Levy County
Department of Public Safety

First Responder
Field Protocols

v1.01 *– Issued 2/1/2016*
v1.02 *– Issued 10/25/2017*
v1.03 *– Issued 1/7/2018*
v2 *– Issued 9/30/2021*

Preface

These protocols have been developed and reviewed by the **Levy County Department of Public Safety** and its Medical Director (Charles Hwang, MD).

These **First Responder Field Protocols** are county-wide protocols that establish basic standards for field performance of all first responders in Levy County, Florida. Individual EMS and fire agencies may not have emergency first response protocols that contradict these protocols without specific written approval from the Levy County Department of Public Safety.

For questions or comments, please contact:

Levy County Department of Public Safety
1251 NE County Road 343
Bronson, FL 32621
(352) 486-5209

Updates

The following changes to the First Responder Field Protocols are effective 9/30/2021. The implementation of these Protocols is contingent upon appropriate and satisfactory training.

- Naloxone (Narcan) administration in the setting of potential opiate overdose (Altered Mental Status Protocol and Poisonings / Overdose Protocol)
- During childbirth, bulb suctioning of the neonate's airway should only occur in the presence of meconium (Childbirth Protocol)
- If a patient is in cardiac arrest and there is a valid (completed, signed, yellow, State of Florida DO NOT RESUSCITATE form [Form 1896]), resuscitation may be withheld (Do Not Resuscitate [DNR] Protocol)
- Thumbs down technique for bag-valve-mask ventilation (Bag-Valve-Mask Protocol)

The following changes to the First Responder Field Protocols are effective 1/7/2018. The implementation of these Protocols is contingent upon appropriate and satisfactory training.

- LUCAS device for mechanical CPR in cardiac arrest (LUCAS Device Protocol)

A Letter from the Medical Director

To: All Levy County first responders

From: Charles Hwang, MD, Medical Director
Levy County Department of Public Safety

Here you will find treatment protocols for all first responders assisting patients in Levy County, Florida. They have been written to help unify, coordinate, and provide consistency in first responder care provided in Levy County. These protocols should provide a framework for the assessment and treatment provided to patients in preparation for the arrival of an advanced life support ambulance. Please discard any previous editions of **Levy County First Responder Field Protocols**.

These protocols are not intended to state the standard of care required in any particular situation, but rather to provide guidelines with the flexibility to address complex medical and trauma emergencies. These protocols are not intended to interfere with the wishes of the patient, their family, or their physician; nor dictate details of care to advising physicians; nor replace the appropriate training assumed for all first responders.

Some specific **points of emphasis:**

1. **Safety** – our first priority is the safety of first responders, patients, and citizens. **STOP** and evaluate every scene for hazards (*e.g. downed power lines, chemical spills, fumes, violent individuals, warning signs, etc.)* before entering. **Universal precautions** should be used at all times to protect yourself and others from infectious hazards. **Do NOT** enter any scene that you consider unsafe, nor perform any actions you feel may be unsafe for you, your patients, or the public.

2. **Spinal immobilization** – immobilization of injured patients should be performed liberally, including **cervical collar** application and **backboard** immobilization. If unable to immobilize an injured patient, do NOT attempt to move the patient prior to EMS arrival unless imminently necessary (e.g. life-saving resuscitation or hazard avoidance).

3. **Patient refusals** – do **NOT** cancel ambulance response unless no patient is present on scene! Patient refusals are a high-risk situation with dangerous medical outcomes.

    a. First responders may **NOT** obtain a patient refusal for patients with an emergency condition. Refusal assessment and documentation must be performed by the paramedic with the EMS transport unit.

    b. Patients **may NOT legally refuse treatment / transport if** their level of consciousness is impaired *or potentially impaired* for any reason. This includes: decreased mental status due to injury or illness, drug or alcohol intoxication,

potential head injury, distracting injury, etc. or being unable to demonstrate appropriate decision-making capacity.

c. Any patient with an obvious—or potentially serious—illness or injury **may NOT refuse transport** until evaluated by a Levy County EMS paramedic.

d. Do **NOT** attempt to physically restrain combative patients. Law enforcement can be asked to calm combative or violent patients, and if physical restraint is required, law enforcement should be asked to perform this procedure (*in accordance with Florida Statute 401.445*).

4. **First responders** – must be cleared by their fire agency's Chief to operate as a Levy County first responder operating under these Field Protocols.

5. **Other medical professionals** – responders licensed by the state of Florida as an RN, PA, NP, DO, or MD may also provide first responder care according to these protocols. Any individual providing care **beyond the scope of these protocols assumes full personal liability** and may not be protected under Good Samaritan laws.

Thank you for your dedication and service to the people of Levy County!

Charles Hwang, MD
Medical Director,
Levy County Department of Public Safety
September 30, 2021

TABLE OF CONTENTS

General First Responder Care

Background

This section provides guidelines to be followed in all protocols (*unless otherwise specified*).

General Considerations

- All patients are to be treated with respect.
- An individual **becomes a patient** when presenting with a **complaint**, evidence of a **medical condition or injury**, or upon discovery of **abnormal vital signs**.
- The **ABC's** (**A**irway, **B**reathing, **C**irculation) will always take priority in patient management.
    - Maneuvers required to open the airway, ensure adequate ventilation, or establish adequate tissue perfusion should always supersede specific protocols.

Assessment

Complete a **First Responder Initial Assessment:**

- Scene size-up:
    - Protect yourself with **body substance isolation (BSI)** and **universal precautions** according to Universal Precautions Protocol.
    - At a minimum, gloves and eye protection should be worn.
    - Evaluate for **scene safety**:
        - Examine the scene for all hazards before entering.
        - Do **NOT** enter any scene you feel may be unsafe.
        - If unsure, request law enforcement to establish scene safety first.
        - Park your unit in a safe place.
    - Assess for the number of patients.
    - Assess the need to request additional resources.

- Initial patient assessment:
    - Identify yourself to the patient.
    - Assess the patient's **level of responsiveness** according to the **AVPU** scale:
        - **A**lert – fully awake, opens eyes spontaneously
        - **V**oice – patient makes purposeful responses to voice
        - **P**ain – patient responds only to tactile stimuli (such as squeezing fingers or rubbing the sternum)
        - **U**nresponsive – patient does not respond to voice or tactile stimuli
    - If the patient is **unresponsive**, immediately evaluate for the presence of a **pulse**.
        - If no pulse is detected, **immediately start chest compressions** and **request an AED**. Follow the Cardiac Arrest Protocol.
    - Evaluate the patient's breathing:
        - If the patient is **not breathing**, or appears to have **inadequate breathing**, immediately **provide oxygen** and proceed directly to the treatment section below.

Issued: 9/30/2021

- Follow the Airway Assessment and Maneuvers Protocol and Oxygen Delivery Protocol.

- Vital signs:
  - Obtain and record a **complete set of vital signs**:
    - **Heart rate**
    - **Blood pressure**
    - **Respiratory rate**
    - **Oxygen saturation** (*via pulse oximeter, as available*)
    - **Temperature** (*via thermometer, as available*)
  - If **oxygen saturation is < 93%**, provide **oxygen** immediately according to the Oxygen Delivery Protocol.

- History of present illness:
  - Obtain a **SAMPLE** history from the patient (and family / bystanders):
    - **S**igns and symptoms
    - **A**llergies
    - **M**edications
    - **P**ast medical and surgical history
    - **L**ast oral intake
    - **E**vents (and exposures)
  - Signs and symptoms of present illness can be clarified by "**OPQRST**":
    - **O**nset
    - **P**rovoking factors (*e.g. sitting up, exertion*)
    - **Q**uality (*descriptive words like "sharp pain" or "numbness"*)
    - **R**adiation
    - **S**everity
    - **T**iming

- Physical assessment:
  - Physical assessment should focus on the patient's:
    - **Airway**, **breathing**, and **circulation**
    - Evidence of **trauma**
    - **Vital signs**
  - Patients often rapidly deteriorate or develop new symptoms!
    - Reassessment of ABC's and vital signs should occur frequently.
  - If airway, breathing, or circulation are **abnormal**, proceed immediately to the **treatment** section below (*and all appropriate protocols*).
    - Once the ABC's are addressed and found to be stable, a focused patient assessment may be performed based on the patient's complaint.
    - Always preserve the patient's modesty and privacy.
  - **See the** Physical Assessment Protocol **for details** on patient assessment.

General First Responder Care

Treatment

Immediate treatment should always prioritize supporting the airway, breathing, and circulation. Maintain cervical spine immobilization at all times in patients with possible head or neck injury.

- **Airway** –
  - Alert patients who can speak with a normal voice have a **patent airway**.
    - Patients who are unresponsive, snoring, gagging, or making high-pitched noises (*stridor*) or abnormal sounds may have an **airway obstruction**.
  - If the patient is not maintaining a patent airway, open the mouth and maintain the airway according to the Airway Assessment and Maneuvers Protocol
    - Open the mouth and perform a **jaw thrust** maneuver.
    - If no concern for trauma, consider adding a **head-tilt chin-lift** maneuver.
  - Suction the airway as needed to clear obstructions or fluid.
  - Inspect for **cyanosis** (*blue discoloration of the lips*)
    - If present, provide **oxygen** per the Oxygen Delivery Protocol.

- **Breathing** –
  - Assist breathing as needed with **oxygen** per the Oxygen Delivery Protocol:
    - Conscious patients may receive **oxygen by nasal cannula at 2 LPM**.
    - Conscious patients with respiratory distress, oxygen saturation < 93%, significant burns, or severe trauma should receive **oxygen by non-rebreather mask at 15 LPM**.
    - Unconscious patients with adequate breathing should receive **oxygen by non-rebreather mask at 15 LPM**.
    - Unconscious patients without adequate breathing (*e.g. apnea, respiratory rate < 8, oxygen saturation < 93%*) should receive **100% oxygen by bag-valve-mask** (see Bag Valve Mask Protocol) at **12 breaths per minute**.
      - When using BVM, deliver 1 breath every 5 - 6 seconds.
      - Hyperventilation may harm the patient.

- **Circulation** –
  - Assess pulse, strength of pulses, and blood pressure.
    - If the patient is unconscious and no pulse is detected, **start chest compressions** immediately and initiate the Cardiac Arrest Protocol.
      - Minimize interruptions to compressions.
      - Even brief interruptions in chest compressions can greatly decrease the patient's chances of survival.
  - Evaluate skin for **pallor** (an unhealthy pale color):
    - If present, provide **oxygen** per Oxygen Delivery Protocol.
  - Evaluate for active **bleeding**:
    - If bleeding is noted, **apply firm direct pressure** to the source(s) of bleeding.

- Pressure may need to be held for several minutes, and in some cases, until the arrival of transport EMS.
- Direct pressure is more successful than bulky bandaging.

- If bleeding cannot be stopped with direct pressure, notify dispatch immediately.
- If all efforts to stop life-threatening bleeding have failed, a **tourniquet** may be applied to the bleeding limb to prevent exsanguination and death.
  - Refer to the Tourniquet Placement Protocol for instructions.
  - **If a tourniquet is applied:**
    - **Make sure that bleeding cannot be stopped despite vigorous firm pressure to the source of bleeding.**
    - **Do not release the tourniquet (even if severe pain).**
    - **Once placed, check that pulses are absent in the limb distal to the tourniquet.**
    - **Mark the time of tourniquet placement on the patient in pen / marker in an easily visible area of the body.**
    - **Notify the arriving EMS crew and dispatch of the tourniquet, its location, and its time of placement.**

Other Considerations

- All patients with a possible head or neck injury should undergo immediate and uninterrupted cervical spine immobilization (*e.g. with a cervical collar*).
- Protect the patient from the environment!
  - Apply blankets, remove from the heat, provide shade, etc.
- Protect seizing patients from further injury.
- Keep the patient in a position of comfort (*except where immobilization is indicated*).
- Turn vomiting patients on their side (*in the recovery position*) to prevent aspiration.
- Do not give patients anything by mouth (*unless specifically indicated in these protocols*).
- Comfort the patient and provide reassurance that an ambulance is on the way.

