OKALOOSA COUNTY EMS

ALS/BLS PROTOCOLS

Version 05.01.2025

Patrick Maddox, Public Safety Director

Darrel Welborn, EMS Chief

Dr. Christopher Tanner, Medical Director

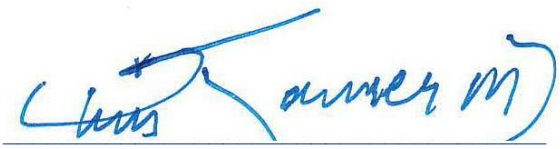
Dr. Todd Bell, Medical Director

Back to Table of Contents

EMS Protocol Medical Director Signature Form

The attached Emergency Medical Protocols are the official Basic and Advanced Life Support Protocols for the Okaloosa County Department of Public Safety and are approved for use by the EMT's and Paramedics of Okaloosa County, to care for the sick and injured.

Reviewed and Approved:



Christopher Tanner, MD

Date: May 1st, 2025

Todd Bell, MD

Date: May 1st, 2025

Back to Table of Contents

TABLE OF CONTENTS

Back to Table of Contents

Back to Table of Contents

COMMUNITY PARAMEDICINE PROTOCOLS

CRITICAL CARE

APPENDICES

Back to Table of Contents

GENERAL INFORMATION

Statement of Purpose

The intention of protocols in a pre-hospital health care delivery system is to facilitate the rapid dispersal of adequate and acceptable measures aimed at stabilizing the sick and injured. These procedures are written to better define the responsibilities of Okaloosa County Paramedics and EMTs, to decrease the chance of confusion at any emergency scene, and to ensure a coordinated and efficient procedure for treatment and transport of patients to a designated medical facility. These protocols are to be followed as closely as possible on each and every patient encountered by all Paramedics and EMT's when hospital medical direction is not readily available or impractical based on patient condition. If a Paramedic or EMT encounters a medical or trauma situation not specifically covered by these protocols, the Paramedic should follow the standard of care as outlined in the 1998 United States Department of Transportation Paramedic/EMT curriculum and the current AHA ECC Guidelines. Off-duty Okaloosa County Paramedics and EMTs, governed by the Okaloosa County EMS Medical Director(s), may render care as outlined in these protocols within the geographical boundaries of Okaloosa County unless the paramedic/EMT has responded as a representative for an outside First Responder Fire Department or US Military Firefighter.

At times, Okaloosa County paramedics and EMTs are required to respond to scenes in counties other than Okaloosa, including disaster aid responses as required by state or federal agencies and mutual aid responses. Okaloosa County paramedics and EMTs are authorized by the Okaloosa County EMS Medical Director(s) to perform within the scope of the Okaloosa County Standing Orders under these circumstances. This policy applies only to Okaloosa County paramedics and EMTs who are on duty and working for an Okaloosa County EMS agency at the time of the incident.

Authorization

These Protocols have been developed and circulated for use by Okaloosa County EMS Paramedics and EMTs in the pre-hospital emergency care of the sick and injured under authority granted in Chapter 401 Florida Statutes and 64J Florida Administrative Code. Changes to these protocols can only be made and promulgated by the Okaloosa County Medical Director(s). Certified Paramedics approved by the Okaloosa County Medical Director(s) are the only personnel authorized to perform ALS procedures called for in these protocols, except as authorized by the Okaloosa County Medical Director(s).

In order for a State Certified Paramedic or EMT to function within the confines of Okaloosa County, he/she shall comply with the following:

1. Must complete all requirements of the field training program under the objectives type-training program.
2. Shall maintain a current AHA BLS for Health Care Providers card or its equivalent, as approved by Florida Administrative Code CH. 64J.
3. EMT's shall maintain a current EMT certification issued by the Florida Department of Health, Bureau of Emergency Medical Services.
4. Paramedics shall maintain a current Paramedic certification issued by the Florida Department of Health, Bureau of Emergency Medical Services.
5. Paramedics shall maintain a current AHA ACLS card or its equivalent, as approved by Florida Administrative Code CH. 64J.

Back to Table of Contents

If any of the above regulations are not complied with in full, the paramedic or EMT shall not practice under the auspices of the Okaloosa County EMS Medical Director(s).

These protocols are to be used by all levels of certification. However, at no time do these guidelines give any healthcare practitioner permission to perform skills or administer medications outside the scope of practice for his/her designated provider level unless specifically stated in the protocol and granted authorization by the Medical Director(s) and the Florida Department of Health, Bureau of Emergency Medical Services.

System Overview

The paramedic's and EMT's safety along with the patient's care must remain the most important priority. Teamwork, cooperation, and communication are desired and considered essential to our goals. Okaloosa County EMS shall be responsible for primary response of BLS and/or ALS transport units. EMS personnel shall assume immediate control and initiate an EMS command system as deemed appropriate and as specified in the OCEMS Standard Operating Procedure 429.00.

If hazardous conditions exist, the Incident Commander shall take immediate steps to control the hazard and protect the patient(s), Fire Department, and non-Fire Department personnel as deemed appropriate.

In mass casualty or mutual aid situations, Okaloosa County Paramedics or EMTs may elect to turn patients over to other agencies. The Paramedic or EMT shall provide the transporting agency with all necessary and available information in a timely manner regarding the patient's condition and treatment rendered.

Upon completion of this interaction, the Paramedic or EMT crews will give any assistance necessary to the transport agency to assure continuity of care; quick, safe, proper loading; and transport to the designated medical facility.

Guidelines for Treatment

The following general measures shall be applied to help promote speed and efficiency when rendering emergency medical care to the sick and injured. These protocols constitute guidelines for treatment and may be altered at the discretion of the supervising hospital physician, providing those revisions are within the standard practice of emergency care.

These protocols are not intended to be a manual on the treatment of all medical emergencies or an instruction manual. The orders and protocols include instructions for certain procedures characteristic to field treatment and especially those instances where special care must be exercised. In no way is this manual meant to interfere with specific procedures ordered by an Emergency Department Physician. The foundation of the protocols is supported by current guidelines presented in the following disciplines; AHA, ITLS, PHTLS, NRP. In cases where the application of a protocol is unclear, contact medical control for instructions.

Lesser invasive procedures should be attempted prior to higher invasive whenever possible. This includes, but is not limited to, attempting IVs prior to IO access.

OCEMS is authorized to utilize other fluids in cases of shortage or other exceptions as approved by Okaloosa County Department of Public Safety, Emergency Medical Services Medical Director(s).

Back to Table of Contents

The following fluids are authorized for use as a substitute for Normal Saline Intravenous administration:

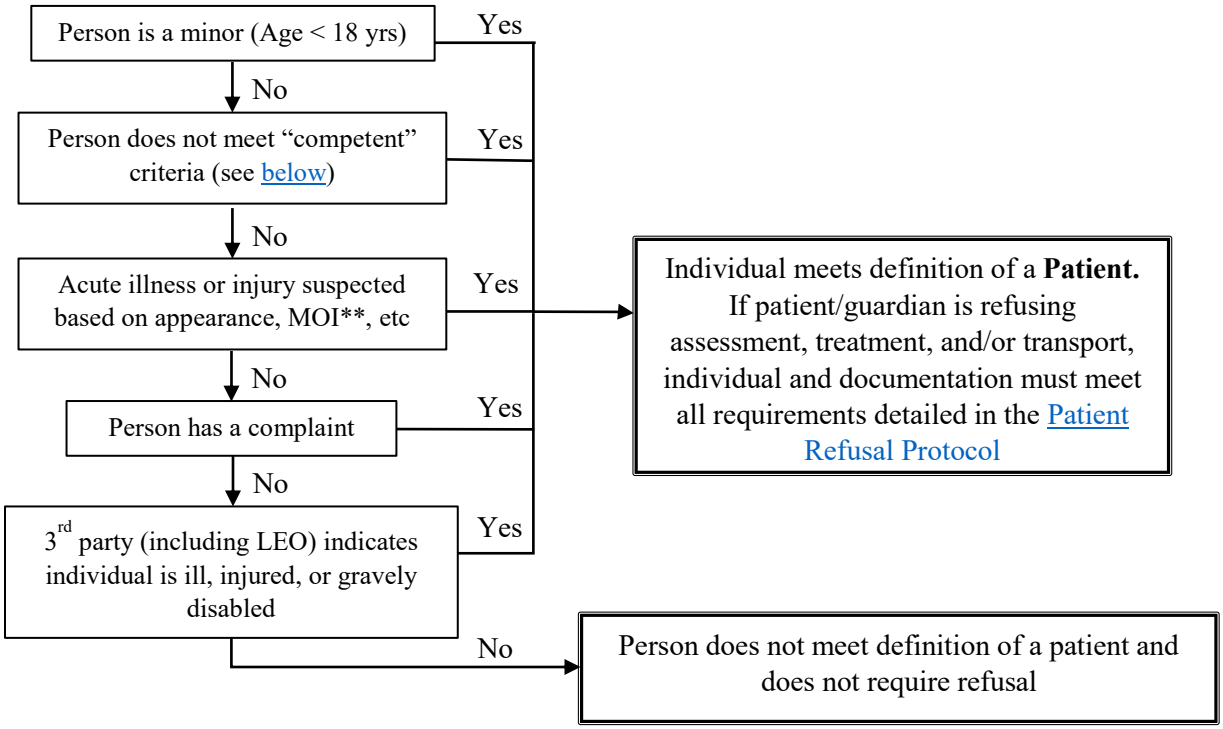
- Lactated Ringers
- D5 / 0.45% Normal Saline
- D5W
- 0.45% Normal Saline (Half Normal Saline)

All fluids may remain on manufactured fluid warmers for a total of 14 days. The outer wrapper shall remain on the fluids when placed on the warmer. A 14-day removal date shall be written on the outer wrapper when the fluid is placed on the warmer. After 14 days, the fluids shall be removed from the warmer and may be used as room temperature fluids until the manufacturer expiration date.

"Patient" or "No Patient" Determination Guidelines

This guideline is intended to refer to individual patient contacts. In the event of a multiple party incident, such as a multi-vehicle collision, it is expected that a reasonable effort will be made to identify those parties with acute illness or injuries. Adult patients indicating that they do not wish assistance for themselves or dependent minors in such a multiple party incident do not necessarily require documentation as patients.

No protocol can anticipate every scenario and providers must use best judgement. When in doubt as to whether an individual is a "patient", err on the side of caution and perform a full assessment and documentation.



**MOI examples requiring patient refusal include, but are not limited to: Rollover MVC, MVC with intrusion into the passenger compartment, MVC involving pedestrians, motorcycles, or bicycles, falls from height greater than 10 feet for adults.

Back to Table of Contents

Patient Consent and Refusals

When applicable, verbal, informed consent should be obtained prior to treatment and transport. Respect the patient's right to privacy and dignity. Courtesy, concern, and common sense will assure the patient of the best possible care.

If, due to the patient's acute or chronic medical conditions, the patient cannot provide verbal, informed consent, the patient can be treated under implied consent. Likewise, if consent cannot be obtained from a parent or legal guardian for a minor patient, the patient can be treated under implied consent.

A patient may refuse treatment and/or transport to the hospital if all of the following conditions are met:

1. The patient is competent to make the decision to refuse (see below for determining competency).
2. A clear explanation is given to the patient (and documented in the PCR) regarding the need for emergency care and transportation and the possible consequences that may develop without medical attention.
3. Efforts to encourage the patient to be transported to the hospital shall also be documented in the PCR.
4. At least two sets of vital signs are obtained and documented.
5. The name of the physician contacted (when contact is necessary per protocol) is documented.
6. For patients who were found to have diabetic symptoms that are resolved after treatment and the patient refuses to be transported, a minimum of two post treatment glucose checks that show the patient's blood glucose level within normal limits shall be obtained and documented.
7. Instructions to the patient to call 911 and seek medical attention and transport to the hospital if their condition deteriorates or if they change their mind regarding transport are documented.
8. The name of the individual signing the patient refusal, if other than the patient, is included in documentation.
9. Obtain a witness signature from a family member, friend, law enforcement officer, or a firefighter is obtained. As a last resort, a fellow EMS provider should sign as a witness on the refusal form.
10. If the patient refuses to sign the electronic EMS refusal, attempt to obtain the signature from a family member, friend, law enforcement, or fire department personnel. Document the name of the individual who signed for the patient in the patient care report narrative.

Competent Individual

The following individuals are considered competent to refuse treatment and transport:

1. Is awake, alert, and oriented to person, place, and time.
2. Understands the circumstances of the current situation.
3. Does not appear to be under the influence of alcohol, drugs, or other mind-altering substances, or circumstances that may interfere with mental function.
4. Demonstrates the understanding of the consequences of refusing medical treatment and/or transport.
5. Is not a clear danger to self or others.
6. Is 18 years of age or older, or an emancipated minor.

Minor Patient Refusing Care and Transport

A minor patient cannot refuse transport without the consent of a parent or legal guardian. If a parent or legal guardian is not present, contact may be made via telephone for permission. Document the parent or legal guardian's name in the patient care report.

Back to Table of Contents

Emancipated Minor

The following individuals are able to make refusal decisions for themselves, assuming all other requirements listed above are met:

1. A person under the age of 18 who has been granted emancipation by the court.
2. A validly married individual.

Patient Incapable of Competently Objecting to Treatment and Transport

Any patient who is incapable of competently objecting to treatment or transport shall be transported for further evaluation and treatment. Police assistance should be sought, if needed.

Patient Refusing Transport after Treatment has been Initiated

Patients may refuse further treatment or transport after treatment has been rendered. The patient must be competent to refuse (see definition above). Medical Control should be contacted (in a recorded manner) in all cases when a patient has been administered any medications (including oxygen and oral glucose) or other advanced treatment (including IV) by EMS personnel and the patient is refusing transport. Once all attempts at convincing the patient of the need for transport have failed, have the patient sign the refusal form and document appropriately.

Transporting a Patient Refusing a Specific Treatment/Procedure Required by Protocol

If a patient refuses treatment required by OCEMS protocol, the paramedic or EMT shall:

1. Explain the need for the treatment procedure and possible consequences of not allowing this treatment or procedure and document in the PCR.
2. If the patient continues to refuse the treatment or procedure, have the patient initial the treatment refusal section and sign the Refusal Form on the PCR.
3. Attempt to obtain a witness signature, if possible.

Physicians on Scene

If the patient, or patient's family, has contacted the patient's private physician, extreme tact and courtesy must be used. Your primary concern is the patient. Treatment and or transportation should not be delayed or hindered in order to speak with a private physician. If time is critical, have the family inform the physician to contact the destination hospital. No telephone orders may be taken from any physician other than the Okaloosa County Medical Director(s) or the receiving hospital's ER Physician, unless so authorized by the Okaloosa County Medical Director(s). For the patient's physician to give orders regarding treatment and or transport, the physician must be on scene and willing to accompany the patient to the hospital.

Should a physician be present at an emergency scene and wish to alter the protocols or supervise the care of a patient, he/she must provide a valid Florida Physician's License and a current ACLS certification card. The physician must be informed that he/she is taking full responsibility of the patient, must sign all medical reports, and must accompany the patient to the hospital. The receiving hospital should be notified prior to relinquishing control to the physician on scene.

Physicians who activate the 911 system for treatment of patients in their office, need not provide proof of licensure nor an ACLS card. These physicians may give orders on their patients, providing those orders do not conflict with these protocols or are otherwise not outside the standard of practice for emergency care.

Back to Table of Contents

Beach Operations

Successful resuscitation of patients in cardiac arrest or systemic compromise must be founded on the positive effects of BLS care. All resuscitation efforts made by Beach Safety and first responding Fire Departments staff should, therefore, be limited to providing good effective BLS, rapidly packaging the patient, and transport. The initial focus will be placed on BLS stabilization and transport off the beach to a staging ambulance close to the scene where effective care can be initiated. Based on the forgoing:

1. Beach responders will ensure that all patients are receiving appropriate and effective BLS care, are appropriately packaged, and are being transported to the staging area within a reasonable time after securing access to the patient.
2. ALS equipped beach responders will bring all ALS equipment to the beach. ALS equipped beach responders will initiate ALS care as indicated by the patient's condition upon arrival at the staging area where EMS transport has not yet arrived.

The Staging point for EMS units on Okaloosa Island will be established by Ocean West Tower or Okaloosa Island Fire Command. Destin Fire Command will assign staging points in Destin. EMS ambulance crews shall remain at their assigned staging areas at the beach access ways and shall not come to the scene on the beach unless otherwise requested by on scene incident command. The patient is better served, and resources are more efficiently used when the EMS ambulance crews prepare at the staging area to receive critical patients while lifeguards and fire department first responders package and transport the patient to them. EMS transport and secondary responders will prepare at the staging area for taking over patient care and transporting to the appropriate facility.

OCEMS Transport Destinations

All patients should be transported to the nearest appropriate facility, except if the patient or legal guardian insists on transport to a more distant facility, or unless specifically addressed in this protocol.

If the patient or legal guardian requests transport to a more distant facility than the closest appropriate facility, the consequences of that decision must be thoroughly explained to all parties involved. All details involved in the decision must be recorded on the Patient Care Report and the patient or guardian is to sign the Bypass Form (located in the Refusal form in the Patient Care Report signature tab).

In the event a stable patient is requesting transport outside of Okaloosa County, the on-duty Branch Commander shall be contacted for authorization, unless transport was arranged in advance (SHH-EC is considered within our catchment area).

Critically Unstable Patients

All critically unstable patients must be transported to the nearest licensed hospital with emergency room services.

Examples of Unstable patients (not all-inclusive) include: Hemodynamic instability, non-patent airway, lack of IV/IO access in the presence of severe hypotension, pericardial tamponade, tension pneumothorax not managed by needle decompression, contractions less than 3 minutes apart post rupture of amniotic membranes.

Under no circumstances should a critically unstable patient be transported to a hospital that is not the closest qualified facility on the basis of telephone orders from the patient's private physician. Should the

Back to Table of Contents

patient's physician object to the treatment and or transport arrangements made by the paramedic or EMT on scene, simply explain that you are following the protocol and refer the Physician to the Okaloosa County Medical Director(s).

STEMI Alert Patients

All patients with acute ST Elevation Myocardial Infarction (STEMI) shall be transported to the closest facility capable of percutaneous coronary intervention (PCI) within 10 minutes (North Okaloosa Medical Center, HCA Florida Fort Walton-Destin Hospital, Sacred Heart Hospital on the Emerald Coast). Transport immediately upon recognizing a STEMI.

Stroke Alert Patients

Patients meeting the "Stroke Alert" criteria as determined by the Stroke Alert Checklist shall be transported to a designated stroke hospital (North Okaloosa Medical Center, HCA Florida Twin Cities Hospital, HCA Florida Fort Walton-Destin Hospital, Destin Emergency Room, Sacred Heart Hospital-Pensacola, Baptist Hospital, HCA Florida West Hospital). Reference the Stroke Patient Destination Algorithm.

Trauma Alert Patients

Patients meeting "Trauma Alert" status as per the State of Florida Department of Health Scorecard methodology shall be transported to a State Approved Trauma Center (SATC). Refer to the OCEMS Trauma Transport Protocol.

Note: In the event that the closest Trauma Center is on BY-PASS Status, then the patient shall be transported to the next closest SATC. If the extended transport time can potentially cause harm to the patient, the patient shall be transported to an Initial Receiving Hospital.

Dive Accident/Decompression Injury Patients

All Dive Accident/Decompression Injury patients shall be transported to the closest local facility for stabilization and, if needed, transported via interfacility transfer to a hyperbaric chamber facility for definitive care.

Obstetrical (OB) Patients

All patients with an estimated gestational age greater than or equal to 20 weeks, regardless of complaint, should go to a hospital with OB care unless they meet trauma, stroke, or STEMI transport criteria.

Note: Minor falls can lead to an abruption in 6% of all cases. These patients will need monitoring in Labor and Delivery. All medical concerns will have OB concerns as well.

Psychiatric Patients

Crew and the patient's safety are paramount. All psychiatric patients transported to or from any facility should be transported on the stretcher with all stretcher straps applied to ensure the patient's safety. In the instance(s) that the facility requesting transport has more than one patient that is to be taken to the same location, the patients that are not on the stretcher shall be seated on the bench seat with the proper seatbelts applied.

Alternative Destination for Medical Detoxification

Patients meeting the below criteria can be transported to the Bridgeway Center located at 205 Shell Ave in Fort Walton Beach for outpatient medical detoxification:

1. Have a current pattern of substance abuse or dependence
2. Have used alcohol and/or substance that requires medical detoxification

Back to Table of Contents

3. Exhibits Acute intoxication or evidence of active withdrawal symptoms.
4. Must be able to participate in requiring minimum supervision
5. Not aggressive, violent, or suicidal

6. Not in acute distress and meet the following vital signs:
    a. Systolic Blood pressure less than 180 and above 90 mmHg
    b. Diastolic Blood pressure less than 110 mmHg and above 60 mmHg
    c. SpO2 greater than 92%
    d. Heart rate between 50 and 100 bpm
    e. Respiratory rate between 12 and 24 breaths per minute
    f. Blood Glucose between 70 and 150 mg/dL
    g. Normal Mentation for the patient
7. If the person has a developmental or mental disability, the disability should not be such magnitude that they cannot function with minimal supervision.
8. If the patient requires medication for a physical or mental health issue, they must bring their own medications.
9. If there are any questions of appropriateness please contact Bridgeway directly at 850-200-0344

Patients can be transported via ambulance, Bridgeway Center (contact number above), and/or law enforcement.

Interfacility Transfers

Any patient returning to a nursing home, residence, or psychiatric facility will be classified as a BLS patient. The EMT will monitor and reassess the patient every ten (10) minutes. The EMT will be responsible for notifying the paramedic or supervisor of any changes in patient stability during transport to the receiving facility.

Obstetrical (OB) Transfers:

BLS OB Transfers

An OB patient transfer will be BLS if the patient has had no history of complications with her current health or the current pregnancy. In cases when the EMT attends the patient during transport, they will monitor and reassess the patient every 10 minutes. The EMT is responsible for notifying the paramedic or supervisor of any changes while enroute to the destination facility. It is preferred that the OB patients have an IV lock in place prior to transport.

ALS OB Transfers

An OB patient will be considered ALS if:

1. Has a medicated IV fluid
2. Requires cardiac monitoring
3. Requires advanced airway
4. Greater than 2 cm of cervical dilation is documented
5. Contractions are less than every 5 minutes apart
6. Amniotic fluid is present
7. Birth is imminent

Transfers of Critical Patients from Hospitals and Outpatient Surgical Centers Located Within Facilities with Admitting Capabilities

This policy is designed to ensure sufficient information is provided to meet the personnel and equipment needs for interfacility transfer of a critical patient by Okaloosa County Emergency Medical Services

Back to Table of Contents

(OCEMS). The transferring physician/hospital is responsible for the orders to care for the patient until arrival and transfer of care at the receiving hospital. The OCEMS crew responsible for transport must be familiar with the orders covering the care of the patient during transport and must be capable of providing any care required during transport. The EMS Branch Commander and/or EMS Medical Director(s) will assist in assessing critical patient care needs and coordinating transport needs with facilities prior to patient transport. **If, after patient contact, any paramedic feels the critical nature of a patient is beyond the scope of their practice or training, he/she should notify the on-duty branch commander immediately and they should not depart the transferring hospital.**

For critical patients requiring transfer between facilities which are identified by dispatch:

Dispatch will:

1. Notify the facility requesting the patient transfer that the EMS Branch Commander will contact them to discuss patient transfer issues. Dispatch will obtain the responsible medical provider's contact information. The EMS Branch Commander may be contacted by the transferring facility at 850-585-9173 (South Branch) or 850-826-0351 (North Branch). The EMS Medical Director(s) serves as consultant to the EMS supervisor and the transferring facility. The EMS Medical Director may be contacted at 850-585-6555 (Dr Tanner) or 512-568-2955 (Dr Bell). Interfacility transport of critical patients should not occur prior to consultation with the EMS supervisor and/or Medical Director.
2. Notify the EMS Branch Commander of the request for a critical patient transfer and provide the contact information of the responsible medical provider.
3. Dispatch the closest available unit to the facility with the direction that the unit "stand by to load."

For critical patients requiring transfer between facilities which are not identified by dispatch:

1. Dispatch available unit to the facility with "customary instruction"
2. Paramedic on scene identifies the potential critical nature of the patient transfer.
3. The Paramedic will notify dispatch over the radio of the critical patient transfer.
4. The Paramedic will notify the on-duty Branch Commander of the critical patient transfer and provide relevant information regarding the transport.

The EMS Branch Commander will:

1. Review the critical patient information to determine the need for additional resources and the appropriateness for transfer by a ground OCEMS unit.
2. Make recommendations and assist with arrangements for an alternative means of transport if other than OCEMS ground transportation is required.
3. Make recommendations and ask for assistance from the transferring hospital when there is a need for additional resources from their staff or facility, which will be required during the OCEMS transport.
4. Consult with EMS Medical Director(s), if needed.
5. Ensure that the OCEMS crew transporting the patient is familiar with the equipment and orders governing the care of the patient during transport.
6. Advise dispatch that the crew is clear to conduct the transport.

The OCEMS Paramedic will:

1. Review the orders governing the care of the patient during the transfer to the receiving facility.

Back to Table of Contents

2. Ensure that the required patient care falls within the scope of practice of the paramedic and any ancillary staff that are accompanying the transport crew.
3. Be familiar with any medication and equipment that is required for transport.
4. Confirm receipt of the contact information for the medical provider that is assuming patient care at receiving facility.

Infectious Disease Protocol

At all times, paramedics and EMT's shall use standardized precautions as outlined in OCEMS SOP 303.00 including the following:

1. Gloves to prevent contact with patient's body fluid.
2. Appropriate masks and protective eyewear during procedures which are likely to generate droplets of body fluids.
3. Gowns during procedures which are likely to generate splashes of body fluids.
4. Proper disposal of sharps at the point of origin in approved containers only (No recapping of needles).
5. Proper cleaning, disinfecting, and disposing of equipment and supplies.
6. Cleansing of hands thoroughly before and after patient contact and after removal of gloves.

"Contact" is defined as blood, blood products, or body fluids coming in contact with intact skin.

"Exposure" is defined as blood, blood products, or body fluids coming in contact with non- intact skin. Examples of non-intact skin include lacerations, abrasions, puncture wounds, and needle stick injuries.

Exposures may also occur through mucous membranes such as; mouth, eyes, nose, and respiratory tract.

If personnel become exposed, follow the procedures listed in the OCEMS SOP 303.00.

These procedures include:

1. The contaminated area should be washed thoroughly with an appropriate cleaning solution as soon as possible.
2. The employee(s) who have sustained an exposure shall accompany the source patient to the hospital.
3. Advise the ER Physician that an exposure has occurred and request that the source patient be tested.
4. Advise the on-duty EMS supervisor.
5. Complete all applicable paperwork in a timely manner.

Tiered Response to 911 Calls: Patient transport by an Emergency Medical Technician in a Basic Life Support Ambulance

The following provisions apply exclusively to the entities operating under the Okaloosa County EMS Medical Protocol (Okaloosa County EMS, North Bay Fire Control District, Destin Fire Control District, Okaloosa Island Fire Control District, Fort Walton Beach Fire Department, and Ocean City – Wright Fire Control District).

Back to Table of Contents

A patient may be treated, transported, and attended by an emergency medical technician at the basic life support level of care if, upon initial assessment it is determined that the patient is:

1. conscious and alert per their baseline
2. all vital signs are stable
3. peripheral intravenous or intraosseous therapy is not required for medication administration or fluid resuscitation

A patient must be attended to by a paramedic during transport when, in the clinical judgement of the assessing healthcare provider, the patient requires continuous advanced life support monitoring and/or treatment. If a patient being transported at the basic life support level of care and attended by an emergency medical technician becomes unconscious, has a change in mental status, or becomes unstable, a paramedic will immediately be requested for intercept. The basic life support unit will not delay continuous transportation and will coordinate appropriate initial receiving facility notification and rendezvous with intercepting unit.

For a patient that has been examined at the advanced life support level by a paramedic – cardiac monitoring or other advanced life support exam – where the findings are normal or unremarkable in relation to the patient's overall clinical presentation, and the patient is otherwise determined to be stable, patient care can be turned over to an emergency medical technician for transport to the closest appropriate facility at the basic life support level of care. A patient may be attended by an emergency medical technician when, in the clinical judgement of the assessing healthcare provider, the patient does not require continuous advanced life support monitoring and/or treatment.

A critically ill or injured patient requiring immediate advanced life support transport and/or immediate paramedic care to prevent loss of life, and in the absence of an OCEMS advanced life support ambulance, may, at the discretion of the responding Fire Company Officer, be transported to the closest appropriate facility in a basic life support ambulance under the direct care of an advanced life support fire department paramedic. In any such circumstances, the Fire Department paramedic may use either the advanced life support equipment provided in the responding ambulance or the organic advanced life support equipment from the fire apparatus to conduct patient monitoring and provide care.

Communications

Medical communications are to be established via patient communication platform, radio, or telephone (via Dispatch patch) with the appropriate facility as soon as possible into the call. Contact can be made during or after the appropriate protocol has been initiated. Orders can only be given by the receiving facility's ER physician or the Okaloosa County Medical Director(s). Should one of these physician's give additional orders, the physician's name should be documented on the PCR.

Back to Table of Contents

RAPID SEQUENCE INDUCTION

Back to Table of Contents

Statement of Purpose

The intention of these RSI Protocols in a pre-hospital health care delivery system is to facilitate the rapid airway management in the critical patient. This RSI procedure shall only be utilized when other less invasive airway management techniques have failed or are impractical.

Authorization

These RSI protocols have been developed and circulated for use by Paramedics in the pre-hospital emergency care of the sick or injured, under authority granted in Chapter 401 Florida Statutes, and 64 J Florida Administrative Code.

Changes to these RSI protocols can only be made and promulgated by the Okaloosa County Medical Director(s). These protocols are to be followed as closely as possible on each and every patient who is a candidate for Rapid Sequence Induction.

Paralytic Medication Expirations

Liquid paralytic agents should be discarded 2 weeks after removal from refrigeration or anytime discoloration or particulate material is noted. The 2-week expiration date should be calculated from the day it was removed from refrigeration and handwritten onto the vial.

Indications for RSI

1. Seizure/Convulsive Disorders
2. Multi-System Trauma
3. Head Injury (GCS of 8 or less)
4. Trismus (Lock-jaw) or Clenched teeth
5. Burn Injuries to the Upper Airway

Contraindications for RSI

Absolute

1. Limited vocal cord visualization due to major facial/laryngeal trauma
2. Patients that cannot be ventilated with a BVM (or some other means) due to trauma or anatomical reasons

Relative

1. Excessive weight
2. Mallampati Class of III or IV
3. C-Spine immobilization concerns
4. Large incisors or “Buck Teeth”
5. Thyromental distance (distance from the bottom of the chin to the top of the thyroid cartilage) less than 3 finger widths

Back to Table of Contents

RSI Procedure

1. Rule out contraindications and anticipate the difficult intubation
2. Prepare intubation equipment, have back-up airway such as the supraglottic airway and cricothyrotomy equipment ready
3. Pre-oxygenate the patient with 100% O2 for at least 2 minutes
    a. NRB mask is preferred method
    b. If rate, volume, and/or effort indicate ventilation using the BVM, ensure ventilations are not forceful (causing oxygen to be forced into the stomach)
4. Monitor and record an EKG strip, SpO2, and EtCO2
5. Consider pre-medications for the following circumstances:
    a. If Bradycardia exists, administer **Atropine 1 mg IV/IO, up to 3 mg total** until heart rate raises to a normal rate
    b. If pediatric (less than 16) and Bradycardia exists, administer **Atropine 0.02 mg/kg IV/IO (up to 1.0 mg per dose; up to 3 mg total)** until heart rate raises to a normal rate
6. Administer **Ketamine 1.5 mg/kg (adult and pediatric) IV/IO** for sedation
    a. When given via IV/IO, Ketamine should be drawn up in a 10 mL syringe and diluted with NS to a full 10 mL volume. The Ketamine should then be administered over at least 1-2 minutes, to prevent laryngospasm and other adverse reactions
    b. Allow medication to take effect (approx. 2 minutes)
7. After Ketamine has taken effect, administer **Succinylcholine 1.5 mg/kg (pediatric 2.0 mg/kg) IV/IO**
8. After approx. 2 minutes and the Succinylcholine has taken effect, perform the intubation
    a. If unable to intubate after 3 total attempts, ventilate with the BVM. Then, secure the airway with a back-up device (Supraglottic Airway Device or cricothyrotomy).
    b. Paramedics can forgo intubation attempts for patients with multisystem trauma and immediately secure the airway with the Supraglottic Airway Device (unless contraindications for the Supraglottic airway device exist).
9. Confirm the airway is secured with auscultation and continuous waveform capnography
10. Secure the airway device in place with a commercial tube holder noting the depth of the tube at the teeth
11. Ventilate the patient to maintain EtCO2 between 35-45mmHg
12. To maintain sedation, administer **Ketamine 1.5 mg/kg (adult and pediatric) IV/IO** every 10 minutes as needed.
    a. When given via IV/IO, Ketamine should be drawn up in a 10 mL syringe and diluted with NS to a full 10 mL volume. Ketamine should then be administered over at least 1-2 minutes.
13. Continue to monitor the patient including the pain level and level of sedation. Treat as indicated. Confirm airway patency every time the patient is moved using auscultation and continuous waveform capnography.

Back to Table of Contents

MEDICAL EMERGENCIES

Back to Table of Contents

GENERAL ASSESSMENT

Initial Assessment

The initial assessment is utilized to assess life-threatening situations. The Initial Assessment and appropriate therapy should be completed immediately and efficiently upon reaching the patient. The Paramedic will decide if Advanced Life Support measures are warranted. When appropriate, stabilizing therapy (i.e., cervical spine immobilization) should be instituted simultaneously with the survey. The EMT/Paramedic should complete the Initial Assessment within 60 seconds.

1. General Impression: note the patient's approximate age, gender, weight, activity, position, obvious injuries/distress, and general appearance.
2. Level of Consciousness: utilize the AVPU pneumonic (Alert, Responds to Verbal stimuli, responds to Painful stimuli, and Unresponsive).
3. Airway: Establish and maintain a patent airway.
    a. If necessary, utilize appropriate devices to maintain the airway: suctioning, OPA, NPA, ETT, and supraglottic airway device.
    b. If the patient's airway cannot be secured by a less invasive means, ALS provider should secure it using a surgical cricothyrotomy for adults or needle cricothyrotomy for pediatric patients less than 8 years old or less than 50 kg.
    c. If airway obstruction is found, proceed to Foreign Body Airway Obstruction protocol
4. Breathing: determine the rate and quality of respirations. Look, listen, and feel for air movement, and auscultate lung sounds.
    a. If inadequate respiratory effort it found, immediately support the patient's respirations with positive pressure ventilations using a BVM with 100% supplemental oxygen, PEEP set to 5 cm H2O, and evaluate for underlying cause.
    b. If necessary to assist with respirations for more than one minute, consider securing the patient's airway with an ET tube or supraglottic airway device.
        i. The Supraglottic Airway Device shall be used after 3 initial attempts at intubation are unsuccessful, when indicated as a first line treatment to secure the airway (specified by protocol), or to secure the airway of a patient by a BLS provider. Once placed, it should be left in place unless it becomes displaced.
        ii. Medications may not be administered via a supraglottic airway device.
        iii. If airway is secured with an advanced airway device, verify the patency of the adjunct via auscultation of breath sounds and EtCO2 waveform capnography.
    c. Apply oxygen as indicated to keep patient's SpO2 level at 94% or greater.
    d. If the patient's SpO2 level does not rise to 94% or greater despite the administration of 100% oxygen, then the PEEP can be increased to a maximum of 15 cm H2O.
5. Circulation: assess carotid, femoral, and radial pulses as indicated. If pulseless, perform CPR and proceed to the Cardiac Arrest Protocol.
    a. Check skin for pallor, diaphoresis, and capillary refill.
    b. Check neck for jugular vein distention.
6. Hemorrhage: control hemorrhage as appropriate. Perform this step first if exsanguinating hemorrhage is suspected.

Baseline Vital Signs

Respiratory rate and effort, pulse rate and quality, skin color/temperature, blood pressure (first should be obtained using manual cuff), Glasgow Coma Scale (GCS), blood glucose level (if indicated), pain score,

Back to Table of Contents

SpO2 level (obtain and record a room air saturation, but do not withhold oxygen to a patient in respiratory distress to obtain a room air saturation).

Vital signs should be monitored and recorded frequently on all patients during transport (about every 10 minutes for stable patients and about every 5 minutes for unstable patients). All transported patients shall have at least two sets of vital signs taken and documented.

Rapid Trauma

Scan and take a quick survey of the patient's entire body for any critical problems. Expose the head, neck, chest, abdomen, and pelvis to look for significant hemorrhage, respiratory compromise, and other life-threatening injuries in the trauma patient.

For isolated injuries, a focused exam shall be performed on the specific areas. For multi-system trauma and altered mentation, a Rapid Trauma Survey and Detailed exam shall be completed.

Detailed Exam

The Detailed Exam occurs after the initial assessment has been completed and appropriate action has been taken. It is a complete examination designed to check for specific, although not necessarily life-threatening injuries. The Detailed Exam can be performed in conjunction with the Initial Assessment or when appropriate throughout patient treatment. The Paramedic should perform and/or check for the following;

Utilize SAMPLE and OPQRST to obtain patient history and the history of the present illness/injury.

