - 3.2. Cardiovascular: elevated heart rate
    - 3.3. Respiratory: Elevated respiratory rate
4. Basic life support
    - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
    - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
    - 4.3. Obtain and record blood glucose measurement, if appropriate.
    - 4.4. Suspect systemic inflammatory response syndrome:
        - 4.4.1. Patient age is eighteen years of age, or greater;
        - 4.4.2. Is non-gravid;
        - 4.4.3. There is suspected or documented infection present; and
        - 4.4.4. Has two, or more, of the following:
            - 4.4.4.1. Temperature greater than 38°C (100.4°F) or less than 36°C (96.8°F)
            - 4.4.4.2. Heart rate greater than 90 beats per minute, or
            - 4.4.4.3. Respiratory rate greater than 20 breaths per minute
5. Advanced life support
    - 5.1. Advanced airway/ventilatory management, if appropriate.
    - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
        - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
            - 5.2.1.1. Acquire right precordial leads in the presence of inferior wall injury.
    - 5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
    - 5.4. Establish vascular access, if appropriate.
        - 5.4.1. If systolic blood pressure is less than 90 mmHg or mean arterial pressure is less than 65 mmHg, administer 250-500 milliliter fluid boluses of 0.9% sodium chloride. Repeat as necessary until signs resolve or two liters of crystalloid solution have been infused.
        - 5.4.2. Prior to utilizing a vasopressor (Dopamine), contact the emergency department physician at the receiving facility.
6. EDMCP contact and special considerations

6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 05-20-2015 (700.06).

Section 400.27: Trauma

1. History
   - 1.1. Mechanism of injury (blunt or penetrating)
   - 1.2. Blunt trauma: amount and direction of force
   - 1.3. Penetrating trauma: weapon, size of object, bullet caliber, trajectory of bullet
   - 1.4. Motor vehicle accident: condition of vehicle, dashboard, and steering wheel, speed of impact, seat belt use, patient trajectory
   - 1.5. Description of scene
   - 1.6. Treatment prior to arrival (patient movement)
   - 1.7. Time of injury
   - 1.8. Protective devices (helmet, air bag, restraint, etc.)
   - 1.9. Alterations in mentation (duration and progression)
   - 1.10. Drug or alcohol use
2. Symptoms
   - 2.1. Respiratory distress
   - 2.2. Chest pain
   - 2.3. Neck pain
   - 2.4. Hemoptysis
   - 2.5. Nausea/Vomiting
   - 2.6. Headache
   - 2.7. Diplopia or blurred vision
   - 2.8. Paresthesia
   - 2.9. Paralysis
3. Signs
   - 3.1. Abdomen: pain, tenderness
   - 3.2. Cardiovascular: muffled heart sounds, distended neck veins, narrow pulse pressure
   - 3.3. HEENT: Battle's sign, raccoon eyes, blood or fluid drainage from nose or ears, symmetry and reactivity of pupils
   - 3.4. Musculoskeletal: evidence of fracture or dislocation, soft tissue injury, loss of function
   - 3.5. Neck: tenderness
   - 3.6. Neurological: alterations in mentation, restlessness, seizure, coma
   - 3.7. Respiratory: apnea, abnormal chest wall movements (paradoxical, retractions), abnormal breath sounds, tracheal shift, subcutaneous emphysema
   - 3.8. Skin: cyanosis, pallor, mottling, entrance and exit wounds, cool, clammy, subcutaneous emphysema, "sucking" chest wound, soft tissue injury
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
   - 4.3. Appropriately immobilize spine.
   - 4.4. Immobilize all foreign objects in position found.

4.5. Obtain and record blood glucose measurement, if appropriate.
4.6. Refer to Trauma Transport Protocol.
4.7. Abdominal trauma
  4.7.1. Cover eviscerations with dressing moistened with sterile 0.9% sodium chloride.
4.8. Burns (chemical)
  4.8.1. Decontaminate
  4.8.2. Apply dry sterile dressings.
4.9. Burns (thermal)
  4.9.1. Apply dry sterile dressings.
4.10. Extremity trauma (suspected fracture/dislocation)
  4.10.1. Suspected fracture or dislocation:
    4.10.1.1. Neurovascular function intact distal to injury:
      4.10.1.1.1. Immobilize.
    4.10.1.2. Neurovascular function compromised distal to injury:
      4.10.1.2.1. Attempt to return extremity to its anatomical position.
      4.10.1.2.2. Immobilize.
  4.10.2. Amputation:
    4.10.2.1. Incomplete:
      4.10.2.1.1. Control hemorrhage.
      4.10.2.1.2. Immobilize in correct anatomical position.
    4.10.2.2. Complete:
      4.10.2.2.1. Control hemorrhage.
      4.10.2.2.2. Irrigate amputated part with 0.9% sodium chloride and wrap in saline moistened sterile dressing.
      4.10.2.2.3. Wrap in plastic and keep cool during transport.
4.11. Head trauma
  4.11.1. Elevate head of backboard thirty degrees in the absence of hypotension.
  4.11.2. Appropriate ventilation rates:
    4.11.2.1. Eucapneic (normal): twelve (12) breaths per minute.
    4.11.2.2. Hyperventilation: twenty (20) breaths per minute.
  4.11.3. Hyperventilate if herniation suspected:
    4.11.3.1. Asymmetrical pupils;
    4.11.3.2. Abrupt deterioration in mentation;
    4.11.3.3. Decorticate or decerebrate posturing; or
    4.11.3.4. Cushing's Triad (hypertension, bradycardia or hypoventilation).
4.12. Thoracic trauma
  4.12.1. Open chest wound
    4.12.1.1. Apply occlusive dressing.
      4.12.1.1.1. Temporarily remove in the presence of deteriorating pulmonary status.
  4.12.2. Flail segment
    4.12.2.1. Attempt to stabilize with bulky dressing
    4.12.2.2. Assist ventilation with bag-mask ventilation.

5. Advanced life support

5.1. Advanced airway/ventilatory management, if appropriate.
5.2. Needle decompression for patient with tension pneumothorax as needed.
5.3. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
5.3.1. Acquire and evaluate 12 lead ECG, if appropriate.
5.4. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
5.5. Establish vascular access, if appropriate. Consider need for second vascular access point.
5.5.1. If clinical signs of hypoperfusion are evident, administer 250-500 milliliter fluid boluses of 0.9% sodium chloride. Repeat as necessary until signs resolve or two liters of crystalloid solution have been infused.
5.6. Burns (chemical)
5.6.1. Decontaminate
5.6.2. Apply dry sterile dressings.
5.6.3. Consider pain management, as appropriate.
5.7. Burns (thermal)
5.7.1. Volume resuscitation in accordance with the Parkland Burn Formula.
5.7.2. Consider pain management, as appropriate.
5.8. Extremity trauma
5.8.1. Consider pain management, as appropriate.
5.9. Head trauma
5.9.1. Target end-tidal carbon dioxide levels should be maintained between 30-35 mmHg in the intubated patient.
5.10. Thoracic trauma
5.10.1. Flail segment
5.10.1.1. Attempt intubation.
5.10.2. Tension pneumothorax
5.10.2.1. Perform needle decompression

6. EDMCP contact and special considerations
6.1. In the presence of crush injury or suspected compartment syndrome:
6.1.1. With the concurrence of the EDMCP, instill 50 milliequivalents of sodium bicarbonate into 1,000 milliliters of 0.9% sodium chloride and infuse at 150 milliliters per hour.
6.1.2. Treatment outlined for crush injury and compartment syndrome are intended for patients who are entrapped for prolonged periods (i.e., building collapse, etc.) and not for isolated instances. For these unique circumstances, contact the EDMCP early in the extrication process and be prepared to administer sodium bicarbonate infusion prior to removal.
6.2. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 02-2008.

This page left blank intentionally.

Section 400.28: Vaginal hemorrhage

1. History
   - 1.1. Onset
   - 1.2. Duration
   - 1.3. Amount (number of pads or tampons, clots and tissue fragments)
   - 1.4. Menstrual history
   - 1.5. Contraception
   - 1.6. Gravida, Para, Abortion (GPA)
   - 1.7. Pregnant (due date)
   - 1.8. Postpartum (time and place of delivery)
   - 1.9. Medical illnesses (bleeding disorders, etc.)
2. Symptoms
   - 2.1. Abdominal pain, cramping
   - 2.2. Weakness
   - 2.3. Passage of clots, tissue fragments (bring to ED)
   - 2.4. Nausea, vomiting
   - 2.5. Thirst
   - 2.6. Dizziness
3. Signs
   - 3.1. Abdominal: tenderness, distension, guarding, rebound
   - 3.2. Neurological: decreased level of consciousness
   - 3.3. Skin: cool, clammy, diaphoresis, pallor
   - 3.4. Vital Signs: orthostasis, tachycardia, hypotension
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
   - 4.3. Obtain and record blood glucose measurement, if appropriate.
   - 4.4. Apply pad to vaginal opening.
   - 4.5. Refer to Obstetrical Transport Protocol, if appropriate.
5. Advanced life support
   - 5.1. Advanced airway/ventilatory management, if appropriate.
   - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
   - 5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
   - 5.4. Establish vascular access, if appropriate.
     - 5.4.1. If clinical signs of hypoperfusion are evident, administer 250-500 milliliter fluid boluses of 0.9% sodium chloride. Repeat as necessary until signs resolve or two liters of crystalloid solution have been infused.
6. EDMCP contact and special considerations
   - 6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 02-2008.

Section 500.00: Pediatric protocols

This section contains standing orders for pediatric patients. Every attempt was made to maintain consistency in dosing by referring to the Broselow™ Pediatric Emergency Care tape. However, some medications authorized under Volusia County Prehospital Standing Orders and Treatment Protocols are not present on the resuscitation tape. Others' are present, but dosing is solely intended for resuscitation of patients in cardiopulmonary arrest. Below is a cross reference of the specific standing orders within this manual that do not refer to the Broselow™ Pediatric Emergency Care tape.

Based upon the strong utilization of this reference, agencies are required to maintain the most up-to-date version of the Broselow™ Pediatric Emergency Care tape on all advanced life support units.

This page left blank intentionally.

Section 500.01: Adrenal insufficiency

1. History
   - 1.1. Onset and duration
   - 1.2. Past medical history
   - 1.3. Recent illness or trauma
   - 1.4. Stress event (i.e., medical procedure, pregnancy, etc.)
   - 1.5. Corticosteroid treatment by others prior to EMS arrival
2. Symptoms
   - 2.1. Weakness
   - 2.2. Nausea
   - 2.3. Vomiting
   - 2.4. Sudden/Severe lower back, abdominal, or leg pain
   - 2.5. Dehydration
   - 2.6. Diarrhea
3. Signs
   - 3.1. Vital signs: outside of normal parameters
   - 3.2. Neurological: altered mental status
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
   - 4.3. Obtain and record blood glucose measurement, if appropriate.
   - 4.4. Nothing by mouth.
5. Advanced life support
   - 5.1. Advanced airway/ventilatory management, if appropriate.
   - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
     - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
       - 5.2.1.1. Acquire right precordial leads in the presence of inferior wall injury.
   - 5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
   - 5.4. Establish vascular access, if appropriate.
     - 5.4.1. If clinical signs of hypoperfusion are evident, administer 250-500 milliliter fluid boluses of 0.9% sodium chloride. Repeat as necessary until signs resolve or two liters of crystalloid solution have been infused.
6. EDMCP contact and special considerations
   - 6.1. Contact the EDMCP with the above assessment and inquire whether methylprednisolone (Solu-Medrol), 2 milligrams per kilogram of body weight to a maximum dose of 125 milligrams, is desired.

History: 01-2018; 11-3-2016 (700.12).

This page left blank intentionally.

Section 500.02: Allergic reactions

1. History
   - 1.1. Exposure, ingestion or contact (stings, drugs, foods, etc.)
   - 1.2. Prior allergic history
   - 1.3. Current medications
2. Symptoms
   - 2.1. Itching
   - 2.2. Rash
   - 2.3. Swelling
   - 2.4. Respiratory distress
   - 2.5. Abdominal pain
   - 2.6. Nausea, vomiting
   - 2.7. Syncope
   - 2.8. Weakness
   - 2.9. Anxiety
   - 2.10. Choking sensation
   - 2.11. Cough
3. Signs
   - 3.1. HEENT: tongue or upper airway (uvula) edema
   - 3.2. Respiratory: wheezing, stridor , hoarseness, cough, upper airway noise
   - 3.3. Skin: rash, redness, urticaria (hives), generalized or local edema
   - 3.4. Vital signs: hypotension
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
   - 4.3. In the presence of a moderate allergic reaction or severe systemic reaction:
     - 4.3.1. Epi-Pen Jr, 0.15 milligram, in patients between fifteen (15) and thirty (30) kilograms.
   - 4.4. Obtain and record blood glucose measurement, if appropriate.
   - 4.5. Give nothing by mouth
5. Advanced life support
   - 5.1. Advanced airway/ventilatory management, if appropriate.
   - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
     - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
   - 5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
   - 5.4. Establish vascular access, if appropriate.
     - 5.4.1. If clinical signs or hypoperfusion are evident, bolus with 0.9% sodium chloride in accordance with Broselow™ Pediatric Emergency Care tape. Repeat as necessary to a maximum amount of sixty milliliters per kilogram.
   - 5.5. Mild reaction (itching, uticaria)

5.5.1. Diphenhydramine (Benadryl) 1 milligram per kilogram (maximum 50 milligrams)

5.5.1.1. May be administered intramuscularly if no venous access available.

5.6. Moderate reaction (dyspnea, wheezing, chest tightness)

5.6.1. Epinephrine (1:1,000) 0.01 milligram per kilogram intramuscularly. Maximum individual dose not to exceed 0.3 milligram.

5.6.2. Albuterol (Proventil) 2.5 milligrams nebulized.

5.6.2.1. If the patient is less than eight years of age, Ipratropium bromide (Atrovent), 0.25 milligram, may be added to the first albuterol nebulizer treatment.

5.6.2.2. If age eight, or greater, Ipratropium bromide (Atrovent), 0.5 milligram, may be added to the first albuterol nebulizer treatment.

5.6.3. Diphenhydramine (Benadryl) 1 milligram per kilogram intravenously (maximum 50 milligrams)

5.6.3.1. May be administered intramuscularly if no venous access available.

5.6.4. Methylprednisolone (Solu-Medrol) 2 milligrams per kilogram intravenously. Maximum dose 125 milligrams.

5.7. Severe systemic reaction (hypotension, stridor, severe respiratory distress)

5.7.1. Epinephrine (1:10,000) 0.01 milligram per kilogram intravenously. Maximum individual dose not to exceed 0.1 milligram.

5.7.1.1. Epinephrine may be repeated every two to three minutes if condition persists or worsens.

5.7.2. Albuterol (Proventil) 2.5 milligrams nebulized.

5.7.2.1. If the patient is less than eight years of age, Ipratropium bromide (Atrovent), 0.25 milligram, may be added to the first albuterol nebulizer treatment.

5.7.2.2. If age eight, or greater, Ipratropium bromide (Atrovent), 0.5 milligram, may be added to the first albuterol nebulizer treatment.

5.7.3. Diphenhydramine (Benadryl) 1 milligram per kilogram intravenously (maximum 50 milligrams)

5.7.3.1. May be administered intramuscularly if no venous access available.

5.7.4. Methylprednisolone (Solu-Medrol) 2 milligrams per kilogram, intravenously. Maximum dose 125 milligrams.

6. EDMCP contact and special considerations

6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 02-2008.

This page left blank intentionally.

Section 500.03: Altered mental status

1. History
   - 1.1. Onset (acute vs. gradual)
   - 1.2. Duration
   - 1.3. History of trauma
   - 1.4. Description of scene (pills found, notes, syringes, etc.)
   - 1.5. Unusual odor in residence or at scene
   - 1.6. Recent emotional trauma or crisis (including suicidal or homicidal ideation)
   - 1.7. Drug or alcohol ingestion
   - 1.8. Toxic exposure
   - 1.9. Exertion or heat exposure
   - 1.10. Psychiatric disorders
   - 1.11. Medical illnesses (diabetes, seizures, etc.)
   - 1.12. Head trauma
   - 1.13. Drug overdose
   - 1.14. Seizures
   - 1.15. CVA
   - 1.16. Diabetes
   - 1.17. Other metabolic disorders, such as kidney or liver failure
   - 1.18. Sepsis
   - 1.19. Psychiatric illness
2. Symptoms
   - 2.1. Abrupt or bizarre behavior changes
3. Signs
   - 3.1. HEENT: breath odor (alcohol, ketones), pupil size and reactivity
   - 3.2. Neck: suspect c-spine injury in the presence of head trauma; nuchal rigidity (stiff neck)
   - 3.3. Neurological: decreased level of consciousness, abnormal pupil size, abnormal pupil symmetry and reactivity, seizures, focal deficits, hallucinations
   - 3.4. Other: evidence of trauma, medical alert tag
   - 3.5. Respiratory: abnormal breathing patterns
   - 3.6. Skin: needle tracks, cyanosis, diaphoresis
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
   - 4.3. Obtain and record blood glucose measurement.
   - 4.4. Nothing by mouth, unless patient is a known diabetic and is able to self-administer glucose paste, orange or apple juice
5. Advanced life support
   - 5.1. Advanced airway/ventilatory management, if appropriate.
   - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.

5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.

5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.

5.4. Establish vascular access, if appropriate.

5.4.1. If clinical signs or hypoperfusion are evident, bolus with 0.9% sodium chloride in accordance with Broselow™ Pediatric Emergency Care tape. Repeat as necessary to a maximum amount of sixty milliliters per kilogram.

5.5. Blood glucose <60 milligrams per deciliter:

5.5.1. Age one month to eleven years: dextrose in accordance with Broselow™ Pediatric Emergency Care tape intravenously. Maximum individual dose 25 grams.

5.5.2. Neonate: dextrose (10%), 0.5 gram per kilogram intravenously. Maximum individual dose 25 grams.

6. EDMCP contact and special considerations

6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 02-2008.

Section 500.04: Cardiac dysrhythmia

1. History
    - 1.1. Onset (acute, gradual)
    - 1.2. Duration
    - 1.3. Precipitating events
    - 1.4. Medical illnesses (especially cardiac and respiratory disease)
2. Symptoms
    - 2.1. Chest pain/discomfort
    - 2.2. Dyspnea
    - 2.3. Nausea
3. Signs
    - 3.1. Cardiovascular: dysrhythmias
    - 3.2. Extremity: peripheral edema
    - 3.3. Neck: flat or distend neck veins.
    - 3.4. Neurological: decreased level of consciousness.
    - 3.5. Respiratory: rales, rhonchi, respiratory distress
    - 3.6. Skin: cool, diaphoretic, pallor, cyanosis.
4. Basic life support
    - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
    - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
    - 4.3. Initiate chest compressions in infants and children eight years of age or younger if heart rate less than sixty per minute (60 BPM) or poor systemic perfusion.
5. Advanced life support
    - 5.1. Advanced airway/ventilatory management, if appropriate.
    - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
        - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
    - 5.3. Establish vascular access, if appropriate.
        - 5.3.1. If clinical signs or hypoperfusion are evident, bolus with 0.9% sodium chloride in accordance with Broselow™ Pediatric Emergency Care tape. Repeat as necessary to a maximum amount of sixty milliliters per kilogram.
    - 5.4. Bradycardias
        - 5.4.1. Hemodynamically stable
            - 5.4.1.1. Strongly consider and aggressively treat for:
                - 5.4.1.1.1. Hypoxia
                - 5.4.1.1.2. Hypothermia
                - 5.4.1.1.3. Hypovolemia
                - 5.4.1.1.4. Traumatic brain injury
        - 5.4.2. Hemodynamically unstable
            - 5.4.2.1. Strongly consider and aggressively treat for:
                - 5.4.2.1.1. Hypoxia
                - 5.4.2.1.2. Hypothermia

5.4.2.1.3. Hypovolemia
5.4.2.1.4. Traumatic brain injury
5.4.2.2. Epinephrine (1:10,000), in accordance with Broselow™ Pediatric Emergency Care tape intravenously.
5.4.2.2.1. Repeat epinephrine (1:10,000), in accordance with Broselow™ Pediatric Emergency Care tape intravenously every three to five minutes if symptoms persist or there is no improvement.
5.4.2.3. Atropine, in accordance with Broselow™ Pediatric Emergency Care tape intravenously.
5.4.2.4. Transcutaneous pacemaker.
5.4.2.4.1. Midazolam (Versed), 0.1 milligram per kilogram of body weight, to a maximum of two milligrams, intravenously or intraosseously.
5.4.2.4.1.1. May repeat midazolam (Versed) once for a maximum of 4 milligrams.
5.4.2.4.1.2. If unable to obtain vascular access, midazolam (Versed), 0.1 milligram per kilogram, intramuscularly, to a maximum of two milligrams. May repeat once, if necessary.
5.4.2.4.2. Pacing should be considered as first line therapy in the presence of heart block or heart transplant.
5.4.2.5. Dopamine infusion, in accordance with Broselow™ Pediatric Emergency Care tape. Titrate to effect.

5.5. Tachycardias with a narrow complex
5.5.1. Hemodynamically stable
5.5.1.1. Attempt to elicit vagal response.
5.5.2. Hemodynamically unstable
5.5.2.1. Narrow complex tachycardia
5.5.2.1.1. Adenosine (Adenocard), in accordance with Broselow™ Pediatric Emergency Care tape.
5.5.2.1.2. If initial dose fails to control rate, adenosine (Adenocard), in accordance with Broselow™ Pediatric Emergency Care tape.
5.5.2.2. Synchronized cardioversion
5.5.2.2.1. Midazolam (Versed), 0.05 milligram per kilogram of body weight, to a maximum of two milligrams, intravenously or intraosseously, may be considered for sedation.
5.5.2.2.1.1. May repeat midazolam (Versed) once for a maximum of 4 milligrams.
5.5.2.2.1.2. If unable to obtain vascular access, midazolam (Versed), 0.1 milligram per kilogram, to a maximum of two

milligrams. May repeat once, if necessary.

5.5.2.2.2. Cardiovert in accordance with Broselow™ Pediatric Emergency Care tape.

5.5.2.2.3. Double initial energy setting for all subsequent cardioversion efforts.

5.6. Tachycardias with a wide complex (0.09 second [90 milliseconds], or greater)

5.6.1. Hemodynamically stable

5.6.1.1. Lidocaine, in accordance with Broselow™ Pediatric Emergency Care tape.

5.6.1.2. If torsades de pointes suspected, magnesium sulfate, in accordance with Broselow™ Pediatric Emergency Care tape, delivered over thirty seconds.

5.6.2. Hemodynamically unstable

5.6.2.1. Synchronized cardioversion

5.6.2.1.1. Midazolam (Versed), 0.05 milligram per kilogram of body weight, to a maximum of two milligrams, intravenously or intraosseously.

5.6.2.1.1.1. May repeat midazolam (Versed) once for a maximum of 4 milligrams.

5.6.2.1.1.2. If unable to obtain vascular access, midazolam (Versed), 0.1 milligram per kilogram, intramuscularly, to a maximum of two milligrams. May repeat once, if necessary.

5.6.2.1.2. Cardiovert, in accordance with Broselow™ Pediatric Emergency Care tape.

5.6.2.1.3. Double the initial energy setting for all subsequent cardioversion efforts.

6. EDMCP contact and special considerations

6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 10-2011 (memorandum 700.09); 07-2009; 03-2008 (memorandum 700.01); 02-2008.

This page left blank intentionally.

Section 500.05: Cardiopulmonary arrest

1. History
   - 1.1. Onset (acute, gradual)
   - 1.2. Duration
   - 1.3. Precipitating events
   - 1.4. Medical illnesses (especially cardiac and respiratory disease)
2. Symptoms
   - 2.1. None
3. Signs
   - 3.1. Respiratory: absent
   - 3.2. Vital Signs: absent
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. Provide positive pressure ventilation with supplemental oxygen.
   - 4.3. Begin cardiopulmonary resuscitation.
     - 4.3.1. Mechanical CPR devices are an acceptable alternative to manual compressions, if not contraindicated.
     - 4.3.2. Interruption of chest compressions should be limited to the performance of therapies that require doing so.
   - 4.4. Apply automatic external defibrillator and defibrillate if indicated.
   - 4.5. Obtain and record blood glucose measurement, if appropriate.
5. Advanced life support
   - 5.1. Advanced airway/ventilatory management, if appropriate.
   - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip.
   - 5.3. Establish vascular access, as appropriate.
   - 5.4. Asystole
     - 5.4.1. Confirm asystole in two leads.
     - 5.4.2. Epinephrine (1:10,000), in accordance with Broselow™ Pediatric Emergency Care tape.
       - 5.4.2.1. Repeat epinephrine (1:10,000), in accordance with Broselow™ Pediatric Emergency Care tape, every three to five minutes so long as rhythm persists.
     - 5.4.3. Consider:
       - 5.4.3.1. Transcutaneous pacemaker, in the presence of post heart transplant.
   - 5.5. Pulseless Electrical Activity
     - 5.5.1. Epinephrine (1:10,000), in accordance with Broselow™ Pediatric Emergency Care tape.
       - 5.5.1.1. Repeat epinephrine (1:10,000), in accordance with Broselow™ Pediatric Emergency Care tape, every three to five minutes so long as rhythm persists.
     - 5.5.2. Consider underlying etiology:
       - 5.5.2.1. Cardiogenic shock or pericardial tamponade.

5.5.2.1.1. Establish second vascular access site and provide volume resuscitation in 500 milliliter increments.
5.5.2.1.2. Consider dopamine infusion, 5-20 micrograms per kilogram per minute.
5.5.2.2. Tension pneumothorax
5.5.2.2.1. Perform needle thoracostomy.
5.5.2.3. Hypovolemia
5.5.2.3.1. Provide adequate volume resuscitation.
5.5.2.4. Hypoxemia
5.5.2.4.1. Ensure adequate ventilation and oxygenation.

5.6. Ventricular Fibrillation
5.6.1. Defibrillate.
5.6.1.1. Deliver initial, single defibrillation, in accordance with Broselow™ Pediatric Emergency Care tape.
5.6.1.2. Double initial energy setting for all subsequent electrical therapy.
5.6.1.3. A pharmaceutical intervention should be delivered between defibrillations.
5.6.2. Epinephrine (1:10,000), in accordance with Broselow™ Pediatric Emergency Care tape.
5.6.2.1. Repeat epinephrine (1:10,000), in accordance with Broselow™ Pediatric Emergency Care tape, every three to five minutes if rhythm persists.
5.6.3. Antidysrhythmic
5.6.3.1. Amiodarone (Cordarone), in accordance with Broselow™ Pediatric Emergency Care tape.
5.6.3.2. If dysrhythmia persists or reoccurs after ten minutes, lidocaine, in accordance with Broselow™ Pediatric Emergency Care tape.
5.6.3.2.1. Repeat lidocaine, in accordance with Broselow™ Pediatric Emergency Care tape, every eight to ten minutes if rhythm persists to a maximum of three milligrams per kilogram.
5.6.3.2.2. If dysrhythmia resolves, in accordance with Broselow™ Pediatric Emergency Care tape, titrating to effect.
5.6.4. In the presence of recurrent or refractory ventricular fibrillation or torsades des pointes:
5.6.4.1. Magnesium sulfate, in accordance with Broselow™ Pediatric Emergency Care tape. Consider early if torsades des pointes is identified.

5.7. Ventricular tachycardia without pulses
5.7.1. Refer to ventricular fibrillation protocol.

6. EDMCP contact and special considerations
6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 06-2010 (memorandum 700.04); 07-2009; 02-2008.

Section 500.06: Dyspnea

1. History
    - 1.1. Onset (acute or gradual)
    - 1.2. Duration
    - 1.3. Exacerbating or alleviating factors
    - 1.4. Oral exposure/foreign bodies (toys, drugs, alcohol, food, chemicals, etc.)
    - 1.5. Trauma
    - 1.6. Environmental exposure
    - 1.7. Smoking
    - 1.8. Medical illnesses (asthma, diabetes, congenital heart disease)
    - 1.9. Home oxygen
    - 1.10. Drug or alcohol use
2. Symptoms
    - 2.1. Chest pain (location, quality, position)
    - 2.2. Dyspnea
    - 2.3. Cough
    - 2.4. Sputum production or change
    - 2.5. Paresthesia in hands or mouth
    - 2.6. Fever
3. Signs
    - 3.1. Cardiovascular: neck vein distention, dysrhythmias
    - 3.2. HEENT: upper airway, facial edema, drooling, nasal flaring
    - 3.3. Neurological: decreased level of consciousness, restlessness, slurred speech
    - 3.4. Respiratory: stridor, rales, rhonchi, wheezing, decreased breath sounds, crepitus, subcutaneous emphysema, accessory muscle usage
    - 3.5. Skin: cyanosis, peripheral edema, hives, evidence of neck or chest trauma
4. Basic life support
    - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
    - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
    - 4.3. Obtain and record blood glucose measurement, if appropriate.
    - 4.4. If Acute Bronchospasm/Asthma:
        - 4.4.1. Assist with self-administration with bronchodialators.
    - 4.5. If Foreign Body Airway Obstruction (FBAO):
        - 4.5.1. Partial obstruction:
            - 4.5.1.1. Do nothing to further agitate the patient.
        - 4.5.2. Complete obstruction:
            - 4.5.2.1. Age less than one year: alternate five back blows and five chest thrusts.
            - 4.5.2.2. Age one year or greater: provide abdominal thrusts
5. Advanced life support
    - 5.1. Advanced airway/ventilatory management, if appropriate.

5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
  5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
5.4. Establish vascular access, if appropriate.
  5.4.1. If clinical signs or hypoperfusion are evident, bolus with 0.9% sodium chloride in accordance with Broselow™ Pediatric Emergency Care tape. Repeat as necessary to a maximum amount of sixty milliliters per kilogram.
5.5. If acute bronchospasm/asthma:
  5.5.1. Albuterol (Proventil) 2.5 milligrams nebulized.
    5.5.1.1. If the patient is less than eight years of age, Ipratropium bromide (Atrovent), 0.25 milligram, may be added to the first albuterol nebulizer treatment.
    5.5.1.2. If age eight, or greater, Ipratropium bromide (Atrovent), 0.5 milligram, may be added to the first albuterol nebulizer treatment.
  5.5.2. Methylprednisolone (Solu-Medrol), 2 milligrams per kilogram. Maximum dose 125 milligrams.
  5.5.3. In severe or refractory cases: epinephrine (1:1,000) 0.01 milligram per kilogram to a maximum of 0.3 milligram, intramuscularly.
  5.5.4. In the presence of a deteriorating or non-responding asthmatic, magnesium sulfate, 50 milligrams per kilogram (to a maximum of 2 grams) in 50 milliliters of 0.9% sodium chloride, infused over twenty to thirty minutes.
5.6. If foreign body airway obstruction:
  5.6.1. Partial obstruction:
    5.6.1.1. Monitor. Intervene only if obstruction deteriorates.
  5.6.2. Complete obstruction:
    5.6.2.1. Attempt direct visualization and remove visible obstruction(s) with Magill forceps.

6. EDMCP contact and special considerations
  6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 02-2008.

Section 500.07: Nausea

1. History
   - 1.1. Isolated nausea
   - 1.2. Nausea following the administration of prehospital medications.
2. Symptoms
   - 2.1. Nausea
3. Signs
   - 3.1. Gastrointestinal: vomiting
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
   - 4.3. Obtain and record blood glucose measurement, if appropriate.
5. Advanced life support
   - 5.1. Advanced airway/ventilatory management, if appropriate.
   - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
     - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
       - 5.2.1.1. Acquire right precordial leads in the presence of inferior wall injury.
   - 5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
   - 5.4. Establish vascular access, if appropriate.
     - 5.4.1. If clinical signs of hypoperfusion are evident, administer 250-500 milliliter fluid boluses of 0.9% sodium chloride. Repeat as necessary until signs resolve or two liters of crystalloid solution have been infused
       - 5.4.1.1. Make reasonable efforts to warm 0.9% sodium chloride before administration.
     - 5.4.2. If hypoperfusion does not respond to volume resuscitation, initiate dopamine infusion, 5-20 micrograms per kilogram per minute and titrate to effect.
   - 5.5. In patients less than forty kilograms <u>and</u> six months of age, or older, administer ondansetron (Zofran), 0.1 milligram per kilogram (maximum dosage of 4 milligrams) intravenously over two to five minutes or intramuscularly if intravenous access cannot be obtained.
6. EDMCP contact and special considerations
   - 6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012 (new).

This page left blank intentionally.

Section 500.08: Near-drowning

1. History
   - 1.1. Length of submersion
   - 1.2. Fresh or salt water
   - 1.3. Warm or cold water
   - 1.4. Water depth
   - 1.5. Water contamination
   - 1.6. Trauma (diving accident, scuba diving, child abuse)
2. Symptoms
   - 2.1. Cough
   - 2.2. Dyspnea
   - 2.3. Pleuritic chest pain
   - 2.4. Vomiting
3. Signs
   - 3.1. Cardiovascular: dysrhythmias
   - 3.2. HEENT: head or neck trauma
   - 3.3. Neurological: seizures, decreased level of consciousness
   - 3.4. Respiratory: rales, rhonchi, wheezing, frothy sputum, respiratory distress, airway obstruction
   - 3.5. Skin: cyanosis, pallor, cold
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
   - 4.3. Obtain and record blood glucose measurement, if appropriate.
   - 4.4. Maintain body temperature.
5. Advanced life support
   - 5.1. Advanced airway/ventilatory management, if appropriate.
   - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
     - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
   - 5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
   - 5.4. Establish vascular access, if appropriate.
     - 5.4.1. If clinical signs or hypoperfusion are evident, bolus with 0.9% sodium chloride in accordance with Broselow™ Pediatric Emergency Care tape. Repeat as necessary to a maximum amount of sixty milliliters per kilogram.
   - 5.5. If evidence of acute pulmonary edema:
     - 5.5.1. Furosemide (Lasix), in accordance with Broselow™ Pediatric Emergency Care tape, in the absence of hypotension.
6. EDMCP contact and special considerations
   - 6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 02-2008.

Section 500.09: Newborn care and resuscitation

1. History
   - 1.1. Premature delivery
   - 1.2. Meconium staining
   - 1.3. Drug and/or alcohol use by mother
2. Symptoms
   - 2.1. None
3. Signs
   - 3.1. Cardiovascular: bradycardia
   - 3.2. Respiratory: insufficient ventilatory effort
   - 3.3. Skin: cyanosis, pallor
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
   - 4.3. Obtain and record blood glucose measurement, if appropriate.
   - 4.4. Normal delivery
     - 4.4.1. Suction mouth, then nose, following delivery of head.
     - 4.4.2. Manipulate nuchal cord to facilitate delivery.
     - 4.4.3. Allow for natural delivery of newborn taking care to protect from expulsive delivery.
     - 4.4.4. Clamp cord at least eight inches from newborns umbilicus with two clamps no less than two inches apart. Cut cord between clamps and assess for and manage any residual hemorrhage.
     - 4.4.5. Dry, maintain body temperature and stimulate.
   - 4.5. Breech delivery
     - 4.5.1. If newborns head does not deliver within three minutes, insert two fingers in to the vagina, palm facing the newborns face. Form a "v-shape" to allow for an air space for the newborn. Suction may be applied as necessary.
     - 4.5.2. Transport immediately.
   - 4.6. In the presence of bradycardia:
     - 4.6.1. If heart rate remains between 60 and 100 beats per minute following a minute of drying, warming, stimulation and oxygenation; begin CPR.
     - 4.6.2. If heart rate is less than 60 beats per minute at any time; begin cardiopulmonary resuscitation.
   - 4.7. In the presence of meconium staining:
     - 4.7.1. Aspirate meconium from oral and nasal cavities with bulb syringe or meconium aspirator.
5. Advanced life support
   - 5.1. Advanced airway/ventilatory management, if appropriate.
   - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.

5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.

5.4. Establish vascular access, if appropriate.

5.4.1. If clinical signs or hypoperfusion are evident, bolus with 0.9% sodium chloride in accordance with Broselow™ Pediatric Emergency Care tape. Repeat as necessary to a maximum amount of sixty milliliters per kilogram.

5.5. In the presence of bradycardia:

5.5.1. If heart rate does not respond to drying, warming, stimulation, oxygenation or cardiopulmonary resuscitation:

5.5.1.1. Epinephrine (1:1,000), in accordance with Broselow™ Pediatric Emergency Care tape. May repeat at three to five minute intervals in the presence of bradycardia.

5.5.1.2. If opiate involvement is suspected:

5.5.1.2.1. Naloxone (Narcan), in accordance with Broselow™ Pediatric Emergency Care tape. May repeat once.

5.6. In the presence of meconium staining:

5.6.1. Intubate the trachea using a meconium aspirator and aspirate particulate matter. Repeat, rinsing between tracheal placements, until clear.

6. EDMCP contact and special considerations

6.1. Dextrose administration in neonates shall be a ten percent (10%) concentration. Refer to Altered Mental Status section.

6.2. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 07-2009; 02-2008.

Section 500.10: Overdose/Poisoning

1. History
   - 1.1. Route, type, time, quantity of exposure
   - 1.2. Accidental, intentional
   - 1.3. Bystander action prior to arrival
   - 1.4. Emesis (induced, spontaneous)
   - 1.5. Any antidote given
   - 1.6. Depression or suicidal
   - 1.7. Previous overdoses/poisonings
   - 1.8. History of drug/alcohol abuse
2. Symptoms
   - 2.1. Mouth or throat pain
   - 2.2. Burns around the mouth
   - 2.3. Eye irritation/burning
   - 2.4. Dyspnea
   - 2.5. Sleepiness
   - 2.6. Nausea, vomiting
   - 2.7. Abdominal pain
   - 2.8. Diarrhea
   - 2.9. Headache
   - 2.10. Itching
   - 2.11. Chest pain
   - 2.12. Depression
3. Signs
   - 3.1. Cardiovascular: dysrhythmias
   - 3.2. Gastrointestinal: vomiting, abdominal tenderness
   - 3.3. HEENT: abnormal breath odor, increased salivation, eye redness, excessive tearing
   - 3.4. Neurological: decreased level of consciousness, coma, seizures
   - 3.5. Respiratory: abnormal breathing patterns, labored respirations, wheezing
   - 3.6. Skin: cyanosis, rash, diaphoresis
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
   - 4.3. Obtain and record blood glucose measurement, if appropriate.
   - 4.4. Decontaminate the patient in the presence of poisoning, if appropriate.
5. Advanced life support
   - 5.1. Advanced airway/ventilatory management, if appropriate.
   - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
     - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
   - 5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.

5.4. Establish vascular access, if appropriate.
  5.4.1. If clinical signs or hypoperfusion are evident, bolus with 0.9% sodium chloride in accordance with Broselow™ Pediatric Emergency Care tape. Repeat as necessary to a maximum amount of sixty milliliters per kilogram.

5.5. Anticholingeric (Organophosphate), symptomatic
  5.5.1. Atropine, 0.05 milligram per kilogram.
    5.5.1.1. Repeat atropine, 0.05 milligram per kilogram, every two to five minutes so long as symptoms persist.

5.6. Antipsychotic/Acute dystonic reaction
  5.6.1. Diphenhydramine (Benadryl), 1 milligram per kilogram (maximum 50 milligrams).

