

# Pediatric Protocols

General Approach to the Pediatric Patient

Airway-Respiratory Failure

Respiratory Distress

Allergic Reaction

Altered Mental Status

Behavioral

Bradycardia

BRUE/ALTE

Cardiac Arrest

Post ROSC

Drowning

Hypoglycemia/Hyperglycemia

Neonatal Resuscitation

Pain Management

Refusals/Non-transport

Regular Narrow Complex Tachycardia

Wide Complex Tachycardia

Seizures

Sepsis

Shock

SIDs

Suspected Stroke

Suspected Abuse

Tracheostomy

Toxin/Overdose

Transport

Unaccompanied Minor

# Pediatric- General Approach

## Inclusions:

- Trauma 15 years and 364 days
- Medical Transport Destination <18 years old
- Medication dosing: pediatrics= less than 50 kg (exceeds length based tape)

### Scene Safety & Scene Survey

Utilize jumpSTART in MCI  
Observe environment for signs of maltreatment (see NAT Protocol)

### Obtain Parental or legal guardian consent

- In the case of a life or limb threatening emergency, provide transport and treatment while obtaining consent (see Care of an Unaccompanied Minor Protocol)
- If parent or legal guardian refuses to provide consent, See Refusals Protocol

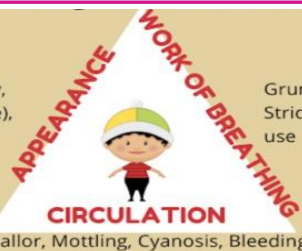
Full ALS Assessment & Treatment when condition warrants

Identify if any special needs, involve caregiver and tailor approach as needed (see Care of Special needs protocol)

Identify age/developmentally appropriate behaviors to aid in assessment (see Pearls)

### Observational Assessment

TICLS: Tone, Interactivity, Consolability, Look (gaze), Speech (cry)



Grunting, Nasal flaring, Stridor, Accessory muscle use

Pallor, Mottling, Cyanosis, Bleeding

### Physical Exam & Treatment (by ABCDE)

Obtain required Vital Signs: Required: HR, RR, BP, O2 Sat  
As appropriate: Temperature, BGL & ETCO2  
Pay close attention to age appropriate values (see chart)

Airway

Breathing

Circulation

Disability

Exposure

### Considerations:

BVM as or more effective than intubation in kids

Most common cause of arrest is respiratory

Bradycardia= impending cardiac arrest

APGAR, AVPU, GCS

Prevent heat loss

### Repeat Assessment

At least every 5 minutes for unstable patients and every 15 minutes for stable patients. Much of the assessment can be performed via observation (see Pediatric Triangle above)