Head-to-Toe Survey

Evaluate the entire patient for DCAP-BTLS-IC-PMS (Deformities, contusions, abrasions, penetrations, burns, lacerations, swelling, tenderness, instability, crepitus, pulse, motor, and sensory). Perform the following targeted assessments:

1. Head: Battle's sign, periorbital ecchymosis, hyphema, pupils, CSF from nose or ears, mouth for broken teeth, dentures, breath odor
2. Neck: Stair-stepping in C1-C7, JVD, Tracheal Deviation
3. Shoulders: Subcutaneous emphysema, nitro patch/paste, pacemaker
4. Chest: Lung sounds, paradoxical movement, heart tones, scars
5. Abdomen: Guarding, rigidity, masses, non-traumatic ecchymosis, palpate all 4 quadrants
6. Hips and Pelvis: Incontinence, priapism
    a. Do not rock the pelvis
7. Legs: Shortening or rotation, edema of the ankles
8. Arms: Needle tracks, medical alert bracelets, dialysis shunt

Back to Table of Contents

GENERAL PEDIATRIC GUIDELINES

1. Pediatric cardiac dysrhythmias are usually caused by extra cardiac factors such as hypoxia, hypercarbia, acidosis, or shock.
2. Heart rates may give clues to the problem, (i.e., bradycardia could be an indication of an airway problem. Tachycardia would indicate hypovolemia, through dehydration and/or trauma).
3. Treat the underlying causes.
4. Infants and children less than 8 years old or under 50 kg presenting with serious or life-threatening medical problems should be transported to the closest appropriate facility.
5. The Handtevy system should be utilized in appropriate situations, as rapidly as possible, for accurate treatment of the pediatric patient. The patient's age should be used to estimate the patient's ideal body weight. The Handtevy length-based tape can be used to estimate the appropriate age if the age is unknown or if the patient appears to be larger or smaller than other patients of the same age.
6. If available, pulse oximeters should be utilized on all pediatric patients in distress.
7. Blood glucose testing should be performed on all pediatric patients in distress, and treated as indicated.
8. If intubation is required, utilize an appropriate CO2 monitor.
9. Pediatric patients who do not respond to standard treatment should be evaluated and treated for:
    a. Hypovolemia
    b. Hypoxia
    c. Hypothermia
    d. Hypoglycemia
    e. Hydrogen Ion (Acidosis)
    f. Hypo-/Hyperkalemia
    g. Hypothermia
    h. Toxins (Drug Overdose)
    i. Tamponade (Cardiac)
    j. Thrombosis (Coronary or Pulmonary)
    k. Trauma
    l. Tension Pneumothorax.
10. For children showing signs of shock, (i.e., decreased LOC, pallor, mottling, poor distal perfusion, and/or delayed capillary refill), treat with airway management and oxygenation, and obtain vascular access. Administer fluid bolus at 20 mL/kg.
11. Always contact the receiving facility for further orders.
12. Remember, children are not small adults. They will compensate much longer, but when they decompensate, they do so quickly.

Back to Table of Contents

ABDOMINAL PAIN/PROBLEMS

BLS/General Care

1. Perform General Assessment.
2. Monitor the patient's SpO2 level and administer supplemental oxygen to maintain an SpO2 reading above or equal to 94%.
3. Perform detailed secondary assessment.
4. Place the patient in a position of comfort and obtain a complete history, including obstetric concerns for female patients.
5. Evaluate the patient's blood glucose level and treat as appropriate.
6. Obtain a 12-lead, if indicated.

ALS Care:

1. Monitor and record a 4-lead EKG.
2. Interpret 12-lead if indicated.
3. Obtain IV access with Normal Saline at a KVO rate and administer fluids as needed.
4. If nausea or vomiting is present, administer antiemetic
    a. Adult: **Ondansetron 4 mg IV/IO/IM/SL**
    b. Pediatric: **Ondansetron 0.1mg/kg IV/IO/IM** up to 4mg
5. Provide pain management per the Pain Management Protocol.

Back to Table of Contents

ACUTE PULMONARY EDEMA/CHF

BLS/General Care

1. Perform General Assessment.
2. Monitor the patient's SpO2 level, EtCO2, and administer supplemental oxygen to maintain an SpO2 reading above or equal to 94%.
    a. Consider application of CPAP and titrate pressure as tolerated. If the patient will not tolerate CPAP or displays contraindications for the intervention, apply supplemental O2 via NRB mask at a rate of 10-15 LPM.
    b. Document SpO2 readings pre- and post-interventions via pulse oximeter.
3. Be prepared to suction and utilize BVM ventilations, as needed.
4. Perform detailed secondary assessment when appropriate.
5. Obtain a 12-lead EKG, if possible.
6. Evaluate the patient's blood glucose level and treat appropriately.
7. Consider ALS intercept

ALS Care

1. If signs and symptoms of cardiogenic shock are present, reference Hypotension protocol.
2. Consider application of Bi-Level CPAP. Start with inspiratory pressure of 10 cmH2O and expiratory pressure of 5 cmH2O. Adjust pressures as needed to provide maximum patient comfort.
3. Consider RSI in the case of hypotension, altered level of consciousness, and/or failure of CPAP/Bi-Level CPAP interventions.
4. Place patient in a seated position with legs dependent (lower than the upper body).
5. Monitor and record a 4-lead EKG. Interpret 12-lead EKG.
6. Initiate IV access with Normal Saline at a KVO rate.
7. Administer **Nitroglycerin, 0.4 mg SL**, repeating every 3-5 minutes until 3 total doses have been administered or patient's symptoms resolve.
    a. Do not administer this medication to patients displaying bradycardia/tachycardia, hypotension, or recent use of erectile dysfunction medications (i.e. Viagra, Levitra, Cialis, etc.).
8. Contract Medical Control for further orders.

Back to Table of Contents

ADRENAL INSUFFICIENCY EMERGENCIES

This protocol is to be used for patients with a known history of Adrenal Insufficiency (Primary Adrenal Insufficiency, Addison's disease, Secondary Adrenal Insufficiency, Congenital Adrenal Hyperplasia) who have or are currently experiencing an episode of high stress such as trauma, infection, or recent surgery. This protocol is to be used to prevent such stressful episodes from possibly causing a life-threatening condition known as Adrenal Crisis, of which these patients are at extreme risk.

BLS/General Care

1. Perform General Assessment
2. Monitor the patient's SpO2 level and administer supplemental oxygen to maintain an SpO2 reading above or equal to 94%.
3. Be alert for vomiting and have suction ready.
4. Evaluate the patient's blood glucose level and treat appropriately.

ALS Care

1. Monitor and record a 4-lead EKG.
2. If the patient or caretaker is able to provide or is found with his/her own supply of prescribed hydrocortisone, assist the patient/caretaker to administer the medication.
3. If the patient or caretaker is not able to administer the patient's prescribed hydrocortisone, administer the medication via IM injection according to the dosage instructions provided with the hydrocortisone (Pediatric dosing is 2mg/kg IV/IM/IO).
4. If the patient or caretaker does not have any prescribed hydrocortisone, administer:
    a. Adults: Methylprednisolone 125mg IV/IO/IM
    b. Pediatrics: Methylprednisolone 1mg/kg IV/IO/IM
5. Initiate IV access with Normal Saline. If the patient is Hypotensive, treat per the Hypotension Protocol.

Note: Adrenal Crisis leading to death usually results from hypotension or cardiac dysrhythmias due to hyperkalemia.

Back to Table of Contents

ALLERGIC REACTION

BLS/General Care

1. Perform General Assessment.
2. If transport is feasible, rapidly transport patient to the closest appropriate medical facility and consider ALS intercept.
3. Monitor the patient's SpO2 level and administer supplemental oxygen to maintain an SpO2 reading above or equal to 94%.
4. Perform detailed secondary assessment when appropriate.
5. For insect bites, remove any stinger still in place with a scraping motion; do not pinch stingers with tweezers.
6. If patient exhibits respiratory distress:
    a. Adults and Pediatric Patients greater than or equal to 30 kg: administer **Epinephrine 1:1,000, 0.3 mg IM** via an auto-injection device (i.e. EpiPen)
    b. Pediatric Patients less than 30 kg: administer **Epinephrine 1:1,000, 0.15 mg IM** via an auto-injection device (i.e. EpiPen Jr.)
7. If signs and symptoms of anaphylaxis and hypotension persist following the first dose of epinephrine, and additional dose of IM epinephrine via auto-injection device may be repeated once at the doses and routes noted in Step 6.

ALS Care

1. Monitor and record a 4-lead EKG.

    Mild: For generalized allergic reactions characterized by urticaria, administer:
    a. Adult: **Diphenhydramine, 50 mg IM/slow IVP**
    b. Pediatric: **Diphenhydramine, 2 mg/kg IO/IM/slow IVP** up to 50 mg

    Moderate: For generalized allergic reactions characterized by respiratory distress, airway swelling, auscultated wheezing, abdominal pain, vomiting, bronchospasm, and/or edema of the tongue, administer
    a. Adults:
        i. **Epinephrine 1:1,000, 0.3 mg IM**. May be repeated X 1 after 5 minutes. Note: Do NOT administer within 5 minutes of Epi-Pen Administration
        ii. **Diphenhydramine, 50 mg IM/IV/IO** if not already administered.
        iii. **Albuterol 2.5 mg/3mL NaCl via nebulizer**, if respiratory distress is present. May be repeated as needed.
        iv. **Methylprednisolone 125 mg IV/IO/IM** (over 2 minutes if given IV/IO)
    b. Pediatric:
        i. **Epinephrine 1:1,000, 0.01 mg/kg IM** up to 0.3 mg.
        ii. **Diphenhydramine 2 mg/kg IM/IV/IO**, up to 50 mg, if not already administered.
        iii. **Albuterol 1.25 mg/3mL NaCl via nebulizer**, if respiratory distress is present. May be repeated as needed.
        iv. **Methylprednisolone 2 mg/kg IV/IO/IM** max single dose 125 mg (over 2 minutes if given IV/IO)
    c. Administer fluids to maintain adequate peripheral perfusion as needed.

Back to Table of Contents

Severe: If patient presents with anaphylactic shock with non-palpable radial pulse OR SBP less than 90 mmHg for adults or non-palpable radial/brachial pulse OR age appropriate hypotension for pediatrics, administer:

a. Adults:
    i. **Push-Dose Epinephrine 1:100,000, 1 mL slow IV/IO push over 1 min.** Repeat every 3 to 5 minutes to maintain SBP of 100 mmHg or maximum total dose of 300 mcg (30 mL) is given.
    ii. **Diphenhydramine, 50 mg IM/IV/IO**, if not already administered.
    iii. **Albuterol 2.5 mg/3mL NaCl via nebulizer**, if respiratory distress is present. May be repeated as needed.
    iv. **Methylprednisolone 125 mg IV/IO/IM** (over 2 minutes if given IV/IO)
b. Pediatrics:
    i. **Push-Dose Epinephrine 1:100,000, 1 mL SLOW IV/IO push over 1 minute**. Repeat every 3 to 5 minutes to maintain age appropriate SBP or maximum total dose of 300 mcg (30 mL) is given.
    ii. **Diphenhydramine, 2 mg/kg IM/IV/IO**, up to 50 mg, if not already administered.
    iii. **Albuterol 1.25 mg/3mL NaCl via nebulizer**, if respiratory distress is present. May be repeated as needed.
    iv. **Methylprednisolone 2 mg/kg IV/IO/IM** max single dose 125 mg (over 2 minutes if given IV/IO)
c. Contact medical control for further orders.

Note: For instructions on how to mix and administer Push-Dose Epinephrine 1:100,000, refer to the Epinephrine Push-Dose Preparation Protocol

Back to Table of Contents

ALTERED MENTAL STATUS

BLS/General Care

1. Perform General Assessment.
2. Monitor the patient's SpO2 level and administer supplemental oxygen to maintain an SpO2 reading above or equal to 94%.
3. Suction and assist ventilations as needed.
4. If opioid overdose is suspected and respiratory compromise is present administer:
    a. Adult: **Naloxone, 1 mg IN**
    b. Pediatric: **Naloxone, 0.2 mg/kg IN**
    c. May be repeated every 2-3 minutes X 2
    d. Titrate to respiratory improvement
5. Check patient's blood glucose level and treat as appropriate.
6. Perform detailed secondary assessment when appropriate.
7. Obtain a 12-lead EKG if appropriate.
8. Consider potential stroke. Reference Stroke Protocol

ALS Care

1. Monitor and record a 4-lead EKG and interpret 12-lead EKG if appropriate.
2. Initiate IV access with Normal Saline at a KVO rate.
3. If opioid overdose is suspected and respiratory compromise is present, administer:
    a. Adults: **Naloxone, 0.5 mg IV/IM** or **1 mg IN** titrate to respiratory improvement. Doses may be repeated every 2-3 minutes for IV/IN administration and 10 minutes for IM, not to exceed a maximum of 10 mg.
    b. Pediatric: **Naloxone, 0.1 mg/kg IV/IO/IM/IN** titrate to respiratory improvement. Doses may repeat every 2-3 minutes for IV/IN administration and 10 minutes for IM, not to exceed a maximum of 4 mg.
4. Contact medical control for further orders.

Note: The Primary treatment of acute narcotic overdose is airway control. Narcan should not routinely be given if the patient's respirations are not compromised.

Back to Table of Contents

DIABETIC EMERGENCY – HYPERGLYCEMIA

BLS/General Care

1. Perform General Assessment.
2. Perform detailed exam when appropriate. Assess for rapid/deep respirations, warm and dry skin, dry mucus membranes, abdominal pain, fruity/acetone odor on breath. If present, suspect DKA.
3. Administer supplemental oxygen as indicated.
4. Obtain a 12 lead EKG, if time permits.
5. Check blood glucose level via Glucometer, and document on the Patient Care Report.

ALS Care

1. Initiate an IV Normal Saline at KVO rate.
    a. Adult: If blood glucose greater than or equal to 300 mg/dl, administer **500 mL Normal Saline** if no pulmonary edema noted. Repeat as needed.
    b. Pediatric: Not routinely encountered. Contact Medical Control for further orders.
2. Monitor and record an EKG strip.
3. Check blood glucose after administration of fluids and document appropriately.
4. Contact Medical Control for further orders.

Back to Table of Contents

DIABETIC EMERGENCY – HYPOGLYCEMIA

BLS/General Care

1. Perform General Assessment.
2. Monitor the patient's SpO2 level and administer supplemental oxygen to maintain an SpO2 reading above or equal to 94%.
3. Check blood glucose level.
4. Perform detailed secondary assessment, patient history, and vital signs.
5. If patient is hypoglycemic with a BGL less than 60 mg/dL with related symptoms and is able to swallow and manage their own airway, administer **Oral Glucose, 15 g PO**.

ALS Care

1. Monitor and record a 4-lead EKG; obtain a 12-lead EKG if appropriate.
2. Initiate IV access with Normal Saline at a KVO rate.
    a. Ensure IV patency prior to administering D10.
3. If patient is hypoglycemic with a BGL less than 60 mg/dL with related symptoms and is unable to follow direction, swallow, or manage their own airway, administer:
    a. Adult: **D10, 100 mL IV/IO**.
    b. Pediatric: **D10, 5-10 mL/kg IV/IO**
4. Reassess BGL and document appropriately. If patient's BGL remains less than 60 mg/dL after two minutes, repeat dose of D10.
5. If IV access is unobtainable, administer:
    a. Adult: **Glucagon, 1 mg IM** or **3 mg IN**
    b. Pediatric **(over 20 kg): Glucagon, 1 mg IM**
    c. Pediatric **(under 20 kg): Glucagon, 0.5 mg IM**
6. If there is no response and there is a high index of suspicion for acute overdose, refer to the Overdose Protocol.
7. Contact medical control for further orders.

Back to Table of Contents

FOREIGN BODY AIRWAY OBSTRUCTION

Note: EMT's and Paramedics shall follow all current AHA guidelines for foreign body airway obstruction relief

Partial Airway Obstruction

BLS/General Care

1. Keep patient in position of comfort.
2. Keep patient calm.
3. Monitor SpO2 level, apply supplemental oxygen as indicated.
4. Suction airway (if possible or needed).
5. Proceed to Complete Airway Obstruction if obstruction completely blocks airway.

Complete Airway Obstruction in Conscious Adult or Child Patient

BLS/General Care

1. Perform abdominal thrusts until the obstruction is dislodged or the patient becomes unconscious.
2. If unable to perform abdominal thrusts due to pregnancy or the patient's size, perform chest thrusts until the obstruction is dislodged or the patient becomes unconscious.

Complete Airway Obstruction in Conscious Infant Patient

BLS/General Care

1. Hold the infant facedown with the head slightly lower than the chest. Support the infant's head and jaw with your hand taking care to avoid compressing the soft tissues of the infant's throat.
2. Deliver up to 5 back blows forcefully between the infant's shoulder blades using the heal of your hand. Deliver each slap with sufficient force to attempt to dislodge the foreign body.
3. After delivering up to 5 back blows, turn the infant over while supporting the patient's head and provide up to 5 quick chest thrusts in the middle of the patient's chest, over the lower half of the sternum (same location as for chest compressions during CPR). Deliver the chest thrusts at a rate of 1 per second, each with the intention of creating enough force to dislodge the foreign body.
4. Repeat the sequence of up to 5 back blows and up to 5 chest thrusts until the object is removed or the infant becomes unresponsive.

Complete Airway Obstruction in Unconscious Adult, Child, or Infant Patient

BLS/General Care

1. Place patient supine on a hard surface (floor).
2. Perform Chest Compressions (following AHA BLS guidelines).
3. Before providing ventilations, look in the patient's mouth. If obstruction can be seen and retrieved, try to remove the object. Do Not Perform a Blind Finger Sweep.
4. If patient's carotid pulse is not palpable, proceed to Cardiac Arrest Protocol.

Back to Table of Contents

ALS Care

1. Attempt to remove obstruction under direct laryngoscopy using Magill Forceps.
2. If unable to easily remove the obstruction using Magill Forceps and the obstruction is beyond the glottic opening, attempt intubation and push the obstruction into the lower airway of one lung. Ventilate the other lung and provide rapid transport.
3. If unable to push the obstruction and ventilate the other lung, the paramedic shall secure the airway using cricothyrotomy (reference the Cricothyrotomy protocol for adult and pediatric patients 8 years of age or greater or over 50 kg and the Needle Cricothyrotomy protocol for pediatrics less than 8 years old or under 50 kg). The decision to perform this procedure should be made quickly into the call, as to prevent hypoxia and potential neurological damage.

Back to Table of Contents

HYPERTENSION

BLS/General Care

1. Perform General Assessment.
2. Perform detailed exam.
3. Administer supplemental oxygen as indicated.
4. Monitor and record an EKG strip.
5. Assess for signs of a stroke. Refer to the Stroke Protocol

ALS Care

1. Initiate IV Normal Saline at KVO rate.
2. Contact Medical Control for further orders.

Back to Table of Contents

HYPOTENSION

BLS/General Care

1. Perform General Assessment.
2. Perform detailed exam, when appropriate.
3. Administer supplemental oxygen as indicated.
4. Consider Trendelenburg position in patients without dyspnea or rales.
5. Obtain a 12 lead EKG.

ALS Care

1. Monitor and record an EKG strip.
2. Initiate an IV Normal Saline at appropriate rate.
3. Cardiac Hypotension due to cases such as inferior MI with right ventricular infarct or cardiogenic shock:
    a. Adult: In the absence of pulmonary edema, administer **500 mL bolus of Normal Saline**, repeating **once**, as needed if systolic BP is less than 90 mmHg and lung sounds are clear.
        i. If no improvement after 2 boluses or the patient has pulmonary edema, administer **Epinephrine 1:100,000 1 mL IV/IO** every 3 to 5 minutes to achieve a SBP of at least 90 systolic or maximum total dose of 300 mcg (30 mL) is given. Reference the Epinephrine Push Dose Preparation protocol for mixing and administration details.
    b. Pediatric: In the absence of pulmonary edema, administer **10 mL/kg bolus of Normal Saline** repeating once, as needed for as long as systolic BP is less than 70 mmHg plus 2 times the age in years and lung sounds are clear.
        i. If no improvement after 2 boluses or the patient has pulmonary edema, consult Medical Control.
4. Non-Cardiac Hypotension due to causes such as prolonged vomiting or diarrhea, volume depletion, etc.:
    a. Adult: Administer a **500 mL bolus of Normal Saline**, repeated as needed for as long as systolic BP is less than 90 mmHg and lung sounds are clear.
        i. If no sign of improvement after 3 boluses, administer **Epinephrine 1:100,000 1 mL IV/IO** every 3 to 5 minutes to achieve a SBP of at least 90 systolic or maximum total dose of 300 mcg (30 mL) is given.
        Reference the Epinephrine Push Dose Preparation protocol for mixing and administration details.
    b. Pediatric: **Administer 20 mL/kg bolus of Normal Saline**, repeated as needed for as long as systolic BP is less than 70 mmHg plus 2 times the age in years and lung sounds are clear.
        i. If no sign of improvement after 2 boluses, contact Medical Control for further direction.
5. If hypotension is secondary from suspected hemorrhage (e.g. GI Bleeding, possibly ruptured Abdominal Aortic Aneurysm, malfunction of a dialysis fistula/shunt, ruptured ectopic pregnancy), administer **1 unit Low Titer O+ Whole Blood (LTO+WB) rapid IV/IO infusion** if any *one* of the following conditions is met:
    a. Systolic Blood Pressure less than 70 mmHg **OR**
    b. Systolic Blood Pressure less than 90 mmHg with Heart Rate greater than or equal to 110 bpm **OR**
    c. EtCO2 less than 25 **OR**

Back to Table of Contents

   d. Age 65 or older with Systolic Blood Pressure less than or equal to 100 and Heart Rate greater than or equal to 100 bpm
6. If vital signs do not improve, repeat **1 unit LTO+WB rapid IV/IO infusion**
   Reference the Blood (Whole and Components) protocol for infusion instructions.
7. Note: TXA is **NOT** indicated for any GI suspected bleeds
8. If patient is pediatric and has suspected GI bleed, consult with Medical Control for possible LTO+WB administration.

Back to Table of Contents

OVERDOSE

BLS/General Care

1. Perform General Assessment.
2. Perform detailed exam, when appropriate.
3. Secure an Airway and administer supplemental oxygen as indicated.
4. Try to identify the ingested substance and time of ingestion. The pill bottles should be brought to the hospital.
5. Contact Poison Control Center at 1-800-222-1222 and/or the receiving facility for direction.
6. Consider the restraint of unconscious patients prior to administering any reversing agents, such as Narcan.
7. Evaluate the patient's blood glucose level.
8. If opioid overdose is suspected and respiratory compromise is present administer:
    a. Adult: **Naloxone, 1 mg IN**
    b. Pediatric: **Naloxone, 0.2 mg/kg IN**
    c. May be repeated every 2-3 minutes X 2
    d. Titrate to respiratory improvement

ALS Care

1. Initiate IV Normal Saline KVO rate.
2. Monitor and record an EKG strip.
3. Initiate proper treatment according to the type of drug ingested:
    a. Opioid overdose with respiratory depression, administer:
        i. Adult: **Narcan in 0.5 mg IV/IO/IM (or 1 mg IN)** until improvement of respiratory status. May repeat IV/IO/IN every 2-3 minutes for IV/IO/IN use or every 10 minutes for IM use, not to exceed 10 mg in total.
        ii. Pediatric: **Narcan, 0.1 mg/kg IV/IO/IM/IN** until improvement of respiratory depression, repeated every 3 minutes, not to exceed 4 mg
    b. Tricyclic Anti-Depressant Overdose: **Sodium Bicarbonate, 1 mEq/kg IV/IO**, followed by **Sodium Bicarbonate, 0.5 mEq/kg IV infusion** over 10 minutes
    c. Cocaine Overdose:
        i. Adult:
            1. When patient is combative or seizing: **Versed, 5.0 mg IV/IN/IM/IO**
            2. If seizure activity persists after the first dose: **Versed, 5.0 mg IV/IN/IM/IO**
            3. If chest pain is present: Administer one dose of **Versed, 2.5 mg IV/IN/IM/IO**, then follow chest pain protocol.
        ii. Pediatric:
            1. If seizures are present: **Versed, 0.1 mg/kg IV/IN/IM/IO**, not to exceed 2 mg in a single dose.
    d. Calcium Channel Blocker Overdose: **Calcium Chloride 10%, 20 mg/kg IV/IO infusion** over 5-10 minutes. If beneficial, follow with **Calcium Chloride 10%, 20-50 mg/kg/hr IV/IO infusion**.
4. Secure airway as needed.

Back to Table of Contents

PAIN MANAGEMENT

Goal of Pain Management

Use of comfort measures therapies as first line treatment.
If used, medications should be administered to a point where the pain is tolerable, not necessary pain free.

BLS/General Care

1. Determine patient's pain using Numeric Rating Scale (0-10), Wong-Baker FACES®, or FLACC.
    a. Note: Overreliance on pain scores may lead to either inadequate pain control in stoic patients or over sedation in patients reporting high levels of pain. Use subjective and objective findings to evaluate need for and efficacy of pain management.
2. Use comfort measures therapies as first line treatment:
    a. Place Patient in position of comfort
    b. Splint/support painful area
    c. Apply ice pack, if applicable
    d. Consider compression, if applicable
    e. If able, provide distraction to the patient

ALS Care

1. For mild, non-cardiac pain (1-3 on pain scale):
    a. Adult: Consider administration of **Ibuprofen 400 mg PO** repeat up to a maximum of 800 mg.
    b. Pediatric: Contact Medical Control for orders
2. For moderate, non-cardiac pain (4-7 on pain scale):
    a. Adults:
        i. Consider **Fentanyl 50 mcg IV/IO/IN**
        ii. Fentanyl dose may be repeated one time after five minutes.
    b. Pediatric:
        i. Consider **Fentanyl 1.0 mcg/kg IV/IO/IN** not to exceed 50 mcg single dose
        ii. Fentanyl dose may be repeated one time after five minutes.
3. For severe, non-cardiac pain (8-10 on pain scale):
    a. Adult:
        i. Administer **Fentanyl 50 mcg IV/IO/IN** *or* **Ketamine 25 mg IV/IO** slowly over at least 1 minute or **50 mg IM**. Note: Ketamine must be diluted before IV/IO administration.
        ii. If Fentanyl was given, **Fentanyl** dose may be repeated every five minutes, up to two times. If Ketamine was given, **Ketamine** dose may be repeated every five minutes, up to three times.
    b. Pediatric:
        i. Administer **Fentanyl 1.0 mcg/kg IV/IO/IN** not to exceed 50 mcg single dose *or* **Ketamine 0.25 mg/kg IV/IO** over at least 1 min or **0.5 mg/kg IM/IN**
        ii. If Fentanyl was given, **Fentanyl** dose may be repeated every five minutes, up to two times. If Ketamine was given, **Ketamine** dose may be repeated every five minutes, up to three times.
4. Transport in position of comfort and frequently reassess patient
5. Discontinue medication administration if any of the following endpoints develop:
    a. Hypotension
    b. Slurred speech
    c. Respiratory depression

Back to Table of Contents

   d. Pain becoming tolerable
   e. Signs/symptoms of allergic reaction
6. If patient develops nausea and/or vomiting, Consider and prepare for administration of:
   a. Adult: **Zofran, 4 mg IV/IO/IM/SL**
   b. Pediatric: **Zofran, 0.1 mg/kg IV/IO/IM**

Wong-Baker FACES® Pain Rating Scale (used for pediatric patients 4-12 years old):

Note: This scale is a self-assessment tool and must be understood by the patient. The patient is to choose the face that best illustrates his/her physical pain. This tool should not be used by a third person to assess the patient's pain by comparing faces.

FLACC (Face, Legs, Activity, Cry, Consolability) Scale: used for pediatric patients less than 4 years old

Criteria	Score 0	Score 1	Score 2
Face	No particular expression or smile	Occasional grimace or frown, withdrawn, uninterested	Frequent to constant quivering chin, clenched jaw
Legs	Normal position or relaxed	Uneasy, restless, tense	Kicking, or legs drawn up
Activity	Lying quietly, normal position, moves easily	Squirming, shifting, back and forth, tense	Arched, rigid or jerking
Cry	No cry (awake or asleep)	Moans or whimpers; occasional complaint	Crying steadily, screams or sobs, frequent complaints
Consolability	Content, relaxed	Reassured by occasional touching, hugging or being talked to, distractible	Difficult to console or comfort

Back to Table of Contents

RESPIRATORY DISTRESS

BLS/General Care

1. Perform General Assessment.
2. Administer supplemental oxygen as indicated.
3. Obtain a 12-lead.
4. Place patient in position of comfort and maintain airway as is appropriate.
5. For a complete airway obstruction, refer to the Foreign Body Airway Obstruction protocol

ALS Care

1. Monitor and record an EKG strip. Interpret the 12-lead EKG.
2. For severe Bronchospasm in conditions such as asthma, bronchitis, and COPD:
    a. Initiate an IV Normal Saline KVO rate.
    b. Administer:
        i. Adult: Nebulize **Albuterol, 2.5 mg/3mL NaCl** and **Ipratropium, 0.5 mg/2.5mL NaCl**. If no response, repeat **Albuterol, 2.5 mg/3mL NaCl** one time, but do not repeat Ipratropium. Consider CPAP/Bi-Level CPAP during and/or following nebulizer treatment.
        ii. Pediatric (greater than 1 year old): Nebulize **Albuterol, 1.25 mg/3mL NaCl** and **Ipratropium, 0.5 mg/2.5mL NS**. Repeat albuterol treatment every 20 minutes, as needed, but do not repeat ipratropium.
        iii. Pediatric (less than 1 year old): Nebulize **Albuterol, 1.25 mg/3mL NaCl** and **Ipratropium, 0.25 mg/2.5mL NS**. Repeat albuterol treatment every 20 minutes, as needed, but do not repeat ipratropium.
    c. If severe respiratory distress continues and is secondary to asthma, or when respiratory failure is imminent, administer:
        i. Adult: **Magnesium Sulfate, 2 g IV infusion**, diluted in 100 mL NS over 20 minutes
        ii. Pediatric: **Magnesium Sulfate, 50 mg/kg IV infusion**, not to exceed 2 g total, diluted in 100 mL NS over 20 minutes

    If respiratory distress continues,
        iii. Adult: Administer **Epinephrine 1:1,000, 0.3 mg IM**
        iv. Pediatric: Contact Medical Control for further orders.
3. For suspected croup or epiglottitis:
    a. Administer humidified oxygen (nebulizer with 3mL Normal Saline) via nebulizer mask if patient will tolerate. The mask may be held if the patient shows resistance to the device.
    b. Do not introduce oral airways, tongue blades, or any other devices in the patient's mouth, as this may precipitate complete airway obstruction.
    c. If no response or patient begins to worsen, consider **Epinephrine 1:1,000, 0.3 mg** nebulized in 2.5mL's of NaCl. Monitor closely, including EKG.
    d. If complete airway obstruction occurs and no other airway can be established, reference the Needle Cricothyrotomy protocol.
4. Contact Medical Control for further orders.

Back to Table of Contents

SEPSIS

BLS/General Care

1. Perform General Assessment.
2. Perform detailed exam, when appropriate.
3. Administer supplemental oxygen as indicated.
4. Activate a Sepsis Alert for patients which meet the following 3 criteria:
    a. Suspected Infection
    b. Two or more of the following:
        i. Temperature greater than 100.4 F or less than 96.8 F
        ii. Respiratory Rate greater than 20/min
        iii. Heart Rate greater than 90/min
    c. EtCO2 less than or equal to 25 mmHg
5. Notify receiving ER of any incoming Sepsis Alert patients.

ALS Care

1. Initiate IV Normal Saline at a KVO rate
2. Administer 250 mL NS boluses until SBP increases above 90 mmHg, not to exceed 2000 mL total
    a. Boluses may be given in rapid succession to maintain adequate systolic blood pressure
3. If SBP remains less than 90 mmHg after 2000 mL fluid bolus, administer **Epinephrine 1:100,000 1 mL** every 3 to 5 minutes to achieve a SBP of at least 90 systolic or maximum total dose of 300 mcg (30 mL) is given.

Back to Table of Contents

SEIZURES

BLS/General Care

1. Perform initial assessment.
2. Perform detailed exam, when appropriate.
3. Administer supplemental oxygen and assist with ventilations via BVM, as indicated.
4. Consider immobilizing the C-Spine in patients with possible Trauma.
5. Evaluate the blood glucose level and treat accordingly.

ALS Care

1. Initiate IV Normal Saline KVO rate.
2. If patient is actively convulsing (Grand Mal/Focal) administer:
    a. Adult: **Versed, 5 mg IV/IN/IM/IO**
    b. Pediatric: **Versed, 0.1 mg/kg IV/IN/IM/IO**
3. If seizure activity continues after 3 minutes:
    a. Adult: Repeat Versed dose one time.
    b. Pediatric: Repeat Versed dose one time
4. If seizures are due to hyperthermia, actively try to cool patient's body temperature by removing clothing and fanning with cool air.
    a. Do not cover the patient with wet towels or ice, and do not give any liquids to drink.
    b. Do not cool to the point of shivering.
5. Prepare to provide oxygenation via Bag Valve Mask and consider intubation.
6. Monitor and record an EKG strip.
7. Contact Medical Control for further orders.

Back to Table of Contents

SICKLE CELL CRISIS

BLS/General Care

1. Perform initial assessment.
2. Perform detailed exam when appropriate.
    a. Assess and record BGL
    b. Verify clear BBS and absence of respiratory distress, chest pain, and stroke-like symptoms. Sickle cell patients are at increased risk of clotting pathologies (i.e. pulmonary embolism, acute coronary syndromes, or cerebral vascular accident) and significant bacterial infections (i.e. meningitis, osteomyelitis, arthritic sepsis).
    c. Fever in a patient with sickle cell history should be taken seriously. Also, these patients have learned to deal with a lifetime of painful episodes and may give the appearance of malingering or drug seeking behavior.
3. Secure an airway and administer supplemental O2, if indicated.

ALS Care

1. Monitor and record an EKG strip.
2. Initiate IV access and provide a 500 mL Normal Saline bolus.
3. Monitor and reassess patient for development of HTN, respiratory distress, or stroke-like symptoms.
4. Consider pain management via Pain Management Protocol.

Back to Table of Contents

STROKE

BLS/General Care

1. Perform initial assessment.
2. Perform detailed exam when appropriate.
    a. Obtain onset time, medication list, and medical history.
3. Support the ABC's and provide supplemental oxygen to hypoxemic (e.g., oxygen saturation less than 94%) stroke patients or those with unknown oxygen saturations.
4. Perform Blood Pressure Monitoring
5. Perform Blood Glucose Check and treat as indicated.
6. Perform pre-hospital stroke scale [BEFAST and RACE (if greater than 3.5 hours since last known well time)] and initiate Stoke Alert if indicated by findings. Reference the Stroke Patient Destination Algorithm.
7. Notify Dispatch and receiving facility of Stroke Alert as soon as possible.
8. Immediately transport patient to the nearest appropriate facility, based on the Stroke Patient Decision Algorithm (see next page).

ALS Care

1. Monitor and record an EKG strip
2. Initiate bilateral IV's Normal Saline KVO rate proximal to the wrist.
    a. Do not treat hypertension in the field for patients with S/S of stroke
3. Manage airway as indicated.
4. Utilize the Stroke Alert Checklist and document in the PCR. A copy should be left at the receiving ED.

BEFAST:

1. Balance: Perform bilateral index finger-to-nose test and bilateral heel-to-shin test
    a. Normal: Patient has proper balance, coordination, no trouble walking, or dizziness
    b. Abnormal: Patient has sudden loss of balance or coordination, trouble walking, or dizziness
2. Eyes: Assess 4 quadrants of visual field by having patient locate your index finger
    a. Normal: Patient has no trouble seeing and does not have sudden double vision
    b. Abnormal: Patient has trouble seeing out of one or both eyes, has sudden double vision, or a fixed gaze to one side
3. Facial Droop: Have the patient smile and show you his/her teeth
    a. Normal: Both sides of face move equally
    b. Abnormal: One side of face does not move as well
4. Arm Drift: Have the patient hold arms out at 90-degree angle with palms up for 10 seconds
    a. Normal: Both arms move equally or not at all
    b. Abnormal: One arm drifts compared to the other or does not move at all
5. Speech difficulty: Have the patient repeat the phrase "You can't teach an old dog new tricks."
    a. Normal: Patient uses correct words with no slurring
    b. Abnormal: Slurred, inappropriate words, or mute
6. Time: Determine the last known well time for the patient (be sure to relay to ED and document in the patient's PCR)

Note: To be considered a "Positive" BEFAST, the patient only needs to have an abnormal finding in one of the five categories.