5.7. Calcium channel blocker, symptomatic (chest pain, syncope or hypotension in the presence of bradycardia or heart block)
  5.7.1. Atropine, in accordance with Broselow™ Pediatric Emergency Care tape.
  5.7.2. Calcium chloride, in accordance with Broselow™ Pediatric Emergency Care tape.

5.8. Opiate, symptomatic
  5.8.1. Naloxone (Narcan) in accordance with Broselow™ Pediatric Emergency Care tape.
  5.8.2. Notwithstanding nasally administered naloxone by lay person or basic life support responders, intravenous naloxone shall be administered in the presence of continued respiratory depression.
  5.8.3. If intravenous administration is available, intravenous administration shall be utilized in lieu of nasal administration.

5.9. Tricyclic and tetracyclic antidepressant
  5.9.1. In the presence of wide complex (QRS >0.12 second), hypotension or any dysrhythmia:
    5.9.1.1. Sodium bicarbonate, in accordance with Broselow™ Pediatric Emergency Care tape.

6. EDMCP contact and special considerations
  6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 02-2008.

Section 500.11: Pain management

1. History
   - 1.1. Chest pain associated with myocardial ischemia
   - 1.2. Isolated musculoskeletal injury secondary
   - 1.3. Burns, in the absence of cardiopulmonary compromise, including localized cold injuries
   - 1.4. Sickle Cell Anemia
2. Symptoms
   - 2.1. Pain
3. Signs
   - 3.1. Skin: pallor, diaphoresis
   - 3.2. Vitals: tachycardia, tachypnea
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%)
   - 4.3. Obtain and record blood glucose measurement, if appropriate.
5. Advanced life support
   - 5.1. Advanced airway/ventilatory management, if appropriate.
   - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
     - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
   - 5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
   - 5.4. Establish vascular access, if appropriate.
     - 5.4.1. If clinical signs or hypoperfusion are evident, bolus with 0.9% sodium chloride in accordance with Broselow™ Pediatric Emergency Care tape. Repeat as necessary to a maximum amount of sixty milliliters per kilogram.
   - 5.5. Morphine sulfate, 0.1 milligram per kilogram (maximum individual dose 2 milligrams). May repeat morphine dosing once for pain associated with:
     - 5.5.1. Isolated extremity injury;
     - 5.5.2. Burns, excluding those with accompanying cardiopulmonary compromise;
     - 5.5.3. Chest pain suspicious of myocardial ischemia; or
     - 5.5.4. Sickle Cell crisis.
   - 5.6. Following administration of an analgesic:
     - 5.6.1. Assess and record changes in discomfort.
     - 5.6.2. Assess and document ventilation and perfusion status.
     - 5.6.3. Assess and document oxygen saturation and end-tidal carbon dioxide, if available by nasal cannula.
6. EDMCP contact and special considerations
   - 6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 02-2008.

Section 500.12: Seizure

1. History
   - 1.1. Onset
   - 1.2. Duration
   - 1.3. Type (grand-mal, focal, petit mal)
   - 1.4. Recovery of consciousness
   - 1.5. Incontinence
   - 1.6. Medical illnesses (especially prior seizures, diabetes, CVA, fever)
   - 1.7. Drug or alcohol withdrawal
   - 1.8. Head trauma
   - 1.9. Pregnancy
2. Symptoms
   - 2.1. Aura (visual or auditory hallucinations)
   - 2.2. Metallic taste in mouth
3. Signs
   - 3.1. Cardiovascular: check for pulses post seizure, as seizure may be first indication of cardiac arrest or serious dysrhythmia
   - 3.2. Genitourinary: incontinence
   - 3.3. HEENT: head trauma, tongue biting/oral trauma
   - 3.4. Neurological: seizures, decreased level of consciousness (postictal), focal neurologic signs
   - 3.5. Skin: cyanosis, pallor, clammy children - rash, hot
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
   - 4.3. Obtain and record blood glucose measurement, if appropriate.
5. Advanced life support
   - 5.1. Advanced airway/ventilatory management, if appropriate.
   - 5.2. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
     - 5.2.1. Acquire and evaluate 12 lead ECG, if appropriate.
   - 5.3. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
   - 5.4. Establish vascular access, if appropriate.
     - 5.4.1. If clinical signs or hypoperfusion are evident, bolus with 0.9% sodium chloride in accordance with Broselow™ Pediatric Emergency Care tape. Repeat as necessary to a maximum amount of sixty milliliters per kilogram.
   - 5.5. If seizure activity is present:
     - 6.1.1. Midazolam (Versed), 0.1 milligram per kilogram of body weight, to a maximum of two milligrams, intravenously or intraosseously.
       - 5.5.1.1. May repeat midazolam (Versed) once for a maximum of 4 milligrams.

5.5.1.2. If unable to obtain vascular access, midazolam (Versed), 0.1 milligram per kilogram, intramuscularly, to a maximum of two milligrams. May repeat once, if necessary.

5.5.2. May repeat above dose once.

6. EDMCP contact and special considerations

6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 07-2009; 03-2008 (memorandum 700.01); 02-2008.

Section 500.13: Trauma

1. History
   - 1.1. Mechanism of injury (blunt or penetrating)
   - 1.2. Blunt trauma: amount and direction of force
   - 1.3. Penetrating trauma: weapon, size of object, bullet caliber, trajectory of bullet
   - 1.4. Motor vehicle accident: condition of vehicle, dashboard, and steering wheel, speed of impact, seat belt use, patient trajectory
   - 1.5. Description of scene
   - 1.6. Treatment prior to arrival (patient movement)
   - 1.7. Time of injury
   - 1.8. Protective devices (helmet, air bag, restraint, etc.)
   - 1.9. Alterations in mentation (duration and progression)
   - 1.10. Drug or alcohol use
2. Symptoms
   - 2.1. Respiratory distress
   - 2.2. Chest pain
   - 2.3. Neck pain
   - 2.4. Hemoptysis
   - 2.5. Nausea/Vomiting
   - 2.6. Headache
   - 2.7. Diplopia or blurred vision
   - 2.8. Paresthesia
   - 2.9. Paralysis
3. Signs
   - 3.1. Abdomen: painful, tender, distended
   - 3.2. Cardiovascular: muffled heart sounds, distended neck veins, narrow pulse pressure
   - 3.3. HEENT: Battle's sign, raccoon eyes, blood or fluid drainage from nose or ears, symmetry and reactivity of pupils
   - 3.4. Musculoskeletal: evidence of fracture or dislocation, soft tissue injury, loss of function
   - 3.5. Neck: tenderness
   - 3.6. Neurological: alterations in mentation, restlessness, seizure, coma
   - 3.7. Respiratory: apnea, abnormal chest wall movements (paradoxical, retractions), abnormal breath sounds, tracheal shift, subcutaneous emphysema
   - 3.8. Skin: cyanosis, pallor, mottling, entrance and exit wounds, cool, clammy, subcutaneous emphysema, "sucking" chest wound, soft tissue injury
4. Basic life support
   - 4.1. Perform appropriate assessment and interventions, including cervical spine immobilization, if appropriate.
   - 4.2. If the patient's oxyhemoglobin saturation is less than ninety-four percent (<94%), administer supplemental oxygen to achieve saturation of ninety-four percent, or greater (≥94%).
   - 4.3. Appropriately immobilize spine.
   - 4.4. Immobilize all foreign objects in position found.

4.5. Obtain and record blood glucose measurement, if appropriate.
4.6. Refer to Trauma Transport Protocol.
4.7. Abdominal trauma
  4.7.1. Cover eviscerations with dressing moistened with sterile 0.9% sodium chloride.
4.8. Burns (chemical)
  4.8.1. Decontaminate
  4.8.2. Apply dry sterile dressings.
  4.8.3. Consider pain management, as appropriate.
4.9. Burns (thermal)
  4.9.1. Apply dry sterile dressings.
4.10. Extremity trauma (suspected fracture/dislocation)
  4.10.1. Suspected fracture or dislocation:
    4.10.1.1. Neurovascular function intact distal to injury:
      4.10.1.1.1. Immobilize.
    4.10.1.2. Neurovascular function compromised distal to injury:
      4.10.1.2.1. Attempt to return extremity to its anatomical position.
      4.10.1.2.2. Immobilize.
  4.10.2. Amputation:
    4.10.2.1. Incomplete:
      4.10.2.1.1. Immobilize in correct anatomical position.
    4.10.2.2. Complete:
      4.10.2.2.1. Irrigate amputated part with 0.9% sodium chloride and wrap in saline moistened sterile dressing.
      4.10.2.2.2. Wrap in plastic and keep cool during transport.
4.11. Head trauma
  4.11.1. Elevate head of backboard thirty degrees in the absence of hypotension.
  4.11.2. Appropriate ventilation rates:
    4.11.2.1. Child (age one year to eight years):
      4.11.2.1.1. Eucapneic (normal): twenty (20) breaths per minute.
      4.11.2.1.2. Hyperventilation: thirty (30) breaths per minute.
    4.11.2.2. Infant (age birth to one year):
      4.11.2.2.1. Eucapneic (normal): thirty (30) breaths per minute.
      4.11.2.2.2. Hyperventilation: thirty-five (35) breaths per minute.
  4.11.3. Hyperventilate if herniation suspected:
    4.11.3.1. Asymmetrical pupils;
    4.11.3.2. Abrupt deterioration in mentation;
    4.11.3.3. Decorticate or decerebrate posturing; or
    4.11.3.4. Cushing's Triad (hypertension, bradycardia or hypoventilation).
4.12. Thoracic trauma
  4.12.1. Open chest wound
    4.12.1.1. Apply occlusive dressing.
      4.12.1.1.1. Temporarily remove in the presence of deteriorating ventilatory status.

4.12.2. Flail segment
4.12.2.1. Attempt to stabilize with bulky dressing
4.12.2.2. Assist ventilation with bag-mask ventilation.

5. Advanced life support
5.1. Advanced airway/ventilatory management, if appropriate.
5.2. Needle decompression for patient with tension pneumothorax as needed.
5.3. Initiate cardiac monitoring. Evaluate and record ECG strip, if appropriate.
5.3.1. Acquire and evaluate 12 lead ECG, if appropriate.
5.4. Monitor and record end-tidal carbon dioxide utilizing waveform capnography, if available and appropriate.
5.5. Establish vascular access, if appropriate.
5.5.1. If clinical signs or hypoperfusion are evident, bolus with 0.9% sodium chloride in accordance with Broselow™ Pediatric Emergency Care tape. Repeat as necessary to a maximum amount of sixty milliliters per kilogram.
5.6. Burns (chemical)
5.6.1. Decontaminate
5.6.2. Apply dry sterile dressings
5.6.3. Consider pain management, as appropriate.
5.7. Burns (thermal)
5.7.1. Volume resuscitation in accordance with the Parkland Burn Formula:
5.7.2. Consider pain management, as appropriate.
5.8. Extremity trauma
5.8.1. Consider pain management, as appropriate.
5.9. Head trauma
5.9.1. Target end-tidal carbon dioxide levels should be maintained between 30-35 mmHg in the intubated patient.
5.10. Thoracic trauma
5.10.1. Flail segment
5.10.1.1. Attempt intubation.
5.10.2. Tension pneumothorax
5.10.2.1. Perform needle decompression.

6. EDMCP contact and special considerations
6.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 02-2008.

This page left blank intentionally.

Section 600.00: Procedural protocols

This section is designed to give the provider an overview of the procedures authorized under Volusia County Prehospital Standing Orders and Treatment Protocols. Providers are encouraged to reference prehospital texts or seek additional clarification if further clarification is necessary or questions arise.

This page left blank intentionally.

Section 600.01: Automatic external defibrillator (AED)

1. Skill level
   1.1. Basic life support (BLS)
2. Physician authorization required prior to performing skill
   2.1. No
3. Indications
   3.1. Pulselessness
   3.2. Apnea
4. Contraindications
   4.1. Patients who are breathing
   4.2. Patients with a pulse
   4.3. Patients that are conscious
5. Complications/Precautions
   5.1. None.
6. Procedure
   6.1. Begin cardiopulmonary resuscitation.
   6.2. Turn AED on and ensure device is working properly through self-test and warnings.
   6.3. Apply pads.
   6.4. Allow device to analyze rhythm and follow instructions.
7. Equipment
   7.1. AED
   7.2. Defibrillation pads, adult
   7.3. Defibrillation pads, pediatric
8. EDMCP contact and special considerations
   8.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.
   8.2. Pediatric pads are recommended for patients weighing less than thirty-two kilograms; however, if no pediatric pads are available, adult pads are a suitable substitute.

History: 01-2018; 02-2008.

This page left blank intentionally.

Section 600.02: Blood glucose measurement

1. Skill level
    1.1. Basic life support (BLS)
2. Physician authorization required prior to performing skill
    2.1. No
3. Indications
    3.1. Altered mental status
    3.2. Diabetic
    3.3. Seizure
    3.4. Syncope
4. Contraindications
    4.1. None
5. Complications/Precautions
    5.1. Infection
    5.2. Erroneous measurements
6. Procedure
    6.1. Ensure all equipment is assembled, readily available and operational.
    6.2. Choose location to acquire sample and cleanse skin with alcohol prep pad.
    6.3. Using a lancet, pierce the skin and capture the sample using the collection tube,
7. Equipment
    7.1. Blood glucose meter
    7.2. Test strips for collecting sample
    7.3. Lancets
8. EDMCP contact and special considerations
    8.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 02-2008 (new).

This page left blank intentionally.

Section 600.03: Continuous positive airway pressure (CPAP)

1. Skill level
   1.1. Advanced life support (ALS)
2. Physician authorization required prior to performing skill
   2.1. No
3. Indications
   3.1. Pulmonary edema secondary to congestive heart failure
   3.2. Pulmonary edema secondary to submersion/near-drowning that does not respond to one hundred percent supplemental oxygen
4. Contraindications
   4.1. Ineffective ventilatory effort
   4.2. Depressed level of consciousness
   4.3. Inability to maintain airway
   4.4. Hypotension
   4.5. Vomiting
   4.6. Gastric distension
5. Complications/Precautions
   5.1. Hypotension
6. Procedure
   6.1. Ensure all equipment is assembled, readily available and operational.
   6.2. Allow patient to assume position of comfort.
   6.3. Begin flow by turning to the 'on' position.
   6.4. Ensure that the flow adjustment valve is on the open position.
   6.5. Ensure that the concentration adjustment valve is in the closed position allowing for 0.28 FiO2.
   6.6. Apply mask to patient's face.
   6.7. Observe for improvement of symptoms.
      6.7.1. The oxygen flow valve may be opened in one half turn increments to allow for a greater fraction of inspired oxygen (FiO2).
7. Equipment
   7.1. CPAP generator
   7.2. Disposable, low pressure circuit
   7.3. Disposable mask with harness
   7.4. Disposable pressure valve, 7.5 cm H2O
   7.5. Oxygen source
8. EDMCP contact and special considerations
   8.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 02-2008.

This page left blank intentionally.

Section 600.04: Cricothyrotomy

1. Skill level
   - 1.1. Advanced life support (ALS)
2. Physician authorization required prior to performing skill
   - 2.1. No
3. Indications
   - 3.1. Inability of the patient to sufficiently maintain adequate ventilation and oxygenation, and;
   - 3.2. Inability of the provider to sufficiently maintain adequate ventilation and oxygenation by way of bag-mask ventilation; and
   - 3.3. Inability of the provider to intubate.
4. Contraindications
   - 4.1. Patients who are able to adequately ventilate and oxygenate spontaneously
   - 4.2. Patients who are able to be adequately ventilated and oxygenated by a field provider
5. Complications/Precautions
   - 5.1. Improper placement
   - 5.2. Excessive hemorrhage
6. Procedure
   - 6.1. Quick Fix Cricothyrotomy Kit: indicated for patients eight years of age or greater
     - 6.1.1. Ensure all equipment is assembled, readily available and operational.
     - 6.1.2. Identify appropriate landmarks.
     - 6.1.3. Prepare area with alcohol or povidone-iodine (Betadine).
     - 6.1.4. Hold the skin taut over the thyroid cartilage.
     - 6.1.5. Make a one half inch vertical incision through the skin over the cricoid membrane to expose the trachea.
     - 6.1.6. Push the blade of the scalpel through membrane and make a small horizontal incision.
     - 6.1.7. Use forceps to open membrane.
     - 6.1.8. Insert the tube into trachea past cuffed end.
     - 6.1.9. Inflate cuff with air.
     - 6.1.10. Ventilate and assess placement.
     - 6.1.11. Secure tube.
   - 6.2. Needle: indicated for patients under eight years of age
     - 6.2.1. Ensure all equipment is assembled, readily available and operational.
     - 6.2.2. Identify appropriate landmarks.
     - 6.2.3. Prepare area with alcohol or povidone-iodine (Betadine).
     - 6.2.4. Puncture cricothyroid membrane at a 45 degree angle caudally while aspirating to identify the lumen of the trachea.
     - 6.2.5. Advance the catheter into the trachea and withdraw the needle.
     - 6.2.6. While holding the catheter in place, attach the standard connection from the 3.5 millimeter endotracheal tube.
     - 6.2.7. Ventilate with a bag-valve device and confirm placement.
7. Equipment
   - 7.1. Quick Fix Cricothyrotomy Kit

7.1.1. Commercially available kit allowing the introduction of an airway through the cricothyroid membrane.
7.1.2. Bag-Mask ventilation device capable of delivering supplemental oxygen.
7.1.3. Oxygen source.

7.2. Needle
7.2.1. 14 gauge by two inch over the needle catheter.
7.2.2. Ten milliliter syringe.
7.2.3. Alcohol or povidone-iodine (Betadine) preps.
7.2.4. Tape, for securing catheter.
7.2.5. Standard 15 millimeter/22 millimeter adapter from a 3.5 millimeter endotracheal tube.
7.2.6. Bag-Mask ventilation device capable of delivering supplemental oxygen.
7.2.7. Oxygen source.

8. EDMCP contact and special considerations

8.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2014; 07-2012; 02-2008.

Section 600.05: Defibrillation (manual) and synchronized cardioversion

1. Skill level
   - 1.1. Advanced life support (ALS)
2. Physician authorization required prior to performing skill
   - 2.1. No
3. Indications
   - 3.1. Ventricular fibrillation and pulseless ventricular tachycardia (defibrillation)
   - 3.2. Tachydysrhythmias (synchronized cardioversion)
4. Contraindications
   - 4.1. None in the presence of a rhythm requiring electrical therapy.
5. Complications/Precautions
   - 5.1. Deterioration of dysrhythmia (synchronized cardioversion)
6. Procedure
   - 6.1. Defibrillation (manual defibrillator)
     - 6.1.1. Ensure all equipment is assembled, readily available and operational.
     - 6.1.2. Confirm rhythm is ventricular fibrillation or pulseless ventricular tachycardia.
     - 6.1.3. Prep skin for application of pads.
     - 6.1.4. Apply pads in the sternum/apex configuration. Alternatively, the anterior/posterior configuration is acceptable or paddles may be utilized.
     - 6.1.5. Select appropriate energy level to deliver and charge defibrillator.
     - 6.1.6. Ensure that no one is in contact with the patient.
     - 6.1.7. Deliver energy, reevaluate patient's rhythm and deliver appropriate subsequent therapy in accordance with current resuscitative guidelines.
   - 6.2. Synchronized cardioversion
     - 6.2.1. Ensure all equipment is assembled, readily available and operational.
     - 6.2.2. Prep skin for application of pads.
     - 6.2.3. Apply pads in the sternum/apex configuration. Alternatively, the anterior/posterior configuration is acceptable or paddles may be utilized.
     - 6.2.4. Engage the synchronization feature on the defibrillator.
     - 6.2.5. Select appropriate energy level to deliver and charge defibrillator.
     - 6.2.6. Ensure that no one is in contact with the patient.
     - 6.2.7. Deliver energy and reevaluate patient's rhythm.
     - 6.2.8. If subsequent synchronized cardioversion is indicated, reengage the synchronization feature on the defibrillator each time before delivering a shock, if necessary.
7. Equipment
   - 7.1. Monitor/Defibrillator
   - 7.2. Defibrillation/Cardioversion pads, adult
   - 7.3. Defibrillation/Cardioversion pads, pediatric
8. EDMCP contact and special considerations
   - 8.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 02-2008.

Section 600.06: Dual lumen airway (Combitube)

1. Skill level
   - 1.1. Basic life support (BLS)
2. Physician authorization required prior to performing skill
   - 2.1. No
3. Indications
   - 3.1. Apnea
   - 3.2. Pulseless
   - 3.3. Unconscious
   - 3.4. Need for prolonged positive pressure ventilation.
4. Contraindications
   - 4.1. Persons under five feet in height.
   - 4.2. Conscious or semi-conscious persons.
   - 4.3. Intact gag reflex.
   - 4.4. Presence of esophageal disease.
   - 4.5. Caustic ingestion.
   - 4.6. Underlying problem that could result in an edematous airway.
5. Complications/Precautions
   - 5.1. Maxilofacial injuries.
6. Procedure
   - 6.1. Ensure all equipment is assembled, readily available and operational.
   - 6.2. Place patient supine with head and neck in neutral position.
   - 6.3. Manually immobilize cervical spine if trauma suspected.
   - 6.4. Grasp lower jaw between thumb and index finger and displace anteriorly.
   - 6.5. Advance dual lumen airway into pharynx along the midline. If resistance is met, redirect tube.
   - 6.6. Advance tube until incisors are between lines on the proximal end of the tube.
   - 6.7. Inflate proximal cuff with one hundred milliliters of air.
   - 6.8. Inflate distal cuff with fifteen milliliters of air.
   - 6.9. Attach positive pressure ventilation device to “Tube 1” and deliver ventilation while auscultating over the patient’s epigastrum.
     - 6.9.1. If tube is placed in the esophagus:
       - 6.9.1.1. Epigastric sounds will be absent.
       - 6.9.1.2. Auscultate lung sounds bilaterally to ensure adequate ventilation.
     - 6.9.2. If tube is placed in the trachea:
       - 6.9.2.1. Epigastric sounds will be present.
       - 6.9.2.2. Reattach positive pressure ventilation device to “Tube 2” and deliver ventilation while auscultating over the patient’s epigastrum. If epigastric sounds are present, remove immediately and ventilate using a bag-mask device.
         - 6.9.2.2.1. If epigastric sounds are absent, auscultate lung sounds bilaterally to ensure adequate ventilation.
   - 6.10. Continue ventilation through appropriate tube while:

6.10.1. Frequently monitoring chest rise and lung sounds to ensure airway adjunct integrity.

6.10.2. Continuous end-tidal carbon dioxide monitoring is required in all instances of dual lumen airway placement.

6.10.2.1. If the patient is under the care of a basic life support provider, continuous use of a colorimetric device is required.

6.10.2.2. If the patient is under the care of an advanced life support provider, continuous use of waveform capnography is required.

7. Equipment

7.1. Dual lumen airway kit.

7.2. Device for providing positive pressure ventilation.

7.3. Suction

7.4. Oxygen source

8. EDMCP contact and special considerations

8.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 02-2008.

Section 600.07: Electrocardiogram, 12 lead

1. Skill level
   - 1.1. Advanced life support (ALS)
2. Physician authorization required prior to performing skill
   - 2.1. No
3. Indications
   - 3.1. Signs or symptoms even remotely indicative of an acute coronary syndrome.
4. Contraindications
   - 4.1. None
5. Complications/Precautions
   - 5.1. None
6. Procedure
   - 6.1. Prepare skin.
   - 6.2. Place limb leads.
     - 6.2.1. Placement on the limb or on the trunk adjacent to the limb is acceptable.
   - 6.3. Place precordial leads.
     - 6.3.1. V1: Fourth intercostal space, immediately right of the sternum.
     - 6.3.2. V2: Fourth intercostal space, immediately left of the sternum.
     - 6.3.3. V3: Fifth intercostal space, midway between V2 and V4.
     - 6.3.4. V4: Fifth intercostal space, on the midclavicular line.
     - 6.3.5. V5: Lateral to V4, on the anterior axillary line.
     - 6.3.6. V6: Lateral to V5, on the mid-axillary line.
   - 6.4. Have patient remain still.
   - 6.5. Acquire 12 lead ECG.
   - 6.6. Rule out ST changes in the presence of the following mimics:
     - 6.6.1. Left ventricular hypertrophy
     - 6.6.2. Paced rhythm
   - 6.7. If ST elevation is present in the inferior leads (II, III and aVF), reposition V4 to the right chest wall (V4R) and reacquire to assess for right ventricular involvement.
   - 6.8. Declare “STEMI Alert” if the following is noted:
     - 6.8.1. ST elevation of at least one millimeter in at least two anatomically contiguous limb leads or two millimeters in at least two anatomically contiguous precordial leads, or
     - 6.8.2. Signs and symptoms of myocardial ischemia in the presence of left bundle branch block (LBB).
   - 6.9. The requirement to transmit ECG’s is addressed under transport protocols.
   - 6.10. Patients with presentation suspicious of myocardial ischemia and in the absence of clinically relevant ST changes will be declared a “cardiac alert” and transported to the nearest emergency department.
7. Equipment
   - 7.1. Cardiac monitor.
   - 7.2. Electrodes
   - 7.3. Razor and other materials to adequately prepare the skin.
   - 7.4. Transmission capability (optional).

8. EDMCP contact and special considerations
   - 8.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.
   - 8.2. Absence of ST changes on the 12 lead is not conclusive for the absence of ischemia or injury.
   - 8.3. ST changes may only be interpreted with a diagnostic 12 lead ECG. Do not rely on what may appear to be ST changes during non-diagnostic rhythm monitoring.

History: 01-2018; 07-2014; 07-2012; 07-2009; 02-2008.

Section 600.08: EMT assistance with medication delivery

1. Skill level
    - 1.1. Basic life support (BLS)
2. Physician authorization required prior to performing skill
    - 2.1. No
3. Indications
    - 3.1. Bronchodilator
        - 3.1.1. Patients experiencing signs or symptoms of respiratory distress associated with bronchoconstriction and having previously been prescribed a bronchodilator.
    - 3.2. Nitroglycerin
        - 3.2.1. Patients experiencing chest pain, having been previously prescribed nitroglycerin.
4. Contraindications
    - 4.1. Bronchodilator
        - 4.1.1. None
    - 4.2. Nitroglycerin
        - 4.2.1. Systolic blood pressure less than ninety mmHg.
        - 4.2.2. Heart rate less than fifty (50).
        - 4.2.3. The chest pain is atypical when compared to pain the patient normally associates with angina.
        - 4.2.4. Patient has taken an agent used in the treatment of erectile dysfunction:
            - 4.2.4.1. Sildenafil citrate (Viagra), tadalafil (Cialis), or vardenafil (Levitra) within twenty-four hours.
5. Complications/Precautions
    - 5.1. Bronchodilator
        - 5.1.1. Tachydysrhythmias
    - 5.2. Nitroglycerin
        - 5.2.1. Hypotension
6. Procedure
    - 6.1. Assistance with a patient's metered-dose inhaler (bronchodilator)
        - 6.1.1. Verify that the medication is prescribed for the individual.
        - 6.1.2. Shake inhaler vigorously for ten to fifteen seconds.
        - 6.1.3. Have patient hold the inhaler in their mouth and activate while inhaling.
        - 6.1.4. Instruct patient to hold their breath for as long as possible to allow medication to permeate air passages.
        - 6.1.5. Repeat once, as necessary (bronchodilator)
    - 6.2. Assistance with a patient's nebulizer
        - 6.2.1. Verify that the medication is prescribed for the individual.
        - 6.2.2. Add medication to the disposable nebulizer reservoir.
        - 6.2.3. Turn on nebulizer to begin aerosolization.
        - 6.2.4. Instruct patient to inhale as deeply as possible to allow medication to permeate air passages.
        - 6.2.5. Repeat once, as necessary.

6.3. Nitroglycerin
- 6.3.1. Verify medication belongs to the patient.
- 6.3.2. Ask patient to lift tongue.
- 6.3.3. Administer tablet or spray in the sublingual space and allow dissolve/be absorbed.
- 6.3.4. Reassess patient.
- 6.3.5. Repeat every five minutes in the presence of symptoms.

7. Equipment
   - 7.1. Bronchodilator
     - 7.1.1. Supplied by patient.
   - 7.2. Nitroglycerin
     - 7.2.1. Supplied by patient.
8. EDMCP contact and special considerations
   - 8.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 02-2008.

Section 600.09: EMT intravenous access

1. Skill level
    - 1.1. Basic life support (BLS).
2. Physician authorization required prior to performing skill
    - 2.1. No.
3. Indications
    - 3.1. Determined need for vascular access for delivery of, or potential delivery of, volume resuscitation or medications.
4. Contraindications
    - 4.1. Presence of an arterio-venous shunt in the extremity.
5. Complications/Precautions
    - 5.1. Infection
    - 5.2. Infiltration
    - 5.3. Catheter shear
6. Procedure
    - 6.1. Identify need for venous access and determine appropriate site to include:
    - 6.2. Peripheral venous access
    - 6.3. Ensure all equipment is assembled, readily available and operational.
    - 6.4. Impede venous return, if appropriate and necessary.
    - 6.5. Prepare site with alcohol or povidone-iodine (Betadine).
    - 6.6. Perform venipuncture:
    - 6.7. Peripheral and external jugular venous access:
        - 6.7.1. Insert an appropriate-sized, over-the-needle catheter at suitable angle to penetrate vein.
        - 6.7.2. Once blood presents in flash chamber, slightly advance needle along axis of vein.
        - 6.7.3. Advance catheter off of needle and into vein.
        - 6.7.4. Withdraw needle and dispose of appropriately.
        - 6.7.5. Collect specimen for blood glucose testing, if appropriate.
        - 6.7.6. Attach maintenance device to hub of catheter.
            - 6.7.6.1. Saline lock:
                - 6.7.6.1.1. Flush with three milliliters of 0.9% sodium chloride while observing for infiltration.
            - 6.7.6.2. Intravenous tubing:
                - 6.7.6.2.1. Infuse at rapid rate while observing for infiltration.
                - 6.7.6.2.2. If determined to be patent, reduce infusion rate to ten milliliters per hour.
        - 6.7.7. Secure catheter and maintenance device.
7. Equipment
    - 7.1. Over-the-needle intravenous catheter.
    - 7.2. Alcohol or povidone-iodine (Betadine) preps.
    - 7.3. Tourniquet
    - 7.4. Tape or other means of securing catheter at venipuncture site.
    - 7.5. Means of maintaining catheter integrity:

7.5.1. 0.9% sodium chloride and infusion set (macro or micro drip); or
7.5.2. Saline lock and 0.9% sodium chloride flush

7.6. Blood glucose meter, if appropriate

8. EDMCP contact and special considerations

8.1. Agencies opting to participate in this level of care are required to provide training to participating EMT's commensurate with the current United States Department of Transportation Emergency Medical Technician-Basic curriculum. Training shall include didactic and clinical instruction, including a demonstration of skills' proficiency by the participant.

8.2. Agencies wishing to participate in the EMT-IV program shall provide written notification to the medical director's office. Such notification shall include evidence of satisfactory training for each participant.

8.3. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012 (new).

Section 600.10: Endotracheal intubation

1. Skill level
   - 1.1. Advanced life support (ALS)
2. Physician authorization required prior to performing skill
   - 2.1. No
3. Indications
   - 3.1. Inability of the patient to sufficiently maintain adequate ventilation and oxygenation, and;
   - 3.2. Inability of the provider to sufficiently maintain adequate ventilation and oxygenation by way of bag-mask ventilation.
4. Contraindications
   - 4.1. Patients who are able to adequately ventilate and oxygenate spontaneously
   - 4.2. Patients who are able to be adequately ventilated and oxygenated by a field provider
5. Complications/Precautions
   - 5.1. Misplaced or dislodged airway.
   - 5.2. Hypoxemia, secondary to prolonged airway management attempts.
   - 5.3. Unrecognized esophageal placement leading to hypoxemia
6. Procedure
   - 6.1. Orotracheal intubation
     - 6.1.1. Ensure all equipment is assembled, readily available and operational. Further ensure that the patient is being adequately oxygenated prior to performing the procedure.
     - 6.1.2. If trauma suspected, maintain cervical spine integrity throughout procedure.
     - 6.1.3. Chemically induce sedated state, if necessary.
     - 6.1.4. Advance the blade into the right side of the patient's mouth, sweeping the tongue laterally while identifying landmarks.
       - 6.1.4.1. Remove foreign bodies that may cause an obstruction.
       - 6.1.4.2. If landmarks are not readily identified in a timely fashion, cease attempt and ventilate patient to ensure adequate ventilation/oxygenation.
     - 6.1.5. Gently advance the distal tip of the endotracheal tube between the vocal cords and in to the trachea.
     - 6.1.6. While firmly grasping the tube, remove the blade.
     - 6.1.7. Inflate cuff, if appropriate, to sufficiently isolate the airway.
     - 6.1.8. Attach bag-valve device and confirm placement.
     - 6.1.9. Continue ventilation:
       - 6.1.9.1. Frequently monitor chest rise and lung sounds to ensure airway adjunct integrity.
       - 6.1.9.2. Continuous end-tidal carbon dioxide monitoring (waveform capnography) is required in all instances of dual lumen airway placement.
7. Equipment
   - 7.1. Orotracheal intubation
     - 7.1.1. Endotracheal tube

7.1.2. Stylet
7.1.3. Laryngoscope handle
7.1.4. Laryngoscope blades, assorted styles and sizes.
7.1.5. Ten milliliter syringe
7.1.6. Tape of device for securing tube
7.1.7. End-tidal carbon dioxide monitoring device
7.1.8. Suction
7.1.9. Bag-Mask ventilation device capable of delivering supplemental oxygen
7.1.10. Oxygen source
7.1.11. Gum-elastic bougie

8. EDMCP contact and special considerations
   8.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 02-2008.

Section 600.11: Epi-Pen administration

1. Skill level
   - 1.1. Basic life support (BLS)
2. Physician authorization required prior to performing skill
   - 2.1. No
3. Indications
   - 3.1. Patients experiencing signs or symptoms of a severe anaphylactic reaction, including generalized uticaria, respiratory distress, or shock.
4. Contraindications
   - 4.1. None in the presence of true anaphylaxis.
5. Complications/Precautions
   - 5.1. Use with caution in patients with cardiovascular disease.
6. Procedure
   - 6.1. Determine proper dose. If utilizing a patient's auto-injector, verify that is was prescribed for them.
     - 6.1.1. Weight greater than thirty (30) kilograms, use adult dosage (0.3 milligram)
     - 6.1.2. Weight between fifteen (15) and thirty (30) kilograms, use pediatric dosage (0.15 milligram)
   - 6.2. Prepare site with alcohol or povidone-iodine (Betadine).
   - 6.3. Remove cap from the auto-injector.
   - 6.4. Place the tip of the auto-injector on the lateral aspect of the thigh midway between the knee and waist.
   - 6.5. Press auto-injector firmly against skin until it activates and hold in place for five to ten seconds; allowing the entire dose of medication to be delivered.
   - 6.6. Remove and properly discard.
7. Equipment
   - 7.1. Epinephrine auto-injector
     - 7.1.1. Epinephrine auto-injector, adult (0.3 milligram)
     - 7.1.2. Epinephrine auto-injector, pediatric (0.15 milligram)
8. EDMCP contact and special considerations
   - 8.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.
   - 8.2. Auto-injectors are a part of the inventory on a basic life support unit. Alternatively, providers are authorized to utilize the patient's prescribed auto-injector.

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 600.12: Blood draw

1. Skill level
    1.1. Advanced life support (ALS)
2. Physician authorization required prior to performing skill
    2.1. No
3. Indications
    3.1. Patients with signs or symptoms of cerebrovascular accident.
    3.2. Upon request of a law enforcement officer who has probable cause to believe an operator of a motor vehicle is under the influence of alcohol, chemical substances or controlled substances, providing:
        3.2.1. The operator caused serious bodily injury to another involved party; or
        3.2.2. The operator caused death to another involved party.
4. Contraindications
    4.1. Inadequate restraint of the patient that may result in injury to the patient during collection.
    4.2. Presence of an arterio-venous shunt in the extremity.
5. Complications/Precautions
    5.1. Infection
6. Complications/Precautions
    6.1. Similar to venous cannulation.
7. Procedure
    7.1. Cerebrovascular accident
        7.1.1. Ensure all equipment is assembled, readily available and operational.
        7.1.2. Prepare site with aseptic solution.
        7.1.3. Perform venous cannulation:
            7.1.3.1. Using appropriate collection system, acquire sample.
            7.1.3.2. Transfer blood sample to blood tube allowing tube to completely fill.
            7.1.3.3. Collect all appropriate samples (green [2]; lavender [1]; and light blue [1]).
        7.1.4. Invert the blood tubes no less than five times to ensure adequate mixing of the sample with the anticoagulant agent. Do not shake.
        7.1.5. Appropriately and legibly label all collected samples.
    7.2. Evidentiary
        7.2.1. Assess the ability to safely draw a blood specimen from the individual.
            7.2.1.1. Statute allows for the law enforcement officer to use reasonable force to facilitate collection of the sample.
            7.2.1.2. The paramedic will convey any concerns over the ability to safely obtain a blood sample to the law enforcement officer.
        7.2.2. Ensure all equipment is assembled, readily available and operational.
            7.2.2.1. The law enforcement officer should be present and observe the entire procedure.
        7.2.3. Impede venous return, if appropriate and necessary.
        7.2.4. Prepare site with povidone-iodine (Betadine).

7.2.5. Perform venipuncture:
7.2.5.1. Insert the needle provided in the collection kit at suitable angle to penetrate vein.
7.2.5.2. Insert blood tube in to collection port, piercing rubber stopper with needle.
7.2.5.3. Allow blood tube to completely fill.
7.2.5.4. Remove blood tube.
7.2.5.5. Collect second blood tube in similar fashion.
7.2.6. Withdraw needle and dispose of appropriately.
7.2.7. Invert the blood tubes no less than five times to ensure adequate mixing of the sample with the anticoagulant agent. Do not shake.
7.2.8. Appropriately dress venipuncture site.
7.2.9. Record all appropriate information required by the blood alcohol sample collection kit.

8. Equipment
8.1. Blood alcohol sample collection kit provided by a law enforcement officer

9. EDMCP contact and special considerations
9.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.
9.2. Only two of the blood collection tube in the blood alcohol sample collection kit should be utilized. The third tube is not to be utilized.

History: 01-2018; 07-2012; 02-2008.

