

# ALS STANDING ORDERS



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## INFORMATION

The following ALS standard requirements shall be performed on all ALS patients. Whenever possible, verbal consent should be obtained prior to treatment.

**It is recognized that the EMS protocols cannot address every possible scenario. Therefore, District Captains and Trauma Hawk personnel are given the authority to deviate from the ALS protocols as required. Good judgment and the patient's best interest must be considered at all times.**



## AIRWAY

- ☐ Semi-conscious or unresponsive patients with an intact gag reflex shall have an NPA inserted unless contraindicated.
- ☐ Unresponsive patients without a gag reflex shall have an OPA inserted.
- ☐ Patients who require ventilatory support (and are unlikely to regain consciousness) for more than two minutes should be intubated (or other advanced airway), with the exception of patients in cardiac arrest.
- ☐ If an airway cannot be secured with two ETT intubation attempts, a SGA should be inserted. District Captains and Flight Crew may perform an additional attempt if necessary.
- ☐ If an airway cannot be secured by any other means, and the patient can not be effectively oxygenated or ventilated, a surgical cricothyrotomy should be performed on adult patients (or needle cricothyrotomy for pediatrics).

**An intubation attempt is defined as the laryngoscope blade passing the patient's lips.**



## BREATHING

### ☐ OXYGENATION

- Oxygen should **ONLY** be administered in order to maintain SpO<sub>2</sub> of 95% or 90% for COPD & asthma patients. Do not withhold oxygen if the patient is dyspneic or hypoxic.
- All stroke patients will be treated with a minimum of 2 Lpm NC regardless of pulse oximetry reading. Increase oxygen therapy as needed.
- All suspected Traumatic Brain Injury (TBI) patients shall receive 15 Lpm via NRB.
- All 3<sup>rd</sup> trimester pregnancy trauma patients shall receive 15 Lpm via NRB.
- Pulse oximetry should be documented (pre and post oxygen administration) and applied for continuous monitoring on all ALS patients.
- If oxygen saturation cannot be maintained, ventilatory support should be provided.

### ☐ VENTILATION

- Ventilatory support shall be accomplished via BVM with either an NPA/OPA, SGA, or ETT intubation.
- The goal is to maintain an SpO<sub>2</sub> of 95% and EtCO<sub>2</sub> levels between 35-45 mmHg (with the exception of COPD and asthma patients).
- Any patient with a pulse who requires ventilation with a BVM for greater than two minutes, should be intubated **(excluding pediatrics)**.
- Endotracheal intubation shall be confirmed by: visualization of the ETT passing through the vocal cords and **continuous EtCO<sub>2</sub> monitoring**.

### ☐ VENTILATORY RATES

- Adults: 10 breaths/minute **(1 breath every 6 seconds) with a pulse.**
- Children: 20 breaths/minute **(1 breath every 3 seconds) with a pulse.**
- Neonates: 40 breaths/minute
- Patients with a pulse that have an advanced airway should be ventilated at a rate of 8-10 breaths/minute **(1 breath every 6-8 seconds) with a pulse.**

## CIRCULATION

- ☐ Carotid and radial pulse present, assess capillary refill, assess skin color, condition and temperature.
- ☐ Apply AED/LP 15 on all unconscious patients.
- ☐ Perform MICCR on all cardiac arrest patients and defibrillate as needed.
- ☐ After oxygenation and ventilation of 1 minute for infants/children and 30 seconds for neonates (birth to 1 month), begin chest compressions if the heart rate remains below 60 BPM with signs of poor perfusion (AMS).



## EtCO<sub>2</sub> MONITORING

- ☐ Should be applied to all patients meeting the following criteria:
  - Requiring ventilatory support (ETT, SGA, CPAP, etc) **MANDATORY**.
  - **The following patients should be monitored if the EtCO<sub>2</sub> nasal cannula sampling device is available:**
    - Patients in respiratory distress
    - Patients with an altered mental status
    - Sedated patients or patients receiving pain medication
    - Patients who have been administered Ketamine
    - Seizure patients

## ECG MONITORING

- ☐ All ALS patients shall be continuously monitored in lead II.
- ☐ Patients who present with any of the following cardiac or possible cardiac symptoms shall have a 12 lead ECG performed:
  - Chest/arm/neck/jaw/upper back/shoulder/epigastric pain or discomfort
  - Palpitations
  - Syncope, lightheadedness, general weakness, or fatigue
  - CHF, SOB, hypertension or hypotension
  - Unexplained diaphoresis or nausea
- ☐ 12 lead ECGs shall be repeated every 10 minutes and upon a ROSC (if transporting leave cables connected until patient is turned over to the ED staff).

## GLUCOSE

- ☐ A BGL shall be documented for patients with any of the following: history of diabetes, altered mental status, general weakness, seizure, syncope/lightheadedness, dizziness, poisoning, stroke, and cardiac arrest.