Back to Table of Contents

Rapid Arterial oCclusion Evaluation (RACE):

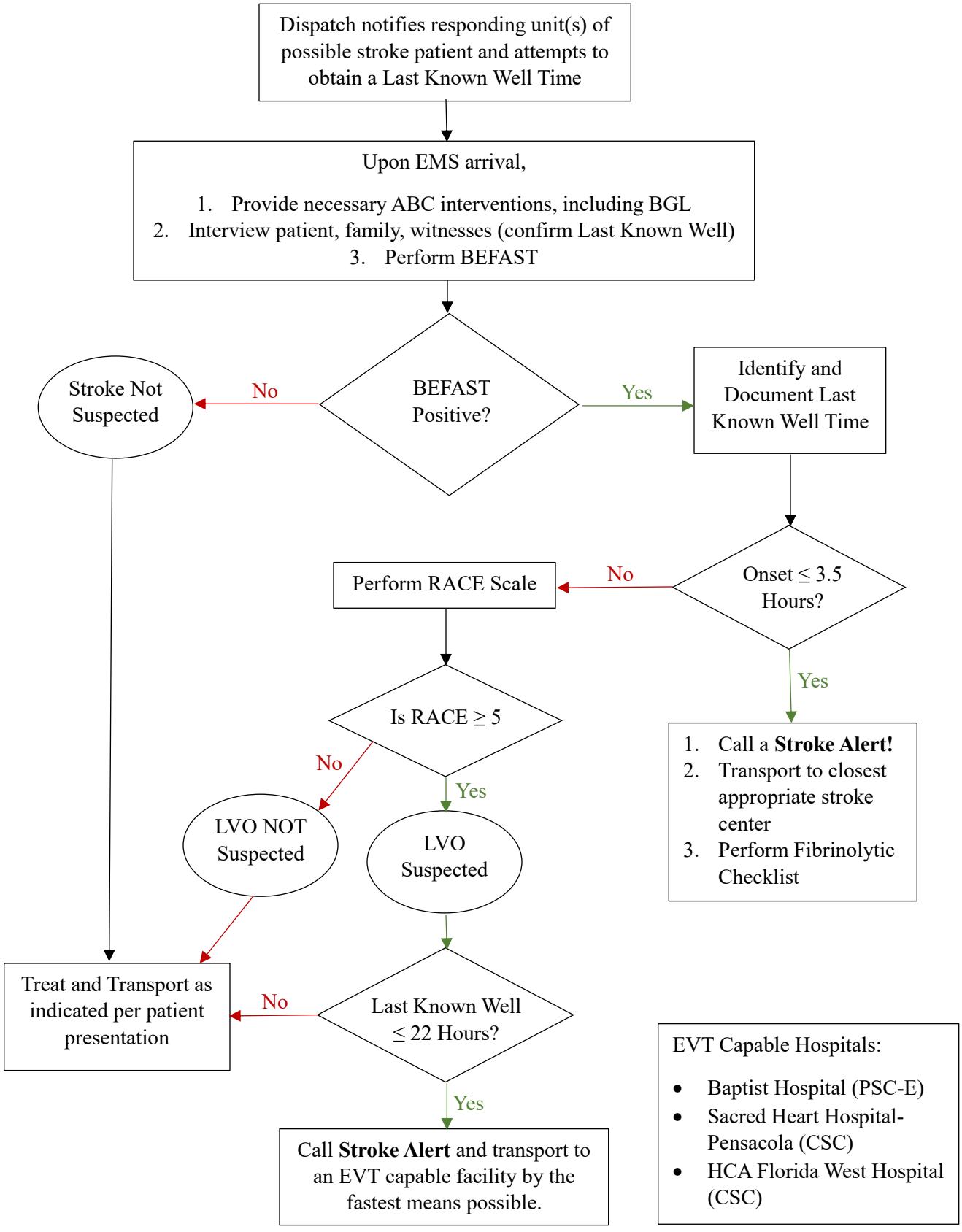
1. Facial Palsy: Ask the patient to smile and show their teeth
    a. Score 0: Facial droop absent (symmetrical)
    b. Score 1: Mild (slight asymmetry)
    c. Score 2: Moderate to Severe (complete asymmetry)
2. Arm Motor Function: Extend the arms of the patient 90 degrees (if sitting) or 45 degrees (if supine) palms up
    a. Score 0: Normal to Mild (limb upheld for 10 seconds or more)
    b. Score 1: Moderate (limb upheld less than 10 seconds)
    c. Score 2: Severe (patient unable to raise arm against gravity)
3. Leg Motor Function: Extend the leg of the patient 30 degrees (while supine) one leg at a time
    a. Score 0: Normal to Mild (limb upheld for more than 5 seconds)
    b. Score 1: Moderate (limb upheld less than 5 seconds)
    c. Score 2: Severe (patient unable to raise leg against gravity
4. Head and Eye Deviation*: Observe range of motion of eyes and look for head turning to one side
    a. Score 0: Absent (normal eye movement to both sides and no head deviation was observed)
    b. Score 1: Present (eyes and/or head deviation to one side was observed)
5. Aphasia (if the patient has **RIGHT** sided weakness) *: Ask the patient to follow two verbal orders: “Close your eyes” and “Make a fist”
    a. Score 0: Normal (performs both tasks correctly)
    b. Score 1: Moderate (performs one task correctly)
    c. Score 2: Severe (performs neither task)
6. Agnosia (if the patient has **LEFT** sided weakness): Ask the patient “Whose arm is this?” when showing him/her the weak arm and “Can you move this arm?”
    a. Score 0: Normal (appropriate or correct answers)
    b. Score 1: Moderate (either does not recognize the limb or states that they can move arm but cannot)
    c. Score 2: Severe: (does not recognize the limb and states that they can move arm but cannot)

Totaling all tests will give the total score (maximum score is a 9)

*Head/Eye Deviation or if patient is mute and does not follow commands is a high likelihood of Large Vessel Occlusion

Back to Table of Contents

Stroke Patient Destination Algorithm



Back to Table of Contents

VIOLENT AND/OR IMPAIRED PATIENT

BLS/General Care

1. Scene safety is imperative, request additional resources early.
2. Perform initial assessment.
3. Perform detailed exam, when appropriate.
4. Have patient placed under a Baker Act via Law Enforcement when appropriate
5. Rule out causes other than psychiatric such as:
    a. CVA
    b. Hypoxia
    c. Hypoglycemia
6. Law Enforcement should physically restrain patient only when necessary, avoiding positional asphyxia.
    a. Establish and maintain physical restraints once safe to approach the patient.
7. Monitor SpO2 level and ***continuous waveform capnography***

ALS Care

1. Administer:
    a. Adult: **Ketamine, 2 mg/kg IM** (Buttocks or Thigh), through clothing if necessary.
        i. Allow 8-10 minutes for onset. Ketamine duration should last approximately 45 minutes.
    b. Pediatric (over 8 years old): **Ketamine, 1 mg/kg IM**
        i. Allow 8-10 minutes for onset. Ketamine duration should last approximately 45 minutes.
    c. Pediatric (less than 8 years old): Consult medical direction prior to sedation.
2. If combativeness persists, contact medical control for further orders.
3. Be prepared to manage airway and/or respiratory depression.
    a. BVM ventilations and suctions should usually be sufficient; ET Intubation should be of last resort.
    b. If bronchorrhea/hypersalivation develops, suction is usually sufficient, but provider may consider administration of:
        i. Adult: **Atropine, 0.5 mg IV**
        ii. Pediatric: **Atropine, 0.02 mg/kg IV**
4. Apply cardiac monitoring, and continue pulse oximetry, and ***continuous waveform capnography***.
5. Establish IV/IO access when appropriate.
6. If nausea/vomiting are present, administer:
    a. Adult: **Ondansetron, 4 mg IV/IM**
    b. Pediatric: **Ondansetron, 0.1 mg/kg IV/IM**, not to exceed 4 mg total

Note: All cases of the use of Ketamine as a chemical restraint will be reviewed by a Medical Director within the month.

Back to Table of Contents

CARDIAC EMERGENCIES

Back to Table of Contents

BRADYCARDIA

BLS/General Care

1. Perform General Assessment.
2. Monitor the patient's SpO2 level and administer supplemental oxygen to maintain an SpO2 reading above or equal to 94%.
3. Perform detailed secondary assessment when appropriate.
4. Be prepared to apply pacer pads as necessary.

ALS Care

1. Monitor and record 4-lead EKG; obtain 12-lead EKG.
2. If stable, initiate IV access with Normal Saline at a KVO rate. Monitor patient and proceed to the unstable protocol if patient begins to exhibit signs of symptoms of being hemodynamically compromised.
3. **Adult:** If patient is or becomes unstable:
    a. Apply pacer pads
    b. Initiate IV access with Normal Saline at a KVO rate and administer fluids as needed.
    c. Administer **Atropine 1 mg IV/IO** with repeat doses allowed every 3 minutes if there is no response, up to a maximum total dose of 3 mg.
    d. If patient is observed to be in a 3rd Degree Block with wide complexes, a 2nd Degree Heart Block Type II, or continues to show no response after medication administration, attempt **Transcutaneous Pacing**.
        i. Transcutaneous Pacing:
            1. Apply pads as per manufacturer specifications. Ensure 4 lead EKG is attached and R waves are clearly visible on the monitor screen.
            2. Set initial pacer rate to 70 beats per minute and turn pacer on.
            3. Increase current until electrical and mechanical capture is obtained. Mechanical capture should be confirmed using femoral pulses.
            4. Frequently reassess femoral pulses to ensure mechanical capture is maintained (at least every 5 minutes).
        ii. If successful, consider sedation:
            1. Adults: Administer **Versed, 2.5 mg IV/IN/IM/IO**. An additional 2.5 mg may be administered after 10 minutes if needed. If hypotensive, administer **Ketamine, 1 mg/kg IV/IO/IM**. Do not delay pacing for sedation if the patient is severely unstable.
    e. If patient continues to be unstable after pacing, or Transcutaneous Pacing fails, administer **Epinephrine 1:100,000 1 mL IV/IO** every 3 to 5 minutes to achieve a heart rate of at least 60 bpm or maximum total dose of 300 mcg (30 mL) is given. Reference the Epinephrine Push Dose Preparation protocol for mixing and administration details.
4. **Pediatric:**
    a. Ensure adequate oxygenation and ventilation first, as hypoxia is most likely to be the cause of the bradycardia.
    b. If patient remains unstable after ventilations and heart rate remains less than 60 bpm, start CPR.
    c. Initiate IV access with Normal Saline at a KVO rate and administer fluids as needed.
    d. If patient remains unstable after CPR, administer **Epinephrine 1:100,000 1 mL IV/IO** over 1 minute. Repeat every 3 to 5 minutes or until a maximum total dose of 300 mcg (30 mL) is administered. Reference the Epinephrine Push Dose Preparation protocol for mixing and administration details.

Back to Table of Contents

e. Consider administering **Atropine 0.02 mg/kg IV/IO**, up to 0.5 mg in a single dose if bradycardia is suspected to be caused by increased vagal tone, cholinergic drug toxicity, or complete AV block. May repeat once.
f. If bradycardia persists after medication administration, attempt **Transcutaneous Pacing**. See Transcutaneous Pacing section above for pacing instructions.

5. Contact Medical Control for further orders.

Back to Table of Contents

CARDIAC ARREST

BLS/General Care

1. Perform General Assessment
2. Initiate compressions utilizing high-quality CPR.
3. Ventilate utilizing a BVM with PEEP valve set to 5 cm H2O, utilizing supplemental oxygen and appropriate airway adjuncts (NPA, OPA, etc.)
4. Apply AED pads, follow directions to allow AED to interpret rhythm, and defibrillate as necessary.
5. Size and place a supraglottic airway.
6. Ventilate only until visualizing chest rise with one breath every 6 seconds once an advanced airway is in place.
7. Continue to utilize AED as indicated.

ALS Care

1. Obtain and record an EKG, confirming rhythm.
    a. Obtain and record and EKG for all rhythm changes.
2. Initiate IV/IO access and administer normal saline at a KVO rate. Administer fluids as indicated.
    a. IV access is preferred to IO access.
3. Follow ACLS algorithm as noted under the Cardiac Arrest Algorithm.
4. Consider gastric decompression once advance airway is in place.
5. Intubation should only be attempted if supraglottic airway and BVM fail to adequately secure the airway after two attempts.
6. Consider and treat all reversible causes:
    a. Hypovolemia: Administer a 300ml bolus of Normal Saline, repeat as needed
    b. Hypoxia: ventilate patient with supplemental oxygen
    c. Hypothermia: provide active and/or passive rewarming of the patient, as able
        i. Hypothermic patients in cardiac arrest should be transported to the closest facility for rewarming before determination of death
    d. Toxins/OD: reference the Overdose protocol
    e. Tamponade, cardiac
    f. Thrombosis (pulmonary or coronary)
    g. Hypo/Hyperkalemia
    h. Hydrogen Ions/Acidosis
        i. Routine administration of Sodium Bicarb is not recommended
    i. Tension Pneumothorax: perform needle decompression, reference Needle Decompression appendix
    j. Trauma: reference Trauma Arrest protocol

Back to Table of Contents

Special Considerations

1. For patients with a valid DNRO, reference the DNRO Protocol.
2. For patient with a presumed traumatic arrest, reference the Trauma Arrest protocol.
3. For patients with a presumed hypothermia-related arrest, reference the Cold Emergency protocol.
4. For pregnant patients, follow the typical cardiac arrest algorithm with the following modifications:
    a. Provide continuous manual left lateral displacement of an obviously gravid uterus to prevent aorto-caval compression and assist with venous return.
    b. Anticipate difficulty with airway management due to physiological changes in pregnancy.
    c. After 10 minutes, if no ROSC is obtained, provide rapid transport to the closest OB-capable receiving facility.
        i. Give early notification to the facility so that they can alert the appropriate teams to be ready upon arrival.
5. For cardiac arrests with a resumed respiratory etiology, consider early management of the airway.

Helpful Resources

1. Cardiac Arrest Algorithm
2. High Performance CPR
3. Death Scene Management
4. Field Termination
5. Post-ROSC protocol

Back to Table of Contents

CARDIAC ARREST ALGORITHM

Procedure

1. Initiate CPR
2. Give Oxygen/Ventilate
3. Attach Monitor and Defibrillator
4. Follow the appropriate route below:

Shockable Rhythm

Ventricular Fibrillation/Ventricular Tachycardia

1. Defibrillate!
    a. Adult:
        i. Zoll: 120 J
        ii. Lifepak: 200 J
        iii. Phillips: 150 J
    b. Pediatric: Zoll, Lifepak, and Phillips: 2 J/kg
2. Perform CPR for 2 minutes and obtain IV/IO access (IV access is preferred over IO access)
3. Defibrillate!
    a. Adult:
        i. Zoll: 150 J
        ii. Lifepak: 300 J
        iii. Phillips: 150 J
    b. Pediatric: Zoll, Lifepak, and Phillips: 4 J/kg
4. Perform CPR for 2 minutes and administer **Epinephrine**
    a. Adult: **1 mg 1:10,000 IV/IO**, repeating every 3-5 minutes.
    b. Pediatric: **0.01 mg/kg 1:10,000** IV/IO repeating every 3-5 minutes
5. Consider advanced airway with EtCO2 monitoring.
6. Defibrillate!
    a. Adult (repeat at these energy settings for all subsequent shocks):
        i. Zoll: 200 J
        ii. Lifepak: 360 J
        iii. Phillips: 150 J
    b. Pediatric: Zoll, Lifepak, and Phillips: 6 J/kg (continue to escalate doses by 2 J/kg to a maximum of 10 J/kg
7. Administer **Antiarrhythmic**
    a. Adult:
        i. **Amiodarone 300 mg IV/IO**, which may be **repeated once at 150 mg IV/IO <u>OR</u>**
        ii. **Lidocaine 1.0-1.5 mg/kg IV/IO** which may be **repeated at 0.5-0.75 mg/kg IV/IO** maximum 3 doses or 3 mg/kg.
    b. Pediatric:
        i. **Amiodarone 5 mg/kg IV/IO,** may be repeated up to 3 total doses **<u>OR</u>**
        ii. **Lidocaine 1mg/kg IV/IO**
8. Begin to treat reversible causes.
9. Defibrillate!

Back to Table of Contents

10. Continue CPR, ventilations, epinephrine administration, defibrillations, and treatment of reversible causes until:
    a. Termination criteria are met: reference Field Termination Protocol.
    b. DNRO is located: reference DNRO Protocol
    c. Patient deteriorates into a non-shockable rhythm: proceed to the Non-Shockable Rhythm Algorithm (listed below).
    d. Patient achieves ROSC: reference Post-ROSC protocol.

Non-Shockable Rhythm

Asystole/Pulseless Electrical Activity

1. Continue to perform CPR for 2 minutes and obtain IV/IO access.
2. Administer **Epinephrine as soon as possible**
    a. Adult: **1 mg 1:10,000 IV/IO**, repeating every 3-5 minutes.
    b. Pediatric: **0.01 mg/kg 1:10,000 IV/IO**, repeating every 3-5 minutes
3. Consider advanced airway with continuous waveform capnography monitoring.
4. Every 2 minutes, perform rhythm check and determine whether patient has improved to a shockable rhythm. If so, reference Shockable Rhythm Algorithm above.
5. Between rhythm checks, begin to treat reversible causes.
6. Continue CPR, ventilations, epinephrine administration, defibrillations, and treatment of reversible causes until:
    a. Termination criteria are met: reference Field Termination protocol.
    b. DNRO is located: reference DNRO protocol
    c. Patient achieves ROSC: reference Post-ROSC protocol.

Back to Table of Contents

CHEST PAIN/STEMI

BLS/General Care

1. Perform General Assessment.
2. Monitor the patient's SpO2 level and administer supplemental oxygen to maintain an SpO2 reading above or equal to 94%.
3. Perform detailed secondary assessment, history, and vital signs.
4. If chest pain is suspected to be ACS and patient has no reported allergy, administer **Aspirin, 324 mg PO**.
5. Obtain a 12-lead EKG.
    a. 12-lead EKG may be transmitted for remote interpretation by a physician or screened on-scene by ALS providers for STEMI and other abnormalities.
6. If patient has their own prescribed nitroglycerin, BLS providers may assist that patient in self-administering the medication at the patient's prescribed dose every 3-5 minutes to a maximum of 3 doses. The patient's blood pressure should be assessed after each dose and maintain a systolic reading of above 90, as well as a heart rate between 60-140 bpm.

ALS Care

1. If 1 mm or more of ST-segment elevation is visible in 2 or more contiguous leads on the 12-lead, immediately notify dispatch and receiving facility of STEMI Alert. As soon as possible, transmit the 12-lead to the receiving facility. Provide rapid transport to the closest facility capable of percutaneous coronary intervention (PCI). Do not delay transport!
2. If ST-segment elevation is found in any inferior leads (II, III, aVF), a second 12-lead should be obtained looking for right side involvement (ST-segment elevation in V4R). **If there is visible elevation in V4R, Nitroglycerin should be withheld!**
3. Initiate IV access with Normal Saline at a KVO rate. If time allows while en route, or if patient is being transported under a STEMI Alert, initiate a second IV secured with a saline lock.
    a. Patients suspected of having a STEMI without the signs and symptoms of pulmonary edema should receive an initial fluid bolus of 300 mL.
4. If patient has not been prescribed nitroglycerin or been assisted in administering their own and has a systolic blood pressure of 90 mmHg or above, administer **Nitroglycerin, 0.4 mg SL** every 3-5 minutes until they have received a total of 3 doses, pain is 0/10, or patient begins to display contraindications. Note: IV access does **not** have to be obtained prior to Nitroglycerin administration.
5. If the patient continues to have pain after the nitroglycerin administration, administer **Fentanyl, 50 mcg IV/IO** (unless contraindicated). This dose may be repeated every 3 minutes until either a maximum dose of 200 mcg is achieved, the patient's pain has resolved, or an endpoint is met per the Pain Management protocol.
6. If patient is hypotensive and does not respond to fluids, consider **Epinephrine 1:100,000 1 mL IV/IO** every 3 to 5 minutes to achieve a SBP of at least 90 systolic or maximum total dose of 300 mcg (30 mL) is given.
   Reference the Epinephrine Push Dose Preparation protocol for mixing and administration details.
7. Contact receiving hospital for further orders.

Back to Table of Contents

DEATH SCENE MANAGEMENT

Once it has been determined that the patient is deceased or resuscitation efforts have been terminated and a time of death has been called, EMS personnel must remain in scene until the scene has been handed over to law enforcement.

1. Local Law Enforcement agency then has jurisdiction of the scene, and the Medical Examiner has jurisdiction of the body and either can determine how the body is to be handled postmortem.
2. Devices inside or on the patient (SGA, ET tubes, IV/IO with fluid bags attached, EKG stickers/defib pads ect.) should be left in place.

In the case of homicide or suicide:

1. Avoid disturbing the patient's position and the scene as much as possible.
2. Do not remove or cut clothing unless absolutely necessary. Do not dispose of any clothing that has been removed. Do not cut through bullet holes, rips, blood stains or cut marks on clothing.

Medical trash generated by EMS and Fire personnel during resuscitation efforts should be picked up and disposed of properly.

Discuss with on-scene law enforcement to ensure appropriate scene management occurs to not impair death investigation. If unsure how to proceed, contact the on duty Branch Commander(s) or Medical Control.

Back to Table of Contents

DNRO (FLORIDA DEPARTMENT OF HEALTH FORM 1896)

Do Not Resuscitate (DNR, Florida Department of Health Form 1896)

1. An EMT/Paramedic shall withhold or withdraw CPR upon presentation of the following:
    a. Original or completed copy, on any shade of yellow paper, of DOH Form 1896. The form must be signed by the patient or the patient's health care surrogate, proxy, court appointed guardian or person with health care durable power of attorney along with the patient's physician, autonomous advanced practice nurse practitioner, or physician assistant.
    b. Do Not Resuscitate Order Device (DNRO Device) which is simply a miniature copy of the DNR. It is attached to the form and designed for portability. It is acceptable, provided it is signed and completed as listed above.
    c. EMS personnel should verify the identity of the patient with a DNR through a driver's license, other photo identification, or from a witness on scene.
        i. If a witness is used to identify the patient, documentation of the witness's full name, address, telephone number, and relationship to the patient should be put in the patient care report.
2. A DNR may be revoked at any time by the patient, if the patient is competent. If signed by the patient's health care surrogate or proxy, court appointed guardian or the person assigned with health care durable power of attorney, a DNR may be revoked by the individual who signed the from. Pursuant to section 64J-2.018, Florida Administrative Code, the revocation may be in writing, by physical destruction, by failure to present it, or by orally expressing a contrary intent.
3. If CPR has been initiated and a valid DNR is discovered, resuscitative efforts should cease. If necessary, contact medical control, or the medical director(s)
    a. Special circumstances include: if DNR is presented after patient has been moved to the back of the ambulance, resuscitation efforts should continue, and transport initiated to prevent calling time of death in the back of the ambulance
    b. When EMS withholds resuscitative efforts because of a DNR, a copy of the DNR should be made and attached to the Patient Care Report (PCR), if possible
4. The presentation of a valid DNR form DOES NOT relieve EMS of the responsibility to provide interventions in a non-arrested patient. Other medically indicated and comfort care measures should be initiated. Pain management may be particularly appropriate in such cases.
5. During each transport, the Paramedic/EMT shall ensure that a copy of the DNR form or the PID accompanies the patient. EMS personnel shall provide all medically indicated care, and comfort measures, short of respiratory or cardiac resuscitation efforts.

Living Will

1. A Living Will is NOT the same as a DNR and can be respected ONLY when accompanied by a DNR or in cases of obvious death.
2. Do not confuse a DNR with a Living Will. Living Wills serve an entirely different purpose and may not influence the acute application of resuscitation.
3. In general, a Living will is made prior to a terminal condition while a patient is in good physical condition and mental health. While this prior declaration may assist a physician in writing a treatment plan for a terminally ill patient, EMS personnel cannot substitute it for a DNR.
4. The EMT/Paramedic is legally obligated to provide the level of care commensurate with the situation, based on their knowledge that the patient needs such care.

Back to Table of Contents

Special Circumstances

1. Triage Situations during an MCI; reference START Triage/MCI Operations appendix
2. A Personal Care Physician (PCP) is in attendance; if the patient's physician is in attendance, s/he can request that the patient be given limited or no resuscitative efforts. If this happens, the physician must agree to accept the responsibility for pronouncing the patient dead. Make sure to document the name of the physician and the time the orders were given. This order, whether verbal or in writing, MUST BE given by a Florida licensed MD or DO to be legal. Have a witness (EMT, paramedic or law enforcement officer) present and have the witness sign the patient care report.

Back to Table of Contents

FIELD TERMINATION

1. Return of spontaneous circulation is dependent on a focused, timely, organized resuscitation. Patient in cardiac arrest should be treated as expeditiously as possible with high quality CPR, rapid defibrillation as indicated.
2. Resuscitative efforts may be discontinued in the pre-hospital setting for patients who are in an asystole rhythm, apneic, and normothermic, after a thorough attempt at resuscitation.
3. Once decision to terminate resuscitation is made, the patient's family should become the focus of the EMS providers. Families need to be informed what is being done and that transporting a patient in cardiac arrest is not routinely supported by evidence, and there is generally no additional benefit to emergency room resuscitation.
4. Resuscitation efforts, including CPR, should be initiated in all cases where a patient is found apneic or with agonal respirations and is pulseless, unless any one of the criteria listed below apply:
    a. Non-traumatic arrest with obvious signs of death including dependent lividity or rigor mortis
    b. Decomposition or putrefaction present; i.e. the skin is bloated, ruptured or with soft tissue sloughed off, often with an odor
    c. Injuries incompatible with life; i.e. decapitation, incineration, massive crush injuries, complete exsanguination, severe displacement of brain matter, etc.
    d. In blunt or penetrating trauma when the patient is found without signs of life; i.e. pulseless, apneic. and absent reflexes or pupillary response. Reference Trauma Arrest protocol.
    e. A valid DNR is present. Reference DNRO protocol.

Termination Criteria

If ALL the following criteria have been met, call medical control for orders to terminate resuscitation efforts:

1. High Quality chest compressions performed
2. Appropriate oxygenation and ventilation provided
    a. Achieved airway control, confirmed placement, and have secured device in place
3. Defibrillation, as indicated
4. Obtained vascular access via IV/IO
    a. Rhythm appropriate medications administered following protocols
5. A minimum of 30 minutes of EMS resuscitation
6. 5 minutes from last Epinephrine administration
7. NO ROSC at ANY point during treatment
8. NO refractory or recurrent ventricular fibrillation or ventricular tachycardia
    a. MUST be a persistent asystole/agonal or slow PEA rhythm
9. NO neurological activity noted (eye opening, pupillary response, agonal breathing, motor responses)
10. Reversible causes identified and managed when possible
    a. Does NOT mean give all cardiac arrests Narcan or Sodium Bicarb
11. IF patient is a minor, the parent/guardian is agreeable to discontinuing efforts
12. ALL EMS provider on-scene agree to terminate efforts

If all of these criteria are met but resuscitation is not terminated, expeditious transport is indicated.

Back to Table of Contents

Key Notes

1. Logistical factors should be considered, such as collapse in a public place, family wishes and safety of the crew and public.
2. Survival and functional neurologic outcomes are unlikely if ROSC is not obtained by EMS. It is dangerous to crew, pedestrians, and other motorists to attempt to resuscitate a patient during transport and should be limited when possible.
3. Quantitative ETCO2 of 10mmHg or less or a drop of 25% despite resuscitation efforts indicated poor prognosis and provides additional support for termination.
4. Cardiac arrest patients whose mechanism of injury does not correlate with the clinical condition, suggesting a non-traumatic cause of arrest, should have standard ACLS resuscitation provided.
5. Focus attention on the family and bystanders. Explain rational for termination.
6. Consider support for family members, such as other family, friend, clergy, faith leaders, or chaplains

Back to Table of Contents

HIGH PERFORMANCE CPR

Key Notes

1. High-quality chest compression with minimal interruptions and early recognition and defibrillation of shockable rhythms is key to increased survivability
2. Utilize "Pitcrew" high performance CPR approach for all cardiac arrests
3. Ideally, patients should be resuscitated on-scene for most medical cardiac arrests, unless environmental including safety, logistical, operational, or clinical concerns dictate otherwise
4. As per AHA guidelines, the routine use of mechanical CPR devices is not recommended. Mechanical devices can be considered in situations where the patient must be moved a long distance, there are not enough rescuers on scene to perform high performance CPR, or all rescuers are too fatigued to continue to provide high performance CPR.
5. Chest Compressions are less effective in a moving vehicle
6. Rapid identification and treatment of reversible causes
    a. Hypovolemia and Hypoxia are the most common causes of PEA
7. If down-time is known or estimated to be five (5) minutes or longer and NO CPR was being performed upon arrival, initiate CPR and perform for two (2) minutes prior to the first defibrillation
8. Follow manufacturer recommended joule settings for specific cardiac monitor
9. Maintain ETCO2 above 10mmHg AT ALL times, this indicates high quality CPR
10. Do NOT over-ventilate/over-inflate, and squeeze bag on upstroke of compressions
11. Provide BLS/ALS support according to current AHA standards, until return of spontaneous circulation (ROSC) is obtained, the patient has been turned over to the receiving hospital, or resuscitation efforts have been terminated
12. Consider termination of efforts for those patients who do not respond to standard ACLS Procedures (reference Field Termination protocol)

"Pitcrew" High Performance CPR

1. Assign a Team Leader
2. Utilize metronome (Zoll set to 110, Lifepak set to 100, Handtevy App set to 110)
3. Use real-time feedback device for CPR quality during resuscitation, when available
    a. Crews should switch to Zoll monitor ASAP when it becomes available
4. Switch compressors, perform rhythm check and defib as appropriate every 2 minutes
5. Pre-charge the defibrillator 15 second before rhythm check while continuing compressions
6. Perform 30 compressions to 2 breathes until an advanced airway is placed
    a. Switched to continuous compressions and asynchronous ventilations once airway secured.
7. Chest compressions should resume immediately following defibrillation with no pauses for pulse checks regardless of rhythm displayed on monitor
8. Chest compressions should be continued after AED analysis while AED is charging
9. Administer Epinephrine as soon as vascular access is obtained
10. Airway management should begin simultaneously with immediate compressions/defibrillations; However, chest compressions and defibrillations take priority over airway management when lacking in adequate resources/personnel
    a. Airway management strategies should not interfere with chest compressions/defibrillations, as airway management is of secondary importance in a successful resuscitation

Back to Table of Contents

NARROW COMPLEX TACHYCARDIA

BLS/General Care

1. Perform initial assessment.
2. Perform detailed exam, when appropriate.
3. Secure an airway and administer supplemental oxygen as indicated.
4. Obtain a 12-lead EKG.
5. Attempt vagal maneuver. Avoid carotid sinus massage.

ALS Care

1. Monitor and record an EKG strip.
2. Initiate IV Normal Saline KVO rate. Administer fluids as needed.
3. Rule out and manage non-cardiac causes such as fever, hypovolemia, anxiety, physical exertion, and electrolyte imbalance.
4. **For stable patients**:
    a. If EKG rhythm is regular and monomorphic and is unknown SVT or Atrial Tachycardia, administer:
        i. Adult: **Adenosine, 6 mg Rapid IVP** and flush IV line with 20mL Normal Saline. If no change, repeat **Adenosine, 12 mg rapid IVP**.
        ii. Pediatric: **Adenosine, 0.1 mg/kg rapid IVP**, not to exceed 6 mg. If no change, repeat **Adenosine, 0.2 mg/kg rapid IVP**, not to exceed 12 mg.
    b. If EKG rhythm is Atrial Fibrillation with Rapid Ventricular Response, atrial flutter, or unknown SVT that did not respond to Adenosine, administer:
        i. Adult: **Cardizem, 0.25 mg/kg IVP** over 2-minutes. After 15 minutes, may repeat **Cardizem, 0.35 mg/kg IVP** over 2 minutes for rate control if first dose is ineffective.
            1. If hypotension develops secondary to Cardizem administration, administer **Calcium Chloride, 500 mg** and 500 mL NS, provided lung sounds are clear.
        ii. Pediatric: Contact Medical Control for further orders.
    c. If no response, contact Medical Control for further orders.
5. **For unstable patients**:
    a. If rhythm is regular and monomorphic and the situation and time permits, administer:
        i. Adult: **Adenosine, 6 mg rapid IVP**.
        ii. Pediatric: **Adenosine, 0.1 mg/kg rapid IVP**
    b. If the situation, time, consciousness, and BP permits administer:
        i. Adult: **Versed, 2.5mg IV/IO**; if hypotensive, consider **Ketamine, 1mg/kg IV/IO/IM**.
        ii. Pediatric: consult Pain Management protocol
    c. Perform synchronized cardioversion ASAP. Repeat as needed until rhythm is corrected. Follow the cardiac monitor manufacturer's recommended energy settings.
        i. Adult: **50 J**, repeated at 50 J escalating doses
        ii. In pediatric patient, synchronized cardioversion is performed at **0.5-1 J/kg**, repeated at 2 J/kg if necessary.
6. Contact Medical Control for further orders.

Back to Table of Contents

POST-ROSC CARE

BLS/General Care

1. Perform General Assessment
2. Maintain SpO2 between 94-98%, administering supplemental oxygen appropriately.
    a. Do not hyper-oxygenate.
3. Obtain a BGL reading.
4. Provide transport to a PCI capable facility. Should the patient revert back into cardiac arrest, divert to the closest Emergency Room.

ALS Care

1. Obtain a 12-lead EKG.
    a. Post-ROSC patients with evidence or interpretation consistent with a STEMI should have early notification of the receiving facility, including transmitting a 12-lead.
2. Treat any abnormal BGL readings.
3. Ensure adequate vascular access is maintained and provide adequate volume resuscitation.
    a. For hypotension, refer to the Hypotension protocol.

Special Notes

1. Consider taking a brief pause, not to cause too much stimuli to the patient immediately after obtaining ROSC, as the heart will be very irritable.
2. Monitoring closely for reoccurrence of cardiac arrest, consider assigning a provider to continuous monitor femoral pulses, especially during movement/transfer
3. Most patient immediately post ROSC will require ventilatory assistance
4. Common causes of post-resuscitation hypotension are hyperventilation, hypovolemia and pneumothorax
5. Ensure adequate number of personnel for transport

Back to Table of Contents

VENTRICULAR TACHYCARDIA

BLS/General Care

1. Perform initial assessment.
2. Perform detailed exam, when appropriate.
3. Secure an airway and administer supplemental oxygen as indicated.
4. Obtain and record a 12-Lead EKG strip.
5. Place Quik-Combo pads on patient and be prepared.

ALS Care

1. If uncertain if a rhythm is VT or SVT, assume all wide complex tachycardia are V-Tach. If still uncertain, contact the receiving facility. If known to be SVT with aberrancy and rhythm is regular and monomorphic, treat as indicated (reference the Narrow Complex Tachycardia protocol)
   If stable:
   a. Initiate IV Normal Saline KVO rate. Administer fluids as needed.
   b. If not contraindicated, administer:
      i. Adults: **Amiodarone, 150 mg IV infusion** over 10 minutes. May repeat, if indicated, not to exceed 2.2 g within 24 hours.
      ii. Pediatric: **Amiodarone, 5 mg/kg IV/IO infusion** over 20-60 minutes
   c. If Amiodarone is contraindicated or unsuccessful, proceed to synchronized cardioversion as needed (see below)

   If unstable:
   a. Perform synchronized cardioversion ASAP, repeating as needed until rhythm is corrected. Follow the cardiac monitor manufacturer's recommended energy settings.
      i. Adult: **100 J**, repeated at 50 J escalating doses
      ii. In pediatric patient, synchronized cardioversion is performed at **0.5-1 J/kg**, repeated at 2 J/kg if necessary.
   b. When time, consciousness, situation, and BP permit, administer
      iii. Adult: **Versed, 2.5 mg IV/IO**. If hypotensive, consider **Ketamine, 1 mg/kg IV/IO/IM**.
      iv. Pediatric: Consult Pain Management protocol.
   c. Initiate IV Normal Saline at a KVO rate when appropriate.
   d. If V-tach continues or recurs, check for an Amiodarone allergy and, if not contraindicated, administer:
      v. Adult: **Amiodarone, 150 mg IV infusion** over 10 minutes.
      vi. Pediatric: **Amiodarone, 5 mg/kg IV infusion** over 20-60 minutes.
2. If cardioversion is successful, do not administer any antiarrhythmics.
3. If heart rhythm is in Torsade de Pointes, administer:
   a. Adult: **Magnesium Sulfate, 2 g IV/IO infusion** over 20 minutes.
   b. Pediatric: **Magnesium Sulfate, 50 mg/kg IV/IO infusion** over 20 minutes, not to exceed 2 g total.
4. Contact receiving facility for further orders.

Back to Table of Contents

ENVIRONMENTAL/EXPOSURES

Back to Table of Contents

CHEMICAL POISONING

BLS/General Care

1. Perform General Assessment
2. Perform detailed exam, when appropriate.
3. Monitor and support oxygenation, as appropriate.
    a. If possible Carbon Monoxide Poisoning: administer high flow O2 at 15 lpm NRB.

ALS Care

1. Carbon Monoxide Poisoning:
    a. Ensure high flow O2 is being administered
    b. Consider early intubation and monitor for pulmonary edema.
    c. Monitor BGL and treat as necessary.
    d. If respiratory depression, administer **Narcan, 0.5 mg IV/IO/IM or 1 mg IN** if suicide attempt is suspected**.** Dose may be repeated one time.
    e. Consider transport to a hyperbaric facility.
2. Hydrofluoric Acid
    a. Full respiratory and SCBA protection is mandatory.
    b. Flush skin burns with large amounts of sterile water.
    c. Flush eye injuries for 30 minutes with normal saline.
    d. For inhalation injuries, place the patient on 100% supplemental oxygen and consider early airway management.
    e. In the presence of a prolonged QT Interval, administer **Calcium Chloride, 1 g IV/IO**.
3. Chlorine
    a. Full respiratory and SCBA protection is mandatory.
    b. Decontaminate patient.
    c. Secure and control airway as indicated, administering high-flow supplemental oxygen and considering early intubation.
    d. **Administer 5 mL normal saline via nebulizer**.
4. Organophosphates
    a. Ensure provider safety and ensure patient is decontaminated.
    b. In severe cases, administer **Atropine, 2 mg IM** every 5 minutes until secretions are dry and/or nearly dry and ventilation can be accomplished with ease. The need for ventilation may continue for at least 3 hours.

