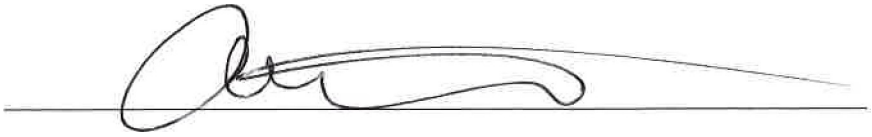
Pecan Plantation
EMS PROTOCOLS



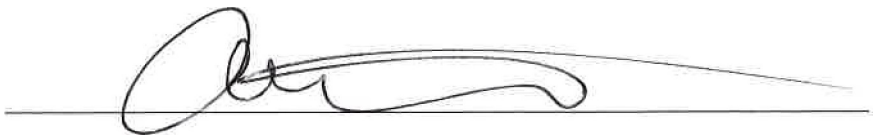
Dr. Erik Axene, M.D.

Medical Director

Effective Date: 9/8/2025
Expiration Date: 9/7/2025

EMERGENCY MEDICAL SERVICES AGREEMENT

I, Dr. Erik Axene M.D., do hereby agree to oversee all actions, treatment and transportation of Pecan Plantation EMS while serving as Medical Director. I attest to meeting requirements stated by the Texas State Board of Medical Examiners Chapter197. EMERGENCY MEDICAL SERVICE, 197.3 Off-Line Medical Director, and Texas. Department of health requirements for EMS Medical Director. I agree to notify the Pecan Plantation EMS within 30 days if I am unable to meet these requirements or no longer wish to provide this service.



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Medical Director

All medications on this list are subject to availability and may be on national backorder. Where indicated by an asterisk (*), *these medications may be considered optional or "if available" based on back-order status. Additionally, Medication concentrations on this list may be subject to temporary change based on availability as well*

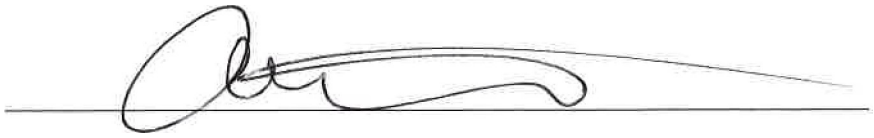
Adenosine	12mg single dose Vial	4
Amiodarone	450mg/9mL	2
Albuterol Sulfate (Ventolin)	2.5mg / 3mL single dose vial	3
Atrovent	0.5mg	3
Aspirin (acetylsalicylic acid)	81 mg tablet (bottle)	1 bottle
Ativan (Optional)*	4mg / 1mL Vial	3
Atropine	1 mg pre-filled syringe	4
Calcium Chloride	1G	1
Dextrose 10%	250mL pre-mixed bag	2
Diphenhydramine (Benadryl)	50mg / 1 mL Vial	2
Diltiazem Hydrochloride (Cardizem)	50 mg/ 10 mL vial	3
Etomidate (Optional)*	40mg 2mg/mL	1
Epinephrine 1: 1,000	1 mg Ampule or vial	2
Epinephrine 1: 10,000	1 mg pre-filled syringe	6
Fentanyl	100 mcg / 2mL vial	4
Glucose oral	15G	2
Ketamine	500mg / 10mL Vial	2
Ketorolac	30mg/mL	2
Lidocaine (Optional)*	100mg/10mL	4

Methylprednisolone	125mg vial	2
Magnesium Sulfate	1 G/ 2 mL	5
Naloxone (Narcan)	2mg pre-filled syringe	4
Nitroglycerin	0.4 mg tablets	1
Nitroglycerin Premixed	25mg/250mL or 50mg/ 250mL	1
Norepinephrine bitartrate (Norepinephrine)	4 mg/4mL	2
Ondansetron HCL (Zofran)	4mg / 2mL	4
Reglan	10mg/2mL	2
Rocuronium Bromide	50 mg/5 mL	2
Rocephin	1G/10mL	2
Sodium Bicarbonate 8.4 %	50 mEq	3
Tetracaine	0.5%/5mL	1
Versed (Midazolam)	10 mg / 2 mL vial	2
Xopenex	0.31mg/3mL	5
Disposable Hot/Cold Packs		4 each
60 mL Syringe		2
20 mL Syringe		2
10mL Syringes		5
3mL Syringes		5
1 mL Syringes		5
Saline Locks/ Extension set		4
Nebulizers for updraft medications (Adult/ Pedi)		2 each
Glucometer with test strips		1
Isolation Masks, including HEPA type masks		4
Water soluble lubricating jelly		4

Alcohol prep pads		20
	IV FLUIDS	
1,000 mL Bag Normal Saline (0.9%)		2
1,000 mL Bag Lactated Ringers		2
500mL Normal Saline *Optional		4
	DRIP SETS	
Select 3 Drip set		4
Sapphire full and half set		1 each
	NEEDLES	
25 gauge		4
22 gauge		4
18 gauge		4
Endotracheal (ET) tubes and Equipment		
2.5 ETT		2
3.0 ETT		2
4.0 ETT		2
5.0 ETT		2
6.0 ETT		2
7.0 ETT		2
8.0 ETT		2
Adult Magill Forceps		1
Pediatric Magill Forceps		1
Laryngoscope Set		1
Pediatric Macintosh Size 0,1		1 each
Pediatric Miller Size 0,1		1 each

Adult Macintosh size 2,3,4		1 each
Adult Miller 2,3,4		1 each
Bougie tube (Adult / Pedi)		1 each
Supraglottic airway (I-gel)		1 each
End Tidal *C02 (*ETT tube adaptor, Adult / Pedi nasal cannula)		2 each
IV CATHETERS (Angiocaths)		
14 gauge		4
16 gauge		4
18 gauge		4
20 gauge		4
22 gauge		4
24 gauge		4
MISC. EQUIPMENT		
Splint kit for extremities	Ie. SAM or Cardboard	1
Cervical Collar Adut/Pedi		2 each
CID Adult/Pedi		2 each
Stair Chair		1
Scoop stretcher		1
Oropharyngeal Airway devices		1 each
Backboards with straps		2
Nasopharyngeal Airway device		1 each
MCI/triage kit (25 MCI tags)		1
Mega mover		1
French Suction Catheter (8Fr, 12Fr, 16Fr)		1 each
OB Kit		1

Sapphire IV Pump	Optional
Intraosseous Infusion Kit (Adult and Pediatric)	1 each
Flashlight	1
Ventilator	Optional
Defib Tech CPR Device	1



Dr. Erik Axene, M.D.

Medical Director

STANDING ORDERS

The attached are “Standing Orders” for use by the Pecan Plantation Emergency Medical Services. A Hospital Emergency Department Physician must be contacted where indicated.

Personnel shall be covered by Pecan Plantation EMS protocols only while on duty and in state.

1) Pecan Plantation EMS personnel, if so, trained may perform any ALS skill at an emergency scene in the primary response area, or when called for mutual aid until an ambulance arrives to transport the patient. Practice of any advanced life support skills or procedures are conducted in accordance with the Medical Directors policy.

2) Pecan Plantation EMS personnel who are currently enrolled in a state approved EMT, EMT-Intermediate and EMT- Paramedic training courses may perform basic or advanced skills ***ONLY*** ***while on an approved rotation.*** It is not acceptable to perform skills outside of an approved rotation.

Medical Control

Pecan EMS Personal will use **Pecan Plantation EMS Medical Director or alternate Medical Director**. Pecan EMS Personal will contact Medical Control on established number at 951-491-5691.

DEFINED SCOPE OF PRACTICE

A. EMT-B

- Patient assessment
- Vital signs
- Oxygen administration
- Capnography
- Spinal immobilization
- Bandaging/Splinting
- Glucometer
- Oral glucose administration
- Automatic External Defibrillation (AED)
- CPR
- Basic airway maintenance (OPA, NPA, BVM)
- Nitroglycerin (after obtaining BP and saline lock)
- Administration of nebulized bronchodilator treatment, up to three
- Administration of intramuscular injections (Adults Only)
- Placement of a supraglottic airway device.
- Obtaining IV and IO access (after approved training)

B. EMT-I

All the above and.

- Endotracheal intubation
- IV administration with fluids

C. EMT-P

All the above and.

- Cardiac monitoring
- 12 lead ECG interpretation
- Manual defibrillation
- Cardioversion
- Cardiac pacing
- Medication administration
- Other procedures as defined as ALS in the protocol

Vital Signs:

It is expected that all patients will receive vital signs including blood pressure, pulse, pulse oximetry and respirations although it is not specifically noted in individual protocols.

Vital signs require every 5 minutes on vasoconstrictive medications. 10 minutes for trauma. 15 minutes for stable transports.

INTERPRETATION OF PROTOCOLS

A. The following situations will be considered recommended transports by the **MEDICAL DIRECTOR**, when they are encountered in the pre-hospital setting. The medic should make every effort to encourage the patient to accept treatment and transport to a medical facility.

- If the patient refuses treatment and transportation, the medic will explain the potential consequences of nontreatment and/or non-transportation to the patient and document this on the patient form
- If the adult patient still refuses, and appears to be mentally competent, then appropriate documentation should be completed and signed by the patient. It is strongly suggested that the medic obtain the signature of a witness. Document the mental capacity and competence of the refusing patient.
- If the adult patient still refuses, and is not mentally competent, involve the police to affect transport - Document Police contact the medic should perform a complete patient assessment and use good common sense when determining whether to transport. If there is any doubt, then transport the patient.
- If an appropriate adult or legal guardian refuses transport or care of a minor, document the mental status and appropriateness of the signing adult.
- If the patient has been given any medication and refuses transport, it is recommended that you consult Medical Direction prior to release from care.

B. Criteria for Recommended Transports

- **Shortness of breath.**
- **All chest pain in patients over the age of 25.**
- **Abdominal pain with any of the following:**

  - ➢ Positive orthostatic (BP drops of 10 mmHg or pulse increase of 10)
  - ➢ Rebound tenderness
  - ➢ Guarding or rigidity
  - ➢ Hematemesis (vomiting blood)
  - ➢ Temperature greater than 99.5
  - ➢ Previous abdominal surgery
  - ➢ Jaundice
  - ➢ Any patient without alternate means of transportation
  - ➢ Pregnant

- **Overdoes (intentional or accidental)**
- **Unconsciousness**
- **Seizures with any of the following:**

  - ➢ Out of medication
  - ➢ First time seizure
  - ➢ Patient actively seizing
  - ➢ More than one seizure
  - ➢ Pregnancy
  - ➢ Associated with history of trauma
  - ➢ Patient is post-ictal state from previous seizure
  - ➢ With a temperature greater than 99.5F
  - ➢ Patient with BP lower than 90/50 or greater than 150/90

- **Pregnancy:**

  - ➢ Blood Pressure of 140/90 or greater
  - ➢ With seizure activity
  - ➢ Any labor prior to the 9th month
  - ➢ Any unusual vaginal bleeding
  - ➢ Ruptured water
  - ➢ Any abdominal or back pain

- **Motor Vehicle Collisions:**

  ➢ All patients involved in an MVA shall be encouraged to go to the hospital

- **All Stab wounds (deep or superficial) All Gunshot wounds**
- **Age:**
  - ➢ Any patient who is unable to effectively communicate or express symptoms, especially children and the elderly.
  - ➢ Any patient under the age of 18 (trauma or medical) without parent or guardian on scene.

- **Shock (any patient presenting with pale, cool, wet skin)**

C. <u>Trauma destination</u>

- The primary paramedic or EMT of each unit is responsible for determining the patient's destination.

- Trauma facilities are designated at Level I, II, III, and IV trauma centers with Level I and II offering the highest level of care.

  - ➢ Level I and II trauma centers provide comprehensive evaluation and treatment for major trauma by a trauma team.
  - ➢ Level III and IV trauma centers are expected to manage most injuries and transfer the patients requiring "Trauma Team Activation" for treatment of serious injuries.

A. <u>Definition of Major Trauma in adult and pediatric patients:</u>

- Multi-system; blunt or penetrating trauma with unstable vital signs:
  - ➢ <u>Adult Vitals</u> (Blood Pressure < 90 mm/Hg, HR > 120, RTS < 11, GCS < 14).
  - ➢ Penetrating injury to the head, neck, torso, groin
  - ➢ Amputation with re-implantation potential
  - ➢ Crushed, De-gloved, or Mangled extremity
  - ➢ Paralysis or other signs of spinal injury Ø Flail chest
  - ➢ Open or suspected depressed skull fracture

- ➢ Unstable pelvis or suspected pelvic fracture Ø Two or more long bone fractures Ø Any high energy events such as:
  - Ejection from vehicle
  - Significant fall (20 feet or greater)
  - Rollover mechanism greater than 90%
  - Bent steering wheel
  - Auto vs Pedestrian / Bicyclist thrown, run over, or with significant (>20mph Impact)
  - Motorcycle Crash > 20 mph
- Multi-system; blunt or penetrating trauma with unstable vital signs:
  - ➢ Pedi (Blood Pressure {Neonate < 60 mmHg, Infant < 65 mmHg, Child 2-5 yr. < 70 mmHg, Child 6-12 yr. < 80 mmHg
  - ➢ Respiratory rate <10 or >60
  - ➢ RTS < 9, GTS < 14

B. Other Considerations:

- End-stage renal disease requiring dialysis
- Pregnancy > 20 weeks
- Age > 55 years old
- Anticoagulation and bleeding disorders
- Burns:
  - ➢ Without other trauma mechanism: Triage to burn center
  - ➢ With trauma mechanism: Triage to Trauma center
  - ➢ Use EMS PROVIDER JUDGEMENT

C. EMTALA and Diversion:

- As mandated by the Emergency Medical Treatment and Labor Act (EMTALA) of 1986, hospital receiving facilities must see all patients who present for treatment, regardless of the patient's ability to pay or presenting complaints. As such, all diversion attempts are *requests* which may be *superseded* at the discretion of the pre-hospital provider.

AIR EVACUATION GUIDELINES

Purpose

The purpose of this Air Evacuation Guideline (AEG) is to provide pre-hospital providers with guidelines for accessing air evacuations services for severely injured patients.
Several factors must be considered before summoning an aero medical device for a scene response (this document is not intended for transfer issue guidelines).

Process

Trauma Service Area E (TSA – E) is very diverse in geography and resources so no guideline can address all issues. Each EMS entity should develop local guidelines for Air Evacuation that addresses response and transport times and the capabilities of their local hospitals. EMS Medical Directors in their respective areas should develop guidelines that address local issues combined with the guidelines suggested in this document. Some areas may have to increase the time allotments included in this document to account for greater distances to trauma centers. **Above all, the primary determinant is to get the patient to the most appropriate facility in the shortest amount of time.**
TSA – E has organized and sanctioned the activities of the Air Medical Committee which will assist, upon request, any area with implementation and customization of air services in their respective areas.

GUIDELINES

A. The following criteria justify (but do not mandate) air evacuation for **adult trauma patients:**

- Transport time to the nearest trauma facility by ground is greater than the response time and transport time to nearest Level I/II Center by air.
- The number of critically injured patients exceeds the capabilities of local EMS agencies, or the transport times of these patients would leave the local community with no EMS coverage for an unacceptable amount of time.
- Ambulance access to the scene is impeded by road conditions, weather, or traffic.

B. The following listed criteria should be used in context with the operational issues discussed above:

- Multi-system trauma, either blunt or penetrating with vital signs as such HR > 120/min, BP < 90 mmHg, GCS < 12, RTS < 11
- Penetrating injury to head, neck, torso, abdomen, or groin.
- Burns > 20% TBSA (2nd or 3rd) or involving face, airway, hands, feet, genitalia (go to burn center primarily)
- Amputation is proximal to wrist or ankle.
- Paralysis or other signs of spinal cord injury
- Open or unstable pelvic fracture

- Two or more proximal long bone fractures
- Age > 55 years old

C. The following criteria justify (but do not mandate) air evacuation for **pediatric trauma patients:**

ALL OF THE ABOVE APPLY TO PEDIATRICS AS WELL WITH THE FOLLOWING ADDITIONAL PARAMETERS:

In addition, the following criteria justify air evacuation for the ***pediatric trauma patient (***birth up to their 15th birthday defines pediatrics). If the injured pediatric patient meets the adult criteria alone and/or the following criteria, then the ***pediatric trauma patient*** should be air evacuated:

- Injury with signs of shock – see table below for parameters.
- Risk for developing respiratory failure or respiratory arrest – see table below for parameters.
- Facial or tracheal injury with airway compromise.

Pediatric Shock and Respiratory Compromise Table

AGE GROUP	HEART RATE	PULSE CHARACTER	BLOOD PRESSURE (mmHg)	RESPIRATORY RATE (BREATHS/ MIN)	CNS
Birth to 6 months	> 190	Weak thready central pulses Absence of peripheral pulses	< 60	> 70	Change in level of conscious ness, dulled response to pain, or comatose
Infant	> 176	Same	< 75	> 50	Same
Preschool	> 132	Same	< 85	> 40	Same
Adolescent	> 120	Same	< 95	> 30	Same

Refusal of transport

All Pecan Plantation EMS personnel must understand that patient refusal of care is the right of every patient that is competent. This represents a substantial risk in many cases and every attempt should be made to convince the patient that you are trying to care for them appropriately. If the patient still adamantly refuses care, utilize the following protocol. Always explain that we are more than happy to return and resume care and that no one will be angry. Always be courteous and professional. Under no circumstances will rude or disrespectful behavior be tolerated.

1. Perform complete patient assessment including vital signs, unless they refuse. If the patient refuses treatment and transport, explain the need for evaluation by an emergency department physician. If the patient still refuses treatment and transport, obtain an AMA signature from the patient along with witness signatures.

2. If the patient does not allow an assessment or vital signs, document a visual exam and attempt to obtain the patient's signature for refusal of the exam. Patient refusals require a witness signature if possible. Use partner as last resort.