Report

- Provide a focused and concise report to the transport EMS crew upon arrival.
- **Your verbal report should include:**
  - Age, name, gender *(do not report the patient's name over the radio)*
  - Chief complaint or problem
  - Current patient status, to include:
    - **AVPU** category (or Glasgow Coma Scale score)
    - Respiratory status
    - Current vital signs (and any changes from initial set)
  - Pertinent **SAMPLE** history
  - Pertinent physical assessment findings
  - Treatments rendered

  - Any concerns
- If you are caring for a **critical patient**, dispatch should be notified **immediately while the transport EMS crew is still en route**!
  - Examples of critical patients include: cardiac arrest, unconscious, unstable vital signs, active seizures, severe trauma or severe burns, active airway assistance, childbirth, hemorrhage or tourniquet placement, etc.
- Notify dispatch immediately if you find any **on-scene hazards** or **safety concerns**.

Transport EMS Assistance

- Your assistance to the Levy County EMS transport crew is greatly appreciated!
- Individuals with current Emergency Vehicle Operators Course (EVOC) training **may be asked to drive the rescue unit**.
  - This allows for increased personnel in the patient compartment.
  - Safety – not fast lights-and-sirens response – is the highest priority!
- **Under the supervision of the Levy County DPS transport paramedic**, individuals holding active State of Florida certification as an EMT or EMT-P can perform certain skills **up to their level of state certification and training** ***at the discretion of the Levy DPS transport paramedic*:**
  - The supervising paramedic must be currently **on scene**, **on-duty** as a Levy County DPS **transport paramedic**, and **acting in that capacity** (*as the transport paramedic*).
  - These skills **MAY INCLUDE:**
    - IV / IO placement, phlebotomy, splint application, 12-lead EKG acquisition, CPAP administration, medication administration, bag-valve ventilation through an endotracheal tube or supraglottic airway device (*if already placed by a Levy DPS transport paramedic*), and other common non-invasive skills as appropriate for the provider's level of certification and training.
  - These skills **DO NOT INCLUDE:**
    - Endotracheal intubation, rapid sequence intubation, supraglottic airway placement (*e.g. King airway or i-gel*), needle thoracostomy (decompression), cricothyrotomy, ventilator management, infusion pump management, cardioversion, cardiac pacing, or other advanced life support (ALS) procedures.
- Skills shall be performed **only if authorized** by the transport ALS paramedic.
- **Do not perform any skill** for which you do not have adequate certification, training, competence, and familiarity.

Altered Mental Status

Background

Altered mental status can be caused by a wide variety of causes. Many have the potential to cause significant morbidity or even death. Check all vital signs, carefully evaluate the patient's respiratory status, and look for signs of trauma or overdose.

Assessment

- Provide initial assessment per General First Responder Care Protocol
  - Assess the patient's **level of responsiveness** according to the **AVPU** scale:
    - **A**lert – fully awake, opens eyes spontaneously
    - **V**oice – patient makes purposeful responses to voice
    - **P**ain – patient responds only to tactile stimuli (such as squeezing fingers or rubbing the sternum)
    - **U**nresponsive – patient does not respond to voice or tactile stimuli
  - Attempt to determine cause of altered mental status
    - **SAMPLE** history
    - Ask bystanders about possible overdose, trauma, and medical conditions
    - Obtain **vital signs**, evaluate for **hypoxia** (*with pulse oximeter*)
    - Evaluate for **hypoglycemia** (*with glucometer, if available*)
      - If glucose < 80, see Diabetic Emergencies Protocol
    - Evaluate for **hypothermia** or **fever** (*with thermometer*)
    - Evaluate for possible **opiate overdose**.
      - If concern for opiate overdose, see Poisoning / Overdose Protocol
    - Evaluate for trauma, and provide spinal immobilization if any concern

First Responder Treatment

- Provide initial treatment per General First Responder Care Protocol
  - **Oxygen** per Oxygen Delivery and General First Responder Care Protocol.
    - If oxygen is needed, notify dispatch / Levy DPS the patient is **critical**.
  - If **hypotensive** (SBP < 100), notify dispatch / Levy DPS the patient is **critical.**
  - If concern for **opiate overdose**, notify dispatch / Levy DPS the patient is **critical**. See Poisoning / Overdose Protocol
- Do not leave the patient unattended.
  - Enlist family or bystanders to encourage the patient to wait for transport EMS.

Report

- Provide report to transport EMS per General First Responder Care Protocol

Anaphylaxis / Allergic Reaction

Background

Allergic reactions can range in severity from a simple rash (*hives*) to severe respiratory compromise and hypotension (*anaphylactic shock*).

Assessment

- Provide initial assessment per General First Responder Care Protocol
- Specific signs and symptoms to consider:
  - Hives (*pale red, raised, itchy bumps*)
  - Face, lip, or tongue swelling
  - Stridor (*high-pitched upper airway noises*)
  - Wheezing (*high-pitched lung noises*)

First Responder Treatment

- Provide initial treatment per General First Responder Care Protocol
  - **Oxygen** per Oxygen Delivery and General First Responder Care Protocol.
    - If oxygen is needed, notify dispatch / Levy DPS the patient is **critical**.
  - If **hypotensive** (SBP < 100), notify dispatch / Levy DPS the patient is **critical.**
    - This is concerning for *anaphylactic shock*.
- If the patient has a prescribed home medication for a simple **allergic reaction** (e.g., rash, hives, itchiness), the first responder may assist the patient in administering:
  - An inhaler
  - A tablet of Benadryl (*diphenhydramine*) 25 mg (*in adults*)
- If signs of **anaphylaxis** (oral swelling, stridor or wheezing, respiratory distress, signs of hypoxia, full-body hives, or low blood pressure), the first responder may additionally assist the patient in administering the patient's own **EpiPen auto-injector**:
  - Remove safety release cap (*on the end opposite of the injection side*).
  - Assist insertion of the auto-injector into the **middle of the patient's lateral thigh**.
  - Press firmly and hold the auto-injector in place for 10 seconds.
  - Do NOT inject into veins, buttocks, fingers, toes, hands, feet, or other areas.
  - **All** patients receiving an EpiPen injection should be considered **critical**.

Report

- Provide report to transport EMS per General First Responder Care Protocol
- Include the following:
  - Exposures, medicines, or insect bites / stings that may have contributed
  - Swelling of the face, mouth, tongue, or lips
  - Wheezing or stridor
  - Any medications administered

Behavioral Emergencies

Background

A psychiatric disturbance is acute mental distress not caused by a medical condition. In the field the cause can be very difficult to determine, so **always consider medical illness or trauma** as a possibility.

Patients under a signed **Baker Act** (Florida Mental Health Act of 1971) are required to undergo involuntary psychiatric evaluation for concerns of a risk of self-harm or neglect due to a psychiatric illness. Similarly, patients under a signed **Marchman Act** are required to undergo involuntary emergency evaluation for risk of self-harm or neglect due to alcohol or drug abuse.

Additionally, **Florida Statute 401.445** pertains to patients not under a Baker or Marchman Act. This statute permits emergency evaluation and transport (*even if refused*) of any patient with an emergency condition who is unable to fully understand and give informed consent for treatment (*e.g. due to alcohol, drugs, medical illness, or trauma*), if they would presumably agree to emergency evaluation and treatment if not intoxicated or incapacitated.

Assessment

- Provide initial assessment per General First Responder Care Protocol
  - Do **NOT** enter any scene you feel may be unsafe.
  - Do **NOT** risk injury to yourself by evaluating a violent patient.
  - Request law enforcement assistance if you have any safety concerns.
  - Maintain a calm and reassuring demeanor.
    - Identify yourself and explain that you are there to help.
    - Use good eye contact, empathetic and non-threatening body language.
    - Encourage the patient to state what is troubling him / her.
    - **Do not** make quick movements, argue with the patient, lie to the patent, or “play along” with visual or auditory hallucinations.
  - Involve trusted family members or friends to assist when possible.
  - Avoid unnecessary physical contact.
  - Do **NOT** physically restrain patients.
    - Law enforcement can be asked to calm combative or violent patients.
    - If physical restraint is required, law enforcement should provide this.

First Responder Treatment

- Provide initial treatment per General First Responder Care Protocol.
- Do not leave the patient unattended.
- Reassure the patient that help is on the way.

Report

- Provide report to transport EMS per General First Responder Care Protocol.

Burns and Smoke Inhalation

Assessment

- Provide initial assessment per General First Responder Care Protocol
  - Do **NOT** enter any scene you feel may be unsafe.
- Perform a detailed physical examination for the extent of the patient's burns.
- Repeat vital signs every 5 minutes.
- **Notify dispatch / Levy DPS** immediately if burns are greater than 15% of body surface area (*palm of hand = 1%*), the patient requires oxygen, or meets trauma alert criteria.
- Specific signs and symptoms to consider:
  - Type and location of burns
  - Look for burns or soot to nose, mouth, tongue, throat, or airway
  - Look for singed nasal hairs or nasal soot

First Responder Treatment

- Provide initial treatment per General First Responder Care Protocol
  - Body substance isolation per Universal Precaution Protocol.
  - Provide **Oxygen** by 100% non-rebreather mask for any patient with concerns of smoke inhalation, burns to face, respiratory difficulty, coughing, or soot to nose or mouth.
- Stop the burning process.
- Remove burned clothing from patient (while **maintaining privacy**).
  - Remove any constricting jewelry (*document type and who received it*).
- If the burning agent is still in contact with the skin, cool with copious sterile water or normal saline, then remove gently.
- If the burning agent is a solid **chemical**, brush away loose, dry agent and then irrigate the burned area with copious sterile water or normal saline.
- For **electrical** burns, carefully evaluate for trauma and initiate spinal immobilization if there are any concerns of trauma.
- If large surface area burns, prevent heat loss by covering with dry blankets or sheets.

Report

- Provide report to transport EMS per General First Responder Care Protocol

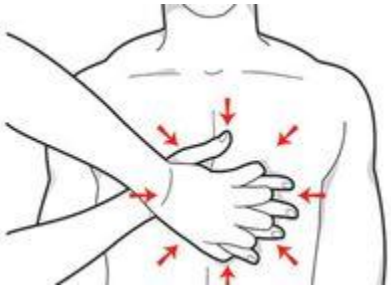
Cardiac Arrest

Assessment

- General considerations per General First Responder Care Protocol
- Check for **carotid or femoral pulses** (for 10 seconds or less).
  - If absent, **start CPR** and proceed immediately to treatment section.
  - **Minimize interruptions** to compressions.
  - Even brief interruptions in chest compressions can greatly decrease the patient's chances of survival.
- **Notify EMS immediately** that the patient is in cardiac arrest (but do not delay CPR).

First Responder Treatment

- General considerations per General First Responder Care Protocol
- Do **NOT** perform CPR on any patient who is awake, talking, or breathing normally.
- **Immediately begin chest compressions if no pulse is detected**
  - Place the palm of one hand **over the lower sternum** of the chest
  - Place other hand over the first, interlocking the fingers



  - Provide chest compressions by pushing hard and fast at:
    - A **rate of 100 beats per minute** or slightly greater (*approximately the rhythm of "Stayin' Alive" by the Bee Gees*)
    - A **depth** of at least **2 inches**
    - Allowing for chest recoil between compressions
    - **Avoid interruptions to chest compressions as a <u>top priority</u>**
- **Call for an automatic external defibrillator (AED)** and apply it as soon as available:
  - Follow the Automatic External Defibrillator (AED) Protocol
  - If the AED reports **"shock advised,"** clear all hands and body parts from the patient and **administer shock**. **Resume compressions immediately** once the shock is delivered.
  - If the AED does <u>not</u> advise a shock, **immediately resume chest compressions**.
- Chest compressions should be delivered continuously at 100 beats per minute in **2 minute intervals**. After 2 minutes of continuous chest compressions, <u>simultaneously</u>:
  - Check for the presence of a pulse
  - Have the AED evaluate whether a shock is advised (and **administer shock** per Automatic External Defibrillator Protocol if indicated)
  - Trade out individuals providing chest compressions (*if additional responders are available*)

    - This process should take 10 seconds or less, and if no pulse is present, **resume CPR and repeat this cycle**.
- If more than 1 first responder is present, the additional responder should provide **2 rescue breaths after every 30 compressions** via Bag-Valve-Mask device (*providing 100% oxygen if available*).
    - In infants and children, this ratio is 2 rescue breaths for every **15 compressions**.
- Continue cycles of **2 minutes of continuous chest compressions** as described above and await Levy DPS paramedic arrival.
- A mechanical CPR device (e.g. LUCAS™ Chest Compression System) may be placed under the following guidelines:
    - If only 1 first responder is present, apply an AED, and deliver 5 cycles of manual CPR (approximately 10 minutes) prior to initiating the mechanical CPR device.
    - If more than 1 first responder is present, immediately deliver manual CPR, apply an AED, and initiate the mechanical CPR device **during a scheduled pause of compressions**
    - **Avoid interruptions to chest compressions as a <u>top priority</u>**
    - Refer to the Lucas Device Protocol

Special Considerations

- If the patient's family (or nursing home) provides a **signed, current, yellow State of Florida "Do Not Resuscitate (DNR)" order**:
    - See Do Not Resuscitate (DNR) Order Protocol.
    - If you have **any doubt** whether or not to resuscitate, **begin resuscitation** and contact EMS.