COMMON CONTAMINANTS

1. Dry Lime
    a. Do not introduce water or saline to the area. Use a brush or gloves to brush dry lime from clothing, hair, skin, etc. Use water only after clearing away powder and only if large amounts of water are available for copious flushing.
2. Carbolic Acid
    a. This chemical is not water-soluble; use alcohol-based products for initial wash of unbroken skin, followed by a long-steady flush with water or saline.

Back to Table of Contents

3. Sulfuric Acid/Sodium Metals
    a. These chemicals produce heat when mixed with water; do not flush with water unless with a hose or shower. Following initial flushing, wash mild burns with soapy water.
4. Hydrofluoric Acid
    a. Symptoms onset may be delayed, so even non-symptomatic patients should be treated. Rinse with water immediately and monitor for signs of hypocalcemia and cardiac arrhythmias.
5. White or Yellow Phosphorous
    a. May continue to burn on contact with moist air, so skin may smoke, and continued injury will occur. Perform thorough irrigation with water and then immerse burned area in water.

Back to Table of Contents

COLD EMERGENCY

BLS/General Care

1. Perform General Assessment.
2. Maintain airway and administer supplemental oxygen as indicated.
    a. Suction airway and assist ventilations, as necessary.
3. Remove wet clothing and warm patient with blankets.
4. Warm as appropriate (Passive vs Active).
5. Carefully handle the patient when performing patient movements. Rough handling may cause cardiac arrythmia and subsequent cardiac arrest.

ALS Care

1. Monitor and record an EKG strip, monitoring for the development of “J” waves.
2. Initiate IV access and administer warm normal saline at a KVO rate.

Passive Rewarming

The patient is insulated from heat loss and allowed to generate heat by themselves. This method is useful for mild cases with no underlying disease.

Active Rewarming

External heat is applied to the patient's skin in a noninvasive manner. It is useful in milder cases. Because the vasoconstricted extremities hold pooled blood, warming of the extremities may result in a reversal of the vasoconstriction and may release incompletely rewarmed blood back to the central circulation. This return of relatively cold blood to a warmer core may cause temperature after-drop or arrhythmias.

Back to Table of Contents

DIVE ACCIDENT AND DECOMPRESSION SICKNESS

BLS/General Care

1. Perform General Assessment
2. Place patient in position of comfort, preferably supine.
    a. Do not place in Trendelenburg.
3. Monitor airway and provide high flow O2.
    a. If patient is breathing spontaneously, provide O2 via NRB at 15 lpm.
    b. If patient is not breathing spontaneously, provide O2 via BVM at 15 lpm.
4. Suction as necessary.
5. Obtain detailed history.
6. Transport patient to the closest facility.

ALS Care

1. Consider administration of aspirin, 324 mg PO.
2. Initiate IV access and administer a 300 mL bolus of normal saline.
3. If patient is obtunded, assist respirations and intubate.
4. If patient is experiencing dyspnea, shortness of breath, or decreased breath sounds, decrease IV fluids to a KVO rate and evaluate for tension pneumothorax.

Note: Any patient that has used SCUBA gear or compressed air within a 24-hour period preceding a medical complaint and has any signs/symptoms of decompression sickness should be considered a Dive Emergency, unless the patient is clearly a victim of unrelated trauma.

Back to Table of Contents

DROWNING

BLS/General Care

1. Perform General Assessment
2. Maintain airway and administer supplemental oxygen as indicated.
3. Perform spinal motion restriction as indicated.
4. Assist ventilations with a BVM and appropriately sized NPA/OPA, and suction as necessary.

ALS Care

1. Consider CPAP/Bi-Level CPAP if patient experienced a drowning incident; consider early intubation in unconscious patients.
2. Initiate IV access; if hypotensive, administer 300 mL fluid bolus which may be repeated as indicated.
    a. If patient remains hypotensive, refer to the Hypotension Protocol.
3. If patient is in cardiac arrest, follow the Cardiac Arrest protocol.
4. Consider placement of an appropriately sized nasogastric/orogastric tube.

Back to Table of Contents

HEAT EMERGENCY

BLS/General Care

1. Perform General Assessment.
2. Maintain airway and administer supplemental oxygen as indicated.
3. Institute appropriate cooling measures.
    a. In suspected heat stroke patients, cool as rapidly as possible to minimize end organ damage.
    b. Apply tepid water to the patient and fan the patient to promote evaporative cooling.
    c. Apply ice packs to the patient's neck, axillae, and groin. Alternatively, cover the patient with a wet sheet.
    d. Transport the patient with the air conditioning turned on high, but avoid patient shivering.

ALS Care

1. Initiate IV access and administer normal saline at a KVO rate.
2. If patient has signs and symptoms of dehydration, administer a 500 mL bolus and reassess. Repeat bolus as indicated, provided lung sounds are clear.
3. Monitor and record an EKG strip.

Exertional heat stroke when a certified athletic trainer is present:

1. If an athlete is currently in the care of a certified athletic trainer and submerged in a cold water tub, follow the direction of the athletic trainer.
2. The trainer will monitor the patient's core body temperature and continue the cold water immersion until the temperature is less than 101.5 degrees Fahrenheit.
3. It is strongly recommended that any patient that has been cold water immersed be transported to the ER for evaluation. All attempts to transport the patient should be made.
4. If at any time the patient becomes critically unstable, the patient shall be immediately transported to the closest ER with traditional cooling techniques performed during transport.

Back to Table of Contents

MARINE BITES/STINGS

BLS/General Care

1. Perform General Assessment.
2. Maintain airway and administer supplemental oxygen as indicated.
3. Remove the tentacles or residue by flushing the area with sea water or Normal Saline. Do not use fresh water. Tentacles can also be scraped off using a plastic object such as a credit card.
4. Manage anaphylaxis as needed per the Allergic Reaction protocol.
5. Inactivate nematocysts and remove tentacles to prevent further injury.
    a. It is not necessary to capture the organism responsible for envenomation, but tentacles can be saved and preserved for identification.
6. Provide reassurance to the patient.
7. Application of a heat pack for up to 20 minutes is optional for pain relief.

ALS Care

1. Consider pain management per the Pain Management protocol.

Back to Table of Contents

SMOKE INHALATION

BLS/General Care:

1. Perform General Assessment
2. Administer 100% O2 via NRB
3. Monitor SpO2 and SpCO (if possible)
4. Provide transport to appropriate facility

ALS Care

1. Monitor and record an EKG strip
2. Initiate IV/IO of Normal Saline at KVO
3. Intubate, if indicated
4. Consider fluid bolus if hypotensive
5. Treat other presenting signs/symptoms with appropriate protocols

Signs and Symptoms of varying levels of exposure:

Mild: Soot in nose, mouth, and/or oropharynx present

Moderate: Soot in nose, mouth, and/or oropharynx present. Confusion disorientation, altered mental status, and/or hypotension present.

Severe: Soot in nose, mouth, and/or oropharynx present. Patient is comatose, hypotensive, and/or in cardiac or respiratory arrest.

Back to Table of Contents

SNAKE BITES

BLS/General Care

1. Perform General Assessment.
2. Maintain airway and administer supplemental oxygen as needed.
3. Immobilize affected area, but do not apply ice pack.
4. Place the patient supine and remove any restrictive jewelry or clothing.
5. Mark the area of edema with a pen.
6. Check for distal pulses and neurologic function of the involved extremity.
7. Attempt to identify the snake; however, do not handle the snake. Snakes can transmit venom through their fangs even when deceased.
8. Contact the receiving hospital early and transport as soon as possible.

ALS Care

1. Initiate IV access in the uninvolved extremity and administer normal saline at a KVO rate.
2. Consider pain management per Pain Management protocol.

Note: There are 45 species of snakes in Florida with only 6 being venomous. The Dusky, Pygmy, and Eastern Diamondback are the 3 rattlesnakes found in Florida. The Coral, Copperhead, and Cottonmouth are the other 3 venomous snakes that reside in Florida.

Back to Table of Contents

TRAUMA

Back to Table of Contents

TRANSPORT GUIDELINES AND SCORECARD

Whenever possible minimize on scene time to 10-minutes with the major trauma patient. If the on scene time is greater than 10 minutes, the reasons and rationale shall be documented in the patient care report. Transport immediately by ground or air if applicable, after BLS immobilization with cervical device and securing the patients airway.

Impaled objects should not be removed from the major trauma patient unless they threaten or compromise the airway. The patient and the object should be immobilized to prevent movement. If the patient is impaled on an object, the object should be cut off at a short distance from the skin and immobilized during transport.

Treatment must be continued during transport, vital signs and EKG evaluation should be monitored and recorded frequently on all ALS and major Trauma patients. The secondary survey and IV/IO attempts should be performed during transport. Reference the General Patient Assessment Protocol.

All patients meeting the Trauma Triage Criteria located in the Okaloosa County Trauma Transport Protocols, shall be transported, when possible, to the designated State Approved Trauma Center (SATC).

Note: The Okaloosa County Trauma Transport Protocols are a separate document and can be found on the Okaloosa County EMS website.

In the event that a facility providing a specialty required by a particular patient is on by-pass, it will be considered no more capable of handling that patient than a facility not offering the particular specialty. The patient will be transported to the nearest facility for stabilization, and then transferred to a facility that is able to provide the necessary care.

Trauma Patients meeting the transport criteria with a ground transport time greater than 20-minutes should be transported by AIR

Back to Table of Contents

GENERAL MANAGEMENT

BLS/General Care

1. Perform General Assessment
2. For mass casualty incidents, utilize the START methodology to triage patients.
3. Immediately treat any life threats.
4. Stabilize cervical spine, as needed.
5. Monitor and support oxygenation, as appropriate.
6. Control any external hemorrhage.
7. Cover penetrating injuries with sterile dressing soaked with sterile normal saline.
8. Stabilize impaled objects.
9. Splint extremities, as necessary, and monitor pulse, motor, and sensory functions.
10. Place hypotensive patients in Trendelenburg.
11. Initiate a “Trauma Alert” for patients meeting the Trauma Transport Criteria and transport to a SATC. If patient does not meet Trauma Alert criteria, the patient should be transported to the closest initial receiving hospital.

ALS Care

1. Secure an airway prior to transport, considering early intubation as appropriate.
2. IV/IO Therapy should be attempted as appropriate but should not delay transport.

Back to Table of Contents

ABDOMINAL TRAUMA

BLS/General Care

1. Perform General Assessment
2. Immediately treat any life threats.
3. Maintain airway and support oxygenation, as appropriate.
4. Stabilize impaled objects.
5. Cover eviscerations with sterile dressings soaked with normal saline.
6. Utilize spinal motion restriction in packaging and consider Trendelenburg positioning in hypotensive patients.
7. Consider activating “Trauma Alert”.

ALS Care

1. Establish two large bore IVs with normal saline at a KVO rate. Establishing IVs should not delay transport.
2. If signs and symptoms of shock are present, administer only enough fluids to maintain peripheral pulses, maintain a systolic blood pressure of approximately 90-100 mmHg.
3. Manage pain using the Pain Management protocol.

Back to Table of Contents

BLEEDING AND HEMORRHAGIC SHOCK

BLS/General Care

1. Perform General Assessment.
2. Maintain airway and administer supplemental oxygen as indicated.
3. Control obvious sources of external hemorrhage with direct pressure and pressure dressings.
    a. If the external bleeding is coming from an extremity and direct pressure does not stop the bleeding, apply a tourniquet. Continue to tighten the tourniquet until bleeding is stopped or tourniquet cannot be tightened anymore.
    b. If one tourniquet does not stop the bleeding, apply a second tourniquet proximal to the first and tighten until the bleeding is stopped.
    c. If external bleeding is coming from the torso or junctional area (groin or axilla) and direct pressure does not stop the bleeding, pack the wound with combat gauze or sterile bandages and hold direct pressure.
    d. If a penetrating wound or open wound is found on the chest, place a 3 sided occlusive dressing or commercial chest seal and reference the Chest Trauma protocol.
4. Assess vital signs and reassess frequently at no longer than 5-minute intervals.

ALS Care

1. Initiate two large bore IVs, but do not delay transport to do so.
2. **Infuse Normal Saline** boluses
    a. Adult: NS 250-500 mL boluses as needed to maintain a systolic blood pressure of 90 mmHg or more. Do not exceed 2 L.
    b. Pediatric: 20 mL/kg (not to exceed 500 mL) as needed to maintain a systolic blood pressure of 70 plus 2 times the age of the patient or more.
3. As soon as it is available and if patient meets the below qualifications, **infuse Low Titer O+ Whole Blood (LTO+WB)—DO NOT DELAY TRANSPORT TO ADMINISTER**
    a. Adult: **Rapidly infuse 1 unit IV/IO** if the patient meets any ***one*** of the following criteria:
        i. Systolic Blood Pressure less than 70 mmHg **OR**
        ii. Systolic Blood Pressure less than 90 mmHg with Heart Rate greater than or equal to 110 bpm **OR**
        iii. EtCO2 less than 25 **OR**
        iv. Age 65 or greater and Systolic Blood Pressure less than or equal to 100 mmHg with Heart Rate greater than or equal to 100 bpm
    b. Adult: If patient's condition does not improve, repeat rapid infusion X 1 (2 units total)
    c. Pediatric 5 years old to signs of puberty: **Rapidly infuse 10 mL/kg IV/IO** (LifeFlow delivers 10 mL per full squeeze of the trigger) if patient meets any ***one*** of the following criteria:
        i. Systolic Blood Pressure less than 70 mmHg **OR**
        ii. Systolic Blood Pressure less than 80 mmHg with Heart Rate greater than or equal to 120 bpm
    d. Pediatric less than 5 years old: Contact Medical Control for orders to administer LTO+WB

    Reference the Blood (Whole and Components) protocol for administration details

Back to Table of Contents

4. If patient meets criteria for LTO+WB administration and time of injury is less than 3 hours, **administer Tranexamic Acid (TXA) IV/IO** (even if LTO+WB is not administered or available):
    a. Adult: **Dilute 2 g in a 100 mL bag** of Normal Saline and infuse over **10 minutes**.
    b. Pediatric 5 years old to puberty: **Dilute 15 mg/kg in a 50mL or 100mL bag** of Normal Saline and infuse over **10 minutes**.
    c. Pediatric less than 5 years old: Contact Medical Control.

Precaution: DO NOT administer TXA in same line as LTO+WB. Infused in another IV/IO site. If no other site is able to be established, thoroughly flush the line with Normal Saline before and after infusing TXA.

Back to Table of Contents

BURNS

BLS/General Care

1. Extinguish and remove any smoldering or burning clothing.
2. Perform General Assessment.
3. Immediately treat any life threats.
4. Maintain airway and support oxygenation, as appropriate.
5. Estimate the area and type of burn using the rule of 9s and evaluate patient for Trauma Alert criteria.
6. Perform spinal motion restriction, as indicated.
7. Cover burns with **dry sterile dressings**.
8. Remove jewelry.

ALS Care

1. Secure an airway and administer supplemental oxygen as indicated, considering early intubation.
2. Initiate IV/IO access and administer fluids as needed.
3. If burns are electrical in nature, obtain 12-lead EKG and treat as indicated.
4. Manage pain per the Pain Management protocol.

MINOR BURNS

Classified as first-degree burns involving <20% BSA, second-degree burns involving <15% BSA, or third-degree burns involving <2% BSA that do not affect the face, hands, feet, genitals, or airway.

MODERATE BURNS

Classified as first-degree burns involving >20% BSA, second-degree burns involving 15-30% BSA, third-degree burns involving 2-10% BSA which do not affect the face, hands, feet, genitals, or airway.

CRITICAL BURNS

Classified as any electrical burn, second-degree burns involving >30% BSA, third-degree burns involving >10%, and third-degree burns involving the face, hands, feet, genitals, or airway.

SUPERFICIAL BURNS

Dry, red wounds with no blistering or potential blistering. Painful.

PARTIAL THICKNESS BURNS

Epidermal layer lost with varying layers of dermis exposed. Moist, red/pink wound with open or intact blisters. Extremely painful.

FULL THICKNESS BURNS

Epidermis and dermis are destroyed. Dry, leathery, white, brown, or charred. Decreased/absent sensation.

Back to Table of Contents

CHEST TRAUMA

BLS/General Care

1. Perform General Assessment
2. Immediately treat any life threats.
3. Apply spinal motion restriction, as indicated.
4. Maintain airway and support oxygenation, as indicated.
5. Control hemorrhage.
6. Cover penetrating injuries and eviscerations with sterile dressings soaked with sterile normal saline.
7. Stabilize impaled objects.
8. For hypotension, place the patient in Trendelenburg.
9. In the presence of flail chest, secure flail segment with a large and bulky dressing with bandages.
10. For patients with an open pneumothorax, cover with an occlusive dressing and tape on three sides or commercial chest seal.
    a. Monitor for development of tension pneumothorax.

ALS Care

1. In the case of tension pneumothorax with associated loss of radial pulse, decreased LOC, or respiratory distress perform pleural decompression on the affected side of the chest.
2. In the case of flail chest segments, initially stabilize with bulky dressing and then consider intubation with PEEP or CPAP.

Back to Table of Contents

CRUSH/REPERFUSION INJURY

For the purposes of this protocol, crush/reperfusion injury patients include patients who have had an extremity or extremities trapped for 60 minutes or more by a heavy object with occlusion of peripheral perfusion.

BLS/General Care

1. Perform General Assessment.
2. Immediately treat any life threats.
3. Apply spinal motion restriction, as indicated.
4. Maintain and support oxygenation, as indicated.
5. Control hemorrhage.

ALS Care

1. Initiate IV access, proximal to the injury or in a different extremity.
2. Administer **Sodium Bicarbonate**
    a. Adult: **50 mEq IV/IO with 1000 mL of normal saline IV infusion**
    b. Pediatric: Contact Medical Control
3. If prolonged entrapment of greater than 4 hours has occurred, consider administering **Albuterol, 2.5 mg Nebulized** and **Calcium Chloride, 1 g IV**

Back to Table of Contents

EYE TRAUMA

BLS/General Care

1. Perform General Assessment.
2. Treat immediate life threats.
3. Perform detailed secondary exam, when appropriate.
4. For chemical burns:
    a. Remove contact lenses, if present.
    b. Flush eyes with 2000 mL of normal saline.
    c. For alkaline burns, flush for a minimum of 20 minutes.
    d. For acid burns, flush for a minimum of 10 minutes.
    e. Contact the receiving hospital for further orders.
5. For traumatic injuries:
    a. Stabilize any penetrating objects.
    b. Apply sterile dressings to both eyes, without applying pressure.
    c. Contact receiving hospital for further orders.

Back to Table of Contents

HEAD TRAUMA

BLS/General Care

1. Perform General Assessment.
2. Treat any immediate life threats.
3. Stabilize cervical spine, as appropriate.
4. Maintain airway and provide high flow O2. Do not allow the patient's SpO2 to drop below 90%.
5. Control hemorrhage.
6. Cover penetrating injuries with sterile dressings soaked in sterile normal saline.
7. Stabilize impale objects in place.
8. For isolated head injuries, elevate the head of the stretcher 15 degrees.

ALS Care

1. Secure an airway as indicated, considering early intubation.
    a. Maintain an EtCO2 level between 35-45 mmHg. Do NOT hyperventilate the patient! Use waveform capnography to continuously monitor.
2. Initiate 2 large bore IVs, but do not delay transport to obtain.
3. If signs and symptoms of shock are present, administer only enough fluids to maintain a systolic BP of 110-120 mmHg. Do not allow hypotension.

Back to Table of Contents

SPINAL MOTION RESTRICTION

It is the intent of these Trauma Protocols to provide guidance to the provider managing trauma patients who require spinal motion restriction. Spinal motion restriction is defined as "application of a cervical collar and maintenance of the spine in neutral alignment." The long spine boards shall only be used as an extrication device and no longer be considered a therapeutic intervention.

BLS/General Care

1. Perform General Assessment.
2. Determine if patient shows indications for spinal motion restriction (see below).
3. Evaluate pulse, motor, and sensory function before and after placement.
4. Apply appropriately-sized cervical collar in order to maintain neutral alignment.
    a. If movement or placement of the collar causes pain, stabilize the head and neck in the position found.
5. Ambulatory patients should be allowed to self-extricate from a vehicle or situation, if applicable. Position the stretcher as close as possible to the patient and allow the patient to lay in position of comfort on the stretcher while minimizing movement of the spine.
6. Non-ambulatory patients should be moved using a spine board or scoop stretcher, however these devices should be removed following placement on the stretcher.
7. If no other options are feasible, the KED can be used as an extrication device.

Spinal Motion Restriction Indications

1. Focal neurological deficits on motor or sensory exam
2. High risk patients:
    a. Ejection from a vehicle
    b. Motorcycle crash greater than 20 mph
    c. Auto vs. pedestrian or bicycle greater than or equal to 20 mph
    d. Axial load to the head (i.e., diving)
    e. Fall from 3 times the patient's height
3. Low risk patients who:
    a. Have point tenderness on palpation of spinous processes
    b. Are not reliable and competent:
        i. Not at baseline level of alertness
        ii. Have evidence of clinical intoxication
        iii. Have distracting injury
        iv. Are unable to communicate adequately

Back to Table of Contents

Trauma Arrest

General Care

1. Perform General Assessment.
2. Resuscitation should not be attempted in an apneic, pulseless patient with unknown time of arrest or if there are injuries incompatible with life (e.g. decapitation).
3. If a patient presents with initial signs of life upon first responder arrival and suffers cardiac arrest after initial first responder intervention, attempt resuscitation as indicated under the Cardiac Arrest protocol with the following exceptions:
    a. ALS Provider: Immediately perform bilateral pleural decompression.

Note

The Emergency Crew on the scene will decide if resuscitation efforts are appropriate for the patient found in Trauma Arrest. The decision shall be based on the patient's medical condition, type and severity of trauma, and "down" time of arrest.

Treatment of patients in cardiorespiratory arrest varies as to the mechanism of injury and whether or not they exhibit any signs of life (pulse, respiration, or reflexes) on initial evaluation. Generally, trauma patients who are found with no signs of life in the field have suffered overwhelming cardiovascular or Central Nervous System (CNS) injuries, which are not amenable to surgical treatment under any circumstances. The survival rate on these patients is essentially zero and attempts at resuscitation are futile.

Back to Table of Contents

OBSTETRIC EMERGENCIES

Back to Table of Contents

ANTE-PARTUM/3RD TRIMESTER HEMORRHAGE

BLS/General Care

1. Perform General Assessment
2. Initiate rapid transport to an OB-capable facility, if possible.
    a. Transport gravid patients in the left lateral recumbent position.
3. Maintain airway and administer supplemental oxygen as indicated.

ALS Care

1. Initiate IV access and administer fluids as needed.
    a. Consider two large bore IVs if bleeding and/or hypotension are present.

Possible Causes of 3rd Trimester Bleeding

1. Abruptio Placenta: The separation of the placenta from the wall of the uterus. Patient may complain of suprapubic "tearing" pain and may have dark vaginal bleeding. May be asymptomatic.
2. Placenta Previa: Occurs when the placenta is attached very low in the uterus, it covers all or part of the cervix. Occurs in approximately 1 in 200 pregnancies; more commonly in mothers greater than 35 years old. Patient presents with painless vaginal bleeding.
3. Uterine Rupture: The actual tearing or rupturing of the uterus. May be caused by abdominal trauma or labor in a woman with a previous uterine scar. The patient may present with signs and symptoms of hypovolemic shock.

Back to Table of Contents

BREECH BIRTH

BLS/General Care

1. Perform General Assessment
2. Initiate immediate transport to the closest OB-capable facility.
3. Place patient on the left side in the Trendelenburg position, elevating hips with a pillow.
4. Discourage patient from pushing or bearing down.
5. Administer high-flow supplemental oxygen. Be sure to document the patient's SpO2 level.
6. If the infants head is not delivered within 3 minutes of the body:
    a. Elevated the mother's hips
    b. Use a gloved hand to form a "V" and attempt to push the vaginal wall away from the infant's mouth and nose, and administer high-flow supplemental oxygen via blow-by at the earliest possible moment.
    c. If the umbilical cord is palpated around the infant's neck, attempt to gently slip the cord over the infant's head. Do not force the cord!
    d. Never attempt to pull the baby out or push a presented limb back in!
    e. Transport to the nearest hospital with the mother's hips elevated and the baby's airway maintained.

Note: Breech births are characterized by babies who present limbs first, and/or buttocks. It is more common in premature infants.

Back to Table of Contents

NEWBORN MANAGEMENT

BLS/General Care

1. Perform General Assessment upon delivery.
2. Attempt to stimulate unresponsive infants no more than twice before initiating any necessary resuscitation.
3. Evaluate airway and respiratory status. In the cases of obstruction due to meconium or other fluids, consider suctioning.
    a. Suctioning is only recommended if the newborn presents as non-vigorous, there is an obvious obstruction to spontaneous breathing, or if they require positive-pressure ventilation.
4. Dry and wrap the infant to keep it warm.
5. Record APGAR score at 1, 5, and 10 minutes.
    a. Do not delay resuscitation in order to obtain APGAR scores.
    b. If 5-minute APGAR score is less than 7, continue scoring at 5-minute intervals until the 20-minute mark.
6. After the umbilical cord stops pulsating, apply one clamp and 3 inches and one at 6 inches from the infant. Cut the cord between the clamps.
    a. Delay cord cutting and clamping for at least 1 minute for term and preterm infants not requiring resuscitation.
7. If:
    a. The patient's heart rate falls less than 100 beats per minute, provide ventilations via BVM, using supplemental oxygen if indicated.
    b. The patient's heart rate falls less than 60 beats per minute, perform chest compressions at a rate of 120 compressions per minute. Stop compressions when a heart rate of greater than 80 beats per minute is achieved and perform BVM ventilations until heart rate is greater than 100 beats per minute. If the heart rate stays below 60 beats per minute, continue to provide more advanced cardiac resuscitative efforts. Reference the Cardiac Arrest protocol.
    c. The patient's respiratory rate falls less than 40 breaths per minute, initiate BVM ventilations to achieve a respiratory rate of 40 breaths per minute.

Note: During transport, the newborn should be secured in a properly sized car seat for the infant and secured in the patient compartment in the ambulance. The newborn should NOT be transported while being held (unsecured).

Back to Table of Contents

NORMAL BIRTH

BLS/General Care

1. Perform General Assessment.
2. If delivery is imminent, prepare patient for delivery prior to transport.
3. Obtain the following information to provide to receiving facility:
    a. Name and age
    b. Patient's physician/Prenatal care
    c. Date of last menstrual cycle, estimated due date, and number of weeks along
    d. Number of previous pregnancies (Gravida) and number of previous viable births (Para)
    e. Current condition of the patient (stable vs. unstable)
    f. Rupture of amniotic membranes. Document the time, color, and odor of fluid.
    g. Timing of contractions—contractions should be timed from the beginning of one contraction to the beginning of the next.
    h. Estimated time of arrival at the facility
4. Perform delivery
    a. Open sterile obstetric kit
    b. Drape patient, ensure patient privacy
    c. Apply sterile gloves and other PPE
    d. As head emerges, gently support the baby's head to prevent an explosive delivery
        i. Do not pull or push baby.
    e. In the event that membranes cover the baby's head after delivery, the sac should be opened (using scissors) and removed from the baby's face.
    f. Observe for the umbilical cord around the baby's neck. It should be gently slipped over the head.
    g. If unable to remove cord from around the neck, clamp and cut cord carefully.
    h. After the head has been delivered, suction the airway with a bulb syringe (mouth and then nose).
        i. Note that if there are any signs of meconium aspiration, immediately begin meconium suction techniques.
    i. Deliver shoulders and body.
    j. Clamp the cord approximately 6 inches from the baby and place a second clamp 3 inches from the first clamp.
    k. Cut the cord using the OB kit provided scalpel.
    l. Inspect the cord for artery and vein characteristics and document.
    m. Dry baby, wrap in a blanket to preserve body heat, insuring the baby's head is covered.
    n. Notify dispatch immediately at the end of the second stage of labor and record and document the time in the PCR.
5. Care for the infant after delivery, referencing the Newborn Management protocol.
6. Deliver the placenta:
    a. Generally, the placenta will be delivered within 15-20 minutes after birth.
        i. Bleeding can be expected as the placenta separates from the uterine wall.
    b. Gently massage the uterus through abdominal wall.
    c. If mother plans to nurse the baby, allow her to nurse to aide in stimulating uterine contractions.
    d. Transport the placenta with mother.
    e. Examine mother's perineum for tears and abnormal bleeding.

Back to Table of Contents

f. Place sanitary napkins.

ALS Care

1. Initiate IV access.
2. In case of severe hemorrhage or signs and symptoms of shock, initiate fluid bolus to maintain adequate perfusion.
3. If severe post-partum hemorrhage is present with any one of the below criteria, **infuse Low Titer O+ Whole Blood (LTO+WB)**, if available, in lieu of fluid bolus
    a. **Rapidly infuse 1 unit IV/IO** if the patient meets any ***one*** of the following criteria:
        i. Systolic Blood Pressure less than 70 mmHg **OR**
        ii. Systolic Blood Pressure less than 90 mmHg with Heart Rate greater than or equal to 110 bpm **OR**
        iii. EtCO2 less than 25
    b. If patient's condition does not improve, repeat rapid infusion X 1 (2 units total)

    Reference the Blood (Whole and Components) protocol for administration details
4. If patient meets criteria for LTO+WB administration and bleeding is confirmed to have started less than 3 hours prior, **administer Tranexamic Acid (TXA) IV/IO** (even if LTO+WB is not administered or available):
    a. **Dilute 2 g in a 100 mL bag** of Normal Saline and infuse over **10 minutes**.
5. Precaution: DO NOT administer TXA in same line as LTO+WB. Infused in another IV/IO site. If no other site is able to be established, thoroughly flush the line with Normal Saline before and after infusing TXA.

Back to Table of Contents

PROLAPSED CORD

BLS/General Care

1. Perform General Assessment
2. Initiate rapid transport to closest OB-capable facility.
3. Place the patient in an exaggerated Trendelenburg position or knee-chest position.
4. Check the cord for pulsations.
5. If there is no pulse in the cord, insert two gloved fingers (using sterile gloves) into the patient's vagina to raise the tissue off of the umbilical cord. Verify a pulse has returned to the cord.
6. Apply a moistened dressing to the exposed cord and do not attempt to push the cord back into the vaginal canal.
7. Contact the receiving facility to provide an early notification and obtain further orders.

Note: A Prolapsed Cord occurs when the umbilical cord slides down into the pelvis and becomes compressed between the pelvis and fetus. This action can actually pinch off fetal circulation. Fetal death is certain without quick intervention.

Back to Table of Contents

PRE-ECLAMPSIA AND ECLAMPSIA

Pre-Eclampsia: A syndrome characterized by HTN, generalized edema, and protein in the urine, usually in the last trimester of pregnancy or up to 30 days post-partum. Headache and altered mental status are seen as the condition progresses.

Eclampsia: All of the aforementioned signs and symptoms of pre-eclampsia with the addition of seizure and possible coma.

BLS/General Care

1. Perform General Assessment.
2. Maintain airway and administer supplemental oxygen as indicated.
3. Obtain full patient history and provide information to receiving facility.

ALS Care

1. Initiate IV access and administer normal saline at a KVO rate.
2. If patient is experiencing eclamptic seizures, administer **Magnesium Sulfate, 2-4 g IV** or **Magnesium Sulfate, 4 g IM**.
    a. Intramuscular injection should be split into two separate 2g injections, one in each buttock.
3. If the seizure persists, contact the receiving facility for the possibility of administration of Versed. **Versed administration must be approved by the receiving facility ER or OB physician in this setting.** Versed may complicate the delivery by causing respiratory depression in the fetus.

Back to Table of Contents

PHARMACOLOGY

Back to Table of Contents

NARCOTICS GUIDELINES

OCEMS Units will carry:

1. 600 mcg Fentanyl
2. 20 mg Versed
3. 1000 mg Ketamine

In accordance with HRS, Chapter 64J Florida Administrative Code, a log shall be maintained for Fentanyl, Versed, and Ketamine. All medications used, removed, or missing must be logged in the appropriate places. Refer to OCEMS SOP 417.00 for the comprehensive policy.

The controlled medication log shall contain:

1. The vehicle or unit ID number (may be listed on the front cover of the Controlled Medication Log).
2. The legible name of the Paramedic conducting the inventory.
3. The Paramedic's identification number.
4. The date and time of the inventory.
5. The drug's name, volume, quantity and expiration date.
    a. Medications dated for example, Fentanyl July 24, would expire at the end of July 2024, unless otherwise indicated.
6. The incident number and the amount for each medication administered.
7. The printed name and signature of the administering Paramedic.
8. The printed name and signature of the person witnessing the disposal of the unused portion.
9. No lines in the log should be skipped or left blank.

Non-controlled medications must be logged on the Patient Care Report.

Back to Table of Contents

MEDICATION LOG GUIDELINES

Each ALS Lock Box will have a dedicated key that will be kept in the possession of the Paramedic assigned to that vehicle. The only other key that can open this box will be a master key held by the Logistics Supervisor, or department designee. During shift change, the off-going Paramedic will turn the key over to the on-coming Paramedic AFTER they jointly verify that the medications are present, and without signs of tampering. The Paramedic who is carrying the key is responsible for medications within the assigned ALS Box.

Keys are to be carried by the Paramedic at all times, and not left in the vehicle.

This procedure will be followed each time the drug key is turned over to any other shift personnel.

Expired Medications:

Expired medications will be removed and submitted to Logistics on the first day of each new month. Expired narcotics will be submitted to the EMS Branch Commander for replacement.

Missing or Broken Medications:

Missing or broken medications will be replaced immediately by the discovering crew, and reported to the crew's supervisor. Missing or broken narcotics will be IMMEDIATELY reported to the crew's supervisor.

These guidelines are based upon Federal DEA and State of Florida regulations and are referenced in OCEMS SOP 417.00

Back to Table of Contents

ADENOSINE

Adenocard, Adenoscan

Classification

Class V Antiarrhythmic

Mechanism of Action

Slows electrical conduction through the AV node.

Indications

SVT

Extreme narrow complex tachycardia

Contraindications

Sick Sinus Syndrome

2nd or 3rd degree AV block

Allergy

Wolff-Parkinson-White Syndrome

Side Effects

Chest Pain

Feeling of impending doom

Shortness of breath

Dizziness/Weakness

Other Information

Adenosine has a half-life of less than 10 seconds and should therefore be given as a rapid IV push with tandem flushes.

Though not frequently successful, stable patients should be coached through vagal maneuvers prior to administration.

In unstable patients, synchronized cardioversion should be performed.

Protocols

Narrow Complex Tachycardia

Back to Table of Contents

ALBUTEROL

Proventil, Ventolin, Proair

Classification

Beta-2 Agonist

Mechanism of Action

Bronchodilates through the relaxation of smooth muscles lining the bronchi.

Indications

Respiratory distress secondary to bronchoconstriction

Contraindications

Tachycardia (Rate above 150)

Hypertension

Hypokalemia

Allergy

Side Effects

Tachycardia

Headache

Cough

Pulmonary Edema

Bronchospasm

Other Information

Although this medication is contraindicated in significantly tachycardic patients, providers should weigh the risks verses benefits of administering this medication, as a patient's tachycardia may be secondary to hypoxia/respiratory distress/emotional distress which may be alleviated with the administration of this medication.

If a patient develops flash pulmonary edema secondary to the administration of this medication, it should be immediately discontinued, and CPAP should be applied to patients for whom the procedure is not contraindicated.

Protocols

Allergic Reaction

Respiratory Distress

Crush/Reperfusion Injury

Back to Table of Contents

AMIODARONE

Cordarone, Pacerone

Classification

Class III Antiarrhythmic, Potassium Channel Blocker

Mechanism of Action

Blocks potassium channels during repolarization of the heart, thereby slowing rate, blocking reentry mechanisms, and stabilizing cardiac rhythms.

Indications

Ventricular tachycardia with a pulse

Ventricular rhythms without a pulse

Contraindications

Hypotension

2nd or 3rd degree AV block

Allergy

Side Effects

Hypotension

Bradycardia

Nausea

Other Information

Amiodarone should only be administered to patients who are in cardiac arrest or who are not hypotensive; in the presence of hypotension, providers should proceed immediately to synchronized cardioversion.

Protocols

Ventricular Tachycardia

Cardiac Arrest

Back to Table of Contents

AMIODARONE INFUSION

Ventricular Tachycardia with a Pulse

1. Mix 150mg into a Normal Saline
2. Administer over 10-minutes (15mg/minute) (Use 10gtts/mL drip set)
3. Utilize chart below for drops per minute

Maintenance Infusion

1. Mix 150mg into a Normal Saline
2. Administer at 1mg/min utilizing the 60 drops/mL administration set
3. Utilize chart below for drops per minute

Amiodarone is a Class III Antiarrhythmic used for life-threatening ventricular rhythms. It acts to slow the sinus rate.