3. If the patient's condition is serious or the patient has potential for complications, contact medical control.

4. Strongly consider factors such as alcohol or substance intoxication, or psychiatric conditions that may prevent the patient from providing a legal refusal. Consider law enforcement intervention if the patient has a psychiatric condition that prevents legal consent/refusal or is refusing care for a critically ill minor. Adult or Child protective services notification may be warranted.

5. Patient must have Present Mental Capacity and not pose a threat to themselves or others. This is particularly important for psychiatric patients that are conscious, alert and orientated to person, place, time and event who may pose a threat to themselves and/or others.

6. The Pecan Plantation EMS does not allow **Paramedic-initiated** refusals.

7. For a call to be cleared with a disposition of "No Patient" or "No Sick or Injured" the subject contacted must not meet the criteria of what is a "patient".

    - a. A patient is anyone that has a medical or trauma complaint, illness, injury or self-harm by injury or overdose.
    - b. Call type changes i.e. A fall to a lift assist requires a chart outlining the circumstances of the call for service. (Assist chart)
    - If the patient has an injury or illness, every possible effort should be made to explain the seriousness of the injury or illness

Refusal to be transported to a local facility: Frequently we encounter those who refuse to be transported to the local facility. It is the policy of the Pecan Plantation EMS to transport the patient to the **closest, most appropriate** facility to treat the patient's condition. We will honor hospital preferences based on patient request, patient physician preference at the discretion of the lead Medic.

If despite multiple attempts the patient refuses transport locally, have the patient sign a refusal and provide them with the requested facility.

Thoroughly document any patient examination and patient refusal.

CLIMATE CONTROL OF MEDICATIONS

This protocol provides guidelines for the storage and handling of temperature sensitive medications. Climate control of medications is required to ensure usability of the drugs and safety for the patient. A climate control policy is required by the Texas Department of Health upon renewing the EMS Provider License.

1. Temperature of medication storage areas such as in the Medic unit or first-in kits will be monitored by thermometers with high and low memory. The recorded memory temperatures will be checked periodically to monitor ambient temperatures that the medications are exposed to.

2. While outside the station, Medic unit engines/generators will remain running and patient compartment air/heat will remain on.

3. If it is discovered that medications have been exposed to temperature ranges outside the recommended range, they will be replaced by Paramedic with notification to EMS Chief.

   These guidelines only ensure appropriate ranges once the medication arrives and is placed in service. Prior to delivery, the manufacturer, supplier, and deliverer must provide protection to the medication.

RESUSCITATION GUIDELINES

The following are guidelines regarding resuscitation in the field. Good judgment and common sense shall be used in the application of the guidelines.

1. The paramedic should be cognizant of the following facts:

A. Persons in V-Tach, V-Fib, PEA, and Asystole can potentially be resuscitated.
B. "Time down" is an inaccurate parameter for resuscitation, as the patient could have been in bradycardia or simply unconscious, yet still perfusing blood to the brain. Additional information received from bystanders regarding time is often inaccurate.
C. Pupil size and response to light can be inaccurate as medications taken orally or intraocularly can affect them. Additionally, children and hypothermic victims may have fixed and dilated pupils from anoxia, yet they may be resuscitated without neurological deficit.

2. Resuscitation **need not** be attempted in the field in cases of:

A. Decapitation
B. Decomposition
C. Rigor Mortis
D. Dependent Lividity
E. Visual massive trauma to the brain or heart that is conclusively incompatible with life.

3. Multiple Casualty Situations – In these situations, the acceptable triage protocol will apply.

4. Texas out of hospital DNR – Patients with valid Texas out of hospital DNR orders will not be resuscitated unless foul play is suspected or if the patient is pregnant. Physician contact is not required unless DNR dispute resolution is needed.

5. Living Wills – The paramedic's actions should not be changed by a living will be described or produced by the family or bystander unless accompanied by a DNR.

TERMINATION OF RESUSCITATION ORDERS

1. Resuscitation efforts on patients with non-traumatic cardiac arrest receiving full ACLS treatments may be terminated after ***twenty minutes (20)*** of full ACLS including intubation/airway control and with **Medical Control Orders**

Field resuscitation efforts will not be terminated:

A. In patients with hypothermia

B. When there has been a return of pulse during resuscitation efforts

C. When the family is uncomfortable with termination of field resuscitation efforts

D. In patients with ETCO2 readings >10mmHg

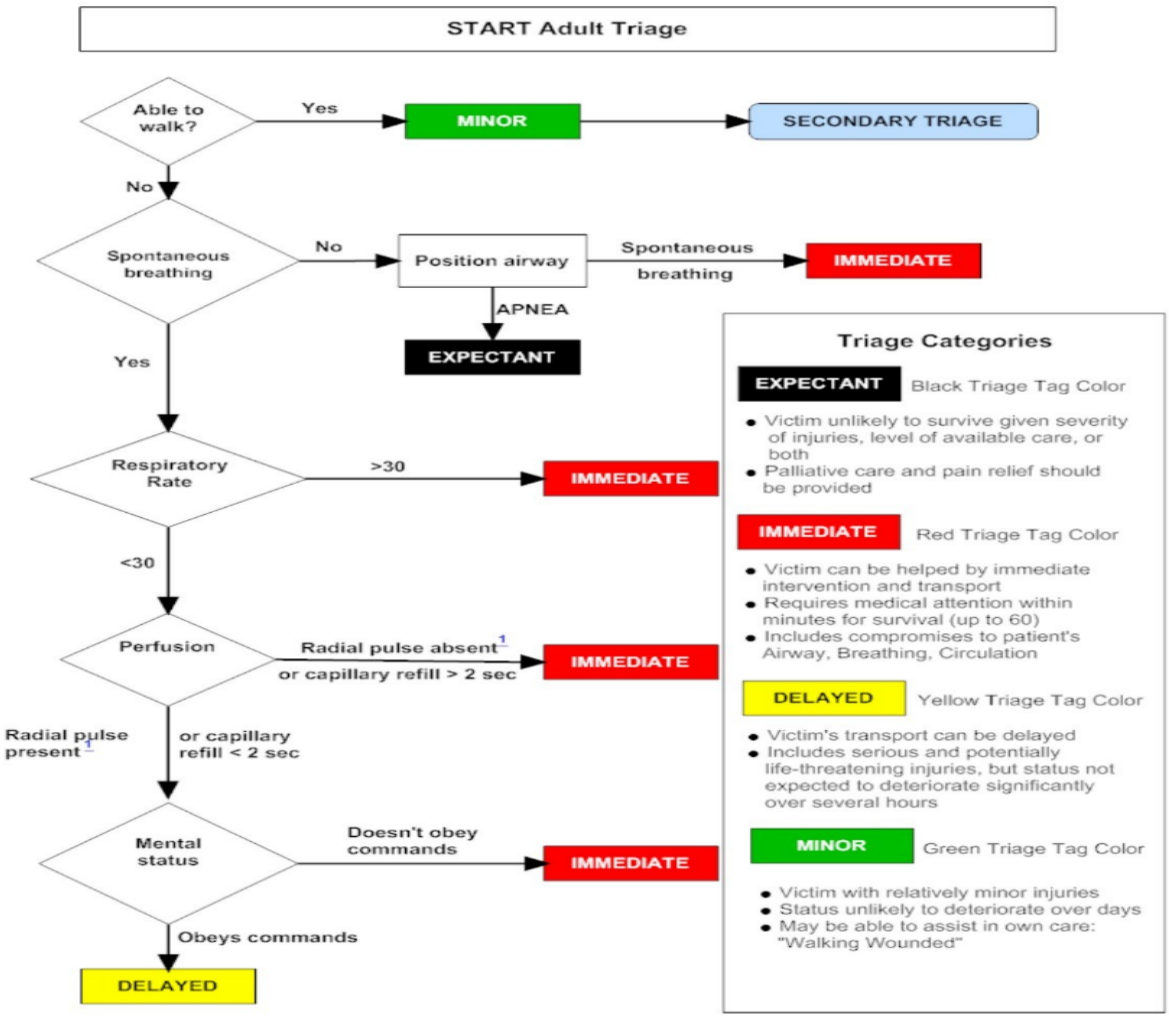
2. The patient should not be left unattended in a public place unless Law Enforcement Officers are on scene and will assume responsibility of the deceased person.

MASS CASUALTY INCIDENTS

1. First arriving EMS unit will establish triage and alert for the need of additional resources.

2. Using the “START” method (simple triage and rapid treatment) Patients will be categorized by severity of injuries using the multi-tags placed on one of the patients 4 extremities with preferred placement on the left arm/wrist.

3. Patients will be color categorized and numerically prioritized using the multi-tags as follows:



ADULT MEDICAL PROTOCOLS

(15 years and older)

AIRWAY OBSTRUCTION

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact
2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining blood glucose.
3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg
4. Suction as necessary
5. IV/IO Access as necessary

ADVANCED LIFE SUPPORT

5. If the airway is still obstructed, perform **direct laryngoscopy.** Attempt to remove foreign bodies with **McGill Forceps.**
6. Clinched jaw with respirations under 8 per minute or a SP02 less than 80% may require RSI to facilitate direct laryngoscopy.
7. Continuous Cardiac Monitoring.
8. Initiate **IV 0.9% NS** and infuse at rate needed to maintain BP above 90 mmHg systolic.

NOTE: Transport to the most appropriate facility. *IF AIRWAY COMPLETELY OBSTRUCTED AND UNABLE TO CLEAR/VENTILATE, TRANSPORT RAPIDLY TO THE CLOSEST MEDICAL FACILITY.

NOTE: If at any time the airway becomes un-obstructed and patient ventilation is successful, administer oxygen; titrate to maintain SpO2 at or above 94% or EtCO2 at 35-45 mmHg.

ALLERGIC REACTIONS

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact
2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining a blood glucose.
3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg
4. Consider nebulized updraft of **Albuterol 2.5 mg if the patient is wheezing,** max 3 doses. Consider nebulized updraft of **Atrovent 0.5 mg,** max 1 dose
5. **Epinephrine 1:1,000 0.5 mg (IM)**
6. If necessary, assist the patient's respirations with **BVM**
7. IV/IO access as needed
8. **Benadryl 25mg IM Once adult only**

ADVANCED LIFE SUPPORT

8. **Benadryl 25-50mg IV/IM**. (for allergic reactions and dystonic reactions)
9. Initiate **IV 0.9% Normal Saline** and infuse at rate needed to maintain BP above 90 mmHg systolic.
10. Continuous cardiac monitoring and consider 12 lead ECG.
11. **Methylprednisolone 125 mg slow IV/IM**
12. Monitor for necessity to intubate

ANXIETY

Scene safety and prevention of escalating a situation are essential.

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact
2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Obtain blood glucose.
3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg
4. Obtain medical history
5. Consider removing the patient from the current environment to facilitate de- escalating the anxiety attack.
6. IV/IO Access as necessary

ADVANCED LIFE SUPPORT

NOTE: Medication administration should only be performed when the patient's anxious behavior becomes detrimental to their condition and prevents EMS from treating the patient appropriately.

7. If **severe anxiety** behavior continues, Consider
   Ativan 1-2 mg IV/IM OR Versed 1-2 mg IV/IM. May repeat once
8. Consider **Continuous Cardiac Monitoring** and **EtCO2. Mandatory if medication were administered.**
9. Consider **IV NORMAL SALINE or Saline Lock.**

BRADYCARDIA

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact
2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining blood glucose.
3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg
4. IV/IO Access as necessary

ADVANCED LIFE SUPPORT

1. Obtain **12 Lead ECG** upon initial contact.
2. Continuous monitoring
3. Initiate **IV 0.9% Normal Saline** and infuse at rate needed to maintain BP above 90 mmHg systolic.
4. If **3rd Degree Heart Block is not present**, administer **Atropine 1 mg IV/IO,** repeat **Atropine 1 mg IV/IO** bolus every five (5) minutes up to a maximum dosage of **3 mg.**
5. If patient is **Responsive**, hypotensive (systolic < 100 mmHg) and still exhibiting bradycardia initiate **Transthoracic Pacing**.
6. Consider pre-medicating the patient with

    A. Versed 2-5 mg IV/IO/IM (For Amnesia).

    OR

    B. Ketamine 0.3mg/kg slow IV push if blood pressure is a concern

NOTE: Pay particular attention to the patient's blood pressure when medicating with either option from "7" above.

CARDIAC ARREST / ASYSTOLE

BASIC LIFE SUPPORT

1. **Initiate CPR.** CPR should be performed for two full minutes prior to any other intervention. **Oxygen should be applied by bag valve mask**. CPR should be performed by Automated CPR Compression Device whenever possible for optimum CPR. Monitor in AED Mode

2. Check airway and place supraglottic airway **WITHOUT INTERUPTION** of CPR and begin assisting ventilations for the patient with EtCO2 monitoring device attached to a BVM.

3. IV/IO Access as necessary

ADVANCED LIFE SUPPORT

3. Confirm **Asystole** in 2 continuous leads. If the rhythm is unclear and possibly ventricular fibrillation, go to the ventricular fibrillation protocol.

3. If after two unsuccessful intubation attempts, or if Spinal immobilization may be compromised, use alternate airway management protocol.

4. Administer **Epinephrine 1:10,000 1 mg IV or IO**. Repeat the initial dosage every 3 - 5 minutes as needed. **Max of 3mg**

Consider termination.

CARDIAC ARREST / PULSELESS ELECTRICAL ACTIVITY (PEA)

BASIC LIFE SUPPORT

1. **Initiate CPR.** CPR should be performed for two full minutes prior to any other intervention. **Oxygen should be applied by bag valve mask**. CPR should be performed by Automated CPR Compression Device whenever possible for optimum CPR. CPR Assist function on the monitor should be used whenever possible for optimum CPR. Monitor in AED Mode

2. Check airway and place Supraglottic or perform endotracheal intubation per scope of practice, **WITHOUT INTERUPTION** of CPR and begin assisting ventilations for the patient with **EtCO2** monitoring device attached to a BVM.

3. IV/IO Access as necessary

ADVANCED LIFE SUPPORT

4. Continuous Cardiac Monitoring.

5. Perform **endotracheal intubation**.

6. If after two unsuccessful intubation attempts, or if Spinal immobilization may be compromised, use alternate airway management protocol.

7. Initiate **0.9% Normal Saline IV/IO** and infuse. spontaneous pulse returns, follow post -resuscitation protocol.

8. Administer **Epinephrine 1:10,000 1 mg IV or IO**. Repeat dosage every 3-5 minutes as needed. **Max of 3mg**

9. Consider **Calcium Chloride 1G IV/IO** and **1 MEQ/KG Sodium Bicarbonate IV/IO** for hyperkalemia.

CARDIAC ARREST / VENTRICULAR FIBRILLATION AND VENTRICULAR TACHYCARDIA WITHOUT A PULSE

BASIC LIFE SUPPORT

1. **Initiate CPR.** CPR should be performed for two full minutes prior to any other intervention.

2. Check airway and place Supraglottic airway, **WITHOUT INTERUPTION** of CPR and begin assisting ventilations for the patient with EtCO2 monitoring device attached to a BVM.

3. IV/IO Access as necessary

ADVANCED LIFE SUPPORT

3. If witnessed, **Defibrillate** immediately at **360 Joules**. Re-evaluate rhythm and pulse. **Initiate CPR**.

4. If unwitnessed **initiate CPR**. CPR should be performed for two full minutes prior to any other intervention. Administer **Oxygen** via bag valve mask. Use **Automated CPR Compression Device.**

5. Perform **endotracheal intubation**.

6. If after two unsuccessful intubation attempts, use alternate airway management protocol.

7. Initiate **IV or IO 0.9% Normal Saline** and infuse minimum of 1000 mL

8. Administer **Epinephrine 1:10,000 1mg IV/IO**. Repeat dosage every 3-5 minutes as needed. **Max of 3mg**

9. **Administer Amiodarone 300mg IV Push**. May repeat once at **150mg** as needed. Or **Lidocaine 1mg/kg repeat at 0.5mg/kg** max of **3mg/kg**

10. Administer **Magnesium Sulfate 1 to 2 gram IV/IO** for Torsade de Pointes.

CHEST PAIN

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact
2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining blood glucose.
3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg
4. Administer **Aspirin 324 mg** PO. Have patient chew aspirin and swallow.
5. IV/IO access as necessary
6. Consider **Nitroglycerin 0.4 mg** sublingually and can repeat twice (2) if B/P is above 110 mmHg systolic.

ADVANCED LIFE SUPPORT

1. Continuous cardiac monitoring.
2. Perform **12 Lead ECG** within 5 minutes from arrival to patient. Consider **15 Lead ECG**.
3. Consider repeating 12-lead every 15 minutes.
4. Initiate **IV 0.9% Normal Saline** and infuse at rate needed to maintain BP above 100 mmHg systolic. If the patient is having an **INFERIOR WALL** myocardial infarction, administer **500-1000 mL 0.9% Normal Saline bolus** prior to **Nitroglycerin** administration.
5. Consider **Nitroglycerin 0.4 mg** sublingually and can repeat three (3) if B/P is above 100 mmHg systolic. May Consider **Nitroglycerin IV** starting at **10 mcg/min**, using IV pump. **Titrate to effect.**
6. Consider **Fentanyl 50mcg – 100mcg IV/IM/IO** for pain relief.

Pre-Hospital treatment of STEMI or other Acute MI

7. If the patient is adamantly refusing transport to a PCI capable hospital, transport to the destination of choice, but alert the facility as soon as possible and state the patient is having STEMI/Acute MI but refusing transport to a PCI hospital.
8. The medic in charge should consider aeromedical transport if this method of transport decreases the transport time by at least twenty (20) minutes.

9. Transport should be without lights and siren if patient condition allows, avoiding catecholamine stimulation.

10. Call report to the destination as soon as possible. Notify them in clear terms that your patient has STEMI/Acute MI. Ask them to notify the cath lab or begin their MI alert procedures or other pre-hospital activation.