Section 600.13: Gastric intubation

1. Skill level
    - 1.1. Advanced life support (ALS)
2. Physician authorization required prior to performing skill
    - 2.1. No
3. Indications
    - 3.1. Decompression of a distended stomach during positive pressure ventilation.
4. Contraindications
    - 4.1. Maxillofacial injury
    - 4.2. Head injury
5. Complications/Precautions
    - 5.1. Misplacement of tube
    - 5.2. Soft tissue disruption on insertion
    - 5.3. Inadvertent passage through fracture site
6. Procedure
    - 6.1. Ensure all equipment is assembled, readily available and operational.
    - 6.2. Determine appropriate size of tube.
    - 6.3. Determine amount of tube to be inserted:
        - 6.3.1. Orogastric insertion:
            - 6.3.1.1. Measure from the distal tip of tube: xiphiod process, to the ear and back to the corner of the patient's mouth.
        - 6.3.2. Nasogastric insertion:
            - 6.3.2.1. Measure from the distal tip of tube: xiphiod process, to the ear and back to the corner of the patient's nare.
    - 6.4. Placement:
        - 6.4.1. Liberally lubricate tube.
        - 6.4.2. Orogastric insertion:
            - 6.4.2.1. Advance tube through mouth and in to pharynx.
            - 6.4.2.2. If patient is awake, instruct them to swallow.
            - 6.4.2.3. Gently advance tube until previously identified stopping point is met.
        - 6.4.3. Nasogastric insertion:
            - 6.4.3.1. Advance tube through nare along the floor of the nasal cavity.
            - 6.4.3.2. If patient is awake, instruct them to swallow.
            - 6.4.3.3. Gently advance tube until previously identified stopping point is met.
    - 6.5. Confirmation
        - 6.5.1. Instill air into the tube while auscultating over the epigastrum.
            - 6.5.1.1. If air is heard entering the stomach, secure tube in place.
            - 6.5.1.2. If no air is heard entering the stomach, remove tube and reattempt.
7. Equipment
    - 7.1. Gastric tubes (assorted sizes)
    - 7.2. Water soluble lubricant

7.3. Suction
7.4. Sixty milliliter syringe (catheter tip)
7.5. Tape for securing tube.

8. EDMCP contact and special considerations
   8.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 02-2008.

Section 600.14: Immunization administration (community health)

1. Skill level
   - 1.1. Advanced life support (ALS)
   - 1.2. Personnel authorized to operate under this protocol include:
     - 1.2.1. Florida-certified paramedics that are credentialed to work under the auspices of the Volusia County EMS Medical Director; and
     - 1.2.2. Florida-certified paramedics not presently credentialed, but working under the direct supervision of a credentialed paramedic; and
     - 1.2.3. Paramedic students attending the paramedic program at Daytona State College, working under the direct supervision of a credentialed paramedic preceptor and on a college sanctioned clinical, may administer immunizations only to persons sixteen (16) years of age, or older.
   - 1.3. Purpose
     - 1.3.1. Provide a method of conveyance for the EMS Medical Director to meet obligations under Chapter 401.272, Florida Statute and Chapter 64J-1.004, Florida Administrative Code.
     - 1.3.2. Provide a uniform and practical methodology for prehospital emergency medical services personnel to deliver influenza and/or pneumoccocal vaccine(s) under the venue of community health in the non-emergent setting in cooperation with the Volusia County Health Department.
2. Physician authorization required prior to performing skill
   - 2.1. Agencies desiring to provide influenza and/or pneumococcal immunizations must make an annual notification to the Medical Director of their intent to provide such a program.
3. Indications
   - 3.1. In accordance with guidelines established by the Volusia County Health Department, to include recommendation from the Centers for Disease Control and Prevention (CDC) and the manufacturer. Immunizations must be provided in accordance with manufacturer recommendations on the package insert unless contrary to Centers for Disease Control and Prevention recommendations or as otherwise specified.
4. Contraindications
   - 4.1. In accordance with guidelines established by the Volusia County Health Department, to include recommendations from the Centers for Disease Control and Prevention and the manufacturer.
5. Complications/Precautions
   - 5.1. In accordance with guidelines established by the Volusia County Health Department, to include recommendations from the Centers for Disease Control and Prevention and the manufacturer.
6. Procedure
   - 6.1. Pre-immunization
     - 6.1.1. Record all pertinent demographic information on appropriate forms.
     - 6.1.2. Complete pre-immunization screening and document the absence of all valid contraindications for the desired vaccination.

6.1.3. Assess for previous vaccine reactions and other allergies.
6.1.4. Assess for all other contraindications identified by the vaccine manufacturer.
6.1.5. Provide patient, parent or legal guardian with CDC Vaccine Information Sheet and obtain consent.

6.2. Immunization
6.2.1. Ensure that demographic and prescreening information is correct and complete on all forms.
6.2.2. Practice all appropriate measures to prevent exposure to bloodborne pathogens to any persons.
6.2.3. Each immunization should be delivered by separate injection.
6.2.4. Identify appropriate injection site:
6.2.4.1. Deltoid (preferred site).
6.2.4.2. Anteriolateral aspect of upper thigh.
6.2.5. Dosage.
6.2.5.1. Influenza: in accordance with manufacturer recommendations.
6.2.5.2. Pneumoccocal: in accordance with manufacturer recommendations.

6.3. Post Immunization
6.3.1. Properly dispose of contaminated sharps.
6.3.2. Apply gentle massaging pressure to the immunization site following withdrawal of the needle.
6.3.3. Document the following.
6.3.3.1. Time vaccine was administered.
6.3.3.2. Administration site.
6.3.3.3. Vaccine and lot number.
6.3.3.4. Name of paramedic administering immunization.
6.3.4. Advise parent or legal guardian of the need to return for follow up vaccination, if appropriate.
6.3.5. Communicate with the patient, parent or legal guardian that they should seek immediate medical assistance in the event of an unusual reaction.

6.4. Post Immunization Complication
6.4.1. V accine Adverse Event Reporting System (VAERS) must be utilized.
6.4.1.1. The National Childhood Vaccine Injury Act of 1986 requires reporting of clinically significant adverse events.
6.4.2. Reportable events
6.4.2.1. Any adverse event following the administration of a vaccine, even if it is uncertain that the vaccine caused the event.
6.4.2.2. Any event listed by the manufacturer as a contraindication to subsequent doses of the vaccine.
6.4.2.3. Any event listed in the Reportable Events Table published at http://vaers.hhs.gov/pubs.htm.
6.4.3. Reporting process
6.4.3.1. All instances involving adverse events following immunization must be immediately reported to the EMS Medical Director verbally. A written summary of the event, accompanied by all

other pertinent patient care reporting, must follow within seventy-two (72) hours.

7.1.1.1. Reporting may be accomplished via:

7.1.1.1.1. Download the form from http://vaers.hhs.gov. Print and complete the form prior to sending by way of facsimile or mail to the location noted on the form. Maintain a copy of the form on file with the agency archives.

7.1.1.1.2. Through secure, web-based application located at: https://secure.vaers.org/VaersDataEntryintro.htm.

7. Equipment

7.1. Handwashing facilities:

7.1.1. Running water and soap (preferred), or

7.1.2. Waterless hand sanitizing solution.

7.2. Vaccine

7.2.1. Single-dose vials or prefilled syringes are preferred.

7.2.2. Multi-dose vials may be utilized with the following caveats:

7.2.2.1. Date and initial vial when originally opened.

7.2.2.2. Swab rubber seal prior to each withdrawal of vaccine.

7.2.2.3. Promptly return unused portion to refrigerated storage.

7.2.2.4. Discard unused portion:

7.2.2.4.1. After thirty (30) days.

7.2.2.4.2. If there is any visible particulate matter or discoloration.

7.2.2.4.3. If not maintained in accordance with the manufacturers recommended refrigerated storage parameters.

7.2.2.4.4. If there is any doubt as to the integrity of the vaccine.

7.3. Alcohol prep pads

7.4. Syringes, if necessary.

7.5. Band-Aids

7.6. Gauze pads

7.7. Gloves

7.8. Biohazardous waste containers (sharps)

7.9. Refrigerated storage

7.10. Appropriate resuscitative equipment, to include

7.10.1. A means of providing positive pressure ventilation with supplemental oxygen.

7.10.2. Assortment of appropriate basic and advanced airway adjuncts.

7.10.3. Sufficient equipment for gaining vascular access.

7.10.4. All medications and fluids required under current prehospital standing orders and treatment protocols for the treatment of allergic reactions and cardiopulmonary arrest.

7.10.5. Cardiac monitor/defibrillator

8. Medical Director Requirements

8.1. Each department intending to participate in an immunization program must provide each participant involved in administering immunizations Medical Director-approved training prior to the beginning of the annual program.

9. EDMCP contact and special considerations

9.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 07-2009; 09-2008 (memorandum 700.03); 02-2008.

Section 600.15: Immunization administration (EMS staff at risk of exposure)

1. Skill level
   - 1.1. Advanced life support (ALS)
   - 1.2. Personnel authorized to operate under this protocol include:
     - 1.2.1. Florida-certified paramedics that are credentialed to work under the auspices of the Volusia County EMS Medical Director; and
     - 1.2.2. Florida-certified paramedics not presently credentialed, but working under the direct supervision of a credentialed paramedic.
2. Physician authorization required prior to performing skill
   - 2.1. Agencies desiring to provide hepatitis A, B and/or tetanus/diphtheria/pertussis vaccinations must make notification to the Medical Director of their intent to provide such a program.
3. Indications
   - 3.1. Immunizations must be provided in accordance with manufacturer recommendations on the package insert unless contrary to Centers for Disease Control and Prevention recommendations or as otherwise specified.
4. Contraindications
   - 4.1. Immunizations must be provided in accordance with manufacturer recommendations on the package insert unless otherwise specified.
5. Complications/Precautions
   - 5.1. Immunizations must be provided in accordance with manufacturer recommendations on the package insert unless otherwise specified.
6. Procedure
   - 6.1. Pre-immunization
     - 6.1.1. Record all pertinent demographic information on appropriate forms.
     - 6.1.2. Complete pre-immunization screening and document the absence of all valid contraindications for the desired vaccination.
     - 6.1.3. Assess for previous vaccine reactions and other allergies.
     - 6.1.4. Assess for all other contraindications identified by the vaccine manufacturer.
     - 6.1.5. Provide employee with vaccine information and obtain consent.
   - 6.2. Immunization
     - 6.2.1. Ensure that demographic and prescreening information is correct and complete on all forms.
     - 6.2.2. Practice all appropriate measures to prevent exposure to bloodborne pathogens to any persons.
     - 6.2.3. Each immunization should be delivered by separate injection.
     - 6.2.4. Identify appropriate injection site:
       - 6.2.4.1. Deltoid (preferred site).
       - 6.2.4.2. Anteriolateral aspect of upper thigh.
     - 6.2.5. Dosage.
       - 6.2.5.1. Hepatitis A vaccine: in accordance with manufacturer recommendations.

6.2.5.2. Hepatitis B vaccine: in accordance with manufacturer recommendations.
6.2.5.3. Tetanus/Diphtheria/Pertussis vaccine: in accordance with manufacturer recommendations.

6.3. Post Immunization
6.3.1. Properly dispose of contaminated sharps.
6.3.2. Apply gentle massaging pressure to the immunization site following withdrawal of the needle.
6.3.3. Document the following.
6.3.3.1. Time vaccine was administered.
6.3.3.2. Administration site.
6.3.3.3. Vaccine and lot number.
6.3.3.4. Name of paramedic administering immunization.
6.3.4. Communicate with the employee that they should seek immediate medical assistance in the event of an unusual reaction.

7. Equipment
7.1. Handwashing facilities:
7.1.1. Running water and soap (preferred), or
7.1.2. Waterless hand sanitizing solution.
7.2. Vaccine
7.2.1. Single-dose vials or prefilled syringes are preferred.
7.2.2. Multi-dose vials may be utilized with the following caveats:
7.2.2.1. Date and initial vial when originally opened.
7.2.2.2. Swab rubber seal prior to each withdrawal of vaccine.
7.2.2.3. Promptly return unused portion to refrigerated storage.
7.2.2.4. Discard unused portion:
7.2.2.4.1. After thirty (30) days.
7.2.2.4.2. If there is any visible particulate matter or discoloration.
7.2.2.4.3. If not maintained in accordance with the manufacturers recommended refrigerated storage parameters.
7.2.2.4.4. If there is any doubt as to the integrity of the vaccine.
7.3. Alcohol prep pads
7.4. Syringes, if necessary.
7.5. Band-Aids
7.6. Gauze pads
7.7. Gloves
7.8. Biohazardous waste containers (sharps)
7.9. Refrigerated storage

8. EDMCP contact and special considerations
8.1. Immunizations administered under this protocol should be provided only to employees at risk of exposure during the performance of their job duties.
8.2. Immunization included under Immunization Administration (Community Health) may also be provided to employees.

8.3. In all instances in which vaccines are being administered, appropriate resuscitative equipment must be on site and readily accessible. Resuscitative equipment includes, but is not limited to:

9. 1.2.13. A means of providing positive pressure ventilation with supplemental oxygen.
10. 1.2.14. Assortment of appropriate basic and advanced airway adjuncts.
11. 1.2.15. Sufficient equipment for gaining vascular access.
12. 1.2.16. All medications and fluids required under current prehospital standing orders and treatment protocols for the treatment of allergic reactions and cardiopulmonary arrest.

12.1.1. Cardiac monitor/defibrillator

12.2. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 07-2009 (new).

This page left blank intentionally.

Section 600.16: Intraosseous access

1. Skill level
   - 1.1. Advanced life support (ALS)
2. Physician authorization required prior to performing skill
   - 2.1. No
3. Indications
   - 3.1. Intraosseous placement is indicated only when:
     - 3.1.1. Two attempts at conventional vascular access have failed, and;
     - 3.1.2. There is an imminent and clinical relevant need for access in order to deliver volume resuscitation or medication.
   - 3.2. Intraosseous placement is reserved for the following patients:
     - 3.2.1. Cardiopulmonary arrest;
     - 3.2.2. Hypoglycemic coma;
     - 3.2.3. Intractable seizure; or
     - 3.2.4. Trauma with overt signs and symptoms of shock, regardless of consciousness.
   - 3.3. For consideration of intraosseous placement in other patients, contact the EDMCP.
4. Contraindications
   - 4.1. Vascular access has been established.
   - 4.2. Placement in a fractured bone.
   - 4.3. Placement distal to a fractured bone.
   - 4.4. Placement in a burned, infected or otherwise unsuitable area.
   - 4.5. Difficulty in finding landmarks.
5. Complications/Precautions
   - 5.1. Extravasation of fluid from an improperly placed needle.
   - 5.2. Fat embolism
   - 5.3. Osteomyelitis
   - 5.4. Take care to avoid the epiphaseal plate.
6. Procedure
   - 6.1. Ensure all equipment is assembled, readily available and operational.
   - 6.2. Identify landmarks.
     - 6.2.1. Adult:
       - 6.2.1.1. Approximately one centimeter medial to the tibial tuberosity (anteriomedial surface of the tibia).
       - 6.2.1.2. Approximately one centimeter proximal to the surgical neck of the humerus.
     - 6.2.2. Pediatric:
       - 6.2.2.1. If the tibial tuberosity is not present: approximately two finger widths below the patella and then medial on to the anteriomedial surface of the tibia.
       - 6.2.2.2. If the tibial tuberosity is present: one finger width below the tibial tuberosity and then medial on to the anteriomedial surface of the tibia.
   - 6.3. Prepare site with alcohol or povidone-iodine (Betadine).

6.4. Select proper needle size and attach to driver.
- 6.4.1. Adult:
  - 6.4.1.1. Forty kilograms, or greater, 25 millimeter, 15 gauge needle for placement in the tibia.
  - 6.4.1.2. Forty kilograms, or greater, 45 millimeter, 15 gauge needle for placement in the humerus.
- 6.4.2. Pediatric: three through thirty-nine kilograms, 15 millimeter, 15 gauge needle for placement in the tibia.

6.5. Stabilize the extremity and position the driver and needle at the insertion site. Make certain that the needle is perpendicular to the skin.

6.6. Drive the needle through the skin noting if the proximal depth mark (five millimeter indicator) is still visible when resistance is felt.
- 6.6.1. If the proximal depth mark is not visible when the needle contacts the bone, abandon the procedure and attempt with a larger needle.

6.7. Penetrate the bone cortex by applying firm and steady pressure to the driver.

6.8. Release the driver trigger and hand pressure when resistance suddenly diminishes.

6.9. Remove the driver from the needle.

6.10. Remove the stylet from the intraosseous device.

6.11. Attach primed extension set of 0.9% sodium chloride to the intraosseous device.
- 6.11.1. If the patient is conscious:
  - 6.11.1.1. Adult: administer lidocaine (2%), 20 milligrams. May repeat once based upon patient discomfort to a maximum of 40 milligrams.
  - 6.11.1.2. Pediatric: administer Lidocaine (2%), 0.5 milligrams per kilogram to a maximum of 20 milligrams. If reliable weight can't be determined from patient, parent or guardian, base dosage on Broselow™ Pediatric Emergency Care tape.
- 6.11.2. Infuse ten milliliters of 0.9% sodium chloride to check for extravasation.
  - 6.11.2.1. If evidence is present indicating an unsuccessful placement, place a saline lock on the hub of the needle and secure in place with a bulky dressing.

6.12. Secure in place, apply patient identification device and frequently observe the site for extravasation.

6.13. Removal
- 6.13.1. If removal is necessary in the prehospital environment, gently apply traction while rotating the device clockwise.
- 6.13.2. Do not tip or bend the needle in any direction.
- 6.13.3. Dress the insertion site with non-sulfa containing antibiotic ointment and a band-aid.

7. Equipment

7.1. EZ-IO Intraosseous driver device.

7.2. EZ-IO needles
- 7.2.1. 45 millimeter, 15 gauge needle
- 7.2.2. 25 millimeter, 15 gauge needle

7.2.3. 15 millimeter, 15 gauge needle. As an alternative to the 15 millimeter needle, agencies can opt to carry the 15 gauge Jamshidi® needle for intraosseous placement in pediatric patients.

7.3. Means of maintaining intraosseous integrity:

7.3.1. 0.9% sodium chloride

7.3.2. Saline lock

7.3.3. Three way stopcock

7.4. Pressure infuser

8. EDMCP contact and special considerations

8.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

8.2. The preferred sequence of initiating vascular access shall be:

8.2.1. Intravenous access,

8.2.2. Intraosseous access in the tibia,

8.2.3. Intraosseous access in the humerus.

History: 01-2018; 07-2012; 01-2011 (memorandum 700.07); 07-2009; 02-2008.

This page left blank intentionally.

Section 600.17: Medication administration

1. Skill level
    - 1.1. Dependent upon circumstances
2. Physician authorization required prior to performing skill
    - 2.1. Yes, unless written as a standing order.
3. Indications
    - 3.1. Need to deliver medication by way of:
        - 3.1.1. Aerosolized
        - 3.1.2. Intramuscularly
        - 3.1.3. Intraosseously
        - 3.1.4. Intravenously
        - 3.1.5. Orally
        - 3.1.6. Rectally
        - 3.1.7. Subcutaneously
        - 3.1.8. Sublingually
4. Contraindications
    - 4.1. See specific medication
5. Complications/Precautions
6. Procedure
    - 6.1. Ensure that the proper medication and dose are being delivered to the proper patient.
    - 6.2. Ensure that the patient is not allergic to the medication, the medication is not expired and the medication is not contaminated with particulate matter or discolored.
    - 6.3. Ensure that the medication is not contraindicated or being administered in any manner that may cause harm to the patient.
    - 6.4. If the medication requires reconstitution, ensure that all particulate matter is dissolved.
    - 6.5. Routes:
        - 6.5.1. Aerosolized
            - 6.5.1.1. Place desired dose into nebulizer reservoir.
            - 6.5.1.2. Using oxygen or compressed air, flow no less than eight liters of gas per minute to achieve atomization of the liquid.
            - 6.5.1.3. Instruct patient to inhale deeply to allow medication to achieve the desire effect.
            - 6.5.1.4. Monitor for complications.
        - 6.5.2. Intramuscularly
            - 6.5.2.1. Draw up desired dose of medication ensuring that no air is present in the barrel.
            - 6.5.2.2. Identify injection site.
                - 6.5.2.2.1. Upper arm (Deltoid)
                - 6.5.2.2.2. Buttocks (Dorsogluteal)
                - 6.5.2.2.3. Thigh (Vastus Lateralis)
            - 6.5.2.3. Aseptically prep the site.

6.5.2.4. Firmly grasp the tissue between your thumb and forefinger.
6.5.2.5. Insert the needle at a ninety degree angle and release the skin. Ensure that the needle remains perpendicular to the skin surface.
6.5.2.6. Aspirate slightly for a free return of blood.
6.5.2.6.1. If a bloody return is present in the barrel, withdraw the needle and identify an alternative site.
6.5.2.7. Inject the medication in to the patient and withdraw the needle.
6.5.3. Intraosseously or Intravenously
6.5.3.1. Draw up desired dose of medication ensuring that no air is present in the barrel.
6.5.3.2. Aseptically prep the injection port on the maintenance line.
6.5.3.3. Attach syringe to medication port.
6.5.3.4. Occlude tubing proximal to the medication port.
6.5.3.5. Administer medication and deliver an adequate fluid bolus to ensure delivery to the patient.
6.5.4. Orally
6.5.4.1. Prepare proper dose for patient.
6.5.4.2. Instruct patient as to the proper means of administering the drug (i.e., chewed and swallowed, etc.).
6.5.4.3. Administer medication
6.5.5. Subcutaneously
6.5.5.1. Draw up desired dose of medication ensuring that no air is present in the barrel.
6.5.5.2. Identify injection site.
6.5.5.2.1. Upper arm
6.5.5.2.2. Thigh
6.5.5.2.3. Abdomen
6.5.5.3. Aseptically prep the site.
6.5.5.4. Grasp the tissue between your thumb and forefinger.
6.5.5.5. Insert the needle at a forty-five degree angle and aspirate slightly for a free return of blood.
6.5.5.5.1. If a bloody return is present in the barrel, withdraw the needle and identify an alternative site.
6.5.5.6. Inject the medication in to the patient and withdraw the needle.
6.5.6. Sublingually
6.5.6.1. Identify the proper dose of the medication.
6.5.6.2. Instruct patient as to the proper means of administering the drug (i.e., allow to dissolve, etc.).
6.5.6.3. Place medication under patient's tongue.

7. Equipment
7.1. Syringe (size dependent)
7.2. Needle (size dependent)

8. EDMCP contact and special considerations
8.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 600.18: Nebulization of bronchodilators

1. Skill level
   1.1. Advanced life support (ALS)
2. Physician authorization required prior to performing skill
   2.1. No
3. Indications
   3.1. Signs or symptoms of respiratory distress associated with bronchoconstriction.
4. Contraindications
   4.1. None
5. Complications/Precautions
   5.1. Use with caution in patients with cardiovascular disease.
6. Procedure
   6.1. Ensure all equipment is assembled, readily available and operational.
   6.2. Add medication to the disposable nebulizer reservoir.
   6.3. Aerosolize medication with oxygen or ambient air source by flowing no less than eight liters per minute on the flowmeter.
   6.4. Instruct patient to inhale as deeply as possible to allow medication to permeate air passages.
   6.5. Repeat as necessary.
7. Equipment
   7.1. Nebulizer or oxygen source capable of delivering eight liters per minute.
   7.2. Disposable nebulizer circuit.
8. EDMCP contact and special considerations
   8.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 600.19: Needle thoracostomy

1. Skill level
    1.1. Advanced life support (ALS)
2. Physician authorization required prior to performing skill
    2.1. No
3. Indications
    3.1. Relief of tension pneumothorax.
4. Contraindications
    4.1. None in the presence of tension pneumothorax.
5. Complications/Precautions
    5.1. Disruption of the neurovascular bundle under the rib.
    5.2. Creation of pneumothorax.
6. Procedure
    6.1. Ensure all equipment is assembled, readily available and operational.
    6.2. Identify landmarks, in order of preference.
        6.2.1. Second intercostal space (above third rib) on the midclavicular line.
        6.2.2. Fourth intercostal space (above the fifth rib) on the mid-axillary line.
    6.3. Prepare site with alcohol or povidone-iodine (Betadine).
    6.4. Insert the over-the-needle catheter (with syringe attached) in to the chest wall above the top of the rib while continually aspirating.
    6.5. Advance catheter off of needle and in to the pleural space.
    6.6. Withdraw needle and dispose of appropriately.
    6.7. Monitor patient for improvement.
        6.7.1. If, following improvement, the patient deteriorates, repeat the procedure.
7. Equipment
    7.1. 14 gauge by two inch over the needle catheter.
    7.2. Ten milliliter syringe.
    7.3. Tape for securing catheter to chest wall.
8. EDMCP contact and special considerations
    8.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 600.20: Patient restraint

1. Skill level
   1.1. Basic life support (BLS)
2. Physician authorization required prior to performing skill
   2.1. No
3. Indications
   3.1. Combative patients who pose a potential threat to themselves or to healthcare providers.
4. Contraindications
   4.1. None, if indicated for patient or crew safety.
5. Complications/Precautions
   5.1. Positional asphyxia
   5.2. Excited delirium
   5.3. Death
6. Procedure
   6.1. Ensure a sufficient number of personnel are available to safely restrain the patient.
   6.2. Restrain patient is a supine or lateral recumbent position. Under no circumstances shall a patient be restrained in a prone position or "hog-tied".
      6.2.1. No fewer than five persons should be utilized to restrain a patient.
      6.2.2. The patient's four extremities and waist must be restrained.
   6.3. An oxygen mask or other appropriate barrier device may be utilized if the patient is spitting.
7. Equipment
   7.1. Soft restraints.
8. EDMCP contact and special considerations
   8.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.
   8.2. Extraordinary effort should be made to avoid placing pressure on the patient's thorax or neck.
   8.3. Capnography and pulse oximetry must be used whenever available to measure the patient's ventilation and oxygenation status.
   8.4. If the patient breaks free from restraint, EMS personnel should refrain from attempting to subdue the patient. Contact law enforcement.

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 600.21: Taser removal

1. Skill level
   1.1. Basic life support (BLS)
2. Physician authorization required prior to performing skill
   2.1. No
3. Indications
   3.1. Combative patients who pose a potential threat to themselves or to healthcare providers.
4. Contraindications
   4.1. Tasers lodged in any portion of the body above the clavicles.
5. Complications/Precautions
6. Procedure
   6.1. Apply gentle and in line traction to the probe in order to remove.
   6.2. If resistance if felt, stabilize in place and transport.
7. Equipment
   7.1. None.
8. EDMCP contact and special considerations
   8.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.
   8.2. Taser deployment by law enforcement is frequently associated with combative or violent patients. EMS personnel must ensure that there is no underlying medical problem. Patients with an altered mental state, exhibiting highly erratic behavior or breathing patterns, or with suspected substance abuse should be transported to an appropriate receiving facility.

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 600.22: Total spine immobilization

1. Skill level
   - 1.1. Basic life support (BLS)
2. Physician authorization required prior to performing skill
   - 2.1. No
3. Indications
   - 3.1. Any suspicion of trauma that compromises spine integrity including, but not limited to:
     - 3.1.1. Neck or back pain following a traumatic event;
     - 3.1.2. Alteration in mentation following a traumatic event;
     - 3.1.3. Suspicious mechanism of injury, even in the absence of neck or back pain;
     - 3.1.4. Unclear circumstances surrounding a submersion event (i.e., near-drowning).
4. Contraindications
   - 4.1. None
5. Complications/Precautions
   - 5.1. Care should be taken to effectively pad voids in all patients to ensure immobility and elimination of pressure points.
6. Procedure
   - 6.1. Manually immobilize the cervical spine.
   - 6.2. Assess neurovascular integrity, including purposeful movement, at each extremity.
   - 6.3. Place properly fitted collar on the patient.
   - 6.4. Appropriately move patient to long spine board by way of:
     - 6.4.1. Log rolling patient on to backboard;
     - 6.4.2. Standing take down; or
     - 6.4.3. Seated spinal immobilization device.
   - 6.5. Secure torso.
     - 6.5.1. Place strap diagonally across torso securing it to the board above a shoulder and adjacent to the opposite hip. Place second strap as mirror image.
     - 6.5.2. Place third strap across waist securing it to the board.
     - 6.5.3. Place fourth strap across knees, securing to board
   - 6.6. Pad voids between patient and backboard.
   - 6.7. Secure cervical spine stabilization device on either side of patient's head to the backboard with adhesive tape.
   - 6.8. Assess neurovascular integrity, including purposeful movement, at each extremity.
7. Equipment
   - 7.1. Backboard (long).
   - 7.2. Four straps for securing torso.
   - 7.3. Cervical collar, rigid.
   - 7.4. Stabilization device to prevent lateral head movement while on the backboard.
   - 7.5. Adhesive tape.
   - 7.6. Backboard (short), alternatively, a Kendrick Extrication Device (KED) may be utilized.

7.7. Sufficient padding for pediatric immobilization. Alternatively, a commercially available pediatric immobilizer may be utilized.

8. EDMCP contact and special considerations

8.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 07-2009; 02-2008.

Section 600.23: Traction splint

1. Skill level
   1.1. Basic life support (BLS)
2. Physician authorization required prior to performing skill
   2.1. No
3. Indications
   3.1. Closed, mid-shaft femur fracture
4. Contraindications
   4.1. Injury to joint proximal or distal to femur.
   4.2. Open femur fracture.
5. Complications/Precautions
   5.1. Failure
6. Procedure
   6.1. Maintain axial traction on the affected extremity.
   6.2. Ready and assemble all equipment.
   6.3. Appropriately place and secure the traction splint and ankle harness.
   6.4. Apply traction.
7. Equipment
   7.1. Traction splint.
8. EDMCP contact and special considerations
   8.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2014 (new).

This page left blank intentionally.

Section 600.24: Transcutaneous pacing

1. Skill level
   1.1. Advanced life support (ALS)
2. Physician authorization required prior to performing skill
   2.1. No
3. Indications
   3.1. Symptomatic bradycardias, including heart blocks, which do not respond to pharmaceutical intervention.
   3.2. Overt bradycardias, including heart blocks, which require immediate and aggressive therapy.
   3.3. Asystole
4. Contraindications
   4.1. None in the presence of hypoperfusion secondary to bradycardia.
5. Complications/Precautions
   5.1. Failure to gain electrical capture.
   5.2. Discomfort in the awake patient.
6. Procedure
   6.1. Ensure all equipment is assembled, readily available and operational.
   6.2. Place pads on patient in either the sternum/apex or anterior/posterior configuration.
   6.3. Connect pacemaker.
   6.4. Set rate for 70-80 per minute.
   6.5. Incrementally increase current until electrical capture is observed.
   6.6. Ensure that mechanical capture is obtained.
   6.7. Consider sedation if patient is intolerant of pacing stimulus.
7. Equipment
   7.1. Transcutaneous pacemaker.
   7.2. Pacing pads.
   7.3. Sedative (optional).
8. EDMCP contact and special considerations
   8.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 600.25: Venous cannulation

1. Skill level
    - 1.1. Advanced life support (ALS).
2. Physician authorization required prior to performing skill
    - 2.1. No.
3. Indications
    - 3.1. Determined need for vascular access for delivery of, or potential delivery of, volume resuscitation or medications.
4. Contraindications
    - 4.1. Presence of an arterio-venous shunt in the extremity.
5. Complications/Precautions
    - 5.1. Infection
    - 5.2. Infiltration
    - 5.3. Catheter shear
6. Procedure
    - 6.1. Identify need for venous access and determine appropriate site to include:
        - 6.1.1. Peripheral venous access
        - 6.1.2. External jugular vein
    - 6.2. Ensure all equipment is assembled, readily available and operational.
    - 6.3. Impede venous return, if appropriate and necessary.
    - 6.4. Prepare site with alcohol or povidone-iodine (Betadine).
    - 6.5. Perform venipuncture:
        - 6.5.1. Peripheral and external jugular venous access:
            - 6.5.1.1. Insert an appropriate-sized, over-the-needle catheter at suitable angle to penetrate vein.
            - 6.5.1.2. Once blood presents in flash chamber, slightly advance needle along axis of vein.
            - 6.5.1.3. Advance catheter off of needle and into vein.
            - 6.5.1.4. Withdraw needle and dispose of appropriately.
    - 6.6. Collect specimen for blood glucose testing, if appropriate.
    - 6.7. Attach maintenance device to hub of catheter.
        - 6.7.1. Saline lock:
            - 6.7.1.1. Flush with three milliliters of 0.9% sodium chloride while observing for infiltration.
        - 6.7.2. Intravenous tubing:
            - 6.7.2.1. Infuse at rapid rate while observing for infiltration.
            - 6.7.2.2. If determined to be patent, reduce infusion rate to ten milliliters per hour.
    - 6.8. Secure catheter and maintenance device.
7. Equipment
    - 7.1. Over-the-needle intravenous catheter.
    - 7.2. Alcohol or povidone-iodine (Betadine) preps.
    - 7.3. Tourniquet
    - 7.4. Tape or other means of securing catheter at venipuncture site.

7.5. Means of maintaining catheter integrity:
   7.5.1. 0.9% sodium chloride and infusion set (macro or micro drip); or
   7.5.2. Saline lock and 0.9% sodium chloride flush
7.6. Blood glucose meter, if appropriate.

8. EDMCP contact and special considerations
   8.1. Contact EDMCP for treatment other than standing orders, dispute resolution or other clarification, as necessary.

History: 01-2018; 07-2012; 07-2009; 02-2008.

Section 700.00: Medication resume

The following pharmaceuticals are authorized to be administered under the parameters set forth in the Volusia County EMS System Protocols:

- Adenosine (Adenocard)
- Albuterol sulfate solution, 0.083% (Proventil)
- Amiodarone (Cordarone)
- Antibiotic ointment (non-sulfa)
- Aspirin (chewable)
- Atropine sulfate
- Calcium chloride
- Dextrose
- Diltiazem hydrochloride (Cardizem)
- Diphenhydramine hydrochloride (Benadryl)
- Dopamine hydrochloride (Intropin)
- Epinephrine, 1:1,000
- Epinephrine, 1:10,000
- EpiPen
- EpiPen Jr
- Etomidate (Amidate)
- Furosemide (Lasix)
- Glucose paste
- Hydroxocobalamin (Cyanokit)
- Ipratropium bromide (Atrovent)
- Ketamine
- Lidocaine hydrochloride, 2%
- Lidocaine hydrochloride, 20%
- Magnesium sulfate, 50%
- Methylprednisone sodium succinate (Solu-Medrol)
- Midazolam (Versed)
- Morphine sulfate
- Naloxone (Narcan)
- Nitroglycerin
- Ondansetron (Zofran)
- Sodium bicarbonate
- Succinylcholine (Anectine)
- Tetracaine (Pontocaine)

The information on the following pages was gathered from manufacturer recommendations. It is intended only as a summary reference. Refer to individual package insert for more comprehensive and additional information.

For specific dosing under these standing orders, see individual standing orders.

History: 01-2018; 07-2012; 07-2009; 02-2008.

Section 700.01: Adenosine (Adenocard)

1. Classification
   1.1. Antidysrhythmic
2. Indications
   2.1. Converting paroxysmal supraventricular tachycardia to sinus rhythm, including those rhythms associated with Wolff-Parkinson-White Syndrome.
3. Precautions
   3.1. Adenosine should be used cautiously in patients taking digoxin or concomitant use of digoxin and verapamil as it may rarely be associated with ventricular fibrillation.
4. Contraindications
   4.1. Second- and third-degree atrioventricular block.
   4.2. Sinus node disease, including sick sinus syndrome or symptomatic bradycardias.
   4.3. Known hypersensitivity to Adenosine or any of its components.
5. Adverse reactions/Side effects
   5.1. Cardiovascular: dysrhythmias at time of conversion, facial flushing, headache, diaphoresis, palpitations, chest pain and hypotension.
   5.2. Central Nervous System: lightheadedness, vertigo, upper extremity paresthesia, numbness, apprehension, blurred vision, burning sensation, heaviness in arms and neck and back pain.
   5.3. Gastrointestinal: nausea, metallic taste, tightness in throat, pressure in groin.
   5.4. Respiratory: dyspnea, chest pressure, hyperventilation and head pressure.
6. Route of administration
   6.1. Intravenous bolus (rapid) only.
      6.1.1. Due to adenosine's half-life, it should be administered through a proximal port on the infusion set and through a proximal and peripheral intravenous site. A twenty milliliter 0.9% sodium chloride flush should follow administration to facilitate delivery of the medication in to central circulation.

History: 01-2018; 02-2008.

This page left blank intentionally.

Section 700.02: Albuterol sulfate solution, 0.083% (Proventil)

1. Classification
   1.1. Bronchodilator
2. Indications
   2.1. Treatment of bronchospasm in patients with reversible obstructive airway disease and acute attacks of bronchospasm.
3. Precautions
   3.1. Albuterol should be used with caution in patients with cardiovascular disorders.
   3.2. If paradoxical bronchospasm occurs during delivery of this medication, discontinue treatments immediately.
   3.3. Albuterol should be administered extremely cautiously to patients being treated with monoamine oxidase inhibitors or tricyclic antidepressants as this may potentiate the cardiovascular effects
   3.4. Beta-receptor blocking agents and albuterol inhibit the effect of each other.
4. Contraindications
   4.1. Known hypersensitivity to Albuterol or any of its components.
5. Adverse reactions/Side effects
   5.1. Cardiovascular: tachycardia, hypertension.
   5.2. Central nervous system: tremors, vertigo, nervousness, headache.
   5.3. Gastrointestinal: nausea.
   5.4. Respiratory: bronchospasm, cough.
6. Route of administration
   6.1. Inhaled updraft treatment following nebulization.

History: 01-2018; 02-2008.

This page left blank intentionally.

Section 700.03: Amiodarone (Cordarone)

1. Classification
   1.1. Antidysrhythmic
2. Indications
   2.1. Treatment of ventricular fibrillation.
   2.2. Treatment of ventricular tachycardia.
3. Precautions
   3.1. Hypotension.
   3.2. Bradycardia and atrio-ventricular block
   3.3. Proarrythmia (primarily, torsades de pointes).
   3.4. Electrolyte disturbance
4. Contraindications
   4.1. Known hypersensitivity to amiodarone or any of its components.
   4.2. Cardiogenic shock
   4.3. Marked sinus bradycardia.
   4.4. Second-or third-degree atrio-venticular (AV) block.
5. Adverse reactions/Side effects
   5.1. Cardiovascular: hypotension, dysrythmia.
6. Route of administration
   6.1. Intravenous.
7. Notes
   7.1. Amiodarone (Cordarone) is incompatible with sodium bicarbonate, therefore amiodarone infusions shall be delivered through a dedicated intravenous line. Bolus therapy shall be followed by a twenty milliliter bolus.
   7.2. Hypotension secondary to amiodarone infusion shall be treated with incremental reduction in the amiodarone infusion.

History: 01-2018; 07-2012 (new).

This page left blank intentionally.

Section 700.04: Antibiotic ointment (non-sulfa)

1. Classification
   1.1. Antibiotic (topical)
2. Indications
   2.1. Topical application to reduce likelihood of infection following removal of intraosseous needle.
3. Precautions
   3.1. Avoid contact with eyes.
4. Contraindications
   4.1. Known hypersensitivity to the product or any of its components.
   4.2. Do not apply to non-intact skin (excluding isolated intraosseous entry point).
   4.3. Do not use on patients under two years of age.
5. Adverse reactions/Side effects
   5.1. Mild to moderate allergic reaction.
6. Route of administration
   6.1. Topical
7. Notes
   7.1. Antibiotic ointment selected must not contain sulfa.

History: 01-2018; 07-2012; 07-2009 (new).

This page left blank intentionally.

Section 700.05: Aspirin, chewable

1. Classification
   1.1. Non-steroidal anti-inflammatory drug (NSAID)
2. Indications
   2.1. Suspected myocardial ischemia.
3. Precautions
   3.1. None
4. Contraindications
   4.1. Aspirin or aspirin product within the past twelve hours.
   4.2. Known hypersensitivity to aspirin, any of its components or aspirin products.
5. Adverse reactions/Side effects
   5.1. Gastrointestinal: nausea
6. Route of administration
   6.1. Chewed and swallowed.