Amiodarone is diluted into an infusion to help reduce the risk of Hypotension. If Hypotension develops, slow rate of infusion.

Always label the bag when administering any medications

	Dose	**Drip Set**	**Drops/min when mixed in 50mL**	**Drops/min when mixed in 100mL**
V-Tach with a Pulse	150mg/10min	10 drops/mL	50 drops/min	100 drops/min
Maintenance Infusion	1mg/min	60 drops/mL	20 drops/min	40 drops/min

Back to Table of Contents

ASPIRIN

Bayer, Aspirtab, ASA

Classification

NSAID, Non-Selective Cyclooxygenase Inhibitor

Mechanism of Action

Inhibits platelet aggregation, preventing further growth of emboli and thrombi.

Indications

Chest Pain

Cardiac Ischemia

Cardiac Infarction

Contraindications

GI hemorrhage

Allergy

Side Effects

Abdominal Pain

Nausea/Vomiting

Increased risk of GI hemorrhage

Other Information

Aspirin does not resolve pre-existing clots and instead only prevents them from growing larger.

Protocols

Chest Pain/STEMI

Dive Accident and Decompression Sickness

Back to Table of Contents

ATROPINE

Classification

Anticholinergic

Mechanism of Action

Acetylcholine antagonist which inhibits parasympathetic stimulation.

Indications

Bradycardia

Bronchorrhea

Symptomatic organophosphate poisoning

Contraindications

Hyperthyroidism

Allergy

Side Effects

Pupil dilation

Dry mouth

Heart palpitations

Dizziness/Weakness

Other Information

Atropine causes pupil dilation which may be confused with signs neurologic damage following a cardiac arrest; ensure that the use of this medication is disclosed immediately to physicians at transfer of care of cardiac arrest or post-ROSC patients.

This medication will likely be unsuccessful at managing bradycardia secondary to 2nd degree, Type II and 3rd degree AV blocks; providers should consider proceeding to external pacing in patient displaying bradycardia secondary to these causes.

Providers performing RSI should consider preparing this medication for rapid administration during the procedure to counteract excess secretions caused by ketamine administration or bradycardia secondary to activation of the vagus nerve by the laryngoscope.

Protocols

Bradycardia

Violent and/or Impaired Patient

Chemical Poisoning

Back to Table of Contents

Blood (Whole and Components)

Classification

Blood (Components)

Mechanism of Action

N/A

Indications

Hemorrhagic Shock

Attempt to obtain verbal consent prior to administration (if possible)

Contraindications

Religious objection to receiving whole blood—be sure refusal form is completed and signed if blood is indicated and not given for this reason

Adverse Reactions

If the patient experiences a transfusion reaction (including generalized urticaria, chills, temperature elevation greater than 2 degrees from baseline, flushed face, sudden dyspnea, wheezing/rales, or anaphylactic reaction):

1. STOP the transfusion immediately!
2. Disconnect ALL tubing from transfusion site and flush IV site with Normal Saline.
3. Treat patient according to presentation. Reference the Allergic Reaction, Acute Pulmonary Edema/CHF, Hypotension, Bleeding and Hemorrhagic Shock protocols.
4. DO NOT discard unused blood or used IV tubing. Secure all items used for the transfusion in a red bag and give to the destination facility for testing.
5. Advise the receiving facility of the transfusion reaction and actions taken. Be sure to document in the patient care report.
6. The on duty EMS Commander will need to complete an incident report and notify the administrator on call.

Other Information

1. To be considered Low Titer O+ Whole Blood (LTO+WB) the titer should be less than 1:256
2. If LTO+WB is not available, O+ packed Red Blood Cells (pRBC's) and Plasma can be substituted for Whole Blood. 1 unit of pRBC's and 1 unit of plasma equals 1 unit of Whole Blood when referencing the appropriate protocols. For pediatrics, infused 10mL/kg of both plasma and pRBC's when protocol states to administer 10mL/kg LTO+WB. If giving components, plasma should be given first followed by pRBC's.
3. Attempt to obtain the largest IV site possible (18ga or above is preferred, 22ga is minimum size) for blood infusion. If IV access is not obtainable, blood can be infused via IO.

Back to Table of Contents

Administration Procedure

1. Complete all verifications:
    a. Confirm patency of administration site. If there is any doubt to the patency, utilize a new administration site.
    b. Confirm the patient meets administration criteria listed in the appropriate protocol and/or received Medical Control approval prior to administration.
    c. Inspect the blood product to ensure there is no discoloration, clotting, or foreign objects. Ensure there is no cracking of the plastic bag that has led to leaking.
    d. Confirm blood product type, ABO Group, Rh type, and expiration date with a second provider.
    e. Be sure to document all the above was completed in the patient care report. Also, document the name of the second provider providing the verification.
2. Obtain a complete set of vitals including patient temperature prior to administration. Reassess vitals throughout administration (including temperature) and document in the patient care report (minimum every 5 minutes).
3. If possible, draw a 4mL sample of the patient's blood **prior** to the blood infusion and place in a lavender top blood tube. Give the blood tube to the destination facility. Do not delay blood infusion to draw the sample.
4. Retrieve the Y blood tubing within the LifeFlow Plus Blood and Fluid Infuser, connect the Warrior Compact Disposable Unit (CDU) ensuring it will be as close to the patient as possible, and prime/flush the line with a 250mL Normal Saline bag; do not use Lactated Ringers or D5W.
5. Connect the Warrior CDU to the Warrior Lite and ensure it powers on. Ensure it is warming by viewing the flashing green check or steady green check.
6. Connect the blood product to the Y tubing, close the roller clamp to the Normal Saline, and prime the blood tubing. Start your infusion of blood. Use the LifeFlow Plus to administer the blood quickly (1 full squeeze of the trigger every 3 seconds). If your patient is pediatric, be sure to accurately infuse the amount as per the appropriate protocol (1 full squeeze of the trigger delivers 10mL). Do not infuse too much!
7. Throughout infusion, continue to monitor the patient for condition changes and possible adverse reactions (see above).
8. If giving TXA or other medications to the patient, be sure to use a second access site. If a second access site is unavailable, be sure to flush the line thoroughly before and after medication administration.
9. Communicate to the receiving facility the following:
    a. That the patient is receiving blood products (provide radio report as soon as possible with adequate advanced warning)
    b. If the patient experienced adverse reactions
    c. If the patient is female of childbearing age, that Rh positive blood products were administered.
10. Complete the OneBlood Transfusion report and OCEMS Un-crossmatched Emergency Blood Release Form and leave a copy of each with the destination facility. The other copies of the forms shall be scanned and attached to the PCR.

Back to Table of Contents

11. Document all of the following in the patient care report:
    a. Blood type, titer, and volume infused
    b. Reason blood was administered
    c. Administration site
    d. Patient's temperature before, during, and after administration
    e. Patient's vitals before, during, and after administration
    f. Patient's response to blood products
    g. Fluid warmer usage
    h. Any adverse reactions
    i. If verbal or implied consent was obtained regarding blood products

Protocols

Hypotension

Bleeding and Hemorrhagic Shock

Normal Birth

Back to Table of Contents

CALCIUM CHLORIDE

Classification

Electrolyte

Mechanism of Action

Key contributor to muscle/cardiac contraction mechanisms.

Indications

Calcium channel blocker overdose

Magnesium overdose

Hydrofluoric acid contamination

Hyperkalemia

Contraindications

Hypercalcemia

Digitalis toxicity

Allergy

Side Effects

Nausea/Vomiting

Blurred vision

Tachycardia

Hypotension

Other Information

Electrolytes should never be administered via rapid IV push and should be administered slowly or in an infusion over time.

Protocols

Overdose

Narrow Complex Tachycardia

Chemical Poisoning

Crush/Reperfusion Injury

Back to Table of Contents

DEXTROSE 10%

D10

Classification

Carbohydrate

Mechanism of Action

Raises blood glucose levels.

Indications

Hypoglycemia

Contraindications

Hyperglycemia

Allergy

Side Effects

Hyperglycemia

Nausea/Vomiting

Other Information

A patient's blood sugar values may fluctuate heavily during the administration and cessation of this medication. Blood glucose values should be evaluated on a regular basis to ensure that there is not a recurrence of hypoglycemia or development of hyperglycemia.

Dextrose is necrotic to tissue. Ensure IV patency prior to initiating infusion and continue to monitor for signs of extravasation/infiltration during administration.

Protocols

Diabetic Emergency

Back to Table of Contents

DILTIAZEM

Cardizem

Classification

Class IV Antiarrhythmic, Calcium Channel Blocker

Mechanism of Action

Inhibits calcium uptake into cardiac cells during depolarization, leading to rate control and vasodilation.

Indications

Atrial fibrillation with Rapid Ventricular Response (RVR)

Narrow complex tachycardia

Contraindications

Hypotension

Hypocalcemia

CHF

Myocardial Infarction (MI)

Allergy

Side Effects

Hypotension

Bradycardia

Nausea/Vomiting

Headache

Dizziness/Weakness

Other Information

In unstable patients, synchronized cardioversion should be performed.

Protocols

Narrow Complex Tachycardia

Back to Table of Contents

DIPHENHYDRAMINE

Benadryl

Classification

Antihistamine

Mechanism of Action

H1 inverse agonist, decreasing allergic reaction symptoms.

Indications

Allergic reaction

Contraindications

Allergy

Side Effects

Lethargy

Dizziness/weakness

Dry mouth

Other Information

This medication will not reverse anaphylactic reactions but assist management of symptoms in conjunction with epinephrine administration.

Protocols

Allergic Reaction

Back to Table of Contents

EPINEPHRINE

Adrenalin, Adrenaline

Classification

Catecholamine, sympathomimetic

Mechanism of Action

Increases chronotropy (heart rate) and inotropy (cardiac contractility).

Indications

Allergic reaction

Respiratory distress

Cardiac arrest

Bradycardia

Hypotension

Contraindications

Tachycardia

Side Effects

Tachycardia

Hypertension

Nausea/Vomiting

Cardiac ischemia

Anxiety

Other Information

This medication can be given IV/IO push and IM injection, so look closely at protocol to determine appropriate administration route, dose, and concentration.

Protocols

Allergic Reaction

Croup/Epiglottitis

Respiratory Distress

Bradycardia

Chest Pain/STEMI

Hypotension

Cardiac Arrest

Back to Table of Contents

EPINEPHRINE PUSH-DOSE PREPARATION

Push-Dose Preparation

1. Discard 1 mL of saline from a 10mL Normal Saline flush
2. Draw up 1 mL of Epinephrine 1:10,000 into syringe. This will yield 10 mcg/mL.
3. Label the syringe Epi 1:100,000! Ensure all providers understand the syringe contains medication.

Administration

1. When administering to a patient, the syringe containing the Epinephrine 1:100,000 should be attached to a needleless port on an administration set. The syringe should NOT be directly attached to the end of the flush to ensure it is not confused with a Normal Saline flush.
2. DO NOT administer faster than 1 mL/minute
3. Medication will have a rapid onset (less than 2 minutes) and short duration (approximately 5 to 10 minutes).
4. Monitor the patient's heart rate and blood pressure throughout administration.

Back to Table of Contents

FENTANYL

Sublimaze, Actiq, Duragesic

Classification

Opioid Analgesic

Mechanism of Action

Opioid receptor agonist, causing pain relief.

Indications

Pain

Contraindications

Hypotension

Respiratory depression

Allergy

Side Effects

Hypotension

Respiratory depression/distress

Nausea/vomiting

Dizziness/weakness

Dry mouth

Other Information

Fentanyl administered via **rapid** IV push may cause “wooden chest syndrome” which causes a temporary spasming of the intercostal muscles and respiratory distress.

Patients who receive this medication should be monitored closely for respiratory depression with naloxone administration provided to anyone who shows signs of respiratory compromise.

Protocols

Chest Pain/STEMI

Pain Management

Back to Table of Contents

GLUCAGON

Glucagen

Classification

Glycogenolytic

Mechanism of Action

Causing the liver to break down glycogen stores and increase blood glucose levels.

Indications

Hypoglycemia

Contraindications

Hyperglycemia

Allergy

Side Effects

Nausea/Vomiting

Tachycardia

Headache

Other Information

Glucagon will not be effective in patients with limited glycogen stores (i.e., pediatric patients and patients who have recently had this medication administered).

Protocols

Diabetic Emergency

Back to Table of Contents

GLUCOSE (ORAL)

Classification

Carbohydrate

Mechanism of Action

Raises blood glucose levels.

Indications

Hypoglycemia

Contraindications

Hyperglycemia

Allergy

Side Effects

Hyperglycemia

Nausea/Vomiting

Other Information

This medication can only be administered to patients who can protect their own airway and follow attending crew member directions.

The onset of medication effects will be more delayed than with IV dextrose, however it is a BLS-friendly option and may be applied to patient gums, as well as ingested.

Protocols

Diabetic Emergency

Back to Table of Contents

IPRATROPIUM BROMIDE

Atrovent

Classification

Anticholinergic, Bronchodilator

Mechanism of Action

Inhibits parasympathetic respiratory response and relaxes bronchial smooth muscle.

Indications

Respiratory distress secondary to bronchoconstriction

Contraindications

Allergy

Side Effects

Nausea/vomiting

Dizziness/weakness

Dry mouth

Other Information

This medication is frequently administered in conjunction with albuterol; unlike albuterol, it is typically only administered once, whereas albuterol may be re-administered multiple times.

Patients with an atropine allergy may also experience adverse reactions to this medication.

Protocols

Respiratory Distress

Back to Table of Contents

KETAMINE

Ketalar

Classification

Dissociative anesthetic

Mechanism of Action

Blockades NMDA and HCNI receptors, leading to dissociation, amnesia, and sedation.

Indications

Pain

Rapid Sequence Intubation

Agitated/violent behavior

Contraindications

Schizophrenia

Allergy

Side Effects

Nausea/vomiting

Bronchorrhea

Respiratory depression

Dizziness/weakness

Confusion/AMS

Other Information

This medication may be administered IV push, IV infusion, IM, or IN.

When given via IV push, the dose should be diluted to prevent laryngospasm and other adverse reactions. Reference Ketamine Administration Guidelines.

The bronchorrhea which may occur secondary to administration of this medication may be counteracted through the administration of atropine.

Protocols

Bradycardia

Pain Management

Narrow Complex Tachycardia

Ventricular Tachycardia

Violent/Impaired Patient

Back to Table of Contents

KETAMINE ADMINISTRATION GUIDELINES

When administering IM or IN, the highest possible concentration should be used. No dilution is needed

When administering IV/IO, Ketamine shall be diluted to prevent adverse reactions. Adverse reactions include laryngospasm, dysphoria, emergence phenomena, respiratory depression, and increased laryngeal/tracheal secretions.

1. Option 1 (Preferred)
    a. The Ketamine dose should be drawn up using a 1mL syringe.
    b. For Adults, the medication should be mixed into a 100mL NS bag.
    c. For Pediatrics, the Ketamine should be mixed into a 50mL NS bag.
    d. The medication shall then be infused over 10-15 minutes.
2. Option 2
    a. The Ketamine dose should be drawn up in an appropriately sized syringe so the medication can be properly dosed (i.e. 1, 3, or 10mL).
    b. Once drawn up, the medication shall be diluted with NS to the full volume of the syringe.
    c. Example: if administering 25mg of Ketamine with a 100mg/mL concentration, the paramedic shall draw up 0.25mL of Ketamine in a 1mL syringe. The paramedic shall then draw up an additional 0.75mL of NS to dilute the medication.
    d. The Ketamine will then be given SLOWLY over 1-2 minutes MINIMUM!

Back to Table of Contents

LIDOCAINE

Xylocaine

Classification

Class Ib Antiarrhythmic, Sodium channel blocker

Mechanism of Action

Blocks sodium channels, slowing the rise of cardiac action potential and depolarization; additionally, blocks nerve receptors near the site of injection/infusion. Medication is reported to prevent increases in ICP associated with vagus nerve stimulation/intubation.

Indications

IO insertion

Ventricular tachycardia with a pulse

Ventricular rhythms without a pulse

Contraindications

Hypokalemia

AV heart block

Wolff-Parkinson-White syndrome

Allergy

Side Effects

Hypotension

Bradycardia

Headache

Dizziness/Weakness

Other Information

With the newest AHA update, Lidocaine has been offered as an alternative to amiodarone in treatment of ventricular rhythms. Follow local protocols regarding medication administration.

When used as pain management for IO insertion, this medication should be slow-infused following insertion of catheter.

Protocols

Cardiac Arrest

Intraosseous Access

Back to Table of Contents

MAGNESIUM SULFATE

Classification

Electrolyte

Mechanism of Action

Inhibits muscle contraction and neuromuscular transmissions, leading to decreased reflexes, bronchodilation, and vasodilation.

Indications

Eclamptic seizures

Respiratory distress secondary to bronchoconstriction

Polymorphic ventricular tachycardia/Torsades de Pointes

Contraindications

Bradycardia

Hypotension

Hypocalcemia

Myasthenia Gravis

Kidney disease

Allergy

Side Effects

Bradycardia

Hypotension

Decreased deep tendon reflexes

Respiratory depression

Tachycardia

Other Information

Electrolytes should never be administered via rapid IV push and should be administered slowly or in an infusion over time.

Magnesium Sulfate overdoses can be reversed through the use of calcium chloride.

Protocols

Respiratory Distress

Ventricular Tachycardia

Pre-Eclampsia and Eclampsia

Back to Table of Contents

METHYLPREDNISOLONE

Solu-Medrol

Classification

Corticosteroid

Mechanism of Action

Diffuses passively across the cellular membrane and binds to the intracellular glucocorticoid receptor. This complex translocates into the nucleus, where it interacts with specific DNA sequences, resulting in either enhancement or suppression of transcription of particular genes.

Indications

Adrenal Insufficiency/Adrenal Crisis

Allergic Reaction

Contraindications

Known hypersensitivity to methylprednisolone or other corticosteroids

Systemic fungal infection

Side Effects

Elevated Blood Pressure

Retention of fluid

Elevation of blood glucose level

Other Information

When packaged in power form, the medication must be mixed with the provided diluent.

When packaged in the Act-o-vial®, complete these steps:

5. Press down on plastic activator to force diluent in to the lower compartment
6. Gently agitate to effect solution
7. Remove plastic tab covering center of stopper
8. Sterilize top of stopper with alcohol prep pad
9. Insert needle squarely through center of stopper until tip is just visible. Invert vial and withdraw dose

Protocols

Adrenal Insufficiency Emergencies

Allergic Reaction

Back to Table of Contents

MIDAZOLAM

Versed

Classification

Benzodiazepine

Mechanism of Action

Activates GABA in CNS, causing sedation and muscle relaxation.

Indications

Seizures

Procedural Sedation

Contraindications

Respiratory depression

Hypotension

Allergy

Side Effects

Hypotension

Respiratory depression

Lethargy

Nausea/vomiting

Other Information

Administration of this medication with opiates may potentiate the respiratory depression effects of each medication.

Orders from medical control may be obtained to use this medication for sedation of violent/agitated patients.

Narcan will be ineffective in reversing respiratory depression caused by this medication; administer cautiously.

Protocols

Bradycardia

Overdose

Seizures

Narrow Complex Tachycardia

Ventricular Tachycardia

Back to Table of Contents

NALOXONE

Narcan

Classification

Opiate receptor antagonist

Mechanism of Action

Blocks actions of opiates and opioids, reversing side effects such as respiratory depression and sedation.

Indications

Respiratory depression secondary to opioid/opiate overdose

Contraindications

Allergy

Side Effects

Nausea/Vomiting

Agitation

Headache

Flash Pulmonary Edema (in large doses—greater than 16mg)

Other Information

Many patients may take other illicit substances in conjunction with opioids/opiates. On reversal of respiratory depression and sedation, providers should be prepared to manage symptoms related to other substances such as methamphetamines, cocaine, spice, etc. which may become more apparent.

Management of hypoxia and apnea should not be delayed in order to administer this medication. Especially following RSI/advanced airway placement, administration of this medication is of secondary importance.

Scenes with patients who have overdosed on narcotics may hold many hazards for providers (i.e., uncapped needles, unknown substances, weapons, other patients or aggressive bystanders, aggressive patients, etc.). Responder safety takes priority, and providers should maintain situational awareness throughout patient care.

Protocols

Altered Mental Status

Overdose

Chemical Poisoning

Back to Table of Contents

NITROGLYCERIN

Nitrostat

Classification

Vasodilator

Mechanism of Action

Dilates vascular smooth muscle, reducing cardiac preload and increasing cardiac perfusion.

Indications

Chest pain

Dyspnea secondary to CHF/pulmonary edema

Contraindications

Hypotension: systolic blood pressure of 90 mmHg or less

PDE5/erectile dysfunction medication use

ST-segment elevation visible in inferior leads (II, III, aVF) or posterior leads (V7, V8, V9)

Allergy

Side Effects

Hypotension

Nausea/Vomiting

Headache

Sublingual tingling/burning sensation

Other Information

Although the vasodilatory effects may assist in increasing cardiac perfusion during a myocardial infarction, the primary focus of nitroglycerin administration is ischemia-related pain relief. This will decrease patient agitation, thereby decreasing cardiac workload and oxygen demand.

The vasodilatory effects of this medication decrease cardiac preload, which may be harmful in patients with a right-side myocardial infarction. Providers should be cautious with administration to patients suffering from an inferior MI, as this frequently occurs in conjunction with right-side MIs. Administer a fluid bolus and perform a right-side and posterior 12-lead in order to assist with assessment and administration decision.

Aspirin administration should be prioritized over nitroglycerin administration.

Protocols

Acute Pulmonary Edema/CHF

Chest Pain/STEMI

Back to Table of Contents

ONDANSETRON

Zofran

Classification

Antiemetic, 5-HT3 Antagonist

Mechanism of Action

Serotonin receptor antagonist in brain and vagus nerve, leading to decreased nausea and incidence of vomiting.

Indications

Nausea

Vomiting

Contraindications

Prolonged QT interval

Allergy

Side Effects

Headache

Fatigue

Serotonin syndrome

Ventricular tachycardia

Other Information

The efficacy of ondansetron has been reported to decrease following the beginning of nausea and even more after a patient begins to vomit. Early administration (i.e., before administration of pain medications in patients with a history of medication-related nausea) will lead to the most positive effect.

Though considered to be a benign medication, patients may experience a prolonged QT interval secondary to its administrations, leaving them at risk for “R-on-T phenomenon” leading to ventricular arrhythmias. Thus, patients who receive this medication from EMS providers should be monitored via 4-lead EKG and transported by ALS providers whenever possible.

Protocols

Abdominal Pain

Pain Management

Violent/Impaired Patient

Back to Table of Contents

SODIUM BICARBONATE

Classification

Electrolyte

Mechanism of Action

Increases serum bicarbonate levels, temporarily increasing blood pH levels.

Indications

Cardiac arrest with suspected hyperkalemia

Crush injuries

Contraindications

Metabolic or respiratory alkalosis

Hypocalcemia

Allergy

Side Effects

Nausea/vomiting

Headache

Dizziness/weakness

Respiratory depression/distress

Other Information

Electrolytes should never be administered via rapid IV push and should be administered slowly or in an infusion over time in patients with a pulse.

Protocols

Overdose

Crush Injuries

Cardiac Arrest

Back to Table of Contents

SUCCINYLCHOLINE

Anectine, Suxamethonium

Classification

Depolarizing neuromuscular blocker

Mechanism of Action

Binds to cholinergic receptors, causing release of potassium and temporary paralysis

Indications

Rapid Sequence Intubation

Contraindications

History of malignant hyperthermia

Hyperkalemia

Kidney Disease

Increased ICP

Allergy

Side Effects

Apnea

Malignant hyperthermia

Fasciculations

Tachycardia

Chest pain

Other Information

Even in patients without a gag reflex, providers should still consider administration of this medication prior to intubation in order to prevent complications such as vocal cord spasm and vomiting during intubation.

Patients should be properly sedated at least two minutes prior to the use of this medication and should continue to be sedated following completion of intubation. Patients should be thoroughly pre-oxygenated both before the administration of this medication, as well as afterwards prior to laryngoscopy.

Succinylcholine is only approved for a single administration in the pre-hospital setting.

Protocols

RSI

Back to Table of Contents

TRANEXAMIC ACID

TXA

Classification

Antifibrinolytics

Mechanism of Action

Inhibits plasmin formation and prevents dissolution of clots.

Indications

Uncontrollable hemorrhage

Contraindications

DVT

Pulmonary embolism

Myocardial infarction

CVA

Bradycardia

Active GI Bleeding

Pediatric patients

Allergy

Side Effects

Nausea/vomiting

Clotting complications (PE, DVT, MI, CVA)

Bradycardia

Abdominal pain

Other Information

Should only be administered within 3 hours of initial injury.

Protocols

Bleeding and Hemorrhagic Shock

Normal Birth

Back to Table of Contents

COMMUNITY PARAMEDICINE PROTOCOLS

Back to Table of Contents

INTENT

The Community Paramedicine protocols & procedures may be utilized by credentialed community paramedicine paramedics, authorized by the Okaloosa County EMS Medical Director(s). The scope of practice of the Community Paramedic shall be guided by these protocols as authorized by the Okaloosa County EMS Medical Director(s).

The Community Paramedic Practitioner will respond to a residence on request from the primary care provider, on request by the patient/parent of patient through 911 triage, or on referral from ALS 911 response. The Community Paramedic Practitioner will follow guidelines outlined by the primary care providers, EMS treatment protocols, or on-line medical direction orders for the management of the patient's condition/complaint.

Back to Table of Contents

GENERAL PATIENT ASSESSMENTS

Indications: This protocol provides general guidance for the evaluation of patients under the Community Paramedicine Program.

Community Paramedic Directives:

1. Prior to initiation of patient contact obtain dispatch and visit information to include patient complaint/illness/reason for visit. Review any available previous pertinent patient care records.
2. The Community Paramedic should introduce him/herself to the patient.
3. Assure the scene is safe for the patient and Community Paramedic (not a full home safety assessment). Assure there is adequate privacy for performing a patient assessment.
4. Obtain a history of patient's present illness/complaint. Sources may include the patient, 911 triage, referring physician or agency, family, or referring EMS unit.
5. Perform a physical exam pertinent to the patient's complaint/condition. Exam may be focused or complete. Obtain full set of vital signs including: temperature, heart rate, blood pressure, respiratory rate, and pulse oximetry.
6. Perform diagnostic studies as indicated for the patient illness/complaint (BGL, ECG, ETCO2, I-STAT blood analysis, other studies as available).
7. If the on-scene Community Paramedic discovers indications of current or impending patient instability, the Community Paramedic Practitioner will contact on-line medical direction for consultation and/or arrange for transport to the ED or alternative treatment facility.
8. Follow appropriate Community Paramedic treatment protocol.
9. Contact designated on-line medical control physician or designee.

a. Provide patient report including: Reason for visit/complaint/illness, physical exam, diagnostic studies and treatment performed.

b. Medical direction may be performed by radio/cell link, patient communication application, or telemetric link providing real-time patient imaging.

c. Determine whether on-scene treatment or patient transport to an ED or alternative treatment facility is indicated.

10. If on-scene treatment is determined appropriate by the Community Paramedic or on-line medical direction, continue patient treatment as indicted by Community Paramedic protocol and/or as directed by on-line medical.
11. Continue on-scene treatment until the patient is comfortable with staying in place or a transport decision has been made.
12. Develop a continuity plan which should include medications administered, medication reconciliation, prescriptions provided, return Community Paramedic visit schedule, clinic, or physician follow up schedule and logistics for follow up compliance if indicated.

Back to Table of Contents

ALTERNATIVE DESTINATIONS/TRANSPORT

Indications: This protocol provides general guidance for the patient who may be transported to a destination other than a hospital emergency department when appropriate under the Community Paramedicine Program. It also provides guidance when transportation other than an ambulance may be appropriate under the Community Paramedicine Program.

Purpose: To assess the patient who might be appropriate for alternative transport or alternative destination.

ALTERNATIVE DESTINATION

Community Paramedic Directives:

1. Follow General Patient Assessments.
2. Obtain and review patient health history and primary care provider's orders prior to evaluation when available.
3. Follow appropriate Community Paramedic protocols for the patient's complaint.
4. Contact the PCP or on-line medical direction per General Patient Assessments**.** Provide patient report and discuss treatment and continuity plan.
5. Continue treatment and follow General Patient Assessments until a disposition is determined and continuity plan completed.
6. Emergency patients requiring treatment will be transported by an EMS agency to a hospital emergency facility, freestanding surgical outpatient facility or hospital- based emergency department that operates a service for treating emergency patients 24 hours a day, seven days a week.
7. A patient may be transported to an alternative non-emergency facility (alternative destination), such as a doctor's office or clinic provided the patient, family or on- line medical direction requests/suggests the alternative destination and the patient is clearly stable and it has been determined that an emergency no longer exists.

ALTERNATIVE TRANSPORT

Community Paramedic Directives:

For a patient for whom it has been determined that an emergency does not exist and for whom an evaluation or scheduled visit at a doctor's office, clinic, or other alternative destination is desired as part of the continuity plan, an alternative form of transport may be considered. This might include a private car, taxi, wheel chair van, ride share service, or other non-emergency medical transport vehicle.

Back to Table of Contents

ANTIBIOTIC SELECTION

Indications: This protocol provides general guidance for antibiotic selection when the evaluation of a patients determines that an infection in which antibiotic treatment is appropriate under the Community Paramedicine Program.

Purpose: To provide guidance for appropriate antibiotic treatment for the patient with an infection amendable to initial treatment at home.

Community Paramedic Directives:

1. Follow General Patient Assessments.
2. Obtain and review patient health history and primary care provider's orders prior to evaluation when available.
3. Obtain manual and automated vital sign readings and obtain patient medication prescription and usage and history of any recent antibiotic usage.
4. Determine whether the patient has additional symptoms which may be related to the infection such as: Fever, chills, sweats, weakness, dizziness or altered mental status. If inclusion criteria for sepsis are present, consider lactate determination, if available or ETCO2 level measurement. If either are abnormal, transport may be indicated.
5. If the patient does not meet criteria for transport determine the type of infection needing treatment. Once the type of infection has been determined, use the following as a guideline for initial antibiotic treatment:
    a. Cellulitis, simple cellulitis may use Cephalexin, cellulitis with concern for MRSA should use Trimethoprim/Sulfamethoxazole or Clindamycin.
        i. Cephalexin (Keflex) 500 mg, QID, 5-10 days, duration depends on severity and follow up arrangements.
        ii. Trimethoprim/Sulfamethoxazole (Bactrim) 160 mg/800 mg, BID, 5-10 days.
        iii. Clindamycin 300 mg, QID, 5-10 days.
    b. Urinary tract infection or pyelonephritis (in order of preference) determine duration based on condition, simple UTI shorter, pyelonephritis longer. Does not present with nausea, vomiting, diarrhea or other signs of systemic infection.
        i. Cephalexin (Keflex) 500 mg, QID, 3-10 days.
        ii. Trimethoprim/Sulfamethoxazole (Bactrim) 160 mg/800 mg, BID, 3-10 days.
        iii. Macrodantin (Nitrofurantoin) 50mg QID 3-7 days
        iv. Cefdinir (Omnicef) 300mg BID 5-10 days
    c. Exudative pharyngitis. Strep pharyngitis is the only pharyngitis with an antibiotic indication. Amoxicillin containing antibiotics may cause a drug rash in a patient with mononucleosis.
        i. Penicillin V potassium 500 mg, QID, 7 – 10 days.
        ii. Cephalexin (Keflex) 500 mg, QID, 7 – 10 days.
    d. Bronchitis. Cough with possible wheezing, no fever, often smoking history and history of COPD.
        i. Azithromycin 250 mg, 2 on first day followed by 1 daily for 4 additional days.
        ii. Amoxicillin/clavulanate 500 mg/ 125 mg, TID, 7 – 10 days.
    e. Bite injuries. This includes all animal and human bite injuries.
        i. Amoxicillin/clavulanate 500 mg/ 125 mg, TID, 7 – 10 days.
    f. Tooth infection. Tooth Pain with gingival erythema.
        i. Penicillin V potassium 500 mg, QID, 7 – 10 days.

Back to Table of Contents

ii. Clindamycin 300 mg, QID, 5 – 10 days.

6. Contact the PCP or on-line medical direction per General Patient Assessments. Provide patient report and discuss treatment and continuity plans.
7. Continue treatment and follow General Patient Assessments until a disposition is determined and continuity plan completed.

Back to Table of Contents

ASTHMA/COPD

Indications: This protocol provides general guidance for the evaluation of patients with Asthma/COPD under the Community Paramedicine Program.

Purpose: Assist the patient (family/caregiver) by increasing awareness of the disease through education on pathology. Demonstrate and review technique of all devices used to treat asthma to assist patient compliance. Evaluate and identify home triggers of disease in an effort to lessen exacerbations of asthma/COPD. Communicate with the primary care provider or on-line medical direction on the condition of the patient as well as on the general well-being of the patient as well as continuing medication reconciliation and continuity plan.

Community Paramedic Directives:

1. Follow General Patient Assessments.
2. Obtain and review patient health history and primary care provider's orders prior to evaluation when available.
3. If no immediate treatment is needed, perform medication review, and patient education.
    a. Review pathophysiology with the patient.
    b. Record the patient's current history including frequency of symptoms with rest, with activity, and with sleep.
    c. Further history will include exacerbating factors including viral exposure, allergen exposure, exercise, cold air, tobacco smoke, chemical irritants, etc.
    d. Observe home in an effort to possibly identify exacerbating factors.
    e. Review devices used by the patient including short/long acting medications and MDI/continuous nebulizer devices.
    f. Review when to call health care provider.
    g. Contact the primary care provider (PCP) to confirm the continuity plan.
4. If immediate treatment is needed:
    a. Attempt Albuterol/Ventolin MDI with spacer
        i. Insert MDI into spacer and have the patient seal their mouth on the spacer or place the mask over their face
        ii. Depress the inhaler and have the patient take 6 breaths without losing seal on the spacer/mask
        iii. Repeat every 3 min until breathing becomes less labored or up to 4x
    b. If distress continues, follow Respiratory Distress protocol.
5. Continue treatment and follow General Patient Assessments until a disposition is determined and continuity plan completed. This plan may include return visits for those patients who received on-scene treatment.

Back to Table of Contents

CONGESTIVE HEART FAILURE

Indications: This protocol provides general guidance for the evaluation of patients with Congestive Heart Failure (CHF) under the Community Paramedicine Program.

Purpose: Assist the patient (family/caregiver) by increasing awareness of the disease through education on pathology. Monitor patient condition after hospital discharge including patient medication compliance, patient diet and fluid intake. Monitor the patient's weight. Communicate with the primary care provider or on-line medical direction on the condition of the patient as well as on the general well-being of the patient as well as continuing medication reconciliation and continuity plan.

Community Paramedic Directives:

1. Follow General Patient Assessments.
2. Obtain and review patient health history and primary care provider's orders prior to evaluation when available.
3. If no immediate treatment is needed, perform medication review, and patient education.
    a. Review pathophysiology with the patient.
    b. Record the patient's current history including diet, fluid intake, and success of diuretic treatment if ongoing.
    c. Review devices used by the patient including oxygen, diuretics, CPAP, and other medications being used for maintenance.
    d. Review when to call health care provider.
    e. Contact the PCP to confirm the continuity plan.
4. If immediate treatment is needed follow the Acute Pulmonary Edema/CHF protocol
5. Contact the PCP or on-line medical direction per General Patient Assessments.
    a. If the patient's Blood Pressure is above 200 systolic and is experiencing an acute episode, apply **1 inch of Nitro Paste** on the patient's upper chest.
    b. Monitor vitals and remove Nitro Paste if systolic blood pressure drops below 140.
    c. Consider administration of **Furosemide 20 – 100 mg PO or IV** (If PO Furosemide is not available and IV Furosemide is administered it should be half the dose ordered for PO) for patients with fluid overload and insufficient diuresis on home medications. Dosage should be determined in consultation with the PCP or on-line medical direction.
6. Continue treatment and follow General Patient Assessments until a disposition is determined and continuity plan completed. This plan may include return visits for those patients who received on-scene treatment.

Back to Table of Contents

CPAP/BIPAP/SLEEP APNEA/OXYGEN SATURATION CHECKS

Indications: This protocol provides general guidance for the evaluation of patients with CPAP/BiPAP therapy, Sleep Apnea, and those recently placed on oxygen under the Community Paramedicine Program.

Purpose: To assist the PCP in observing and documenting recently diagnosed/chronic sufferers of obstructive sleep apnea through written and /or verbal communication to ensure proper ventilation of the patient during sleep for the purpose of avoidance of long-term Obstructive Sleep Apnea pathologic outcomes.