Indications for STEMI/acute MI on 12-lead ECG

1. ST elevation more than 1mm in 2 contiguous limb leads

2. ST elevation more than 2mm in 2 contiguous chest leads

3. New or Presumed new Left Bundle Branch Block (LBBB)

4. ST depression in V1 - V4 with R wave in V1 - V2 (posterior infarct)

Special Notes:

a. *Do not use Nitro if patient on Erectile Dysfunction Drugs (Cialis, Viagra), over the past* ***48 hours****.*

b. *Cautious use of Nitro if patients have known Aortic Stenosis. Watching hypotension*

CONGESTIVE HEART FAILURE

Patients usually have respiratory distress with rales, tachycardia, and normal or elevated blood pressure, may or may not have chest discomfort, usually has bilateral leg swelling.

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact
2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining blood glucose.
3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg
4. IV/IO access as necessary

ADVANCED LIFE SUPPORT

5. Continuous cardiac monitoring.
6. Perform a 12 lead ECG. Consider 15 lead ECG.
7. Consider using CPAP/BiPAP
8. Initiate **IV 0.9% Normal Saline** and infuse at rate needed to maintain BP above 100 mmHg systolic. **Norepinephrine 2mcg/min titrate to effect.**
9. May Consider **Nitroglycerin IV** start at **10 mcg/min**, using IV pump. **Titrate to effect**
10. Consider **Fentanyl 50mcg – 100mcg** for pain relief.
11. Consider **Zofran 4mg repeat once to max 8mg, or Reglan 5mg repeat once** for nausea**.**
12. **Perform RSI** if Patient has a GCS <8, is still in Respiratory Distress with SPO2 below 88%, ETCO2 >50 mmHg**, and has signs of exhaustion** that has failed to respond to all other interventions.

DIABETIC / ALTERED MENTAL STATUS

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact
2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels.
3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg
4. Perform blood glucose level test. Perform q5 for D10 administration.
5. Consider **15 Grams Oral Glucose** orally, if glucose level is below **70 mg/dl** and patient is conscious and oriented enough to safely swallow.
6. IV Access as necessary
7. Consider **Dextrose 10% IV 250mL** if glucose level is below **70 mg/dl** and patient is unable to safely swallow.

ADVANCED LIFE SUPPORT

6. Continuous cardiac monitoring.
7. Consider **IV 0.9% Normal Saline or saline lock** and infuse at rate needed to maintain systolic BP of at least 100 mmHg.
8. For **Hyperglycemia and Diabetic Ketoacidosis:** Consider fluid bolus of **1000mL 0.9% Normal Saline**. These patients require transport to an ED for further treatment. **Be cautious in patients with CHF not to fluid overload**.

HYPERTENSIVE CRISIS

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact
2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining blood glucose.
3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg
4. IV/IO access as necessary

ADVANCED LIFE SUPPORT

4. Obtain 12 lead ECG
5. Continuous Cardiac Monitoring
6. Initiate **IV 0.9% Normal Saline** and infuse at rate needed to maintain BP above 100 mmHg systolic.

NOTE: If patient still has hypertension with MAP > 120, with **Associating Symptoms**; headache, altered mental status, dyspnea, and chest or abdominal pain. Pulse should be above 60 bpm.

7. Administer **Labetalol 20 mg may** repeat at **40 mg** after 10mins as needed.
8. **Nitroglycerin IV started at 10mcg/min** using IV Pump, for continued hypertension, post previous treatments.
9. Check BP at 5 and 10 minutes after administration.

HYPOTENSION

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact
2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining blood glucose.
3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg
4. IV/IO access as necessary
5. **TRANSPORT BY MOST APPROPRIATE MEANS IMMEDIATELY** to the closest facility.

ADVANCED LIFE SUPPORT

5. Continuous cardiac monitoring; consider 12 lead ECG
6. Initiate IV or IO with a large bore catheter. Infuse a **1000mL bolus of 0.9% Normal Saline** for SBP <90 mmHg (goal SBP 90-110 mmHg).
7. ***After 1000mL** **Bolus EPI 1/100,000 administer 10mcg– (discard 1mL of NS flush and replace with 1mL EPI 1/10,000). *Administer 1mL. (10mcg/mL)*. DISCARD syringe with remaining 9mL in syringe.**
8. ***After 1000mL** **Norepinephrine IV drip –using IV pump. Blood pressure should be maintained 90-110 mmHg.**

NAUSEA / VOMITING

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact

2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining a blood glucose.

3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg

4. IV/IO access as necessary

5. **Zofran 4 mg IM ONLY** for Nausea

ADVANCED LIFE SUPPORT

5. Consider cardiac monitoring. *Consider 12 lead ECG for prolonged QT syndrome*

6. Consider **IV 0.9% Normal Saline** or **Saline Lock**. Infuse at rate needed to maintain systolic B/P of 100 mmHg or above.

7. Consider **Zofran 4 mg** for Nausea. May repeat once in 15 minutes. **Max of 8 mg.**

8. Consider **Reglan 5mg** for nausea or vomiting. May repeat once in 15 minutes **Max of 10mg**.

OVERDOSE / POISONING

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact. **CONTACT POISON CONTROL 1-888-222-1222**
2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining blood glucose.
3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg
4. Obtain **Medical History** of occurrence (what, when, where, any drugs and/or alcohol ingestion, circumstances of incident). All efforts should be made to obtain medication bottles and transported to the hospital along with the patient.
5. Consider **Naloxone 0.5-2.0 mg IN**, for respiratory depression if narcotic use is suspected. May repeat once if there is no response.

ADVANCED LIFE SUPPORT

6. Continuous cardiac monitoring.
7. Consider **IV 0.9% Normal Saline or Saline Lock** and infuse at TKO rate.
8. Consider **Naloxone 0.5-2.0 mg IV/IM/IN/IO**, respiratory depression with narcotic use suspected. May repeat twice if there is no response. **Max of 6mg**

NOTE: ONLY REVERSE NARCOTIC OVERDOSE IF RESPIRATORY DEPRESSION IS PRESENT.

1. Consider **Sodium Bicarbonate 1 mEq/kg** for **Tricyclic** overdose and tachycardia.
2. Consider **Benadryl (Diphenhydramine) 25- 50 mg**, for Dystonic reactions (involuntary muscle contortions)
3. Consider **Atropine 2mg IV/IO** for organophosphate poisoning.

NOTE: Every attempt should be made to convince attempted suicide patients to allow EMS to transport the patient to the hospital. Law enforcement intervention may be necessary to ensure transport and/or restraint. **Those with intent of harming themselves or others have NO ability to refuse treatment/transport. Patients with intentional overdose shall be transported to closest, most appropriate**

OB / BLEEDING

BASIC LIFE SUPPORT

1. Assure **ABCs** are intact.
2. Place Patient partially on **left side**.
3. Obtain **SpO2** and consider **End-Tidal CO2** levels.
4. Administer **Oxygen,** titrate to maintain SpO2 at or above 94% or ETCO2 at 35-45 mmHg.
5. Obtain **Vital Signs**.
    A. Place **absorbent dressing** on vagina and have patient hold legs together.
    B. **TRANSPORT** to the closest, most appropriate facility.
    C. **Notify receiving facility** as soon as possible.
6. Report amount of blood-soaked absorbent dressings to receiving facility.
7. IV/IO Access as necessary

ADVANCED LIFE SUPPORT

7. Continuous Cardiac Monitoring.
8. Initiate **IV 0.9% Normal Saline** or **Saline Lock** and infuse at rate needed to maintain BP above 100 mmHg systolic.

OB / LABOR

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact
2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining a blood glucose.
3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg
4. Place patient in position of comfort slightly on left side.
5. Check for contractions. Note frequency and duration of contractions.
6. **Check for crowning.**
7. If patient is crowning, and this is a single birth delivery; refer to the appropriate presentation protocol and deliver on scene.
8. If patient is crowning, and this is a multiple birth delivery, begin transport immediately. If delivery is necessary, refer to appropriate presentation protocol and delivery enroute.
9. Transport patient to the **closest appropriate facility** available to handle delivery, maternal and neonatal care.
10. IV/IO access as necessary

ADVANCED LIFE SUPPORT

10. Initiate **IV NORMAL SALINE** with a large bore catheter.
11. Continuous cardiac monitoring.

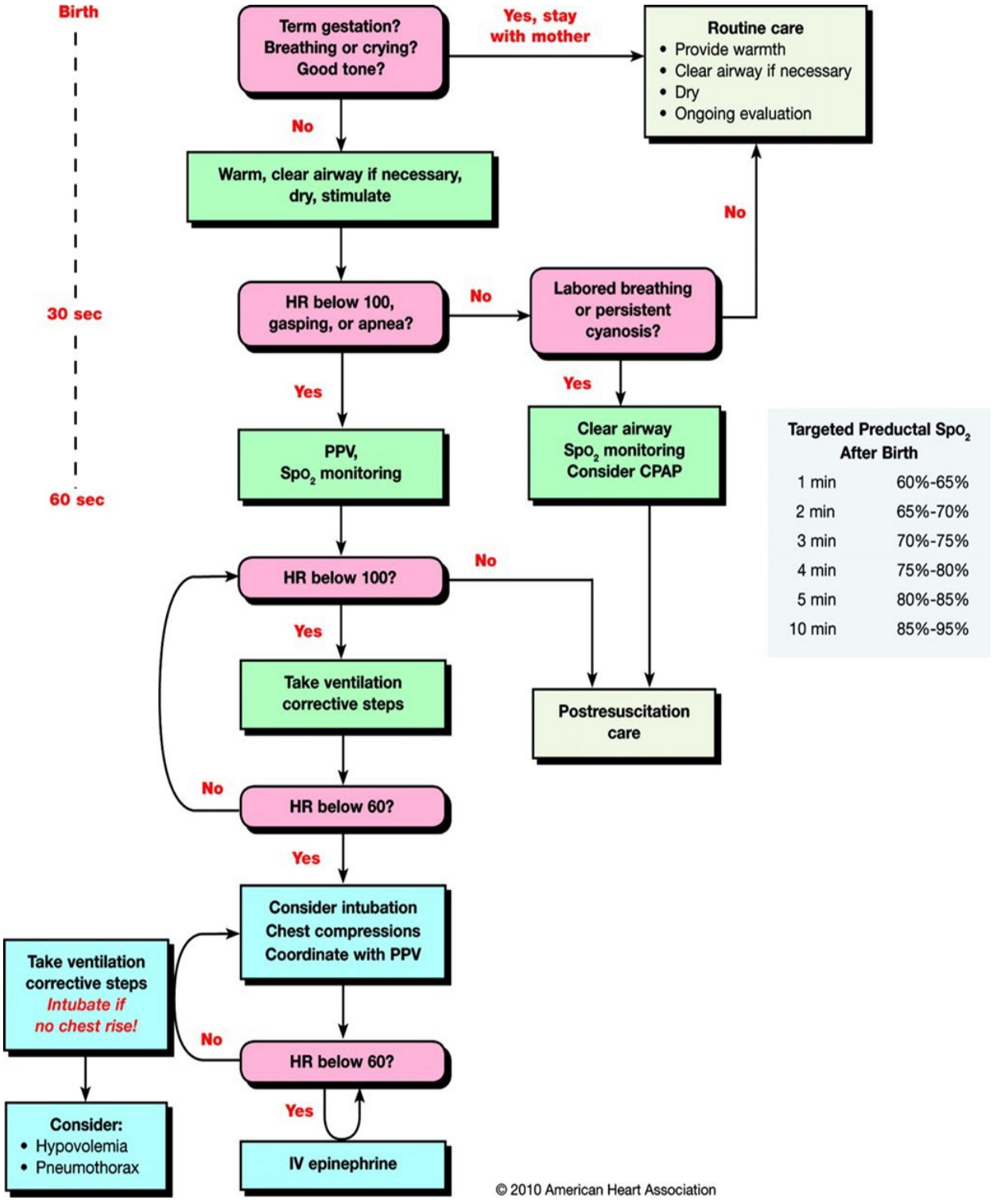
OB / NORMAL DELIVERY

BASIC LIFE SUPPORT

1. Prepare a sterile OB kit
2. Place patient in comfortable, easily accessible position
3. Tell mother to breathe deeply between contractions and to push with contractions
4. As the head crowns, control it with gentle pressure
5. If umbilical cord is around infant's neck, gently slip it over the head to free it
6. Allow mother to push, support infant's head as it rotates
7. Place baby above the level of the vagina
8. Clamp umbilical cord as follows:
    1. First clamp, 10 cm from the baby
    2. Second clamp, 5 cm above the first clamp toward the baby
9. Cut cord between the clamps
10. Suction infant with bulb syringe **only if baby is not vigorous** or thick **meconium** is **not** present. If present, see ALS guidelines below.
11. Dry, warm, and stimulate. Assess APGAR at 1 and 5 minutes.
12. Prepare for delivery of the placenta. **Do not pull on the umbilical cord**
13. If the mother continues to bleed, gently massage the uterine fundus until it becomes hard.
14. IV/IO access as necessary

ADVANCED LIFE SUPPORT

14. If thick meconium is present, **do not suction with a bulb syringe**. After delivery, **immediately intubate** and **suction the ET** using the **meconium aspirator** prior to the baby's first breath.
15. Initiate IV of **Normal Saline**, titrate to Systolic BP ≥ 100


Birth
30 sec
60 sec
Term gestation?
Breathing or crying?
Good tone?
Yes, stay with mother
Routine care
• Provide warmth
• Clear airway if necessary
• Dry
• Ongoing evaluation
No
Warm, clear airway if necessary, dry, stimulate
No
HR below 100, gasping, or apnea?
No
Labored breathing or persistent cyanosis?
Yes
Yes
PPV, Spo2 monitoring
Clear airway Spo2 monitoring Consider CPAP
Targeted Preductal Spo2 After Birth
1 min 60%-65%
2 min 65%-70%
3 min 70%-75%
4 min 75%-80%
5 min 80%-85%
10 min 85%-95%
HR below 100?
No
Yes
Take ventilation corrective steps
Postresuscitation care
No
HR below 60?
Yes
Consider intubation
Chest compressions
Coordinate with PPV
Take ventilation corrective steps
Intubate if no chest rise!
No
HR below 60?
Yes
Consider:
• Hypovolemia
• Pneumothorax
IV epinephrine
© 2010 American Heart Association

APGAR CHART

Perform at 1 minute and 5 minutes post birth

	0 (Points)	1	2
Appearance	Blue or pale all over	Blue extremities, but torso pink	Pink all over
Pulse	None	< 100	≥ 100
Grimace	No response	Weak grimace when stimulated	Cries or pulls away when stimulated
Activity	None	Some flexion of arms	Arms flexed, legs resist extension
Respirations	None	Weak, irregular or gasping	Strong cry

0-3 Critically Low, 4-6 Fairly Low, 7-10 Generally Normal

OB / POSTPARTUM HEMORRHAGE

If in the process of caring for the mother after delivery of the placenta, and severe vaginal bleeding is apparent:

BASIC LIFE SUPPORT

1. Assure ABC's are intact.
2. Place a sanitary napkin or folded multi-trauma dressing over the vagina. **Do not pack any absorbent material into the vagina!**
3. External bleeding from perineal tears may be managed with firm pressure. It may be necessary to open labia and apply bandage at the bleeding site. Avoid internal vaginal examination and **do not** pack the vagina with absorbent material.
4. Lower the mother's legs and ask her to keep them together.
5. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining a blood glucose.
6. Administer **Oxygen**; titrate to maintain SpO2 at or above 94% or ETCO2 at 35-45 mmHg.
7. Promote uterine contractions via uterine massage to control bleeding. Place the baby at the mother's breast and encourage the infant to nurse.
8. Keep the patient and the baby warm.
9. Transport the patient quickly to the closest, most appropriate medical facility.
10. IV/IO access as necessary

ADVANCE LIFE SUPPORT

10. Initiate **IV Normal Saline** with a large bore.
11. Continuous cardiac monitoring.
12. If attempts to control bleeding are not successful, contact medical control.

OB / BREECH DELIVERY

BASIC LIFE SUPPORT

1. Place mother supine with elevated hips and legs bent, and in an area with plenty of room to assist with the delivery.

2. Obtain **Vital Signs**, **SpO2** and consider **End-Tidal CO2** levels.

3. Administer **Oxygen**; titrate to maintain SpO2 at or above 94% or ETCO2 at 35-45 mmHg.

4. Put on **sterile exam gloves**, **gown**, and **face mask** with shield. Protect yourself from blood borne pathogens. If time permits, **apply sterile drapes to mother**.

5. As baby's lower body delivers support the baby with an arm underneath (like holding a football).

6. When the umbilical area delivers, pull a small loop down to minimize traction on it. Keep supporting the baby's body and **Do Not** extend the baby's neck. You may check baby's heart rate by palpating the cord.

7. Place two fingers in vagina to provide an airway with a gloved hand by making a "V" over the infant's mouth.

8. Place finger in baby's mouth to gently assist delivery past the maternal perineum.

9. If at any time complications develop, begin transport and continue to attempt the delivery in route.

10. Note the time of delivery!

11. As the baby's nose and mouth become visible check for thick meconium stain. If no evidence of meconium, **bulb suction mouth then nose** as soon as visible.

12. Clamp umbilical cord as follows:
    a. First clamp, 10 cm from the baby
    b. Second clamp, 5 cm above the first clamp toward the baby
13. Cut cord between the clamps

14. Assess **APGAR** score at 1 minute and at 5 minutes after delivery.

15. **Dry baby** with a sterile towel and wrap in a warm sterile blanket.

OB / BREECH DELIVERY Cont.

ADVANCED LIFE SUPPORT

16. If thick meconium is present, **do not suction with a bulb syringe**. After delivery, **immediately intubate** and **suction the ET** using the **meconium aspirator** prior to the baby's first breath.