## VITAL SIGNS

- ☐ A complete set of vital signs shall be documented as follows (BP, HR, RR, Skin, Temp, O<sub>2</sub> Sat.):
  - Priority 3 patients at least two sets or every 15 minutes
  - Priority 2 patients every 5 minutes
- ☐ A blood pressure shall be checked before and after the administration of a drug known to effect blood pressure.
- ☐ For the purposes of these protocols, adult hypotension is defined as a systolic blood pressure less than 90 mmHg.
- ☐ Initially, all blood pressures shall be taken manually. A manual blood pressure should be taken to confirm any abnormal or significant change of an automatic blood pressure cuff reading.



## PEDIATRIC

- ☐ Patients who have not reached puberty are considered pediatric patients and shall be treated under the pediatric guideline section of these protocols.
- ☐ Patients who have reached puberty shall be treated under the adult section of these protocols.
- ☐ An IO should be placed for patients with emergency medical conditions that require urgent vascular access in whom an IV is not immediately obtainable or is deemed to have insufficient access. IO is the preferred method of vascular access during pediatric cardiac arrest.
- ☐ Fluid boluses are 20mL/kg and may be repeated 2x prn for hypotension; maximum 60mL/kg (for non-trauma related hypotension).
- ☐ Infants and children with a heart rate less than 60 beats/minute after adequate ventilation has occurred with signs of poor perfusion shall have CPR initiated (continuous compressions).
- ☐ The preferred method for ventilating pediatric patients is with a BVM in conjunction with an oral or nasal airway. Pediatric patients who can not protect their airway, are unable to maintain oxygen saturation despite BVM ventilation, and/or can not be effectively ventilated with a BVM, should be upgraded to a Supraglottic Airway (SGA) (age specific) followed by intubation if needed. Infants and children who have an advanced airway placed during CPR should be ventilated at a rate of 1 breath every 6 seconds. Coordinate compressions and ventilations to avoid simultaneous delivery.
- ☐ Maintain an SpO<sub>2</sub> of 95% and an EtCO<sub>2</sub> between 35-45 mmHg.

## THE "HANDTEVY" SYSTEM

- ☐ The "Handtevy" system shall be utilized in the resuscitation and treatment of all pediatric patients.
- ☐ The child's age should be used as the primary reference point for determining the appropriate patient care. Alternatively use the Handtevy length based tape to determine appropriate care if the child appears shorter or taller than stated age or if the age is unknown.

## PEDIATRIC AGE CLASSIFICATIONS

- ☐ Neonates: Birth to 1 month
- ☐ Infants: 1 month to 1 year
- ☐ Children: 1 year to puberty

*Puberty is defined as breast development for females  
and underarm, chest or facial hair on males.  
Once a child reaches puberty, use the adult guidelines.*



## PEDIATRIC RESPIRATORY RATES

- ☐ Neonate: Birth to 1 month (40-60 breaths/min)
- ☐ Infants: 1 month to 1 year (30-60 breaths/minute)
- ☐ Toddlers: 1-3 y/o (24-40 breaths/minute)
- ☐ Preschooler: 4-5 y/o (22-34 breaths/minute)
- ☐ School age: 6-12 y/o (18-30 breaths/minute)
- ☐ Adolescent ages: 13-18 y/o (12-16 breaths/minute)

## PEDIATRIC HEART RATES

- ☐ Newborn to 3 months: 85-205, mean 140 beats/minute
- ☐ 3 months to 2 years: 100-190, mean 130 beats/minute
- ☐ 2 years to 10 years: 60-140, mean 80 beats/minute
- ☐ Greater than 10 years old: 60-100, mean 75 beats/minute

## PEDIATRIC HYPOTENSION

- ☐ Neonates: SBP less than 60
- ☐ Infants: SBP less than 70
- ☐ Children 1-10 years: SBP less than  $70 + (\text{age in years} \times 2)$
- ☐ Children greater than 10 years: SBP less than 90

# TRANSPORT DESTINATIONS



**Priority One:** Patients in Cardiac or Respiratory Arrest

**Priority Two:** Unstable patients with immediate life-threatening conditions

**Priority Three:** Stable patients with no immediate life-threatening conditions

## ❑ ALL PRIORITY ONE MEDICAL PATIENTS

- All Primary cardiac arrest patients will be transported to the closest approved STEMI Facility if transport time is less than 20 minutes.
- Pediatric patients who have regained a ROSC shall be transported to a comprehensive pediatric emergency department. Pulseless pediatric patients shall be transported to closest approved pediatric emergency department primary or comprehensive.
- Pediatric respiratory arrest cases that have successful airway management (i.e good compliance with the BVM and airway adjuncts, positive EtCO<sub>2</sub> waveform, improving pulse oximetry) shall be transported to the closest comprehensive pediatric emergency department. All other pediatric respiratory arrest patients who have an unstable airway (unable to ventilate or oxygenate) shall be transported to closest approved pediatric emergency department primary or comprehensive.
- All others patients shall be transported to the closest hospital emergency department (excluding Free Standing ED's).

## ❑ ALL PRIORITY TWO MEDICAL PATIENTS

- Shall be transported to the closest appropriate emergency department.

## ❑ ALL PRIORITY THREE PATIENTS

- Should be transported to the closest appropriate emergency department.