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 700.06: Atropine sulfate

1. Classification
    1.1. Anticholinergic
2. Indications
    2.1. Symptomatic bradycardias.
    2.2. Anticholinesterase poisoning from organophosphate pesticides.
3. Precautions
    3.1. Use with caution in all patients age forty, or greater.
4. Contraindications
    4.1. Glaucoma
5. Adverse reactions/Side effects
    5.1. Cardiovascular: Tachycardia
    5.2. Central nervous system: blurred vision, photophobia:
    5.3. ENT: dryness of oral mucosa
6. Route of administration
    6.1. Intravenously
    6.2. Intraosseously

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 700.07: Calcium chloride

1. Classification
   1.1. Electrolyte
2. Indications
   2.1. Suspicion of hyperkalemia in cardiopulmonary arrest.
   2.2. Calcium channel blocker overdose.
3. Precautions
   3.1. Use with caution in patients taking digitalis.
   3.2. Injections should be administered slowly to prevent concentrated calcium levels from reaching the heart because of the danger of acutely reduced cardiac output.
4. Contraindications
   4.1. Digitalis toxicity
5. Adverse reactions/Side effects
   5.1. Cardiovascular: peripheral vasodilation
6. Route of administration
   6.1. Intravenously
   6.2. Intraosseously
7. Notes
   7.1. Calcium chloride should be administered slowly through a large vein.

History: 01-2018; 07-2014; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 700.08: Dextrose

1. Classification
   1.1. Hypoglycemic agent
2. Indications
   2.1. Used for the treatment of hypoglycemia associated with insulin shock.
3. Precautions
   3.1. Care should be taken to ensure the vascular access device is well within the lumen of the vein and that extravasation does not occur.
   3.2. Patient receiving Dextrose should receive additional carbohydrates if they decline transport.
4. Contraindications
   4.1. Suspicion of intracerebral or intraspinal hemorrhage.
   4.2. In the presence of delirium tremens and dehydration.
5. Adverse reactions/Side effects
   5.1. Cardiovascular: creation of thrombus, phlebitis, hyperglycemia
6. Route of administration
   6.1. Intravenously
   6.2. Intraosseously
7. Notes
   7.1. Due to the hypertonic nature of some solutions, the medication must be administered slowly through a patent access point.

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 700.09: Diltiazem (Cardizem)

1. Classification
   1.1. Calcium channel blocker
2. Indications
   2.1. Conversion of paroxysmal supraventricular tachycardia (PSVT).
   2.2. Rate control in the presence of atrial flutter and atrial fibrillation.
3. Precautions
   3.1. May produce heart block if given in the presence of a sinus rhythm.
   3.2. Use cautiously in the presence of congestive heart failure or myocardial infarction
4. Contraindications
   4.1. Second- and third-degree atrioventricular block.
   4.2. Sinus node disease, including sick sinus syndrome or symptomatic bradycardias.
   4.3. Known hypersensitivity to diltiazem or any of its components.
5. Adverse reactions/Side effects
   5.1. Cardiovascular: bradycardia, hypotension
   5.2. Gastrointestinal: nausea
   5.3. Other: vertigo, lightheadedness, headache
6. Route of administration
   6.1. Intravenously

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 700.10: Diphenhydramine (Benadryl)

1. Classification
   1.1. Antihistaminic
2. Indications
   2.1. For allergic reactions following the management of severe symptomology.
3. Precautions
   3.1. Use caution when administering diphenhydramine to patients with narrow-angle glaucoma.
   3.2. Tissue necrosis may accompany intramuscular injection.
   3.3. Over medicating pediatric patients may result in hallucinations, convulsions or death.
   3.4. Diphenhydramine is more likely to potentiate vertigo, drowsiness and hypotension in the elderly.
   3.5. Use cautiously in patients with bronchial asthma and cardiovascular disease.
4. Contraindications
   4.1. Diphenhydramine should not be used in neonates, premature infants and nursing mothers.
   4.2. Known hypersensitivity to diphenhydramine or any of its components.
5. Adverse reactions/Side effects
   5.1. Cardiovascular: hypotension, headache, palpitations, bradycardia and extrasystoles.
   5.2. Central nervous system: sedation, vertigo, fatigue, confusion, excitation, euphoria and tinnitus.
   5.3. Gastrointestinal: epigastric distress, nausea and vomiting.
   5.4. General: urticaria, anaphylactic shock, photosensitivity, diaphoresis and drying of the oral mucosa.
   5.5. Genitourinary: Frequent urination and difficult urination.
   5.6. Respiratory: thickening of bronchial secretions, tightness of chest or throat and wheezing.
6. Route of administration
   6.1. Intravenous
   6.2. Intramuscular, only as last resort in the absence of intravenous access.

History: 01-2018; 07-2014; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 700.11: Dopamine hydrochloride (Intropin)

1. Classification
   1.1. Sympathomimetic
2. Indications
   2.1. States of hypoperfusion not attributed to hypovolemia (i.e., cardiogenic shock).
3. Precautions
   3.1. Cardiovascular disease
   3.2. Use caution when administering dopamine to patients receiving, or who have received, monoamine oxidase (MAO) inhibitor therapy.
4. Contraindications
   4.1. Hypovolemic shock
   4.2. Uncorrected tachydysrhythmias
   4.3. Known hypersensitivity to Dopamine or any of its components.
5. Adverse reactions/Side effects
   5.1. Cardiovascular: hypertension, dysrhythmias, palpitations
6. Route of administration
   6.1. Intravenous infusion.

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 700.12: Epinephrine, 1:1,000

1. Classification
   1.1. Sympathomimetic
2. Indications
   2.1. Cardiopulmonary resuscitation.
   2.2. Bradycardia
   2.3. Moderate to severe allergic reaction, including anaphylaxis.
3. Precautions
   3.1. Administer epinephrine cautiously to elderly patients, patients with cardiovascular disease, hypertension, diabetes and gravid patients.
4. Contraindications
   4.1. None, in the presence of cardiopulmonary arrest.
5. Adverse reactions/Side effects
   5.1. Cardiovascular: hypertension, tachycardia, dysrhythmia, palpitations.
   5.2. Central nervous system: anxiety, headache, cerebral hemorrhage may occur with over dosage.
6. Route of administration
   6.1. Intravenously
   6.2. Intraosseously
   6.3. Intramuscularly (anaphylaxis only)

History: 01-2018; 07-2014; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 700.13: Epinephrine, 1:10,000

1. Classification
   1.1. Sympathomimetic
2. Indications
   2.1. Cardiopulmonary resuscitation.
   2.2. Bradycardia
   2.3. Moderate to severe allergic reaction, including anaphylaxis.
3. Precautions
   3.1. Administer epinephrine cautiously to elderly patients, patients with cardiovascular disease, hypertension, diabetes and gravid patients.
4. Contraindications
   4.1. None, in the presence of cardiopulmonary arrest.
5. Adverse reactions/Side effects
   5.1. Cardiovascular: hypertension, tachycardia, dysrhythmia, palpitations.
   5.2. Central nervous system: anxiety, headache, cerebral hemorrhage may occur with over dosage.
6. Route of administration
   6.1. Intravenously
   6.2. Intraosseously

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 700.14: EpiPen and EpiPen Jr auto-injector

1. Classification
   1.1. Sympathomimetic
2. Indications
   2.1. Moderate to severe allergic reaction, including anaphylaxis.
3. Precautions
   3.1. Administer Epinephrine cautiously to elderly patients, patients with cardiovascular disease, hypertension, diabetes and gravid patients.
4. Contraindications
   4.1. None, in the presence of anaphylaxis.
5. Adverse reactions/Side effects
6. 7.3. Cardiovascular: hypertension, tachycardia, dysrhythmia, palpitations.
   6.1. Central nervous system: anxiety, headache, cerebral hemorrhage may occur with over dosage.
7. Route of administration
   7.1. Intramuscularly
8. Notes
   8.1. This synopsis is generic for the EpiPen (>30 kilograms) and EpiPen Jr. (15-30 kilograms) Auto-Injectors

History: 01-2018; 07-2012; 07-2009 (new).

This page left blank intentionally.

Section 700.15: Etomidate (Amidate)

1. Classification
   1.1. Sedative/Hypnotic
2. Indications
   2.1. When sedation is required to facilitate intubation.
3. Precautions
   3.1. Etomidate may induce cardiac depression in elderly patients.
4. Contraindications
   4.1. Known hypersensitivity to etomidate or any of its components.
5. Adverse reactions/Side effects
   5.1. Cardiovascular: hypertension, hypotension, tachycardia, bradycardia, dysrhythmias
   5.2. Other: transient venous pain on administration, transient skeletal muscle movement.
   5.3. Respiratory: Hypoventilation, short periods of apnea.
6. Route of administration
   6.1. Intravenously
   6.2. Intraosseously
7. Notes
   7.1. This drug must be stored, handled and disposed of as a controlled substance.

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 700.16: Furosemide (Lasix)

1. Classification
   1.1. Diuretic
2. Indications
   2.1. Pulmonary edema associated with congestive heart failure.
3. Precautions
   3.1. Excessive diuresis may cause dehydration and electrolyte imbalances, which may lead to dysrhythmias.
4. Contraindications
   4.1. Patients with anuria.
   4.2. Known hypersensitivity to furosemide or any of its components.
5. Adverse reactions/Side effects
   5.1. Cardiovascular: Hypotension
   5.2. Central nervous system: vertigo, headache, blurred vision, paresthesia
   5.3. Gastrointestinal: nausea, vomiting
6. Route of administration
   6.1. Intravenously

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 700.17: Glucose paste

1. Classification
   1.1. Antihypoglycemic
2. Indications
   2.1. Known or suspected hypoglycemia
3. Precautions
   3.1. Oral glucose agents place the patient at risk of aspiration if they are unable to maintain a patent airway independently.
4. Contraindications
   4.1. In patients unable to self-maintain a patent airway.
5. Adverse reactions/Side effects
   5.1. Endocrine: hyperglycemia
6. Route of administration
   6.1. Oral
7. Notes
   7.1. Glucose paste is not a required item on advanced life support units.

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 700.18: Hydroxocobalamin (Cyanokit)

1. Classification
   1.1. Cyanide antidote
2. Indications
   2.1. Cardiopulmonary arrest secondary to removal from structure fire.
3. Precautions
   3.1. Administration of hydroxocobalmin infusion must be accomplished through separate intravenous access.
4. Contraindications
   4.1. None
5. Adverse reactions/Side effects
   5.1. Hypertension
   5.2. Erythema
   5.3. Chromaturia
6. Route of administration
   6.1. Intravenously
   6.2. Intraosseously
7. Notes
   7.1. Due to incompatibility with various resuscitation medications, administration of hydroxocobalamin infusion shall be performed through a dedicated intravenous line.

History: 01-2018; 07-2012 (new).

This page left blank intentionally.

Section 700.19: Ipratropium bromide (Atrovent)

1. Classification
   1.1. Bronchodilator
2. Indications
   2.1. Treatment of bronchospasm in patients with reversible obstructive airway disease and acute attacks of bronchospasm.
3. Precautions
   3.1. Ipratropium bromide should be used with caution in patients with cardiovascular disorders.
   3.2. If paradoxical bronchospasm occurs during delivery of this medication, discontinue treatments immediately.
4. Contraindications
   4.1. Known hypersensitivity to ipratropium bromide or any of its components.
5. Adverse reactions/Side effects
   5.1. Respiratory: bronchitis, COPD exacerbation, and dyspnea
6. Route of administration
   6.1. Inhaled updraft treatment following nebulization.

History: 01-2018 (new).

This page left blank intentionally.

Section 700.20: Ketamine (Ketalar)

1. Classification
   1.1. Non-barbiturate anesthetic
2. Indications
   2.1. Excited delirium
3. Precautions
   3.1. Careful monitoring for ventilatory and respiratory insufficiency following administration.
4. Contraindications
   4.1. Known hypersensitivity to ketamine or any of its components.
5. Adverse reactions/Side effects
   5.1. Hypertension or hypotension
   5.2. Tachycardias or bradycardias
6. Route of administration
   6.1. Intramuscular
7. Notes
   7.1. This drug must be stored, handled and disposed of as a controlled substance.
   7.2. Ketamine is to be used exclusively for excited delirium. It is not intended as an alternative agent for sedation under airway management.

History: 01-2018 (new).

This page left blank intentionally.

Section 700.21: Lidocaine, 2%

1. Classification
   1.1. Antidysrhythmic
2. Indications
   2.1. Ventricular irritability, including: premature ventricular complexes, wide-complex tachycardia, ventricular tachycardia and ventricular fibrillation.
   2.2. As an agent for premedicating candidates for elective intubation with suspected cerebral insult.
   2.3. As a local analgesic prior to fluid administration through an intraosseous line.
3. Precautions
   3.1. High serum levels of lidocaine can be toxic resulting in decreased mentation, seizures and coma.
4. Contraindications
   4.1. Presence of bradydysrhythmias or heart block.
   4.2. Known hypersensitivity to lidocaine or any of its components.
5. Adverse reactions/Side effects
   5.1. Cardiovascular: bradycardia, hypotension, cardiovascular collapse
   5.2. Central nervous system: lightheadedness, apprehension, decrease in mentation, confusion, vomiting, unconsciousness
6. Route of administration
   6.1. Intravenously
   6.2. Intraosseously

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 700.22: Lidocaine, 20%

1. Classification
   1.1. Antidysrhythmic
2. Indications
   2.1. Used for maintaining therapeutic levels of Lidocaine following resolution of dysrhythmias with bolus therapy.
3. Precautions
   3.1. High serum levels of Lidocaine can be toxic resulting in decreased mentation, seizures and coma.
4. Contraindications
   4.1. Presence of bradydysrhythmias or heart block.
   4.2. Known hypersensitivity to lidocaine or any of its components.
5. Adverse reactions/Side effects
   5.1. Cardiovascular: bradycardia, hypotension, cardiovascular collapse
   5.2. Central nervous system: lightheadedness, apprehension, decrease in mentation, confusion, vomiting, unconsciousness
6. Route of administration
   6.1. Intravenous infusion

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 700.23: Magnesium sulfate, 50%

1. Classification
   1.1. Electrolyte
2. Indications
   2.1. Non-responding or deteriorating asthmatics.
   2.2. Preeclampsia/Eclampsia.
   2.3. Refractory or recurrent ventricular fibrillation or torsades de pointes.
3. Precautions
   3.1. Magnesium therapy should be cautiously considered in the presence of renal insufficiency.
4. Contraindications
   4.1. Heart block
   4.2. Known hypersensitivity to magnesium or any of its components.
5. Adverse reactions/Side effects
   5.1. Cardiovascular: cardiovascular collapse or depression
   5.2. Central nervous system: Altered mental status
   5.3. Respiratory: respiratory depression
6. Route of administration
   6.1. Intravenous
   6.2. Intravenous infusion
   6.3. Intraosseously

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 700.24: Methylprednisolone sodium succinate (Solu-Medrol)

1. Classification
   1.1. Corticosteroid
2. Indications
   2.1. Acute bronchospasm
   2.2. Allergic states
3. Precautions
   3.1. None
4. Contraindications
   4.1. Premature infants
   4.2. Known hypersensitivity to methylprednisolone or any of its components.
5. Adverse reactions/Side effects
   5.1. Cardiovascular: hypertension, sodium retention, potassium loss
   5.2. Neurological: vertigo, headache
6. Route of administration
   6.1. Intravenously
   6.2. Intraosseously

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 700.25: Midazolam (Versed)

1. Classification
   1.1. Benzodiazepine, anticonvulsant/sedative
2. Indications
   2.1. Seizure
   2.2. Airway management
3. Precautions
   3.1. Careful monitoring for ventilator and respiratory insufficient following administration.
4. Contraindications
   4.1. Known hypersensitivity to midazolam or any of its components.
5. Adverse reactions/Side effects
   5.1. CNS: altered mental status
   5.2. Respiratory: respiratory depression
6. Route of administration
   6.1. Intravenous
   6.2. Intraosseous
   6.3. Intramuscular
7. Notes
   7.1. This drug must be stored, handled and disposed as a controlled substance.

History: 01-2018 (new).

This page left blank intentionally.

Section 700.26: Morphine sulfate

1. Classification
    1.1. Analgesic
2. Indications
    2.1. Management of pain associated with:
        2.1.1. Burns
        2.1.2. Ischemic chest pain
        2.1.3. Pulmonary edema
        2.1.4. Sickle Cell crisis
3. Precautions
    3.1. In the presence of right ventricular infarction, morphine sulfate may result in a precipitous drop in systolic pressure as a result of reduced preload.
4. Contraindications
    4.1. Systolic blood pressure less than 90 mmHg.
    4.2. Known hypersensitivity to morphine or any of its components.
5. Adverse reactions/Side effects
    5.1. Central nervous system: decrease in mentation
    5.2. Respiratory: respiratory depression
6. Route of administration
    6.1. Intravenously
    6.2. Intraosseously
7. Notes
    7.1. This drug must be stored, handled and disposed of as a controlled substance.

History: 01-2018; 07-2014; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 700.27: Naloxone (Narcan)

1. Classification
   1.1. Narcotic/opiate antagonist
2. Indications
   2.1. Known or suspected narcotic/opiate overdose.
3. Precautions
   3.1. Too rapid of an administration or complete opiate reversal may cause withdrawal-like effects.
4. Contraindications
   4.1. Presence of cerebral insult.
   4.2. Known hypersensitivity to naloxone or any of its components.
5. Adverse reactions/Side effects
   5.1. None
6. Route of administration
   6.1. Intravenously
   6.2. Intraosseously
   6.3. Intranasally (basic life support providers only)
7. Notes
   7.1. Naloxone should be administered gradually to improve cardiopulmonary status and not based upon level of consciousness.

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 700.28: Nitroglycerin

1. Classification
   1.1. Vasodilator
2. Indications
   2.1. Signs or symptoms associated with myocardial ischemia.
   2.2. Signs or symptoms associated with pulmonary edema.
3. Precautions
   3.1. Nitroglycerin may precipitate severe hypotension in the presence of agents used to treat erectile dysfunction.
   3.2. In the presence of right ventricular infarction, Nitroglycerin may result in a precipitous drop in systolic pressure as a result of reduced preload.
4. Contraindications
   4.1. Systolic blood pressure less than 90 mmHg.
   4.2. In patients who have taken sildenafil citrate (Viagra), tadalafil (Cialis), or vardenafil (Levitra) within twenty-four hours.
   4.3. Known hypersensitivity to nitroglycerin or any of its components.
5. Adverse reactions/Side effects
   5.1. Cardiovascular: hypotension
   5.2. Central nervous system: syncope
   5.3. Other: headache
6. Route of administration
   6.1. Sublingual

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 700.29: Ondansetron (Zofran)

1. Classification
   1.1. Antiemetic
2. Indications
   2.1. Nausea
3. Precautions
   3.1. Use in patients following abdominal surgery or in patients with chemotherapy-induced nausea and vomiting may mask a progressive ileus and/or gastric distention
4. Contraindications
   4.1. Known hypersensitivity to ondansetron or any of its components.
   4.2. Known history of QTC prolongation
   4.3. Patients taking medications that may cause QTC prolongation (i.e., chlorpromazine, haloperidol, droperidol, quetiapine, olanzapine, amisulpride, thioridazine, quinidine, procainamide, disopyramide, sotalol, amiodarone)
5. Adverse reactions/Side effects
   5.1. Gastrointestinal: diarrhea
   5.2. Other: headache
6. Route of administration
   6.1. Intravenous
   6.2. Intramuscular

History: 01-2018; 07-2012 (new).

This page left blank intentionally.

Section 700.30: Sodium bicarbonate

1. Classification
   1.1. Alkalotic
2. Indications
   2.1. Metabolic acidosis.
3. Precautions
   3.1. Overly aggressive therapy with sodium bicarbonate may result in metabolic alkalosis.
   3.2. Great care should be exercised when administering sodium bicarbonate to patients with congestive heart failure or renal insufficiency due to the likelihood of sodium retention.
   3.3. In patients under two years of age, sodium bicarbonate should be diluted with 0.9% sodium chloride on a one-to-one basis to yield a 4.2% solution
4. Contraindications
   4.1. Hypochloremic states associated with excessive vomiting or from continuous gastrointestinal aspiration.
   4.2. Known hypersensitivity to sodium bicarbonate or any of its components.
5. Adverse reactions/Side effects
   5.1. Cardiovascular: metabolic alkalosis will occur with over aggressive administration of sodium bicarbonate.
6. Route of administration
   6.1. Intravenously
   6.2. Intraosseously
7. Notes
   7.1. Due to the pH of the solution, the medication must be administered slowly through a patent access point.

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 700.31: Succinylcholine succinate (Anectine)

1. Classification
   1.1. Ultra-short acting, depolarizing, neuromuscular blocker
2. Indications
   2.1. To facilitate tracheal intubation.
3. Precautions
   3.1. Fasciculations
   3.2. Increased intragastric pressure, which may result in regurgitation.
4. Contraindications
   4.1. Personal or familial history of malignant hyperthermia.
   4.2. Skeletal muscle myopathies.
   4.3. Hyperkalemic states.
   4.4. Post-burn or-crush injuries.
   4.5. Known hypersensitivity to succinylcholine or any of its components.
5. Adverse reactions/Side effects
   5.1. Cardiovascular: dysrhythmia
   5.2. Central nervous system: hyperthermia, masseter spasm
   5.3. Neurological: paralysis
6. Route of administration
   6.1. Intravenously
   6.2. Intraosseously
7. Notes
   7.1. Only prehospital agencies and personnel with written authorization may carry and utilize succinylcholine.
   7.2. Great care should be taken to ensure adequate sedation has been delivered prior to inducing paralysis.

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 700.32: Tetracaine (Pontocaine)

1. Classification
   1.1. Ophthalmic analgesic
2. Indications
   2.1. Treatment for exposure to oleum capsicum, “tear gas” or other like chemical irritant.
3. Precautions
   3.1. Ophthalmic analgesia in the presence of foreign bodies adjacent to the globe can result in further injury without associated symptoms. Therefore, don’t allow the patient to rub their eyes.
4. Contraindications
   4.1. Known hypersensitivity to tetracaine or any of its components.
5. Adverse reactions/Side effects
   5.1. HEENT: eye itching, watery eyes
6. Route of administration
   6.1. Topical
7. Notes
   7.1. Tetracaine is not a required medication under Volusia County Prehospital Standing Orders and Treatment Protocols.

History: 01-2018; 07-2012; 07-2009; 02-2008.

This page left blank intentionally.

Section 900.00: Memorandum indicating change or clarification

Memorandums contained in this section are intended to alter or clarify current *Volusia County Prehospital Standing Orders and Treatment Protocols*. Each memorandum is appropriately titled and contains a brief description of the content of the change. Dissemination of this information to all appropriate personnel is the responsibility of each agency.

With the addition of these memorandums to the document, the medical director strongly encourages the agency to reference the specific memorandum on the affected pages in order to make providers aware of the change while perusing or otherwise referencing the manual.

The next revision of this document will contain these changes or clarifications in the body of the document, thereby eliminating pages in this section with every revision.

History: 03-30-2020 (900.16); 03-20-2020 (900.15); 03-16-2020 (900.14); 03-12-2020 (900.13); 03-04-2020 (900.12); 12-03-2019 (900.11); 05-17-2019 (900.10); 02-21-2019 (900.09); 02-04-2019 (900.08); 01-14-2019 (900.06 and 900.07); 10-26-2018 (900.05); 07-30-2018 (900.04); 07-05-2018 (900.02 and 900.03); 05-02-2018 (900.01)

Section 900.01: Medication alternatives

Description of modification/clarification: Alternatives for solutions and medications.

Distribution date: May 2, 2018

Expiration date: Upon release of next comprehensive protocol revision

Approved by: Peter C. Springer, MD, FACEP

In the presence of ongoing shortages and disruption in intravenous solutions and medications, the following authorizations are in effect.

Intravenous fluids for medication infusions

When small volume (≤250 milliliters) intravenous solutions are unavailable, Buretrol® infusion sets are an acceptable alternative in conjunction with larger volume intravenous infusion solutions (>250 milliliters) as a means of isolating a precise volume for preparing infusions.

Agencies that must resort to utilization of a Buretrol® device shall:

1. Ensure that limited quantities are purchased. Once small volume intravenous solutions (≤250 milliliters) are available, it is the expectation that Buretrol® device use shall be immediately discontinued and the agency shall revert to conventional delivery modalities described in *Volusia County Prehospital Standing Orders and Treatment Protocols*.
2. Ensure that all personnel are properly and comprehensively trained in the manufacturer intended use of the product prior to deploying the devices to field units.
3. If an agency intends to utilize the Buretrol® device under this authorization, written notification shall be provided to the medical director.
4. Provide verbal notification to the medical director upon learning of any concerns regarding the product or its performance under this authorization. A comprehensive written notification is required by the close of the first business day following verbal notification.

The provider shall be responsible for mixing the appropriate drug at the time of administration. Furthermore, the provider shall be responsible for determining the concentration in the Buretrol® device chamber and the requisite drip rate to achieve the desired dose authorized under *Volusia County Prehospital Standing Orders and Treatment Protocols*. A matrix of recommended preparations (*Recommended dilution of medication for administration with Buretrol® device*) is provided below as a point of reference for field providers.

As an ongoing means to extend the availability of intravenous fluid reserves, field providers shall utilize saline-flushed locks in lieu of using conventional intravenous fluids delivered via infusion set whenever volume resuscitation or other circumstances do not present.

§900.01 is rescinded
See §900.02

~~*Recommended dilution of medication for administration with Buretrol® device*~~			
~~Medication~~	~~Protocol~~	~~Preparation~~	~~Drops per minute[1]~~
~~Amiodarone~~	~~Wide complex tachycardia~~	~~150 milligrams into 50 milliliters~~	~~Run wide open until infusion is complete~~
~~Epinephrine, 1:1,000~~	~~Bradycardias~~	~~1 milligram into 100 milliliters (yields 10 micrograms per milliliter)~~	~~12-60 drops per minute~~
~~Magnesium sulfate~~	~~Asthma~~	~~2 grams into 50 milliliters~~	~~130 drops per minute~~
~~Magnesium sulfate~~	~~Eclampsia~~	~~4 grams into 50 milliliters~~	~~130 drops per minute~~

~~1 Drops per minute calculated for a Buretrol® set with a drop-to-volume ratio of sixty (60) drops equates to one (1) milliliter.~~

~~Epinephrine, 1:10,000~~

~~In the absence of availability of epinephrine (1:10,000), dilution of epinephrine (1:1,000) shall be the alternative authorized under protocol.~~

~~Agencies that must resort to diluting epinephrine (1:1,000) shall:~~

§900.01 is rescinded

See §900.02

1. ~~Ensure that dilution occurs at the time of administration. Dilution in advance is prohibited.~~
2. ~~Ensure that those personnel are properly and comprehensively trained in the dilution process prior to deploying to field units.~~
3. ~~Refrain from using multi-dose vials.~~
4. ~~If an agency intends to dilute epinephrine (1:1,000) under this authorization, written notification shall be provided to the medical director.~~
5. ~~Provide verbal notification to the medical director upon experiencing any concerns regarding this process. A comprehensive written notification is required by the close of the first business day following verbal notification.~~

~~The provider shall dilute one (1) milliliter epinephrine (1:1,000) with nine (9) milliliters 0.9% sodium chloride. The yield – epinephrine (1:10,000) – shall be administered in accordance with references to epinephrine (1:10,000) throughout *Volusia County Prehospital Standing Orders and Treatment Protocols*.~~

~~Lidocaine, 20%~~

~~In the absence of lidocaine, 20%, the following standing orders have been modified as follows.~~

~~*Ventricular ectopy*. Administer initial dose of lidocaine, 2%, 1-1.5 milligrams per kilogram of body weight. If the dysrhythmia returns, subsequent bolus therapy shall be repeated at appropriate time intervals to a maximum dose of 3 milligrams per kilogram of body weight.~~

~~*Wide complex tachycardia (hemodynamically stable).* Administer amiodarone 150 milligrams over ten (10) minutes. If dysrhythmia persists, contact the emergency department to determine if the receiving physician desires synchronized cardioversion.~~

~~*Wide complex tachycardia (hemodynamically unstable).* Provide synchronized cardioversion in accordance with protocol. If dysrhythmia resolves, administer amiodarone 150 milligrams over ten (10) minutes.~~

~~Ventricular fibrillation (post resuscitation). Administer amiodarone 150 milligrams over ten (10) minutes.~~

~~Ondansetron (Zofran)~~

~~In the absence of availability of injectable ondansetron, orally disintegrating tablets (ODT) may be utilized. Injectable solutions remain the preferred method of delivery.~~

~~Agencies that must resort to utilization of ondansetron ODT shall:~~

1. ~~Ensure that limited quantities of ondansetron ODT product are purchased. Once injectable ondansetron is available, it is the expectation that ondansetron ODT use shall be immediately discontinued and the agency shall revert to injectable solutions as authorized under *Volusia County Prehospital Standing Orders and Treatment Protocols*.~~
2. ~~Ensure that all personnel are properly and comprehensively trained in the proper use of the product prior to convening to field units.~~
3. ~~If an agency intends to utilize ondansetron ODT under this authorization, written notification shall be provided to the medical director.~~
4. ~~Provide verbal notification to the medical director upon experiencing any concerns regarding this process. Additionally, a comprehensive written notification is required by the close of the first business day following verbal notification.~~

~~The provider shall administer a single dose of four (4) milligrams to patients consistent with *Volusia County Prehospital Standing Orders and Treatment Protocols*.~~

§900.01 is rescinded
See §900.02

Section 900.02: Medication alternatives

Description of modification/clarification: Alternatives for solutions and medications.

Distribution date: July 5, 2018

Expiration date: Upon release of next comprehensive protocol revision

Approved by: Peter C. Springer, MD, FACEP

In the presence of ongoing shortages and disruption in intravenous solutions and medications, the following authorizations are in effect.

Intravenous fluids for medication infusions

When small volume (≤250 milliliters) intravenous solutions are unavailable, Buretrol® infusion sets are an acceptable alternative in conjunction with larger volume intravenous infusion solutions (>250 milliliters) as a means of isolating a precise volume for preparing infusions.

Agencies that must resort to utilization of a Buretrol® device shall:

§900.02 is rescinded

See §900.04

1. Ensure that limited quantities are purchased. Once small volume intravenous solutions (≤250 milliliters) are available, it is the expectation that Buretrol® device use shall be immediately discontinued and the agency shall revert to conventional delivery modalities described in *Volusia County Prehospital Standing Orders and Treatment Protocols*.
2. Ensure that all personnel are properly and comprehensively trained in the manufacturer intended use of the product prior to deploying the devices to field units.
3. If an agency intends to utilize the Buretrol® device under this authorization, written notification shall be provided to the medical director.
4. Provide verbal notification to the medical director upon learning of any concerns regarding the product or its performance under this authorization. A comprehensive written notification is required by the close of the first business day following verbal notification.

The provider shall be responsible for mixing the appropriate drug at the time of administration. Furthermore, the provider shall be responsible for determining the concentration in the Buretrol® device chamber and the requisite drip rate to achieve the desired dose authorized under *Volusia County Prehospital Standing Orders and Treatment Protocols*. A matrix of recommended preparations (*Recommended dilution of medication for administration with Buretrol® device*) is provided below as a point of reference for field providers.

As an ongoing means to extend the availability of intravenous fluid reserves, field providers shall utilize saline-flushed locks in lieu of using conventional intravenous fluids delivered via infusion set whenever volume resuscitation or other circumstances do not present.

Recommended dilution of medication for administration with Buretrol® device			
Medication	Protocol	Preparation	Drops per minute[1]
Amiodarone	Wide complex tachycardia	150 milligrams into 50 milliliters	Run wide open until infusion is complete
Epinephrine, 1:1,000	Bradycardias	1 milligram into 100 milliliters (yields 10 micrograms per milliliter)	12-60 drops per minute
Magnesium sulfate	Asthma	2 grams into 50 milliliters	130 drops per minute
Magnesium sulfate	Eclampsia	4 grams into 50 milliliters	130 drops per minute

1 – Drops per minute calculated for a Buretrol® set with a drop-to-volume ratio of sixty (60) drops equates to one (1) milliliter.

Epinephrine, 1:10,000

In the absence of availability of epinephrine (1:10,000), dilution of epinephrine (1:1,000) shall be the alternative authorized under protocol.

Agencies that must resort to diluting epinephrine (1:1,000) solutions shall:

1. Ensure that dilution occurs at the time of administration. Dilution in advance is prohibited.
2. Ensure that the personnel are properly and comprehensively trained in the dilution process prior to deploying to field units.
3. Refrain from using multi-dose vials.
4. If an agency intends to dilute epinephrine (1:1,000) under this authorization, written notification shall be provided to the medical director.
5. Provide verbal notification to the medical director upon experiencing any concerns regarding this process. A comprehensive written notification is required by the close of the first business day following verbal notification.

The provider shall dilute one (1) milliliter epinephrine (1:1,000) with nine (9) milliliters 0.9% sodium chloride. The yield – epinephrine (1:10,000) – shall be administered in accordance with references to epinephrine (1:10,000) throughout *Volusia County Prehospital Standing Orders and Treatment Protocols*.

Lidocaine, 20%

In the absence of lidocaine, 20%, the following standing orders have been modified as follows.

Ventricular ectopy. Administer initial dose of lidocaine, 2%, 1-1.5 milligrams per kilogram of body weight. If the dysrhythmia returns, subsequent bolus therapy shall be repeated at appropriate time intervals to a maximum dose of 3 milligrams per kilogram of body weight.

§900.02 is rescinded
See §900.04

Wide complex tachycardia (hemodynamically stable). Administer amiodarone 150 milligrams over ten (10) minutes. If dysrhythmia persists, contact the emergency department to determine if the receiving physician desires synchronized cardioversion.

Wide complex tachycardia (hemodynamically unstable). Provide synchronized cardioversion in accordance with protocol. If dysrhythmia resolves, administer amiodarone 150 milligrams over ten (10) minutes.

Ventricular fibrillation (post resuscitation). Administer amiodarone 150 milligrams over ten (10) minutes.

Ondansetron (Zofran)

In the absence of availability of injectable ondansetron, orally disintegrating tablets (ODT) may be utilized. Injectable solutions remain the preferred method of delivery.

Agencies that must resort to utilization of ondansetron ODT shall:

1. Ensure that limited quantities of ondansetron ODT product are purchased. Once injectable ondansetron is available, it is the expectation that ondansetron ODT use shall be immediately discontinued and the agency shall revert to injectable solutions as authorized under *Volusia County Prehospital Standing Orders and Treatment Protocols*.
2. Ensure that all personnel are properly and comprehensively trained in the proper use of the product prior to carrying it in field units.
3. If an agency intends to utilize ondansetron ODT under this authorization, written notification shall be provided to the medical director.
4. Provide verbal notification to the medical director upon experiencing any concerns regarding this process. Additionally, a comprehensive written notification is required by the close of the first business day following verbal notification.

§900.02 is rescinded
See §900.04

The provider shall administer a single dose of four (4) milligrams to patients consistent with *Volusia County Prehospital Standing Orders and Treatment Protocols*.

Diltiazem (Cardizem)

If diltiazem (Cardizem) is unavailable, advanced life support providers may substitute amiodarone, 150 milligrams diluted in fifty milliliters and infused over ten (10) minutes in the presence of symptomatic atrial flutter or atrial fibrillation.

Dopamine

If a provider is unable to obtain dopamine, no substitution is provided for. Volume resuscitation with crystalloid fluids shall be administered in accordance with protocol. This section temporarily waives the requirement to inventory dopamine from advanced life support units. Agencies are required to replenish dopamine at their earliest convenience.

Section 900.03: Albuterol (pediatric) clarification

Description of modification/clarification: Alternatives for solutions and medications.

Distribution date: July 5, 2018

Expiration date: Upon release of next comprehensive protocol revision

Approved by: Peter C. Springer, MD, FACEP

A scrivener's error resulted in the inadvertent omission of authorization to repeat two additional doses of albuterol in pediatric sections addressing allergic reactions (§500.02) and dyspnea (§500.06). This section authorizes the administration of two subsequent doses of albuterol – to a maximum of 7.5 milligrams – if signs and/or symptoms of respiratory distress continue.

Section 900.04: Medication alternatives

Description of modification/clarification: Alternatives for solutions and medications.

Distribution date: July 30, 2018

Expiration date: Upon release of next comprehensive protocol revision

Approved by: Peter C. Springer, MD, FACEP

In the presence of ongoing shortages and disruption in intravenous solutions and medications, the following authorizations are in effect.

Intravenous fluids for medication infusions

When small volume (≤250 milliliters) intravenous solutions are unavailable, Buretrol® infusion sets are an acceptable alternative in conjunction with larger volume intravenous infusion solutions (>250 milliliters) as a means of isolating a precise volume for preparing infusions.

Agencies that must resort to utilization of a Buretrol® device shall:

1. Ensure that limited quantities are purchased. Once small volume intravenous solutions (≤250 milliliters) are available, it is the expectation that Buretrol® device use shall be immediately discontinued and the agency shall revert to conventional delivery modalities described in *Volusia County Prehospital Standing Orders and Treatment Protocols*.
2. Ensure that all personnel are properly and comprehensively trained in the manufacturer intended use of the product prior to deploying the devices to field units.
3. If an agency intends to utilize the Buretrol® device under this authorization, written notification shall be provided to the medical director.
4. Provide verbal notification to the medical director upon learning of any concerns regarding the product or its performance under this authorization. A comprehensive written notification is required by the close of the first business day following verbal notification.

The provider shall be responsible for mixing the appropriate drug at the time of administration. Furthermore, the provider shall be responsible for determining the concentration in the Buretrol® device chamber and the requisite drip rate to achieve the desired dose authorized under *Volusia County Prehospital Standing Orders and Treatment Protocols*. A matrix of recommended preparations (*Recommended dilution of medication for administration with Buretrol® device*) is provided below as a point of reference for field providers.

As an ongoing means to extend the availability of intravenous fluid reserves, field providers shall utilize saline-flushed locks in lieu of using conventional intravenous fluids delivered via infusion set whenever volume resuscitation or other circumstances do not present.

Recommended dilution of medication for administration with Buretrol® device			
Medication	Protocol	Preparation	Drops per minute[1]
Amiodarone	Wide complex tachycardia	150 milligrams into 50 milliliters	Run wide open until infusion is complete
Epinephrine, 1:1,000	Bradycardias	1 milligram into 100 milliliters (yields 10 micrograms per milliliter)	12-60 drops per minute
Magnesium sulfate	Asthma	2 grams into 50 milliliters	130 drops per minute
Magnesium sulfate	Eclampsia	4 grams into 50 milliliters	130 drops per minute

1 – Drops per minute calculated for a Buretrol® set with a drop-to-volume ratio of sixty (60) drops equates to one (1) milliliter.

Epinephrine, 1:10,000

In the absence of availability of epinephrine (1:10,000), dilution of epinephrine (1:1,000) shall be the alternative authorized under protocol.

Agencies that must resort to diluting epinephrine (1:1,000) solutions shall:

1. Ensure that dilution occurs at the time of administration. Dilution in advance is prohibited.
2. Ensure that all personnel are properly and comprehensively trained in the dilution process prior to deploying to field units.
3. Refrain from using multi-dose vials.
4. If an agency intends to dilute epinephrine (1:1,000) under this authorization, written notification shall be provided to the medical director.
5. Provide verbal notification to the medical director upon experiencing any concerns regarding this process. A comprehensive written notification is required by the close of the first business day following verbal notification.

The provider shall dilute one (1) milliliter epinephrine (1:1,000) with nine (9) milliliters 0.9% sodium chloride. The yield – epinephrine (1:10,000) – shall be administered in accordance with references to epinephrine (1:10,000) throughout *Volusia County Prehospital Standing Orders and Treatment Protocols*.