17. Initiate **IV NORMAL SALINE** with a large bore catheter.

18. Continuous cardiac monitoring.

OB / ARM PRESENTATION

BASIC LIFE SUPPORT

1. Assure ABC's are intact.
2. If mother is multi-gravida and has arm and head presentation, refer to the normal delivery protocol and deliver on scene. If mother is prim gravida, refer to the normal delivery protocol and deliver enroute.
3. If mother presents with an **arm only** presentation, **this baby will not deliver!**
4. Obtain **Vital Signs, SPO2** and consider **End-Tidal CO2** levels.
5. Administer **Oxygen**; titrate to maintain a SpO2 above 94% or an EtCO2 at 35-45 mmHg
6. Place mother on her left side
7. **TRANSPORT IMMEDIATELY to the closest most appropriate facility!**
8. IV/OI access as necessary

ADVANCED LIFE SUPPORT

8. Initiate **IV Normal Saline** with a large bore catheter and infuse at 100 (Mother)
9. Continuous cardiac monitoring
10. Notify receiving facility as soon as possible.

OB / PRE-ECLAMPSIA / ECLAMPSIA

Pre-eclampsia presents with hypertension (systolic over 140 and/or diastolic over 90) and/or edema. The patient may very rapidly progress into eclampsia with seizures. Vital signs are extremely important. The patient may or may not show signs of edema.

BASIC LIFE SUPPORT

1. Assure **ABCs** are intact.
2. Obtain **SpO2** and consider **End-Tidal CO2** levels.
3. Administer **Oxygen,** titrate to maintain SPO2 at or above 94% or ETCO2 at 35-45mmHg.
4. Obtain **Vital Signs**.
5. **TRANSPORT BY MOST APPROPRIATE MEANS IMMEDIATELY** to the Closest, most appropriate facility.
6. IV/IO access as necessary

ADVANCED LIFE SUPPORT

6. Continuous Cardiac Monitoring.
7. Initiate **IV NORMAL SALINE or Saline Lock**. Infuse at TKO rate.
8. If seizures occur, consider **Magnesium Sulfate 5 gm** slow IV over 10 min.

If patient is still seizing

9. Consider **Ativan 2-4 mg IV/IM** may be repeated once in 5 minutes to max of 8 mg **Or Versed 2.5-5 IV/IM/IN** may repeat once. Observe for signs of respiratory depression in both mother and/or newborn

PROLAPSED CORD

BASIC LIFE SUPPORT

1. Assure ABC's are intact.
2. Place mother in supine position with hips elevated and legs bent for comfort.
3. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining a blood glucose.
4. Administer **Oxygen**; titrate to maintain SpO2 at or above 94% or ETCO2 at 35-45 mmHg.
5. **Put on sterile exam glove, gown and face mask with shield**. Protect yourself from bloodborne pathogens.
6. **Insert a gloved hand** inside vagina and hold the presenting part of the baby off the cord. Make sure the cord has a pulse.
7. Transport immediately to the closest, most appropriate facility!
8. Notify receiving facility as soon as possible.

ADVANCED LIFE SUPPORT

9. Initiate **IV Normal Saline** with a large bore catheter.
10. Continuous cardiac monitoring

OB / NEWBORN MECONIUM ASPIRATION SYNDROME

Amniotic fluid containing meconium may be thin and watery or thick and particulate (resembling pea soup). Newborns delivered through thick meconium are at greatest risk for meconium aspiration syndrome.

If thin meconium is present:

BASIC LIFE SUPPORT

1. As soon as the head is delivered and prior to delivery of the shoulders, suction the newborn's mouth, then nose and posterior pharynx thoroughly with a large bore (12F or 14F) suction catheter.

ADVANCED LIFE SUPPORT

If thick meconium is present.

2. **Immediately** after delivery of baby and before the baby's first breath, visualize the hypopharynx with laryngoscope and suction any residual meconium.

3. Intubate trachea**.**

4. Connect **meconium aspirator** to ET tube and apply direct suction**. As suction is applied, slowly withdraw ET tube.**

5. **Intubate trachea** with a new ET tube and ventilate with BVM at a rate of 40 to 60 ventilations per minute. If necessary, connect meconium aspirator to ET tube and apply direct suction**. As suction is applied, slowly withdraw ET tube**

6. If necessary, repeat steps 3, 4, and 5 with a new ET tube and suction until the aspirated material is completely clear of the airway.

NOTE: It may become necessary to ventilate the newborn with a BVM before the trachea is completely clear of meconium!

OB / NEWBORN RESUSCITATION

BASIC LIFE SUPPORT

1. If meconium is present; go to the meconium aspiration protocol.
2. Wrap newborn in blanket to keep warm.
3. Position airway.
4. Suction airway if needed. Suction mouth then nose.
5. Stimulate newborn by gently rubbing the back or flicking the soles of the feet.
6. Administer blow-by **Oxygen**.
7. If respiratory rate is less than 40 per minute, ventilate with **BVM** at a rate of 40 to 60 ventilations per minute.
8. Newborn heart rates less than 100 bpm, immediately begin ventilations with **BVM** at a rate of 40 to 60 ventilations per minute until heart rate improves to 120 bpm.
9. Newborn heart rates less than 60 bpm, initiate chest compressions at a rate of 100 per minute until heart rate reaches 80 per minute and still improving.

ADVANCED LIFE SUPPORT

10. If ventilation with BVM is ineffective, intubate. Obtain ETCO2 reading with waveform for confirmation of placement.
11. Initiate **IV or IO NS** and infuse at **TKO** rate. Consider **Normal Saline bolus 20mL/kg.**
12. If BVM ventilation ET tube is adequate and heart rate remains below 80 bpm with compressions, Consider **Epinephrine 0.1 mg/kg** 1:10,000 IV, IO. If needed, repeat.

NOTE: The **Broselow Tape** should be considered in determining dosages and vital sign values, and should be used in conjunction with the Pediatric Protocol

PROLAPSED UTERUS

BASIC LIFE SUPPORT

1. Assure ABC's are intact.
2. Place patient in the **supine position**.
3. **Cover all protruding tissues** with a sterile moist dressing.
4. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining a blood glucose.
5. Administer **Oxygen**; titrate to maintain SpO2 at or above 94% or ETCO2 at 35-45 mmHg.

ADVANCED LIFE SUPPORT

6. Initiate **IV NORMAL SALINE** with a large bore catheter.
7. Continuous cardiac monitoring.
8. **Transport immediately! Consider Air medical or rapid ground transport to the closest, most appropriate medical facility.**

OB / SUPINE HYPOTENSION SYNDROME

Supine Hypotension Syndrome occurs when the patient lays supine, and the fetus exerts pressure on the Vena Cava causing poor venous return to the heart causing poor cardiac output.

BASIC LIFE SUPPORT

1. Assure **ABCs** are intact.
2. Obtain **SpO2** and consider **End-Tidal CO2** levels.
3. Administer **Oxygen**, titrate to maintain SPO2 at or above 94% or ETCO2at 35-45 mmHg.
4. Obtain Vital Signs.
5. Place patient in left lateral recumbent position or lay patient supine with pillow propped under right hip area.
6. **TRANSPORT BY MOST APPROPRIATE MEANS IMMEDIATELY** to the closest, most appropriate facility.
7. If patient is on Backboard place 1000mL Saline bag under right side of backboard and retract gravid uterus to left.

ADVANCED LIFE SUPPORT

8. Continuous cardiac monitoring.
9. Initiate **IV NORMAL SALINE** with a large bore catheter.

NOTE:

A. Severe hypotension could possibly be a ruptured uterus hemorrhaging internally without signs of vaginal bleeding.

PAIN MANAGEMENT

For moderate to severe pain, including abdominal pain:

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact

2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining blood glucose.

3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45mmHg

4. IV/IO access as necessary

ADVANCED LIFE SUPPORT

4. Continuous Cardiac Monitoring. **If pain management is initiated, continuous cardiac monitoring and ETCO2 is MANDATORY.**

5. Initiate **IV 0.9% Normal Saline** and infuse at rate needed to maintain systolic B/P of 100 or above. **Pedi: 70+2x age (yrs.)**

6. For treatment of pain management consider **one of the following**

A. **Ketorolac 30 mg IV/IM once, Adults only**

Or

B. **Fentanyl 50 to 100mcg IV/IO/IN/IM** every 5 minutes until pain controlled to a **maximum of 300mcg**.
Pedi: 1mcg/kg up to a **maximum initial dose of 50mcg**; may repeat dose **once**.

Or

C. **Ketamine 0.3mg/kg slow IV/IM/IO**; may repeat ½ dose q 10mins as needed.
Pedi: 0.1mg/kg up to a **maximum initial dose of 10mg**; may repeat dose once.

Psychiatric/Behavioral

Basic Life Support

1. **ASSURE SCENE IS SAFE**
2. Assure ABC's intact
3. Obtain vitals, SpO2, EtCO2 levels
4. Administer **Oxygen**, titrate to maintain at or above 94%, EtCO2 35-45 mmHg
5. Obtain medical history
6. If patient is unwilling or unable to fully cooperate, initiate **soft restraints**

NOTE: NO "HOG TYING", 'HOBBLE RESTRAINT", PRONE POSITIONS, OR PLACING ANYTHING ON THE ANTERIOR SURFACE OF THE PATIENT.

7. Perform blood glucose. If below 70mg/dl, initiate Altered Mental Status
8. Obtain temperature
9. IV Access as necessary

Advanced Life Support

10. If **violent behavior** continues, consider **Versed 2.5-5 mg IM/IN repeat dose once q 10 mins, or Ketamine 2-4 mg/kg deep IM (max 400mg) may repeat q 20 mins. Contact Medical Control for further doses.**
11. Continuous cardiac monitoring
12. Consider **IV 0.9% Normal Saline or Saline Lock**
13. For overdose, go to overdose protocol
14. Transport to appropriate facility with psychiatric services
15. If unstable, transport to closest, most appropriate facility

If excited delirium is present, ice packs are to be placed in axilla and groin

RESPIRATORY ARREST

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact
2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining blood glucose.
3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg
4. Consider assisting ventilations with a **BVM**, if indicated
5. Consider placement of an appropriately sized I-Gel
6. IV/IO access as necessary

ADVANCED LIFE SUPPORT

6. Continuous cardiac, ETCO2 and SP02 monitoring.
7. Perform **endotracheal intubation**. Check ET tube placement by auscultating the abdomen and upper and lower lobes of the lungs bilaterally and End-Tidal CO2. Thoroughly secure the ET tube! Consider C-Collar to secure tube.
8. If after two unsuccessful intubation attempts, or if Spinal immobilization may be compromised, use alternate airway management.
9. Initiate **IV or IO 0.9% Normal Saline** and infuse at rate needed to maintain systolic B/P above 100 mmHg.

NOTE: Attempts at intubation should take ***no longer*** than 15 seconds.

NOTE: **Frequent re-assessment of the endotracheal tube placement by auscultation and EtCO2 is a MUST!**

RESPIRATORY DISTRESS/ASTHMA/COPD

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact

2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Obtain a blood glucose.

3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg

4. Consider nebulized **Albuterol 2.5mg** may repeat x 2 for a total of 3**,** if wheezing or use of accessory muscles is present. **Atrovent 0.5mg** once. Consider use of **Xopenex 0.31mg** for patients already using Albuterol or with high heart rate x2, total of 3.

5. If necessary, assist patient's ventilations with a **BVM**.

ADVANCED LIFE SUPPORT

7. Consider 12 Lead.

8. Continuous cardiac monitoring.

9. Consider using CPAP/BiPAP if hypoxic.

10. Initiate **IV 0.9% of Normal Saline** and infuse at rate needed to maintain BP above 100 mmHg systolic.

11. Consider **Methylprednisolone 125mg** slow IV or IM.

12. Consider **Magnesium Sulfate IV 2G over 10mins**

13. Repeat **Nebulized Albuterol 2.5 mg and Atrovent 0.5mg or Xopenex 0.31mg** over 6 to 10 minutes if respirations still exhibit wheezing or use of accessory muscles.

14. If **Stridor** is present, mix 1**mg (1mL) of Epinephrine 1:10,000 with 2 mL of normal saline** in a nebulizer mask and nebulize over 6 minutes.

15. If **Asthma**, consider **Epinephrine 1:1,000 0.5 mg IM**

SEIZURES

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact
2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels.
3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg
4. **Protect** patient from injury.
5. **Look** for reason of seizure activity. Consider seizure history and transport accordingly.
6. Perform **blood glucose level** test. If below **70,** initiate Diabetic protocol.
7. IV/IO access as necessary

ADVANCED LIFE SUPPORT

8. Continuous cardiac monitoring and End-Tidal CO2. Consider obtaining a 12-lead ECG
9. Initiate **IV or IO NS** and infuse at TKO rate.
10. Consider **Ativan 2-4mg slow IV/IM/IO**. May be repeated every 5 minutes to a max of **12 mg**. Observe for signs of respiratory depression.

OR

Versed 2.5 - 5 mg IV/IM/IO/IN. May repeat dose once to a max of **10 mg**.

NOTE: Hypoxia during the postictal stage is the primary cause for patients to have repeat seizures. High flow Oxygen is the treatment of choice. Seizure activity can be detected utilizing ETCO2 capnography.

SEPSIS

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact

2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining a blood glucose.

3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg

4. IV/IO Access as necessary

ADVANCED LIFE SUPPORT

4. Continuous cardiac monitoring

5. Perform 12 lead ECG.

6. Initiate **IV 0.9% Normal Saline**, two if possible and infuse **30 mL/kg bolus**. For patients with active pulmonary edema or dialysis patients administer fluid in **250 mL boluses** to maintain SBP >100 mmHg; if increased respiratory distress with IV fluids, discontinue IV fluids**. Norepinephrine at 2mcg/min titrate** to effect for continued hypotension.

7. Consider administration of **Rocephin 1G IV**

8. Rapidly transport to the closest facility for continued treatment and notify ER of **SEPSIS ALERT.**

Prehospital Consideration for Sepsis.

A. Presumed source of infection (lung, skin, urine, abdomen, or CNS)

B. Two or more of the following (SIRS Criteria)
   a. Temperature > 100.4 F
   b. HR > 90
   c. RR > 20
   d. Altered mental status (abnormal from baseline)

SNAKE BITE

BASIC LIFE SUPPORT

1. Assure **ABCs** are intact.
2. **Keep patient calm** and place in supine position or position of comfort.
3. Obtain **SpO2** and consider **End-Tidal CO2** levels.
4. Administer **Oxygen,** titrate to maintain SpO2 at or above 94% or ETCO2 at 35-45mmHg.
5. Obtain **Vital Signs**.
6. Keep the injured part lower than the heart.
7. **TRANSPORT BY MOST APPROPRIATE MEANS IMMEDIATELY** to the closest, most appropriate facility.

ADVANCED LIFE SUPPORT

8. Initiate **IV 0.9% Normal Saline** and infuse at a rate needed to maintain a systolic blood pressure above **100 mmHg**. **Pedi: 20 mL/kg bolus** to maintain a systolic blood pressure of **70+2x age (yrs).**
9. Continuous cardiac monitoring.
10. **If pain management is initiated, continuous cardiac monitoring and ETCO2 is MANDATORY.**
11. For treatment of pain management, see protocol (M-30).
12. Try to safely identify the snake. Do **not** attempt to trap or kill any snake. There are only 4 types of poisonous snakes in Texas (Rattlesnake, Cottonmouth/Water Moccasin, Copperhead, and Coral Snake). Check the site for two fang marks or horseshoe teeth marks with swelling and note whether envenomation appears to have occurred or not.

NOTE: Call Hospital to confirm if they have Crofab (anti-venom).

NOTE: Pediatrics should be transported to Cook Children's.

STROKE / CVA

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact

2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining a blood glucose. Evaluate pupils.

3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg

4. If altered mental status is present, perform blood glucose test. If blood sugar is below **70**, initiate the **Altered Mental Status** protocol. Place patient on stretcher with head of bed at 30 degrees.

ADVANCED LIFE SUPPORT

5. Continuous cardiac monitoring. Obtain 12 lead ECG.

6. Initiate **IV 0.9% Normal Saline** and infuse at rate needed to maintain BP above 100 mmHg systolic.

7. Check BP at 5 and 10 minutes after administration.

8. Transport patients in a position of comfort to the most appropriate facility, preferably an **acute stroke center.**

SUPRAVENTRICULA TACHYCARDIA (SVT)

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact
2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining a blood glucose.
3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg

ADVANCED LIFE SUPPORT

4. Continuous Cardiac Monitoring.
5. Obtain **12 Lead ECG** and consider **15 Lead ECG.**
6. Initiate **IV 0.9% Normal Saline** 500mL bolus

If **SYMPTOMATIC** (chest pain, shortness of breath, hypotension, or altered mental status) consider **Synchronized Cardioversion:**

7. Consider sedation with **Versed 2.5-5mg IVP**; may repeat dose up to **10 mg max** or **Ketamine 0.3 mg/kg SLOW IVP**; may repeat dose once.
8. Deliver Synchronized Cardioversion starting at **100 J**; increase dose until successful conversion. Cardioversion dosing **100 J, 150 J, 200 J, 300 J and 360J**.

If **ASYMPTOMATIC** (no findings of symptomatic criteria):

9. Vagal maneuvers
10. Administer **Adenosine 12 mg rapid IVP** flushed rapidly by **10 - 20mL 0.9% Normal Saline**. Repeat **12mg x1** as needed **Max 24mg**

VENTRICULAR TACHYCARDIA WITH A PULSE

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact
2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining blood glucose.
3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg
4. IV/IO access as necessary

ADVANCED LIFE SUPPORT

5. Continuous Cardiac Monitoring.
6. Obtain **12 Lead ECG** and consider **15 Lead ECG.**
7. Initiate **IV 0.9% Normal Saline** 500mL NS bolus.