Report

- Provide report to transport EMS per General First Responder Care Protocol
- Include the following:
    - Time of arrest (*if known*), duration of current CPR efforts, shocks delivered

Chest Pain

Assessment

- Provide initial assessment per General First Responder Care Protocol
- Obtain a **SAMPLE** history with **OPQRST**
- Perform a physical assessment, including a careful heart and lung examination
- Ask about medications taken recently

First Responder Treatment

- Provide initial treatment per General First Responder Care Protocol.
- Provide supplemental **oxygen** if indicated according to Oxygen Delivery Protocol.
- In adults, if the patient takes **aspirin**, encourage the patient to **take their own aspirin** (**one 325 mg tablet or four "baby" 81 mg tablets**).
    - **Do NOT** encourage the patient to take **aspirin** if allergic, have known stomach ulcers or gastrointestinal bleeding, or have taken aspirin in the past 8 hours.
- Reassure the patent and bystanders, and explain that an ambulance is on its way.

Report

- Provide report to transport EMS per General First Responder Care Protocol
- Include the following:
    - Time of onset
    - Medications taken
    - Any known cardiac, medical, or surgical history
    - Presence of an irregular heartbeat

Childbirth

Assessment

- Provide initial assessment per General First Responder Care Protocol
- Obtain a current pregnancy history, including:
  - Due date
  - Has the patient's water broken? When? Appearance of fluid?
  - How far apart are contractions?
  - How many times has she been pregnant?
  - Problems with this (or previous) pregnancies?
  - Has she had prenatal care?
- **Notify dispatch immediately** that the patient may be in active labor.

First Responder Treatment

- Provide initial treatment per General First Responder Care Protocol
- Use bodily substance isolation per Universal Precautions Protocol.
- Instruct the patient **not to push** and **not to go to the bathroom**.
  - Do not hold the patient's legs together.
- Do **NOT** inspect or touch the patient's pelvis / vaginal areas **unless delivery is imminent**. Maintain privacy at all times. Have your partner present as a chaperone.
- If the **head is <u>not</u> the presenting part** (*e.g. limb, cord, buttocks, or back first*):
  - This may be a high-risk breech delivery.
  - Instruct the patient **not to push** and notify dispatch immediately
- If **birth is imminent** (*i.e. baby is crowning*):
  - **Notify dispatch immediately**
  - Wear as much personal protective equipment (PPE) as is available, including gloves (sterile if available) and eye protection.
  - Drape the patient's legs and abdomen with clean sheets.
  - Do **NOT** rupture an intact amniotic sac.
  - Notify dispatch immediately if amniotic fluid is not clear, or is foul-smelling.
  - If the baby's head is emerging, use the palm of your hand to gently support the head, preventing a rapid and uncontrolled delivery. **Do NOT push or pull on the head** or any presenting part.
  - As the head emerges, determine if the umbilical cord is around the neck:
    - If so, attempt to slip the cord over the baby's head.
    - If unsuccessful, maintain one finger under the cord to alleviate pressure.
  - Guide the baby's head and body gently as delivery progresses.
  - If delivery of the baby stops progressing, assist the mother in **flexing her hips up sharply**:

    
  - Support the baby's head, neck, and body carefully. Do not apply pressure to the chest or abdomen of the baby, as internal organs are very delicate.

- Observe for meconium staining (yellow or brown discoloration of amniotic fluid)
  - If present, use a bulb suction to **suction the nose and mouth** of the baby 2 or 3 times.
- Rub the newborn's back or flick its feet to stimulate breathing.
- Evaluate the newborn's ABCs and skin color:
  - Assist ventilations and provide CPR if indicated:
    - If adequate breathing but signs of hypoxia, administer **oxygen by blow-by** at 15 LPM.
    - If inadequate breathing, ventilate via bag-valve-mask at a rate of **40 breaths per minute**, squeezing only enough for chest rise.
    - If no pulse, or heart rate less than 80 despite oxygen, provide newborn chest compressions with **2 fingers** over the sternum at **120 beats per minute**.
- Dry and warm the newborn. Keep the baby warm in blankets.
- Do **not** cut the umbilical cord unless advised by EMS.
- Until the cord is clamped, the baby should be kept at the level of the mother's pelvis to maintain healthy blood flow. The baby can be placed on the mother's lower abdomen / pelvis for warmth.
- Do **not** attempt to deliver the placenta. It may self-deliver within 30 minutes.
- Record the time of delivery.

- **Reevaluate the mother**:
  - Maintain communications with the mother throughout the process.
  - Monitor pulse, respirations, and blood pressure.
  - Up to 500 mL of blood loss may be normal, but if continued blood loss is noted, massage the fundus (uterus) – with fingers extended, use your palm to massage and knead the lower abdomen above the pubis until the uterus firms.
- **Reevaluate the newborn**:
  - Reassess ABCs. Stimulate again (flick feet, massage back) if breathing poorly.
  - Repeat suctioning as necessary.
  - Ensure that the newborn is warm, dry, swaddled, and has its head covered.
  - Provide oxygen (by blow-by oxygen) and / or ventilatory assistance (by bag-valve-mask, squeeze only enough to ensure chest rise) if necessary.
    - Ventilate at a rate of **40 breaths per minute**.
    - Reassess after one minute. If heart rate is less than 80 beats per minute, start chest compressions at **120 beats per minute**.

Report

- Provide report to transport EMS per General First Responder Care Protocol
- Include the following:
  - Current pregnancy history (*as above*)
  - Frequency of contractions and whether water has broken
  - Time of delivery (*if applicable*) and any complications

Choking / Airway Obstruction

Background

Management of choking or possible airway obstruction depends on **age** and whether the obstruction is thought to be a **complete obstruction** or a **partial obstruction**.

Complete obstructions need immediate treatment, while partial obstructions may actually become worse with aggressive measures.

Assessment

- Provide initial assessment per General First Responder Care Protocol
- Specific questions to consider:
  - Witnessed?
  - Was the patient eating?
  - Could there be a food or foreign body obstruction?

First Responder Treatment for Adult Choking / Airway Obstruction

- Provide initial treatment per General First Responder Care Protocol
- Assess airway per Airway Assessment and Maneuvers Protocol
- Patients who can **speak**, **cough forcefully**, **cry**, or **breathe** likely have a partial obstruction and **should NOT** undergo advanced maneuvers below

- **For conscious, choking ADULTS who cannot cough, cry, or breathe:**
  - **Give 5 back blows** – bend the patient forward at the waist and give 5 back blows between the shoulder blades with the heel of one hand.
  - **Give 5 abdominal thrusts** - place a fist (thumb side against the abdomen just above the navel) covered by your other hand and give 5 quick, upward abdominal thrusts.
  - Continue sets of **5 back blows** and **5 abdominal thrusts** until:
    - Object is forced out.
    - Patient can cry, cough forcefully, or breathe.
    - Patient becomes unconscious (*proceed to **unconscious** section below*)

- **For UNCONSCIOUS, choking ADULTS:**
  - **Start CPR and initiate** Cardiac Arrest Protocol
  - **Open airway, look for a foreign body, and remove if seen**

First Responder Treatment for Pediatric Choking / Airway Obstruction

- Provide initial treatment per General First Responder Care Protocol
- Assess airway per Airway Assessment and Maneuvers Protocol
- Patients who can **speak**, **cough forcefully**, **cry**, or **breathe** likely have a partial obstruction and **should NOT** undergo advanced maneuvers below

Choking / Airway Obstruction

- **<u>For conscious, choking INFANTS who cannot cough, cry, or breathe</u>:**
  - **Give 5 back blows** – *while supporting the head / neck*, give firm back blows with the heel of one hand between the infant's shoulder blades
  - **Give 5 chest thrusts** - *while supporting the head / neck*, place 2 or 3 fingers on the infant's sternum and compress about 1.5 inches
  - Continue sets of **5 back blows** and **5 chest thrusts** until:
    - Object is forced out.
    - Infant can cry, cough forcefully, or breathe.
    - Infant becomes unconscious (*proceed to **unconscious** section below)*

- **<u>For conscious, choking CHILDREN who cannot cough, cry, or breathe</u>:**
  - **Give 5 back blows** – bend the child forward at the waist and give 5 back blows between the shoulder blades with the heel of one hand.
  - **Give 5 abdominal thrusts** - place a fist (thumb side against the abdomen just above the navel) covered by your other hand and give 5 quick, upward abdominal thrusts.
  - Continue sets of **5 back blows** and **5 abdominal thrusts** until:
    - Object is forced out.
    - Child can cry, cough forcefully, or breathe.
    - Child becomes unconscious (*proceed to **unconscious** section below*)

- **<u>For UNCONSCIOUS, choking INFANTS OR CHILDREN</u>:**
  - **Start CPR and initiate** Pediatric Cardiac Arrest Protocol
  - **Open airway, look for a foreign body, and remove if seen**

Report

- Provide report to transport EMS per General First Responder Care Protocol

Issued: 9/30/2021

Diabetic Emergencies

Background

Low glucose (**hypoglycemia**) is a medical emergency and may cause anxiety, irritability, confusion, altered mental status, weakness, neurologic symptoms, or unconsciousness.

High glucose (**hyperglycemia**) may cause severe dehydration and acidosis, and may be accompanied by increased thirst or urination, fatigue, rapid breathing, or abdominal pain.

Both hypoglycemia and hyperglycemia lead to organ damage and eventually death.

Assessment

- Provide initial assessment per General First Responder Care Protocol
- Specific questions to consider:
  - Does the patient take insulin? Oral diabetic medicines?
  - When was the last time the patient took their diabetic medicine(s)?
  - When did the patient last eat?

First Responder Treatment

- Provide initial treatment per General First Responder Care Protocol
- As available, **check glucose level** with a glucometer.
- If glucose is 80 or less, encourage the patient to self-administer a sugar source (juice, oral glucose tablets).
  - Do **NOT** administer oral glucose to a patient with depressed level of consciousness or risk for aspiration
- If glucose is over 300, encourage the patient to drink 8 to 12 ounces of water.
- If unconscious, notify dispatch immediately the patient is **critical**.

Special Considerations

- Hypoglycemic patients who take long-acting insulin or an oral diabetic medicine are **high risk** to become hypoglycemic or unconscious even *hours* later!
  - This is true even if given oral glucose!
  - These patients must be evaluated by a transport EMS paramedic.

Report

- Provide report to transport EMS per General First Responder Care Protocol
- Include the following:
  - Glucose level (before *and* after treatment) if available.

Do Not Resuscitate (DNR) Order

Background

A family member, nursing facility, or caretaker may present a Do Not Resuscitate (DNR) form.

The form must be a completed, signed, yellow, State of Florida **DO NOT RESUSCITATE** form (Form 1896) to be valid.

It must be on yellow paper and signed by the patient's physician.

Assessment

- Provide initial assessment per General First Responder Care Protocol
- Check for **carotid or femoral pulses** (for 10 seconds or less).
    - If pulses present:
        - The patient is not in cardiac arrest
        - Provide initial assessment per General First Responder Care Protocol
    - If pulses absent:
        - If a valid (completed, signed, yellow, Do Not Resuscitate) form is presented, withhold resuscitation.
        - If the form is invalid or there is uncertainty, begin **resuscitation** and contact Levy EMS

Report

- Provide report to transport EMS per General First Responder Care Protocol
- Include the following:
    - Time of arrest (*if known*), duration of current CPR efforts, shocks delivered, DNR form.