Community Paramedic Directives:

1. Follow General Patient Assessments.
2. Obtain and review patient health history and primary care provider's orders prior to evaluation when available.
3. If no immediate treatment is needed, perform medication review, and patient education.
    a. Review pathophysiology with the patient.
    b. Review devices used by the patient including: oxygen, CPAP/BiPAP devices, and other medications being used for maintenance.
    c. Review when to call health care provider.
    d. Patient should be monitored for hemodynamic instability the first 8 hours after starting CPAP/BiPAP.
4. Conduct a patient assessment which includes:
    a. Vital Sign assessments including SpO2, ETCO2, and weight/BMI
    b. Sleep habits (work nights? Irregular work schedule)
    c. Alcohol/recreational drug use? Prescription drug use? Compliant?
    d. Quality of life - Noticeable changes after usage.
5. Troubleshoot if necessary including ensuring proper fit of mask, use of machine, and general condition of machine.
6. If oxygen is being used, assure the patient has connection with necessary resources (oxygen supply company, etc.) to maintain continued supply.
7. Contact the PCP or on-line medical direction per General Patient Assessments.
8. Continue treatment and follow General Patient Assessments until a disposition is determined and continuity plan completed. This plan may include return visits for those patients in whom oxygen saturation is less than 95% on treatment after on-scene assessment and treatment.

Back to Table of Contents

CONTINUITY PLANNING

Indications: This protocol provides general guidance for continuity planning for patients treated under the Community Paramedicine Program.

Purpose: To establish a continuity plan for patients evaluated and treated under the Community Paramedicine Program.

Community Paramedic Directives:

1. Follow General Patient Assessments.
2. Obtain and review patient health history and primary care provider's orders prior to evaluation when available.
3. Patients treated under the Community Paramedicine Program will be provided a written Continuity Plan which will include:
    a. Follow up evaluation: In cooperation with the patient and online medical direction, the Community Paramedic Practitioner will provide a **Follow Up Location** in accordance with plan of care.
    b. Medication reconciliation: In cooperation with the patient and on-line medical direction, the Community Paramedic Practitioner can provide a **Medication Reconciliation** plan for the patient. The plan should include an assessment of the prescribed medications and the ability of the patient to understand the medication they are to be taking. If additional medications are needed, the Community Paramedic Practitioner will help to develop a plan for assuring the patient has what is needed. The Community Paramedic Practitioner may call in medications to a pharmacy of the patient's choice at the direction of the on-line medical direction physician.
    c. Additional treatment: In cooperation with the patient and on-line medical direction, the Community Paramedic Practitioner will provide a plan for **Additional Treatment,** when needed. This plan may include arrangements for additional home visits by medical professionals, delivery on home medical equipment, or other treatments needed for the patient.
4. Contact the PCP or on-line medical direction per General Patient Assessments. Along with the patient report discuss treatment and continuity plans.
5. Continue treatment and follow General Patient Assessments until a disposition is determined and continuity plan completed.

Back to Table of Contents

DIZZINESS

Indications: This protocol provides general guidance for the evaluation of patients with a complaint of dizziness under the Community Paramedicine Program.

Purpose: To assess the patient with dizziness and differentiate between the patients who can be treated supportively vs those who will require ED evaluation.

Community Paramedic Directives:

1. Follow General Patient Assessments.
2. Obtain and review patient health history and primary care provider's orders prior to evaluation when available.
3. Perform neurological assessment. Obtain BEFAST and RACE Scale. If BEFAST and RACE Scale is positive, transport to Emergency Department. Refer to Stroke Protocol.
4. Obtain 12 lead ECG. If EKG shows signs of arrhythmia or coronary ischemia, refer to the appropriate protocol.
5. Assess dizziness for light headedness vs. vertigo (sense of movement or unsteadiness and inability to walk straight).
6. Consider treatment with IV fluids or anti vertigo medication.
7. Consider administration of NS IV fluid bolus up to 1 liter. Repeat as indicated. Administer IV fluids cautiously in the elderly and those with a history of CHF.
8. Consider administering **Antivert (Meclizine) 25mg PO** for dizziness. Do NOT administer when other first-generation antihistamines [Diphenhydramine (Benadryl) or Doxylamine (Unisom)] have been taken within the previous 12 hours.
9. Contact the PCP or on-line medical direction per General Patient Assessments. Along with the patient report and discuss treatment and continuity plans.
10. Continue treatment and follow General Patient Assessments until a disposition is determined and continuity plan completed.

Back to Table of Contents

ELEVATED BLOOD PRESSURE

Indications: This protocol provides general guidance for the evaluation of patients with the complaint of elevated blood pressure under the Community Paramedicine Program.

Purpose: To assess the patient with elevated blood pressure and differentiate between the patient who can be treated supportively vs those who will require ED evaluation.

Community Paramedic Directives:

1. Follow General Patient Assessments.
2. Obtain and review patient health history and primary care provider's orders prior to evaluation when available.
3. Obtain manual and automated vital sign readings and obtain patient hypertensive medication prescription and usage.
4. Determine whether the patient has additional symptoms which may be related to the elevated blood pressure such as: chest pain, shortness of breath, other pain, headache, or neurologic symptoms. Symptomatic patients should be considered for transport to the ED for evaluation.
5. Asymptomatic hypertensive patients are appropriate for home treatment and close follow up. Blood pressures with systolic below 220 and diastolic below 120 may be appropriate for home treatment.
6. Contact the PCP or on-line medical direction per General Patient Assessments. Provide patient report and discuss treatment and continuity plans.
7. Continue treatment and follow General Patient Assessments until a disposition is determined and continuity plan completed.

Back to Table of Contents

EPISTAXIS

Indications: This protocol provides general guidance for the evaluation of patients with complaint of nose bleed under the Community Paramedicine Program.

Purpose: To assess the patient with a nose bleed, provide initial treatment and differentiate between the patient who can be treated at home vs those who will require ED evaluation.

Community Paramedic Directives:

1. Follow General Patient Assessments.
2. Obtain and review patient health history and primary care provider's orders prior to evaluation when available.
3. If the patient has active bleeding on in initial evaluation, provide direct pressure to the nose as soon as possible while obtaining additional history.
4. Evaluate the patient's history and determine the following:
    a. Time of onset of current nosebleed
    b. History of previous bleeds and treatment required.
    c. Use of medication which may affect treatment of the nosebleed.
    d. Assess vital signs.
    e. Presence of systemic symptoms: Fever, chills, diaphoresis, weakness, dizziness, changes in mental status, breathing difficulty, chest pain, or other systemic symptoms
5. Assess Hgb and INR, if available, for patients with significant bleeds or patients taking Coumadin (Warfarin)
    a. Hgb may fluctuate in this patient population, obtain baseline from PCP if possible
    b. INR
        i. If above 4.9, patient requires emergency room intervention. Contact transport unit and transport to closest ED. Contact the patient's PCP for awareness.
        ii. Values between 2.0 and 3.0 are normal for patient on Coumadin (Warfarin)
        iii. Values at 1.1 or below are normal
6. Patients with systemic symptoms or vital sign changes or significant lab abnormalities may need transported to the ED for evaluation.
7. Patients without systemic symptoms and stable vital signs may be appropriate for home treatment, and close follow up.
8. Provide/direct treatment
    a. Have the patient lean forward slightly and grasp their nose between their index and middle fingers providing direct pressure for 10-15 minutes.
    b. Assess the back of the patient's throat during this time. If there is blood going down their throat or they are choking on blood, this is a life-threatening emergency and requires ED care. Contact a transport unit and have patient transported to closest ED.
    c. Reassess after initial 10-15 minutes. If treatment was not successful, consider **oxymetazoline (Afrin) 2-3 sprays in the affected nostril(s)**.
    d. Repeat direct pressure for another 10-15 minutes. Try to keep the patient from swallowing blood which may irritate the GI tract and result in vomiting of blood.
9. If direct pressure is successful in controlling the bleeding, give the patient and family education as to the typical treatment of nose bleeds, self-treatment options, and prevention options.
10. Contact the PCP or on-line medical direction per General Patient Assessments. Provide patient report and discuss treatment and continuity plan.
11. Continue treatment and follow General Patient Assessments until a disposition is determined and continuity plan completed.

Back to Table of Contents

FEEDING TUBE CARE

Indications: This protocol provides general guidance for the evaluation of patients with Feeding Tube problems under the Community Paramedicine Program. These complaints may include feeding tube blockage, damage or the need for replacement of the Feeding Tube.

Purpose: To assess complaints related to Feeding Tubes.

Community Paramedic Directives:

1. Follow General Patient Assessments.
2. Obtain and review patient health history and primary care provider's orders prior to evaluation when available.
3. Examine the feeding tube for patency, functionality, and placement.
4. Attempt to identify the type of feeding tube.
5. If there is evidence of feeding tube blockage, flush the tube using a small (approx. 10 ml) syringe. If unable to establish good flow and the tube is in place, consider making arrangement for feeding tube replacement.
6. If the feeding tube is non-functional, damaged, or has become displaced, consider replacement of the tube, if indicated, or make arrangement for feeding tube replacement.
7. If the feeding tube has become displaced, consider placement of a temporary Foley Catheter in the existing tract, if indicated.
8. Contact the PCP or on-line medical direction per General Patient Assessments. Provide patient report and discuss treatment and continuity plans.
9. Continue treatment and follow General Patient Assessments until a disposition is determined and continuity plan completed.

Nasogastric (NG) Feeding Tube Placement

Supplies

1. NG feeding tube
2. Cup of water
3. 5 ml syringe
4. Permanent marker
5. Tape, cut into strips, and/or clear dressing
6. Gauze or washcloth
7. Skin prep (if needed)

Preparing for Tube Placement

1. Wash your hands with soap and water.
2. Gather all needed supplies.
3. Select which side of the nose to use. If this is a first insertion, consider using the side with the better airflow. Then alternate between the two sides of the nose.
4. Wipe skin around cheek and nose clean and allow to dry completely.
5. Apply skin prep to cheek, if appropriate.
6. Apply skin protective dressing, such as extra thin duoderm.
7. Position the patient: an infant can be held, secured in an infant carrier, or swaddled. An older child or adult may lie down or sit up as able

Inserting the Tube

1. Some NG feeding tubes have a stylet, which is a thin wire that is in the NG tube that helps during placement. If your tube has a stylet, pull back slightly on the stylet before placing the tube to make sure it moves freely. Then push the stylet back into place.

Back to Table of Contents

2. If there are two ports at the end of the feeding tube, close the cover on the port that does not have the stylet.
3. Measure from the tip of the nose to the earlobe on the side of the face you are inserting the tube. Then measure from the earlobe to the end of the breastbone where the ribs come together. Then measure from the end of the breastbone to halfway between the breastbone and the belly button. This point is your length. Mark this point with a permanent marker.
4. Dip the end of the feeding tube in water to make it slippery. Do not use gels or Vaseline due to the danger of getting these things into the lungs and/or clogging the feeding tube.
5. Insert the tube through the nostril until you reach the marked point.
    a. Insert gently directing the tube along the floor of the nose, avoiding poking straight up. If you meet resistance, pull back a bit and try redirecting downward toward the ear.
    b. Slightly bend the patient's head forward when the feeding tube is at the curve of the nose and throat. Avoid bending the neck backwards which opens the airway.
    c. Patient may take sips of water, if desired.
    d. Proceed with moving the tube downward as the patient swallows.
    e. To avoid injury, never push against resistance when placing the NG tube.
    f. Gagging is normal while the tube is being placed.
6. If the patient is choking, coughing or having trouble breathing, pull the tube out immediately and let the patient rest before trying again.
7. Once you have the feeding tube in place, hold the tube between your fingers and remove the stylet. Save the stylet in a plastic bag. You will need to re-insert the stylet when you reinsert the NG tube.
8. Connect the syringe to the feeding port and pull back to get 1-2 ml of stomach contents.
9. When you get stomach contents, remove the syringe, discard the stomach contents and tape the feeding tube in place.
10. If you are not able to remove stomach contents, remove the syringe, close cover on the port and place the patient on his/her left side for 10 minutes. After 10 minutes, connect the syringe and pull back to get stomach contents.
11. If you are still not able to get stomach contents, remove the feeding tube, reinsert stylet into feeding tube, measure the feeding tube again and change mark, if needed. Then insert the feeding tube and check for stomach contents again.
12. If you are still unable to pull back stomach contents, contact PCP or on-line medical direction.
13. Do not start feeding or give a medication until you have confirmed that the feeding tube is in the stomach.
14. Utilize ultrasound to verify placement.

Removing the Feeding Tube

1. Remove the tape that is holding the tube in place.
2. Pinch the feeding tube and pull the tube out. Pinching the tube prevents anything leaking out of the tube while you are removing it.
3. Rinse the feeding tube with warm water using a syringe and check for any holes or tears.

Things to Remember

1. Always wash your hands before and after handling the feeding tube.
2. Always remove the stylet from the feeding tube once it has been inserted.
3. Never put the stylet back into the feeding tube while the tube is in the patient.
4. Always save the stylet to the feeding tube. It will be necessary to have the stylet to reinsert the tube.
5. Do not use the feeding tube again if:
    a. There are any holes or tears in the tube.
    b. The tube is stretched out and the stylet no longer fits into the tube.
    c. The tube is due to be changed (change monthly or sooner as recommended)
    d. The tube is difficult to flush or pass formula through.

Back to Table of Contents

GASTROINTESTINAL (GI) COMPLAINTS

Indications: This protocol provides guidance for the evaluation and treatment of a patient with GI complaints under the Community Paramedicine Program.

Purpose: Evaluation and treatment of patients with presumed simple GI complaints. These would include nausea, vomiting, and/or diarrhea of short duration without signs of hemodynamic compromise or significant abdominal pain.

Community Paramedic Directives:

1. Follow General Patient Assessments.
2. Obtain and review patient health history and primary care provider's orders prior to evaluation, when available.
3. Using universal precautions, initiate an IV and administer fluids if hypovolemia is noted with a maximum administration of 2 L
4. Contact the patient's PCP or on-line medical direction, provide a patient report and determine whether on-scene treatment is appropriate.
5. For a patient with nausea and/or vomiting administer **Ondansetron 4 mg PO/IV/IM.** If nausea and/or vomiting persist after 45 minutes, repeat **Ondansetron 4 mg PO/IV/IM**.
6. Obtain fecal occult test
7. After treatment the patient should be reassessed. Treatment goals include the cessation of nausea and/or vomiting, toleration of PO fluids, cessation of abdominal symptoms, and indications of complete rehydration, such as lack of orthostatic vital sign changes.
8. Contact the patient's PCP or on-line medical direction, provide a revised patient report, and determine appropriate disposition and continuity plan. This plan may include a prescription for anti-emetics and/or scheduled reevaluation as determined by the PCP or on-line medical direction.

Back to Table of Contents

HOME SAFETY ASSESSMENT

Indications: This protocol provides general guidance for evaluating the safety of a patient's residence under the Community Paramedicine Program.

Purpose: To ensure the home is in a safe condition in order to meet the medical needs of the patient. This protocol can be used to conduct a pre-surgical assessment, post-operative assessment, or an evaluation of the safety of the home at any time.

Community Paramedic Directives:

1. Follow General Patient Assessments.
2. Obtain and review patient health history and primary care provider's orders prior to evaluation when available.
3. Complete the Fall Risk Toolkit with fall risk tests
4. Complete recommendations for the resident and possible referrals
5. Discuss the findings with the patient and/or family and provide resources to remedy the negative results.
6. Review the report with the patient and/or family to ensure they understand the recommendations.
7. Complete report and return a copy to the PCP or designated provider.
8. If any life-threating issues are identified, notify the ordering PCP or designated provider immediately.

Back to Table of Contents

HYPO/HYPERGLYCEMIA

Indications:
This protocol provides general guidance for the evaluation of patients with hyperglycemia or hypoglycemia related to known diabetes under the Community Paramedicine Program.

Purpose:
To assess the diabetic patient and treat patients with extremes of blood glucose who do not require urgent ED evaluation. Patients who should be transported immediately include those who have significant vital sign abnormalities or signs of significant infection.

Community Paramedic Directives:

1. Follow General Patient Assessments.
2. Obtain and review patient health history and primary care provider's orders prior to evaluation, when available. If not already done, measure the blood glucose level with capillary BGL monitor.

Hypoglycemia

1. Hypoglycemic patients who cannot be cleared by ALS 911 response will likely need transport to the ED. If the Community Paramedic Practitioner is in attendance for the hypoglycemic patient, treat per Diabetic Emergency - Hypoglycemia Protocol.
2. If BGL remains low and transport ambulance is not on scene, request a transport unit (if not already dispatched).
3. If the patient meets refusal protocols, follow Patient Consent and Refusals Protocol.

Hyperglycemia

1. Assess the patient's medication compliance and diet.
2. If the patient presents with vomiting and/or diarrhea, the patient has the signs of DKA and treatment should include transport to ED for further evaluation and care.
3. Obtain a blood sample for I-STAT evaluation, see I-STAT Protocol.
4. Assist the patient in the administration of their own diabetic treatment medications as indicated.
5. Consider administration of IV NS Bolus up to 2000mL.
6. Recheck blood glucose and reassess the patient every 30 minutes during treatment.
7. Contact the PCP or on-line medical direction per General Patient Assessments. Provide the patient report and discuss treatment and continuity plans.
8. Continue treatment and follow General Patient Assessments until a disposition is determined and continuity plan completed.

Reference Sliding Scale for Novolin R

Blood Glucose (mg/dL)	Moderate Dose
Less than 60	Treat Hypoglycemia
70-150	0 units
151-200	2 units SQ
201-250	3 units SQ
251-300	5 units SQ
301-350	7 units SQ
351-400	10 units SQ
Greater than 400	Administer 12 units SQ, Notify provider and repeat POC blood sugar check in 2 hours. Continue to repeat 10 units SQ and POC blood sugar checks every 2 hours until blood glucose is less than 300 mg/dL. Once blood sugar is less than 300 mg/dL, repeat POC blood sugar in 4 hours, then resume normal POC blood sugar check and insulin regular sliding scale.

Back to Table of Contents

IMMUNIZATIONS

Indications: This protocol provides general guidance for providing immunizations to patients under the Community Paramedicine Program.

Purpose: The Community Paramedic Practitioner may provide vaccinations for seasonal influenza, pneumonia, or other immunizations as directed by the PCP or other patient provider. Community immunization and other public health applications are important duties Community Paramedic's may perform as determined necessary in cooperation with the PCP and the local public health department. Training will be approved by the OCEMS Medical Director(s) and may be accomplished under the direction of the PCP, OCEMS Medical Director(s), and/or the local public health department.

Community Paramedic Directives:

1. Follow General Patient Assessments.
2. Obtain and review patient health history and primary care provider's orders prior to evaluation, when available.
3. Indications for immunization:
    a. Community Paramedic patients may be immunized or tested for TB under guidelines developed by the public health department.
    b. Timing of immunizations will be determined by the PCP and public health department to comply with public health needs.
    c. Immunizations may be performed in the residence, clinic, mass immunization, or setting as approved by the OCEMS Medical Director and/or local public health department.
4. Immunization
    a. Immunizations may be administered via IM, SQ, or intranasal route as indicated by the manufacturer. Dosing will be determined by guidance provided by the PCP or local public health department as required for the agent administered.
5. Record keeping
    a. A record of patients receiving immunizations will be maintained by the agency performing the immunizations as determined by the local public health department.
    b. Entry into the Florida Shots registry may be required for some immunizations.

Back to Table of Contents

I-STAT

Indications: This protocol provides guidance for obtaining I-STAT values on the request of the PCP under the Community Paramedicine Program.

Purpose: To assist the medical provider in obtaining certain blood laboratory values while in the patient's home. The Community Paramedic shall communicate with the primary care provider or on-line medical direction on the condition of the patient as well as the I-STAT values and continuity plan.

Community Paramedic Directives:

1. Follow General Patient Assessments.
2. Obtain and review patient health history and primary care provider's orders prior to evaluation, when available.
3. While using universal precautions, obtain sample of patient's venous blood with use of a butterfly needle of at least 20-gauge and a green top blood tube.
4. Roll the tube back and forth in hands at least 5 (five) times.
5. Using a 1 cc syringe with at least a 20-gauge needle, withdraw 1 cc blood from the green top tube.
6. Expel 2 drops of blood from the syringe prior to filling I-STAT chamber.
7. Remove cartridge from the package while handling the cartridge from the sides only.
8. Place cartridge on a flat surface.
9. Fill the cartridge with the blood sample only to the appropriate level as marked on the cartridge.
10. Close cover over sample well.
11. Turn on I-STAT, enter operator ID, and patient ID numbers.
12. Insert cartridge into analyzer (Do not remove while "cartridge locked" message is on).
13. Record the results on the PCR and communicate the results to the PCP or on-line medical direction.

Precautions

1. Avoid drawing blood from an arm with an IV already in place as this will dilute the sample and may interfere with test results.
2. Venous stasis as with prolonged tourniquet application may alter lab results.
3. Avoid having the patient use extra muscle activity such as clenching the fist as this may increase potassium results.

Special Notes

1. Cartridges are good for two (2) weeks at room temperature.
2. Lab results will not be interpreted in the field alone and will always be sent to the referring PCP or on-line medical direction.
3. If the Community Paramedic notices a possible life-threatening abnormal lab value, they will immediately contact the referring PCP or on-line medical direction to discuss the results and determine treatment and disposition.

Back to Table of Contents

IV CATHETER STARTS AND CHANGES

Indications: This protocol provides guidance for the insertion, removal and reinsertion of intravenous (IV) catheters under the Community Paramedicine Program.

Purpose: To insert, remove and reinsert IV catheters for the purpose of new or continuing IV access and avoidance of possible local and systemic infections and/or patient discomfort.

Community Paramedic Directives:

1. Follow General Patient Assessments.
2. Obtain and review patient health history and primary care provider's orders prior to evaluation, when available.
3. Be aware of complications of long-term catheter use and effects of termination of IV. Educate patient on signs of infection.
4. Consider certain medications, which could lead to uncontrolled bleeding.
5. While using universal precautions, clean the site with an aseptic technique, replace the IV catheter using standard technique. Assure patency with flush and blood return. Mark site with date and time.
6. Communicate any unusual findings with PCP or on-line medical direction.

Back to Table of Contents

LAB DRAW

Indications: This protocol provides guidance for obtaining a lab specimen for testing on the request of the PCP under the Community Paramedicine Program.

Purpose: To assist the PCP in obtaining specimens for appropriate diagnostic and testing procedures. By performing the lab draws in the home, the patients will not need to go into a medical provider's office for a minor procedure that can be managed by the Community Paramedic.

Community Paramedic Directives:

1. Follow General Patient Assessments.
2. Obtain and review patient health history and primary care provider's orders prior to evaluation, when available.
3. Perform the lab draw using universal precautions.
4. Blood tubes should be collected in the order of red, green, purple, pink, and blue.
5. Fill out the label for each of the tubes to include the patient's name, date of birth, Community Paramedic's initials, and date and time of the lab draw. Pre-completed labels may also be used, when available.
6. Affix the label to the blood tubes.
7. Complete the lab paperwork provided by the PCP's office or hospital lab.
8. Place the samples in a biohazard bag.
9. Deliver samples to the appropriate ordering PCP's office or lab.

Back to Table of Contents

MIGRAINE HEADACHE

Indications: This protocol provides general guidance for treatment of a migraine headache when the evaluation of the patient determines that the headache is of typical presentation for the patient, the patient wishes home treatment for the condition, and the headache is appropriate for treatment under the Community Paramedicine Program.

Purpose: To provide guidance for appropriate treatment for the patient with a migraine headache or recurrent headache without red flag symptoms (see below) amenable to treatment at home.

Community Paramedic Directives:

1. Follow General Patient Assessments.
2. Obtain and review patient health history and primary care provider's orders prior to evaluation, when available.
3. Obtain manual and automated vital sign readings and determine patient headache medication prescription and usage (if prescribed).
4. Determine whether the patient has additional symptoms which may indicate red flag symptoms such as: Sudden onset atypical for the patient's previous headaches (maximum intensity within one minute), fever, neck stiffness, weakness, dizziness, or altered mental status. If red flag symptoms are present, transport is indicated.
5. If the patient does not meet above criteria for transport, the following are appropriate home treatments to use for migraine headache treatment:
    a. Oxygen, 2 – 4 L per NC. Not proven but worth a try in migraine HA.
    b. IV Fluid, 1 – 2 L NS bolus. Helpful particularly if the patient had been vomiting.
    c. Acetaminophen 650 mg.
    d. Diphenhydramine 50 mg, PO, for sedation and nausea treatment
    e. Ondansetron 4 mg, PO, for nausea without active vomiting.
    f. Ibuprofen 200 mg, 2 – 4 tabs PO **OR** Ketorolac (Toradol) 30 mg IV or IM, for pain.
    g. Reglan (Metoclopramide) 10mg IV, Ketorolac (Toradol) 30 mg IV, and Benadryl (Diphenhydramine) (if not already given) 25mg IV.
6. Contact the PCP or on-line medical direction per the General Protocol for Patient Assessments. Provide patient report and discuss treatment and continuity plans.
7. Continue treatment and follow the General Patient Assessments until a disposition is determined and continuity plan completed.

Back to Table of Contents

OPIATE WITHDRAWAL

Indications: This protocol provides general guidance for treatment of Opiate Withdrawal when the evaluation of the patient determines that the overdose or withdrawal is of typical presentation for the patient, the patient wishes home/field treatment for the condition, and the signs and symptoms are appropriate for treatment under the Community Paramedicine Program.

Purpose: To provide guidance for appropriate treatment for the patient with Opiate Overdose/Withdrawal symptoms amenable to treatment at home.

Community Paramedic Directives:

All patients contacted by Community Paramedic for Opiate Overdose/Withdrawal will have a PCR completed to include all contact information including phone number. The patient will be given information on the Bridgeway Center's outpatient Detoxification program and Medication Assisted Treatment (MAT). If the patient declines transport, a refusal will be completed and follow up contact will be made by either an OCEMS Community Paramedic or Bridgeway Center representative for further support.

1. Assess opioid withdrawal signs and symptoms. Must present with 2 or more objective signs.
    a. Yawning
    b. Rhinorrhea or lacrimation
    c. Dilated pupils
    d. Tachycardia
    e. Diaphoresis
    f. Restlessness and/or agitation
    g. Vomiting or diarrhea
    h. Piloerection
        i. Subjective signs that do not count include nausea, stomach/abdomen cramps, body aches, aches in joints/bones, nasal congestion, hot or cold feeling
2. Assess for exclusion criteria
    a. No opioid withdrawal signs or symptoms
    b. Under 16 years of age
    c. Methadone use within the past 10 days
    d. Severe medical conditions (e.g. sepsis, respiratory distress, etc.)
    e. AMS and/or unable to give consent or comprehend potential risks and benefits
3. If no exclusion criteria are present conduct COWS Score, if 8 or greater begin treatment.
    a. Offer the patient Buprenorphine or Suboxone and counseling on treatment options
        i. Contact medical control with complex cases
    b. Administer Buprenorphine or Suboxone
        i. 16mg SL
        ii. Reassess after 10 min utilizing COWS Score
        iii. If symptoms are worse or still present, administer Buprenorphine or Suboxone 8mg SL
        iv. DO NOT EXCEED 24mg SL total dose
4. If exclusion criteria is present, do not treat with MAT and refer to appropriate OCEMS protocol

Back to Table of Contents

SICK PERSON (NON-SPECIFIC)

Indications: This protocol provides general guidance for the evaluation of patients with non-specific sick person complaints under the Community Paramedicine Program.

Purpose: To assess the patient with nonspecific sick person complaints and differentiate between the patient who can be treated at home versus those who will require ED evaluation.

Community Paramedic Directives:

1. Follow General Patient Assessments.
2. Obtain and review patient health history and primary care provider's orders prior to evaluation, when available.
3. Assess the patient's complaints and determine the following:
    a. History of current complaints
    b. Presence of systemic symptoms: fever, chills, diaphoresis, weakness, dizziness, changes in mental status, breathing difficulty, chest pain, other systemic symptoms, and/or alterations in vital signs
4. Patients with systemic symptoms or vital sign changes may need transported to the ED for evaluation.
5. Patients without systemic symptoms may be appropriate for home treatment and close follow up.
6. Contact the PCP or on-line medical direction per the General Patient Assessments. Provide patient report and discuss treatment and continuity plan.

Back to Table of Contents

SKIN INFECTION (CELLULITIS)

Indications: This protocol provides general guidance for the evaluation of patients with possible cellulitis under the Community Paramedicine Program.

Purpose: To assess the patient with possible cellulitis and differentiate between the patient who can be treated at home vs those who will require ED evaluation.

Community Paramedic Directives:

1. Follow General Patient Assessments.
2. Obtain and review patient health history and primary care provider's orders prior to evaluation, when available.
3. Assess the patient's area of concern and determine the following:
    a. Presence or absence of injury
    b. Location and extent of skin changes
    c. Additional local symptoms: redness, drainage, weeping, ascending redness, and/or warmth of the skin
    d. Presence of systemic symptoms: fever, chills, diaphoresis, weakness, dizziness, and/or changes in mental status
4. Patients with systemic symptoms should be transported to the ED for evaluation.
5. Patients without systemic symptoms may be appropriate for home treatment and close follow up.
6. Contact the PCP or on-line medical direction per the General Patient Assessments. Provide patient report and discuss treatment and continuity plan.

Back to Table of Contents

SKIN RASH

Indications: This protocol provides general guidance for the evaluation of patients with possible skin rash under the Community Paramedicine Program.

Purpose: To assess the patient with possible skin rash and differentiate between the patient who can be treated at home vs those who will require ED evaluation.

Community Paramedic Directives:

1. Follow General Patient Assessments.
2. Obtain and review patient health history and primary care provider's orders prior to evaluation, when available.
3. Assess the patient's area of concern and determine the following:
    a. History of exposure to possible allergen (oral) or skin contact exposure (poison ivy/oak)
    b. Location and extent of skin changes
    c. Additional local symptoms: redness, drainage, weeping, ascending redness, and/or warmth of the skin
    d. Presence of systemic symptoms: fever, chills, diaphoresis, weakness, dizziness, changes in mental status and/or breathing difficulty
4. Patients with systemic symptoms should be transported to the ED for evaluation.
5. Patients with acute symptoms should be treated per appropriate OCEMS protocol.
6. Patients without systemic symptoms may be appropriate for home treatment and close follow up.
7. Consider **Diphenhydramine** 25 – 50 mg PO or IV/IM for treatment of pruritis.
8. Contact the PCP or on-line medical direction per the General Patient Assessments. Provide patient report and discuss treatment and continuity plan.

Back to Table of Contents

SUTURE REMOVAL

Indications: This protocol provides general guidance for the evaluation of patients with the need of suture removal under the Community Paramedicine Program.

Purpose: To assess the patient with wounds that have been closed with suture or staples and differentiate between the patient who can be treated at home vs those who will require ED evaluation.

Community Paramedic Directives:

1. Follow General Patient Assessments.
2. Obtain and review patient health history and primary care provider's orders prior to evaluation, when available.
3. Assess the patient's wound and determine the following:
    a. Mechanism of injury
    b. Date of injury and wound repair
    c. Type of wound closure: staples, suture absorbable vs synthetic (e.g. nylon)
    d. Care of wound since closure
    e. Recommended time for closure devices to be removed
    f. Appearance of wound: clean and dry, drainage seen, color of surrounding skin, swelling or pain experienced by the patient.
4. Determine whether the patient has additional symptoms which may be related to wound complications such as: fever, local redness or swelling, red streaks proximal to the wound.
5. Symptomatic patients should be considered for transport to the ED for evaluation.
6. Asymptomatic patients are appropriate for home treatment, suture/staple removal, and appropriate follow up.
7. Contact the PCP or on-line medical direction per the General Patient Assessments. Provide patient report and discuss treatment and continuity plan.

Procedure:

1. Remove sutures at the following intervals
    a. 5-7 days on the face, followed by skin glue
    b. 7-10 days for torso and extremities
    c. 10-14 days for joints
    d. Refer to PCP for longer times.
2. Do not attempt to remove sutures if they are in an area that is difficult to access. If in a sensitive area, provide privacy for the patient.
3. Thoroughly clean the area with soap and water to remove any blood or crusting from the site. Pat to dry.
4. Clean the site with a chlorhexidine after it has dried
5. While holding the tweezers with your dominant hand, grab the knot of your suture. Pull the knot away from the skin to create a space between the thread and skin.
6. While holding the scissors in your non-dominant hand, cut the left or right side of the suture knot. You will only need to make a single cut.
7. After you have cut the thread, gently pull the thread up and away from the skin with the tweezers.
8. Once you have removed all of the sutures, look carefully at the site to make sure there are no threads left behind.

Back to Table of Contents

9. Clean the wound once more with soap and water. Pat dry with a clean towel.
10. Clean the site with chlorhexidine after it has dried.
11. Apply a thin layer of petrolatum (ex. Vaseline, Aquaphor) and apply a bandage.
12. Direct patient to continue daily bandage changes until the site is fully healed.

Back to Table of Contents

UPPER RESPIRATORY INFECTION COMPLAINTS

Indications: This protocol provides general guidance for the evaluation of patients with presumed upper respiratory infection complaints under the Community Paramedicine Program.

Purpose: To assess the patient with upper respiratory complaints and differentiate between the patient who can be treated supportively vs those who will require ED evaluation.

Community Paramedic Directives:

1. Follow General Patient Assessments.
2. Obtain and review patient health history and primary care provider's orders prior to evaluation, when available.
3. Patients with significant abnormalities in vital signs or hypoxia on room air or their prescribed home oxygen should be transported for ED evaluation.
4. If the patient has audible or auscultated wheezing, treat per the Asthma/COPD protocol.
5. Provided there is no fever, hypoxia, or significant wheezing not cleared with treatment, the patient may be a candidate for home supportive treatment.
6. Contact the PCP or on-line medical direction per the General Patient Assessments. Along with the patient report and discuss treatment and continuity plans.

Back to Table of Contents

URINARY COMPLAINTS

Indications: This protocol provides general guidance for the evaluation of patients with Urinary complaints under the Community Paramedicine Program. These complaints may include pain with urination, urinary retention, and hematuria.

Purpose: To assess complaints related to the urinary tract.

Community Paramedic Directives:

1. Follow General Patient Assessments.
2. Obtain and review patient health history and primary care provider's orders prior to evaluation, when available.
3. Obtain a urine sample for urine dip stick. The urine should be clean catch, strait catheterization, or current/new Foley sample as indicated.
4. Use the urine dipstick results to guide therapy:
    a. If the urine is positive for infection, consider oral and/or IV antibiotics.
    b. If the urine is negative for infection and urinary retention is suspected, consider Foley catheter insertion.
    c. If hematuria alone is present, assess for urinary retention or kidney stone.
5. Contact the PCP or on-line medical direction per the General Patient Assessments**.** Along with the patient report, give the results of the urine dip stick and discuss treatment and continuity plan.

Back to Table of Contents

URINARY CATHETER INSERTION AND CARE

Indications: This protocol provides general guidance for the evaluation of patients with catheter problems under the Community Paramedicine Program. These complaints may include blocked catheter, damaged catheter, or the need for replacement or insertion of a catheter.

Purpose: To assess complaints related to placement and maintenance of urinary catheters. Also, to provide guidance on the selection and insertion of a urinary catheter.

Community Paramedic Directives:

1. Follow General Patient Assessments.
2. Obtain and review patient health history and primary care provider's orders prior to evaluation, when available.
3. Obtain signature on Catheter Insertion/Pelvic Exam release form.
4. Examine the catheter for patency, functionality, and placement.
5. If there is evidence of catheter blockage, flush the catheter using sterile technique and saline. If unable to establish good flow, consider catheter replacement.
6. If the catheter is non-functional, damaged, or has become displaced, consider catheter replacement.
7. If the catheter is replaced, use sterile technique and obtain a urine sample for urine dip stick.
8. Report the dip stick results to on-line medical direction. As the catheter may be colonized with bacteria making the dipstick unreliable, treat the patient as directed by on-line medical direction. Refer to Urinary Complaints protocol.
9. Consider use of Lidocaine Jelly 2% (Uro-Jet) to ease discomfort related to catheter placement.
10. A patient with signs of urinary retention may need placement of a new catheter for relief of the symptoms. Indications may include urgency without ability to urinate, lower abdominal distension and cramping, and history of previous episodes of urinary retention.
11. Contact the PCP or on-line medical direction per the General Patient Assessments. Along with the patient report, give the results of the urine dipstick, if obtained, and discuss treatment and continuity plans.