If **SYMPTOMATIC** (chest pain, shortness of breath, hypotension, or altered mental status) consider **Synchronized Cardioversion:**

8. Consider sedation with **Versed 2.5-5 mg IVP**; may repeat dose up to **10 mg max** or **Ketamine 0.3mg/kg SLOW IVP**; may repeat dose once.
9. Deliver Synchronized Cardioversion starting at **100J**; increase dose until successful conversion. Cardioversion dosing **100J, 150J, 200J, 300J and 360J**.
10. Consider **Amiodarone 150mg IVP over Or Lidocaine 1mg/kg IVP max 3mg/kg**

If **ASYMPTOMATIC** (no findings of symptomatic criteria):

11. Consider **Amiodarone 150mg IVP over Or Lidocaine 1mg/kg IVP**

Atrial Fibrillation / Atrial Flutter

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact

2. Obtain Vital Signs to include Temperature, SpO2 and End-Tidal CO2 levels. Consider obtaining blood glucose.

3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg

4. IV/IO access as necessary

ADVANCED LIFE SUPPORT

5. Continuous Cardiac Monitoring.

6. Obtain **12 Lead ECG** and consider **15 Lead ECG.**

7. Initiate **IV 0.9% Normal Saline** 500Ml bolus.

If **SYMPTOMATIC** (chest pain, shortness of breath, hypotension, or altered mental status) consider **Synchronized Cardioversion:**

8. Consider sedation with **Versed 2.5-5 mg IVP**; may repeat dose up to **10 mg max** or **Ketamine 0.3mg/kg SLOW IVP**; may repeat dose once.

9. Deliver Synchronized Cardioversion starting at **100 J**; increase dose until successful conversion. Cardioversion dosing **100 J, 150 J, 200 J, 300 J and 360 J**.

If **ASYMPTOMATIC** (no findings of symptomatic criteria):

10. Consider **Cardizem 0.25mg/kg slow IVP**. Repeat after 20mins as needed at **Cardizem 0.35 mg/kg slow IVP.**

Consider potential Sepsis

PEDIATRIC MEDICAL PROTOCOLS
(15 years and younger)

NOTE: The **Broselow Tape** should be used in determining dosages and vital sign values and should be used in conjunction with the Pediatric Protocols.

INTRODUCTION TO PEDIATRIC EMERGENCIES

All the Pediatric protocols are to be implemented for **Pediatric patients only**. Anyone under the age of **15** is considered Pediatric. Pediatric protocols will be implemented on all patients fifteen years **(15)** of age and under. Patients under **18** may not refuse treatment and transport unless married, emancipated by a court of law, or in the military.

Pregnant minors may present special challenges regarding consent/refusal. Definition of age groups:

Newborn: Just born.

Neonate: Birth to 30 days.

Infant: 1 month to 1 year.

Child: 1 year to puberty.

Adolescent: Puberty to adults.

Vital sign values, drug dosages and treatments vary greatly with each pediatric age group making it extremely difficult to provide an accurate protocol for each patient. **Anytime you have a question or doubt regarding the protocol and your patient, contact medical control before implementing any treatments.**

The **Broselow Tape** may be used to determine vital sign values, and drug dosages not covered in the pediatric protocols.

AIRWAY OBSTRUCTION / PEDIATRIC

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact
2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining a blood glucose.
3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg
4. Initiate basic life support obstructed airway procedure.
5. If patient is Unresponsive; Assist Ventilation with a BVM as needed.
6. Suction if needed.

ADVANCED LIFE SUPPORT

7. If airway is still obstructed, perform direct laryngoscopy. Attempt to remove any foreign body with McGill Forceps.
8. Clinched jaw with respirations under 8 per minute or a SP02 less than 80% may require RSI to facilitate direct laryngoscopy. **CONTACT MEDICAL CONTROL**
9. Continuous cardiac monitoring.
10. Initiate **IV 0.9% Normal Saline** and infuse at **TKO** rate. Consider **Normal Saline bolus of 20mL/kg.**

ALLERGIC REACTION / PEDIATRIC

BASIC LIFE SUPPORT

1. Assure ABC's are intact

2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining a blood glucose.

3. Administer **Oxygen** titrate to maintain SPO2 at or above 94% or ETCO2 at 35-45mmHg.

4. For wheezing and / or use of accessory muscles with a respiratory rate above 60 per minute consider nebulized updraft **Albuterol 2.5 mg.** May repeat two times.

ADVANCED LIFE SUPPORT

5. With localized reaction, dyspnea, shock (systolic B/P less than 90 mmHg), or unconscious patient:

6. Cardiac monitoring as appropriate.

7. Initiate **IV 0.9% Normal Saline** and infuse at **TKO** rate. Consider **Normal Saline bolus of 20mL/kg.**

8. If necessary, assist patient's respirations with **BVM.**

9. Consider **Benadryl 0.5-1mg/kg IM or IV. Max dose 25mg.**

10. Consider **Epinephrine 1:1,000 0.01 mg/kg** intramuscular. **Max dose 0.3mg**

11. Consider **Methylprednisolone IVP/IM 2mg/kg max of 125mg**

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BRADYCARDIA / PEDIATRIC

Cardiac output in neonates, infants, and children is influenced more by Heart Rate than by Stroke Volume. Insufficient or ineffective pediatric heart rates will most often be corrected as a direct result of correcting hypoxia. This is especially true in newborns and infants. A precise diagnosis of the specific bradycardic arrhythmia is not important once the rhythm is determined to be slow for adequate perfusion.

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact
2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining a blood glucose.
3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg
4. Assist ventilations via **BVM** and/or appropriate airway device.
5. Newborn/infant/child with heart rate less than 60 with poor systemic perfusion, start **chest compressions** at rate of 100/minute and continue until heart rate reaches 80/minute.

ADVANCED LIFE SUPPORT

6. Continuous cardiac monitoring.
7. **Intubate** and assist ventilations using a BVM with 100% Oxygen if patient is unresponsive.
8. Initiate **IV 0.9% Normal Saline** and infuse at **TKO** rate. Consider **Normal Saline bolus of 20mL/kg**.
9. If the heart rate remains below **60/minute**, Consider **Epinephrine 0.01 mg/kg, 1:10,000 solution IV or IO**.
10. If heart rate remains below **60/minute**, administer **Atropine 0.02 mg/kg IV or IO**. **Minimum dose is 0.1 mg**. **Maximum dose is 2.0 mg**.

CARIDAC ARREST / ASYSTOLE / PEDIATRIC

BASIC LIFE SUPPORT

Attempt to identify the cause. Consider All “H’s” and “T’S”.

1. Initiate **CPR**. CPR should be performed for two minutes prior to any other intervention.
2. Begin artificial ventilation with **BVM** and appropriate airway device with supplemental **Oxygen**.
3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg
4. Keep the patient warm.

ADVANCED LIFE SUPPORT

5. Confirm **Asystole** in 2 continuous leads. If rhythm is unclear and is possibly ventricular fibrillation, go to the pediatric ventricular fibrillation protocol (P-7).
6. Perform **endotracheal intubation**. **Use End-Tidal CO2**. Thoroughly secure the ET Tube.
7. Initiate **IV or IO 0.9% Normal Saline** and infuse at **TKO** rate. Consider **Normal Saline bolus of 20mL/kg.**
8. Consider **Epinephrine 0.01 mg/kg 1:10,000 IV or IO bolus**. May repeat in 3-5 minutes.
9. Transport immediately.

NOTE: Intubation attempts should not take longer than 15 seconds.

NOTE: The **Broselow Tape** should be used in determining accurate dosages and vital sign values and should be used in conjunction with the Pediatric Protocols.

CARIDAC ARREST / PEDIATRIC PULSELESS ELECTRICAL ACTIVITY (PEA)

BASIC LIFE SUPPORT

Attempt to identify the cause. Consider All “H’s” and “T’S”.

1. Initiate **CPR**. CPR should be performed for two minutes prior to any other intervention.
2. Begin artificial ventilation with **BVM** and appropriate airway device with supplemental **Oxygen**.
3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg
4. Keep the patient warm.

ADVANCED LIFE SUPPORT

5. Perform **endotracheal intubation**. **Use End-Tidal CO2**. Thoroughly secure the ET Tube.
6. Initiate **IV or IO 0.9% Normal Saline** and infuse at **TKO** rate.
7. Administer **Normal Saline bolus of 20mL/kg.**
8. Consider **Epinephrine 0.01 mg/kg 1:10,000 IV, IO bolus**. May repeat every 3 to 5 minutes.
9. Transport immediately!

CARIDAC ARREST / PEDIATRIC VENTRICULAR FIBRILLATION AND VENTRICULAR TACHYCARDIA WITHOUT A PULSE

BASIC LIFE SUPPORT

Attempt to identify the cause. Consider All “H’s” and “T’S”.

1. Initiate **CPR**. CPR should be performed for two minutes prior to any other intervention.

2. Begin artificial ventilation with **BVM** and appropriate airway device with supplemental **Oxygen**.

ADVANCED LIFE SUPPORT

3. If witnessed, **Defibrillate** immediately at **2 Joules/kg**. Re-evaluate rhythm and pulse. **Initiate CPR**. CPR should be performed for two minutes prior to any other intervention. Proceed to step #5.

4. If unwitnessed **initiate CPR**. CPR should be performed for two full minutes prior to any other intervention.

5. After two minutes of CPR, check rhythm and pulse. **Defibrillate** at **2 Joules/kg as need**.

6. Perform **endotracheal intubation**. **Use End-Tidal CO2**. Thoroughly secure the ET Tube.

7. After two minutes of CPR, check rhythm and pulse, **Defibrillate** at **4 Joules/kg**, all subsequent defibrillations shall be delivered at **4J/kg as needed**.

8. Initiate **IV 0.9% Normal Saline** and infuse at **TKO** rate or **IO with Pediatric Needle** may be used if there is no peripheral vein access.

9. Consider **Epinephrine 0.01 mg/kg 1:10,000 IV or IO bolus**. Followed by 2 minutes of CPR. May repeat every 3-5 minutes.

10. Administer **Amiodarone 5mg/kg** IVP max of 300mg. May repeat at **5mg/kg** up to max of 150mg. Contact Medical Control for further considerations.

DIABETIC / ALTERED MENTAL STATUS / PEDIATRIC

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact
2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels.
3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg.
4. Perform blood glucose level test. (**50-250 mg/dl** is normal)
5. Consider **7.5g Insta-Glucose** orally, if the glucose level is below 50 md/dl and patient is conscious and oriented enough to safely swallow.

ADVANCED LIFE SUPPORT

6. Consider continuous cardiac monitoring.
7. Initiate **IV 0.9% Normal Saline** and infuse at **TKO** rate. Consider **Normal Saline bolus of 20mL/kg.**
8. Consider **Naloxone 0.1mg/kg (max 2mg) IV** if airway is not intact and narcotic use is suspected.
9. For Hyperglycemia and Diabetic Ketoacidosis **(>250 mg/dl**): Consider fluid bolus of **20mL/kg 0.9% Normal Saline**. These patients require transport to an Emergency Department for further treatment.

NAUSEA / VOMITING / PEDIATRIC

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact.

2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining a blood glucose.

3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg

ADVANCED LIFE SUPPORT

4. Cardiac monitoring as appropriate.

5. Initiate **IV 0.9% Normal Saline** and infuse at **TKO** rate. Consider **Normal Saline bolus of 20mL/kg.**

6. Consider **Zofran 0.1 mg/ kg** IV push for nausea. May repeat once in **15 minutes to a max of 4 mg.**

PAIN MANAGEMENT / PEDIATRIC

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact

2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining a blood glucose.

3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg

4. Broselow tape may be used to estimate. **Use of the Broselow tape is encouraged.**

ADVANCED LIEE SUPPORT

1. Initiate **IV 0.9% Normal Saline** and infuse at **TKO** rate. Consider **Normal Saline bolus of 20mL/kg.**

NOTE: Initiate any other applicable pain control measures. (i.e. ice pack, splinting, verbal reassurance, etc.)

2. Continuous Cardiac Monitoring. **If pain management is initiated, continuous cardiac monitoring and ETCO2 is MANDATORY.**

3. If the patient is in severe pain, administer pain medication:

A. **Fentanyl 1mcg/kg IV/IO/IN/IM** with **Maximum initial dose of 50 mcg**. May repeat dose once.

OR

B. **Ketamine 0.1 mg/kg IV/IM/IN** with **Maximum initial dose of 10 mg**; may repeat dose once.

4. **Consider Zofran 0.1 mg/kg IV** for nausea **max of 4 mg**.

RESPIRATORY ARREST / PEDIATRIC

BASIC LIFE SUPPORT

1. Begin artificial ventilation with **BVM** and appropriate airway device with supplemental **Oxygen**. (See subglottic protocol S-3)

2. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg

3. Suction patient as needed.

4. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining a blood glucose.

ADVANCED LIFE SUPPORT

5. Perform **endotracheal intubation**. **Use End-Tidal CO2**. Thoroughly secure the ET Tube.

6. Continuous Cardiac Monitoring.

7. Initiate **IV 0.9% Normal Saline** and infuse at **TKO** rate or **IO with Pediatric Needle** may be used if there is no peripheral vein access.

8. **Epinephrine 1:10,000 IV or IO 0.01 mg/kg (Max 0.3 mg)**. May repeat initial dose in 3-5 min.

NOTE: Intubation attempts should not take longer than 15 seconds.

RESPIRATORY DISTRESS / PEDIATRIC

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact
2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining a blood glucose.
3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg
4. Consider **Nebulized Albuterol 2.5 mg may repeat x 2 for a total of 3,** if wheezing and / or use of accessory muscles present.

ADVANCED LIFE SUPPORT

5. Consider, **Epinephrine 2 mg of 1:1000 Epinephrine (2 mL of Epinephrine**) mixed with **3 mL of Normal Saline** in a nebulizer for stridor.
6. Initiate **IV 0.9% Normal Saline** and infuse at **TKO** rate. Consider **Normal Saline bolus of 20mL/kg.**
7. Continuous cardiac monitoring.
8. Consider **Methylprednisolone 2 mg/kg (max dose of 125mg)**.
9. Consider **Epinephrine 1:10,000 1mg mixed with 2mL NS and nebulized**

SEIZURES / PEDIATRIC

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact
2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining a blood glucose.
3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg
4. Obtain temperature.
5. **Protect** patient from injury.
6. **Look** for reason of seizure activity. Consider seizure history and transport the patient to the closest, most appropriate facility. Characterize and time the seizure.

ADVANCED LIFE SUPPORT

7. Continuous cardiac monitoring and EtCO2 monitoring
8. Initiate **IV 0.9% Normal Saline** and infuse at **TKO** rate or **IO with Pediatric Needle** may be used if no peripheral vein access.
9. Consider **Ativan 0.1 mg/kg slow IV, IO, IM**, with a **maximum dose of 4 mg**, if back-to-back or lasting longer than 5 minutes. Hold if Systolic BP < 70 mmHG + (age in years X 2). **Or Versed 0.01mg/kg IV/IN**

NOTE: In children with no prior history of seizures, the most probable cause will be febrile.

NOTE: Hypoxia during the postictal stage is the primary cause for patients to have repeat seizures. High flow Oxygen is the treatment of choice.

Special Notes: Tachycardia & dilated pupils may indicate seizure activity and must be monitored, especially in the paralyzed patient. Treat with medication as appropriate.

SUPRAVENTRICULAR TACHYCARDIA (SVT) / PEDIATRIC

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact

2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining a blood glucose.

3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg

ADVANCED LIFE SUPPORT

4. Continuous Cardiac Monitoring.

5. Obtain 12 Lead ECG and consider 15 Lead ECG.

6. Initiate **IV 0.9% Normal Saline** and infuse at **TKO** rate or **IO with Pediatric Needle** may be used if no peripheral vein access.

Contact Medical Control for below the line orders.

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7. **Cardiovert** infant heart rates above 220 bpm with serious signs of cardiovascular compromise. If shock is present, cardioversion should not be delayed for premedication.

a. Pre-medicate with **Versed 0.1 mg/kg** with a max of 2.5 mg slow IV.
b. Deliver synchronized cardioversions 0.5 Joules/kg. If no conversion repeat at 1.0 Joule/ kg.

For stable patients, or unsuccessful cardioversion:

8. Consider **Adenosine 0.1 mg/kg** rapid IVP (1-3 seconds) followed by 3 cc 0.9% NaCl rapid IVP. If unsuccessful in 2 minutes, administer Adenosine 0.2 mg/kg rapid IVP (1-3 seconds) followed by 3 cc 0.9% NaCl rapid IVP.

VENTRICULAR TACHYCARDIA WITH A PULSE / PEDIATRIC

BASIC LIFE SUPPORT

1. Assure **ABC's** are intact

2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining a blood glucose.

3. Administer **Oxygen**, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg

ADVANCED LIFE SUPPORT

4. Continuous Cardiac Monitoring. Obtain 12 Lead ECG and consider 15 Lead ECG.

5. Initiate **IV 0.9% Normal Saline** and infuse at **TKO** rate or **IO with Pediatric Needle** may be used if no peripheral vein access.

6. **Unstable tachycardia if cardiorespiratory compromise (hypotension, altered mental status)**

Contact Medical Control for below the line orders.

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7. **Cardiovert** infant heart rates above 220 bpm with serious signs of cardiovascular compromise. If shock is present, cardioversion should not be delayed for premedication.

a. Pre-medicate with or **Versed 0.1 mg/kg** with a max of 2.5 mg slow IV.
b. Deliver synchronized cardioversions 0.5 Joules/kg. If no conversion repeat at 1.0 Joule/ kg.