Electrical Injury

Background

Electrical injuries – *including lightning strikes and shocks from wiring / power lines* – can range from minor injuries to severe burns or cardiac arrest.

Cardiac arrest from electrical Injury (*including lightning strikes*) has a **high rate of survival** and should undergo prolonged CPR efforts.

Assessment

- Provide initial assessment per General First Responder Care Protocol
- Questions to ask *(if known)*:
  - Type of circuit: alternating current (**AC**) or direct current (**DC**)
  - Voltage
- Physical assessment areas to consider:
  - Burns
  - Entrance and exit wounds
  - Explosive injuries (*blunt trauma, fractures, hemorrhage*)
  - Cardiac arrhythmias or cardiac arrest

First Responder Treatment

- Evaluate for scene safety – *do not become a patient!*
  - Avoid risking electrical shock to yourself
  - Do not enter any scene with active lightning
- Provide initial treatment per General First Responder Care Protocol
  - If unconscious, **check pulse** immediately.
  - If no pulse, **start CPR**, **apply an AED**, and follow Cardiac Arrest Protocol
- Remove the patient from the environment – avoid additional injury.
- **Treat patients in cardiac arrest <u>first</u>** – electrical shock victims have a uniquely high survival rate in cardiac arrest.

Report

- Provide report to transport EMS per General First Responder Care Protocol
- Include the following:
  - Burns, wounds, or injuries noted
  - Irregular pulse (*if present*) or abnormal vital signs
  - Type of current (AC or DC) and voltage, if known

Eye Injuries

Background

Eye injuries require prompt **eye protection**. If exposed to a chemical agent, the affected eye(s) will likely need emergent **decontamination** with water or saline.

Assessment

- Provide initial assessment per General First Responder Care Protocol
- Specific questions to consider:
  - Pain? Vision loss?
  - Does the patient wear **contact lenses**?
  - **If the eye was exposed to chemicals or a foreign substance:**
    - What is the name of the chemical (*or substance*)?
    - How much exposure occurred?
    - How long has the chemical been in the eye?
  - **If the eye suffered blunt or penetrating trauma:**
    - What object struck the eye?
    - Could the object still be in the eye?

First Responder Treatment

- Provide initial treatment per General First Responder Care Protocol
- **Do not expose yourself to any hazardous chemicals**.
- Remove any clothing that could have been exposed to hazardous chemicals.
- Keep the patient **sitting up** or keep the **head of the stretcher up** at 60 degrees.
- **Do NOT touch the eye** directly or put any pressure on the injured eye
- Avoid bright lights
- **If the patient has a suspected chemical exposure to the eye:**
  - Encourage the patient to **flush the affected eye(s) with copious water** (*under a faucet or eye wash station*)
  - Burns to the eye may be ongoing unless the chemical is washed out
- **If the patient has blunt or penetrating trauma to the eye:**
  - **Do NOT** touch or attempt to remove any foreign objects
  - If available, cut the bottom off of a styrofoam / paper cup and tape it to the patient's face (*around the eye*) to protect the affected eye from pressure.

Report

- Provide report to transport EMS per General First Responder Care Protocol
- Include the following:
  - Name, type, time, and duration of exposure
  - Contact lens wearer (*or not*)

Head, Neck, Back, and Spine Injuries

Background

The ability to walk, move extremities, or feel sensation or a lack of spinal pain does **NOT** rule out a spine or spinal cord injury. When a spine or spinal cord injury is possible, **immobilize**.

Assessment

- Provide initial assessment per General First Responder Care Protocol
- Specific questions to consider:
  - Numbness, weakness, or tinging in extremities
  - Loss of sensation or strength below a specific level
  - Incontinence or urinary / stool retention

First Responder Treatment

- Provide initial treatment per General First Responder Care Protocol
- For patients with severe **head injury**:
  - Administer supplemental **oxygen** to all patients with head injury
  - Support insufficient breathing with bag-valve-mask ventilation (*as indicated*)
  - Closely monitor airway, breathing, circulation, and mental status
  - **Do NOT** apply pressure to an open or depressed skull injury
- Any patient with a violent **injury to the head or neck** should undergo **cervical spine immobilization** per Cervical Spine Immobilization Protocol.
- Patients with fall or trauma with altered mental status (GCS < 15, significant intoxication, dementia), or blunt trauma such as the following, should additionally receive **backboard immobilization** per Long Spine Board Immobilization Protocol:
  - Any mechanism that produces a violent impact to the head, neck, torso, or pelvis
  - Injury with acute back pain
  - Incidents with sudden acceleration or deceleration
  - Any fall in the elderly
  - Ejection
  - Shallow-water drowning or diving accidents
  - High-voltage electrical injuries
- Any patient with spinal tenderness, post-traumatic neurological deficits or complaints, paralysis, weakness, or anatomical deformities of the spine shall receive full **cervical spine immobilization** and **backboard immobilization with long spine board**.
- Patients that only complain of neck pain with no neurological deficits, significant mechanism of injury, or evidence of other spinal injury, may receive cervical collar only

Refusal or Intolerance

- For **patients who cannot tolerate** supine position due to clinical condition:
  - Apply all elements of spinal immobilization that the patient will tolerate
  - Maintain spinal alignment as best as can be achieved during transport
  - Clearly **document and report** the clinical condition that interfered

- For **patients who refuse** spinal immobilization:
  - Advise the patient of the importance of immobilization and the risks of refusing
  - If the patient allows, apply the cervical collar even if backboard is refused
  - Maintain spinal alignment as best as can be achieved during transport
  - Clearly **document and report** refusal of immobilization

Report

- Provide report to transport EMS per General First Responder Care Protocol

Heat-Related Injuries

Background

Heat illness progresses from lightheadedness and cramps, to **heat exhaustion** (*heavy sweating and tachycardia*), to **heat stroke** (*the patient no longer sweats, their core temperature rises, and they become confused*). Heat stroke is a true medical emergency!

Assessment

- Provide initial assessment per General First Responder Care Protocol
- Physical assessment areas to consider:
    - Full vital signs, especially **temperature**, **heart rate**, and **blood pressure**.
    - Skin condition:
        - Hot and sweaty?
        - Cold and clammy?
        - Hot and dry?
    - Level of consciousness (**AVPU**)

First Responder Treatment

- Provide initial treatment per General First Responder Care Protocol
- **Move the patient to a cool environment** immediately
- Remove outer layers of clothing (*maintain privacy*)
- In alert and cooperative patients, encourage **oral hydration** (*water or a sports drink*)
- **If the patent experiences severe symptoms** (*e.g., weakness, lightheadedness, loss of consciousness, confusion, or abnormal temperature*)**:**
    - Cool the patient with water, water mist, and / or fanning
    - Rotate cold packs to armpits and / or neck
    - Check **blood glucose** (*with glucometer, if available*)

Report

- Provide report to transport EMS per General First Responder Care Protocol

Hypotension / Shock

Background

Shock occurs when there is insufficient blood flow to vital organs. Sustained hypotension leads to organ damage and death. **SBP < 90** mmHg often heralds a shock state.

Keep in mind that the SBP for different patients can vary from 90 – 200 mmHg. Therefore, < 90 mmHg is not the cut off for all patients – look for other signs and symptoms as noted below.

Assessment

- Provide initial assessment per General First Responder Care Protocol
- Attempt to determine the **cause** of hypotension or shock
  - Examples: dehydration, hemorrhage, anaphylaxis, infection, heart problems, medication overdose, hypothermia, or spinal cord injury
- **Symptoms** may include: severe thirst, anxiety, rapid or weak pulse, rapid and shallow respirations, altered mental status, pallor, or clammy skin

First Responder Treatment

- Provide initial treatment per General First Responder Care Protocol
- Protect the patent from heat loss or environmental heat exposure
  - Remove from outside environment
  - Remove wet clothing (*maintain privacy*) and provide a blanket
- Continually reassess:
  - Check blood pressure every 5 minutes, before and after any interventions
  - Ask the patient to **lie flat** until transport EMS arrives
  - **Elevate the legs** 8 - 12 inches above the level of the heart
- Evaluate for uncontrolled bleeding, and stop with pressure or elevation
- If hypotension / shock is felt to be from dehydration or fluid loss:
  - Encourage gentle **oral fluid intake** in alert and oriented patients (*if the patient is not nauseous or vomiting*)

Report

- Provide report to transport EMS per General First Responder Care Protocol

Hypothermia / Cold-Related Injuries

Background

Hypothermia is more common in northern states, but may be seen in Florida in colder months. Patients at risk include: occupational or swimming exposures, homeless, or intoxicated patients.

Assessment

- Provide initial assessment per General First Responder Care Protocol
- **Symptoms** may include: cold skin, shivering (*may not be present*), slow speech, altered mental status, unconsciousness

First Responder Treatment

- Provide initial treatment per General First Responder Care Protocol
- Evacuate patient from cold environment
    - Warm patient area
    - Remove wet or cold clothing and wrap patient in blankets
    - Handle the patient very gently
        - A hypothermic heart is irritable
        - Ventricular arrhythmias may result from rough treatment
- **If hypothermia injury is local (frostbite):**
    - Handle injured part gently and leave uncovered
    - Warm the area of injury, as above. (**CAVEAT: Do not** allow the injured part to thaw if a chance exists for the part to refreeze)

Special Considerations

Severe bradycardia and low temperature may give the appearance of death. A careful patient assessment is paramount!

Hypothermic patients in cardiac arrest have a uniquely high survival rate and should undergo prolonged resuscitation and CPR efforts. CPR should not be terminated until on-line medical control approves. (*"Never assume a patient is dead until they're **warm** and dead!"*)

Report

- Provide report to transport EMS per General First Responder Care Protocol

Mass Casualty Triage and Care

Background

A Mass Casualty incident or "MCI" is defined as any event that overwhelms the resources of the EMS system. Examples include (*but are not limited to*):

- Plane / train / bus crashes, hurricanes, earthquakes, tornadoes
- Terrorist events (explosions, weapons of mass destruction, biological warfare)
- Mass shootings, injuries, or killings

Assessment

- Provide initial assessment per General First Responder Care Protocol
- Determine scene safety
- **Notify dispatch immediately** of multiple victims on scene
- If you note **more than 5 critical patients** on scene, notify dispatch of a **mass casualty incident (MCI)** and an **estimated number of victims**
- Begin triaging patients according to **START** triage system (*described below*)

First Responder Treatment

- Provide initial treatment per General First Responder Care Protocol
- Determine scene safety
- Perform mass-casualty triage according to **START** triage system (*described below*)
- Patients' severity will be identified as one of four categories:
    - **Black** (Dead)
    - **Red** (Immediate) - Requires immediate intervention and transportation
    - **Yellow** (Delayed) - Requires intervention and transportation, but this can be delayed for a few hours
    - **Green** (Minor) - Ambulatory "walking wounded" with minor injuries
- Assist Levy EMS with START triage and the incident command system.

START Triage

The steps of the **START triage** system are as follows:

- **Step 1**: Loudly ask anyone within the sound of your voice to move to a designated area.
    - This will help you sort out the **Green** (walking wounded)
    - These patients should be tagged Green (Minor).