Lidocaine, 20%

In the absence of lidocaine, 20%, the following standing orders have been modified as follows.

Ventricular ectopy. Administer initial dose of lidocaine, 2%, 1-1.5 milligrams per kilogram of body weight. If the dysrhythmia returns, subsequent bolus therapy shall be repeated at appropriate time intervals to a maximum dose of 3 milligrams per kilogram of body weight.

Wide complex tachycardia (hemodynamically stable). Administer amiodarone 150 milligrams over ten (10) minutes. If dysrhythmia persists, contact the emergency department to determine if the receiving physician desires synchronized cardioversion.

Wide complex tachycardia (hemodynamically unstable). Provide synchronized cardioversion in accordance with protocol. If dysrhythmia resolves, administer amiodarone 150 milligrams over ten (10) minutes.

Ventricular fibrillation (post resuscitation). Administer amiodarone 150 milligrams over ten (10) minutes.

Ondansetron (Zofran)

In the absence of availability of injectable ondansetron, orally disintegrating tablets (ODT) may be utilized. Injectable solutions remain the preferred method of delivery.

Agencies that must resort to utilization of ondansetron ODT shall:

1. Ensure that limited quantities of ondansetron ODT product are purchased. Once injectable ondansetron is available, it is the expectation that ondansetron ODT use shall be immediately discontinued and the agency shall revert to injectable solutions as authorized under *Volusia County Prehospital Standing Orders and Treatment Protocols*.
2. Ensure that all personnel are properly and comprehensively trained in the proper use of the product prior to deploying to field units.
3. If an agency intends to utilize ondansetron ODT under this authorization, written notification shall be provided to the medical director.
4. Provide verbal notification to the medical director upon experiencing any concerns regarding this process. Additionally, a comprehensive written notification is required by the close of the first business day following verbal notification.

The provider shall administer a single dose of four (4) milligrams to patients consistent with *Volusia County Prehospital Standing Orders and Treatment Protocols*.

Diltiazem (Cardizem)

If diltiazem (Cardizem) is unavailable, advanced life support providers may substitute amiodarone, 150 milligrams diluted in fifty milliliters and infused over ten (10) minutes in the presence of symptomatic atrial flutter or atrial fibrillation.

Dopamine

If a provider is unable to obtain dopamine, no substitution is provided for. Volume resuscitation with crystalloid fluids shall be administered in accordance with protocol. This section temporarily waives the requirement to inventory dopamine from advanced life support units. Agencies are required to replenish dopamine at their earliest convenience.

Morphine

In the absence of readily available morphine supplies, the modified equipment thresholds below are in effect. Reduction of morphine on prehospital units is not permitted until product availability has been exhausted with all licensed vendors.

1. Non-transport units may reduce morphine stock to ten (10) milligrams per unit.
2. Transport units may reduce amounts to twenty (20) milligrams per unit.
3. In the event the above amounts aren't sustainable, preference shall be given to maintaining morphine on transport units. If ongoing disruptions in product availability dictate reductions below these temporarily revised guidelines, it is permissible for the unit to remain in service despite the depletion.
4. Weekly written notification shall be made to the medical director identifying each unit operating below the revised thresholds for the duration of the supply interruption.

Section 900.05: Transport protocol: addition of interventional STEMI center

Description of modification/clarification: New interventional STEMI center.

Distribution date: October 26, 2018

Expiration date: Upon release of next comprehensive protocol revision

Approved by: Peter C. Springer, MD, FACEP

Effective November 1, 2018 at 12:01 a.m., Florida Hospital Fish Memorial, 1055 Saxon Boulevard, Orange City will be eligible to receive patients meeting STEMI alert criteria. As is customary with all other STEMI receiving facilities, early verbal notification and transmission of a clear ECG tracing shall be conveyed at the prehospital providers' earliest opportunity.

Section 900.06: Hospital name change

Description of modification/clarification: Rebranding of Florida Hospital facilities.

Distribution date: January 14, 2019

Expiration date: Upon release of next comprehensive protocol revision

Approved by: Peter C. Springer, MD, FACEP

Effective January 1, 2019 at 12:01 a.m., Adventist Health System (Florida Hospital) rebranded their facilities. As such, all references in Volusia County Prehospital Standing Orders and Treatment Protocols to Florida Hospital shall be amended in accordance with this page.

Florida Hospital DeLand is now Adventhealth DeLand
Florida Hospital Fish Memorial is now Adventhealth Fish Memorial
Florida Hospital Memorial Medical Center is now Adventhealth Daytona Beach
Florida Hospital New Smyrna is now Adventhealth New Smyrna Beach

Services available at these facilities is not altered by the name change.

Section 900.07: Transport destination selection

Description of modification/clarification: Reiteration of patient ability to select transport destination.

Distribution date: January 14, 2019

Expiration date: Upon release of next comprehensive protocol revision

Approved by: Peter C. Springer, MD, FACEP

It's come to my attention that some crews have imposed an arbitrary maximum distance regarding transportation of patients to hospitals, therefore, the following update is provided for clarification.

Except in defined circumstances, persons seeking ambulance transport shall be afforded the opportunity to select the Volusia County-designated receiving facility of patient preference (*section 200.01, Volusia County Prehospital Standing Orders and Treatment Protocols*). If the patient has no preference, the patient shall be transported to the closest appropriate emergency department.

Circumstances that may limit the ability of a patient to determine the transport destination include:

1. If the patient's selection of an emergency department is not the closest facility and the patient has an actual or suspected life threatening condition, consult the emergency department physician at the hospital of the patient's choosing and request diversion to the closest appropriate hospital (*section 200.01, Volusia County Prehospital Standing Orders and Treatment Protocols*).
2. Persons meeting state- or locally-designated criteria shall be transported to the appropriate facility of choice;
    a. Cardiac/STEMI (*section 200.02, Volusia County Prehospital Standing Orders and Treatment Protocols*),
    b. Florida Mental Health Act (*section 200.03, Volusia County Prehospital Standing Orders and Treatment Protocols*),
    c. Obstetrical (*section 200.04, Volusia County Prehospital Standing Orders and Treatment Protocols*),
    d. Stroke (*section 200.05, Volusia County Prehospital Standing Orders and Treatment Protocols*),
    e. Therapeutic hypothermia (*section 200.06, Volusia County Prehospital Standing Orders and Treatment Protocols*), and
    f. Trauma (*section 200.07, Volusia County Prehospital Standing Orders and Treatment Protocols*)
3. Transport unit personnel shall adhere to hospital emergency department and/or medical director diversion status (*section 100.05, Volusia County Prehospital Standing Orders and Treatment Protocols*).

Absent any one of the above criteria, prehospital personnel are specifically prohibited from preferentially diverting or otherwise influencing a patient's choice in emergency department selection due to distance, provider's impression that the facility cannot offer sufficient services at the selected facility, potential for subsequent transfer, or other reasons.

The above is a summary of transport parameters. Transport unit personnel are expected to familiarize themselves with all of the components of the transport protocol in making hospital selection.

Section 900.08: Release of first response agency

Description of modification/clarification: Introductory program involving the release of first response agencies under specific conditions.

Distribution date: February 4, 2019

Expiration date: Upon release of next comprehensive protocol revision

Approved by: Peter C. Springer, MD, FACEP

This program is intended as an introductory program and authorizes only the agencies and personnel identified under separate written correspondence from the EMS medical director to operate under the auspices of this section.

Release of first response agency

Scope and purpose

The *Release of first response agency* is a pilot program intended exclusively for agencies with written authorization from the medical director to execute the appropriate refusal, return to service, and allow the low acuity patient to independently await the ambulance arrive for persons with no perceived or discernable emergency medical condition. The program is meant to improve efficiency within the emergency medical services system and gain resource capacity through the professional, responsible, and appropriate application of this program. Deviations from or usurpation of the intended spirit of the program may result in restrictions to the paramedic or emergency medical technicians ability to practice in Volusia County.

Persons that are eligible for: *Release of first response agency*.

1. An adult or an emancipated minor;
2. Be alert and oriented;
3. Free from alcohol or drug intoxication[1];
4. Must be independently and effectively able to ambulate without reasonable risk of fall[2];
5. Be in no apparent distress;
6. Must have and maintain reliable access to access the 9-1-1 system until the ambulance arrives on scene;
7. Be in a safe environment[3]; and
8. Be amenable to the terms and conditions of this program.

Persons that are ineligible for: *Release of first response agency*.

[1] For purposes of this section, "alcohol or drug intoxication" means any reasonable suspicion as determined on clinical assessment by the field provider or admission of consumption of alcohol or drugs by the patient.
[2] For purposes of this section, "independently and effectively able to ambulate without reasonable risk of fall" means persons able to move between two points in a timely manner without assistance, without undue burden, and without exacerbating any underlying medical condition.
[3] For purposes of this section, "safe environment" shall include a residence, hotel/motel room, or any domicile in which the persons resides or was invited to visit. Commercial buildings and other public spaces are not considered safe environments.

1. Hearing-impaired persons, sight-impaired persons, mentally-impaired persons, or others' with special needs;
2. Individuals with a definable unstable emergency medical condition;
3. Individuals with a perceived emergency medical condition;
4. Individuals with a preexisting medical condition which, in the judgment of the emergency medical technician or paramedic, would place them at increased risk by being left to independently await the ambulance arrival;
5. Individuals with vital signs outside of physiological norms; and
6. Individuals that have received any advanced life support assessment or treatment by the emergency medical provider

If an individual is eligible based upon the above criteria, the first response agency may seek consent from the patient and execute the appropriate release. Regardless of eligibility, no individual shall be directly denied or otherwise persuaded to decline allow this interruption in care.

<u>First response prehospital provider (paramedic or emergency medical technician) responsibilities:</u>

1. Afford the patient the ability to make an informed decision regarding their willingness to participate in the *Release of first response agency* program.
2. The responsible paramedic or emergency medical technician affording the option of exercising this program shall be clearly identified in the patient care report. If no designation is made, the report author will be presumed to be the individual responsible for the determination.
3. It is the expectation that a comprehensive history and physical examination occur prior to invoking this program. The assessment, and contemplation of any other mitigating factors in the provider's decision-making process, shall be comprehensively documented.
4. The provider shall record the following specific information in the patient care report: patient's legal name; patient's date of birth; patient's home address; patient's telephone number; the unique incident or case number assigned to the patient; and the name of the hospital emergency department at which the patient intends to be evaluated.
5. The patient care report shall be completed as soon as practical. Under no circumstances may the report be left incomplete prior to the provider ending their shift.
6. Communicate with the responding transport unit to determine their estimated time of arrival. If the arrival is imminent, invoking the use of *Release of first response agency* may not be appropriate. This program shall not be used as a mechanism to hastily disposition a patient.
7. Notify your supervisor of any irregularities encountered in the administration of this program.
8. Document an exclusive disposition description in the patient disposition section of the electronic patient care report that will allow identification of the incident.

<u>First response agency responsibilities:</u>

1. If irregularities are reported by field personnel, those concerns shall be conveyed to the medical director, or his or her designee, in writing no later than the close of business on the first business day following notification by the field provider. Irregularities of greater concern shall also require verbal communication as soon as possible.

2. Create a unique patient disposition description in the electronic patient care report and instruct all personnel in its use for this program. The description shall be uniform with all other participating agencies and agreeable with the Emergency Medical Administration division.
3. Review all instances in which this program is utilized for appropriateness and application of parameters established in this section.

Transport agency responsibilities

If the ambulance arrival is delayed more than thirty (30) minutes following the first response agency clearing the scene, telephone contact shall be made with the patient by a Volusia County Emergency Medical Services division system status controller, or his or her designee.

Section 900.09: Interface between advanced life support non-transport providers and basic life support transport

Description of modification/clarification: Authorization and expectations in transition of care between advanced life support non-transport agencies and basic life support transport.

Distribution date: February 21, 2019

Expiration date: Upon release of next comprehensive protocol revision

Approved by: Peter C. Springer, MD, FACEP

This section authorizes paramedics with an advanced life support provider who perform a comprehensive patient assessment to turn over care to an appropriately staffed basic life support ambulance for transport providing:

1. That no advanced life support assessment[1] or intervention has been performed; and
2. There is no reasonable anticipation that advanced life support assessment and/or care will be necessary following the advanced life support providers departure.

During the introduction period for basic life support transport units, these assets are anticipated to be available only in the Daytona Beach and Holly Hill areas. Based upon compliance with and efficacy of the program, the geographical region is anticipated to expand as the program evolves.

[1] For purposes of this section, "advanced life support assessment" does not include verbal and visual assessment by a paramedic.

Section 900.10: Spinal motion restriction (SMR)

Description of modification/clarification: Modification of total spine immobilization.

Distribution date: May 17, 2019

Expiration date: Upon release of next comprehensive protocol revision

Approved by: Peter C. Springer, MD, FACEP

Consistent with the joint position statement by the *American College of Surgeons Committee on Trauma* (ACS-COT), *American College of Emergency Physicians* (ACEP), and the *National Association of EMS Physicians* (NAEMSP)[1], this addendum recognizes appropriate utilization and application of spinal immobilization procedures.

The nomenclature spinal motion restriction (SMR) has become favored over spinal immobilization. SMR involves the minimization of unwanted and unnecessary movement of the potentially injured spine. SMR shall be accomplished utilizing long-established procedures including:

1. Manual immobilization of the cervical spine until total spinal motion restriction is completed;
2. Placement of an approved, properly-sized rigid cervical collar;
3. Placement of the patient on to an approved spine board minimizing unnecessary movement of the spine during the process;
4. Secure a strap to the spine board above the patient's shoulder and extend the strap diagonally across the torso and attached to the spine board adjacent to the hip on the opposite side of the spine board. A second strap shall be applied from the opposite shoulder in a similar fashion crossing the torso.
5. A third strap shall be affixed at or slightly below the waist line to prevent lateral movement of the spine;
6. A fourth strap may be applied across the lower legs to facilitate patient safety; and
7. Approved head immobilization devices shall be affixed on either side of the patient's head to restrict motion of the cervical spine.

Indications

In the presence of blunt trauma SMR is indicated with any one, or more, of the following:

1. Acutely altered level of consciousness (e.g., GCS <15, evidence of intoxication);
2. Midline neck or back pain and/or tenderness;
3. Focal neurologic signs and/or symptoms (e.g., numbness or motor weakness);
4. Anatomic deformity of the spine;

[1] Fischer, MD, MS, P. E., Perina, MD, D. G., Delbridge, MD, MPH, T. R., Fallat, MD, M. E., Salomone, MD, J. P., Dodd, MS, MA, J., Bulger, MD, E. M., and Gestring, MD, M. L. (2018, August 9). Spinal Motion Restriction in the Trauma Patient – A Joint Position Statement. Retrieved May 16, 2019, from https://www.tandfonline.com/doi/full/10.1080/10903127.2018.1481476

5. Distracting circumstances or injury (e.g., long bone fracture, degloving, or crush injuries, large burns, emotional distress, communication barrier, etc.) or any similar injury that impairs the patient's ability to contribute to a reliable examination

In the absence of provider suspicion of spinal injury, there are no indications for SMR in the presence of penetrating trauma.

The above applies to all patient ages.

Section 900.11: AdventHealth Deltona ER

Description of modification/clarification: Authorization of ambulance receiving facility.

Distribution date: December 3, 2019

Expiration date: Upon release of next comprehensive protocol revision

Approved by: Peter C. Springer, MD, FACEP

The following facility is an authorized ambulance receiving facility effective Wednesday, December 4, 2019 at 9:00 a.m.

AdventHealth Deltona ER
3108 Howland Boulevard
Deltona, Florida 32725

The Deltona facility is an appropriate receiving facility for all but specialty transports (e.g., obstetrical, STEMI, stroke, trauma, etc.) with a caveat: the facility is an appropriate alternative for persons with compromised and uncontrolled airway issues when it is closest.

Section 900.12: Guidance on handling suspected coronavirus disease 2019 (COVID-19)

Description of modification/clarification: Guidance for emergency medical services on the screening and handling of handling suspected coronavirus disease 2019 (COVID-19).

Distribution date: March 4, 2020

Expiration date: Upon release of next comprehensive protocol revision

Approved by: Peter C. Springer, MD, FACEP

Introduction

This update is provided as guidance in light of the emergence of coronavirus disease 2019 (COVID-19). As the information and recommendations remain fluid at the time of this documents creation, all providers are expected to review information published by the United States Department of Health and Human Services, Centers for Disease Control and Prevention on a routine and ongoing basis.

Additionally, this document recognizes that the Florida Department of Health-Volusia is the local, lead-agency managing public health matters.

Persons under investigation (PUI) for coronavirus disease 2019 (COVID-19)

The following matrix was developed by the Centers for Disease Control and Prevention for establishing the status of person under investigation (PUI).

Clinical Features		Epidemiologic Risk
Fever[1] **or** signs/symptoms of lower respiratory illness (e.g. cough or shortness of breath)	**and**	Any person, including healthcare workers[2], who has had close contact[3] with a laboratory-confirmed[4] COVID-19 patient within 14 days of symptom onset
Fever[1] **and** signs/symptoms of a lower respiratory illness (e.g., cough or shortness of breath) requiring hospitalization	**and**	A history of travel from affected geographic areas[5] (see below) within 14 days of symptom onset
Fever[1] with severe acute lower respiratory illness (e.g., pneumonia, ARDS) requiring hospitalization and without alternative explanatory diagnosis (e.g., influenza)[6]	**and**	No source of exposure has been identified

~~1 – Fever may be subjective or confirmed.~~

~~2 – For healthcare personnel, testing may be considered if there has been exposure to a person with suspected COVID-19 without laboratory confirmation. Because of their often extensive and close contact with vulnerable patients in healthcare settings, even mild signs and symptoms (e.g., sore throat) of COVID-19 should be evaluated among potentially exposed healthcare personnel. Additional information is available in CDC's Interim U.S. Guidance for Risk Assessment and Public Health Management of Healthcare Personnel with Potential Exposure in a Healthcare Setting to Patients with Coronavirus Disease 2019 (COVID-19).~~

~~3 – Close contact is defined as a) being within approximately 6 feet (2 meters) of a COVID-19 case for a prolonged period of time; close contact can occur while caring for, living with, visiting, or sharing a healthcare waiting area or room with a COVID-19 case; or b) having direct contact with infectious secretions of a COVID-19 case (e.g., being coughed on). If such contact occurs while not wearing recommended personal protective equipment or PPE (e.g., gowns, gloves, NIOSH-certified disposable N95 respirator, eye protection), criteria for PUI consideration are met. Additional information is available in CDC's updated Interim Infection Prevention and Control Recommendations for Patients with Confirmed COVID-19 or Persons Under Investigation for COVID-19 in Healthcare Settings. Data to inform the definition of close contact are limited. Considerations when assessing close contact include the duration of exposure (e.g., longer exposure time likely increases exposure risk) and the clinical symptoms of the person with COVID-19 (e.g., coughing likely increases exposure risk as does exposure to a severely ill patient). Special consideration should be given to healthcare personnel exposed in healthcare settings as described in CDC's Interim U.S. Guidance for Risk Assessment and Public Health Management of Healthcare Personnel with Potential Exposure in a Healthcare Setting to Patients with COVID-19.~~

~~4 – Documentation of laboratory-confirmation of COVID-19 may not be possible for travelers or persons caring for COVID-19 patients in other countries.~~

~~5 – Affected areas are defined as geographic regions where sustained community transmission has been identified. Relevant affected areas will be defined as a country with at least a CDC Level 2 Travel Health Notice. See all COVID-19 Travel Health Notices.~~

~~6 – Category includes single or clusters of patients with severe acute lower respiratory illness (e.g., pneumonia, ARDS) of unknown etiology in which COVID-19 is being considered.~~

~~Telecommunications~~

~~This document augments existing emergency medical dispatch procedures. Telecommunications staff shall maintain adherence to quality emergency medical dispatch protocols for the triage of complaint types, delivery of pre-arrival instructions to callers in need of assistance, and all other aspects of emergency medical dispatch.~~

~~.~~

~~.implement screening for callers describing viral signs and symptoms to include:~~

1. ~~Has the patient traveled to endemic regions, as defined by the Centers for Disease Control and Prevention, within the previous fourteen (14) days?~~
2. ~~Has the patient been in direct contact with anyone who has traveled to endemic regions, as defined by the Centers for Disease Control and Prevention, within the previous fourteen (14) days?~~

~~For purposes of this document, viral signs and symptoms shall include, but are not limited to, fever, congestion, sore throat, rhinorrhea (runny nose), nausea, vomiting, and diarrhea. If any of these are present, that information shall be conveyed to agencies involved in the disposition of the incident; regardless of travel.~~

~~If practical, and in the absence of a condition necessitating and emergency medical response, PUI should be routed to nurse triage for additional assessment and disposition.~~

~~The nurse triage component of the communications center shall engage PUI that are routed to them via the emergency medical dispatch process. If a PUI is identified using the Florida Department of Health-Volusia screening and assessment tool, and they are determined not to be in need of emergency medical care, the FDOH-Volusia shall be conferenced in to the call~~

~~Prehospital providers~~

~~In the event a provider encounters a PUI, personnel engaging the patient shall utilize all appropriate barrier precautions. Additionally, the following shall be contemplated:~~

Interim Guidance for Emergency Medical Services (EMS) Systems and 911 Public Safety Answering Points (PSAPs) for COVID-19 in the United States

Source: *Centers for Disease Control and Prevention. (2020). Interim Guidance for Emergency Medical Services (EMS) Systems and 911 Public Safety Answering Points (PSAPs) for COVID-19 in the United States (February 15, 2020). United States Department of Health and Human Services. https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-for-ems.html. Retrieved March 4, 2020*

This guidance applies to all first responders, including law enforcement, fire services, emergency medical services, and emergency management officials, who anticipate close contact with persons with confirmed or possible COVID-19 in the course of their work.

Background

Emergency medical services (EMS) play a vital role in responding to requests for assistance, triaging patients, and providing emergency medical treatment and transport for ill persons. However, unlike patient care in the controlled environment of a healthcare facility, care and transports by EMS present unique challenges because of the nature of the setting, enclosed space during transport, frequent need for rapid medical decision making, interventions with limited information, and a varying range of patient acuity and jurisdictional healthcare resources.

When preparing for and responding to patients with confirmed or possible coronavirus disease 2019 (COVID-19), close coordination and effective communications are important among 911 Public Safety Answering Points (PSAPs) – commonly known as 911 call centers, the EMS system, healthcare facilities, and the public health system. Each PSAP and EMS system should seek the involvement of an EMS medical director to provide appropriate medical oversight. For the purposes of this guidance, "EMS clinician" means prehospital EMS and medical first responders. When COVID-19 is suspected in a patient needing emergency transport, prehospital care providers and healthcare facilities should be notified in advance that they may be caring for, transporting, or receiving a patient who may have COVID-19 infection.

Updated information about COVID-19 may be accessed at https://www.cdc.gov/coronavirus/2019-ncov/index.html. Infection prevention and control recommendations can be found here: https://www.cdc.gov/coronavirus/2019-nCoV/hcp/infection-control.html. Additional information for healthcare personnel can be found at https://www.cdc.gov/coronavirus/2019-nCoV/guidance-hcp.html.

Case Definition for COVID-19

CDC's most current case definition for a person under investigation (PUI) for COVID-19 may be accessed at https://www.cdc.gov/coronavirus/2019-nCoV/clinical-criteria.html.

Recommendations for 911 PSAPs

Municipalities and local EMS authorities should coordinate with state and local public health, PSAPs, and other emergency call centers to determine need for modified caller queries about COVID-19, outlined below.

Development of these modified caller queries should be closely coordinated with an EMS medical director and informed by local, state, and federal public health authorities, including the city or county health department(s), state health department(s), and CDC.

Modified Caller Queries

PSAPs or Emergency Medical Dispatch (EMD) centers (as appropriate) should question callers and determine the possibility that this call concerns a person who may have signs or symptoms and risk factors for COVID-19. The query process should never supersede the provision of pre-arrival instructions to the caller when immediate lifesaving interventions (e.g., CPR or the Heimlich maneuver) are indicated. Patients in the United States who meet the appropriate criteria should be evaluated and transported as a PUI. Information on COVID-19 will be updated as the public health response proceeds. PSAPs and medical directors can access CDC's PUI definitions here.

Information on a possible PUI should be communicated immediately to EMS clinicians before arrival on scene in order to allow use of appropriate personal protective equipment (PPE). PSAPs should utilize medical dispatch procedures that are coordinated with their EMS medical director and with the local or state public health department.

PSAPs and EMS units that respond to ill travelers at US international airports or other ports of entry to the United States (maritime ports or border crossings) should be in contact with the CDC quarantine station of jurisdiction for the port of entry (see: CDC Quarantine Station Contact List) for planning guidance. They should notify the quarantine station when responding to that location if a communicable disease is suspected in a traveler. CDC has provided job aids for this purpose to EMS units operating routinely at US ports of entry. The PSAP or EMS unit can also call CDC's Emergency Operations Center at (770) 488-7100 to be connected with the appropriate CDC quarantine station.

Recommendations for EMS Clinicians and Medical First Responders

EMS clinician practices should be based on the most up-to-date COVID-19 clinical recommendations and information from appropriate public health authorities and EMS medical direction.

State and local EMS authorities may direct EMS clinicians to modify their practices as described below.

Patient assessment

- If PSAP call takers advise that the patient is suspected of having COVID-19, EMS clinicians should put on appropriate PPE before entering the scene. EMS clinicians should consider the signs, symptoms, and risk factors of COVID-19 (https://www.cdc.gov/coronavirus/2019-nCoV/clinical-criteria.html).

- If information about potential for COVID-19 has not been provided by the PSAP, EMS clinicians should exercise appropriate precautions when responding to any patient with signs or symptoms of a respiratory infection. Initial assessment should begin from a distance of at least 6 feet from the patient, if possible. Patient contact should be minimized to the extent possible until a facemask is on the patient. If COVID-19 is suspected, all PPE as described below should be used. If COVID-19 is not suspected, EMS clinicians should follow standard procedures and use appropriate PPE for evaluating a patient with a potential respiratory infection.

- A facemask should be worn by the patient for source control. If a nasal cannula is in place, a facemask should be worn over the nasal cannula. Alternatively, an oxygen mask can be used if clinically indicated. If the patient requires intubation, see below for additional precautions for aerosol-generating procedures.

- During transport, limit the number of providers in the patient compartment to essential personnel to minimize possible exposures.

Recommended Personal Protective Equipment (PPE)

- EMS clinicians who will directly care for a patient with possible COVID-19 infection or who will be in the compartment with the patient should follow Standard, Contact, and Airborne Precautions, including the use of eye protection. Recommended PPE includes:
  - A single pair of disposable patient examination gloves. Change gloves if they become torn or heavily contaminated,
  - Disposable isolation gown,
  - Respiratory protection (i.e., N-95 or higher-level respirator), and
  - Eye protection (i.e., goggles or disposable face shield that fully covers the front and sides of the face).
- Drivers, if they provide direct patient care (e.g., moving patients onto stretchers), should wear all recommended PPE. After completing patient care and before entering an isolated driver's compartment, the driver should remove and dispose of PPE and perform hand hygiene to avoid soiling the compartment.
  - If the transport vehicle does not have an isolated driver's compartment, the driver should remove the face shield or goggles, gown and gloves and perform hand hygiene. A respirator should continue to be used during transport.
- All personnel should avoid touching their face while working.
- On arrival, after the patient is released to the facility, EMS clinicians should remove and discard PPE and perform hand hygiene. Used PPE should be discarded in accordance with routine procedures.
- Other required aspects of Standard Precautions (e.g., injection safety, hand hygiene) are not emphasized in this document but can be found in the guideline titled Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings.

Precautions for Aerosol-Generating Procedures

- If possible, consult with medical control before performing aerosol-generating procedures for specific guidance.
- In addition to the PPE described above, EMS clinicians should exercise caution if an aerosol-generating procedure (e.g., bag valve mask (BVM) ventilation, oropharyngeal suctioning, endotracheal intubation, nebulizer treatment, continuous positive airway pressure (CPAP), bi-phasic positive airway pressure (biPAP), or resuscitation involving emergency intubation or cardiopulmonary resuscitation (CPR) is necessary.
  - BVMs, and other ventilatory equipment, should be equipped with HEPA filtration to filter expired air.
  - EMS organizations should consult their ventilator equipment manufacturer to confirm appropriate filtration capability and the effect of filtration on positive pressure ventilation.
- If possible, the rear doors of the transport vehicle should be opened and the HVAC system should be activated during aerosol-generating procedures. This should be done away from pedestrian traffic.

EMS Transport of a PUI or Patient with Confirmed COVID-19 to a Healthcare Facility (including interfacility transport)

If a patient with an exposure history and signs and symptoms suggestive of COVID-19 requires transport to a healthcare facility for further evaluation and management (subject to EMS medical direction), the following actions should occur during transport:

- EMS clinicians should notify the receiving healthcare facility that the patient has an exposure history and signs and symptoms suggestive of COVID-19 so that appropriate infection control precautions may be taken prior to patient arrival.
- Keep the patient separated from other people as much as possible.
- Family members and other contacts of patients with possible COVID-19 should not ride in the transport vehicle, if possible. If riding in the transport vehicle, they should wear a facemask.

- ~~Isolate the ambulance driver from the patient compartment and keep pass-through doors and windows tightly shut.~~
- ~~When possible, use vehicles that have isolated driver and patient compartments that can provide separate ventilation to each area.~~
  - ~~Close the door/window between these compartments before bringing the patient on board.~~
  - ~~During transport, vehicle ventilation in both compartments should be on non-recirculated mode to maximize air changes that reduce potentially infectious particles in the vehicle.~~
  - ~~If the vehicle has a rear exhaust fan, use it to draw air away from the cab, toward the patient-care area, and out the back end of the vehicle.~~
  - ~~Some vehicles are equipped with a supplemental recirculating ventilation unit that passes air through HEPA filters before returning it to the vehicle. Such a unit can be used to increase the number of air changes per hour (ACH) (https://www.cdc.gov/niosh/hhe/reports/pdfs/1995-0031-2601.pdfpdf icon).~~
- ~~If a vehicle without an isolated driver compartment and ventilation must be used, open the outside air vents in the driver area and turn on the rear exhaust ventilation fans to the highest setting. This will create a negative pressure gradient in the patient area.~~
- ~~Follow routine procedures for a transfer of the patient to the receiving healthcare facility (e.g., wheel the patient directly into an Airborne Infection Isolation Room).~~

~~Documentation of patient care~~

- ~~Documentation of patient care should be done after EMS clinicians have completed transport, removed their PPE, and performed hand hygiene.~~
  - ~~Any written documentation should match the verbal communication given to the emergency department providers at the time patient care was transferred.~~
- ~~EMS documentation should include a listing of EMS clinicians and public safety providers involved in the response and level of contact with the patient (for example, no contact with patient, provided direct patient care). This documentation may need to be shared with local public health authorities.~~

~~Cleaning EMS Transport Vehicles after Transporting a PUI or Patient with Confirmed COVID-19~~

~~The following are general guidelines for cleaning or maintaining EMS transport vehicles and equipment after transporting a PUI:~~

- ~~After transporting the patient, leave the rear doors of the transport vehicle open to allow for sufficient air changes to remove potentially infectious particles.~~
  - ~~The time to complete transfer of the patient to the receiving facility and complete all documentation should provide sufficient air changes.~~
- ~~When cleaning the vehicle, EMS clinicians should wear a disposable gown and gloves. A face shield or facemask and goggles should also be worn if splashes or sprays during cleaning are anticipated.~~
- ~~Ensure that environmental cleaning and disinfection procedures are followed consistently and correctly, to include the provision of adequate ventilation when chemicals are in use. Doors should remain open when cleaning the vehicle.~~
- ~~Routine cleaning and disinfection procedures (e.g., using cleaners and water to pre-clean surfaces prior to applying an EPA-registered, hospital-grade disinfectant to frequently touched surfaces or objects for appropriate contact times as indicated on the product's label) are appropriate for SARS-CoV-2 (the virus that causes COVID-19) in healthcare settings, including those patient-care areas in which aerosol-generating procedures are performed.~~
- ~~Products with EPA-approved emerging viral pathogens claims are recommended for use against SARS-CoV-2. These products can be identified by the following claim:~~
  - ~~"[Product name] has demonstrated effectiveness against viruses similar to SARS-CoV-2 on hard non-porous surfaces. Therefore, this product can be used against SARS-CoV-2 when used in accordance with the directions for use against [name of supporting virus] on hard, non-porous surfaces."~~
  - ~~This claim or a similar claim, will be made only through the following communications outlets: technical literature distributed exclusively to health care facilities, physicians, nurses and public health officials, "1-800" consumer information services, social media sites and company websites (non-label-related). Specific claims for "SARS-CoV-2" will not appear on the product or master label.~~
  - ~~See additional information about EPA-approved emerging viral pathogens claimsexternal icon.~~
- ~~If there are no available EPA-registered products that have an approved emerging viral pathogen claim, products with label claims against human coronaviruses should be used according to label instructions.~~
- ~~Clean and disinfect the vehicle in accordance with standard operating procedures. All surfaces that may have come in contact with the patient or materials contaminated during patient care (e.g., stretcher, rails, control panels, floors, walls, work surfaces) should be thoroughly cleaned and disinfected using an EPA-registered hospital-grade disinfectant in accordance with the product label.~~
- ~~Clean and disinfect reusable patient-care equipment before use on another patient, according to manufacturer's instructions.~~
- ~~Follow standard operating procedures for the containment and disposal of used PPE and regulated medical waste.~~
- ~~Follow standard operating procedures for containing and laundering used linen. Avoid shaking the linen.~~

~~Follow-up and/or Reporting Measures by EMS Clinicians After Caring for a PUI or Patient with Confirmed COVID-19~~

~~EMS clinicians should be aware of the follow-up and/or reporting measures they should take after caring for a PUI or patient with confirmed COVID-19:~~

- ~~State or local public health authorities should be notified about the patient so appropriate follow-up monitoring can occur.~~
- ~~EMS agencies should develop policies for assessing exposure risk and management of EMS personnel potentially exposed to SARS-CoV-2 in coordination with state or local public health authorities. Decisions for monitoring, excluding from work, or other public health actions for HCP with potential exposure to SARS-CoV-2 should be made in consultation with state or local public health authorities. Refer to the Interim U.S. Guidance for Risk Assessment and Public Health Management of Healthcare Personnel with Potential Exposure in a Healthcare Setting to Patients with Coronavirus Disease 2019 (COVID-19) for additional information.~~
- ~~EMS agencies should develop sick-leave policies for EMS personnel that are nonpunitive, flexible, and consistent with public health guidance. Ensure all EMS personnel, including staff who are not directly employed by the healthcare facility but provide essential daily services, are aware of the sick-leave policies.~~
- ~~EMS personnel who have been exposed to a patient with suspected or confirmed COVID-19 should notify their chain of command to ensure appropriate follow-up.~~
  - ~~Any unprotected exposure (e.g., not wearing recommended PPE) should be reported to occupational health services, a supervisor, or a designated infection control officer for evaluation.~~
  - ~~EMS clinicians should be alert for fever or respiratory symptoms (e.g., cough, shortness of breath, sore throat). If symptoms develop, they should self-isolate and notify occupational health services and/or their public health authority to arrange for appropriate evaluation.~~

~~EMS Employer Responsibilities~~

~~The responsibilities described in this section are not specific for the care and transport of PUIs or patients with confirmed COVID-19. However, this interim guidance presents an opportunity to assess current practices and verify that training and procedures are up-to-date.~~

- ~~EMS units should have infection control policies and procedures in place, including describing a recommended sequence for safely donning and doffing PPE.~~
- ~~Provide all EMS clinicians with job- or task-specific education and training on preventing transmission of infectious agents, including refresher training.~~
- ~~Ensure that EMS clinicians are educated, trained, and have practiced the appropriate use of PPE prior to caring for a patient, including attention to correct use of PPE and prevention of contamination of clothing, skin, and environment during the process of removing such equipment.~~
- ~~Ensure EMS clinicians are medically cleared, trained, and fit tested for respiratory protection device use (e.g., N95 filtering facepiece respirators), or medically cleared and trained in the use of an alternative respiratory protection device (e.g., Powered Air-Purifying Respirator, PAPR) whenever respirators are required. OSHA has a number of respiratory training videosexternal icon.~~
- ~~EMS units should have an adequate supply of PPE.~~
- ~~Ensure an adequate supply of or access to EPA-registered hospital grade disinfectants (see above for more information) for adequate decontamination of EMS transport vehicles and their contents.~~
- ~~Ensure that EMS clinicians and biohazard cleaners contracted by the EMS employer tasked to the decontamination process are educated, trained, and have practiced the process according to the manufacturer's recommendations or the EMS agency's standard operating procedures.~~

~~Additional Resources~~

~~The EMS Infectious Disease Playbook, published by the Office of the Assistant Secretary for Preparedness and Response's Technical Resources, Assistance Center, Information Exchange (TRACIE) is a resource available to planners at https://www.ems.gov/pdf/ASPR-EMS-Infectious-Disease-Playbook-June-2017.pdf.~~

Section 900.13: Guidance on handling suspected coronavirus disease 2019 (COVID-19)

Description of modification/clarification: Guidance for emergency medical services on the screening and handling of handling suspected coronavirus disease 2019 (COVID-19).

Distribution date: March 12, 2020

Expiration date: Upon release of next comprehensive protocol revision

Approved by: Peter C. Springer, MD, FACEP

Section 900.13: Guidance on handling suspected coronavirus disease 2019 (COVID-19) **replaces** *section 900.12: Guidance on handling suspected coronavirus disease 2019 (COVID-19)*

Introduction

This update is provided as guidance in light of the emergence of coronavirus disease 2019 (COVID-19). As the information and recommendations remain fluid at the time of this documents creation, all providers are expected to review information published by the United States Department of Health and Human Services, Centers for Disease Control and Prevention on a routine and ongoing basis.

Additionally, this document recognizes that the Florida Department of Health-Volusia is the local, lead-agency managing public health matters.

Persons under investigation (PUI) for coronavirus disease 2019 (COVID-19)

The following matrix was developed by the Centers for Disease Control and Prevention for establishing the status of person under investigation (PUI).

Clinical Features		Epidemiologic Risk
Fever[1] **or** signs/symptoms of lower respiratory illness (e.g. cough or shortness of breath)	**and**	Any person, including healthcare workers[2], who has had close contact[3] with a laboratory-confirmed[4] COVID-19 patient within 14 days of symptom onset
Fever[1] **and** signs/symptoms of a lower respiratory illness (e.g., cough or shortness of breath) requiring hospitalization	**and**	A history of travel from affected geographic areas[5] (see below) within 14 days of symptom onset

Clinical Features		Epidemiologic Risk
Fever[1] with severe acute lower respiratory illness (e.g., pneumonia, ARDS) requiring hospitalization and without alternative explanatory diagnosis (e.g., influenza)[6]	**and**	No source of exposure has been identified

1 – Fever may be subjective or confirmed.

2 – For healthcare personnel, testing may be considered if there has been exposure to a person with suspected COVID-19 without laboratory confirmation. Because of their often extensive and close contact with vulnerable patients in healthcare settings, even mild signs and symptoms (e.g., sore throat) of COVID-19 should be evaluated among potentially exposed healthcare personnel. Additional information is available in CDC's Interim U.S. Guidance for Risk Assessment and Public Health Management of Healthcare Personnel with Potential Exposure in a Healthcare Setting to Patients with Coronavirus Disease 2019 (COVID-19).