Standard Procedures and Documentation:

1. Discuss the procedure with the patient, explaining any associated risks or benefits, to gain valid informed consent. Document this in the patient's notes. Check for allergies to lubricating or anesthetic gel
2. Screen the bed/area to ensure privacy and maintain dignity.
3. Wash your hands and prepare a sterile area.
4. Obtain the equipment needed to perform the female catheterization procedure, following aseptic non-touch technique (ANTT) guidance. This equipment should include:
    a. Sterile pack suitable for catheterization (receiver, low-linting swabs, gallipots, disposable towels)
    b. Sterile gloves
    c. Cleansing fluid
    d. Syringe and sterile water for non-prefilled catheters
    e. Sterile individual antiseptic/lubricating gel
    f. Disposable apron

Back to Table of Contents

   g. Appropriate catheter
   h. Drainage system/catheter valve
5. Assemble the equipment on a sterile surface at the patient's bedside.
6. **Select the smallest size catheter that can provide adequate urine drainage. In general**:
   a. Size 12-14 Fr for women draining clear urine.
   b. Size 14-16 Fr for men draining clear urine.
   c. Size 16-18 Fr for patients with debris or mucous in their urine.
   d. Sizes in excess of 18 Fr for patients with hematuria, unless otherwise specified by physician.
   e. Size 22 Fr for continuous bladder irrigations (CBI's), unless otherwise specified by physician.
7. Help the patient remove relevant clothing (that is, underwear and/or pajama bottoms) as necessary. Ensure the patient is not unnecessarily exposed by covering thighs and genital area with a towel until you are ready to begin the procedure.
8. Use a protective covering for bed linen to keep the bed dry.
9. Help the patient into a supine position with legs bent and knees apart.
10. Wash and dry your hands. Put on a plastic apron and open the catheterization pack using ANTT.
11. Open additional equipment using ANTT. Leave the urinary catheter in its inner sterile plastic protective wrapping until the time of insertion to protect it from potential physical and environmental contamination.
12. Remove the towel covering the patient's genital area.
13. Wash your hands and put on sterile gloves. Place a sterile towel under the patient's buttocks and across the thighs; this creates a sterile field.
14. Clean the genital area using an antiseptic to prevent infection. Be sure to clean around and under all folds and skin in the general area.
15. Apply numbing gel and lubricant: This reduces discomfort.
16. Insert the catheter: The catheter is inserted slowly and steadily into the urethra until it reaches the bladder. Urine should flow freely into the collection tubing
17. Gently inflate the balloon with 10ml of sterile water or solution, according to the manufacturer's directions. For pre-filled balloons remove the clip and gently squeeze the reservoir of sterile water. Observe the patient for any signs of discomfort as inflation should be pain-free.
18. Once the balloon is inflated, withdraw the catheter slightly to ensure the catheter is in the bladder and is secure.
19. If the catheter is not already attached to a drainage bag, attach it to either a drainage system or catheter valve as required.
20. Make the patient comfortable. Help them get dressed if required and ensure the bed is clean and dry.
21. Dispose of equipment in a clinical waste bag
22. Wash your hands.
23. Fully document the procedure including:
   a. Reason for insertion
   b. Date and time of catheterization
   c. Catheter type
   d. Length
   e. Balloon size and volume of water inserted
   f. Batch/lot number
   g. Manufacturer

Back to Table of Contents

h. Expiration date
i. Meatal cleansing solution
j. Lubricant
k. Name and signature of health professional and any problems encountered on insertion
l. Date of removal/change

24. If it is the patient's first catheterization, the urine output should be measured and recorded on insertion to help monitor renal function and fluid balance. The volume also provides important information about bladder capacity in patients who have urinary retention.
25. Check the patient is comfortable and give them information on the maintenance and care of the catheter and drainage system.

Catheter Selection:

1. Indwelling catheterization should be undertaken using Foley urethral catheters; these have a self-retaining balloon that, when filled with water or solution provided by the manufacturer, remains in the bladder.
2. The correct catheter for individual patients depends on factors such as the likely duration of use and the catheter material type, diameter, length and balloon size.
3. For short-term use (less than 28 days) an uncoated latex, PVC, polytetrafluoroethylene (PTFE), or silver alloy catheter should be used; if a latex-based catheter is being considered, the patient should be checked for latex allergy. For longer-term use all silicone, silicone elastomer, or hydrogel-coated catheters should be used.
4. Female-length catheters should be used routinely for female patients who are mobile. These are more discreet than standard-length catheters and are less likely to cause trauma or infections in female patients as movement in and out of the urethra is reduced.
5. The inflation valve on female catheters can become caught between the thighs in patients who are obese, confined to bed or wheelchair users, and this can lead to soreness. In these cases, a longer standard-length catheter can be used to avoid skin damage and improve patient comfort.
6. For routine drainage a 10ml balloon size should be used; this is usually inflated with 10ml of sterile water. Some catheters are supplied with a pre-filled syringe of glycerin solution or a pre-filled 10ml balloon of sterile water.
7. The health professional undertaking catheterization is responsible for selecting a suitable catheter and using it in accordance with the manufacturer's instructions.

Female Catheterization

1. Using low-linting swabs, separate the labia with your non-dominant hand so you can see the urethral meatus.
2. Hold the labia open and, with your dominant hand, clean the urethral meatus with 0.9% sterile sodium chloride in downward movements towards the anus, using single strokes.
3. Remove the cap from the lubricating/anesthetic gel and insert the nozzle into the urethra. Squeeze the gel into the urethra, remove the nozzle and discard. If you are using an anesthetic gel, leave it for approximately five minutes, or according to the manufacturer's instructions, to take effect. If you are using a plain aqueous lubricating gel without anesthetic, you can continue with the procedure immediately.
4. When the anesthetic gel has taken effect, wipe away any excess, dispose of the gloves, wash and dry your hands, and put on new sterile gloves.
5. Place a receiver containing the catheter on the sterile towel between the patient's legs and open the catheter but leave it in the sterile packaging to reduce the risk of contamination. Hold the labia open.

Back to Table of Contents

6. Holding the catheter in your dominant hand, introduce the tip into the urethral orifice in a slightly upward and backward direction, feeding it out of the sterile packaging (this adds a further layer of physical protection for the duration of the insertion procedure). Insert the catheter approximately 5-6cm. The direction and length of catheter inserted relates to the anatomy of the female genitourinary tract. If the patient experiences any pain or discomfort, stop the procedure, attempt with a smaller size or abandon the procedure and follow up with PCP.
7. Once urine starts to drain, insert the catheter up to the bifurcation point to ensure the balloon is in the bladder. Inflation of the balloon in the urethra is painful.

Male Catheterization

1. Place the patient in the supine position with legs extended and flat on the bed.
2. Prepare the catheterization tray and catheter and drape the patient appropriately using the sterile drapes provided. Place a sterile drape under the patient's buttocks and the fenestrated (drape with hole) drape over the penis.
3. Apply water-soluble lubricant to the catheter tip.
4. With your non-dominant hand, grasp the penis just below the glans and hold upright.
5. If the patient is uncircumcised, retract the foreskin. Replace the foreskin at the end of the procedure.
6. With your dominant hand, cleanse the glans using chlorhexidine. Use new chlorhexidine swab for a single circular motion.
7. Place the drainage basin containing the catheter on or next to the thighs.
8. With your non-dominant hand, gently straighten and stretch the penis. Lift it to an angle of 60-90 degrees. At this time, you may use the topical anesthetic to anesthetize the urinary canal, which will minimize the discomfort.
9. With your dominant hand, insert the lubricated tip of the catheter into the urinary meatus.
10. Continue to advance the catheter completely to the bifurcation i.e. until only the inflation and drainage ports are exposed and urine flows (this is to ensure proper placement of the catheter in the bladder and prevent urethral injuries and hematuria that result when the foley catheter balloon is inflated in the urethra).
11. Note: If resistance is met during advancement of the catheter: Pause for 10-20 seconds. Instruct the patient to breathe deeply and evenly. Apply gentle pressure as the patient exhales.
12. If you still meet resistance, stop the procedure and repeat the above 10-20 second pause.
13. Attach the syringe with the sterile water and inflate the balloon. It is recommended to inflate the 5cc balloon with 7-10cc of sterile water, and to inflate the 30cc balloon with 35cc of sterile water. Improperly inflated balloons can cause drainage and leakage difficulties.
14. Gently pull back on the catheter until the balloon engages the bladder neck.
15. Attach the urinary drainage bag and position it below the bladder level. Secure the catheter to the thigh. Avoid applying tension to the catheter.
16. Remove drapes and cover patient. Ensure drainage bag is attached to bed frame. Remove your gloves and wash your hands.
17. Note: Never inflate a balloon before establishing that the catheter is in the bladder and not just in the urethra. If the patient reports discomfort, withdraw the fluid from the balloon and advance the catheter a little further, then re-inflate the balloon.

Back to Table of Contents

CRITICAL CARE

Back to Table of Contents

INTENT

Critical Care Transport protocols & procedures may be utilized by credentialed critical care transport paramedics, authorized by the Okaloosa County EMS Medical Director(s), for use during the interfacility transfer of critical care patients only. The scope of practice of the CCT-P shall be guided by the transferring physician's written orders. If an order is received that deviates from these protocols or is outside the training and comfort level of the CCT-P, the OCEMS Medical Director shall be contacted prior to departure from the transferring hospital for directives.

Back to Table of Contents

ABBREVIATIONS AND TERMS

Abbreviations

- ETSN: Ear-to-sternal notch (airway position, previously known as “sniffing position”), performed by elevating the patient’s head, and confirmed from the patient’s side by visualizing that the auditory canal is level with sternum and parallel to the ground.
- ELM : External Laryngeal Manipulation, also known as “Bimanual Laryngoscopy”, similar to BURP
- IIRR: “If incomplete response, repeat”, applies to transient or incomplete responses to initial doses of medications, e.g. repeat doses of nebulized albuterol in the face of continued wheezing and difficulty breathing
- MAP: Mean Arterial Pressure
- MIH: Mobile Integrated Healthcare services that are designed to enhance, coordinate, effectively manage, and integrate out-of-hospital care
- OLMC: On-Line Medical Control
- PIE: Progressive Insertion Epiglottoscopy, or epiglottis identification laryngoscopy, prior to exposing vocal folds during intubation
- PCMH: Patient Centered Medical Home refers to the function and/or group of providers through which individuals receive comprehensive, patient-centered, and coordinated care
- SBP/DBP: Systolic Blood Pressure/Diastolic Blood pressure - all units of measurement are in mmHg, e.g., SBP > 90 means Systolic Blood Pressure > 90 mmHg

Terms

- Atropinization: Drying of mucus membranes and airway secretions resulting from appropriate dosing of atropine in organophosphate poisoning
- Drug-Assisted Airway: Pharmacologic and procedural induction of sedation or unconsciousness to facilitate advanced airway management
- Hemodynamic Instability: Abnormal or unstable low blood pressure. Signs and symptoms include diminished organ function (e.g. AMS, pallor/diaphoresis) due to a low perfusion (blood flow) state; may be manifested as absolute hypotension (e.g. SBP < 90 in adults) or relative hypotension in patients with signs of poor perfusion.
- Inframammary Line: The anatomic location used to guide needle thoracostomy insertion site selection
- Needle Thoracostomy: Insertion of a large-bore catheter into the chest for the purpose of relieving a tension pneumothorax
- Serial EKGs: Repeat EKGs, at minimum 2-tracings prior to arrival at the destination
- Waveform Capnography: The visual representation of the measured exhaled carbon dioxide in graphic form as opposed to a numeric value. Visualized as a 4-phase generally square shaped

Back to Table of Contents

waveform with each breath. Monitoring is required for all patient's receiving advanced airway intervention, including endotracheal intubation or blind insertion supraglottic airway

Back to Table of Contents

CHEST TUBE MANAGEMENT

1. Inspect the patient's chest wall to ensure that all connections are tight and that the tubing is not kinked. Also check the skin around the insertion site for subcutaneous emphysema. Be sure that all connections are tight and that all connections between the tube and the chest drain system are secured with non-porous tape.
2. Note color, consistency and amount of drainage.
3. Note any air leak in the water chamber. Ask the sending facility staff RN if there has been a prior leak.
4. Mark Pleur-evac (or other drainage system) with a pen at the current level of drainage in the system.
    a. Be alert to sudden changes in the amount of drainage.
    b. A sudden increase indicates hemorrhage or sudden patency of a previously obstructed tube.
    c. A sudden decrease indicates chest tube obstruction or failure of the chest tube or drainage system.
5. Adjust wall suction to create a gentle rolling of bubbles in the water seal chamber or until suction indicator in appropriate range. Vigorous bubbling results in water loss. Note that some systems do not include a water seal chamber and therefore may not bubble.
6. Verify the level of the suction control chamber is at the level prescribed by the physician (usually -20 cm).
7. Do not clamp the patient's drainage tube at any time during travel. The water seal in the unit prevents backflow of air, whether or not suction is applied.
8. Position patient in semi-fowlers (if condition allows) to enhance air and fluid evacuation. NEVER raise the chest tube above the chest or the drainage will backup into the chest. Avoid any dependent loops as drainage problems and tube obstruction may occur. The tubing should be coiled flat on the bed and from there fall in a straight line to the chest drainage system.
9. After placing the patient in the ambulance, place the Pleur-evac next to the cot and secure with 3" tape

Back to Table of Contents

EXTRA-CORPOREAL MEMBRANE OXYGENATION (ECMO)

ECMO accredited staff must be present to manage and maintain changes during transport.

Unlike standard cardiopulmonary bypass which provides cardiopulmonary support following cardiac surgery or cardiac arrest, ECMO provides longer-term support, typically over 3-10 days.

Prevention of complications is fundamental to successful ECMO care. Ensure and document the following prior to initiation of transport.

Securing Cannula: All ECMO lines MUST be secured at 2 points with properly adherent skin dressings. Initial securing is the responsibility of the cannulator (physician) and cannot be delegated.

Prior to transport, ensure that backup components of critical items are available

Cannula positions: Cannula position must be confirmed radiographically by medical staff prior to transport.

ECMO Cannula dressings: Sterility must be maintained and insertion sites kept unsoiled.

Patient Movement: Prevent tension or torsion to the ECMO circuits during patient movement

Back to Table of Contents

HEMODYNAMIC MONITORING

All patients who are transported by a Critical Care Paramedic that have invasive pressure lines will be monitored continuously with the use of a cardiac monitor. All pulmonary artery catheters will be monitored during transport. The following standards will be achieved on all patients meeting the criteria for hemodynamic monitoring.

Procedure

1. Assess the pressure waveform displayed on the sending facility monitor.
2. Obtain a pre-transport strip of waveform from sending facility's monitoring equipment as well as a post- transport strip from receiving facility's monitoring equipment.
3. Obtain current pressure readings from the monitor and patient care records.
4. The CCT-P will evaluate the pressure transducer for compatibility with the CCT-P equipment. If the line is not compatible, the pressure line must be changed to facilitate monitoring by the CCT-P unit during the transport.
5. Flush the invasive line prior to changing over to CCT-P equipment to ensure patency.
6. Once line has been changed over, flush any visible air out of line via stopcock before flushing to patient.
7. The pressure bag will be inflated to 300 mmHg.
8. The pressure cable will be connected to the monitor and the patient end will be connected to the transducer port on the pressure tubing.
9. The transducer will be placed at the phlebostatic axis (4th intercostal space, mid-chest level) line and taped securely.
10. All excess tubing will be coiled and taped in an orderly fashion.
11. The pressure line will be zeroed and calibrated to the monitor.
12. The waveform will be identified by the labels provided in the monitor (PA, ART).
13. The waveform will be assessed on the monitor, a pressure reading will be obtained and a strip will be obtained and submitted with the patients chart.

Back to Table of Contents

INTRA-AORTIC BALLOON PUMP (IABP)

The CCT-P will utilize a RN or perfusionist from the sending facility to maintain the IABP.

Procedure

1. Review the most recent 12-lead EKG. Select lead with greatest R-Wave amplitude. Place patient in this lead on cardiac monitor for continuous monitoring during transport. Limit chest artifact. EKG leads for the IABP will be secured with tape to the patient's chest and maintained during transport. Lead selection may need to be changed in order to get the best R-wave and capture on the balloon pump (if EKG triggered).
2. Arterial line shall be maintained on the IABP. If a transducer is used, ensure that it is directly connected to the pump and in working order. Maintain adequate arterial tracing. If radial site is used, secure arm with arm board to protect site during transport. Secure tubing.
3. Evaluate balloon insertion site. Note balloon size in the medical record. Check dressing site appearance. Monitor site frequently (every 15 minutes and as needed) during transport. Instruct patient to keep affected leg straight. Ensure that a knee immobilizer is in place prior to transport for additional reinforcement.
4. Establish baseline condition. Evaluate hemodynamics and clinical condition.
5. Hemodynamic assessment will include: temperature; blood pressure; respiration rate and quality; heart rate and rhythm; arterial blood pressure; Augmented pressures, MAP; CVP; PAP; augmented diastolic pressure (ADP). Document findings include patient's weight.
6. Evaluate pulses, both radial sites as well as posterior tibial and dorsalis pedis to facilitate subsequent localization during transport, also capillary filling times and extremity temperature.
7. Review lab values and trends.
8. Maintain H.O.B. at lowest point tolerated by patient, never to exceed 30 degrees.
9. Evaluate and closely monitor urinary output. All patients will have an in-dwelling urinary catheter.
10. Maintain IABP at prescribed timing/ratio (i.e.: 1:1; 1:2; 1:4). Evaluate effects.
11. Document hemodynamics. Document: IABP type, model and trigger (EKG, A-Line)

Precautions

1. Never leave balloon pump inactive in patient for more than 20-30 minutes (i.e., not inflating and deflating). Thrombosis formation could occur after 30 minutes. Utilize 60 ml syringe to manually fill and deflate balloon.
2. Balloon leak: Observe tubing for blood. If blood is observed in the pneumatic tubing, shut off the balloon pump and leave intact. Maintain sterile technique and notify the physician and receiving facility immediately.
3. IABP Failure: Evaluate patient's condition and hemodynamics. Troubleshoot the device and make every effort to correct the problem and maintain the patient's safety. If IABP is inoperable for greater than 20-30 minutes, inflate IABP manually with 60 cc syringe every 3-5 minutes to avoid clot formation (Inflate with 10cc less than balloon size).
4. Ensure IABP battery is charged and Helium tank level is sufficient for transport. The balloon pump should be plugged into the ambulance inverter or generator outlets during transport.

Back to Table of Contents

5. Ensure there is ample tubing length for transfer and loading the patient into the ambulance. Secure the IABP tubing at patient end and stretcher end, but not mid-line. Put loops in tubing if length permits.
6. If bleeding is observed at the insertion site, apply direct pressure to the site until bleeding stops
7. If CPR is required, the IABP should be switched to “pressure trigger” mode.

Back to Table of Contents

MECHANICAL VENTILATION

All patients who are transported by the Critical Care Transport Unit will be monitored closely for the following:

1. Pulse oximetry- will be continuous and these patients will maintain an O2 saturation of 90% or above. The pulse oximeter readings will be documented on the patient care record (EPCR) prior to departure from the sending facility and every 15 minutes throughout the duration of the transport. Report from the sending facility should include the patient's normal range of SpO2. This will set the parameters for the CCT-P team regarding SpO2. Some patients will not have, nor maintain an SpO2 of 90% or greater due to their underlying pulmonary condition. Documentation of the reason for the variance from the CCT-P standard of care is essential.
2. Capnography- will be continuously monitored in all intubated patients. Tracheostomy patients will have capnography/ capnometry monitored when indicated. Examples would be abnormal vital signs and/or changes from normal condition. Titrations in respiratory rate and/or tidal volume may be made in order to maintain EtCO2 at normal range of 35-45 mmHg or level prescribed by physician or patient condition. Some patients will not have an EtCO2 within the desired range due to their underlying condition. Documentation of the reason for the variance from the CCT-P standard of care is essential.
3. Ventilator settings- will be documented on the run sheet, as well as any changes that are made during the transport.
4. Endotracheal- or tracheal suctioning will be performed using aseptic technique when to maintain a patent airway; the type, color and amount of secretions will be documented on the run sheet.
5. Sedation: Patients that require sedation and/or a paralytic to maintain adequate oxygenation and reduce anxiety will be provided with medication as per protocol.
6. Tracheostomy Patients: The CCT-P will ensure that all patients whose airway is maintained by a tracheostomy tube will be provided with the obturator and an additional tracheostomy tube prior to leaving the sending facility.
7. AMBU Bag: The CCT-P will ensure that a bag valve mask (BVM) resuscitator is kept with the patient at all times. This will ensure adequate ventilation management in the event of mechanical ventilator failure.
8. Communication: Communicate with a vent patient, prior to switching to the CCT-P vent, the differences they will experience. Continue to talk with the patient and attempt to alleviate anxiety/restlessness.
9. Scene Call- In the presence of any advanced field airway, either placed by the CCT-P or prior to arrival, the CCT-P may utilize the ventilator with the initial recommended settings setting (waveform EtCO2 required)
10. Patients on home ventilators- will remain on current ventilator for transport ensuring there is adequate power supply.

Patient may be moved over to the CCT-P ventilator if:

1. Clinical indication (respiratory compromise) is present
2. CCT-P is unfamiliar with home ventilator and family is unable to accompany patient during transport
3. Equipment constantly malfunction/alarms

Back to Table of Contents

GOALS:

1. To maintain pulmonary management of the ventilator dependent patient during transport.
2. To maintain or improve the patient's level of care.
3. To prevent complications of oxygen toxicity/dependence by providing the appropriate FiO2.
4. To provide quality patient care utilizing the transport team approach.
5. To prevent complications of positive pressure ventilation.

Back to Table of Contents

PULMONARY ARTERY CATHETERS

Procedure

1. Check and document PCWP at sending facility ONLY. Check PA systolic, diastolic and mean pressures at sending facility and every 10 minutes.
2. The Pulmonary Artery Capillary Pressure (PCWP) will only be obtained at the sending facility
    a. Normal Mean Values:
        i. Pulmonary Artery Pressure (PAP) Systolic 15-30 mmHg Diastolic 4-12 mmHg
        ii. Pulmonary Artery Capillary Pressure (PCWP): 4-10 mmHg
        iii. Central Venous or Right Atrial Pressure (CVP): 0-12 mmHg
        iv. (Therapeutic ranges may be somewhat higher than the above values)
    b. Exceptions:
        i. The optimal mean PCWP (wedge) may be 15-20 mmHg in patients with compromised left ventricular function, post-op stress or post MI.
        ii. For patients with COPD and respiratory failure, expect PCWP pressures in the range of 30-50 mmHg. PCWP should be normal in pure pulmonary hypertension.
3. Trends in PAP and PCWP pressures are the most significant factors in detecting significant physiological changes in the patient's condition. Be sure to obtain history of these values prior to transport.
4. Inspect and document the insertion site. Note and document the PA insertion depth.
5. Calibrate the transducer at the beginning of the transfer before the patient is transferred over to the stretcher and with any major position changes.
6. Maintain pressurized flush system at 300 mmHg.
7. If change in waveform occurs, contact Medical Control for direction.
8. Follow set parameters for specific IV vasoactive drips as ordered by transferring physician.

Back to Table of Contents

TRANSVENOUS PACEMAKERS

Procedure

1. Place a new battery in the temporary pacemaker and test it prior to use.
2. Connect pacer wires to Temporary Pacemaker Cables with leads/heartwires - the patient cable with lead or heartwire plugs into socket on top of unit. In the absence of patient cables, temporary transvenous leads plug directly into the two smaller sockets.
3. Match the positive (+) and negative (-) leads to the positive (+) and negative (-) sockets or clips (as applicable). There may be instances where the leads are reversed in polarity to obtain capture. CCT-P will connect in the same manner as the sending facility.
4. Set the pacemaker controls
    a. Set the sensitivity (the highest number is least sensitive; the lowest is most sensitive)
5. Demand mode - (withholds its pacing stimulus after sensing a spontaneous depolarization) set the sensitivity value to detect intrinsic activity.
    a. Set pacemaker's rate 10 bpm slower than patient's intrinsic rate (the sense indicator will flash regularly)
    b. Reduce milliamps (output) to the minimum value (this avoids risk of competitive pacing).
    c. Sensitivity should be set at its lowest value necessary to ensure mechanical capture, and should be increased only to the point of stopping any oversensing.
    d. Restore original pulse generator rate and output values.
6. If asynchronous mode is indicated (stimulates at a fixed, preset rate independently of the electrical and/or mechanical activity of the heart) turn sensitivity dial to ASYNC (not the preferred mode for critical care transport).
    a. Set the rate and milliamps (output)
    b. Set the milliamps (output) at 5 and the rate at 60 or as directed by the physician orders.
7. Turn the pacemaker ON
8. Check the monitor to ascertain that capture (depolarization of the atria and/or ventricles) is obtained- if not, increase the milliamps slowly until capture is obtained, this is the threshold (minimum electrical stimulus needed to consistently elicit a cardiac depolarization). Then set the milliamps at two (2) x the threshold.

Setting Stimulation Threshold

1. Ensure the patient is connected to pacemaker and being monitored on EKG.
2. Set pulse generator rate at least 10 ppm faster than the patient's intrinsic rate (The pace indicator will be flashing regularly at the set rate).
3. Decrease the milliamps (output) until 1:1 capture is lost (the pace and sense indicators will be flashing intermittently).

Back to Table of Contents

VENTRICULAR ASSIST DEVICE (IMPELLA)

The CCT-P will utilize a RN from the sending facility to maintain the Impella Ventricular Assist device.

Procedure

1. The Impella is intended for partial circulatory support using an extracorporeal bypass unit, for periods from 6 hours (Impella 2.5) to 2 weeks (Impella 5.0).
2. Document position of Impella as reported by sending facility. If possible, bring reports and/or imaging studies that document confirmation of placement.
3. Observe sheath site for signs of bleeding, swelling or hematoma.
4. Review last vital signs, presence or absence & location of pedal pulses.
5. Determine if the patient has chest discomfort, pain or shortness of breath.
6. The HOB should never be moved from the position it was originally established at. Movement of the HOB is the primary cause of migration of the Impella during transport. Most patients will need to remain flat throughout transport. Under no conditions is HOB ever to exceed 30˚.
7. Refer to hemodynamic monitoring protocol for arterial line maintenance.

Precautions

1. In sure that the stopcock on the peel-away introducer or repositioning sheath is always kept in the closed position. Significant bleeding can occur if the stopcock is left in the open position.
2. CPR should be initiated immediately per OCEMS protocol if indicated for any patient supported by the impella. When initiating CPR, reduce the impella flow rate. When cardiac function has been restored, return flow rate to the previous level and assess placement signals on the controller
3. During defibrillation, do NOT touch the impella catheter, cables or automated impella controller.
4. Infusion through the sideport of the introducer can be done only after all air is removed from the introducer. If performed, the infusion should be done for flushing purposes only and NOT for delivering therapy or monitoring blood pressure.

Back to Table of Contents

VENTRICULAR ASSIST DEVICE (ALL OTHERS, EXCEPTING IMPELLA)

While some VADs produce pulsatile flow, most VADs use continuous flow technology, thereby creating a non-pulsatile continuous flow. This means most patients with a VAD will not have a palpable pulse and, therefore, taking a blood pressure with a manual cuff and stethoscope will rarely allow you to auscultate a pressure. It is imperative that the type and model of VAD be identified (i.e. HeartWare HVAD vs Jarvik 2000 FlowMaker). Important aspects of transport include allowing a family member to ride along with the patient because the family member can be an invaluable resource. They are often trained in the operation of the equipment and know how to handle an emergency, and can also be a comfort to the patient.

Refer to device specific manual for setup and troubleshooting or questions. Verify you are using the most current procedure manual before operation.

Unresponsive patients with a capillary refill > 3 seconds

1. If CPR and defibrillation can be performed on the patient (see VAD reference or documentation):
    a. Refer to Cardiac Arrest Protocol
2. If CPR and defibrillation are contraindicated:
    a. Check controller for alarms. (I.e. low battery, driveline malfunction, pump stopped.)
    b. Auscultate and feel left upper abdominal quadrant for a continuous whirring sound and vibrations.
    c. Determine if there is a “hand pump” or external device to utilize.
    d. Remember not to perform chest compressions because they could dislodge the pump, making the patient bleed to death. (Unless the patient is in obvious cardiac arrest and the pump isn’t working. Use the assistance of the VAD coordinator to figure this out before starting any compressions).
    e. Perform all other BLS/ACLS protocols as written.
    f. Avoid kinking or twisting driveline when strapping the patient onto the stretcher.
    g. Keep batteries and controller in reach and secured to the patient during transport. Keep them dry.
    h. Take the patient’s emergency travel bag when leaving the scene. (It has an extra controller, batteries and the VAD coordinator’s emergency contact number.) Access back up controller and power sources as needed.
    i. Monitor and document all IBP (in hospital), EKG, and Wave form ETC02 and ventilator settings every 15 minutes.
    j. Contact online medical control for further instructions.
    k. If feasible, transport the patient to their implant hospital. If not, transport to the nearest most appropriate hospital.

Back to Table of Contents

VENTRICULOSTOMY MONITORING

Procedure

1. Maintain patient's head position per physician's order (usually 30 degrees).
2. Check and document dressing site and appearance.
3. Confirm level of drain and any other patient specifics in regards to monitoring, as follows.
4. Review physician's order to place ventriculostomy to either drain or monitor.
    a. If ventriculostomy is placed to drain:
        i. Verify that the stopcock at the zero level is opened to the drainage bag side. The drip chamber is placed so that the zero level is at the foramen of Monroe (Point of communication between the 3rd and lateral ventricles of the brain). Anatomical landmark for foramen of Monroe is the external auditory canal. Ensure the Buretrol is moved so that the pressure line is at the ordered level of drainage.
    b. If ventriculostomy is set to monitor:
        i. Do not collect measurements during transport.
5. The system must be secured on a pole at all times. The system is adjusted to obtain the zero level.
6. If tubing becomes occluded during transport, do not flush or manipulate line. Notify receiving staff upon arrival.
7. Document on PCR drainage amount, color, ICP, and any other pertinent information.

Back to Table of Contents

APPENDICES

Back to Table of Contents

APGAR SCORING

The APGAR Scoring System is widely utilized as an indicator of the need for resuscitation of the newborn. Five objective signs are evaluated and the total score is noted at 1-minute and again at 5-minutes after the complete birth of the infant. If the 5-minute APGAR score is less than 7, additional scores are obtained every 5-minutes for a total of 20-minutes. The heart rate of the newborn is determined by listening to the chest with a stethoscope or by palpating the umbilical cord stump for arterial pulsations. Respiratory activity is judged by the newborn's breathing effort and rate. Muscular tone is best seen in the extremities in response to stimulation. Reflex activity is best evaluated during suctioning of the naso- and oropharynx or when handling the infant. Most newborns score only 1 for color both at 1 and 5-minutes of age (as there is some degree of peripheral cyanosis/acrocyanosis. The need for immediate resuscitation can be more rapidly assessed by evaluating the HR, respiratory activity and color, than by the total APGAR score. Since even a short delay in initiating resuscitation may result in a long delay in establishing spontaneous and regular respirations and/or HR. It should not be delayed while obtaining the 1-minute score.

APGAR Table

	0	**1**	**2**
Appearance	Blue/Pale	Pink body, blue extremities	Completely pink
Pulse	Absent	Less than 100 bpm	Greater than 100 bpm
Grimace	No response	Grimace/Irritability	Cries
Activity	Limp	Some flexion	Active motion
Respirations	Absent	Slow and irregular	Strong Cry

Back to Table of Contents

AUTOMATIC TRANSPORT VENTILATORS

The **Autovent 4000** is a pneumatically powered portable ventilator and CPAP generator. The Autovent 4000 in Ventilation mode delivers a time cycled constant flow breath. The inspiratory time is constant and the breath volume is varied by changing the flow rate into the patient. Various breaths per minute are achieved by varying the expiratory time.

If at any time an equipment malfunction occurs, and/or the ventilator is not maintaining adequate respiratory compliance, the ventilator will be disconnected from the patient and the patient will be ventilated with a BVM.

Ventilator Assembly:

1. Set the Ventilation Mode switch to "Auto Ventilation" mode.
2. Connect the Ventilator oxygen supply line to a 50-psi oxygen source. Ensure the oxygen source has enough pressure to properly ventilate the patient for the duration of transport. Also, ensure the oxygen connections are free of liquids or contaminates so the ventilator will provide optimal performance.
3. Connect the OCEMS supplied breathing circuit to the 22mm connection on the right side of the unit. **Do NOT use any ventilation circuit not specifically recommended for the Autovent 4000.** Ensure the circuit is fit snugly over the connection so it does not inadvertently be disconnected.

Ventilator Settings:

Interfacility Transfer:

1. Ensure the patient has a stable/secured airway and adequate ventilations with current transferring hospital ventilator settings with the transferring physician, respiratory therapist, and/or nurse.
2. Review and select with most appropriate ventilation settings on the Autovent 4000 with the transferring physician, respiratory therapist, and/or nurse.
3. Once the settings are configured, the patient's ventilations can be moved from the hospital ventilator to the Autovent 4000.
4. The patient should be monitored for a minimum of 10 minutes by the paramedic and either the physician, respiratory therapist, and/or nurse to ensure the patient's compliance with the Autovent 4000. Should the patient not tolerate the Autovent 4000, the patient shall be returned to the hospital ventilator. The paramedic shall contact the on duty commander and advise him/her of the situation.
5. If the patient tolerates the Autovent 4000, the patient can then be moved to the EMS stretcher and transport initiated.
6. The paramedic shall reassess the ventilator settings and patient compliance **every 5 minutes.**

Back to Table of Contents

7. Upon arrival to the destination facility, the hospital respiratory therapist, nurse, or receiving physician shall verify the patient's ventilation settings and assist with the transfer of the patient's ventilations to the receiving facility's ventilator.

911 Response:

1. Ensure the patient has a patent airway confirmed with visualized chest rise and fall and **waveform EtCO2**.
2. Determine the ideal tidal volume based on the patient's ideal body weight (based on their approximate height). The ideal tidal volume should be 6-8 mL/kg of ideal body weight. Target the respiratory rate and tidal volume for an approximate minute volume of 100mL/kg ideal body weight. **For both adults and pediatrics, use the 1 second inspiratory time. Only use the 2 second inspiratory time if a larger tidal volume is required.** Utilize the quick reference chart with the ventilator for assistance.
3. Connect a PEEP valve to the exhalation port of the vent tubing and set it to 5 cm/H2O.
4. Once the ventilator is set and ready, connect the patient to the ventilator.
5. Closely monitor the patient's vitals (pulse rate, BP, SpO2, and EtCO2) and reassess the ventilation settings and patient compliance **every 5 minutes**.
6. The airway pressure gauge should be observed to make sure the patient is receiving adequate positive pressure ventilation. If the gauge reading is low during the delivery of a breath and the chest rise is also low, check the tidal volume setting, patient connections and examine the patient for a possible obstruction of the airway or other injury. The gauge reading should also be observed to make sure it is not too high. Common numbers used in practice are a maximum of 20 cm H2O for and unprotected airway and 30 cm H20 for a protected airway. Higher pressures may be required based on the patient's condition. A high reading with pressure limit alarm may indicate a blocked airway or a stiff lung.

Manual Breaths:

1. Manual breaths may be delivered using the manual breath button. Each time this button is pushed the ventilator will deliver one breath with the selected inspiratory time and tidal volume. This button can be used to deliver breaths during CPR. If this button is pushed during automatic ventilation, the ventilator will deliver the breath and then continue to deliver automatic breaths based on BPM rate selected.
   For example if you were delivering 10 BPM with a 1 second inspiratory time the manual breath button would trigger a breath to be delivered when pushed. This breath would have a 1 second inspiratory time, followed by a 5 second expiratory time. Automatic ventilation would then continue based on the 10 BPM setting.
2. **This button should be pushed and released as soon as the desired breath starts**. If the button is held down longer than the inspiratory time the tidal volume will be based on the time the button is held down and will exceed the set value. The pressure relief may trigger if this happens.

Back to Table of Contents

Spontaneous Breathing by the Patient:

Should the patient begin to breathe spontaneously the Autovent 4000 will sense this breath and deliver the set tidal volume at the set inspiratory/rate. The breath timing will be reset based on the selected BPM rate. For example, if 10-BPM was selected, the next breath will be delivered 6 seconds after the start of the spontaneous breath. This function operates in the Auto Ventilation mode only. Should the patient demand exceed the gas flow rate, the addition demand will be supplied by ambient air. Ambient air is pulled in through an anti-suffocation valve located in the breathing circuit connection fitting. If the patient begins spontaneous breathing, administer additional sedation as per the RSI protocol.

Warning: Should a mechanical problem develop or the patient appear to be experiencing difficulty breathing while connected to the unit, disconnect the unit immediately and ventilate by other means.

Back to Table of Contents

THE BAKER ACT AND RELATED LAWS

The Baker Act (Chapter 394, Part I, F.S.) is actually The Florida Mental Health Act. It does not authorize the provision of medical treatment. It may be initiated by a Certified Law Enforcement Officer. A Law Enforcement Officer may give EMS Personnel verbal permission to treat a patient under the auspices of the Baker Act. The Law Enforcement Officer must physically accompany the patient to the receiving facility and complete all related Baker Act Forms. Ensure the Officer's name and ID number are clearly documented on the Patient Care Report.

It is important to remember; the Baker Act relates to mental illness only.

The Marchman Act (Chapter 397, F.S.) This Act states that: A person may be taken into custody by a Law Enforcement Officer and court ordered into treatment for "substance abuse impairment". This means a condition involving the use of alcoholic beverages or any psychoactive or mood-altering substance to such a manner as to induce mental, emotional, or physical problems and cause socially dysfunctional behavior.

The Emergency Examination and Treatment of Incapacitated Persons Act (Chapter 401.445, F.S.) This Act gives EMS Personnel the power to treat without informed consent if the person at the time of exam or treatment is intoxicated, under the influence of drugs or otherwise incapable of providing informed consent without fear of having to respond to civil suits. This Act is specifically tailored for pre-hospital use.

Back to Table of Contents

BLOOD DRAWING PROCEDURE AND KIT

Blood Drawing Procedure

Blood specimens will be drawn by certified Paramedics for blood alcohol analysis upon request of an authorized Law Enforcement Officer. The blood should only be drawn with a sealed kit provided by the Officer.

The following information must be documented on a Patient Care Report:

1. Officer's Name
2. Officer's ID number
3. Kit opened by the Paramedic or in the presence of the Paramedic
4. Type of skin prep used (only use skin prep supplied in the kit)
5. Number of tubes drawn
6. All tubes placed back in kit
7. Kit resealed by Paramedic or in the presence of the Paramedic
8. Note any problems with the incident

The Okaloosa County Medical Director(s) should be notified if the blood drawing procedure conflicts with patient care.