- **Step 2**: In an orderly fashion, move to each patient checking for the status of **Breathing**, **Circulation,** and **Mental status**. Tag them using the following rules:
    - **Breathing:**
        - **Yes** – if respirations less than 30, then proceed to **circulation**.
        - **Yes** – if respirations **greater than 30 → triage Red (Immediate)**
        - **No** – **open and clear the airway**:
            - if breathing begins → **triage Red (Immediate)**
            - if breathing does not begin → **triage Black (Dead / Expectant)**

- **<u>Circulation</u>:**
  - Control bleeding
  - Check pulse:
    - Weak pulse → triage **Red (Immediate)**
    - Strong Pulse → check **capillary refill time** (*press on fingernail, measure how long color takes to return*):
      - If **< 2 seconds** → proceed to **mental status**
      - If **> 2 seconds** → **triage Red (Immediate)**
- **<u>Mental Status</u>:**
  - Give the patient a **simple command** (*e.g., "open your eyes," squeeze my hand," etc.):*
    - Patient follows command → **triage Yellow (Delayed)**
    - Patient fails to follow commands → **triage Red (Immediate)**

START Triage Mnemonic

The mnemonic "***<u>30, 2, Can-Do!</u>***" is a reminder of key parts of START triage:

- **30** breaths / min. (*or more*) = **Red (Immediate)**
- **2 second** capillary refill (*or more, <u>or</u> weak pulse*) = **Red (Immediate)**
- Fails mental status check (*no "**Can do!**"*) = **Red (Immediate)**

Special Considerations

It is difficult for medical professionals to change their mindset from *saving all patients at any cost*, to *saving the most lives possible* in an event where resources are limited.

With such limited resources in a mass casualty event, medical professionals should use this triage process and make decisions on which patients to transport as a priority.

Triage → reassessment → repeat triage frequently leads to the most appropriate decisions.

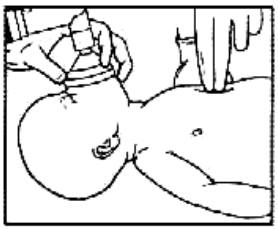
Pediatric Cardiac Arrest

Assessment

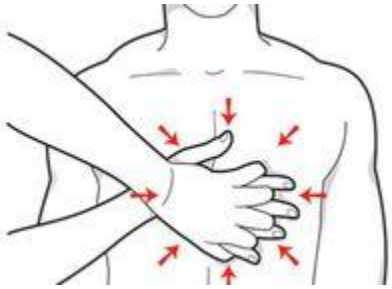
- General considerations per General First Responder Care Protocol
- Check for **carotid or femoral pulses** (for 10 seconds or less).
  - If absent, **start CPR** and proceed immediately to treatment section.
- **Notify EMS immediately** that the patient is in cardiac arrest (but do not delay CPR).

First Responder Treatment

- General considerations per General First Responder Care Protocol
- Do **NOT** perform CPR on any patient who is awake, interactive, or breathing normally.
- **Immediately begin chest compressions if no pulse is detected:**
  - **For NEWBORNS or INFANTS (age < 1):**
    - **Place 2 fingers in the center of the chest just below the nipples. Press down approximately one-third the depth of the chest.**



    - **For INFANTS, compress chest at 100 beats per minute**
      - *(The rhythm of "Stayin' Alive" by the Bee Gees)*
    - **For NEWBORNS, compress chest at 120 beats per minute**
      - *(Slightly faster than "Stayin' Alive" by the Bee Gees)*
  - **For CHILDREN:**
    - Place the palm of one hand **over the lower sternum** of the chest
    - Place other hand over the first, interlocking the fingers



    - Provide chest compressions by pushing hard and fast at:
      - A **rate of 100 beats per minute** or slightly greater (*approximately the rhythm of "Stayin' Alive" by the Bee Gees*)
      - A **depth** of at least **2 inches**
  - Allow for chest recoil between compressions
  - **Avoid interruptions** to chest compressions as a top priority
  - **Provide 2 rescue breaths** by bag valve mask **every 15 compressions**
    - (2 breaths every **30** compressions for a **lone rescuer**)
- **Call for an automatic external defibrillator (AED)** and apply it as soon as available:

  - Follow the Automatic External Defibrillator (AED) Protocol
  - **If pediatric pads are unavailable, adult pads can be used (if > 1 year old)**
  - If the AED reports **"shock advised,"** clear all hands and body parts from the patient and **administer shock**.
  - Resume compressions immediately once the shock is delivered.
  - If the AED does not advise a shock, **immediately resume chest compressions**.
- Chest compressions should be delivered continuously at 100 beats per minute in **2 minute intervals**. After 2 minutes of continuous chest compressions, simultaneously:
  - Check for the presence of a pulse
  - Have the AED evaluate whether a shock is advised (and **administer shock** per Automatic External Defibrillator Protocol if indicated)
  - Trade out individuals providing chest compressions (*if additional responders are available*)
  - This process should take 10 seconds or less, and if no pulse is present, **resume CPR and repeat this cycle**.
- **In children, if heart rate is less than 60**, **continue CPR until heart rate ≥ 60**
- The provider not giving compressions should provide **2 rescue breaths after every 15 compressions** via Bag-Valve-Mask device (*providing 100% oxygen if available*).
- Continue cycles of **2 minutes of continuous chest compressions** as described above and await Levy DPS paramedic arrival.

Special Considerations

- Use extreme sensitivity and professionalism with the family.
- If the patient's family provides a **signed, current, yellow State of Florida "Do Not Resuscitate (DNR)" order**:
  - See Do Not Resuscitate (DNR) Order Protocol.
  - If you have **any doubt** whether or not to resuscitate, **begin resuscitation** and contact EMS.

Report

- Provide report to transport EMS per General First Responder Care Protocol
- Include the following:
  - Time of arrest (*if known*), duration of current CPR efforts, shocks delivered

Pediatric Emergencies

Assessment

- Provide initial assessment per General First Responder Care Protocol
- In infants and children, focus assessment on **the pediatric ABCs**:
  - **Appearance and Airway**
    - Normal speech / cry?
    - Responding well to parents or stimuli (*toy, light, keys, etc.*)?
    - Moving extremities well, with good muscle tone?
  - **(Work of) Breathing**
    - Increased or excessive work of breathing?
      - Nasal flaring
      - Chest or neck retractions
      - Grunting
    - Noisy breathing
      - Stridor
      - Wheezing
  - **Circulation**
    - Signs of poor circulation (*or low oxygen, or cold*):
      - Cyanosis (*blue color*)
      - Pallor (*pale*)
      - Mottling (*skin with patches of cyanosis*)
      - Poor capillary refill (*greater than 2 seconds*)
    - Bleeding
- Frequent reassessment of **the pediatric ABC's** is critical.
- In general, pediatric vital signs are **less important than the pediatric ABC's** (*above*)
  - Pediatric vital signs vary by age! See Vital Sign Ranges Protocol
- Infants and children have unique anatomy and physiology:
  - Small airway (*easily obstructed by secretions or swelling*)
  - Large tongue (*can block airway*)
  - Easily become hypothermic (*keep warm*)
  - Infants are **nose breathers**, so a stopped-up nose → breathing problems
  - Children often compensate well and may look normal until a sudden decline

First Responder Treatment

- Provide initial treatment per General First Responder Care Protocol
- Provide **oxygen** to any pediatric patient with abnormal **pediatric ABC's**
  - Assist ventilations with bag-valve-mask as needed for inadequate breathing
- Keep child calm, warm, and in general, allow child to sit with mom or dad

Report

- Provide report to transport EMS per General First Responder Care Protocol

Poisoning / Overdose

Background

Determine the agent, time, and amount of ingestion, circumstances of the event, and document all details of the event. Collect and retain for transport any pill bottles, containers, or other identifying material(s) which could help to identify the substance.

Several ingestions have antidotes or countermeasures if the substance can be identified.

Assessment

- Provide initial assessment per General First Responder Care Protocol
- Specific questions to consider:
  - Poison(s), time, route (*e.g., ingested, inhaled, injected*)
    - Obtain container, determine amount present prior to ingestion
  - Vomiting? Altered mental status?
- Assess if the patient has a **suspected opiate overdose** based on:
  - The patient does not respond to verbal stimuli, but either responds to painful stimuli or is unresponsive (P or U of AVPU); AND
  - Respirations less than 10/minute and signs of respiratory failure; AND
  - If **glucose** > 60
- Consider contacting **Florida Poison Control (1-800-222-1222)** for assistance

First Responder Treatment

- Provide initial treatment per General First Responder Care Protocol
- **Do NOT induce vomiting**!
- If **vomiting**, suction mouth and place patient on their side in the recovery position
- If **hypotension**, follow Hypotension / Shock Protocol
- If **seizing**, follow Seizures Protocol
- If inhaled, remove from environment and administer 100% **oxygen** by non-rebreather
- If **altered mental status**:
  - Check **glucose** (*with glucometer, as available*)
  - Follow Altered Mental Status Protocol
- If **skin or eye contamination**:
  - Remove affected clothing (*maintain privacy*)
  - Irrigate gently with copious water or saline
- If insufficient respirations, assist ventilation with bag-valve-mask according to the Airway Assessment and Maneuvers Protocol
- If concern for **suspected opiate overdose** (responds only to painful stimuli or unresponsive, decreased respirations, and glucose > 60):
  - Administer naloxone (Narcan) via a Mucosal Atomization Device (MAD)
  - Insert MAD into patient's left nostril and for:
    - ADULT: inject 1mg / 1ml.
    - PEDIATRIC: inject 0.5mg / 0.5ml.
  - Insert MAD into patient's right nostril and for:

        - ADULT: inject 1mg / 1ml.
        - PEDIATRIC: inject 0.5mg / 0.5ml.
    - After 5 minutes, if patient's respiratory rate is less than 10 breaths/minute, administer a second dose of naloxone following the same procedure as above
    - These patients must be transported to the hospital

Report

- Provide report to transport EMS per General First Responder Care Protocol
- Include the following:
    - Substance(s), amount, route, and time
    - Florida Poison Control recommendations (*if applicable*)

Respiratory Emergencies

Assessment

- Provide initial assessment per General First Responder Care Protocol
- Physical assessment areas to consider:
  - Work of breathing
  - Lung sounds (*e.g., stridor, cough, wheezing, gurgling, snoring*)
  - Skin changes (e.g., *pallor, cyanosis, flushing, hives*)
- Obtain **SAMPLE** history with **OPQRST**
- Obtain full set of vital signs including SpO_2 with pulse-oximeter
- Attempt to determine cause of respiratory distress (*e.g., wheezing, airway obstruction, stridor, snoring, gurgling, decreased breath sounds, crackles, trauma, etc.)*

First Responder Treatment

- Provide initial treatment per General First Responder Care Protocol
- Allow position of greatest comfort (*usually sitting up / head of bed elevated*)
- Assess airway per Airway Assessment and Maneuvers Protocol
- Suction oral secretions (*if needed*)
- Administer **oxygen** per Oxygen Delivery Protocol for any patient with respiratory distress to maintain $SpO_2 > 93\%$
- For inadequate breathing, support ventilation with bag-valve-mask (BVM)

Pediatric Considerations

- Bradycardia in children is **always due to hypoxia** until proven otherwise
  - Always administer **oxygen** to children with bradycardia, decreased mental status, respiratory distress, or $SpO_2 < 93\%$
- **Blow-by oxygen** may be the best intervention for children until transport EMS arrives
- The mother or father's lap may be the best position to prevent anxiety
- If a child is in **tripod position** (hands on knees in respiratory distress), **notify dispatch immediately that this patient is critical**
  - Children in tripod position with excessive drooling may have epiglottitis, a surgical emergency
  - **Do not** lay the patient flat, agitate the patient, or attempt to visualize the airway
- Accessory muscle use, nasal flaring, combativeness, or lethargy can be additional presentations for children in respiratory distress
- In case of respiratory failure, BVM can be just as effective as an ALS airway

Report

- Provide report to transport EMS per General First Responder Care Protocol

Seizures

Background

Do not worry about determining the cause of seizures in the field. The prime concern is **airway protection** and **prevention of further injury**. History is extremely helpful, so on-scene information (*such as number and timing of seizures*) is very important.

Assessment

- Provide initial assessment per General First Responder Care Protocol
- Obtain a full set of vital signs
- Specific questions to consider:
    - History of seizures, compliance with seizure medications
    - How many seizures, time between seizures, and if the patient returned to a normal mental status between seizures
        - Multiple seizures without returning to normal mental status is concerning for **status epilepticus**, a medical emergency

First Responder Treatment

- Provide initial treatment per General First Responder Care Protocol
- Cervical collar and maintain spinal immobilization (*if any concern for spinal trauma*)
- Gently **protect the patient** from hurting him / herself
    - Do not restrain the patient
    - Do not force anything between the teeth, except to assure airway patency
- Provide **oxygen** if SpO_2 < 93% and be prepared to support ventilation with BVM
    - Suction the mouth as needed
- Obtain **blood glucose level** (*with glucometer, if available*)
    - Treat per Diabetic Emergencies Protocol if abnormal
- If the patient has additional seizures, **notify dispatch the patient is critical**

Report

- Provide report to transport EMS per General First Responder Care Protocol
- Include the following:
    - How many seizures, time between seizures, return to normal mental status
    - Description of seizure appearance

Stroke / Neurologic Emergencies

Background

The brain is lost quickly without adequate blood flow. Optimal patient outcomes depend on duration of patient symptoms and requesting expeditious ALS transport.