3 – Close contact is defined as a) being within approximately 6 feet (2 meters) of a COVID-19 case for a prolonged period of time; close contact can occur while caring for, living with, visiting, or sharing a healthcare waiting area or room with a COVID-19 case; or b) having direct contact with infectious secretions of a COVID-19 case (e.g., being coughed on). If such contact occurs while not wearing recommended personal protective equipment or PPE (e.g., gowns, gloves, NIOSH-certified disposable N95 respirator, eye protection), criteria for PUI consideration are met. Additional information is available in CDC's updated Interim Infection Prevention and Control Recommendations for Patients with Confirmed COVID-19 or Persons Under Investigation for COVID-19 in Healthcare Settings. Data to inform the definition of close contact are limited. Considerations when assessing close contact include the duration of exposure (e.g., longer exposure time likely increases exposure risk) and the clinical symptoms of the person with COVID-19 (e.g., coughing likely increases exposure risk as does exposure to a severely ill patient). Special consideration should be given to healthcare personnel exposed in healthcare settings as described in CDC's Interim U.S. Guidance for Risk Assessment and Public Health Management of Healthcare Personnel with Potential Exposure in a Healthcare Setting to Patients with COVID-19.

4 – Documentation of laboratory-confirmation of COVID-19 may not be possible for travelers or persons caring for COVID-19 patients in other countries.

5 – Affected areas are defined as geographic regions where sustained community transmission has been identified. Relevant affected areas will be defined as a country with at least a CDC Level 2 Travel Health Notice. See all COVID-19 Travel Health Notices.

6 – Category includes single or clusters of patients with severe acute lower respiratory illness (e.g., pneumonia, ARDS) of unknown etiology in which COVID-19 is being considered.

Telecommunications

This document augments existing emergency medical dispatch procedures. Telecommunications staff shall maintain adherence to quality emergency medical dispatch protocols for the triage of complaint types, delivery of pre-arrival instructions to callers in need of assistance, and all other aspects of emergency medical dispatch.

For persons that have accessed the communications center that describe viral signs and symptoms, the following questions shall be included in the assessment:

1. Has the patient traveled to endemic regions, as defined by the Centers for Disease Control and Prevention, within the previous fourteen (14) days?
2. Has the patient been in direct contact with anyone who has traveled to endemic regions, as defined by the Centers for Disease Control and Prevention, within the previous fourteen (14) days?

If the above questions are answered in the affirmative or if the incident location has been identified to the communications center by the Florida Department of Health-Volusia as having a

~~confirmed case of COVID-19 or a person under investigation, the communications center shall include "Code 19" in the computer aided dispatch notes.~~

~~For purposes of this document, viral signs and symptoms shall include, but are not limited to, fever, congestion, sore throat, rhinorrhea (runny nose), nausea, vomiting, and diarrhea. If any of these are present, that information shall be conveyed to agencies involved in the disposition of the incident; regardless of travel.~~

~~If practical, and in the absence of a condition necessitating and emergency medical response, PUI should be routed to nurse triage for additional assessment and disposition.~~

~~The nurse triage component of the communications center shall engage PUI that are routed to them via the emergency medical dispatch process. If a PUI is identified and in the absence of an emergency medical condition, the nurse triage staff member shall gather appropriate information and conference in the Florida Department of Health-Volusia for additional assessment. If the FDOH-Volusia staff deem the person not to be a PUI, the incident shall be handled in accordance with emergency medical dispatch and nurse triage guidelines.~~

~~Prehospital providers~~

~~The following guidance is provided relating to patient assessment and treatment of PUI:~~

~~Personal protective equipment~~

- ~~Don appropriate personal protective equipment (PPE) to include: examination gloves; disposable isolation gown; appropriately-sized respiratory protection (i.e., N-95 or higher level respirator); and eye/splash protection.~~
- ~~If practical, and not detrimental to the patient, place respiratory protection (i.e., N-95) on the patient.~~
- ~~Doffing of personal protective equipment shall be compliant with best practices to avoid further contamination.~~
- ~~In an effort to address ongoing supply shortages, the N-95 particulate mask may be selectively reused in the absence of damage or gross contamination. In these instances, an employee-assigned mask should be provided for care and storage by the employee.~~

~~Assessment and treatment~~

- ~~Initial assessment of PUI should be made from a distance of at least six (6) feet.~~
- ~~If medical care is indicated, limit the number of personnel involved in care to the minimum required to safely and effectively perform the task or tasks. Emergency medical care shall be rendered without delay.~~
- ~~Limit or otherwise restrict aerosol-generating procedures.~~

~~If transport is required:~~

- ~~Provide notification to the intended destination of the PUI designation as soon as practical. The notification shall include the hospital-created phrase "Code 19".~~
- ~~In an effort to reduce the need for subsequent transfer, PUIs shall be transported to facilities with admission capabilities. PUIs shall not be transported to freestanding emergency departments.~~
- ~~Limit the number of attendees to the minimum number to effectively care for the patient.~~
- ~~Prior to departing the scene, the driver should doff all personal protective equipment prior to entering the cab of the vehicle to prevent contamination. The driver, if involved in patient transfer at the destination, shall apply fresh personal protective equipment prior to engaging in transfer of the patient.~~
- ~~Upon arrival at the destination, place the transport unit is an area not commonly utilized for conventional ambulance traffic and away from pedestrian traffic.~~
- ~~Consult with hospital staff prior to off-loading the patient in order to determine where the patient is to be brought and the route of travel within the facility.~~

~~If transport isn't required:~~

- ~~If the patient is not in need of emergency medical care and meets criteria for COVID-19, the field provider on scene shall contact the Florida Department of Health-Volusia (FDOH-Volusia) at (386) 316-5030 for consultation. Factors to discuss on the call should include, but not be limited to: resources available to the patient, medical history, including comorbid conditions; imminent needs (e.g., medication, food, etc.); and other factors that may lend to an appropriate disposition being made.~~
  - ~~If FDOH-Volusia concurs with no transport, they'll make arrangements for on-site testing and disposition.~~
  - ~~If FDOH-Volusia does not concur with emergency medical services assessment and patient opts for transport, transport in accordance with this document.~~

~~Decontamination~~

- ~~All personnel engaged in decontamination of equipment and the transport vehicle shall utilize the above-recommended personal protective equipment.~~
- ~~Allow transport vehicles to remain open allowing for air exchange to occur.~~
- ~~Decontamination of vehicles and equipment:~~
  - ~~Durable equipment (able to be immersed): remove any visible contaminant and wash with soap and warm water. Follow with the liberal application of an EPA-registered, hospital-grade disinfectant and allow to air dry. The disinfectant shall claim its effectiveness on emerging viral pathogens.~~
  - ~~Delicate equipment (not able to be immersed): remove any visible contaminant and wipe with cloth moistened with soap and warm water. When dry, wipe with an EPA-registered, hospital-grade disinfectant and allow to air dry. The disinfectant shall claim its effectiveness on emerging viral pathogens.~~
  - ~~Disposable equipment: discard in the appropriate receptacle.~~

~~**Documentation**~~

~~All agencies are responsible for recording the name or names of employees with direct contact with the patient.~~

~~Interim Guidance for Emergency Medical Services (EMS) Systems and 911 Public Safety Answering Points (PSAPs) for COVID-19 in the United States~~

~~This guidance applies to all first responders, including law enforcement, fire services, emergency medical services, and emergency management officials, who anticipate close contact with persons with confirmed or possible COVID-19 in the course of their work.~~

~~Updated March 10, 2020~~

~~Summary of Key Changes for the EMS Guidance:~~

- ~~Updated PPE recommendations for the care of patients with known or suspected COVID-19:~~
  - ~~Facemasks are an acceptable alternative until the supply chain is restored. Respirators should be prioritized for procedures that are likely to generate respiratory aerosols, which would pose the highest exposure risk to HCP.~~
  - ~~Eye protection, gown, and gloves continue to be recommended.~~
    - ~~If there are shortages of gowns, they should be prioritized for aerosol-generating procedures, care activities where splashes and sprays are anticipated, and high-contact patient care activities that provide opportunities for transfer of pathogens to the hands and clothing of HCP.~~
  - ~~When the supply chain is restored, fit-tested EMS clinicians should return to use of respirators for patients with known or suspected COVID-19.~~
- ~~Updated guidance about recommended EPA-registered disinfectants to include reference to a list now posted on the EPA website.~~

~~Background~~

~~Emergency medical services (EMS) play a vital role in responding to requests for assistance, triaging patients, and providing emergency medical treatment and transport for ill persons. However, unlike patient care in the controlled environment of a healthcare facility, care and transports by EMS present unique challenges because of the nature of the setting, enclosed space during transport, frequent need for rapid medical decision-making, interventions with limited information, and a varying range of patient acuity and jurisdictional healthcare resources.~~

~~When preparing for and responding to patients with confirmed or possible coronavirus disease 2019 (COVID-19), close coordination and effective communications are important among 911 Public Safety Answering Points (PSAPs) — commonly known as 911 call centers, the EMS system, healthcare facilities, and the public health system. Each PSAP and EMS system should seek the involvement of an EMS medical director to provide appropriate medical oversight. For the purposes of this guidance, "EMS clinician" means prehospital EMS and medical first responders. When COVID-19 is suspected in a patient needing emergency transport, prehospital care providers and healthcare facilities should be notified in advance that they may be caring for, transporting, or receiving a patient who may have COVID-19 infection.~~

~~Updated information about COVID-19 may be accessed at https://www.cdc.gov/coronavirus/2019-ncov/index.html. Infection prevention and control recommendations can be found here: https://www.cdc.gov/coronavirus/2019-nCoV/hcp/infection-control.html. Additional information for healthcare personnel can be found at https://www.cdc.gov/coronavirus/2019-nCoV/guidance-hcp.html.~~

~~Case Definition for COVID-19~~

~~CDC's most current case definition for a person under investigation (PUI) for COVID-19 may be accessed at https://www.cdc.gov/coronavirus/2019-nCoV/clinical-criteria.html.~~

~~Recommendations for 911 PSAPs~~

~~Municipalities and local EMS authorities should coordinate with state and local public health, PSAPs, and other emergency call centers to determine need for modified caller queries about COVID-19, outlined below.~~

~~Development of these modified caller queries should be closely coordinated with an EMS medical director and informed by local, state, and federal public health authorities, including the city or county health department(s), state health department(s), and CDC.~~

~~Modified Caller Queries~~

~~PSAPs or Emergency Medical Dispatch (EMD) centers (as appropriate) should question callers and determine the possibility that this call concerns a person who may have signs or symptoms and risk factors for COVID-19. The query process should never supersede the provision of pre-arrival instructions to the caller when immediate lifesaving interventions (e.g., CPR or the Heimlich maneuver) are indicated. Patients in the United States who meet the appropriate criteria should be evaluated and transported as a PUI. Information on COVID-19 will be updated as the public health response proceeds. PSAPs and medical directors can access CDC's PUI definitions here.~~

~~Information on a possible PUI should be communicated immediately to EMS clinicians before arrival on scene in order to allow use of appropriate personal protective equipment (PPE). PSAPs should utilize medical dispatch procedures that are coordinated with their EMS medical director and with the local or state public health department.~~

~~PSAPs and EMS units that respond to ill travelers at US international airports or other ports of entry to the United States (maritime ports or border crossings) should be in contact with the CDC quarantine station of jurisdiction for the port of entry (see: CDC Quarantine Station Contact List) for planning guidance. They should notify the~~

~~quarantine station when responding to that location if a communicable disease is suspected in a traveler. CDC has provided job aids for this purpose to EMS units operating routinely at US ports of entry. The PSAP or EMS unit can also call CDC's Emergency Operations Center at (770) 488-7100 to be connected with the appropriate CDC quarantine station.~~

~~Recommendations for EMS Clinicians and Medical First Responders~~

~~EMS clinician practices should be based on the most up-to-date COVID-19 clinical recommendations and information from appropriate public health authorities and EMS medical direction.~~

~~State and local EMS authorities may direct EMS clinicians to modify their practices as described below.~~

~~Patient assessment~~

- ~~If PSAP call takers advise that the patient is suspected of having COVID-19, EMS clinicians should put on appropriate PPE before entering the scene. EMS clinicians should consider the signs, symptoms, and risk factors of COVID-19 (https://www.cdc.gov/coronavirus/2019-nCoV/clinical-criteria.html).~~

- ~~If information about potential for COVID-19 has not been provided by the PSAP, EMS clinicians should exercise appropriate precautions when responding to any patient with signs or symptoms of a respiratory infection. Initial assessment should begin from a distance of at least 6 feet from the patient, if possible. Patient contact should be minimized to the extent possible until a facemask is on the patient. If COVID-19 is suspected, all PPE as described below should be used. If COVID-19 is not suspected, EMS clinicians should follow standard procedures and use appropriate PPE for evaluating a patient with a potential respiratory infection.~~

- ~~A facemask should be worn by the patient for source control. If a nasal cannula is in place, a facemask should be worn over the nasal cannula. Alternatively, an oxygen mask can be used if clinically indicated. If the patient requires intubation, see below for additional precautions for aerosol-generating procedures.~~

- ~~During transport, limit the number of providers in the patient compartment to essential personnel to minimize possible exposures.~~

~~Recommended Personal Protective Equipment (PPE)~~

- ~~EMS clinicians who will directly care for a patient with possible COVID-19 infection or who will be in the compartment with the patient should follow Standard, Precautions and use the PPE as described below. Recommended PPE includes:~~
  - ~~N-95 or higher-level respirator or facemask (if a respirator is not available),~~
    - ~~N95 respirators or respirators that offer a higher level of protection should be used instead of a facemask when performing or present for an aerosol-generating procedure~~
  - ~~Eye protection (i.e., goggles or disposable face shield that fully covers the front and sides of the face). Personal eyeglasses and contact lenses are NOT considered adequate eye protection.~~
  - ~~A single pair of disposable patient examination gloves. Change gloves if they become torn or heavily contaminated, and isolation gown.~~
    - ~~If there are shortages of gowns, they should be prioritized for aerosol-generating procedures, care activities where splashes and sprays are anticipated, and high-contact patient care activities that provide opportunities for transfer of pathogens to the hands and clothing of EMS clinicians (e.g., moving patient onto a stretcher).~~
- ~~When the supply chain is restored, fit-tested EMS clinicians should return to use of respirators for patients with known or suspected COVID-19.~~
- ~~Drivers, if they provide direct patient care (e.g., moving patients onto stretchers), should wear all recommended PPE. After completing patient care and before entering an isolated driver's compartment, the driver should remove and dispose of PPE and perform hand hygiene to avoid soiling the compartment.~~
  - ~~If the transport vehicle does not have an isolated driver's compartment, the driver should remove the face shield or goggles, gown and gloves and perform hand hygiene. A respirator or facemask should continue to be used during transport.~~
- ~~All personnel should avoid touching their face while working.~~
- ~~On arrival, after the patient is released to the facility, EMS clinicians should remove and discard PPE and perform hand hygiene. Used PPE should be discarded in accordance with routine procedures.~~
- ~~Other required aspects of Standard Precautions (e.g., injection safety, hand hygiene) are not emphasized in this document but can be found in the guideline titled Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings.~~

~~Precautions for Aerosol-Generating Procedures~~

- ~~If possible, consult with medical control before performing aerosol-generating procedures for specific guidance.~~
- ~~An N-95 or higher-level respirator, instead of a facemask, should be worn in addition to the other PPE described above, for EMS clinicians present for or performing aerosol-generating procedures.,~~
- ~~EMS clinicians should exercise caution if an aerosol-generating procedure (e.g., bag valve mask (BVM) ventilation, oropharyngeal suctioning, endotracheal intubation, nebulizer treatment, continuous positive airway pressure (CPAP), bi-phasic positive airway~~

pressure (biPAP), or resuscitation involving emergency intubation or cardiopulmonary resuscitation (CPR)) is necessary.
    - BVMs, and other ventilatory equipment, should be equipped with HEPA filtration to filter expired air.
    - EMS organizations should consult their ventilator equipment manufacturer to confirm appropriate filtration capability and the effect of filtration on positive pressure ventilation.
- If possible, the rear doors of the transport vehicle should be opened and the HVAC system should be activated during aerosol-generating procedures. This should be done away from pedestrian traffic.

EMS Transport of a PUI or Patient with Confirmed COVID-19 to a Healthcare Facility (including interfacility transport)

If a patient with an exposure history and signs and symptoms suggestive of COVID-19 requires transport to a healthcare facility for further evaluation and management (subject to EMS medical direction), the following actions should occur during transport:

- EMS clinicians should notify the receiving healthcare facility that the patient has an exposure history and signs and symptoms suggestive of COVID-19 so that appropriate infection control precautions may be taken prior to patient arrival.
- Keep the patient separated from other people as much as possible.
- Family members and other contacts of patients with possible COVID-19 should not ride in the transport vehicle, if possible. If riding in the transport vehicle, they should wear a facemask.
- Isolate the ambulance driver from the patient compartment and keep pass-through doors and windows tightly shut.
- When possible, use vehicles that have isolated driver and patient compartments that can provide separate ventilation to each area.
    - Close the door/window between these compartments before bringing the patient on board.
    - During transport, vehicle ventilation in both compartments should be on non-recirculated mode to maximize air changes that reduce potentially infectious particles in the vehicle.
    - If the vehicle has a rear exhaust fan, use it to draw air away from the cab, toward the patient-care area, and out the back end of the vehicle.
    - Some vehicles are equipped with a supplemental recirculating ventilation unit that passes air through HEPA filters before returning it to the vehicle. Such a unit can be used to increase the number of air changes per hour (ACH) (https://www.cdc.gov/niosh/hhe/reports/pdfs/1995-0031-2601.pdf).
- If a vehicle without an isolated driver compartment and ventilation must be used, open the outside air vents in the driver area and turn on the rear exhaust ventilation fans to the highest setting. This will create a negative pressure gradient in the patient area.
- Follow routine procedures for a transfer of the patient to the receiving healthcare facility (e.g., wheel the patient directly into an examination room).

Documentation of patient care

- Documentation of patient care should be done after EMS clinicians have completed transport, removed their PPE, and performed hand hygiene.
    - Any written documentation should match the verbal communication given to the emergency department providers at the time patient care was transferred.
- EMS documentation should include a listing of EMS clinicians and public safety providers involved in the response and level of contact with the patient (for example, no contact with patient, provided direct patient care). This documentation may need to be shared with local public health authorities.

Cleaning EMS Transport Vehicles after Transporting a PUI or Patient with Confirmed COVID-19

The following are general guidelines for cleaning or maintaining EMS transport vehicles and equipment after transporting a PUI:

- After transporting the patient, leave the rear doors of the transport vehicle open to allow for sufficient air changes to remove potentially infectious particles.
    - The time to complete transfer of the patient to the receiving facility and complete all documentation should provide sufficient air changes.

- When cleaning the vehicle, EMS clinicians should wear a disposable gown and gloves. A face shield or facemask and goggles should also be worn if splashes or sprays during cleaning are anticipated.

- Ensure that environmental cleaning and disinfection procedures are followed consistently and correctly, to include the provision of adequate ventilation when chemicals are in use. Doors should remain open when cleaning the vehicle.

- Routine cleaning and disinfection procedures (e.g., using cleaners and water to pre-clean surfaces prior to applying an EPA-registered, hospital-grade disinfectant to frequently touched surfaces or objects for appropriate contact times as indicated on the product's label) are appropriate for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in healthcare settings, including those patient-care areas in which aerosol-generating procedures are performed.

- Products with EPA-approved emerging viral pathogens claims are recommended for use against SARS-CoV-2. Refer to List Nexternal icon on the EPA website for EPA-registered disinfectants that

have qualified under EPA's emerging viral pathogens program for use against SARS-CoV-2.

- Clean and disinfect the vehicle in accordance with standard operating procedures. All surfaces that may have come in contact with the patient or materials contaminated during patient care (e.g., stretcher, rails, control panels, floors, walls, work surfaces) should be thoroughly cleaned and disinfected using an EPA-registered hospital-grade disinfectant in accordance with the product label.

- Clean and disinfect reusable patient-care equipment before use on another patient, according to manufacturer's instructions.

- Follow standard operating procedures for the containment and disposal of used PPE and regulated medical waste.

- Follow standard operating procedures for containing and laundering used linen. Avoid shaking the linen.

Follow-up and/or Reporting Measures by EMS Clinicians After Caring for a PUI or Patient with Confirmed COVID-19

EMS clinicians should be aware of the follow-up and/or reporting measures they should take after caring for a PUI or patient with confirmed COVID-19:

- State or local public health authorities should be notified about the patient so appropriate follow-up monitoring can occur.
- EMS agencies should develop policies for assessing exposure risk and management of EMS personnel potentially exposed to SARS-CoV-2 in coordination with state or local public health authorities. Decisions for monitoring, excluding from work, or other public health actions for HCP with potential exposure to SARS-CoV-2 should be made in consultation with state or local public health authorities. Refer to the Interim U.S. Guidance for Risk Assessment and Public Health Management of Healthcare Personnel with Potential Exposure in a Healthcare Setting to Patients with Coronavirus Disease 2019 (COVID-19) for additional information.
- EMS agencies should develop sick-leave policies for EMS personnel that are nonpunitive, flexible, and consistent with public health guidance. Ensure all EMS personnel, including staff who are not directly employed by the healthcare facility but provide essential daily services, are aware of the sick-leave policies.
- EMS personnel who have been exposed to a patient with suspected or confirmed COVID-19 should notify their chain of command to ensure appropriate follow-up.
  - Any unprotected exposure (e.g., not wearing recommended PPE) should be reported to occupational health services, a supervisor, or a designated infection control officer for evaluation.
  - EMS clinicians should be alert for fever or respiratory symptoms (e.g., cough, shortness of breath, sore throat). If symptoms develop, they should self-isolate and notify occupational health services and/or their public health authority to arrange for appropriate evaluation.

EMS Employer Responsibilities

The responsibilities described in this section are not specific for the care and transport of PUIs or patients with confirmed COVID-19. However, this interim guidance presents an opportunity to assess current practices and verify that training and procedures are up-to-date.

- EMS units should have infection control policies and procedures in place, including describing a recommended sequence for safely donning and doffing PPE.
- Provide all EMS clinicians with job- or task-specific education and training on preventing transmission of infectious agents, including refresher training.
- Ensure that EMS clinicians are educated, trained, and have practiced the appropriate use of PPE prior to caring for a patient, including attention to correct use of PPE and prevention of contamination of clothing, skin, and environment during the process of removing such equipment.
- Ensure EMS clinicians are medically cleared, trained, and fit tested for respiratory protection device use (e.g., N95 filtering facepiece respirators), or medically cleared and trained in the use of an alternative respiratory protection device (e.g., Powered Air-Purifying Respirator, PAPR) whenever respirators are required. OSHA has a number of respiratory training videos.
- EMS units should have an adequate supply of PPE.
- Ensure an adequate supply of or access to EPA-registered hospital-grade disinfectants (see above for more information) for adequate decontamination of EMS transport vehicles and their contents.
- Ensure that EMS clinicians and biohazard cleaners contracted by the EMS employer tasked to the decontamination process are educated, trained, and have practiced the process according to the manufacturer's recommendations or the EMS agency's standard operating procedures.

Additional Resources

The EMS Infectious Disease Playbook, published by the Office of the Assistant Secretary for Preparedness and Response's Technical Resources, Assistance Center, Information Exchange (TRACIE) is a resource available to planners at https://www.ems.gov/pdf/ASPR-EMS-Infectious-Disease-Playbook-June-2017.pdf.

Section 900.14: Guidance on handling suspected coronavirus disease 2019 (COVID-19)

Description of modification/clarification: Guidance for emergency medical services on the screening and handling of handling suspected coronavirus disease 2019 (COVID-19).

Distribution date: March 17, 2020

Expiration date: Upon release of next comprehensive protocol revision

Approved by: Peter C. Springer, MD, FACEP

Section 900.14: Guidance on handling suspected coronavirus disease 2019 (COVID-19) **replaces** *section 900.13: Guidance on handling suspected coronavirus disease 2019 (COVID-19)*

Introduction

This update is provided as guidance in light of the emergence of coronavirus disease 2019 (COVID-19). As the information and recommendations remain fluid at the time of this documents creation, all providers are expected to review information published by the United States Department of Health and Human Services, Centers for Disease Control and Prevention on a routine and ongoing basis.

Additionally, this document recognizes that the Florida Department of Health-Volusia is the local, lead-agency managing public health matters.

Persons under investigation (PUI) for coronavirus disease 2019 (COVID-19)

The following matrix was developed by the Florida Department of Health for establishing the status of person under investigation (PUI).

SCREENING CRITERIA

If your patient is exhibiting symptoms of acute lower respiratory illness (e.g., fever[1], cough, and shortness of breath) and meets one or more of the following criteria:

1. Persons who have had a close contact with a laboratory-confirmed COVID-19 case
2. Persons hospitalized with acute lower respiratory illness of unknown origin
3. History of travel to or from an affected geographic area with widespread community transmission
4. History of international travel or a cruise
5. Age ≥65 with chronic health conditions
6. Immunocompromised persons

1 Oral temperature ≥100.4.

Telecommunications

This document augments existing emergency medical dispatch procedures. Telecommunications staff shall maintain adherence to quality emergency medical dispatch protocols for the triage of complaint types, delivery of pre-arrival instructions to callers in need of assistance, and all other aspects of emergency medical dispatch.

If the questions in table I (above) are answered in the affirmative or if the incident location has been identified to the communications center by the Florida Department of Health-Volusia as having a confirmed case of COVID-19 or a person under investigation, the communications center shall include "Code 19" and other appropriate language in the computer aided dispatch notes.

For purposes of this document, viral signs and symptoms shall include, but are not limited to, fever, congestion, sore throat, rhinorrhea (runny nose), nausea, vomiting, and diarrhea. If any of these are present, that information shall be conveyed to agencies involved in the disposition of the incident; regardless of travel.

If practical, and in the absence of a condition necessitating and emergency medical response, PUI should be routed to nurse triage for additional assessment and disposition.

The nurse triage component of the communications center shall engage PUI that are routed to them via the emergency medical dispatch process. If a PUI is identified and in the absence of an emergency medical condition, the nurse triage staff member shall gather appropriate information and conference in the Florida Department of Health-Volusia for additional assessment. They can be reached at (386) 316-5030 or (386) 481-4345. If the FDOH-Volusia staff deem the person not to be a PUI, the incident shall be handled in accordance with emergency medical dispatch and nurse triage guidelines.

Prehospital providers

The following guidance is provided relating to patient assessment and treatment of PUI:

Personal protective equipment

- Don appropriate personal protective equipment (PPE) to include: examination gloves; disposable isolation gown; appropriately-sized respiratory protection (i.e., N-95 or higher level respirator); and eye/splash protection.
- If practical, and not detrimental to the patient, place respiratory protection (i.e., N-95) on the patient.
- Doffing of personal protective equipment shall be compliant with best practices to avoid further contamination.
- In an effort to address ongoing supply shortages, the N-95 particulate mask may be selectively reused in the absence of damage or gross contamination. In these instances, an employee-assigned mask should be provided for care and storage by the employee.

~~Assessment and treatment~~

- ~~Initial assessment of PUI should be made from a distance of at least six (6) feet.~~
- ~~If medical care is indicated, limit the number of personnel involved in care to the minimum required to safely and effectively perform the task or tasks. Emergency medical care shall be rendered without delay.~~
- ~~Limit or otherwise restrict aerosol-generating procedures.~~

~~If transport is required:~~

- ~~As different hospital systems – and their campuses – may be utilizing slightly different processes based upon resources, early communication of PUI status is vital so that the emergency department can prepare and provide instruction to incoming crews. The notification shall include the hospital-created phrase "Code 19".~~
- ~~In an effort to reduce the need for subsequent transfer, PUIs shall be transported to facilities with admission capabilities. PUIs shall not be transported to freestanding emergency departments.~~
- ~~Limit the number of attendees to the minimum number to effectively care for the patient.~~
- ~~Prior to departing the scene, the driver should doff all personal protective equipment prior to entering the cab of the vehicle to prevent contamination. The driver, if involved in patient transfer at the destination, shall apply fresh personal protective equipment prior to engaging in transfer of the patient.~~
- ~~Upon arrival at the destination, place the transport unit is an area not commonly utilized for conventional ambulance traffic and away from pedestrian traffic.~~
- ~~Consult with hospital staff prior to off-loading the patient in order to determine where the patient is to be brought and the route of travel within the facility.~~

~~If transport isn't required:~~

- ~~If the patient is not in need of emergency medical care and meets criteria for COVID-19, the field provider on scene shall contact the Florida Department of Health-Volusia (FDOH-Volusia) at (386) 316-5030 or (386) 481-4345 for consultation. Factors to discuss on the call should include, but not be limited to: resources available to the patient, medical history, including comorbid conditions; imminent needs (e.g., medication, food, etc.); and other factors that may lend to an appropriate disposition being made.~~
  - ~~If FDOH-Volusia concurs with no transport, they'll make arrangements for on-site testing and disposition.~~
  - ~~If FDOH-Volusia does not concur with emergency medical services assessment and patient opts for transport, transport in accordance with this document.~~

~~Decontamination~~

- ~~All personnel engaged in decontamination of equipment and the transport vehicle shall utilize the above-recommended personal protective equipment.~~
- ~~Allow transport vehicles to remain open allowing for air exchange to occur.~~
- ~~Decontamination of vehicles and equipment:~~

- ~~Durable equipment (able to be immersed): remove any visible contaminant and wash with soap and warm water. Follow with the liberal application of an EPA-registered, hospital-grade disinfectant and allow to air dry. The disinfectant shall claim its effectiveness on emerging viral pathogens.~~
- ~~Delicate equipment (not able to be immersed): remove any visible contaminant and wipe with cloth moistened with soap and warm water. When dry, wipe with an EPA-registered, hospital-grade disinfectant and allow to air dry. The disinfectant shall claim its effectiveness on emerging viral pathogens.~~
- ~~Disposable equipment: discard in the appropriate receptacle.~~

~~Documentation~~

~~All agencies are responsible for recording the name or names of employees with direct contact with the patient.~~

~~Interim Guidance for Emergency Medical Services (EMS) Systems and 911 Public Safety Answering Points (PSAPs) for COVID-19 in the United States~~

~~This guidance applies to all first responders, including law enforcement, fire services, emergency medical services, and emergency management officials, who anticipate close contact with persons with confirmed or possible COVID-19 in the course of their work.~~

~~Updated March 10, 2020~~

~~Summary of Key Changes for the EMS Guidance:~~

- ~~Updated PPE recommendations for the care of patients with known or suspected COVID-19:~~
  - ~~Facemasks are an acceptable alternative until the supply chain is restored. Respirators should be prioritized for procedures that are likely to generate respiratory aerosols, which would pose the highest exposure risk to HCP.~~
  - ~~Eye protection, gown, and gloves continue to be recommended.~~
    - ~~If there are shortages of gowns, they should be prioritized for aerosol-generating procedures, care activities where splashes and sprays are anticipated, and high-contact patient care activities that provide opportunities for transfer of pathogens to the hands and clothing of HCP.~~
  - ~~When the supply chain is restored, fit-tested EMS clinicians should return to use of respirators for patients with known or suspected COVID-19.~~
- ~~Updated guidance about recommended EPA-registered disinfectants to include reference to a list now posted on the EPA website.~~

~~Background~~

~~Emergency medical services (EMS) play a vital role in responding to requests for assistance, triaging patients, and providing emergency medical treatment and transport for ill persons. However, unlike patient care in the controlled environment of a healthcare facility, care and transports by EMS present unique challenges because of the nature of the setting, enclosed space during transport, frequent need for rapid medical decision-making, interventions with limited information, and a varying range of patient acuity and jurisdictional healthcare resources.~~

~~When preparing for and responding to patients with confirmed or possible coronavirus disease 2019 (COVID-19), close coordination and effective communications are important among 911 Public Safety Answering Points (PSAPs) — commonly known as 911 call centers, the EMS system, healthcare facilities, and the public health system. Each PSAP and EMS system should seek the involvement of an EMS medical director to provide appropriate medical oversight. For the purposes of this guidance, "EMS clinician" means prehospital EMS and medical first responders. When COVID-19 is suspected in a patient needing emergency transport, prehospital care providers and healthcare facilities should be notified in advance that they may be caring for, transporting, or receiving a patient who may have COVID-19 infection.~~

~~Updated information about COVID-19 may be accessed at https://www.cdc.gov/coronavirus/2019-ncov/index.html. Infection prevention and control recommendations can be found here: https://www.cdc.gov/coronavirus/2019-nCoV/hcp/infection-control.html. Additional information for healthcare personnel can be found at https://www.cdc.gov/coronavirus/2019-nCoV/guidance-hcp.html.~~

~~Case Definition for COVID-19~~

~~CDC's most current case definition for a person under investigation (PUI) for COVID-19 may be accessed at https://www.cdc.gov/coronavirus/2019-nCoV/clinical-criteria.html.~~

~~Recommendations for 911 PSAPs~~

~~Municipalities and local EMS authorities should coordinate with state and local public health, PSAPs, and other emergency call centers to determine need for modified caller queries about COVID-19, outlined below.~~

~~Development of these modified caller queries should be closely coordinated with an EMS medical director and informed by local, state, and federal public health authorities, including the city or county health department(s), state health department(s), and CDC.~~

~~Modified Caller Queries~~

~~PSAPs or Emergency Medical Dispatch (EMD) centers (as appropriate) should question callers and determine the possibility that this call concerns a person who may have signs or symptoms and risk factors for COVID-19. The query process should never supersede the provision of pre-arrival instructions to the caller when immediate lifesaving interventions (e.g., CPR or the Heimlich maneuver) are indicated. Patients in the United States who meet the appropriate criteria should be evaluated and transported as a PUI. Information on COVID-19 will be updated as the public health response proceeds. PSAPs and medical directors can access CDC's PUI definitions here.~~

~~Information on a possible PUI should be communicated immediately to EMS clinicians before arrival on scene in order to allow use of appropriate personal protective equipment (PPE). PSAPs should utilize medical dispatch procedures that are coordinated with their EMS medical director and with the local or state public health department.~~

~~PSAPs and EMS units that respond to ill travelers at US international airports or other ports of entry to the United States (maritime ports or border crossings) should be in contact with the CDC quarantine station of jurisdiction for the port of entry (see: CDC Quarantine Station Contact List) for planning guidance. They should notify the~~

quarantine station when responding to that location if a communicable disease is suspected in a traveler. CDC has provided job aids for this purpose to EMS units operating routinely at US ports of entry. The PSAP or EMS unit can also call CDC's Emergency Operations Center at (770) 488-7100 to be connected with the appropriate CDC quarantine station.

Recommendations for EMS Clinicians and Medical First Responders

EMS clinician practices should be based on the most up-to-date COVID-19 clinical recommendations and information from appropriate public health authorities and EMS medical direction.

State and local EMS authorities may direct EMS clinicians to modify their practices as described below.

Patient assessment

- If PSAP call takers advise that the patient is suspected of having COVID-19, EMS clinicians should put on appropriate PPE before entering the scene. EMS clinicians should consider the signs, symptoms, and risk factors of COVID-19 (https://www.cdc.gov/coronavirus/2019-nCoV/clinical-criteria.html).

- If information about potential for COVID-19 has not been provided by the PSAP, EMS clinicians should exercise appropriate precautions when responding to any patient with signs or symptoms of a respiratory infection. Initial assessment should begin from a distance of at least 6 feet from the patient, if possible. Patient contact should be minimized to the extent possible until a facemask is on the patient. If COVID-19 is suspected, all PPE as described below should be used. If COVID-19 is not suspected, EMS clinicians should follow standard procedures and use appropriate PPE for evaluating a patient with a potential respiratory infection.

- A facemask should be worn by the patient for source control. If a nasal cannula is in place, a facemask should be worn over the nasal cannula. Alternatively, an oxygen mask can be used if clinically indicated. If the patient requires intubation, see below for additional precautions for aerosol-generating procedures.

- During transport, limit the number of providers in the patient compartment to essential personnel to minimize possible exposures.

Recommended Personal Protective Equipment (PPE)

- EMS clinicians who will directly care for a patient with possible COVID-19 infection or who will be in the compartment with the patient should follow Standard, Precautions and use the PPE as described below. Recommended PPE includes:
  - N-95 or higher-level respirator or facemask (if a respirator is not available),
    - N95 respirators or respirators that offer a higher level of protection should be used instead of a facemask when performing or present for an aerosol-generating procedure
  - Eye protection (i.e., goggles or disposable face shield that fully covers the front and sides of the face). Personal eyeglasses and contact lenses are NOT considered adequate eye protection.
  - A single pair of disposable patient examination gloves. Change gloves if they become torn or heavily contaminated, and isolation gown.
    - If there are shortages of gowns, they should be prioritized for aerosol-generating procedures, care activities where splashes and sprays are anticipated, and high-contact patient care activities that provide opportunities for transfer of pathogens to the hands and clothing of EMS clinicians (e.g., moving patient onto a stretcher).
- When the supply chain is restored, fit-tested EMS clinicians should return to use of respirators for patients with known or suspected COVID-19.
- Drivers, if they provide direct patient care (e.g., moving patients onto stretchers), should wear all recommended PPE. After completing patient care and before entering an isolated driver's compartment, the driver should remove and dispose of PPE and perform hand hygiene to avoid soiling the compartment.
  - If the transport vehicle does not have an isolated driver's compartment, the driver should remove the face shield or goggles, gown and gloves and perform hand hygiene. A respirator or facemask should continue to be used during transport.
- All personnel should avoid touching their face while working.
- On arrival, after the patient is released to the facility, EMS clinicians should remove and discard PPE and perform hand hygiene. Used PPE should be discarded in accordance with routine procedures.
- Other required aspects of Standard Precautions (e.g., injection safety, hand hygiene) are not emphasized in this document but can be found in the guideline titled Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings.

Precautions for Aerosol-Generating Procedures

- If possible, consult with medical control before performing aerosol-generating procedures for specific guidance.
- An N-95 or higher-level respirator, instead of a facemask, should be worn in addition to the other PPE described above, for EMS clinicians present for or performing aerosol-generating procedures.,
- EMS clinicians should exercise caution if an aerosol-generating procedure (e.g., bag valve mask (BVM) ventilation, oropharyngeal suctioning, endotracheal intubation, nebulizer treatment, continuous positive airway pressure (CPAP), bi-phasic positive airway

pressure (biPAP), or resuscitation involving emergency intubation or cardiopulmonary resuscitation (CPR)) is necessary.
    - BVMs, and other ventilatory equipment, should be equipped with HEPA filtration to filter expired air.
    - EMS organizations should consult their ventilator equipment manufacturer to confirm appropriate filtration capability and the effect of filtration on positive-pressure ventilation.
- If possible, the rear doors of the transport vehicle should be opened and the HVAC system should be activated during aerosol-generating procedures. This should be done away from pedestrian traffic.