For stable patients, or unsuccessful cardioversion:

8. Consider **Amiodarone 5mg/kg IVP**.

ADULT / PEDI TRAUMA PROTOCOLS

AMPUTATIONS

Adult/Pedi

BASIC LIFE SUPPORT

1. Assure ABC's are intact

2. Administer Oxygen, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg

3. Control bleeding with direct pressure or pressure points. Consider Topical hemostatic dressing.

4. Control active extremity bleeding with potential for exsanguinations with Trauma Tourniquet.

5. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining blood glucose.

6. Remove gross contaminants on part by rinsing with sterile saline solution. No attempt should be made to debride the part.

7. Wrap the amputated part in moistened saline gauze and place it in a plastic bag. Seal the plastic bag tightly, so excess fluid cannot encounter the amputated part. Place the sealed bag in iced solution of water or saline if possible.

8. Bandage and splint the injured extremity as appropriate. Consider C-spine immobilization if multi-system trauma is involved.

ADVANCED LIFE SUPPORT

9. Continuous Cardiac Monitoring. **If pain management is initiated, continuous cardiac monitoring and ETCO2 is MANDATORY**.

10. TRANSPORT BY MOST APPROPRIATE MEANS IMMEDIATELY to the closest, most appropriate facility.

11. Initiate IV or IO with a large bore catheter. Infuse at a rate needed to maintain a systolic blood pressure above 100 mmHg. Pedi: 20 mL/kg bolus to maintain a systolic blood pressure of 70+2x age (yrs). Use a Buretrol drip set on all Pediatric IVs!

12. For treatment of pain management, see pain management protocols

BURNS

Adult/Pedi

BASIC LIFE SUPPORT

Stop the burning process on any area still smoldering by application of cool water or saline.

1. Assure ABC's are intact

2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining blood glucose.

3. Administer Oxygen, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg

4. Associated airway problems and major trauma are given highest initial priority.

5. Calculate total BSA percentage involved.

6. Wrap burned areas with dry non-adhering sterile dressing. Do not remove clothing adherent to the burn wound. Keep patients warm.

7. IV/IO Access as necessary

8. TRANSPORT BY MOST APPROPRIATE MEANS IMMEDIATELY to the closet most appropriate facility.

ADVANCED LIFE SUPPORT

7. Initiate IV or IO with a large bore catheter.

8. Administer fluid bolus of 1-2 liters of Lactated Ringers.

9. Continuous Cardiac Monitoring. If pain management is initiated, continuous cardiac monitoring and ETCO2 is MANDATORY.

10. Perform 12 Lead ECG.

11. Consider RSI per protocol

12. For treatment of pain management, see pain management protocols

CRUSHED EXTREMITIES

Adult/Pedi

BASIC LIFE SUPPORT

1. Assure ABC's are intact

2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining blood glucose.

3. Administer Oxygen, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg

4. Stabilize and evaluate the crushed extremity.

5. Check for distal pulse, capillary refill, and sensory in the injured extremity.

6. Bandage and splint the injured extremity as needed. Consider C-Spine Immobilization if multi-system trauma involves the cervical spine.

7. Re-evaluate distal pulse and capillary refill.

8. TRANSPORT BY MOST APPROPRIATE MEANS IMMEDIATELY to the closest, most appropriate facility.

ADVANCED LIFE SUPPORT

1. Continuous Cardiac Monitoring. **If pain management is initiated, continuous cardiac monitoring and ETCO2 is MANDATORY**.

2. Initiate IV or IO with a large bore catheter. Infuse at a rate needed to maintain a systolic blood pressure above 100mmHg. Pedi: 20 mL/kg bolus to maintain a systolic blood pressure of 70+2x age (yrs). Use a Buretrol drip set on all Pediatric IVs

3. For treatment of pain management, see pain management protocols

4. Consider Sodium Bicarb 1mEq/kg (Crush injury exceeds 30 minutes+)

NOTE: Administration of Fentanyl or Ketamine for pain may be implemented prior to splinting as needed.

FRACTURED EXTREMITIES

Adult/Pedi

BASIC LIFE SUPPORT

1. Assure ABC's are intact

2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining a blood glucose.

3. Administer Oxygen, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg

4. Stabilize and evaluate the injured extremity.

5. Check for distal pulse, capillary refill, and sensory in the injured extremity.

6. Bandage and splint the injured extremity as needed. Consider topical hemostatic dressing for heavy local bleeding uncontrolled by conventional methods. Consider Trauma Tourniquet for active bleeding with possibility of exsanguination.

7. Re-evaluate distal pulse and capillary refill.

8. TRANSPORT BY MOST APPROPRIATE MEANS IMMEDIATELY to the closest, most appropriate facility.

ADVANCED LIFE SUPPORT

1. Continuous Cardiac Monitoring. If pain management is initiated, continuous cardiac monitoring and ETCO2 is MANDATORY.

2. Initiate IV or IO with a large bore catheter. Infuse at a rate needed to maintain a systolic blood pressure above 100 mmHg. Pedi: 20 mL/kg bolus to maintain a systolic blood pressure of 70+2x age (yrs). Use a Buretrol drip set on all Pediatric IVs!

3. For treatment of pain management, see pain management protocols

4. Consider administration **Rocephin 1 G for open fractures or deep open lacerations**

NOTE: Administration of Fentanyl for pain may be implemented prior to splinting as needed.

EYE INJURIES

Adult/Pedi

BASIC LIFE SUPPORT

1. Assure ABC's are intact

2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining a blood glucose.

3. Administer Oxygen, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg

4. Attempt to remove any contact lenses.

5. If necessary, irrigate any foreign material from eye with Sterile Water or Normal Saline.

6. Bandage the injured eye with moist sterile dressing. Bandage the other eye to help prevent ocular movements.

7. For chemical eye injuries:

a. Immediately flush the affected eye continuously using 1000mL Normal Saline.

b. Continue flushing during transport.

c. Examine for chemical burns to the rest of the body.

8. TRANSPORT BY MOST APPROPRIATE MEANS IMMEDIATELY to the closest, most appropriate facility.

ADVANCED LIFE SUPPORT

9. Continuous Cardiac Monitoring. If pain management is initiated, continuous cardiac monitoring and ETCO2 is MANDATORY.

10. Initiate IV or IO with a large bore catheter. Infuse at a rate needed to maintain a systolic blood pressure above 100 mmHg. Pedi: 20 mL/kg bolus to maintain a systolic blood pressure of 70+2x age (yrs). Use a Buretrol drip set on all Pediatric IVs!

11. Consider use of **Tetracaine 1-2gtts**

12. For treatment of pain management see pain management protocol.

HEAD INJURIES

Adult/Pedi

BASIC LIFE SUPPORT

1. Assure ABC's are intact

2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining a blood glucose.

3. Administer Oxygen, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg

4. Immobilize cervical spine according to Spinal Motion Restriction Protocol.

a. Avoid hyperextension of neck.

b. If airway is not secure, use mechanical adjuncts as appropriate.

c. Be prepared to manage vomiting.

ADVANCED LIFE SUPPORT

5. Continuous cardiac monitoring.

6. Evaluate neurological status and document pupillary size and reaction.

7. Initiate IV or IO with a large bore catheter. Infuse at a rate needed to maintain a systolic blood pressure above 100 mmHg. Pedi: 20 mL/kg bolus to maintain a systolic blood pressure of 70+2x age (yrs). Use a Buretrol drip set on all Pediatric IVs!

8. Consider Rapid Sequence Induction per protocol. **Pedi: Contact Medical Control.**

9. If after three unsuccessful intubation attempts, or if Spinal immobilization may be compromised, use appropriate Airway Intervention Protocol to manage Airway.

10. TRANSPORT BY MOST APPROPRIATE MEANS IMMEDIATELY to the most appropriate facility! If airway unsecured, transport to the closest facility.

NOTE: ETCO2 should be maintained to 30-35mmHg to aid in reducing ICP by causing mild vasoconstriction in the cerebral vessels reducing CPP (Cerebral Perfusion Pressure). CO2 is a potent vasodilator and will increase ICP as it accumulates. DO NOT HYPERVENTILATE.

MULTI-SYSTEM TRAUMA

Adult/Pedi

BASIC LIFE SUPPORT

1. Maintain airway and stabilize C-Spine. Administer Oxygen, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg

2. Rapidly assess patient for multi-system trauma. If present, assess for the most appropriate means of transportation to the nearest appropriate facility.

3. Rapidly extricate patient from vehicle. If time and safety permits Immobilize cervical spine according to Spinal Motion Restriction Protocol.

4. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining a blood glucose.

5. TRANSPORT BY MOST APPROPRIATE MEANS IMMEDIATELY to the most appropriate facility!

ADVANCED LIFE SUPPORT

1. Consider Rapid Sequence Induction per protocol. Pedi: Contact Medical Control. (S-1)

2. If after three unsuccessful intubations attempts, or if Spinal immobilization may be compromised, use appropriate Airway Intervention Protocol to manage Airway.

3. Continuous cardiac monitoring.

4. Initiate IV or IO with a large bore catheter. Infuse at a rate needed to maintain a systolic blood pressure above 100 mmHg. Pedi: 20 mL/kg bolus to maintain a systolic blood pressure of 70+2x age (yrs). Use a Buretrol drip set on all Pediatric IVs!

5. Control extremity trauma with potential for exsanguination with Trauma Tourniquet.

6. Treat other conditions such as flail segment (stabilize), sucking chest wound (three-sided occlusive dressing), pneumothorax or hemothorax (needle decompression.)

NOTE: Termination of efforts if pulseless and apneic on contact in blunt and penetrating trauma, see Traumatic Arrest Protocol.

PENETRATING INJURIES TO EXTREMITIES

Adult/Pedi

BASIC LIFE SUPPORT

1. Assure ABC's are intact

2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining a blood glucose.

3. Administer Oxygen, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg

4. Stabilize and evaluate the injured extremity.

5. Check and re-evaluate for distal pulse, capillary refill, and sensory in the injured extremity.

6. Bandage and splint the injured extremity as needed.

7. Consider C-Spine Immobilization if multi-system trauma involves the cervical spine.

8. For active bleeding with the possibility of exsanguinations, consider Trauma Tourniquet Protocol. (S-22)

9. TRANSPORT BY MOST APPROPRIATE MEANS IMMEDIATELY to the closest, most appropriate facility.

ADVANCED LIFE SUPPORT

10. Continuous Cardiac Monitoring.

11. If pain management is initiated, continuous cardiac monitoring and ETCO2 is MANDATORY.

12. Initiate IV or IO with a large bore catheter. Infuse at a rate needed to maintain a systolic blood pressure above 100 mmHg. Pedi: 20 mL/kg bolus to maintain a systolic blood pressure of 70+2x age (yrs). Use a Buretrol drip set on all Pediatric IVs!

13. For treatment of pain management, see pain management

NOTE: Stabilize the object in place. If impaled object is causing airway compromise resulting in respiratory distress, and this distress cannot be corrected without the removal of the foreign object. Contact Medical Control immediately for further instructions

PENETRATING TRUNCAL WOUNDS

Adult/Pedi

BASIC LIFE SUPPORT

1. Assure ABC's are intact

2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining a blood glucose.

3. Administer Oxygen, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg

4. If impaled object is still impaled, stabilize the object in place.

5. Treat open chest wounds according to sucking chest wound protocol.

6. Treat evisceration of abdominal contents by covering the tissue with saline moistened gauze or trauma dressing. Do not attempt to replace the abdominal contents.

7. Immobilize cervical spine according to Spinal Motion Restriction Protocol

8. TRANSPORT BY MOST APPROPRIATE MEANS IMMEDIATELY to the closest, most appropriate facility.

ADVANCED LIFE SUPPORT

9. Continuous cardiac monitoring.

10. If pain management is initiated, continuous cardiac monitoring and ETCO2 is MANDATORY.

11. Initiate IV or IO with a large bore catheter. Infuse at a rate needed to maintain a systolic blood pressure above 100 mmHg. Pedi: 20 mL/kg bolus to maintain a systolic blood pressure of 70+2x age (yrs). Use a Buretrol drip set on all Pediatric IVs!

12. For treatment of pain management, see protocol pain management

14. Monitor and Treat for tension pneumothorax with needle decompression if indicated.

NOTE: Termination of efforts if pulseless and apneic on contact in blunt and penetrating trauma, see Traumatic Arrest Protocol.

SUCKING CHEST WOUNDS

Adult/Pedi

BASIC LIFE SUPPORT

1. Assure ABC's are intact

2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining a blood glucose.

3. Administer Oxygen, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg

4. Assist ventilations with BVM if necessary.

5. Consider C-Spine Immobilization if trauma involving cervical or thoracic spine.

6. Seal the wound as rapidly as possible to prevent further collapse of the lung.

7. Watch closely for signs of Tension Pneumothorax. If the signs develop, lift a corner of the dressing to relieve the Tension Pneumothorax.

8. TRANSPORT BY MOST APPROPRIATE MEANS IMMEDIATELY to the Closest, most appropriate facility.

ADVANCED LIFE SUPPORT

9. Needle decompression the thorax using the needle decompression procedure protocol.

10. Continuous Cardiac Monitoring. If pain management is initiated, continuous cardiac monitoring and ETCO2 is MANDATORY.

11. Initiate IV or IO with a large bore catheter. Infuse at a rate needed to maintain a systolic blood pressure above 100 mmHg. Pedi: 20 mL/kg bolus to maintain a systolic blood pressure of 70+2x age (yrs). Use a Buretrol drip set on all Pediatric IVs!

12. For treatment of pain management, see pain management protocols

TENSION PNEUMOTHORAX

Adult/Pedi

BASIC LIFE SUPPORT

1. Assure ABC's are intact

2. Obtain Vital Signs, SpO2 and End-Tidal CO2 levels. Consider obtaining a blood glucose.

3. Administer Oxygen, titrate to maintain SpO2 at or above 94% and EtCO2 at 35-45 mmHg

4. TRANSPORT BY MOST APPROPRIATE MEANS IMMEDIATELY to the closest, most appropriate facility.

ADVANCED LIFE SUPPORT

5. Needle decompresson the thorax using the needle decompression procedure protocol.

6. Continuous Cardiac Monitoring.

7. If pain management is initiated, continuous cardiac monitoring and ETCO2 is MANDATORY.

8. Initiate IV or IO with a large bore catheter. Infuse at a rate needed to maintain a systolic blood pressure above 100 mmHg. Pedi: 20 mL/kg bolus to maintain a systolic blood pressure of 70+2x age (yrs). Use a Buretrol drip set on all Pediatric IVs!

9. For treatment of pain management, see pain management protocols

TRAUMATIC CARDIAC ARREST

Adult/Pedi

1. Determine if the patient is a candidate for resuscitation.

Unless a patient arrests during transport, ALS credentialed Providers should not initiate Cardiopulmonary Resuscitation (CPR) for pulseless, apneic patients in the presence of:

• Blunt Traumatic Cardiopulmonary Arrest with clearly associated mechanism to the head and/or torso in conjunction with the lack of spontaneous respirations.

• Penetrating Traumatic Cardiopulmonary Arrest with clearly associated mechanism to the head and/or torso region.

2. Initiate CPR if warranted.

3. Perform endotracheal intubation. Check ET tube placement by auscultating the abdomen and upper and lower lobes of the lungs bilaterally and End-Tidal CO2. Thoroughly secure the ET tube!

4. If after two unsuccessful intubation attempts, or if Spinal immobilization may be compromised, use appropriate alternate airway protocol.

5. Transport the patient to the nearest hospital immediately.

ALL OTHER TREATMENTS WILL BE INITIATED ENROUTE!

6. Check cardiac rhythm quickly, then go to appropriate arrhythmia protocols.

7. Initiate IV/IO 0.9% NORMAL SALINE with a large bore catheter and run wide open.

8. Consider needle chest decompression bilaterally.

NOTE: Frequent re-assessment of the ET tube placement is a MUST!

To put the first point in plain terms, if transport of the penetrating traumatic arrest will take more than 20 minutes to an APPROPRIATE trauma center or BLS airway procedures do not give spontaneous respirations AND there are no other signs of life (something on ECG, movement, reflexes, etc.) do not attempt resuscitation. Remember that all penetrating trauma scenes are considered crime scenes.

SKILLS / PROCEDURES

TEXAS OOH-DNR FORM

Figure: 25 TAC §157.25 (b)(2)

STOP DO NOT RESUSCITATE

TEXAS DEPAR™ENT OF STATE HEALTH SERVICES
STANDARD OUT-OF-HOSPITAL DO-NOT-RESUSCITATE ORDER

This document becomes effective immediately on the date of execution. It remains in effect until the patient is pronounced dead by authorized medical or legal authority or the document is revoked. Comfort measures will be given as needed.

All persons who sign the form must sign again under number 3.

1. _____ **Date of Birth:**_____ **Male/Female** (Circle One)

Patient's full legal name — printed or typed

2. COMPLETE **ONE** OF THE FOUR BOXES: **A**, **B**, **C**, or **D**. If using Box **A**, **B**, or **C**, Witnesses and Physician's Statement must be completed.

A. **Patient's Statement:** I, the undersigned, am an adult capable of making an informed decision regarding the withholding or withdrawing of CPR, including the treatments listed below, and I direct that none of the following resuscitation measures be initiated or continued: **Cardiopulmonary Resuscitation (CPR), Transcutaneous Cardiac Pacing, Defibrillation, Advanced Airway Management, Artificial Ventilation.**

Signature _____ Date _____ Printed or Typed Name _____

B. **Only use this box if the order is being completed by a person acting on behalf of an adult patient who is incompetent or otherwise unable to make his or her wishes known.**

I am the patient's: ☐ legal guardian; ☐ agent under Medical Power of Attorney; ☐ or Qualified Relative (see back); **AND**:

☐ I attest to issuance of an Out-of-Hospital DNR by the patient by nonwritten means of communication; **OR**
☐ I am acting under the guidance of a prior Directive to Physicians; **OR**
☐ I am acting upon the known values and desires of the patient; **OR**
☐ I am acting in the patient's best interest based upon the guidance given by the patient's physician.