Assessment

- Provide initial assessment per General First Responder Care Protocol
- Specific questions to consider:
  - An accurate **time of symptom onset** is the critical question!
    - Determines whether the patient can receive a clot-busting medicine (tPA)
- Perform a formal **Stroke Assessment** (*see below*)

First Responder Treatment

- Provide initial treatment per General First Responder Care Protocol
- Keep the head of stretcher up at 45 degrees.
- Administer **oxygen** at 2L by nasal cannula to all patients (*or more, to keep SpO_2 > 93%*)
- Check **blood glucose** (*with glucometer, if available*)
  - Treat per Diabetic Emergency Protocol if abnormal
  - Hypoglycemia can mimic stroke symptoms
- If seizure activity, refer to Seizure Protocol

Stroke Assessment

The **Cincinnati Prehospital Stroke Scale (CPSS)** is used to screen for acute stroke.

- **Stroke alert criteria are met** if **all of the following are true**:
  1. **≥ 1** of **Cincinnati Prehospital Stroke Scale** (**CPSS**) criteria are **abnormal** and **new**.
  2. **The abnormal symptom(s)** are **less than 3.5 hours old**.
     (*This includes patients who awoke with the symptoms < 3.5 hours ago*).
  3. The patient has **no evidence of trauma**
  4. Glucose is **greater than 50**

Cincinnati Prehospital Stroke Scale
QUESTION 1 – Facial droop (*Have patient smile and show teeth*) **Normal** – Both sides of face move equally **Abnormal** – One side of face does not move as well **QUESTION 2 – Arm drift** (*Patient closes eyes, holds arms out – palms up – for 10 seconds*) **Normal** – Both arms move the same or both arms do not move at all **Abnormal** – One arm doesn't move or one arm drifts down compared with the other **QUESTION 3 – Abnormal speech** (*Have patient say, "You can't teach an old dog new tricks"*) **Normal** - Patient uses correct words with no slurring **Abnormal** – Patient slurs words, uses the wrong words, or is unable to speak

- If stroke alert criteria are met, **notify dispatch that the patient is a Stroke Alert**.

Report

- Provide report to transport EMS per General First Responder Care Protocol
- Include the following:
  - Time of onset
  - Findings from **Cincinnati Prehospital Stroke Scale (CPSS)**
  - Glucose level

Trauma

Background

Early transport of the critical trauma patient offers the greatest chance of survival. Focus your efforts on protecting the patient's **airway**, **breathing**, **circulation**, and **spinal immobilization**

Notify dispatch immediately of any patients meeting **Trauma Alert Criteria**.

- See Trauma Alert Criteria Protocol

Assessment

- Evaluate for scene safety – *do not become a patient!*
- Provide initial assessment per General First Responder Care Protocol
- Evaluate patient for **Trauma Alert Criteria** per Trauma Alert Criteria Protocol
  - If positive, **notify dispatch immediately** the patient is a **Trauma Alert**
- If multiple critical trauma patients, see Mass Casualty Triage and Care Protocol
- Measure vital signs including pulse, blood pressure, and SpO_2

First Responder Treatment

- Provide initial treatment per General First Responder Care Protocol
- **Circulation**
  - Evaluate for active hemorrhage
  - Control bleeding with **strong direct pressure at source**
    - Elevate limb to assist with hemorrhage control
    - **If all efforts to control active hemorrhage fail**, apply a **tourniquet** per Tourniquet Placement Protocol
- **Airway**
  - Assess airway patency per Airway Assessment and Maneuvers Protocol
  - If intact, administer **oxygen** to all patients per Oxygen Delivery Protocol
    - Reassess frequently to **keep $SpO_2 \geq 95\%$**
    - Trauma victims benefit especially from supplemental **oxygen**
  - Maintain **cervical immobilization** per Cervical Spine Immobilization Protocol
- **Breathing**
  - Assess respiratory effort
  - If adequacy of ventilation is in question:
    - Support ventilation at a rate of 12-14 BPM with **100**% **oxygen** via Bag Valve Mask
  - Assess for chest trauma:
    - If an **open chest wound** is present, cover with a gloved hand, place 4x4 Vaseline gauze dressing over wound, and tape on three sides only
- **Disability**
  - Assess neurologic status using **AVPU**
    - If unresponsive, reevaluate ABCs, and immobilize with:
      - **Cervical collar** (per Cervical Spine Immobilization Protocol)
      - **Backboard** (per Long Spine Board Immobilization Protocol)

    - Evaluate for spinal injury per Head, Neck, Back, and Spine Injuries Protocol
- **Assess extremities**
    - Splint suspected fracture sites in most appropriate fashion after checking **pulses**, **motor function**, and **sensation**.
    - If the patient is critically injured, utilization of the long spine board as a total body splint is a time and resource efficient procedure.
    - Place cold pack on suspected fracture sites if time and resources allow.
    - **Recheck pulse, motor function and sensation after immobilization**.
- **Reassess vital signs** every 2 to 5 minutes

Amputations and Partial Amputations

- **If partial amputation:**
    - Place in a **dressing moistened with normal saline** and splint in line with associated extremity.
    - Avoid torsion or traction of severed part
- **If complete amputation:**
    - **Control bleeding:**
        - Apply **direct pressure to bleeding sites**.
        - **Elevate** above the level of the heart as able.
        - **If bleeding is profuse despite elevation and direct pressure:**
            - Place blood pressure cuff just proximal to amputation site and inflate to just above systolic pressure.
            - Maintain cuff pressure during transport.
            - Do not place cuff over joints.
        - **If bleeding is still profuse:**
            - Consider applying a **tourniquet** (per Tourniquet Placement Protocol). **Notify dispatch and transport EMS immediately**.
- **Wrap amputated part in a dressing moistened with normal saline**.
    - Secure in watertight container.
    - Place container in cool water.
    - Ensure amputated part is transported with the patient!
- **Do NOT place the amputated part on ice**!
    - This may damage the amputated part and prevent re-implantation.

Report

- Provide report to transport EMS per General First Responder Care Protocol
- Include the following:
    - Number of patients and patients meeting Trauma Alert Criteria
    - Injuries found
    - Tourniquet placement time and location (*if applicable*)

Airway Assessment and Maneuvers

Airway Assessment

- Alert and talking patients have a patent (*open*) airway
- Patients with diminished mental status may <u>not</u> be able to protect their airway
  - The tongue is the most likely cause of airway obstruction
  - Vomit or thick saliva may cause obstruction
- Burns or facial trauma may cause airway obstruction
- **Gagging** may indicate airway obstruction
- **Snoring** may indicate the tongue is obstructing proper ventilation
- **Gurgling** indicates excessive secretions that require suctioning
- **Stridor** indicates upper airway swelling that may require oxygen or assisted ventilation

Maneuvers

Open the airway:

- **<u>Jaw thrust maneuver</u>:**
  - Position yourself behind the head of the supine (*lying flat*) patient
  - Firmly hold the angles of the lower jaw with both hands
  - Open the lower lip with your thumbs
  - With both hands, thrust the jaw forward gently
    - This opens the airway and repositions the tongue.

  - **When performed correctly, this maneuver does not manipulate the spine and can be used in patents with possible spinal injury.**
- **<u>Head-tilt chin-lift maneuver</u>:**
  - **Do <u>NOT</u> use in patients with possible spine injury!**
  - Position yourself to the side of the supine (*lying flat*) patient
  - Press down gently on the forehead with one hand
  - Using the fingers of your other hand, lift the chin upward

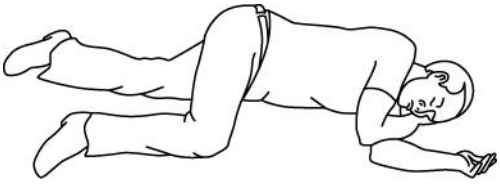
Suction the airway:

- Suction for no more than 5 seconds at a time

- **Do not** suction past the base of the tongue
- Only suction using the catheter on its way out

Recovery Position:

- **Do NOT** use in patients with suspected spinal trauma
- For patients with diminished mental status to protect against aspiration (*choking on vomit or secretions*)



- **Technique:**
  - Lay the patient on their side
  - Tuck one arm underneath the head (*for protection*)
  - Place the other elbow at a right angle, hand toward the head
  - Straighten the leg closest to the ground
  - Bend the knee furthest from the ground 90 degrees, and use this leg to prevent the patient from rolling over
  - Monitor the patient closely and do not leave their side

Oropharyngeal Airway (OPA):

- If the patient is unconscious and has abnormal breathing:
  - **The patient must be unconscious and unresponsive.**
  - Take BSI precautions
  - Measure for correct size. The OPA is sized by measuring from the center of the mouth to the angle of the jaw, or from the corner of the mouth to the earlobe.
  - Open the mouth. The mouth is opened using either the “jaw thrust” maneuver or the “scissors” finger technique.
  - Insert the OPA without pushing the tongue back. The OPA is inserted in the patient’s mouth upside down so the tip of the OPA is facing the roof of the patient’s mouth. As the airway is inserted it is rotated 180 degrees until the flange comes to rest on the patient’s lips and/or teeth.
  - A head-tilt chin-lift or jaw-thrust maneuver must still be maintained, even when an OPA is inserted.
  - **If the patient begins to retch/gag, remove the OPA immediately! Suction as needed.**
  - Do NOT attempt to insert an OPA during a seizure. Note: most post-ictal patients do not need an OPA.

Nasopharyngeal Airway (NPA):

- If the patient is unconscious and has abnormal breathing:
  - **Nasal airways are <u>contraindicated</u> in patients with severe trauma to the head and/or face.**

- Take BSI precautions.
- Select the proper size airway. Measure from the tip of the patient's earlobe to the tip of the patient's nose. The diameter of the airway should be the largest that will fit. To determine this, select the size that approximates the diameter of the patient's little finger.
- Lubricate the airway device with a water-soluble lubricant.
- Insert the airway. With the patient's head in a neutral position, gently pull back the tip of the patient's nose. Insert the airway; bevel toward the nasal septum, into the ***right*** nostril following the natural curvature of the nasal passage. The flange should rest against the nasal opening.
- **If an obstruction or resistance is encountered, do not force the airway. The airway should be removed and inserted in the left nostril.**
- A head-tilt chin-lift or jaw-thrust maneuver must still be maintained, even when an NPA is inserted.

Signs of Inadequate Breathing

Patients with signs of **inadequate breathing** require **oxygen** (per Oxygen Delivery Protocol) and, if severe, should receive **assisted ventilations** (per Bag-Valve-Mask Protocol).