EMS Transport of a PUI or Patient with Confirmed COVID-19 to a Healthcare Facility (including interfacility transport)

If a patient with an exposure history and signs and symptoms suggestive of COVID-19 requires transport to a healthcare facility for further evaluation and management (subject to EMS medical direction), the following actions should occur during transport:

- EMS clinicians should notify the receiving healthcare facility that the patient has an exposure history and signs and symptoms suggestive of COVID-19 so that appropriate infection control precautions may be taken prior to patient arrival.
- Keep the patient separated from other people as much as possible.
- Family members and other contacts of patients with possible COVID-19 should not ride in the transport vehicle, if possible. If riding in the transport vehicle, they should wear a facemask.
- Isolate the ambulance driver from the patient compartment and keep pass-through doors and windows tightly shut.
- When possible, use vehicles that have isolated driver and patient compartments that can provide separate ventilation to each area.
    - Close the door/window between these compartments before bringing the patient on board.
    - During transport, vehicle ventilation in both compartments should be on non-recirculated mode to maximize air changes that reduce potentially infectious particles in the vehicle.
    - If the vehicle has a rear exhaust fan, use it to draw air away from the cab, toward the patient-care area, and out the back end of the vehicle.
    - Some vehicles are equipped with a supplemental recirculating ventilation unit that passes air through HEPA filters before returning it to the vehicle. Such a unit can be used to increase the number of air changes per hour (ACH) (https://www.cdc.gov/niosh/hhe/reports/pdfs/1995-0031-2601.pdf).
- If a vehicle without an isolated driver compartment and ventilation must be used, open the outside air vents in the driver area and turn on the rear exhaust ventilation fans to the highest setting. This will create a negative pressure gradient in the patient area.
- Follow routine procedures for a transfer of the patient to the receiving healthcare facility (e.g., wheel the patient directly into an examination room).

Documentation of patient care

- Documentation of patient care should be done after EMS clinicians have completed transport, removed their PPE, and performed hand hygiene.
    - Any written documentation should match the verbal communication given to the emergency department providers at the time patient care was transferred.
- EMS documentation should include a listing of EMS clinicians and public safety providers involved in the response and level of contact with the patient (for example, no contact with patient, provided direct patient care). This documentation may need to be shared with local public health authorities.

Cleaning EMS Transport Vehicles after Transporting a PUI or Patient with Confirmed COVID-19

The following are general guidelines for cleaning or maintaining EMS transport vehicles and equipment after transporting a PUI:

- After transporting the patient, leave the rear doors of the transport vehicle open to allow for sufficient air changes to remove potentially infectious particles.
    - The time to complete transfer of the patient to the receiving facility and complete all documentation should provide sufficient air changes.

- When cleaning the vehicle, EMS clinicians should wear a disposable gown and gloves. A face shield or facemask and goggles should also be worn if splashes or sprays during cleaning are anticipated.

- Ensure that environmental cleaning and disinfection procedures are followed consistently and correctly, to include the provision of adequate ventilation when chemicals are in use. Doors should remain open when cleaning the vehicle.

- Routine cleaning and disinfection procedures (e.g., using cleaners and water to pre-clean surfaces prior to applying an EPA-registered, hospital-grade disinfectant to frequently touched surfaces or objects for appropriate contact times as indicated on the product's label) are appropriate for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in healthcare settings, including those patient-care areas in which aerosol-generating procedures are performed.

- Products with EPA-approved emerging viral pathogens claims are recommended for use against SARS-CoV-2. Refer to List Nexternal icon on the EPA website for EPA-registered disinfectants that

have qualified under EPA's emerging viral pathogens program for use against SARS-CoV-2.

- Clean and disinfect the vehicle in accordance with standard operating procedures. All surfaces that may have come in contact with the patient or materials contaminated during patient care (e.g., stretcher, rails, control panels, floors, walls, work surfaces) should be thoroughly cleaned and disinfected using an EPA-registered hospital-grade disinfectant in accordance with the product label.

- Clean and disinfect reusable patient-care equipment before use on another patient, according to manufacturer's instructions.

- Follow standard operating procedures for the containment and disposal of used PPE and regulated medical waste.

- Follow standard operating procedures for containing and laundering used linen. Avoid shaking the linen.

Follow-up and/or Reporting Measures by EMS Clinicians After Caring for a PUI or Patient with Confirmed COVID-19

EMS clinicians should be aware of the follow-up and/or reporting measures they should take after caring for a PUI or patient with confirmed COVID-19:

- State or local public health authorities should be notified about the patient so appropriate follow-up monitoring can occur.
- EMS agencies should develop policies for assessing exposure risk and management of EMS personnel potentially exposed to SARS-CoV-2 in coordination with state or local public health authorities. Decisions for monitoring, excluding from work, or other public health actions for HCP with potential exposure to SARS-CoV-2 should be made in consultation with state or local public health authorities. Refer to the Interim U.S. Guidance for Risk Assessment and Public Health Management of Healthcare Personnel with Potential Exposure in a Healthcare Setting to Patients with Coronavirus Disease 2019 (COVID-19) for additional information.
- EMS agencies should develop sick-leave policies for EMS personnel that are nonpunitive, flexible, and consistent with public health guidance. Ensure all EMS personnel, including staff who are not directly employed by the healthcare facility but provide essential daily services, are aware of the sick-leave policies.
- EMS personnel who have been exposed to a patient with suspected or confirmed COVID-19 should notify their chain of command to ensure appropriate follow-up.
  - Any unprotected exposure (e.g., not wearing recommended PPE) should be reported to occupational health services, a supervisor, or a designated infection control officer for evaluation.
  - EMS clinicians should be alert for fever or respiratory symptoms (e.g., cough, shortness of breath, sore throat). If symptoms develop, they should self-isolate and notify occupational health services and/or their public health authority to arrange for appropriate evaluation.

EMS Employer Responsibilities

The responsibilities described in this section are not specific for the care and transport of PUIs or patients with confirmed COVID-19. However, this interim guidance presents an opportunity to assess current practices and verify that training and procedures are up-to-date.

- EMS units should have infection control policies and procedures in place, including describing a recommended sequence for safely donning and doffing PPE.
- Provide all EMS clinicians with job- or task-specific education and training on preventing transmission of infectious agents, including refresher training.
- Ensure that EMS clinicians are educated, trained, and have practiced the appropriate use of PPE prior to caring for a patient, including attention to correct use of PPE and prevention of contamination of clothing, skin, and environment during the process of removing such equipment.
- Ensure EMS clinicians are medically cleared, trained, and fit tested for respiratory protection device use (e.g., N95 filtering facepiece respirators), or medically cleared and trained in the use of an alternative respiratory protection device (e.g., Powered Air-Purifying Respirator, PAPR) whenever respirators are required. OSHA has a number of respiratory training videos.
- EMS units should have an adequate supply of PPE.
- Ensure an adequate supply of or access to EPA-registered hospital-grade disinfectants (see above for more information) for adequate decontamination of EMS transport vehicles and their contents.
- Ensure that EMS clinicians and biohazard cleaners contracted by the EMS employer tasked to the decontamination process are educated, trained, and have practiced the process according to the manufacturer's recommendations or the EMS agency's standard operating procedures.

Additional Resources

The EMS Infectious Disease Playbook, published by the Office of the Assistant Secretary for Preparedness and Response's Technical Resources, Assistance Center, Information Exchange (TRACIE) is a resource available to planners at https://www.ems.gov/pdf/ASPR-EMS-Infectious-Disease-Playbook-June-2017.pdf.

Section 900.15: Guidance on handling suspected coronavirus disease 2019 (COVID-19)

Description of modification/clarification: Guidance for emergency medical services on the screening and handling of handling suspected coronavirus disease 2019 (COVID-19).

Distribution date: March 20, 2020

Expiration date: Upon release of next comprehensive protocol revision

Approved by: Peter C. Springer, MD, FACEP

Section 900.15: Guidance on handling suspected coronavirus disease 2019 (COVID-19) **replaces** *section 900.14: Guidance on handling suspected coronavirus disease 2019 (COVID-19)*

Introduction

This update is provided as guidance in light of the emergence of coronavirus disease 2019 (COVID-19). As the information and recommendations remain fluid at the time of this documents creation, all providers are expected to review information published by the United States Department of Health and Human Services, Centers for Disease Control and Prevention on a routine and ongoing basis.

Additionally, this document recognizes that the Florida Department of Health-Volusia is the local, lead-agency managing public health matters.

Persons under investigation (PUI) for coronavirus disease 2019 (COVID-19)

Telecommunications

This document augments existing emergency medical dispatch procedures. Telecommunications staff shall maintain adherence to quality emergency medical dispatch protocols for the triage of complaint types, delivery of pre-arrival instructions to callers in need of assistance, and all other aspects of emergency medical dispatch.

Telecommunications screening criteria are outlined in table I.

If your patient is exhibiting symptoms of acute lower respiratory illness (e.g., fever[1], cough, and shortness of breath) and meets one or more of the following criteria:

1. Persons who have had a close contact with a laboratory-confirmed COVID-19 case
2. History of international travel or a cruise or travel to California, New York, Oregon, or Washington

3. ~~Age ≥65 with chronic health conditions (cardiovascular, diabetes, etc.)~~
4. ~~Immunocompromised persons (weakened immune systems, patients undergoing chemotherapy, lupus, etc.)~~

~~1 – Oral temperature ≥100.4 or subjectively described by the caller.~~

~~If any of these are present, that information shall be conveyed to agencies involved in the disposition of the incident; regardless of travel.~~

~~If practical, and in the absence of a condition necessitating and emergency medical response, PUI should be routed to nurse triage for additional assessment and disposition.~~

~~The nurse triage component of the communications center shall engage PUI that are routed to them via the emergency medical dispatch process. If a PUI is identified and in the absence of an emergency medical condition, the nurse triage staff member shall gather appropriate information and conference in the Florida Department of Health-Volusia for additional assessment. They can be reached at (386) 316-5030 or (386) 481-4345. If the FDOH-Volusia staff deem the person not to be a PUI, the incident shall be handled in accordance with emergency medical dispatch and nurse triage guidelines.~~

~~Prehospital providers~~

~~The following guidance is provided relating to patient assessment and treatment of PUI:~~

~~The following matrix (table II) was developed by the Florida Department of Health for establishing the status of person under investigation (PUI).~~

~~If your patient is exhibiting symptoms of acute lower respiratory illness (e.g., fever[1], cough, and shortness of breath) and meets one or more of the following criteria:~~

1. ~~Persons who have had a close contact with a laboratory-confirmed COVID-19 case~~
2. ~~Persons hospitalized with acute lower respiratory illness of unknown origin~~
3. ~~History of international travel or a cruise or travel to California, New York, Oregon, or Washington~~
4. ~~Age ≥65 with chronic health conditions~~
5. ~~Immunocompromised persons (weakened immune systems, patients undergoing chemotherapy, lupus, etc.)~~

~~1 – Oral temperature ≥100.4.~~

~~Personal protective equipment~~

- ~~Don appropriate personal protective equipment (PPE) to include: examination gloves; disposable isolation gown; appropriately-sized respiratory protection (i.e., N-95 or higher level respirator); and eye/splash protection.~~
- ~~If practical, and not detrimental to the patient, place surgical mask on the patient.~~
- ~~Doffing of personal protective equipment shall be compliant with best practices to avoid further contamination.~~
- ~~In an effort to address ongoing supply shortages, the N-95 particulate mask may be selectively reused in the absence of damage or gross contamination. In these instances, an employee-assigned mask should be provided for care and storage by the employee.~~
- ~~In an effort to further extend existing PPE caches, crews should give strong consideration to a single provider, wearing appropriate PPE, entering the incident location. Additional team members shall be prepared to approach the patient and render care if the initial responder requests assistance.~~

~~Assessment and treatment~~

- ~~Initial assessment of PUI should be made from a distance of at least six (6) feet.~~
- ~~If medical care is indicated, limit the number of personnel involved in care to the minimum required to safely and effectively perform the task or tasks. Emergency medical care shall be rendered without delay.~~
- ~~Limit or otherwise restrict aerosol-generating procedures.~~

~~If transport is required:~~

- ~~As different hospital systems – and their campuses – may be utilizing slightly different processes based upon resources, early communication of PUI status is vital so that the emergency department can prepare and provide instruction to incoming crews. Hospitals may redirect incoming ambulances with patients meeting specific criteria to alternative treatment sites (e.g., portable buildings, tents, etc.) on hospital property.~~
- ~~The radio notification shall include the hospital-created phrase "Code 19".~~
- ~~In an effort to reduce the need for subsequent transfer, PUIs shall be transported to facilities with admission capabilities. PUIs shall not be transported to freestanding emergency departments.~~
- ~~Limit the number of attendees to the minimum number to effectively care for the patient.~~
- ~~Prior to departing the scene, the driver should doff all personal protective equipment prior to entering the cab of the vehicle to prevent contamination. The driver, if involved in patient transfer at the destination, shall apply fresh personal protective equipment prior to engaging in transfer of the patient.~~
- ~~Upon arrival at the destination, place the transport unit is an area not commonly utilized for conventional ambulance traffic and away from pedestrian traffic.~~
- ~~Consult with hospital staff prior to off-loading the patient in order to determine where the patient is to be brought and the route of travel within the facility.~~

~~If transport isn't required:~~

- ~~If the patient is not in need of emergency medical care and meets criteria for COVID-19, the field provider on scene shall contact the Florida Department of Health-Volusia (FDOH-Volusia) at (386) 316-5030 or (386) 481-4345 for consultation. Factors to discuss on the call should include, but not be limited to: resources available to the patient, medical history, including comorbid conditions; imminent needs (e.g., medication, food, etc.); and other factors that may lend to an appropriate disposition being made.~~
  - ~~If FDOH-Volusia concurs with no transport, they'll make arrangements for on-site testing and disposition.~~
  - ~~If FDOH-Volusia does not concur with emergency medical services assessment and patient opts for transport, transport in accordance with this document.~~

~~Decontamination~~

- ~~All personnel engaged in decontamination of equipment and the transport vehicle shall utilize the above-recommended personal protective equipment.~~
- ~~Allow transport vehicles to remain open allowing for air exchange to occur.~~
- ~~Decontamination of vehicles and equipment:~~
  - ~~Durable equipment (able to be immersed): remove any visible contaminant and wash with soap and warm water. Follow with the liberal application of an EPA-registered, hospital-grade disinfectant and allow to air dry. The disinfectant shall claim its effectiveness on emerging viral pathogens.~~
  - ~~Delicate equipment (not able to be immersed): remove any visible contaminant and wipe with cloth moistened with soap and warm water. When dry, wipe with an EPA-registered, hospital-grade disinfectant and allow to air dry. The disinfectant shall claim its effectiveness on emerging viral pathogens.~~
  - ~~Disposable equipment: discard in the appropriate receptacle.~~

~~**Documentation**~~

~~All agencies are responsible for recording the name or names of employees with direct contact with the patient.~~

Interim Guidance for Emergency Medical Services (EMS) Systems and 911 Public Safety Answering Points (PSAPs) for COVID-19 in the United States

This guidance applies to all first responders, including law enforcement, fire services, emergency medical services, and emergency management officials, who anticipate close contact with persons with confirmed or possible COVID-19 in the course of their work.

Updated March 10, 2020

Summary of Key Changes for the EMS Guidance:

- Updated PPE recommendations for the care of patients with known or suspected COVID-19:
  - Facemasks are an acceptable alternative until the supply chain is restored. Respirators should be prioritized for procedures that are likely to generate respiratory aerosols, which would pose the highest exposure risk to HCP.
  - Eye protection, gown, and gloves continue to be recommended.
    - If there are shortages of gowns, they should be prioritized for aerosol-generating procedures, care activities where splashes and sprays are anticipated, and high-contact patient care activities that provide opportunities for transfer of pathogens to the hands and clothing of HCP.
  - When the supply chain is restored, fit-tested EMS clinicians should return to use of respirators for patients with known or suspected COVID-19.
- Updated guidance about recommended EPA-registered disinfectants to include reference to a list now posted on the EPA website.

Background

Emergency medical services (EMS) play a vital role in responding to requests for assistance, triaging patients, and providing emergency medical treatment and transport for ill persons. However, unlike patient care in the controlled environment of a healthcare facility, care and transports by EMS present unique challenges because of the nature of the setting, enclosed space during transport, frequent need for rapid medical decision-making, interventions with limited information, and a varying range of patient acuity and jurisdictional healthcare resources.

When preparing for and responding to patients with confirmed or possible coronavirus disease 2019 (COVID-19), close coordination and effective communications are important among 911 Public Safety Answering Points (PSAPs) — commonly known as 911 call centers, the EMS system, healthcare facilities, and the public health system. Each PSAP and EMS system should seek the involvement of an EMS medical director to provide appropriate medical oversight. For the purposes of this guidance, "EMS clinician" means prehospital EMS and medical first responders. When COVID-19 is suspected in a patient needing emergency transport, prehospital care providers and healthcare facilities should be notified in advance that they may be caring for, transporting, or receiving a patient who may have COVID-19 infection.

Updated information about COVID-19 may be accessed at https://www.cdc.gov/coronavirus/2019-ncov/index.html. Infection prevention and control recommendations can be found here: https://www.cdc.gov/coronavirus/2019-nCoV/hcp/infection-control.html. Additional information for healthcare personnel can be found at https://www.cdc.gov/coronavirus/2019-nCoV/guidance-hcp.html.

Case Definition for COVID-19

CDC's most current case definition for a person under investigation (PUI) for COVID-19 may be accessed at https://www.cdc.gov/coronavirus/2019-nCoV/clinical-criteria.html.

Recommendations for 911 PSAPs

Municipalities and local EMS authorities should coordinate with state and local public health, PSAPs, and other emergency call centers to determine need for modified caller queries about COVID-19, outlined below.

Development of these modified caller queries should be closely coordinated with an EMS medical director and informed by local, state, and federal public health authorities, including the city or county health department(s), state health department(s), and CDC.

Modified Caller Queries

PSAPs or Emergency Medical Dispatch (EMD) centers (as appropriate) should question callers and determine the possibility that this call concerns a person who may have signs or symptoms and risk factors for COVID-19. The query process should never supersede the provision of pre-arrival instructions to the caller when immediate lifesaving interventions (e.g., CPR or the Heimlich maneuver) are indicated. Patients in the United States who meet the appropriate criteria should be evaluated and transported as a PUI. Information on COVID-19 will be updated as the public health response proceeds. PSAPs and medical directors can access CDC's PUI definitions here.

Information on a possible PUI should be communicated immediately to EMS clinicians before arrival on scene in order to allow use of appropriate personal protective equipment (PPE). PSAPs should utilize medical dispatch procedures that are coordinated with their EMS medical director and with the local or state public health department.

PSAPs and EMS units that respond to ill travelers at US international airports or other ports of entry to the United States (maritime ports or border crossings) should be in contact with the CDC quarantine station of jurisdiction for the port of entry (see: CDC Quarantine Station Contact List) for planning guidance. They should notify the

quarantine station when responding to that location if a communicable disease is suspected in a traveler. CDC has provided job aids for this purpose to EMS units operating routinely at US ports of entry. The PSAP or EMS unit can also call CDC's Emergency Operations Center at (770) 488-7100 to be connected with the appropriate CDC quarantine station.

Recommendations for EMS Clinicians and Medical First Responders

EMS clinician practices should be based on the most up-to-date COVID-19 clinical recommendations and information from appropriate public health authorities and EMS medical direction.

State and local EMS authorities may direct EMS clinicians to modify their practices as described below.

Patient assessment

- If PSAP call takers advise that the patient is suspected of having COVID-19, EMS clinicians should put on appropriate PPE before entering the scene. EMS clinicians should consider the signs, symptoms, and risk factors of COVID-19 (https://www.cdc.gov/coronavirus/2019-nCoV/clinical-criteria.html).

- If information about potential for COVID-19 has not been provided by the PSAP, EMS clinicians should exercise appropriate precautions when responding to any patient with signs or symptoms of a respiratory infection. Initial assessment should begin from a distance of at least 6 feet from the patient, if possible. Patient contact should be minimized to the extent possible until a facemask is on the patient. If COVID-19 is suspected, all PPE as described below should be used. If COVID-19 is not suspected, EMS clinicians should follow standard procedures and use appropriate PPE for evaluating a patient with a potential respiratory infection.

- A facemask should be worn by the patient for source control. If a nasal cannula is in place, a facemask should be worn over the nasal cannula. Alternatively, an oxygen mask can be used if clinically indicated. If the patient requires intubation, see below for additional precautions for aerosol-generating procedures.

- During transport, limit the number of providers in the patient compartment to essential personnel to minimize possible exposures.

Recommended Personal Protective Equipment (PPE)

- EMS clinicians who will directly care for a patient with possible COVID-19 infection or who will be in the compartment with the patient should follow Standard, Precautions and use the PPE as described below. Recommended PPE includes:
  - N-95 or higher-level respirator or facemask (if a respirator is not available),
    - N95 respirators or respirators that offer a higher level of protection should be used instead of a facemask when performing or present for an aerosol-generating procedure
  - Eye protection (i.e., goggles or disposable face shield that fully covers the front and sides of the face). Personal eyeglasses and contact lenses are NOT considered adequate eye protection.
  - A single pair of disposable patient examination gloves. Change gloves if they become torn or heavily contaminated, and isolation gown.
    - If there are shortages of gowns, they should be prioritized for aerosol-generating procedures, care activities where splashes and sprays are anticipated, and high-contact patient care activities that provide opportunities for transfer of pathogens to the hands and clothing of EMS clinicians (e.g., moving patient onto a stretcher).
- When the supply chain is restored, fit-tested EMS clinicians should return to use of respirators for patients with known or suspected COVID-19.
- Drivers, if they provide direct patient care (e.g., moving patients onto stretchers), should wear all recommended PPE. After completing patient care and before entering an isolated driver's compartment, the driver should remove and dispose of PPE and perform hand hygiene to avoid soiling the compartment.
  - If the transport vehicle does not have an isolated driver's compartment, the driver should remove the face shield or goggles, gown and gloves and perform hand hygiene. A respirator or facemask should continue to be used during transport.
- All personnel should avoid touching their face while working.
- On arrival, after the patient is released to the facility, EMS clinicians should remove and discard PPE and perform hand hygiene. Used PPE should be discarded in accordance with routine procedures.
- Other required aspects of Standard Precautions (e.g., injection safety, hand hygiene) are not emphasized in this document but can be found in the guideline titled Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings.

Precautions for Aerosol-Generating Procedures

- If possible, consult with medical control before performing aerosol-generating procedures for specific guidance.
- An N-95 or higher-level respirator, instead of a facemask, should be worn in addition to the other PPE described above, for EMS clinicians present for or performing aerosol-generating procedures.,
- EMS clinicians should exercise caution if an aerosol-generating procedure (e.g., bag valve mask (BVM) ventilation, oropharyngeal suctioning, endotracheal intubation, nebulizer treatment, continuous positive airway pressure (CPAP), bi-phasic positive airway

pressure (biPAP), or resuscitation involving emergency intubation or cardiopulmonary resuscitation (CPR)) is necessary.
    - BVMs, and other ventilatory equipment, should be equipped with HEPA filtration to filter expired air.
    - EMS organizations should consult their ventilator equipment manufacturer to confirm appropriate filtration capability and the effect of filtration on positive-pressure ventilation.
- If possible, the rear doors of the transport vehicle should be opened and the HVAC system should be activated during aerosol-generating procedures. This should be done away from pedestrian traffic.

EMS Transport of a PUI or Patient with Confirmed COVID-19 to a Healthcare Facility (including interfacility transport)

If a patient with an exposure history and signs and symptoms suggestive of COVID-19 requires transport to a healthcare facility for further evaluation and management (subject to EMS medical direction), the following actions should occur during transport:

- EMS clinicians should notify the receiving healthcare facility that the patient has an exposure history and signs and symptoms suggestive of COVID-19 so that appropriate infection control precautions may be taken prior to patient arrival.
- Keep the patient separated from other people as much as possible.
- Family members and other contacts of patients with possible COVID-19 should not ride in the transport vehicle, if possible. If riding in the transport vehicle, they should wear a facemask.
- Isolate the ambulance driver from the patient compartment and keep pass-through doors and windows tightly shut.
- When possible, use vehicles that have isolated driver and patient compartments that can provide separate ventilation to each area.
    - Close the door/window between these compartments before bringing the patient on board.
    - During transport, vehicle ventilation in both compartments should be on non-recirculated mode to maximize air changes that reduce potentially infectious particles in the vehicle.
    - If the vehicle has a rear exhaust fan, use it to draw air away from the cab, toward the patient-care area, and out the back end of the vehicle.
    - Some vehicles are equipped with a supplemental recirculating ventilation unit that passes air through HEPA filters before returning it to the vehicle. Such a unit can be used to increase the number of air changes per hour (ACH) (https://www.cdc.gov/niosh/hhe/reports/pdfs/1995-0031-2601.pdf).
- If a vehicle without an isolated driver compartment and ventilation must be used, open the outside air vents in the driver area and turn on the rear exhaust ventilation fans to the highest setting. This will create a negative pressure gradient in the patient area.
- Follow routine procedures for a transfer of the patient to the receiving healthcare facility (e.g., wheel the patient directly into an examination room).

Documentation of patient care

- Documentation of patient care should be done after EMS clinicians have completed transport, removed their PPE, and performed hand hygiene.
    - Any written documentation should match the verbal communication given to the emergency department providers at the time patient care was transferred.
- EMS documentation should include a listing of EMS clinicians and public safety providers involved in the response and level of contact with the patient (for example, no contact with patient, provided direct patient care). This documentation may need to be shared with local public health authorities.

Cleaning EMS Transport Vehicles after Transporting a PUI or Patient with Confirmed COVID-19

The following are general guidelines for cleaning or maintaining EMS transport vehicles and equipment after transporting a PUI:

- After transporting the patient, leave the rear doors of the transport vehicle open to allow for sufficient air changes to remove potentially infectious particles.
    - The time to complete transfer of the patient to the receiving facility and complete all documentation should provide sufficient air changes.

- When cleaning the vehicle, EMS clinicians should wear a disposable gown and gloves. A face shield or facemask and goggles should also be worn if splashes or sprays during cleaning are anticipated.

- Ensure that environmental cleaning and disinfection procedures are followed consistently and correctly, to include the provision of adequate ventilation when chemicals are in use. Doors should remain open when cleaning the vehicle.

- Routine cleaning and disinfection procedures (e.g., using cleaners and water to pre-clean surfaces prior to applying an EPA-registered, hospital-grade disinfectant to frequently touched surfaces or objects for appropriate contact times as indicated on the product's label) are appropriate for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in healthcare settings, including those patient-care areas in which aerosol-generating procedures are performed.

- Products with EPA-approved emerging viral pathogens claims are recommended for use against SARS-CoV-2. Refer to List Nexternal icon on the EPA website for EPA-registered disinfectants that

have qualified under EPA's emerging viral pathogens program for use against SARS-CoV-2.

- Clean and disinfect the vehicle in accordance with standard operating procedures. All surfaces that may have come in contact with the patient or materials contaminated during patient care (e.g., stretcher, rails, control panels, floors, walls, work surfaces) should be thoroughly cleaned and disinfected using an EPA-registered hospital-grade disinfectant in accordance with the product label.

- Clean and disinfect reusable patient-care equipment before use on another patient, according to manufacturer's instructions.

- Follow standard operating procedures for the containment and disposal of used PPE and regulated medical waste.

- Follow standard operating procedures for containing and laundering used linen. Avoid shaking the linen.

Follow-up and/or Reporting Measures by EMS Clinicians After Caring for a PUI or Patient with Confirmed COVID-19

EMS clinicians should be aware of the follow-up and/or reporting measures they should take after caring for a PUI or patient with confirmed COVID-19:

- State or local public health authorities should be notified about the patient so appropriate follow-up monitoring can occur.
- EMS agencies should develop policies for assessing exposure risk and management of EMS personnel potentially exposed to SARS-CoV-2 in coordination with state or local public health authorities. Decisions for monitoring, excluding from work, or other public health actions for HCP with potential exposure to SARS-CoV-2 should be made in consultation with state or local public health authorities. Refer to the Interim U.S. Guidance for Risk Assessment and Public Health Management of Healthcare Personnel with Potential Exposure in a Healthcare Setting to Patients with Coronavirus Disease 2019 (COVID-19) for additional information.
- EMS agencies should develop sick-leave policies for EMS personnel that are nonpunitive, flexible, and consistent with public health guidance. Ensure all EMS personnel, including staff who are not directly employed by the healthcare facility but provide essential daily services, are aware of the sick-leave policies.
- EMS personnel who have been exposed to a patient with suspected or confirmed COVID-19 should notify their chain of command to ensure appropriate follow-up.
  - Any unprotected exposure (e.g., not wearing recommended PPE) should be reported to occupational health services, a supervisor, or a designated infection control officer for evaluation.
  - EMS clinicians should be alert for fever or respiratory symptoms (e.g., cough, shortness of breath, sore throat). If symptoms develop, they should self-isolate and notify occupational health services and/or their public health authority to arrange for appropriate evaluation.

EMS Employer Responsibilities

The responsibilities described in this section are not specific for the care and transport of PUIs or patients with confirmed COVID-19. However, this interim guidance presents an opportunity to assess current practices and verify that training and procedures are up-to-date.

- EMS units should have infection control policies and procedures in place, including describing a recommended sequence for safely donning and doffing PPE.
- Provide all EMS clinicians with job- or task-specific education and training on preventing transmission of infectious agents, including refresher training.
- Ensure that EMS clinicians are educated, trained, and have practiced the appropriate use of PPE prior to caring for a patient, including attention to correct use of PPE and prevention of contamination of clothing, skin, and environment during the process of removing such equipment.
- Ensure EMS clinicians are medically cleared, trained, and fit tested for respiratory protection device use (e.g., N95 filtering facepiece respirators), or medically cleared and trained in the use of an alternative respiratory protection device (e.g., Powered Air-Purifying Respirator, PAPR) whenever respirators are required. OSHA has a number of respiratory training videos.
- EMS units should have an adequate supply of PPE.
- Ensure an adequate supply of or access to EPA-registered hospital-grade disinfectants (see above for more information) for adequate decontamination of EMS transport vehicles and their contents.
- Ensure that EMS clinicians and biohazard cleaners contracted by the EMS employer tasked to the decontamination process are educated, trained, and have practiced the process according to the manufacturer's recommendations or the EMS agency's standard operating procedures.

Additional Resources

The EMS Infectious Disease Playbook, published by the Office of the Assistant Secretary for Preparedness and Response's Technical Resources, Assistance Center, Information Exchange (TRACIE) is a resource available to planners at https://www.ems.gov/pdf/ASPR-EMS-Infectious-Disease-Playbook-June-2017.pdf.

Section 900.16: Guidance on handling suspected coronavirus disease 2019 (COVID-19)

Description of modification/clarification: Guidance for emergency medical services on the screening and handling of handling suspected coronavirus disease 2019 (COVID-19).

Distribution date: March 30, 2020

Expiration date: Upon release of next comprehensive protocol revision

Approved by: Peter C. Springer, MD, FACEP

Section 900.16: Guidance on handling suspected coronavirus disease 2019 (COVID-19) **replaces** *section 900.15: Guidance on handling suspected coronavirus disease 2019 (COVID-19)*

Introduction

This update is provided as guidance in light of the emergence of coronavirus disease 2019 (COVID-19). As the information and recommendations remain fluid at the time of this documents creation, all providers are expected to review information published by the United States Department of Health and Human Services, Centers for Disease Control and Prevention and the Florida Department of Health on a routine and ongoing basis.

Additionally, this document recognizes that the Florida Department of Health-Volusia is the local, lead-agency managing public health matters.

Persons under investigation (PUI) for coronavirus disease 2019 (COVID-19)

Telecommunications

This document augments existing emergency medical dispatch procedures. Telecommunications staff shall maintain adherence to quality emergency medical dispatch protocols for the triage of complaint types, delivery of pre-arrival instructions to callers in need of assistance, and all other aspects of emergency medical dispatch.

Telecommunications screening criteria are outlined in table I.

Table I: Telecommunications screening criteria for persons under investigation (PUI)
If your patient is exhibiting symptoms of acute lower respiratory illness (e.g., fever[1], cough, and shortness of breath) and meets one or more of the following criteria: 1. Persons who have had a close contact with a laboratory-confirmed COVID-19 case; 2. History of international travel or a cruise or travel to or from an affected geographic area with widespread community transmission;

3. Age ≥65 with chronic health conditions (cardiovascular, diabetes, etc.); or
4. Immunocompromised persons (weakened immune systems, patients undergoing chemotherapy, lupus, etc.)

1 – Oral temperature ≥100.4 or subjectively described by the caller.

If any of these are present, that information shall be conveyed to agencies involved in the disposition of the incident; regardless of travel.

If practical, and in the absence of a condition necessitating and emergency medical response, PUI should be routed to nurse triage for additional assessment and disposition.

The nurse triage component of the communications center shall engage PUI that are routed to them via the emergency medical dispatch process. If a PUI is identified and in the absence of an emergency medical condition, the nurse triage staff member shall gather appropriate information and conference in the Florida Department of Health-Volusia for additional assessment. They can be reached at (386) 316-5030 or (386) 481-4345. If the FDOH-Volusia staff deem the person not to be a PUI, the incident shall be handled in accordance with emergency medical dispatch and nurse triage guidelines.

Prehospital providers

The following guidance is provided relating to patient assessment and treatment of PUI:

The following matrix (table II) was developed by the Florida Department of Health for establishing the status of person under investigation (PUI).

Table II: Prehospital provider screening criteria for persons under investigation (PUI)
If your patient is exhibiting symptoms of acute lower respiratory illness (e.g., fever[1], cough, and shortness of breath) and meets one or more of the following criteria: 1. Persons who have had a close contact with a laboratory-confirmed COVID-19 case; 2. Persons hospitalized with acute lower respiratory illness of unknown origin; 3. History of international travel <u>or</u> a cruise <u>or</u> travel to or from an affected geographic area with widespread community transmission; 4. Age ≥65 with chronic health conditions; or 5. Immunocompromised persons (weakened immune systems, patients undergoing chemotherapy, lupus, etc.).

1 – Oral temperature ≥100.4.

Personal protective equipment

- Don appropriate personal protective equipment (PPE) to include: examination gloves; disposable isolation gown; appropriately-sized respiratory protection (i.e., N-95 or higher level respirator); and eye/splash protection.
- If practical, and not detrimental to the patient, place surgical mask on the patient.
- Doffing of personal protective equipment shall be compliant with best practices to avoid further contamination.
- In an effort to address ongoing supply shortages, the N-95 particulate mask may be selectively reused in the absence of damage or gross contamination. In these instances, an employee-assigned mask should be provided for care and storage by the employee.
- In an effort to further extend existing PPE caches, crews should give strong consideration to a single provider, wearing appropriate PPE, entering the incident location. Additional team members shall be prepared to approach the patient and render care if the initial responder requests assistance.

Assessment and treatment

- Initial assessment of PUI should be made from a distance of at least six (6) feet.
- If medical care is indicated, limit the number of personnel involved in care to the minimum required to safely and effectively perform the task or tasks. Emergency medical care shall be rendered without delay.
- Limit or otherwise restrict aerosol-generating procedures.

If transport is required:

- As different hospital systems – and their campuses – may be utilizing slightly different processes based upon resources, early communication of PUI status is vital so that the emergency department can prepare and provide instruction to incoming crews. Hospitals may redirect incoming ambulances with patients meeting specific criteria to alternative treatment sites (e.g., portable buildings, tents, etc.) on hospital property.
- The radio notification shall include the hospital-created phrase "Code 19".
- In an effort to reduce the need for subsequent transfer, PUIs shall be transported to facilities with admission capabilities. PUIs shall not be transported to freestanding emergency departments.
- Limit the number of attendees to the minimum number to effectively care for the patient.
- Prior to departing the scene, the driver should doff all personal protective equipment prior to entering the cab of the vehicle to prevent contamination. The driver, if involved in patient transfer at the destination, shall apply fresh personal protective equipment prior to engaging in transfer of the patient.
- Upon arrival at the destination, place the transport unit is an area not commonly utilized for conventional ambulance traffic and away from pedestrian traffic.
- Consult with hospital staff prior to off-loading the patient in order to determine where the patient is to be brought and the route of travel within the facility.

If transport isn't required:

- If the patient is not in need of emergency medical care and meets criteria for COVID-19, the field provider on scene shall contact the Florida Department of Health-Volusia (FDOH-Volusia) at (386) 316-5030 or (386) 481-4345 for consultation. Factors to discuss on the call should include, but not be limited to: resources available to the patient, medical history, including comorbid conditions; imminent needs (e.g., medication, food, etc.); and other factors that may lend to an appropriate disposition being made.
  - If FDOH-Volusia concurs with no transport, they'll make arrangements for on-site testing and disposition.
  - If FDOH-Volusia does <u>not</u> concur with emergency medical services assessment and patient opts for transport, transport in accordance with this document.

<u>Decontamination</u>

- All personnel engaged in decontamination of equipment and the transport vehicle shall utilize the above-recommended personal protective equipment.
- Allow transport vehicles to remain open allowing for air exchange to occur.
- Decontamination of vehicles and equipment:
  - Durable equipment (able to be immersed): remove any visible contaminant and wash with soap and warm water. Follow with the liberal application of an EPA-registered, hospital-grade disinfectant and allow to air dry. The disinfectant shall claim its effectiveness on emerging viral pathogens.
  - Delicate equipment (not able to be immersed): remove any visible contaminant and wipe with cloth moistened with soap and warm water. When dry, wipe with an EPA-registered, hospital-grade disinfectant and allow to air dry. The disinfectant shall claim its effectiveness on emerging viral pathogens.
  - Disposable equipment: discard in the appropriate receptacle.

<u>Facilities licensed by the Florida Agency for Health Care Administration</u>

Consistent with direction from the Florida Agency for Health Care Administration, this protocol recognizes the vulnerability of populations inside licensed facilities (e.g., adult day care facilities, assisted living facilities, nursing homes, etc.). Therefore, providers shall wear appropriate personal protective equipment when entering these facilities. In an effort to preserve limited supplies of N-95 particulate respirators, surgical masks are appropriate for non-suspected COVID-19 interactions.

Documentation

All agencies are responsible for recording the name or names of employees with direct contact with patients with known or suspected COVID-19.

Interim Guidance for Emergency Medical Services (EMS) Systems and 911 Public Safety Answering Points (PSAPs) for COVID-19 in the United States

This guidance applies to all first responders, including law enforcement, fire services, emergency medical services, and emergency management officials, who anticipate close contact with persons with confirmed or possible COVID-19 in the course of their work.

Updated March 10, 2020

Summary of Key Changes for the EMS Guidance:

- Updated PPE recommendations for the care of patients with known or suspected COVID-19:
  - Facemasks are an acceptable alternative until the supply chain is restored. Respirators should be prioritized for procedures that are likely to generate respiratory aerosols, which would pose the highest exposure risk to HCP.
  - Eye protection, gown, and gloves continue to be recommended.
    - If there are shortages of gowns, they should be prioritized for aerosol-generating procedures, care activities where splashes and sprays are anticipated, and high-contact patient care activities that provide opportunities for transfer of pathogens to the hands and clothing of HCP.
  - When the supply chain is restored, fit-tested EMS clinicians should return to use of respirators for patients with known or suspected COVID-19.
- Updated guidance about recommended EPA-registered disinfectants to include reference to a list now posted on the EPA website.

Background

Emergency medical services (EMS) play a vital role in responding to requests for assistance, triaging patients, and providing emergency medical treatment and transport for ill persons. However, unlike patient care in the controlled environment of a healthcare facility, care and transports by EMS present unique challenges because of the nature of the setting, enclosed space during transport, frequent need for rapid medical decision-making, interventions with limited information, and a varying range of patient acuity and jurisdictional healthcare resources.