I direct that none of the following resuscitation measures be initiated or continued on behalf of the patient: Cardiopulmonary Resuscitation (CPR), Transcutaneous Cardiac Pacing, Defibrillation, Advanced Airway Management, Artificial Ventilation.

Signature _____ Date _____ Printed or Typed Name _____

C. **Only use this box if the order is being completed by a person acting on behalf of a minor patient who has been diagnosed with a terminal or irreversible condition.**

I am the minor patient's: ☐ Parent; ☐ legal guardian; or ☐ managing conservator.

I direct that none of the following resuscitation measures be initiated or continued on behalf of the patient: Cardiopulmonary Resuscitation (CPR), Transcutaneous Cardiac Pacing, Defibrillation, Advanced Airway Management, Artificial Ventilation.

Signature _____ Date _____ Printed or Typed Name _____

WITNESSES: (see qualifications on reverse) We have witnessed all of the above signatures.

Witness 1 Signature/Date _____ Witness Printed or Typed Name _____

Witness 2 Signature/Date _____ Witness Printed or Typed Name _____

PHYSICIAN'S STATEMENT: I, the undersigned, am the attending physician of the patient named above. I have noted the existence of this order in the patient's medical records, and I direct out-of-hospital health care professionals to comply with this order as presented.

Date _____ Physician's signature/Printed name/License number _____

D. **Only use this box if the order is being completed by two physicians acting on behalf of an adult who is incompetent or otherwise unable to make his or her wishes known, and who is without a legal guardian, agent, or qualified relative.**

☐ I attest to issuance of an Out-of Hospital DNR by the patient by nonwritten communication; **OR**:
☐ The patient's specific wishes are unknown, but resuscitation measures are, in reasonable medical judgement, considered ineffective in these circumstances or are otherwise not in the best interest of the patient.

I direct that none of the following resuscitation measures be initiated or continued on behalf of the patient: Cardiopulmonary Resuscitation (CPR), Transcutaneous Cardiac Pacing, Defibrillation, Advanced Airway Management, Artificial Ventilation.

Signature _____ Treating Physician/Date _____ Printed or Typed Name _____

Signature Second Physician who is not involved in treating the patient/Date _____ Printed or Typed Name _____

3. **ALL PERSONS WHO SIGNED MUST SIGN HERE (Pursuant to H&SC 166.083(b)(13). This document has been properly completed.**

Signature of Patient, Agent or Relative (A, B, or C)/Signature of Second Physician (D)/Signature of Attending Physician _____

Signature of Witness/Signature of Witness/Date _____

SHOULD TRANSPORT OCCUR, THIS DOCUMENT OR A COPY MUST ACCOMPANY THE PATIENT.

BOUGIE

This procedure applies to unconscious patients who are apneic and have no gag reflex, and in whom oral attempts have been unsuccessful or a difficult airway is anticipated.

Exclusion Criteria: Patients less than 14 years of age utilized the pediatric bougie.

Indications: Difficult intubation with a restricted view of the glottic opening. This may occur due to; short, thick (bull) neck, Pregnancy, Laryngeal edema, normal anatomic variation, tumors above the glottic opening or the inability to position the patient (i.e. entrapment, confined space)

1. Hyper oxygenate patients with 100% oxygen for at least 1 minute prior to each intubation attempt.

2. Have suction available with rigid Yankauer tip.

3. Prepare bougie by curving it and ensuring the distal tip is formed into a “J”.

4. To intubate using the bougie:

A. Perform laryngoscopy, obtaining best possible view of glottic opening.

B. Advance the bougie, continually observing its distal tip, with its concavity facing anterior.
C. Visualize the tip of the bougie passing posteriorly to the epiglottis and (where possible) anterior to the arytenoid cartilage.
D. Once the tip of the bougie has passed the epiglottis, continue to advance it in the midline so that it passes behind the epiglottis but in an anterior direction.
E. As the tip of the bougie enters the glottic opening you will feel “clicks” as it passes over the tracheal rings or the tip will” hold up” against the airway wall. This suggests correct insertion, although not 100% reliable confirmation. However, failure to elicit clicks or hold up is indicative of esophageal placement. If hold-up is felt, withdraw the bougie approx. 5 cm to avoid the ET tube impacting against the carina.

5. To insert the endotracheal tube:

A. Hold the bougie firmLy in place **while maintaining a laryngoscopy**.

BOUGIE Cont.

B. Instruct another provider to pass the ET tube over the proximal end of the bougie.

C. As the proximal tip of the bougie is re-exposed as the ET tub slides downward, the assistant should carefully grasp it, assuming control of the bougie and passing control of the ET tube to the intubator.

D. Carefully advance the ET tube along the bougie and through the glottic opening, taking care to not move the bougie.

E. **Successful intubation may be considerably enhanced by rotating the ET tube 90 degrees counter-clockwise, so the bevel faces posteriorly**. In doing so, the bougie may also rotate along the same plane but should not move up or down in the trachea.

6. Once the ET tube is fully in place, hold it securely as another provider withdraws the bougie.

7. Withdraw the laryngoscope.

8. Inflate the cuff without delay. Verify correct positioning of the ET tube using all appropriate methods.

9. Secure ET tube and apply c-collar.

10. Document the use of the bougie and all other intubation documentation.

CPAP (CONTINUOUS POSITIVE AIRWAY PRESSURE)

Continuous Positive Airway Pressure has been shown to rapidly improve vital signs, gas exchange, and the work of breathing, decrease the sense of dyspnea, and decrease the need for endotracheal intubation in the patients who suffer from shortness of breath from asthma, COPD, pulmonary edema, CHF, and pneumonia. In patients with CHF, CPAP improves hemodynamics by reducing preload and afterload.

INDICATIONS:

Any patient who is complaining of shortness of breath for reasons other than pneumothorax and:

A. Is awake and oriented.
B. Is over 12 years old and is able to fit the CPAP mask
C. Has the ability to maintain an open airway (GCS>10)
D. A respiratory rate greater than 25 breaths per minute
E. Has a systolic blood pressure above 90 mmHg
F. Uses accessory muscles during respirations
G. Sign and Symptoms consistent with asthma, COPD, pulmonary edema, CHF, or pneumonia

CONTRAINDICATIONS:

A. Patient is in respiratory arrest
B. Patient is suspected of having a pneumothorax
C. Patient has a tracheostomy

PRECAUTIONS:

1. Use care if patient:

A. Has impaired mental status and is not able to cooperate with the procedure
B. Had failed at past attempts at noninvasive ventilation
C. Has active upper GI bleeding or history of recent gastric surgery
D. Complains of nausea or vomiting
E. Has inadequate respiratory effort
F. Has excessive secretions
G. Has a facial deformity that prevents the use of CPAP

PROCEDURE:

CPAP (CONTINUOUS POSITIVE AIRWAY PRESSURE) Cont.

1. Make sure patient does not have a pneumothorax!
2. EXPLAIN THE PROCEDURE TO THE PATIENT
3. Ensure adequate oxygen supply to ventilate device (100% when starting and until Sa02 is >95%)
4. Place the patient on continuous pulse oximetry and End Tidal CO2.
5. Place the CPAP over the mouth and nose
6. Secure the mask with provided straps or the other provided devices
7. Adjust PEEP.
    a. Begin with 5 cmH20.
    b. If no relief increase PEEP to 7.5 cmH20.
    c. If no relief increase PEEP to 10 cmH20.

8. Check for air leaks
9. Monitor and document the patient's respiratory response to the treatment
10. Continue to coach patient to keep mask in place and readjust as needed
11. If respiratory status deteriorates, remove device and consider bag valve mask ventilation and/or endotracheal intubation.
12. Consider inline nebulizer treatment according to protocol.

<u>REMOVAL PROCEDURE:</u>

CPAP therapy needs to be continuous and should not be removed unless the patient cannot tolerate the mask or experiences continued or worsening respiratory failure

<u>PEDIATRIC CONSIDERATIONS:</u>

CPAP should not be used in children under 12 years of age

<u>SPECIAL NOTES:</u>

1. Advise receiving hospital as soon as possible so they can be prepared for patient
2. Do not remove CPAP until hospital therapy is ready to be placed on patient
3. Watch patient for gastric distention
4. Reassessment of the patient's status is critical and should be performed every 5- 10 minutes
5. Any patient who has a rise in the ETCO2 >60mmhg will have CPAP discontinued.

In patients with Asthma and COPD: ETCO2 <60mmHg before starting CPAP. If the level rises in the first 5 minutes, then CPAP will be discontinued

EXTERNAL JUGULAR VEIN CANNULATION PROCEDURE

1. Select IV fluid and drip set. Set up IV and prime tubing.
2. Place patient in supine, head down position to fill jugular vein.
3. Turn patient's head to the side.
4. Locate vein and prep the overlying skin with alcohol or iodine.
5. Align the catheter in the direction of the vein with the point aimed at the ipsilateral shoulder.
6. Occlude the vein with one finger above the clavicle.
7. Puncture the skin midway between the angle of the jaw and the mid-clavicular line with the bevel of the needle upward. Advance the needle into the vein. Note blood return in the end of the catheter chamber when the needle end of the catheter enters into the vein. Advance the catheter another 1/8th inch further into the vein. Slide the needle back. Advance the catheter the rest of the way into the vein if possible.
8. Remove the needle from the catheter and attach the IV tubing.
9. Initiate the infusion wide open and check for infiltration, then slow drip rate to desired rate.
10. Secure the IV catheter well.

No Bilateral EJ attempts shall be made

I-GEL AIRWAY

For use by the EMT-B, EMT-I, EMTP

Endo-tracheal intubation provides a definitive airway. Every attempt should be made to secure an airway with an endotracheal tube. Following two (2) unsuccessful attempts to place an endotracheal tube, or if it appears additional endotracheal intubation attempts would be unsuccessful, use of the i-gel Airway should be considered.

A. Patient is apneic and without a gag reflex.

The I-gel is contraindicated:

A. An intact gag reflex

B. Cases of known or suspected caustic poisoning

C. Known esophageal disease, or esophageal trauma

D. Patients have known or suspected foreign body obstruction of the larynx or trachea.

I-gel AIRWAY DEVICE PROCEDURE

1. Body Substance Isolation (BSI)
2. Attach pulse oximeter and ETCO2 to monitor oxygen saturation and CO2 readings.
3. Using the information provided in the package insert, choose the correct i-gel size, based on patient weight in kg.

Size **5**	large adults 90+kg 25
Size **4**	medium adults 50-90kg 25
Size **3**	small adults 30-60kg 25
S i z e **2.5**	large pediatrics 25-35kg 10
S i z e **2.0**	small pediatrics 10-25kg 10
S i z e **1.5**	infants 5-12kg 10
S i z e **1.0**	neonates 2-5kg

4. Apply a water-based lubricant to the back, sides and front of the cuff with a thin layer of lubricant taking care to avoid a bolus of lubricant in the bowl of the cuff or elsewhere on the device. Avoid touching the cuff with your hands.

5. Pre-oxygenate patient with 100% oxygen for at least 1 minute.

6. Position the head of patient in the "sniffing position" With head extended and neck flexed. The chin should be gently pressed down before proceeding to insert the I-gel.

7. Hold the I-gel at the integral bite block with dominant hand. With non-dominant hand, hold mouth open and gently press chin down.

8. Introduce tip of I-gel into mouth and advance by gliding the device downwards and backwards along the hard palate with continuous but gentle push until a definitive resistance is felt and the teeth are near the integral bite block. **Do not apply excessive force on the device during insertion.**

9. Attach the ETCO2 measuring device and BVM to the 15 mm connector of the i-gel. While gently bagging the patient to assess ventilation, confirm placement by auscultation. ETCO2 of 35-45 mm/Hg with good wave form and chest movement.

10. Maintain control of the i-gel until the device can be secured. Secure I-gel by the provided securing device or tape as necessary

11. After securing reconfirm proper position by auscultation, chest movement and ETCO2.

12. **DO NOT COVER THE PROXIMAL OPENING OF THE GASTRIC ACCESS LUMEN.** The gastric access lumen allows the insertion of up to a 14 Fr diameter nasogastric tube into the esophagus and stomach.

13. Immediately following successful placement of the I-gel Airway consider an appropriately sized cervical collar. In the event a C-collar will not fit, manual inline stabilization should be utilized and if transported; blankets, towels and tape should be used appropriately to restrict cervical spinal motion.

Intraosseous

Exclusion Criteria:

IO access should not be performed on infants weighing less than 3 kg.

IO access may not be performed on a leg in which the tibia or femur is fractured, orthopedic procedures have been performed, i.e. artificial knee, the patella and tibial tuberosity cannot be located, or is compromised by a pre-existing condition that may interfere with IO placement or delivery of fluids into the vascular system, i.e. tumor, infection or excessive tissue at insertion site.

1. This procedure applies to conscious or unconscious patients of any age with poor vascular access when such access is needed.

2. Connect an extension set to a bag of fluid and prime the set.

3. Fill a 10 mL syringe from the bag and connect it to the Connect extension set. Prime the set and keep the set and syringe sterile.

4. Position the patient so that the site is accessible. For children, support the leg with a towel.

5. Locate the insertion site. A) Locate the patella, measure approximately two (2) finger-widths below the patella to the elevation or bump on the anterior surface of the tibia. This is the tibial tuberosity. B) Measure one (1) finger width medial to the tibial tuberosity. **This is the insertion site.**

    1. **Alternate site:** Proximal humeral head at the greater humeral tubercle.

    2. **Alternate site:** Distal femoral head.

6. Prepare the site, clean with providone-iodine or alcohol, and dry site with sterile gauze pad.

7. Prepare the IO driver and needle set.

A) Open the IO cartridge and attach to the driver. You will feel as the magnet in the needle connects to the drill. The needle sets are color coded, Blue and / or Yellow denotes size for adults.
B) Remove the safety cap from the needle.

8. Stabilize the patient's leg near the insertion site.

9. To insert the IO needle, position the driver at the insertion site with the needle at a 90 degree angle to the bone's surface.

10. Verify that the mark closest to the flange of the catheter will be visible above the skin after insertion. There are 2 marks on the adults. The mark closest to the flange is 5mm from the flange, if this mark won't be visible following insertion, there is excessive tissue at the insertion point which may prevent the needle from the penetrating the bones cortex to reach the medullary cavity. Choose a larger needle; if a larger needle is not available then IO access will not be possible at this time.

11. Continue holding the needle stabilizer in place and pull up on the stylet. Once removed, discard the stylet.

12. Push the needle through the soft tissue until bone is encountered, continue insertion by maintaining a 90 degree angle and applying mild steady pressure on the driver as the needle powers through the outer surface of the bone. Stop when there is a sudden decrease in resistance.

13. Remove the driver from the needle set by supporting the needle with on hand and pulling straight up on the driver with the other.

14. Remove the stylet from the catheter by grasping the hub with one hand and rotating the stylet counter clockwise, dispose the stylet appropriately, do not attempt to reinsert the stylet.

15. Confirmation of proper placement of the catheter is noted by either:

A) Catheter stands at a 90 degree angle and is firmLy seated in the tibia, or
B) Fluid flows freely with no evidence of extravasation.

16. If proper insertion cannot be confirmed or appears to be blocked and cannot be flushed, leave the catheter in place for removal in the ED. Attempt vascular access using the other leg or another route.

17. If placement is confirmed, flush the catheter. Connect the primed Connect extension set and 10 mL syringe to the IO hub. Do not attach a syringe or flow set directly to the IO catheter. Rapidly and forcefully flush the catheter with fluid. This clears a pathway for an acceptable infusion rate. Note: Adult flush 10 mL, Pedi flush 5 mL.

18. After confirming placement, attach Fixation to the stabilizer base. Restrain the patient's leg as needed to prevent dislodgement. If the needle is dislodged, stop the infusion and apply pressure at the site with sterile gauze.

19. Connect the primed flow set and begin infusing fluid and further medications. Because the pressure within the bone is greater than the pressure created by gravity, fluid must be infused under pressure. Insert the bag into a pressure infuser. For all patients, inflate the pressure infuser to 300 mm/Hg

20. As a reminder for hospitals of IO placement and its timely removal, apply the prepackaged wristband to the patient's wrist.

MEDICATION ADMINISTRATION

MEDICATION ADMINISTRATION PROCEDURE

Subcutaneous Injection

1. Subcutaneous injections are administered into the subcutaneous tissue and not superficial dermis or muscle.
2. Inject into the subcutaneous tissue over the deltoid muscle of the shoulder area.
3. Clean the injection site with alcohol or iodine swab.
4. Pull the skin away from underlying muscle before “tenting” or pinching the site.
5. Advise the patient to expect the stick and try to relax the deltoid.
6. Insert the needle at a 45-degree angle into the subcutaneous tissue.
7. Pull back (aspirate) on the syringe to confirm placement is NOT in a vessel by observing for blood return.

Intramuscular Injection

1. Intramuscular injections are administered into the muscular tissue.
2. Inject into the muscular tissue over the deltoid muscle of the shoulder area or the hip area.
3. Clean the injection site with alcohol or iodine swab.
4. Pull the skin away from underlying muscle before “tenting” or pinching the site.
5. Advise the patient to expect the stick and try to relax the deltoid.
6. Insert the needle at a 90-degree angle into the muscular tissue.
7. Pull back (aspirate) on the syringe to confirm placement is NOT in a vessel by observing for blood return.

NEEDLE DECOMPRESSION PROCEDURE

1. Administer Oxygen high flow as appropriate.
2. Identify the second intercostal space, midclavicular line on the affected side.
3. Prep area.
4. Remove the hub from the packaging
5. Insert the catheter, Insert the needle into the second intercostal space at a 90 degree angle to the chest wall over the third rib to avoid the nerve, artery, and vein that lie just beneath each rib.
6. Puncture the parietal pleura and observe the sudden movement air from catheter. Insert the catheter an additional 1 cm into the chest cavity.
7. Hold the position of the needle and remove the Veress needle leaving the catheter in place.
8. Reassess ventilatory status, jugular veins, trachea position and vital signs.