Assembly:

1. Remove bottom (white cap) from catheter
2. Attach catheter to protective shield
3. Slide blood tube inside the protective shield. Do not "seat" the tube until skin penetration has been established. Doing so, could inactivate the vacuum.
4. Remove top (yellow cap) from catheter
5. Gain venous access
6. Slide (seat) blood tube firmly in position

Note: Various law enforcement agencies may utilize a different brand of kit however, the components are essentially identical.

Back to Table of Contents

COMBAT APPLICATION TOURNIQUET (C-A-T)

The Combat Application Tourniquet® (C-A-T®) is a small and lightweight one-handed tourniquet that completely occludes arterial blood flow in an extremity. The C-A-T® uses a Self-Adhering Band and a Friction Adaptor Buckle to fit a wide range of extremities combined with a one-handed windlass system. The windlass uses a free moving internal band to provide true circumferential pressure to an extremity. The windlass is then locked in place; this requires only one hand, with the Windlass Clip™. The C-A-T® also has a Hook-and-Loop Windlass Strap™ for further securing of the windlass during patient transport.

Application:

1. Route the self-adhering band around the extremity.
2. Pass the band through the outside slit of the buckle.
3. Pull the self-adhering band tight.
4. Twist the rod.
5. Lock the rod in place.
6. Secure the rod with the strap.
7. Record the time of application on the strap.

Back to Table of Contents

COMMON/APPROVED MEDICAL ABBREVIATIONS

AAA = abdominal aortic aneurysm

AAOX4 = awake, alert, and oriented to person, place, time, and events

AED = automated external defibrillator

abd. = abdomen

Ab. = abortion

AF = atrial fibrillation

ARDS = Adult Respiratory Distress Syndrome

ASA = Acetylsalicylic Acid (aspirin)

AT = atrial tachycardia

AV = atrioventricular

BGL = blood glucose level

BSA = body surface area

BS = breath sounds

C-spine = cervical spine

CC or C/C = chief complaint

CHF = congestive heart failure

CNS = central nervous system

c/o = complains of

CO = carbon monoxide

CO2 = carbon dioxide

D/C = discontinue

DT's = delirium tremens

DVT = deep venous thrombosis

Dx = diagnosis

ECG – EKG = electrocardiogram

e.g. = for example

ENT = ear, nose, and throat

ETOH = Ethanol (alcohol)

fx = fracture

Back to Table of Contents

Gm, g = gram

GSW = gunshot wound

gtt = drop

GU = genitourinary

GYN = gynecologic

hr = hour

H/A = headache

Hgb = hemoglobin

Hg = mercury

H & P = history and physical

HTN = Hypertension

Hx = history

IC = incident commander

ICP = intracranial pressure

JVD = jugular venous distention

KVO = keep vein open

LAC = laceration

LBBB = left bundle branch block

LSB = Long Spine Board

MAEx4 = moves all extremities x 4

NaCl = sodium chloride

NAD = no acute distress

NPO = nothing by mouth

NKA = no known allergies

NKDA = no known drug allergies

NSAID = Non-steroidal anti-inflammatory drug

OD = overdose

PERRL(A) = pupils equal, round, and reactive to light (accommodation)

PID = pelvic inflammatory disease

PO = by mouth

Back to Table of Contents

PTA = prior to arrival

Pt, PT = patient

RBBB = right bundle branch block

R/O = rule out

ROM = range of motion

Rx = take, treatment

S/S = signs and symptoms

TIA = transient ischemic attack

VS = vital signs

y/o = year(s) old

Back to Table of Contents

CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP) & BI-LEVEL CPAP

Indications

1. Respiratory distress not responsive to basic protocol treatments
2. Flail chest
3. CHF/Pulmonary edema
4. COPD/Asthma (you may add a nebulizer treatment in-line with CPAP in this instance)
5. Pneumonia
6. Near drowning

Contraindications

1. Respiratory Arrest
2. Facial deformity/trauma
3. Aspiration risk
4. Protracted vomiting
5. Inability to cooperate
6. Loss of Consciousness
7. Pneumothorax
8. Cardiogenic Shock
9. Dive accidents/decompression sickness where the possibility of barotrauma exists

Pulmodyne GO-PAP™ CPAP Procedure

1. Choose the correct size mask for the patient's face
2. Assemble the CPAP and attach to oxygen source
3. Flow oxygen at 10 LPM. Do NOT exceed 10 LPM!
4. Place the mask over the patient's face. Ensure a seal is created with no leaks. If the mask is leaking, adjust the mask or change sizes. The mask must seal to provide the needed positive pressure.
5. Use the supplied head strap to secure the mask to the patient's face.
6. Adjust the Positive End Expiratory Pressure (PEEP) by turning the white adjuster. The different levels of PEEP are 5, 7.5, and 10 cmH2O.
7. Continuously monitor and document the patient's SpO2, EtCO2, and breathing status.
8. Monitor oxygen usage.
9. When complete, unit can be discarded (single patient use)

Adding Nebulizer

10. Add medication to the nebulizer cannister
11. Connect nebulizer cannister to oxygen source using included oxygen supply tubing
12. Push the nebulizer cannister into the port and turn a quarter turn to secure.
13. Flow oxygen at 8 LPM. Ensure medication is nebulizing by seeing the misting of the medication. If needed, tap the nebulizer cannister until it starts to nebulize.
14. More medication can be added via the medication port. If completed, remove the cannister from the device and ensure the port automatically seals shut.

Note: This CPAP mask delivers approximately 30% FiO2. More oxygen can be delivered using an EtCO2 nasal cannula. Ensure the mask seals around the nasal cannula.

Back to Table of Contents

Flow-Safe II+® Disposable Bi-Level CPAP Procedure

CPAP Mode

1. Choose the correct size mask for the patient's face.
2. Assemble the device and connect to an oxygen source.
3. Start to flow oxygen and secure the mask to the patient's face. Ensure a seal is created with no leaks. If the mask is leaking, adjust the mask or change sizes. The mask must seal to provide the needed positive pressure.
4. Adjust the oxygen flow to obtain the desired pressure. Flow of 12-14 LPM is required to reach pressure of 8.5-10.0 cmH2O. Use the chart located on the oxygen tubing of the device for flow and pressure reference.
5. Continuously monitor and document the patient's SpO2, EtCO2, and breathing status.
6. When complete, unit can be discarded (single patient use)

Bi-Level Mode

1. Choose the correct size mask for the patient's face.
2. Assemble the device and connect to an oxygen source.
3. Rotate the Green switch on the mask to change the mask to the Bi-Level setting
4. Start to flow oxygen and secure the mask to the patient's face. Ensure a seal is created with no leaks. If the mask is leaking, adjust the mask or change sizes. The mask must seal to provide the needed positive pressure.
5. Flow the oxygen at 14 LPM to reach approximately 8 cmH2O Inspiratory Positive Airway Pressure (IPAP). This is the minimum IPAP pressure required for device to function properly in the Bi-Level mode.
6. Adjust the oxygen flow to obtain the desired pressure. A flow of 17 LPM is required to reach maximum IPAP pressure of 12-13 cmH2O. Use the chart located on the oxygen tubing of the device for flow and pressure reference.
7. Adjust Expiratory Positive Airway Pressure (EPAP) for patient comfort and to ease the patient's work of breathing. To adjust the EPAP use the blue EPAP knob. Turning the EPAP knob clockwise increases pressure while turning it counter-clockwise decreases pressure.
8. Ensure the mask maintains an effective seal. A seal is required for the mask to shift into EPAP mode from IPAP modes.
9. Continuously monitor and document the patient's SpO2, EtCO2, and breathing status.
10. Monitor oxygen usage.
11. When complete, unit can be discarded (single patient use)

Notes:

1. Bi-Level CPAP is the same as "BiPAP"
2. CPAP assists in oxygenation where Bi-Level CPAP is assisted ventilation and provides oxygenation.
3. Use the built-in manometer to estimate IPAP and EPAP.
4. An in-line nebulizer can be used during CPAP operation, but cannot be used in Bi-Level mode.
5. The FiO2 delivered to the patient with this mask varies depending on several variables: respiratory rate, tidal volume, and pressure settings.
6. If using on Bi-Level mode for an interfacility transfer (patient already on Bi-Level CPAP), trial the patient on the device for approximately 10 minutes to ensure the patient tolerates the mask and maintains appropriate vitals.

Back to Table of Contents

CRICOTHYROTOMY

Cricothyrotomy is an emergency lifesaving procedure. It is an invasive technique that allows rapid entrance into the airway for temporary ventilation and oxygenation in those patients in which airway control is not possible by other methods.

Indications: To relieve partial or complete upper airway obstruction or to secure an airway in a patient who cannot be ventilated adequately by other means.

Contraindications: Patient can be ventilated and oxygenated by less invasive means, patients 8 years of age or younger (see Needle Cricothyrotomy).

Procedure:

1. Position the patient supine and hyperextend the patient's neck (unless cervical spine injury is suspected) to bring the larynx and cricothyroid membrane into the extreme anterior position. If cervical spine injury is suspected, maintain the patient's head in neutral alignment with manual stabilization throughout the procedure.
2. Stabilize the patient's larynx using your non-dominant hand. Locate the cricothyroid membrane between the thyroid and cricoid cartilages by palpating from the thyroid cartilage down or palpating up from the sternal notch.
3. Clean the area well using aseptic technique.
4. Using the scalpel, make a vertical incision through the skin down to the cricothyroid membrane.
5. Next, using the scalpel, make a horizontal incision through the cricothyroid membrane.
6. Immediately after the scalpel has passed into the membrane, use a trach hook to maintain proper positioning of the cricothyroid membrane.
7. Using the dilators, enlarge the hole into the tracheal and insert a Bougie into the trachea. You should be able to feel the clicking of Bougie on the trachea rings to ensure proper placement.
8. Advance the 6.0 Shiley trach tube over the Bougie and into the trachea. Be sure to remove the trach hook prior to advancing the tube to ensure the cuff of the Trach tube is not inadvertently punctured by the trach hook.
9. Inflate the cuff of the trach tube and ventilate the patient with a BVM with 10-15 LPM of oxygen.
10. Auscultate lung sounds for proper tube placement and monitor the patient's SpO2 level and continuous waveform capnography.
11. Secure the tube and continually reassess the patient for adequate ventilation, oxygenation, and proper tube placement.

Back to Table of Contents

ENDOTRACHEAL INTUBATION AND CONFIRMATION

CO2 Detectors: The End-Tidal CO2 Detector attaches to the endotracheal ET tube and a breathing device (BVM/ventilator) to detect numerical or waveform measurements of End-Tidal CO2. The end-tidal CO2 continuously monitors the concentration of CO2 molecules that absorb infrared light at the end of each breath.

Normal CO2 Values are 35mmHg – 45mmHg. In the poorly perfusing patient such as with cardiac arrest, it is not uncommon to see readings in the 10mmHg – 15mmHg range.

Indications:

1. To assist verification of endotracheal tube placement after intubation and during transport.
2. To detect approximate ranges of End-Tidal CO2 when clinically significant.
3. To assist with determining the effectiveness of positive ventilations and patient oxygenation.

Caution:

1. Results are not conclusive; the endotracheal tube should be immediately removed unless correct anatomic placement can be confirmed with certainty by other means.
2. This device should not be used in conjunction with heated humidifier or nebulizer. Excessive humidity will affect accuracy.
3. The EtCO2 detector may not register a breath when the EtCO2 is less than 8mmHg. In cardiac standstill, re-establishment of cardiac output and pulmonary perfusion by adequate cardiopulmonary resuscitation is necessary to increase End-Tidal CO2 levels detectable by CO2 Detector.
4. This device cannot be used to detect oropharyngeal tube placement. Standard clinical assessment should be used.

Back to Table of Contents

Facility Capabilities

OKALOOSA COUNTY	Adult SATC	Pediatric SATC	OB	CSC/ EVT	Stroke Center	PCI Center	Whole Blood	Urgent Care
HCA Fort Walton Beach-Destin Medical Center	X		X		X	X	X	
HCA Twin Cities Hospital					X		X	
HCA Destin Emergency Room (FS)					X		X	
North Okaloosa Medical Center			X		X	X	X	
Eglin Regional Medical Center			X				X	
Walton County								
Sacred Heart Hospital on the Emerald Coast			X			X	X	
SANTA ROSA COUNTY								
HCA Navarre Emergency Room (FS)					X			X
Baptist Emergency Room/Urgent Care (FS)								X
Sacred Heart Emergency Room (FS)					X			
Santa Rosa Medical Center			X		X		X	
Gulf Breeze Hospital			X		X		X	
ESCAMBIA COUNTY								
HCA Florida West Hospital			X	X	X	X	X	
Baptist Hospital	X		X	X	X	X	X	
Sacred Heart Hospital/Pediatric Hospital	X	X	X	X	X	X	X	

FS: Free Standing
SATC: State Approved Trauma Center
OB: Obstetrical Care
CSC: Comprehensive Stroke Center
EVT: Endovascular Thrombectomy
PCI: Percutaneous Intervention (Cath Lab)

Back to Table of Contents

FIELD MEDICAL DOCUMENTATION

The Patient Care Report is the “True” legal document regarding patient care. The report should be clear, concise, and complete.

Patient Care Reports shall be initiated on all patients with a medical complaint (without exception).

If you assess and vitalize a patient and find no obvious medical problem, a Patient Care Report shall be generated (without exception).

Patient’s accepting medical treatment and transport shall sign the Patient Care Report. If the patient is not capable of signing, simply state the reason in the PCR and attempt to have receiving nurse sign.

Trauma Alert: Document at least two sets of vital signs and the patient’s Glasgow Coma Score. It is equally important to document any and all reasons for prolonged on-scene times greater than ten (10) minutes, the time the provider called the “Alert”, and the criteria used to determine the “Alert”.

BLS Documentation

Basic Life Support Patient Care Reports are just as important as ALS. The report should include at least two sets of patient vital signs. Refusals shall be signed by the patient when applicable. A witness’s signature for the refusal should be obtained when possible. Family members, Police Officers, and Crew members are all good sources for this procedure.

ALS Documentation

Advanced Life Support Patient Care Reports shall be completed as accurately as possible. The report shall include at least two sets of patient vital signs. Any conscious, alert and orientated patient without s/s of head injury or intoxication that refuses medical treatment for a medical emergency shall sign an “informed refusal”. The paramedic should include as much detail as possible in his/her narrative for the refusal – including the paramedic’s recommendation, patient rationale for refusal etc. AVOID using terms such as “no medical need” and/or “P.U.T.S.”.

Back to Table of Contents

GLASGOW COMA SCALE

A score of 13 correlates with a Mild Brain Injury, 9-12 is Moderate, 8 or less is Severe, 3 usually equates to Death.

GCS Table

Adult:

	1	2	3	4	5	6
Eye Opening	None	Pain	Voice	Spontaneous		
Verbal	None	Incoherent	Inappropriate	Confused	Oriented	
Best Motor Response	None	Extension to Pain	Flexion to Pain	Withdrawal from Pain	Localizes Pain	Obeys Commands

Pediatrics less than 2 years old:

	1	2	3	4	5	6
Eye Opening	None	Pain	Voice	Spontaneous		
Verbal	None	Inconsolable, agitated	Inconsistently consolable, moaning	Cries but is consolable, inappropriate interactions	Smiles, oriented to sounds, follows objects, interacts	
Best Motor Response	None	Extension to pain	Flexion to Pain	Withdrawal from Pain	Localizes Pain	Appropriate response to stimuli

Back to Table of Contents

IGEL

Indications

1. Secure airway of patient after 3 total failed intubation attempts
2. Secure airway of patients in cardiac arrest
3. Secure airway of patients suffering severe, multisystem trauma

Contraindications

1. Patients with an intact gag reflux
2. Complete obstruction of the upper airway (foreign object or pathology)
3. Patients with known esophageal disease
4. Patients who have ingested caustic substances

Procedure

1. Choose appropriate size iGel based on ideal body weight or height (see chart).
2. Remove the iGel from the packaging ensuring it remains medically clean.
3. Open a lube packet and place a bolus of lubricant on the inner side of the main shell of the packaging.
4. Lubricate the iGel's back, sides, and front (in that order) with a thin layer of lubricant. Ensure there are no foreign bodies or large amount of lubricant obstructing the distal opening.
    a. If not immediately inserting the device, the iGel can be placed back inside the protective cradle packaging.
5. Position the patient in the "sniffing" position (if not contraindicated).
6. Grasp the iGel firmly along the bite block and position the device with the cuff outlet facing toward the patient's chin.
7. Introduce the leading soft tip into the mouth of the patient in the direction of the hard palate. Continue to advance the device downward and backward along the hard palate with continuous but gentle pressure until a definitive resistance is felt.
8. The tip of the airway should be located into the upper oesophageal opening with the cuff located against the laryngeal framework. The incisors should be resting on the bite block.
9. Ventilate the patient while confirming proper placement with auscultation of breath sounds, chest movement, and end tidal CO2.
10. Once placement is confirmed, secure the device by sliding the strap underneath the patient's occiput and attach to the hook ring. Take care to ensure the strap is not secured too tight. Alternatively, the device can be secured by taping to the maxilla.

Notes:

1. Sometimes a feel of "give-way" is felt before the end point resistance is met. This is due to the passage of the bowl of the iGel through the faucial pillars. It is important to continue to insert the device until a **definitive resistance** is felt.
2. Once correct insertion is achieved and the teeth are located on the integral bite block, do not repeatedly push down or apply excessive force during insertion.
   It is not necessary to insert fingers or thumbs into the patient's mouth during the insertion process.

Back to Table of Contents

Tube Size	1	1.5	2	2.5	3	4	5
Packaging Color	Pink	Light Blue	Gray	White	Yellow	Green	Orange
Weight (Ideal)	2-5 kg	5-12 kg	10-25 kg	25-35 kg	30-60 kg	50-90 kg	90+ kg
Patient Size	Neonate	Infant	Small Pediatric	Large Pediatric	Small Adult	Medium Adult	Large Adult

Back to Table of Contents

ACCESSING IMPLANTED PORT IN ACUTELY ILL PATIENTS

Due to the high risk of infection, accessing a port should only be completed when all attempts at peripheral vascular access have failed.

Procedure:

1. Palpate the area over the port to locate the center rubber hub.
2. It is preferred for the patient to turn head away from the site if possible and apply mask. Provider should also wear a mask.
3. Using aseptic technique clean the site with alcohol followed by betadine prior to access.
4. With clean hands don sterile gloves utilizing sterile technique and port access kit.
5. Use thumb and first finger to stabilize the port.
6. Introduce a non-coring 45 degree needle or Huber needle perpendicularly to the hub and press down firmly using care not to perforate the back of the port.
7. Check placement by aspirating blood from the access. Flush port with 10mL of Normal Saline and secure with 4x4 for support and venaguard.
8. Administer normal saline drip at KVO rate to prevent thrombus

Note: If unable to aspirate blood or feel resistance or swelling when flushing the needle, it should be removed immediately and disposed of. Contact medical control for further orders with the acute patient.

Due to inaccessibility of a heparin flush, it is imperative a pre-hospital drip of normal saline at KVO should be utilized to prevent clotting.

Back to Table of Contents

INTRAOSSEOUS ACCESS

Indication:

To obtain vascular access in adult and pediatric patients when IV access is unable to be obtained.

Contraindications:

1. Ability to obtain IV access
2. Fracture in the bone selected for IO insertion
3. Inability to identify insertion landmarks
4. Infection at the IO insertion site
5. IO insertion, or attempted insertion, in selected bone within the past 48 hours
6. Significant orthopedic procedure in the selected bone (joint replacement, prosthesis, etc.)

Procedure:

1. Choose insertion site. Approved sites include the proximal humeral head (preferred site for adults), distal femur (preferred site for infants and small children), and proximal tibial tuberosity.
2. Prepare equipment
3. Cleanse the site with antiseptic agent (iodine preferred)
4. Stabilize the site and maintain tension on the skin
5. Insert IO needle into the site perpendicular to the target bone surface. Insert until the needle is touching the bone surface.
6. One black line should be visible on the needle set. If at least one black line is not visible, choose a different size needle or choose a different insertion site.
7. Squeeze the driver trigger to activate. Provide steady, gentle, downward pressure. Do NOT use excessive force!
    a. In the event of driver failure, the needle can be inserted manually. Provide manual, steady downward pressure while twisting the needle back and forth until it reaches the intraosseous space.
8. Adults: Stop the drill when the hub of the needle reaches the patient's skin
9. Pediatrics: Stop the drill when a decrease of resistance is felt (Stop when you feel the pop).
10. Stabilize the hub of the IO catheter and remove the driver.
11. Maintain stabilization of the IO catheter hub and remove the IO needle. Once removed, immediately place the needle in a bio-hazard sharps container.
12. Connect a flushed saline lock or tubing to the exposed Luer-lock hub.
13. Vigorously flush the IO with 10mL of Normal Saline while monitoring the site for infiltration.
14. Secure the IO needle with a commercial stabilizer or bulky dressings and tape.
15. Begin infusion (using a pressure bag, if needed) to maintain flow while consistently monitoring the site for patency.

Pain Management

IO infusion is very painful. In conscious patients, follow the following procedure in lieu of step 13 above when flushing the IO insertion site

Adult:

1. Slowly infuse **40 mg 2% Lidocaine** over 2 minutes
2. Allow the Lidocaine to dwell in the IO space for 60 seconds
3. Flush with 5-10mL of Normal Saline

Back to Table of Contents

4. Slowly administer **20mg 2% Lidocaine** over 60 seconds
5. Begin infusion while monitoring for infiltration

Pediatric:

1. Slowly infuse **0.5mg/kg 2% Lidocaine** not to exceed 40mg over 2 minutes
2. Allow the Lidocaine to dwell in the IO space for 60 seconds
3. Flush with 2-5mL of Normal Saline
4. Slowly administer **0.25mg/kg 2% Lidocaine** not to exceed 20 mg over 60 seconds
5. Begin infusion while monitoring for infiltration

Back to Table of Contents

PEDIATRIC INTUBATION

The pediatric patient is very reliant on oxygen with hypoxemia being the major cause of cardiopulmonary arrest in the age group. Delivery of oxygen in the highest tolerable concentration is indicated. Note: The use of Bag Valve Mask ventilations with the use of an NPA or OPA is acceptable in the pediatric patient equal to or less than 8-years of age, if unable to intubate.

The following rules are to be utilized when intubating the pediatric patient:

1. The endotracheal tube can be sized by several methods to include the Handtevy application, size of the nares, or size of the pinky finger. Remember, to prepare not only the indicated size, but also a tube which is 0.5mm in the next larger and smaller sizes.
2. The anatomy of the airway is different than the adult patient and very apparent vocal cords may not be anticipated. Due to the over-abundance of tissue in the posterior pharynx in infants, the tracheal opening may simply present as the anterior opening found in the sub-glottic region. Anytime the pediatric patient is intubated, or prolonged bag valve mask ventilation (greater than 3 minutes) occurs, a nasogastric tube should be inserted (Reference Nasogastric Tube Insertion). This procedure will ensure that gastric distention is relieved and maximum ventilatory support is achieved.
3. The endotracheal tube (ETT) will be secured as soon as correct placement is assured by auscultation of lung sounds. Do not let go of the ETT during this process! Tape should be applied to the maxillary region of the face only! (Tape applied to the mandibular region may cause extubation if the mouth opens during transport, etc.)
4. The most experienced crew members should be charged with airway control and great care should be exercised when moving the patient from one surface to another in order to assure that accidental extubation does not occur.

When assessing the child for intubation complications (Bradycardia, cyanosis, etc.) remember to assess in order of the following causes:

1. Displaced ETT (right mainstem, esophagus, etc).
2. Obstructed ETT (kinked, secretions in the tube etc).
3. Pneumothorax (spontaneous, traumatic).
4. Equipment failure (O2 supply, BVM reservoir, etc).

Back to Table of Contents

MUCOSAL ATOMIZATION DEVICE (MAD)

Contraindications

1. Damaged nasal mucosa may inhibit absorption of the medication.
2. Nasal trauma
3. Epistaxis (nosebleed)
4. Nasal congestion or discharge
5. Any recognized nasal mucosal abnormality

Procedure

1. Prepare the equipment / medication
2. Draw the medication into the syringe:
    a. Maximum adult and pediatric administration is 1 mL per nostril.
    b. Med should be split with half of the dose given in one nostril and the other half given in the other nostril.
3. Expel all of the air from the syringe.
4. Securely attach the mucosal atomizer to the syringe.
5. The patient should be in a recumbent or supine position. If the patient is sitting, compress the nares after administration.
6. Using your free hand to hold the crown of the head stable, place the tip of the atomizer snugly against the nostril aiming slightly up and inward (towards the top of the opposite ear).
7. Briskly compress the syringe plunger to properly atomize the medication.
8. Monitor the patient.

Back to Table of Contents

NASOGASTRIC TUBE INSERTION

Nasogastric Tube insertion is indicated to relieve gastric distention in the ventilated patient who meet the following criteria:

1. The adult patient with noticeable gastric distention that interferes with ventilatory support.
2. Any pediatric patient that is intubated or receives long term (> 3-minutes) ventilation by BVM.

Note: This procedure should not be performed in the presence of frontal head trauma where the cribriform plate may be fractured.

Procedure

1. Ready the proper size tube (adult 16f) Pediatrics as per the Handtevy application 6-16f. 60mL Syringe, water soluble lubricant and tape.
2. Measure the tube by placing over the stomach region and extend to the ear and then to the nose. (Note the tube mark at this time).
3. Lubricate the end of the tube and insert into the largest nare, advancing until the tube mark noted above is at the nare opening. The conscious patient can assist while swallowing during insertion.
4. Verify placement by auscultating epigastric sounds while inserting 20-30mL's of air.
5. Tape in place and note the depth of the tube on the Patient Care Report.

Back to Table of Contents

NEEDLE CRICOTHYROTOMY

This procedure may be used to relieve an upper airway obstruction after unsuccessful attempts at establishing an airway in the pediatric patient.

Indications: To relieve partial or complete upper airway obstruction or to secure an airway in a Pediatric Patient 8 years of age or younger who cannot be ventilated or oxygenated adequately by other means.

Contraindications: Patient can be ventilated and oxygenated by less invasive means, patients over 8 years of age (see Cricothyrotomy).

Procedure

1. Position the patient supine and hyperextend the patient's neck (unless cervical spine injury is suspected) to bring the larynx and cricothyroid membrane into the extreme anterior position. If cervical spine injury is suspected, maintain the patient's head in neutral alignment with manual stabilization throughout the procedure.
2. Stabilize the patient's larynx using your non-dominant hand. Locate the cricothyroid membrane between the thyroid and cricoid cartilages by palpating from the thyroid cartilage down or palpating up from the sternal notch.
3. Clean the area well using aseptic technique.
4. Expel approximately 5mL of NS from a NS flush and attach it to a 14 Gauge or larger 3.25-inch angiocatheter (same used for chest decompression).
5. Use the 14 Gauge angiocatheter to carefully puncture the cricothyroid membrane. While advancing the needle, another provider should be drawing back on the syringe. Once the needle enters the trachea, a "pop" can be felt and air will be returned easily with bubbles seen in the syringe.
6. Advance the catheter over the needle while holding the needle in position, then withdraw the needle after the catheter is advanced flush to the skin.
7. Remove the plunger from a 3mL syringe and attach the syringe to the catheter hub.
8. Attach a 15mm adaptor to the syringe chamber (should be the adaptor from an 8.0mm ETT, but could vary depending on syringe manufacturer).
9. Oxygenate the patient with BVM attached to high flow O2 (10-15 lpm) and with PEEP (set to 5-15 cm H2O).
10. Confirm and document placement by auscultating bilateral breath sounds and SpO2 level.
11. Do not let go of the catheter and be careful not to kink the catheter. There is no reliable way to secure the catheter in place and is only a temporary measure until a definitive airway can be established at the hospital.
12. Observe for subcutaneous air, which may indicate tracheal injury or misplacement of the needle cricothyrotomy, and continually reassess the patient for adequate oxygenation.
13. Provide rapid transport to the closest emergency room.

Back to Table of Contents

ACCESSING PICC LINE OR CENTRAL VENOUS CATHETER

Procedure

1. With clean hands use proper PPE (gloves).
2. Using aseptic technique, clean the hub with an alcohol prep.
3. Lines should have heparin solution resting within and need to be flushed with normal saline.
    a. If sudden chest pain occurs, stop flush immediately. If any resistance is felt do not force the flush. There can be more than one lumen present and an attempt can be made at the second or third lumen. If resistance continues attempt IO access or call medical control for instructions.
4. Medication administration may be completed at this time.
5. Administer maintenance drip of normal saline at KVO rate to prevent thrombus.

Back to Table of Contents

PLEURAL DECOMPRESSION

The patient with a tension pneumothorax may exhibit any or all of the following signs and symptoms:

1. Shortness of breath
2. Chest pain
3. Cyanosis
4. Tracheal deviation (not always present)
5. Hyperresonance on the side of the pneumothorax
6. Wide changes in BP with respirations
7. Diminished or absent lung sounds on the affected side
8. Reduced BP
9. Distended neck veins (may not be present if there is associated severe hemorrhage)
10. Shock.

The indication for performing emergency decompression is the presence of a tension pneumothorax with decompensation as evidenced by more than one of the following:

1. Respiratory distress and cyanosis
2. Loss of radial pulse (late sign)
3. Decreasing level of consciousness.

Procedure

1. Administer high flow oxygen and ventilatory assistance, if indicated.
2. Identify the 4th or 5th intercoastal space perpendicular to the chest wall, anterior mid-axillary line (same location as V5 on standard 12-lead) on the same side as the pneumothorax.
   Alternate location: Identify the 2nd or 3rd intercostal space on the anterior chest at the midclavicular line on the same side as the pneumothorax.
3. Prep the area with a Betadine solution.
4. Insert a 14-gauge or larger 3.25-inch catheter into the prepared intercostal space.
5. Insert the catheter through the parietal pleura until air escapes. It should exit under pressure.
6. Remove the needle and secure with a one-way valve. Leave in place until it is replaced by a chest tube at the hospital.

Back to Table of Contents

PULSE OXIMETERS

Pulse oximeters are used for the detection of hypoxemia in arterial oxyhemoglobin. The following guidelines will be used for measuring the severity of respiratory distress:

1. Mild Distress: SaO2 of 94% or greater
2. Moderate Distress: SaO2 of 85-93%
3. Severe Distress: SaO2 of < 85%

Indications:

1. Patients with known history of and/or complaining of, respiratory distress or disease, cardiac conditions, and neurological problems.
2. To monitor distal oxygenation of extremity fractures and dislocations.
3. Patients treated and/or transported with oxygen.

Precautions:

1. Patients with carbon monoxide inhalation may yield slightly higher oxygen saturation readings than actual blood oxygen saturations. Other gases and medical conditions may alter the saturation readings.
2. Patients wearing false fingernails and/or paint may affect the accuracy of the reading when the finger probe is used.
    a. The probe may be rotated 90° to help facilitate a reading.
3. Low flow states, such as severe hypotension, cardiac arrest, etc. will cause the pulse oximeter to not register.
4. Poor reading of the pulse oximeter can be determined with poor pleth waveform on the cardiac monitor.

Back to Table of Contents

START TRAIGE/MCI OPERATIONS

The goal of the START program is to provide the "greatest good for the greatest number of patients".

Definitions:

MCI = Mass Casualty Incident (Any incident where first responders' capabilities are exceeded)

1. Level I = 5-10 patients
2. Level II = 11-20 patients
3. Level III = > 20 patients
4. Level IV = 100-1000 patients
5. Level V = > 1000 patients

Groups needed:

1. Command
2. Triage
3. Treatment
4. Transport
5. Staging
6. Extrication
7. Haz-Mat
8. Landing Zone
9. Rehab

The patient assessment process is based on the following;

1. Respirations
    a. Below 10 breaths per minute
    b. Between 10-30 breaths per minute
    c. Above 30 breaths per minute
2. Perfusion/pulse: capillary refill above or below two seconds
3. Mental status: ability to follow commands

Back to Table of Contents

START TRIAGE

Adult Triage

1. Assess for walking wounded
    a. Able to ambulate: GREEN
    b. Unable to ambulate: proceed to next step
2. Assess respirations
    a. Apneic: reposition airway
        i. Continued apnea: BLACK
        ii. Renewed respiratory effort: RED
    b. Respirations less than 10 or greater than 30 breaths per minute: RED
    c. Respirations between 10-30 breaths per minute: proceed to the next step
3. Assess perfusion
    a. Absent radial pulses or capillary refill greater than 2 seconds: RED
    b. Radial pulses present or capillary refill less than 2: proceed to next step
4. Assess Mental Status
    a. Unable to follow commands: RED
    b. Able to follow commands: YELLOW

Pediatric Triage

1. Assess for walking wounded
    a. Able to ambulate: GREEN
    b. Unable to ambulate: Proceed to next step
2. Assess respirations
    a. Apneic: Reposition airway
        i. Renewed respiratory effort: RED
        ii. Continued apnea: Proceed to next step
            1. Carotid pulse not palpable: BLACK
            2. Carotid pulse palpable:
                a. Perform 5 rescue breaths
                    i. Patient still apneic: BLACK
                    ii. Patient spontaneous breathing: RED
    b. Respirations greater less than 15 or greater than 45 breaths per minute: RED
    c. Respirations between 10-30 breaths per minute: proceed to the next step
3. Assess perfusion
    a. Absent radial pulses or capillary refill greater than 2 seconds: RED
    b. Capillary refill less than 2 or palpable pulse: proceed to next step
4. Assess Mental Status
    a. Alert only to pain or unresponsive: RED
    b. Alert or alert to verbal stimuli: YELLOW

Back to Table of Contents

TASER DART TREATMENT

Assessment and Documentation

1. Location of the probes on the patient's body.
2. Events leading up to LEO / EMS arrival.
3. Physical / Neuro assessments, Blood Glucose and two sets of vital signs (pulse, respirations and blood pressure).
4. SAMPLE History.
5. Care provided.

Removal of Probe(s)

1. Place one hand on the area where the probe is embedded and stabilize the skin surrounding the puncture site.
2. Place second hand firmly around the probe, and in one swift fluid motion, pull the probe straight out from the puncture site.
3. Inspect the probes for broken/missing tips, transport to ER if barb broken/missing.
4. Cleanse puncture sites and apply an adhesive bandage as needed.
5. Extracted probes (sharps) are considered evidence and should be given to LEO for disposal.
6. Suggest patient be evaluated by MD if signs of infection occur.

CONTRAINDICATIONS

1. Oral penetration
2. Ocular penetration
3. Genital penetration
4. Other sites of concern (e.g. trachea, major vessels, into bone, etc.)

Rule out other reasons for violent and combative behavior including intoxication, psychosis, hypoxia, hypoglycemia, overdose, or CNS infection, etc.

Back to Table of Contents

12-LEAD INTERPRETATION

Definitions

1. ST Elevation: The ST segment rises above the isoelectric line from the " J " point, an indication of acute injury.
2. "J" point: The point where the QRS complex ends and the ST segment begins.
3. Ischemia: A deficit between blood supply and demand.
4. Injury: Damage to the cardiac tissue caused by ischemia.
5. Necrosis: Death of tissue that cannot be reversed. Seen on the EKG as a pathological Q-wave.

Indications to obtain

At least one 12-lead EKG shall be obtained and documented for patients meeting one the following criteria (Paramedic discretion on patients less than 18 years of age):

15. Chest Pain
16. Dysrhythmia
    a. Heart rate less than or equal to 50
    b. Heart rate greater than or equal to 150
    c. Frequent PVC's
    d. Other abnormalities
17. Epigastric pain (unless associated with a GI bleed)
18. Thoracic back pain without trauma
19. Diaphoresis (unless explained by fever)
20. Shortness of breath
21. Congestive Heart Failure/Pulmonary Edema
22. Abnormal appearing rhythm in leads I, II, and/or III
23. Syncope/Near syncope
24. Post return of spontaneous circulation on any age cardiac arrest patient

Interpretation

1. Check QRS for width (Lead I is a good lead for this) greater than 0.12 seconds is too wide.
2. Look at V1. Upward defection with a QRS greater than 0.12 seconds (3 Boxes) indicates a RBBB. A downward deflection with a QRS of greater than 0.12 seconds is an indication of a LBBB.
3. Scan the EKG for ST Elevation greater than 1 mm, measured at the J-point
    a. Leads II, III, and aVF = Inferior wall
    b. V1 - V2 = Septal wall
    c. V3 - V4= Anterior wall
    d. V5 – V6 = Low lateral wall
    e. Leads I and aVL = High lateral wall
4. ST Elevation is a sign of acute injury.
5. T-wave inversion is a sign of ischemia and may be associated with acute MI.
6. Pathological Q-wave is one quarter of the height of the entire QRS or greater than 40 milliseconds wide. It indicates an old infarct (if ST is normal) or new infarct if ST is elevated.

Back to Table of Contents

Lead Placement

1. V1 is placed at the 4th intercostal space, just right of the sternum.
2. V2 is placed at the 4th intercostal space just left of the sternum.
3. V3 is placed between V2 and V4
4. V4 is placed on the mid clavicular line and 5th intercostal space.
5. V5 is simply placed between V4 and V6
6. V6 is placed on the mid axillary line, horizontal with V4

Back to Table of Contents