Signs of inadequate breathing include:

- Tripod position (*leaning forward, hands on knees*)
- Agonal respirations (*gasping*)
- Hypoventilation (*breaths are **too shallow** or **too slow** to provide adequate oxygen*)
- Hypoxia (*low oxygen*)
- Signs of hypoxia, including:
  - Cyanosis (*abnormal blue color of skin or lips*)
  - Pallor (*paleness*)
  - Cool and clammy skin
  - Confusion
  - Rapid heart rate
  - Respiratory distress
- Nasal flaring, severe retractions, or excessive accessory muscle use

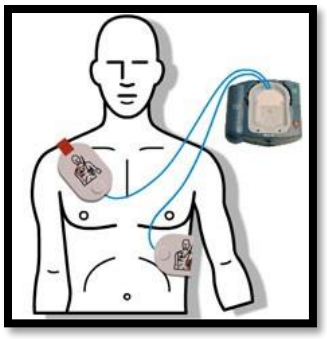
Automated External Defibrillator (AED)

General Guidelines

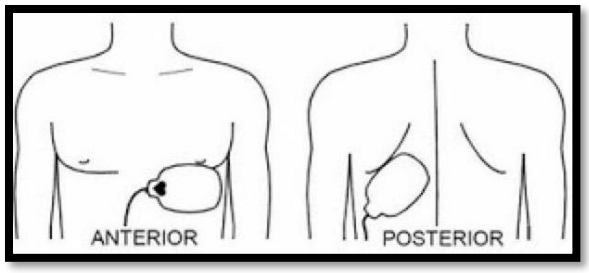
- To be used **ONLY for patients in full cardiac arrest:**
  - **No** pulse
  - **No** breathing (*or only agonal breathing without a pulse*)
- **Never** shock a conscious, breathing, or pulsed patient **even if AED advises a shock**
- Arrest management per Cardiac Arrest Protocol or Pediatric Cardiac Arrest Protocol

Technique

- **Follow all instructions provided on AED**
- **Place defibrillator pads to chest** as directed on AED diagram
  - Ensure pads have good connection with dry skin
  - Trim chest hair if necessary to ensure firm placement
  - Remove metal from area
- If no diagram provided, place either in **standard position** or **AP position**:
  - **Standard position** – one pad on the upper right chest, second pad to the left side of the chest below the nipple line (*under the armpit*)
  - **AP position** – one pad on the left lower chest (*over the heart*), second pad to the left back (*behind the heart*)



Standard placement



AP placement

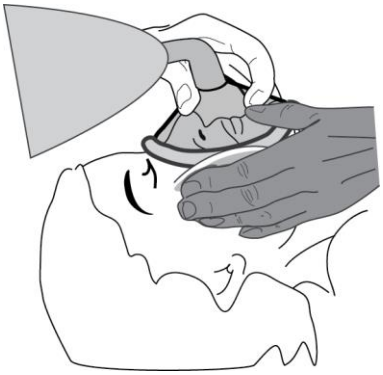
- Press the **ANALYZE** button – this may take up to 10 seconds
- Ensure that no one – *including you!* – is touching the patient
  - Tell everyone to **"STAND CLEAR!"**
- Depending on the AED brand, press the **CHARGE** button (*if required*)
- Press the **SHOCK** button if the AED advises a shock
- Resume CPR per the Cardiac Arrest Protocol or Pediatric Cardiac Arrest Protocol

Issued: 9/30/2021

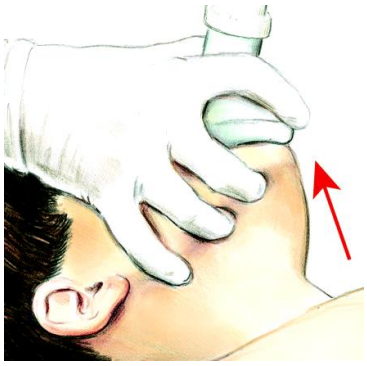
Bag-Valve-Mask

Technique

- Select an appropriate bag-valve-mask size (*adult, pediatric, infant, or neonate*)
  - Mask should be able to cover the nose and mouth comfortably
- Assemble the bag-valve-mask:
  - Attach the air cushion mask to the bag-valve device
  - Attach the oxygen tubing to an oxygen source at 15 liters / minute (LPM)
- Ensure the patient is supine (*laying on their back*)
- Place the air cushion mask over the bridge of the patient's nose, covering the nose and mouth with a tight seal



- Stand behind the patient's head
- **Ventilation Method #1 (EC clamp technique)**
  - Grasp the mask with thumb and index finger in a "C" shape
  - Use the remaining 3 fingers under the jaw line, squeezing the mask to the face to generate a tight seal



  - If <u>no</u> additional rescuers are available:
    - The first responder should squeeze the ventilation bag with the alternate hand
  - If additional rescuers are available:
    - The first responder should perform this hand placement with both hands.
    - An additional rescuer should squeeze the ventilation bag to deliver breaths
- **Ventilation Method #2 (2 thumbs down technique)** (only use if additional rescuers are available):

- Use the thenar eminence (fleshy part) of both hands to secure the mask to the face
- Use the other fingers to lift the mandible up towards your thumbs

- An additional rescuer should squeeze the ventilation bag to deliver breaths

- Squeeze the ventilation bag:
  - At about **12 breaths per minute** (1 breath **every 5 - 6 seconds**)
  - Only enough to ensure chest rise (*without excessive ventilation*)
- Consider oropharyngeal airway (OPA) or nasopharyngeal airway (NPA) if the patient is unconscious and has abnormal breathing. Refer to Airway Assessment and Maneuvers Protocol

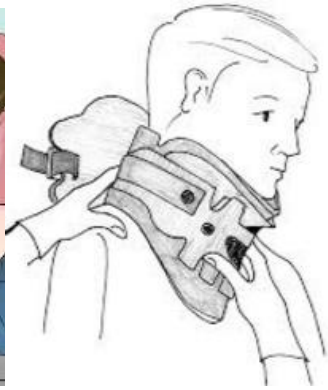
Cervical Spine Immobilization

General Considerations

- Provide **cervical spine immobilization** with a **cervical collar** for <u>any</u> patient with:
  - Any mechanism that produces a violent impact on the head or neck
  - Incidents that produce sudden acceleration or deceleration
  - Any significant neck pain or posterior head pain
  - Any concern for head or neck injury in a patient with altered level of consciousness <u>or</u> decreased ability to communicate
- **When in doubt, immobilize!**

Technique

- Notify the patient you are attempting to protect their neck and prevent spinal cord injury
- Your goal is to immobilize the cervical spine (*neck*) in a neutral (*natural*) position **without twisting, flexing, or manipulating the spine**
- If the neck is not in the neutral position, gently attempt to achieve normal alignment
  - An awake and alert patient can assist this process
  - If this elicits **pain**, development of a **neurologic deficit**, or **resistance to movement**, discontinue this effort and **immobilize in the current position**
- Once in neutral position, use **gentle pressure with hands on either side of the head to maintain the cervical spine in neutral position**
  - If the patient must be rolled, this should be performed with "**log roll precautions**"
    - One individual holds the neck in neutral position, while assistants roll the patient as a single unit, keeping the entire spine straight (*no twisting*):



- Once available, **apply a cervical collar** to immobilize the cervical spine as shown above
  - Ensure minimal movement of the spine as you apply the collar
  - Velcro the collar so that it fits snugly and prevents neck twisting or flexing

Long Spine Board Immobilization

General Considerations

Immobilize with a **long spine board** or **continuous whole-spine immobilization** precautions for any patient suffering the following:

- **Blunt trauma with diminished level of consciousness**
- Complaints suggestive of **spinal injury**:
  - Spinal pain or tenderness (*including muscles adjacent to the spine*)
  - Neurologic deficit or complaint (*e.g. weakness, numbness, abnormal sensation*)
  - Anatomical deformity of the spine
- **Distracting Injuries**
  - Includes: *long bone fractures, joint dislocations, abdominal or chest pain, large lacerations, crush injuries, serious burns, any injury producing acute functional impairment*)

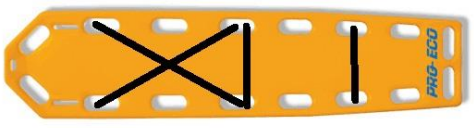
When in doubt, immobilize!

Technique

- Immobilize cervical spine with cervical collar per Cervical Spine Immobilization Protocol
- Maintain entire spine in **normal anatomic spinal alignment** at all times:
  - If the spine is not in a neutral position, gently attempt to normalize alignment
  - If this elicits **pain**, development of a **neurologic deficit**, or **resistance to movement**, discontinue this effort and **immobilize in the current position**
  - Your goal is to prevent the spine from being twisted, flexed, or manipulated out of normal alignment

If immobilizing using a long spine board:

- Place patient on the long spine board using log-roll precautions (as described in Cervical Spine Immobilization Protocol)
  - **Never** place patients prone (*face down*) when immobilizing
  - If the patent is unable to be placed supine, place him/her in the safest position that maintains in-line spinal stability
- Stabilize the patient to the backboard with straps and head-rolls as available by appropriate methods. One example of strap placement:



- Assess and document neurologic and motor status of extremities after immobilization

LUCAS Device

General Considerations

The LUCAS™ Chest Compression System is a mechanical chest compression device for patients over the age of 12 in non-traumatic cardiac arrest.

- The device should only be used in patients **12 years or older** in **non-traumatic cardiac arrest**, where manual CPR would otherwise be used
  - If only 1 first responder is present, apply an AED, and deliver 5 cycles of manual CPR (approximately 10 minutes) prior to initiating the mechanical CPR device.
  - If more than 1 first responder is present, immediately deliver manual CPR, apply an AED, and initiate the mechanical CPR device **during a scheduled pause of compressions**
  - **Avoid interruptions to chest compressions as a <u>top priority</u>**

- The device should NOT be used in:
  - Patients who are awake, talking, or breathing normally.
  - Patients under age 12
  - Traumatic cardiac arrest or obvious signs of contributing traumatic injury
  - Patients who do not fit the device properly:
    - Patents who do not fit within the device
    - Patients too large, for whom you cannot press the pressure pad down 2 inches
    - Patients too small, for whom you cannot pull the pressure pad down to touch the sternum

- The LUCAS device should only be implemented by a first responder trained at the EMT level or above.

Technique

- Initiate interventions as outlined by the Cardiac Arrest Protocol
  - Manual CPR should be initiated immediately. AED should be applied immediately. **Both CPR and AED must be initiated prior to LUCAS device** placement.
  - If the AED reports **"shock advised**,**"** clear all hands and body parts from the patient and **administer shock**. **Resume compressions immediately** once the shock is delivered.
  - **Minimize interruptions to chest compressions and limit to 10 seconds or less**
  - **<u>Do not delay manual CPR or AED placement for LUCAS device placement</u>**. Continue until the device can be placed
- **Apply the backplate**
  - Center the backplate, with the top of the backplate located just below the patient's armpit.

  - The backplate can be placed by log-rolling the patient or raising the torso **during a scheduled pause of compressions** (e.g. after two minutes of uninterrupted compressions)
- **Position the compressor**
  - Turn the LUCAS device on (the device will perform a 3 second self-test)
  - Lift the LUCAS device using the handles on each side
  - Approach the patient on the opposite side of the provider performing chest compressions
  - Attach the claw hook to the backplate on the side opposite the provider performing chest compressions
  - Place the LUCAS device across the patient, between the arms of the provider performing compressions
  - The provider performing compressions may now stop compressions and assist securing the claw hook to the backplate on their side
  - Pull up once to ensure the LUCAS device is securely attached
- **Adjust the height and position of the compression arm**
  - Use two fingers to ensure that the suction cup is immediately above the end of the sternum
    - If necessary, move the device by pulling the support legs to adjust the position
  - Press the Adjust Mode button to adjust the height of the compression arm
  - Manually push down the suction cup to the patient's chest, without compressing the chest. Pads and wires should not be under the suction cup.
  - Press the green Pause button to confirm placement
    - If position is incorrect, press the Adjust Mode button again and reposition
- **Patient adjuncts**
  - Place the neck roll behind the patient's head and attach the straps to the LUCAS device
  - Place the patient's arms in the straps provided
- **Start compressions**
  - **If the patient is not intubated**, push the **ACTIVE (30:2)** button to initiate compressions with a 30:2 compression to ventilation rate
  - **If the patient is intubated** with an iGel or endotracheal tube, push the **ACTIVE (continuous)** button
- **Rhythm and Pulse check**
  - After 2 minutes of continuous chest compressions, stop compressions for analysis by pushing the Pause button. Simultaneously:
    - Check for the presence of a pulse
    - Have the AED evaluate whether a shock is advised (and **administer shock** per Automatic External Defibrillator Protocol if indicated)
    - This process should take 10 seconds or less, and if no pulse is present, **resume CPR and repeat this cycle**.
  - If AED recommends "shock advised", defibrillation can and should be performed with the LUCAS device in place and in operation

  - Pads and wires should not be under the suction cup.
- **Disruption or malfunction**
  - If disruption or malfunction of the LUCAS device occurs, immediately restart manual CPR.