OROTRACHEAL INTUBATION PROCEDURE

1. Position patient supine in sniffing or neutral position. For trauma patients, maintain inline Cervical Spine stabilization.

2. **Pre-Oxygenate** the patient with 100 % Oxygen with BVM.

3. Select the appropriate size tube. If using cuffed tube, inflate cuff to check for leaks.

4. Assemble all appropriate equipment and have on hand and ready for use (suction, Magill forceps, 10 mL syringe, CO_2 detector, End-Tidal CO_2, tube securing device). Have back up airway available.

5. Using the laryngoscope, visualize the glottic opening. Insert the endotracheal tube, and visualize the tube passing through the vocal cords. This should take no longer than 15 seconds.

6. If using a cuffed tube, inflate cuff with approximately 10 mL of air.

7. Attach End-Tidal CO_2 detector.

8. Auscultate lung sounds to verify tube placement. Monitor SpO_2 and End-Tidal CO_2. Ventilate with BVM at rate needed to maintain SpO_2 at 95 to 99% and End-Tidal CO_2 at 35 to 45 mmHg.

9. If lung sounds are heard only on the right side, deflate the cuff and pull the tube back a slight distance being careful not to extubate the patient. Re-inflate the cuff.

10. Re-confirm the tube placement by watching for bilateral chest rise, then auscultate for bilateral lung sounds axillary and auscultate the epigastrium. Ventilate with BVM at rate needed to maintain SpO_2 at 95 to 99% and End-Tidal CO_2 at 35 to 45 mmHg. Do not hyperventilate.

11. Secure the tube well.

12. Apply c-collar to patient for extra tube placement stabilization and reconfirm lung sounds.

13. If repeated intubations fail, secure airway using subglottic airway.

NOTE: Intubation attempts should take no longer than 15 seconds. If an attempt fails, stop and re-oxygenate the patient for at least two minutes.

NOTE: Re-assess tube placement frequently. (After every movement)

PERIPHERAL IV INSERTION PROCEDURE

1. Select IV fluid and drip set. Set up IV and prime tubing.

2. Apply tourniquet proximally to the site.

3. Locate vein and prep the overlying skin with alcohol or iodine (if no iodine allergy).

4. Puncture the skin with the bevel of the needle upward. Advance the needle into the vein. Note blood return in the end of the catheter chamber when the needle end of the catheter enters into the vein. Advance the catheter another 1/8th inch further into the vein. Slide the needle back. Advance the catheter the rest of the way into the vein if possible.

5. Remove tourniquet.

6. Remove the needle from the catheter and attach the IV tubing.

7. Initiate the infusion wide open and check for infiltration, then slow drip rate to desired rate.

8. Secure the IV catheter well.

DRUG ASSISTED INTUBATION

Indication:

- Airway protection
- Respiratory failure

Contraindications:

- Spontaneous breathing with adequate ventilation and a patent airway.
- Inadequate personnel or other resources to safely carry out procedure • Predicted Difficult Intubation

1. **Pre-Oxygenate with 100% FiO2**

2. Assign personnel (recorder, medications, Etc.)

3. Calculate and draw up all appropriate medications.

    - **Atropine 0.02 mg/kg IV/IO (if <1 year old)**

Induction Agents

- **Ketamine 1-2 mg/kg (max 500mg)**
- **Etomidate 0.3mg/kg**

Paralytic Agent

- **Rocuronium 1 mg/kg. MAX DOSE 100 mg**.
- Or **Succinylcholine 1.5mg/kg**

- **Sedative Agent used after intubation**. **MUST ADMINISTER ONE**

- **Versed 5mg**, repeat as needed **max dose of 15 mg**.

OR

- **Ketamine 1-2 mg/kg (max 500mg)**

1. **Assemble equipment (laryngoscope, video laryngoscope, bougie, syringe, Etc.)**
2. **Prepare suction equipment**

3. **Prepare secondary airway equipment (i-Gel, Cric kit)**
4. **Place patient onto cardiac monitor, SpO2, EtCO2; obtain vital signs**
5. **If hypotensive, infuse 0.9% Normal Saline at a rate needed to maintain a systolic blood pressure above 90 mmHg. Pedi: 20 mL/kg bolus to maintain a systolic blood pressure of 70+2 x age (yrs)**
6. **Administer Induction agent**
7. **Administer Paralytic agent**
8. **Intubate the patient and inflate the cuff on the endotracheal tube, if applicable**
9. **Confirm placement with EtCO2 and auscultation of the lungs and abdomen**
10. **Secure endotracheal tube with securing device and place a cervical collar on the patient.**
11. **Re-medicate the patient with either: <u>(Paramedic discretion)</u> Mandatory!**

    Versed 5 mg IV/IO; q 10 mins may repeat to a max dose of 20mg

    or

    Ketamine 1-2 mg/kg IV/IO (max dose of 500 mg)
12. **Obtain vital signs and confirm tube placement often.**

NOTE: Monitor the Paralyzed patient for seizure activity (pupils) and treat underlying respiratory distress with **<u>In-Line Nebulization.</u>**

NOTE: Check ET tube placement after every movement

NOTE: Document the size of tube, measurement at teeth, and Medics on scene.

NOTE: Make sure RSI Check List is filled out with proper signatures.

Class I
Complete visualization of the soft palate

Class II
Complete visualization of the uvula

Class III
Visualization of the base of the uvula only

Class IV
Soft palate is not visible at all

Class I = No additional difficulty	**Class III** = Moderate difficulty
Class II = No additional difficulty	**Class IV** = Severe difficulty

SPINAL RESTRICTION

THIS POLICY APPLIES TO**:** All patients who may have experienced head, cervical or spine trauma.

EXCLUSION CRITERIA: Penetrating trauma to head and/or neck, injuries where c-collar placement could compromise airway management, ventilation, or hemorrhage control.

TERMINOLOGY:

Spinal Motion Restriction – application of a cervical collar, placement of patient on a long spine board, application of head immobilization device and tape to secure patient.

Selective Motion Restriction – application of cervical collar only following spinal assessment.

GUIDELINES:

Spinal Motion Restriction is suggested when the patient has been subjected to forces capable of damaging the spinal column and the patient has at least one of the following (NEXUS) criteria:

1. Altered Mental Status
2. Evidence of drug and/or alcohol intoxication
3. Any painful or distracting injury
4. Midline Spine Tenderness
5. Focal Neurologic Deficit

If 1 – 5 above are all negative, *Selective Motion Restriction* should be utilized following a complete neuro and spinal assessment. EMTs may attend patients in which selective motion restriction has been utilized ONLY following assessment.

If required, *Selective Motion Restriction* is the placement of an approved, properly sized cervical collar before the patient is moved.

Patients found in motor vehicles secondary to an MVC with a complaint of neck or back pain:

1. Should have a spinal assessment completed to rule out any midline spine tenderness or focal neuro deficit.
2. Should have a cervical collar applied.
3. Be asked if they are able to exit the vehicle on their own.
    A. Yes - assist them to stretcher and secure them for transport
    B. No – be removed via appropriate extrication method and moved to stretcher and secured for transport

4. Once removed from the vehicle, and secured on stretcher, the patient should be placed in a semi-Fowler's or high-Fowler's position for comfort during transport
- In special situations, alternative stabilization devices such as KED's, etc. may be used as indicated.
- Pediatric patients may be stabilized in an approved car seat or with a commercial pediatric stabilization device.

If the need for *Spinal Motion Restriction* after assessing items 1 – 5 above, the restriction devices must remain on the patient until assessed and removed at a hospital.

Unless the patient meets any of the criteria in 1-5 above, long spine boards should only be utilized for extrication or ease of movement of the patient on to the stretcher in the semi-Fowler's position.

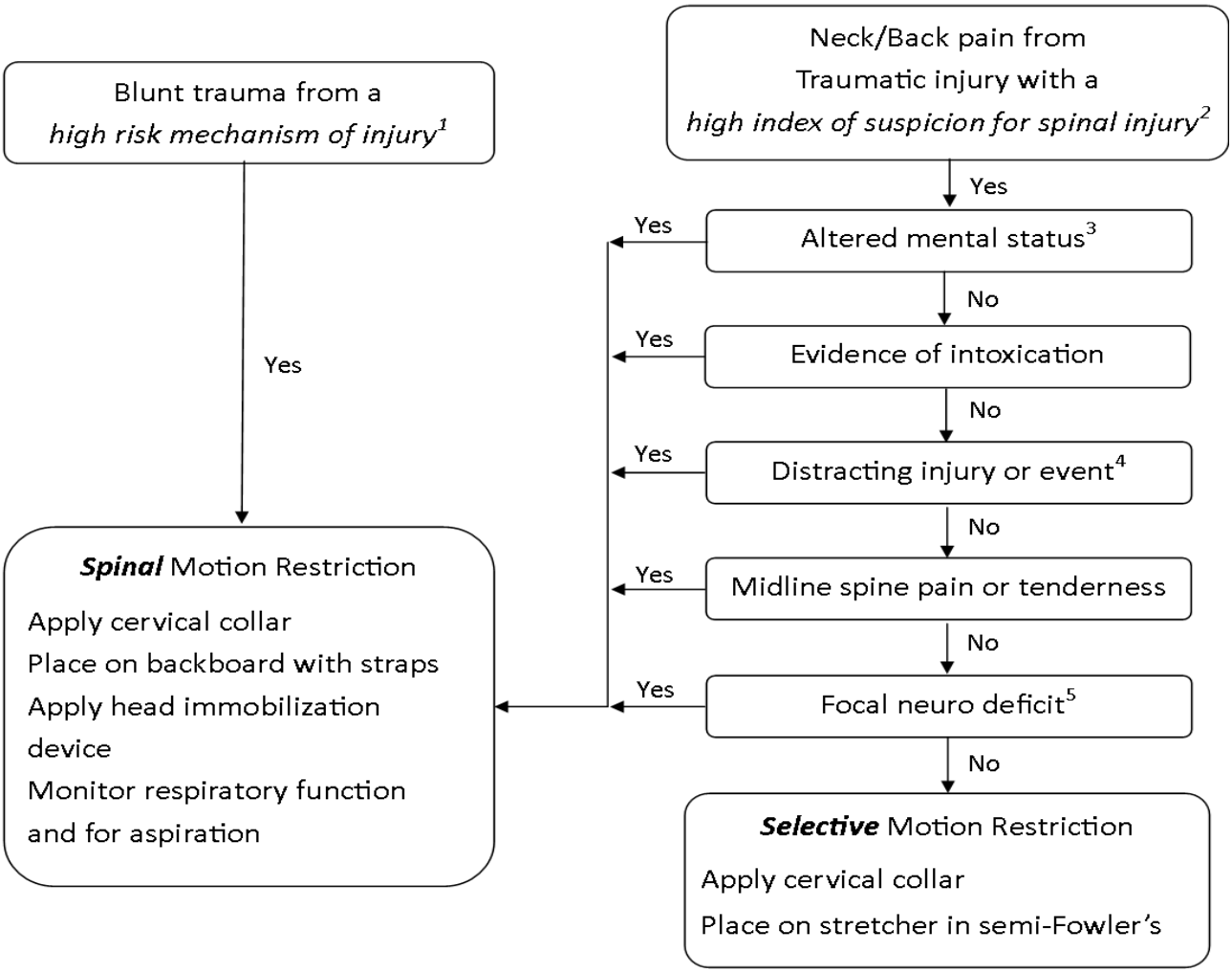
Have a high index of suspicion for spinal injuries in the following patients:

1. Patients <14 or >65 years of age.
2. History of Spinal Injury
3. Auto vs. Pedestrian accidents
4. Patients in vehicles with significant damage secondary to MVC

Patients that MUST have full Spinal Motion Restriction (including Long Spine Boards, C-Collar, Head Immobilization Devices and tape):

1. Critical patients secondary to Multisystem Trauma
2. Axial Loading Injuries (Dive Injuries)
3. Trauma Patients being sent by Helicopter
4. Fall from a significant height (adult >20 ft., pediatric >10 ft. or 3 times the patients height)

Indications for Spinal Motion Restriction



1. Critical multi-system trauma, axial loading injury, fall from a significant height (adult > 20 ft., Pedi > 10 ft. or 3 x patient's height), or patient going by helicopter.
2. Patient age < 14 or > 65 years, past medical history of spinal injury, pedestrian struck by vehicle, or patient in vehicle with significant damage due to MVC.
3. Head injury with altered LOC, mental handicap (dementia, developmental disability), or communication barrier (hearing or speech impairment, young age, foreign language).
4. Long bone fracture, avulsion, burn, death or serious injury of occupant in same vehicle, significant laceration, or crush injury. **Patient must be calm and cooperative.**
5. Numbness, weakness, unequal strengths, or decreased sensation of pain or temperature.

TASER PROBE REMOVAL

1. Identify the location of any Taser barbs on the patient's body.

2. Before touching the patient, ensure that the wires attached to any barbs embedded in the patient have been disconnected from the hand-held Taser device.

3. Because Taser barbs do not constitute a penetrating traumatic injury, removing them is usually appropriate.

    a. If a barb is embedded in a patient's genitalia, neck face, or eye and is not causing an airway obstruction; or in a female patient's breast, transport the patient to a hospital for removal of the barb.

    b. If a barb is causing airway obstruction, immediately remove it.

4. **To remove a barb:**

    a. Stabilize the skin around the barbed prongs and pull it from the skin.

    b. Clean the skin with an alcohol prep pad and bandage as needed.

    c. Dispose of the barb in a designated Sharps container.

5. Confer with the Police officer who discharged the Taser device to determine the patient conditions prior to and after the Taser discharge.

6. Perform a patient assessment. **If the patient has a cardiac history or appears under the influence of drugs of abuse, transport the patient for assessment by a physician.** Cardiac events related to Tasers are much more common in patients under the influence of drugs of abuse and may be delayed up to four hours.

TRAUMA TOURNIQUET

This protocol has been developed following the review of course material and studies such as the Tactical Combat Casualty Course. Tourniquet use was once considered unsafe, but considering recent trends in trauma care, tourniquets using commercially available products are showing promise in preventing unnecessary trauma deaths due to exsanguination (bleeding out).

It is the intent that this protocol be used in life threatening extremity trauma situations where time is imperative to prevent uncontrolled blood loss. Penetrating trauma to an extremity that severs an artery can lead to exsanguinations in as little as three (3) minutes uncontrolled. Some law enforcement officers in our area carry their own trauma tourniquets, so it is imperative that field medics be able to identify and apply them rapidly.

Trauma tourniquets will only be applied in potential exsanguinating injuries that cannot be controlled by other means. ALWAYS apply the tourniquet PROXIMAL to the injury, never over the injury, clothes, or pockets, and never cover the tourniquet site. It is highly recommend that you place a tag or marking such as “TQ” or “T” on the patient and make sure that receiving personnel are aware that a tourniquet is in place. Time is not as critical as once feared.
Tourniquets have been left in place for several hours without loss of limb. The main priority is delivering the patient to definitive trauma care in the safest, most expedient form of travel available.

Application: Note: Some steps may vary slightly with different models.

1. Insert the wounded extremity through the one-handed configuration.
2. Pull the self adhering band tight.
3. Don’t adhere the band past the clip.
4. Twist the rod/windlass until bleeding stops (do not over-tighten).
5. Lock the rod/windlass in place with the clip.
6. Hemorrhage is now controlled.
7. Secure the windlass strap to hold the rod/windlass in place.
8. Secure the band all the way around the arm until it is secure in place.
9. Now ready for transport.
10. Treat according to extremity trauma protocol and pain management.

TRANSTHORACIC PACING

Pre-medicate with one of the following:

- **Versed 2-5 mg** slow IV push (For Amnesia).

OR

- **Ketamine 0.3-0.5mg/kg SLOW IV PUSH**

1. Apply external pacing pads and leads. Be sure the pads are positioned properly.
2. Leave the monitor set on lead I, II, and III.
3. Press the pacer button and check for visual indicators pacing is active.
4. Set the rate to **80 bpm.**
5. Starting at **80 mA** Increase the current in **10 mA** segments until a QRS with a pulse is captured.
6. Check pulse rate.

DEFIBRILLATION / SYNCHRONIZED CARDIOVERSION

Manual Defibrillation

1. Place pads appropriately, shaving off hair and drying water at the site of pad placement as needed.

2. Select energy dosage (adult **360J**) (pediatric **2J/kg** body weight)

3. Press “Charge” button
   *** Do not withhold compressions while charging for defibrillation ***

4. Completion of charge will be indicated by a visual and audible alarm. Upon completion of charge, CLEAR ALL PERSONNEL FROM PATIENT and press “Shock”.
   *** Electricity can and will travel through any adjacent mediums including the patient and can present a hazard to responders if in contact***

5. Confirm shock delivery with the monitor. Resume interventions while leaving the monitor in the same configuration unless it impedes patient monitoring.

Synchronized Cardioversion

1. Place pads appropriately, shaving off hair and drying water at the site of pad placement as needed.

2. Select energy dosage (adult **100 J, 150 J, 200 J, 300 J and 360J**) (pediatric **0.5-1 J / kg** ideal body weight Second dose **2 J / kg** body weight)

3. Press “Sync” button
   *** Confirm monitor synchronization by noting markers on every R wave of the ECG***
   *** Failure to confirm synchronization will result in **DEFIBRILLATION** and can result in lethal arrhythmia***

4. Press “**Charge**” button

5. Completion of charge will be indicated by a visual and audible alarm. Upon completion of charge, **CLEAR ALL PERSONNEL FROM PATIENT** and press “Shock”.
   *** Electricity can and will travel through any adjacent mediums including the patient and can present a hazard to responders if in contact***

6. Confirm shock delivery with the monitor. Resume interventions while leaving the monitor in the same configuration unless it impedes patient monitoring.