When preparing for and responding to patients with confirmed or possible coronavirus disease 2019 (COVID-19), close coordination and effective communications are important among 911 Public Safety Answering Points (PSAPs)— commonly known as 911 call centers, the EMS system, healthcare facilities, and the public health system. Each PSAP and EMS system should seek the involvement of an EMS medical director to provide appropriate medical oversight. For the purposes of this guidance, "EMS clinician" means prehospital EMS and medical first responders. When COVID-19 is suspected in a patient needing emergency transport, prehospital care providers and healthcare facilities should be notified in advance that they may be caring for, transporting, or receiving a patient who may have COVID-19 infection.

Updated information about COVID-19 may be accessed at https://www.cdc.gov/coronavirus/2019-ncov/index.html. Infection prevention and control recommendations can be found here: https://www.cdc.gov/coronavirus/2019-nCoV/hcp/infection-control.html. Additional information for healthcare personnel can be found at https://www.cdc.gov/coronavirus/2019-nCoV/guidance-hcp.html.

Case Definition for COVID-19

CDC's most current case definition for a person under investigation (PUI) for COVID-19 may be accessed at https://www.cdc.gov/coronavirus/2019-nCoV/clinical-criteria.html.

Recommendations for 911 PSAPs

Municipalities and local EMS authorities should coordinate with state and local public health, PSAPs, and other emergency call centers to determine need for modified caller queries about COVID-19, outlined below.

Development of these modified caller queries should be closely coordinated with an EMS medical director and informed by local, state, and federal public health authorities, including the city or county health department(s), state health department(s), and CDC.

Modified Caller Queries

PSAPs or Emergency Medical Dispatch (EMD) centers (as appropriate) should question callers and determine the possibility that this call concerns a person who may have signs or symptoms and risk factors for COVID-19. The query process should never supersede the provision of pre-arrival instructions to the caller when immediate lifesaving interventions (e.g., CPR or the Heimlich maneuver) are indicated. Patients in the United States who meet the appropriate criteria should be evaluated and transported as a PUI. Information on COVID-19 will be updated as the public health response proceeds. PSAPs and medical directors can access CDC's PUI definitions here.

Information on a possible PUI should be communicated immediately to EMS clinicians before arrival on scene in order to allow use of appropriate personal protective equipment (PPE). PSAPs should utilize medical dispatch procedures that are coordinated with their EMS medical director and with the local or state public health department.

PSAPs and EMS units that respond to ill travelers at US international airports or other ports of entry to the United States (maritime ports or border crossings) should be in contact with the CDC quarantine station of jurisdiction for the port of entry (see: CDC Quarantine Station Contact List) for planning guidance. They should notify the

quarantine station when responding to that location if a communicable disease is suspected in a traveler. CDC has provided job aids for this purpose to EMS units operating routinely at US ports of entry. The PSAP or EMS unit can also call CDC's Emergency Operations Center at (770) 488-7100 to be connected with the appropriate CDC quarantine station.

Recommendations for EMS Clinicians and Medical First Responders

EMS clinician practices should be based on the most up-to-date COVID-19 clinical recommendations and information from appropriate public health authorities and EMS medical direction.

State and local EMS authorities may direct EMS clinicians to modify their practices as described below.

Patient assessment

- If PSAP call takers advise that the patient is suspected of having COVID-19, EMS clinicians should put on appropriate PPE before entering the scene. EMS clinicians should consider the signs, symptoms, and risk factors of COVID-19 (https://www.cdc.gov/coronavirus/2019-nCoV/clinical-criteria.html).

- If information about potential for COVID-19 has not been provided by the PSAP, EMS clinicians should exercise appropriate precautions when responding to any patient with signs or symptoms of a respiratory infection. Initial assessment should begin from a distance of at least 6 feet from the patient, if possible. Patient contact should be minimized to the extent possible until a facemask is on the patient. If COVID-19 is suspected, all PPE as described below should be used. If COVID-19 is not suspected, EMS clinicians should follow standard procedures and use appropriate PPE for evaluating a patient with a potential respiratory infection.

- A facemask should be worn by the patient for source control. If a nasal cannula is in place, a facemask should be worn over the nasal cannula. Alternatively, an oxygen mask can be used if clinically indicated. If the patient requires intubation, see below for additional precautions for aerosol-generating procedures.

- During transport, limit the number of providers in the patient compartment to essential personnel to minimize possible exposures.

Recommended Personal Protective Equipment (PPE)

- EMS clinicians who will directly care for a patient with possible COVID-19 infection or who will be in the compartment with the patient should follow Standard, Precautions and use the PPE as described below. Recommended PPE includes:
  - N-95 or higher-level respirator or facemask (if a respirator is not available),
    - N95 respirators or respirators that offer a higher level of protection should be used instead of a facemask when performing or present for an aerosol-generating procedure
  - Eye protection (i.e., goggles or disposable face shield that fully covers the front and sides of the face). Personal eyeglasses and contact lenses are NOT considered adequate eye protection.
  - A single pair of disposable patient examination gloves. Change gloves if they become torn or heavily contaminated, and isolation gown.
    - If there are shortages of gowns, they should be prioritized for aerosol-generating procedures, care activities where splashes and sprays are anticipated, and high-contact patient care activities that provide opportunities for transfer of pathogens to the hands and clothing of EMS clinicians (e.g., moving patient onto a stretcher).
- When the supply chain is restored, fit-tested EMS clinicians should return to use of respirators for patients with known or suspected COVID-19.
- Drivers, if they provide direct patient care (e.g., moving patients onto stretchers), should wear all recommended PPE. After completing patient care and before entering an isolated driver's compartment, the driver should remove and dispose of PPE and perform hand hygiene to avoid soiling the compartment.
  - If the transport vehicle does not have an isolated driver's compartment, the driver should remove the face shield or goggles, gown and gloves and perform hand hygiene. A respirator or facemask should continue to be used during transport.
- All personnel should avoid touching their face while working.
- On arrival, after the patient is released to the facility, EMS clinicians should remove and discard PPE and perform hand hygiene. Used PPE should be discarded in accordance with routine procedures.
- Other required aspects of Standard Precautions (e.g., injection safety, hand hygiene) are not emphasized in this document but can be found in the guideline titled Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings.

Precautions for Aerosol-Generating Procedures

- If possible, consult with medical control before performing aerosol-generating procedures for specific guidance.
- An N-95 or higher-level respirator, instead of a facemask, should be worn in addition to the other PPE described above, for EMS clinicians present for or performing aerosol-generating procedures.,
- EMS clinicians should exercise caution if an aerosol-generating procedure (e.g., bag valve mask (BVM) ventilation, oropharyngeal suctioning, endotracheal intubation, nebulizer treatment, continuous positive airway pressure (CPAP), bi-phasic positive airway

pressure (biPAP), or resuscitation involving emergency intubation or cardiopulmonary resuscitation (CPR)) is necessary.
  - BVMs, and other ventilatory equipment, should be equipped with HEPA filtration to filter expired air.
  - EMS organizations should consult their ventilator equipment manufacturer to confirm appropriate filtration capability and the effect of filtration on positive-pressure ventilation.
- If possible, the rear doors of the transport vehicle should be opened and the HVAC system should be activated during aerosol-generating procedures. This should be done away from pedestrian traffic.

EMS Transport of a PUI or Patient with Confirmed COVID-19 to a Healthcare Facility (including interfacility transport)

If a patient with an exposure history and signs and symptoms suggestive of COVID-19 requires transport to a healthcare facility for further evaluation and management (subject to EMS medical direction), the following actions should occur during transport:

- EMS clinicians should notify the receiving healthcare facility that the patient has an exposure history and signs and symptoms suggestive of COVID-19 so that appropriate infection control precautions may be taken prior to patient arrival.
- Keep the patient separated from other people as much as possible.
- Family members and other contacts of patients with possible COVID-19 should not ride in the transport vehicle, if possible. If riding in the transport vehicle, they should wear a facemask.
- Isolate the ambulance driver from the patient compartment and keep pass-through doors and windows tightly shut.
- When possible, use vehicles that have isolated driver and patient compartments that can provide separate ventilation to each area.
  - Close the door/window between these compartments before bringing the patient on board.
  - During transport, vehicle ventilation in both compartments should be on non-recirculated mode to maximize air changes that reduce potentially infectious particles in the vehicle.
  - If the vehicle has a rear exhaust fan, use it to draw air away from the cab, toward the patient-care area, and out the back end of the vehicle.
  - Some vehicles are equipped with a supplemental recirculating ventilation unit that passes air through HEPA filters before returning it to the vehicle. Such a unit can be used to increase the number of air changes per hour (ACH) (https://www.cdc.gov/niosh/hhe/reports/pdfs/1995-0031-2601.pdf).
- If a vehicle without an isolated driver compartment and ventilation must be used, open the outside air vents in the driver area and turn on the rear exhaust ventilation fans to the highest setting. This will create a negative pressure gradient in the patient area.
- Follow routine procedures for a transfer of the patient to the receiving healthcare facility (e.g., wheel the patient directly into an examination room).

Documentation of patient care

- Documentation of patient care should be done after EMS clinicians have completed transport, removed their PPE, and performed hand hygiene.
  - Any written documentation should match the verbal communication given to the emergency department providers at the time patient care was transferred.
- EMS documentation should include a listing of EMS clinicians and public safety providers involved in the response and level of contact with the patient (for example, no contact with patient, provided direct patient care). This documentation may need to be shared with local public health authorities.

Cleaning EMS Transport Vehicles after Transporting a PUI or Patient with Confirmed COVID-19

The following are general guidelines for cleaning or maintaining EMS transport vehicles and equipment after transporting a PUI:

- After transporting the patient, leave the rear doors of the transport vehicle open to allow for sufficient air changes to remove potentially infectious particles.
  - The time to complete transfer of the patient to the receiving facility and complete all documentation should provide sufficient air changes.

- When cleaning the vehicle, EMS clinicians should wear a disposable gown and gloves. A face shield or facemask and goggles should also be worn if splashes or sprays during cleaning are anticipated.

- Ensure that environmental cleaning and disinfection procedures are followed consistently and correctly, to include the provision of adequate ventilation when chemicals are in use. Doors should remain open when cleaning the vehicle.

- Routine cleaning and disinfection procedures (e.g., using cleaners and water to pre-clean surfaces prior to applying an EPA-registered, hospital-grade disinfectant to frequently touched surfaces or objects for appropriate contact times as indicated on the product's label) are appropriate for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in healthcare settings, including those patient-care areas in which aerosol-generating procedures are performed.

- Products with EPA-approved emerging viral pathogens claims are recommended for use against SARS-CoV-2. Refer to List N on the EPA website for EPA-registered disinfectants that have qualified under

EPA's emerging viral pathogens program for use against SARS-CoV-2.

- Clean and disinfect the vehicle in accordance with standard operating procedures. All surfaces that may have come in contact with the patient or materials contaminated during patient care (e.g., stretcher, rails, control panels, floors, walls, work surfaces) should be thoroughly cleaned and disinfected using an EPA-registered hospital grade disinfectant in accordance with the product label.

- Clean and disinfect reusable patient-care equipment before use on another patient, according to manufacturer's instructions.

- Follow standard operating procedures for the containment and disposal of used PPE and regulated medical waste.

- Follow standard operating procedures for containing and laundering used linen. Avoid shaking the linen.

Follow-up and/or Reporting Measures by EMS Clinicians After Caring for a PUI or Patient with Confirmed COVID-19

EMS clinicians should be aware of the follow-up and/or reporting measures they should take after caring for a PUI or patient with confirmed COVID-19:

- State or local public health authorities should be notified about the patient so appropriate follow-up monitoring can occur.
- EMS agencies should develop policies for assessing exposure risk and management of EMS personnel potentially exposed to SARS-CoV-2 in coordination with state or local public health authorities. Decisions for monitoring, excluding from work, or other public health actions for HCP with potential exposure to SARS-CoV-2 should be made in consultation with state or local public health authorities. Refer to the Interim U.S. Guidance for Risk Assessment and Public Health Management of Healthcare Personnel with Potential Exposure in a Healthcare Setting to Patients with Coronavirus Disease 2019 (COVID-19) for additional information.
- EMS agencies should develop sick-leave policies for EMS personnel that are nonpunitive, flexible, and consistent with public health guidance. Ensure all EMS personnel, including staff who are not directly employed by the healthcare facility but provide essential daily services, are aware of the sick-leave policies.
- EMS personnel who have been exposed to a patient with suspected or confirmed COVID-19 should notify their chain of command to ensure appropriate follow-up.
  - Any unprotected exposure (e.g., not wearing recommended PPE) should be reported to occupational health services, a supervisor, or a designated infection control officer for evaluation.
  - EMS clinicians should be alert for fever or respiratory symptoms (e.g., cough, shortness of breath, sore throat). If symptoms develop, they should self-isolate and notify occupational health services and/or their public health authority to arrange for appropriate evaluation.

EMS Employer Responsibilities

The responsibilities described in this section are not specific for the care and transport of PUIs or patients with confirmed COVID-19. However, this interim guidance presents an opportunity to assess current practices and verify that training and procedures are up-to-date.

- EMS units should have infection control policies and procedures in place, including describing a recommended sequence for safely donning and doffing PPE.
- Provide all EMS clinicians with job- or task-specific education and training on preventing transmission of infectious agents, including refresher training.
- Ensure that EMS clinicians are educated, trained, and have practiced the appropriate use of PPE prior to caring for a patient, including attention to correct use of PPE and prevention of contamination of clothing, skin, and environment during the process of removing such equipment.
- Ensure EMS clinicians are medically cleared, trained, and fit tested for respiratory protection device use (e.g., N95 filtering facepiece respirators), or medically cleared and trained in the use of an alternative respiratory protection device (e.g., Powered Air-Purifying Respirator, PAPR) whenever respirators are required. OSHA has a number of respiratory training videos.
- EMS units should have an adequate supply of PPE.
- Ensure an adequate supply of or access to EPA-registered hospital grade disinfectants (see above for more information) for adequate decontamination of EMS transport vehicles and their contents.
- Ensure that EMS clinicians and biohazard cleaners contracted by the EMS employer tasked to the decontamination process are educated, trained, and have practiced the process according to the manufacturer's recommendations or the EMS agency's standard operating procedures.

Additional Resources

The EMS Infectious Disease Playbook, published by the Office of the Assistant Secretary for Preparedness and Response's Technical Resources, Assistance Center, Information Exchange (TRACIE) is a resource available to planners at https://www.ems.gov/pdf/ASPR-EMS-Infectious-Disease-Playbook-June-2017.pdf.

Strategies to Optimize the Supply of PPE and Equipment (in part, full resource available as noted)[1]

Strategies for Optimizing the Supply of Eye Protection (March 17, 2020)

Audience: These considerations are intended for use by federal, state, and local public health officials; leaders in occupational health services and infection prevention and control programs; and other leaders in healthcare settings who are responsible for developing and implementing policies and procedures for preventing pathogen transmission in healthcare settings.

Purpose: This document offers a series of strategies or options to optimize supplies of eye protection in healthcare settings when there is limited supply. It does not address other aspects of pandemic planning; for those, healthcare facilities can refer to COVID-19 preparedness plans.

Surge capacity refers to the ability to manage a sudden, unexpected increase in patient volume that would otherwise severely challenge or exceed the present capacity of a facility. While there are no commonly accepted measurements or triggers to distinguish surge capacity from daily patient care capacity, surge capacity is a useful framework to approach a decreased supply of eye protection during the COVID-19 response. Three general strata have been used to describe surge capacity and can be used to prioritize measures to conserve eye protection supplies along the continuum of care.

- Conventional capacity: measures consist of providing patient care without any change in daily contemporary practices. This set of measures, consisting of engineering, administrative, and personal protective equipment (PPE) controls should already be implemented in general infection prevention and control plans in healthcare settings.
- Contingency capacity: measures may change daily standard practices but may not have any significant impact on the care delivered to the patient or the safety of healthcare personnel (HCP). These practices may be used temporarily during periods of expected eye protection shortages.
- Crisis capacity: strategies that are not commensurate with U.S. standards of care. These measures, or a combination of these measures, may need to be considered during periods of known eye protection shortages.

The following contingency and crisis strategies are based upon these assumptions:

1. Facilities understand their eye protection inventory and supply chain
2. Facilities understand their eye protection utilization rate
3. Facilities are in communication with local healthcare coalitions, federal, state, and local public health partners (e.g., public health emergency preparedness and response staff) regarding identification of additional supplies
4. Facilities have already implemented other engineering and administrative control measures including:
   - Reducing the number of patients going to the hospital or outpatient settings
   - Excluding HCP not essential for patient care from entering their care area
   - Reducing face-to-face HCP encounters with patients
   - Excluding visitors to patients with confirmed or suspected COVID-19
   - Cohorting patients and HCP
   - Maximizing use of telemedicine
5. Facilities have provided HCP with required education and training, including having them demonstrate competency with donning and doffing, with any PPE ensemble that is used to perform job responsibilities, such as provision of patient care

Conventional Capacity Strategies

Use eye protection according to product labeling and local, state, and federal requirements.

Contingency Capacity Strategies

Selectively cancel elective and non-urgent procedures and appointments for which eye protection is typically used by HCP.

Shift eye protection supplies from disposable to re-usable devices (i.e., goggles and reusable face shields).

- Consider preferential use of powered air purifying respirators (PAPRs) or full-face elastomeric respirators which have built-in eye protection.
- Ensure appropriate cleaning and disinfection between users if goggles or reusable face shields are used.

Implement extended use of eye protection.

Extended use of eye protection is the practice of wearing the same eye protection for repeated close contact encounters with several different patients, without removing eye protection between patient encounters. Extended use of eye protection can be applied to disposable and reusable devices.

- Eye protection should be removed and reprocessed if it becomes visibly soiled or difficult to see through.
  - If a disposable face shield is reprocessed, it should be dedicated to one HCP and reprocessed

[1] United States Department of Health and Human Services, Centers for Disease Control and Prevention. (2020). Strategies to Optimize the Supply of PPE and Equipment. Retrieved from https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/index.html

whenever it is visibly soiled or removed (e.g., when leaving the isolation area) prior to putting it back on. See protocol for removing and reprocessing eye protection below.

- Eye protection should be discarded if damaged (e.g., face shield can no longer fasten securely to the provider, if visibility is obscured and reprocessing does not restore visibility).
- HCP should take care not to touch their eye protection. If they touch or adjust their eye protection they must immediately perform hand hygiene.
- HCP should leave patient care area if they need to remove their eye protection. See protocol for removing and reprocessing eye protection below.

Crisis Capacity Strategies

Cancel all elective and non-urgent procedures and appointments for which eye protection is typically used by HCP.

Use eye protection devices beyond the manufacturer-designated shelf life during patient care activities.

If there is no date available on the eye protection device label or packaging, facilities should contact the manufacturer. The user should visually inspect the product prior to use and, if there are concerns (such as degraded materials), discard the product.

Prioritize eye protection for selected activities such as:

- During care activities where splashes and sprays are anticipated, which typically includes aerosol generating procedures.
- During activities where prolonged face-to-face or close contact with a potentially infectious patient is unavoidable.

Consider using safety glasses (e.g., trauma glasses) that have extensions to cover the side of the eyes.

Exclude HCP at higher risk for severe illness from COVID-19 from contact with known or suspected COVID-19 patients.

- During severe resource limitations, consider excluding HCP who may be at higher risk for severe illness from COVID-19, such as those of older age, those with chronic medical conditions, or those who may be pregnant, from caring for patients with confirmed or suspected COVID-19 infection.

Designate convalescent HCP for provision of care to known or suspected COVID-19 patients.

- It may be possible to designate HCP who have clinically recovered from COVID-19 to preferentially provide care for additional patients with COVID-19. Individuals who have recovered from COVID-19 infection may have developed some protective immunity, but this has not yet been confirmed.

Selected Options for Reprocessing Eye Protection

Adhere to recommended manufacturer instructions for cleaning and disinfection.

When manufacturer instructions for cleaning and disinfection are unavailable, such as for single use disposable face shields, consider:

1. While wearing gloves, carefully wipe the inside, followed by the outside of the face shield or goggles using a clean cloth saturated with neutral detergent solution or cleaner wipe.
2. Carefully wipe the outside of the face shield or goggles using a wipe or clean cloth saturated with EPA-registered hospital disinfectant solution.
3. Wipe the outside of face shield or goggles with clean water or alcohol to remove residue.
4. Fully dry (air dry or use clean absorbent towels).
5. Remove gloves and perform hand hygiene.

Strategies for Optimizing the Supply of Isolation Gowns (March 17, 2020)

Audience: These considerations are intended for use by federal, state, and local public health officials; leaders in occupational health services and infection prevention and control programs; and other leaders in healthcare settings who are responsible for developing and implementing policies and procedures for preventing pathogen transmission in healthcare settings.

Purpose: This document offers a series of strategies or options to optimize supplies of isolation gowns in healthcare settings when there is limited supply. It does not address other aspects of pandemic planning; for those, healthcare facilities can refer to COVID-19 preparedness plans.

Surge capacity refers to the ability to manage a sudden, unexpected increase in patient volume that would otherwise severely challenge or exceed the present capacity of a facility. While there are no widely accepted measurements or triggers to distinguish surge capacity from daily patient care capacity, surge capacity is a useful framework to approach a decreased supply of isolation gowns during the COVID-19 response. Three general strata have been used to describe surge capacity and can be used to prioritize measures to conserve isolation gown supplies along the continuum of care.

- Conventional capacity: measures consist of providing patient care without any change in daily contemporary practices. This set of measures, consisting of engineering, administrative, and personal protective equipment (PPE) controls should already be implemented in general infection prevention and control plans in healthcare settings.
- Contingency capacity: measures may change daily standard practices but may not have any significant impact on the care delivered to the patient or the safety

of healthcare personnel (HCP). These practices may be used temporarily during periods of expected isolation gown shortages.

- Crisis capacity: strategies that are not commensurate with standard U.S. standards of care. These measures, or a combination of these measures, may need to be considered during periods of known isolation gown shortages.

The following contingency and crisis strategies are based upon these assumptions:

1. Facilities understand their current isolation gown inventory and supply chain
2. Facilities understand their isolation gown utilization rate
3. Facilities are in communication with local healthcare coalitions, federal, state, and local public health partners (e.g., public health emergency preparedness and response staff) regarding identification of additional supplies
4. Facilities have already implemented other engineering and administrative control measures including:
   a) Reducing the number of patients going to the hospital or outpatient settings
   b) Excluding HCP not directly involved in patient care
   c) Reducing face-to-face HCP encounters with patients
   d) Excluding visitors to patients with confirmed or suspected COVID-19
   e) Cohorting patients and HCP
   f) Maximizing use of telemedicine
5. Facilities have provided HCP with required education and training, including having them demonstrate competency with donning and doffing, with any PPE ensemble that is used to perform job responsibilities, such as provision of patient care

Conventional Capacity Strategies

Use isolation gown alternatives that offer equivalent or higher protection.

Several fluid-resistant and impermeable protective clothing options are available in the marketplace for HCP. These include isolation gowns and surgical gowns. When selecting the most appropriate protective clothing, employers should consider all of the available information on recommended protective clothing, including the potential limitations. Nonsterile, disposable patient isolation gowns, which are used for routine patient care in healthcare settings, are appropriate for use by HCP when caring for patients with suspected or confirmed COVID-19. In times of gown shortages, surgical gowns should be prioritized for surgical and other sterile procedures. Current U.S. guidelines do not require use of gowns that conform to any standards.

Contingency Capacity Strategies

Selectively cancel elective and non-urgent procedures and appointments for which a gown is typically used by HCP.

Shift gown use towards cloth isolation gowns.

Reusable (i.e., washable) gowns are typically made of polyester or polyester-cotton fabrics. Gowns made of these fabrics can be safely laundered according to routine procedures and reused. Care should be taken to ensure that HCP do not touch outer surfaces of the gown during care.

- Laundry operations and personnel may need to be augmented to facilitate additional washing loads and cycles
- Systems are established to routinely inspect, maintain (e.g., mend a small hole in a gown, replace missing fastening ties), and replace reusable gowns when needed (e.g., when they are thin or ripped)

Consider the use of coveralls.

Coveralls typically provide 360-degree protection because they are designed to cover the whole body, including the back and lower legs, and sometimes the head and feet as well. While the material and seam barrier properties are essential for defining the protective level, the coverage provided by the material used in the garment design, as well as certain features including closures, will greatly affect the protective level. HCP unfamiliar with the use of coveralls must be trained and practiced in their use, prior to using during patient care.

In the United States, the NFPA 1999 standard specifies the minimum design, performance, testing, documentation, and certification requirements for new single-use and new multiple-use emergency medical operations protective clothing, including coveralls for HCP.

Use of expired gowns beyond the manufacturer-designated shelf life for training.

The majority of isolation gowns do not have a manufacturer-designated shelf life. However, consideration can be made to using gowns that do and are past their manufacturer-designated shelf life. If there is no date available on the gown label or packaging, facilities should contact the manufacturer.

Use gowns or coveralls conforming to international standards.

Current guidelines do not require use of gowns that conform to any standards. In times of shortages, healthcare facilities can consider using international gowns and coveralls. Gowns and coveralls that conform to international standards, including with EN 13795 and EN14126, could be reserved for activities that may involve moderate to high amounts of body fluids.

Crisis Capacity Strategies

Cancel all elective and non-urgent procedures and appointments for which a gown is typically used by HCP.

Extended use of isolation gowns.

Consideration can be made to extend the use of isolation gowns (disposable or cloth) such that the same gown is worn by the same HCP when interacting with more than one patient known to be infected with the same infectious disease when these patients housed in the same location (i.e., COVID-19 patients residing in an isolation cohort). This can be considered only if there are no additional co-infectious diagnoses transmitted by contact (such as Clostridioides difficile) among patients. If the gown becomes visibly soiled, it must be removed and discarded as per usual practices.

Re-use of cloth isolation gowns.

Disposable gowns are not typically amenable to being doffed and re-used because the ties and fasteners typically break during doffing. Cloth isolation gowns could potentially be untied and retied and could be considered for re-use without laundering in between.

In a situation where the gown is being used as part of standard precautions to protect HCP from a splash, the risk of re-using a non-visibly soiled cloth isolation gown may be lower. However, for care of patients with suspected or confirmed COVID-19, HCP risk from re-use of cloth isolation gowns without laundering among (1) single HCP caring for multiple patients using one gown or (2) among multiple HCP sharing one gown is unclear. The goal of this strategy is to minimize exposures to HCP and not necessarily prevent transmission between patients. Any gown that becomes visibly soiled during patient care should be disposed of and cleaned.

Prioritize gowns.

Gowns should be prioritized for the following activities:

- During care activities where splashes and sprays are anticipated, which typically includes aerosol generating procedures
- During the following high-contact patient care activities that provide opportunities for transfer of pathogens to the hands and clothing of healthcare providers, such as:
  - Dressing, bathing/showering, transferring, providing hygiene, changing linens, changing briefs or assisting with toileting, device care or use, wound care

Surgical gowns should be prioritized for surgical and other sterile procedures. Facilities may consider suspending use of gowns for endemic multidrug resistant organisms (e.g., MRSA, VRE, ESBL-producing organisms).

When No Gowns Are Available

Consider using gown alternatives that have not been evaluated as effective.

In situation of severely limited or no available isolation gowns, the following pieces of clothing can be considered as a last resort for care of COVID-19 patients as single use. However, none of these options can be considered PPE, since their capability to protect HCP is unknown. Preferable features include long sleeves and closures (snaps, buttons) that can be fastened and secured.

- Disposable laboratory coats
- Reusable (washable) patient gowns
- Reusable (washable) laboratory coats
- Disposable aprons
- Combinations of clothing: Combinations of pieces of clothing can be considered for activities that may involve body fluids and when there are no gowns available:
  - Long sleeve aprons in combination with long sleeve patient gowns or laboratory coats
  - Open back gowns with long sleeve patient gowns or laboratory coats
  - Sleeve covers in combination with aprons and long sleeve patient gowns or laboratory coats

Reusable patient gowns and lab coats can be safely laundered according to routine procedures.

- Laundry operations and personnel may need to be augmented to facilitate additional washing loads and cycles
- Systems are established to routinely inspect, maintain (e.g., mend a small hole in a gown, replace missing fastening ties) and replace reusable gowns when needed (e.g., when they are thin or ripped)

Strategies for Optimizing the Supply of Facemasks

Audience: These considerations are intended for use by federal, state, and local public health officials; leaders in occupational health services and infection prevention and control programs; and other leaders in healthcare settings who are responsible for developing and implementing policies and procedures for preventing pathogen transmission in healthcare settings.

Purpose: This document offers a series of strategies or options to optimize supplies of facemasks in healthcare settings when there is limited supply. It does not address other aspects of pandemic planning; for those, healthcare facilities can refer to COVID-19 preparedness plans.

Surge capacity refers to the ability to manage a sudden, unexpected increase in patient volume that would otherwise severely challenge or exceed the present capacity of a facility. While there are no commonly accepted measurements or triggers to distinguish surge capacity from daily patient care capacity, surge capacity is a useful framework to approach a decreased supply of facemasks during the COVID-19 response. Three general strata have been used to describe surge capacity and can be used to

prioritize measures to conserve facemask supplies along the continuum of care.

- Conventional capacity: measures consist of providing patient care without any change in daily contemporary practices. This set of measures, consisting of engineering, administrative, and personal protective equipment (PPE) controls should already be implemented in general infection prevention and control plans in healthcare settings.
- Contingency capacity: measures may change daily standard practices but may not have any significant impact on the care delivered to the patient or the safety of healthcare personnel (HCP). These practices may be used temporarily during periods of expected facemask shortages.
- Crisis capacity: strategies that are not commensurate with U.S. standards of care. These measures, or a combination of these measures, may need to be considered during periods of known facemask shortages.

The following contingency and crisis strategies are based upon these assumptions:

1. Facilities understand their facemask inventory and supply chain
2. Facilities understand their facemask utilization rate
3. Facilities are in communication with local healthcare coalitions, federal, state, and local public health partners (e.g., public health emergency preparedness and response staff) regarding identification of additional supplies.
4. Facilities have already implemented other engineering and administrative control measures including:
   - Reducing the number of patients going to the hospital or outpatient settings
   - Excluding HCP not essential for patient care from entering their care area
   - Reducing face-to-face HCP encounters with patients
   - Excluding visitors to patients with confirmed or suspected COVID-19
   - Cohorting patients and HCP
   - Maximizing use of telemedicine
5. Facilities have provided HCP with required education and training, including having them demonstrate competency with donning and doffing, with any PPE ensemble that is used to perform job responsibilities, such as provision of patient care

<u>Conventional Capacity Strategies</u>

Use facemasks according to product labeling and local, state, and federal requirements.

- FDA-cleared surgical masks are designed to protect against splashes and sprays and are prioritized for use when such exposures are anticipated, including surgical procedures.
- Facemasks that are not regulated by FDA, such as some procedure masks, which are typically used for isolation purposes, may not provide protection against splashes and sprays.

<u>Contingency Capacity Strategies</u>

Selectively cancel elective and non-urgent procedures and appointments for which a facemask is typically used by HCP.

Remove facemasks for visitors in public areas.

Healthcare facilities can consider removing all facemasks from public areas. Facemasks can be available to provide to symptomatic patients upon check in at entry points. All facemasks should be placed in a secure and monitored site. This is especially important in high-traffic areas like emergency departments.

Implement extended use of facemasks.

Extended use of facemasks is the practice of wearing the same facemask for repeated close contact encounters with several different patients, without removing the facemask between patient encounters.

- The facemask should be removed and discarded if soiled, damaged, or hard to breathe through.
- HCP must take care not to touch their facemask. If they touch or adjust their facemask they must immediately perform hand hygiene.
- HCP should leave the patient care area if they need to remove the facemask.

Restrict facemasks to use by HCP, rather than patients for source control.

Have patients with symptoms of respiratory infection use tissues or other barriers to cover their mouth and nose.

<u>Crisis Capacity Strategies</u>

Cancel all elective and non-urgent procedures and appointments for which a facemask is typically used by HCP.

Use facemasks beyond the manufacturer-designated shelf life during patient care activities.

If there is no date available on the facemask label or packaging, facilities should contact the manufacturer. The user should visually inspect the product prior to use and, if there are concerns (such as degraded materials or visible tears), discard the product.

Implement limited re-use of facemasks.

Limited re-use of facemasks is the practice of using the same facemask by one HCP for multiple encounters with different patients but removing it after each encounter. As it is unknown what the potential contribution of contact transmission is for SARS-CoV-2, care should be taken to ensure that HCP do not touch outer surfaces of the mask

during care, and that mask removal and replacement be done in a careful and deliberate manner.

- The facemask should be removed and discarded if soiled, damaged, or hard to breathe through.
- Not all facemasks can be re-used.
  - Facemasks that fasten to the provider via ties may not be able to be undone without tearing and should be considered only for extended use, rather than re-use.
  - Facemasks with elastic ear hooks may be more suitable for re-use.
- HCP should leave patient care area if they need to remove the facemask. Facemasks should be carefully folded so that the outer surface is held inward and against itself to reduce contact with the outer surface during storage. The folded mask can be stored between uses in a clean sealable paper bag or breathable container.

Prioritize facemasks for selected activities such as:

- For provision of essential surgeries and procedures
- During care activities where splashes and sprays are anticipated
- During activities where prolonged face-to-face or close contact with a potentially infectious patient is unavoidable
- For performing aerosol generating procedures, if respirators are no longer available

When No Facemasks Are Available, Options Include

Exclude HCP at higher risk for severe illness from COVID-19 from contact with known or suspected COVID-19 patients.

During severe resource limitations, consider excluding HCP who may be at higher risk for severe illness from COVID-19, such as those of older age, those with chronic medical conditions, or those who may be pregnant, from caring for patients with confirmed or suspected COVID-19 infection.

Designate convalescent HCP for provision of care to known or suspected COVID-19 patients.

It may be possible to designate HCP who have clinically recovered from COVID-19 to preferentially provide care for additional patients with COVID-19. Individuals who have recovered from COVID-19 infection may have developed some protective immunity, but this has not yet been confirmed.

Use a face shield that covers the entire front (that extends to the chin or below) and sides of the face with no facemask.

Consider use of expedient patient isolation rooms for risk reduction.

Portable fan devices with high-efficiency particulate air (HEPA) filtration that are carefully placed can increase the effective air changes per hour of clean air to the patient room, reducing risk to individuals entering the room without respiratory protection. NIOSH has developed guidance for using portable HEPA filtration systems to create expedient patient isolation rooms. The expedient patient isolation room approach involves establishing a high-ventilation-rate, negative pressure, inner isolation zone that sits within a “clean” larger ventilated zone.

Consider use of ventilated headboards

NIOSH has developed the ventilated headboard that draws exhaled air from a patient in bed into a HEPA filter, decreasing risk of HCP exposure to patient-generated aerosol. This technology consists of lightweight, sturdy, and adjustable aluminum framing with a retractable plastic canopy. The ventilated headboard can be deployed in combination with HEPA fan/filter units to provide surge isolation capacity within a variety of environments, from traditional patient rooms to triage stations, and emergency medical shelters.

HCP use of homemade masks:

In settings where facemasks are not available, HCP might use homemade masks (e.g., bandana, scarf) for care of patients with COVID-19 as a last resort. However, homemade masks are not considered PPE, since their capability to protect HCP is unknown. Caution should be exercised when considering this option. Homemade masks should ideally be used in combination with a face shield that covers the entire front (that extends to the chin or below) and sides of the face.

Strategies for Optimizing the Supply of N95 Respirators (February 29, 2020)

Audience: These considerations are intended for use by federal, state, and local public health officials, respiratory protection program managers, occupational health service leaders, infection prevention and control program leaders, and other leaders in healthcare settings who are responsible for developing and implementing policies and procedures for preventing pathogen transmission in healthcare settings.

Purpose: This document offers a series of strategies or options to optimize supplies of disposable N95 filtering facepiece respirators (commonly called “N95 respirators”) in healthcare settings when there is limited supply. It does not address other aspects of pandemic planning; for those, healthcare settings can refer to existing influenza preparedness plans to address other aspects of preparing to respond to novel coronavirus disease 2019 (COVID-19). The strategies are also listed in order of priority and preference in the Checklist for Healthcare Facilities: Strategies for Optimizing the Supply of N95 Respirators during the COVID-19 Response in an easy-to-use format for healthcare facilities.

The following strategies are based upon these assumptions: 1) facilities understand their current N95 respirator inventory and supply chain, 2) facilities understand their N95 respirators utilization rate, and 3) facilities are in communication with state and local public health partners (e.g., public health emergency preparedness and response staff) and healthcare coalitions. While these strategies are targeted for optimizing the supply of N95 respirators, some of these strategies may be applicable to optimizing the supply of other personal protective equipment such as gowns, gloves, and eye protection.

Controlling exposures to occupational hazards is a fundamental way to protect personnel. Conventionally, a hierarchy has been used to achieve feasible and effective controls. Multiple control strategies can be implemented concurrently and or sequentially. This hierarchy can be represented as follows:

- Elimination
- Substitution
- Engineering controls
- Administrative controls
- Personal protective equipment (PPE)

To prevent infectious disease transmission, elimination (physically removing the hazard) and substitution (replacing the hazard) are not typically options for the healthcare setting. However, exposures to transmissible respiratory pathogens in healthcare facilities can often be reduced or possibly avoided through engineering and administrative controls and PPE. Prompt detection and effective triage and isolation of potentially infectious patients are essential to prevent unnecessary exposures among patients, healthcare personnel (HCP), and visitors at the facility.

N95 respirators are the PPE most often used to control exposures to infections transmitted via the airborne route, though their effectiveness is highly dependent upon proper fit and use. The optimal way to prevent airborne transmission is to use a combination of interventions from across the hierarchy of controls, not just PPE alone. Applying a combination of controls can provide an additional degree of protection, even if one intervention fails or is not available.

Respirators, when required to protect HCP from airborne contaminants such as infectious agents, must be used in the context of a comprehensive, written respiratory protection program that meets the requirements of OSHA's Respiratory Protection standard. The program should include medical evaluations, training, and fit testing.

Surge capacity refers to the ability to manage a sudden, unexpected increase in patient volume that would otherwise severely challenge or exceed the present capacity of a facility. While there are no commonly accepted measurements or triggers to distinguish surge capacity from daily patient care capacity, surge capacity is a useful framework to approach a decreased supply of N95 respirators during the COVID-19 response. Three general strata have been used to describe surge capacity and can be used to prioritize measures to conserve N95 respirator supplies along the continuum of care.

- Conventional capacity: measures consist of providing patient care without any change in daily contemporary practices. This set of measures, consisting of engineering, administrative, and PPE controls should already be implemented in general infection prevention and control plans in healthcare settings.
- Contingency capacity: measures may change daily contemporary practices but may not have any significant impact on the care delivered to the patient or the safety of the HCP. These practices may be used temporarily when demands exceed resources.
- Crisis capacity: alternate strategies that are not commensurate with contemporary U.S. standards of care. These measures, or a combination of these measures, may need to be considered during periods of expected or known N95 respirator shortages.

Decisions to implement measures in contingency capacity and then crisis capacity should be based on:

- Consideration of all conventional capacity strategies first.
- The availability of N95 respirators and other types of respiratory protection.
- Consultation with entities that include some combination of: local healthcare coalitions, federal, state, or local public health officials, appropriate state agencies that are managing the overall emergency response related to COVID-19, and state crisis standards of care committees. Even when state/local coalitions or public health authorities can shift resources between health care facilities, these strategies may still be necessary.