Care of the Device

- Power supply / battery
  - A fully charged battery should allow 45 minutes of uninterrupted operation
  - There is an extra battery in the LUCAS device bag
  - The battery is automatically charged when plugged into a wall outlet and not in operation
    - The device should be stored with the LUCAS device plugged into a wall outlet
  - When the battery LED shows an intermittent light, replace the battery or connect to a wall outlet
  - You may connect the LUCAS device to wall power in all operational modes, but the battery must be installed for the device to remain operational
- Care after use
  - Remove the suction cup and stabilization strap. If used, remove patient straps
  - Clean all surfaces and straps with an appropriate cleaning agent
  - Let the device and parts dry
  - Replace the used battery with a fully-charged battery
  - Remount or replace the suction cup and straps
  - Repack the device into the carrying bag
  - Ensure that the charging cord is plugged into the LUCAS device

Oxygen Delivery

General Guidelines

- All patients with the following **should receive supplemental oxygen** (*if available*):
  - Hypoxia
  - Signs of hypoxia
  - Hypotension / shock
  - Acutely ill
  - Head injury or severe trauma
  - Stroke
  - Diminished mental status
  - **OR** patients you suspect may become hypoxic (*regardless of SpO_2* level)

- Signs of **hypoxia** include:
  - Cyanosis (*abnormal blue color of skin or lips*)
  - Pallor (*paleness*)
  - Cool and clammy skin
  - Confusion
  - Rapid heart rate
  - Respiratory distress
  - Diminished mental status or agitation

- **If a patient is unable to maintain O_2 > 93%, contact dispatch and Levy DPS transport EMS immediately**

Oxygen Delivery

- Conscious patients:
  - May receive **oxygen by nasal cannula at 2 liters/minute (LPM)**
  - Increase oxygen levels up as needed
- Conscious patients with respiratory distress or SpO_2 < 93%:
  - Should receive **oxygen by non-rebreather mask at 15 LPM**.
  - Also for significant burns, or severe trauma

- Unconscious patients with adequate breathing:
  - Should receive **oxygen by non-rebreather mask at 15 LPM**
- Unconscious patients without adequate breathing:
  - e*.g. apnea, respiratory rate < 8,* SpO_2 *< 93%*
  - Should receive **100% oxygen by bag-valve-mask** (see Bag Valve Mask Protocol) at **12 breaths per minute**
    - When using BVM, deliver 1 breath every 5 - 6 seconds
    - Hyperventilation may harm the patient

- **Blow-by oxygen** (*holding a non-rebreather at 100% oxygen a short distance from the child's face*) may be considered for alert pediatric patients (to prevent agitation)

Physical Assessment

Background

No guideline can replace a careful evaluation and vigilant reassessment of your patient. Pay particular attention to the airway, breathing, circulation, and mental status of every patient.

Only perform a detailed examination if there are no apparent life-threatening conditions that require emergent intervention.

General Considerations

- Examination can often be focused
  - Prioritize areas that are likely related to the patient's complaint or injury
- Trauma assessment of the entire body can focus on **DCAP-BTLS:**
  - **D**eformities and dislocations
  - **C**ontusions (*bruises*)
  - **A**brasions
  - **P**enetrating wounds
  - **B**urns
  - **T**enderness
  - **L**acerations (*deep cuts*)
  - **S**welling

Specific Physical Assessment Considerations

Head

- DCAP-BTLS

Face

- Facial deformities, bleeding, or burns
- Burns

Eyes

- Pupil size
  - "Pinpoint" pupils may indicate narcotic overdose
  - Unequal pupils may indicate brain injury or bleed
- Pupils constrict equally and rapidly to light
  - A slow response may reflect brain injury, shock, or high CO_2 levels
- Eyes able to look in all directions

Mouth

- Airway obstructions
- Burns
- Bite injuries (*may indicate seizures*)
- Cyanosis (*blue discoloration*) suggests hypoxia (*low oxygen*)
- Pale gums or tongue (*suggests shock / poor perfusion*)

Physical Assessment

Neck

- Tenderness to cervical spine suggests spinal injury and requires spinal immobilization
- Neck muscle usage with respiration suggests severe respiratory distress
- Jugular venous distention (*distended neck veins*) suggests heart failure, fluid overload state, or heart compression (*e.g. from tension pneumothorax or fluid around the heart*).

Chest

- Evaluate for equal chest rise
  - Unequal chest rise suggests pneumothorax or multiple rib fractures
- Retractions indicate respiratory distress
- Evaluate breath sounds
  - Wheezing (*high pitched lower airway sounds*) suggests asthma or lung disease
  - Stridor (*high pitched upper airway sounds*) suggests airway obstruction or edema
  - Crackles indicate fluid in the lungs
  - Rhonchi (*snoring sounds*) can reflect mucous in the airway
  - Absent breath sounds suggest pneumothorax
- Evaluate heart sounds
  - Irregular heart sounds suggest arrhythmia
  - Distant heart sounds may reflect heart failure, or fluid around the heart (*pericardial effusion / tamponade*)

Abdomen

- Localized tenderness may determine the organ involved
- Rigidity, guarding (*tensing when pressed*), or skin bruising may indicate a surgical emergency or internal bleeding
- Absence of bowel sounds may indicate bowel obstruction

Extremities

- Evaluate "**P,M,S**"
  - **P**ulses
    - Radial – in wrists (*proximal to thumb*)
    - Dorsalis pedis – in feet (*top of foot at mid-foot, in line with second toe*)
  - **M**otor function and strength
  - **S**ensation
- Evaluate capillary refill – press down on nail, evaluate whether color returns briskly
  - Slow capillary refill (*e.g. > 2 seconds*) suggests shock / poor circulation

Back and Spine

- Tenderness to a spinal level when pressed suggests spinal injury and requires immobilization

Stroke Alert Criteria

Stroke Alert Criteria – Cincinnati Prehospital Stroke Scale (CPSS)

Stroke alert criteria are met if **all of the following are true**:

1. **≥ 1** of the **Cincinnati Prehospital Stroke Scale** (**CPSS**) criteria are **abnormal** and **new**.
2. **The abnormal symptom(s)** are **less than 3.5 hours old**.
   (*This includes patients who awoke with the symptoms < 3.5 hours ago*).
3. The patient has **no evidence of trauma**
4. Glucose is **greater than 50**

Cincinnati Prehospital Stroke Scale

QUESTION 1 – Facial droop (*Have patient smile and show teeth*)
Normal – Both sides of face move equally
Abnormal – One side of face does not move as well

QUESTION 2 – Arm drift (*Patient closes eyes, holds arms out – palms up – for 10 seconds*)
Normal – Both arms move the same or both arms do not move at all
Abnormal – One arm doesn't move or one arm drifts down compared with the other

QUESTION 3 – Abnormal speech (*Have patient say, "You can't teach an old dog new tricks"*)
Normal - Patient uses correct words with no slurring
Abnormal – Patient slurs words, uses the wrong words, or is unable to speak

If stroke alert criteria are met, **notify dispatch that the patient is a Stroke Alert**.

Tourniquet Placement

General Considerations

- Tourniquets can stop life-threatening hemorrhage but should be seen as a **last resort after other hemorrhage control attempts have failed**, including:
  - Vigorous firm **pressure** to the source of bleeding.
  - **Elevation** of bleeding limb above the level of the heart
  - **Placement of a blood pressure cuff** just proximal to the hemorrhage source, inflated to just above systolic pressure
- Mark the time of tourniquet placement on the patient in pen / marker
  - Select an easily visible area of the body
- Notify the arriving EMS crew and dispatch of the tourniquet
  - *An unnoticed tourniquet can lead to limb loss!*

Technique

- **Do not apply** a tourniquet if hemorrhage control has already been achieved
- **Do not apply** a tourniquet for **non**- life-threatening or **non-** limb-threatening bleeding

- **Apply the tourniquet** to the limb between the heart and the source of hemorrhage
  - Place **proximal** to the injury on the thickest portion of the extremity (*if possible*)
  - **Do not place** over joints or impaled objects
- Tighten tourniquet **until the pulse in the limb is absent** (*at the distal end*) **and bleeding stops**
- **Mark the time** of tourniquet placement on the patient in pen / marker
  - Select an easily visible area of the body
- **Notify the arriving EMS crew** and dispatch of the tourniquet
  - *An unnoticed tourniquet can lead to limb loss!*
- Instruct the patient to notify <u>all</u> care members they encounter that a tourniquet is in place

Trauma Alert Criteria

ADULT Trauma Alert Criteria

An adult patient meets **Trauma Alert Criteria** if they meet:

- **ONE** or more **RED CRITERIA** or
- **TWO** or more **BLUE CRITERIA** or
- **Pregnancy criteria** – Pregnant females ≥ 20 weeks gestation with MVC > 35 MPH and/or rollover, ejection, steering wheel deformity, or trauma with significant mechanism

	RED CRITERIA	BLUE CRITERIA
Airway	Active ventilation assistance (*beyond simple oxygenation*)	Respiratory rate of 30 or greater
Circulation	No palpable radial pulse and pulse > 120 **OR** Systolic BP < 90 mmHg	Sustained pulse of > 120 BPM
Best Motor Response	Score of **4 or less** in the Motor section of Glasgow Coma Scale (GCS) **OR** Paralysis, spinal cord injury, or loss of sensation	Score of **5** on the motor section of the Glasgow Coma Scale (GCS)
Cutaneous	2nd or 3rd degree burns to 15 percent or more of the total body surface area **OR** Electrical burns **OR** Amputation proximal to the wrist or ankle **OR** Penetrating injury to the head, neck, or torso (excluding superficial wounds)	Major degloving injury, major flap avulsion (> 5 inches), or gunshot wound to extremities
Long Bone Fracture	Symptoms of **two or more** long bone fractures sites (*humerus, radius / ulna, femur, tibia / fibula*)	Single long bone fracture from MVC or from a fall > 10 feet
Age	n/a	55 years of age or older
Mechanism	n/a	Ejection from a motor vehicle (**NOT** a motorcycle, moped, ATV, bicycle, or bed of pick-up truck) **OR** Steering wheel deformity
	1 Required	**2 Required**

If you have concerns of a **pediatric** trauma alert, contact dispatch and Levy DPS immediately.

Issued: 9/30/2021

Universal Precautions

Universal Precautions / BSI

All blood and human bodily fluids should be considered infectious, regardless of the perceived "low risk" status of a patient.

Universal precautions (also called ***body substance isolation****, or* ***BSI***) includes the use of **hand washing**, appropriate personal protective equipment such as **gloves**, **eye protection**, and **masks** whenever touching or exposure to patients' body fluids is anticipated.

Additionally, **gowns**, **fluid shields**, or **N95 respirators** may be required in some circumstances.

Appropriate respiratory protection should be worn if there is suspicion that the patient may have infectious Tuberculosis or other respiratory-spread infection.

The CDC recommends universal precautions for the care of all patients, regardless of their diagnosis or presumed infection status.

Standard Practices

- Sharps will be disposed of in appropriate sharps container(s)
- Sharps will **not** be recapped
- Hands will be cleaned – preferably with soap and water – after patient contact or contact with bodily fluids or potentially infectious materials
    - Waterless hand cleaners may be used until soap and water are available.
- Contaminated equipment will be cleaned and then disinfected.
- Personal protective equipment (*see above*) should be used to cover any areas that could provide a route for contamination or biohazard exposure

Vital Sign Ranges (Adult and Pediatric)

Normal Pediatric Vital Signs

Vary by age. Please refer to the chart below.

Age	Approximate Weight (kg)	Heart Rate (BPM)	Respiratory Rate (RPM)	Systolic BP (mmHg)
Premature	< 3	100 - 190	40 - 60	n/a
Newborn	3 - 4	90 - 190	30 - 60	50 - 70
6 months	5 - 7	80 - 180	25 - 40	60 - 110
1 year	10	80 - 150	20 - 40	70 - 110
3 - 4 years	15	80 - 140	20 - 30	80 - 115
5 - 6 years	20	70 - 120	20 - 25	85 - 120
7 - 9 years	25	70 - 110	20 - 25	85 - 120
10 - 12 years	35	60 - 110	15 - 20	95 - 135

Normal Adult Vital Signs

Heart Rate (BPM)	Respiratory Rate (RPM)	Systolic BP (mmHg)
60 - 100	12 - 20	90 - 120