## ❑ TRAUMA PATIENTS

- All adult and pediatric trauma alert patients meeting trauma alert criteria, shall be transported to the closest Trauma Center.
- Trauma patients who arrest in the presence of Fire Rescue personnel, shall be transported to the closest Trauma Center.
- All pregnant (visibly or by history of gestation >20 weeks) patients meeting Trauma Alert criteria that are transported by air, shall go to St. Mary's. All patients who meet the same criteria but are ground transported shall be taken to the closest Trauma Center.
- All intubated interfacility transfers should be both paralyzed and sedated by the sending facility. If the sending facility physician refuses to administer paralytics, the District Captain must be contacted and is to follow the Advanced Airway (RSI) protocol. The District Captain must then accompany the patient to the receiving facility..



## ❑ STEMI ALERTS

- Once a STEMI Alert has been determined, the 12 lead must be transmitted and the patient should have transport expedited to the closest approved STEMI Facility.
- The patient shall be transported by air (if available) to the closest approved STEMI facility with surgical backup if the ground transport time to the closest approved STEMI Facility is greater than 40 minutes. Refer to the Hospital Capabilities List for the approved STEMI Facilities and STEMI Facilities with surgical backup.

## ❑ STROKE ALERTS

Transport to the closest Primary Stroke Center only  
if **all** of the following are met:

- Transport time is **greater than 20 minutes** to a Comprehensive Stroke Care Center **AND**
- Onset of symptoms is less than 3.5 hours **AND**
- The patient is not complaining of a severe headache **AND**
- There are no tPA exclusions

### **All other Stroke Alerts shall be transported to a Comprehensive Stroke Center**

- If the ground transport time to the closest Stroke Center (Primary or Comprehensive) is greater than 40 minutes, then the patient shall be transported by air (if available) to the closest Comprehensive Stroke Center. If air transport is not available and the patient is a candidate for tPA (see above) then transport the patient to the closest Stroke Center (Primary or Comprehensive) by ground. If not a candidate for tPA, transport to the closest Comprehensive Stroke Center.

## ❑ PEDIATRIC PATIENTS

- For the purposes of transport, a pediatric patient is considered less than 18 y/o.
- All ALS Pediatric patients (excluding Trauma Alerts) shall be transported to an approved Pediatric Emergency Facility.

## ❑ OBSTETRICAL PATIENTS (DEFINED AS PREGNANCY 20 WEEKS OR GREATER)

- If in labor/ABD pain transport to the closest OB hospital.
- Over 20 weeks with a NON OB related minor concern can go to the closest ED.
- Stable patients over 20 weeks may go to the OB hospital of their choice within 40 minutes.
- Patients less than 20 weeks are GYN cases and can be transported to closest ED

### **Primary Pediatric Emergency Department:**

**These hospitals do not have inpatient pediatric capabilities but are comfortable treating minor pediatric illnesses and injuries in their emergency department.**

### **Comprehensive Pediatric Emergency Department:**

**These hospitals have pediatric admitting capabilities and surgery options. They also have pediatric intensive care units (PICU).**





## ❑ DECOMPRESSION SICKNESS & CARBON MONOXIDE POISONING

- Patients with decompression sickness or carbon monoxide poisoning shall be transported to St. Mary's Medical Center Hyperbaric Chamber (encode prior to transport to confirm availability of Hyperbaric chamber). If unavailable transport to closest ED.

## ❑ PSYCHIATRIC PATIENTS

- Stable psychiatric patients shall be transported to the closest appropriate facility.
- Unstable psychiatric patients shall be transported to the closest emergency department for stabilization.

### FREE STANDING EMERGENCY DEPARTMENT

*Patients may be transported to a "Free Standing ED" upon the patient's request and:*

- **Critically ill patients such as Priority 1 or 2 patients should not be transported to the Free Standing ED.**
- **Patient must be informed that if transported to a Free Standing ED and they subsequently require admission, they may need to be transferred to another facility.**
- **Patient must sign an Emergency Transport Disclaimer.**



## HELICOPTER OPERATIONAL CRITERIA

- ☐ The guidelines for air ambulance transport include, but are not limited to the following:
- ☐ Trauma patients that meet the trauma scorecard methodology and criteria as set forth in the rules and regulations of Palm Beach County Trauma Ordinance, Palm Beach County Trauma Agency TTP's, and Rule 64J-1.014, F.A.C.; and,
- ☐ Pre-hospital ground transport to a Trauma Center is greater than 20 minutes; or,
- ☐ Pre-hospital scene extrication time of a trauma patient is greater than 15 minutes; or,
- ☐ Pre-hospital ground response time to the scene is greater than 10 minutes; or,
- ☐ Mass Casualty Incidents (MCI) involving multiple patients with traumatic injuries; or,
- ☐ To augment or expedite pre-hospital ground transport, or
- ☐ To transport a patient upon request by the EMS provider.

## HELICOPTER WILL NOT BE USED (GROUND TRANSPORT WILL BE REQUIRED)

- ☐ Bariatric patient known or estimated to be three-hundred fifty (350) lbs (159kg) or greater.
- ☐ Patient who is combative and cannot be physically and/or chemically restrained.
- ☐ Hazmat contaminated patient.