### Medial Consultation

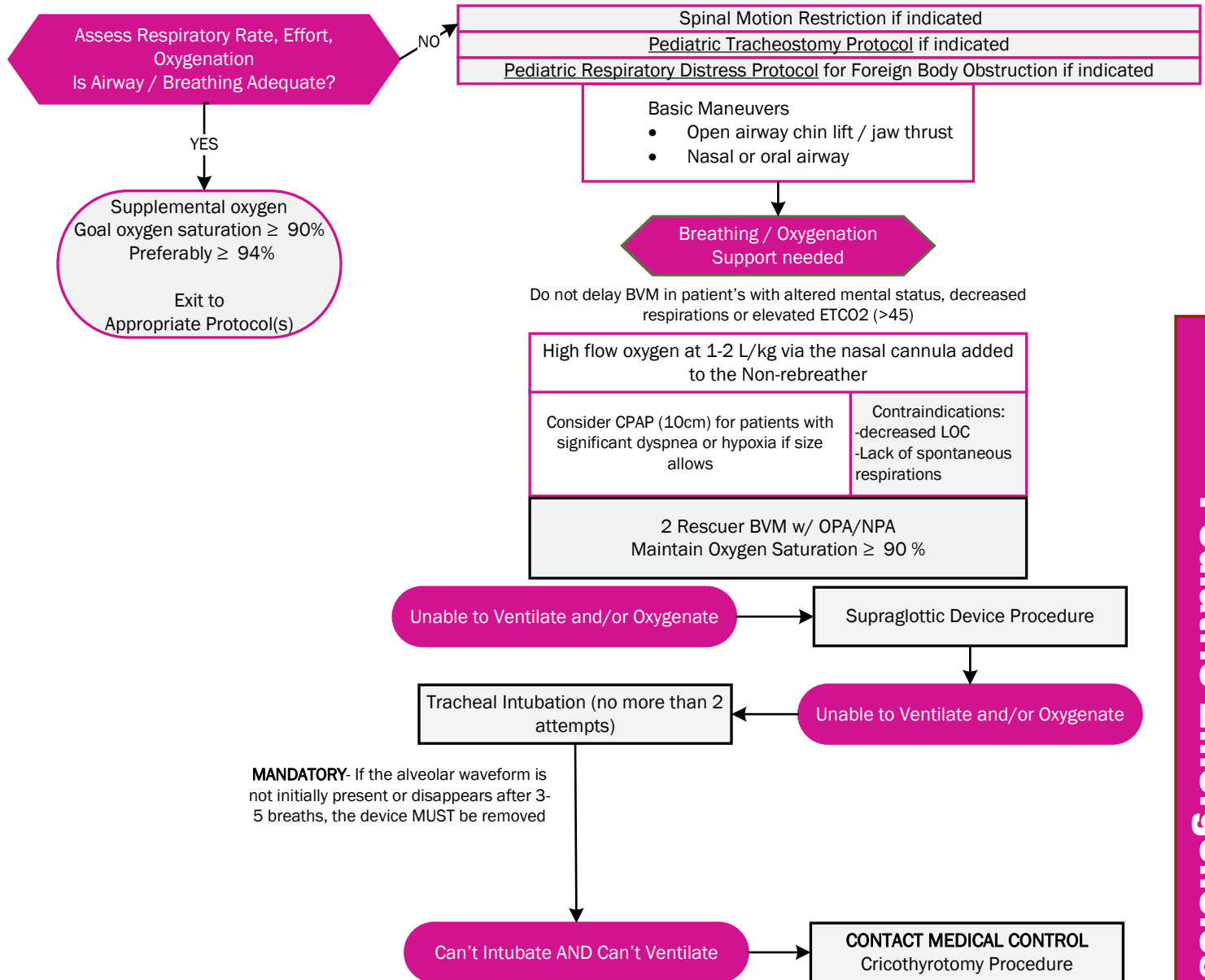
A) shall be obtained when required by a specific protocol (i.e. BRUE, Refusals, Unaccompanied Minor)  
B) Should be obtained when adequate treatment effects haven't been reached by the end of the protocol  
C) Available at any time for any reason

Utilize appropriate restraint device  
Ensure parent/caregiver appropriately restrained  
View Transport Protocols for appropriate destination

## PEARLS

- Infant: avoid anything distressing until after assessment is complete. >6 months of age best examined in parents arms (if appropriate)
- Toddler: Approach slowly. Sit or squat next to them. Allow them to remain in parent's lap when possible. Give them limited choices. Speak slowly & use simple, age appropriate terms. Do not expect them to cooperate (be flexible).
- Preschooler: allow child to handle equipment. Do not lie to the child. Play games with immobilized preschoolers for distraction.
- School Age: allow them to be involved in care, however do not negotiate unless they really have a choice. Provide reassurance.
- Adolescent: Treat as an adult. Explain what you are doing and why. Show respect & speak to the adolescent directly.

# Pediatric Airway- Respiratory Failure



If unstable airway and/or clinical instability will not allow for safe transport to a Pediatric Comprehensive Center, proceed to the closest appropriate ED. See [Transport Destinations Protocol](#).

## PEARLS

- In Pediatric patients, BVM is an acceptable end point of airway management if successful
- If strong suspicion for tension pneumothorax, consider: Chest Decompression Procedure if indicated
- Notify the medical director within 24 hours of the Cricothyrotomy procedure (follow agency contact procedures)
- HOPs Killers- Hypotension, Oxygenation (hypoxia), Ph (Acidosis)- if not addressed, increases the chances of cardiac arrest during intubation
- If first intubation attempt fails, make an adjustment and then try again: Different laryngoscope blade; Gum Elastic Bougie; Different ETT size; Change cricoid pressure; Apply BURP; Change head positioning
- During intubation attempts use External Laryngeal Manipulation to improve view of glottis.
- If an effective airway is being maintained by BVM with continuous pulse oximetry values of  $\geq 90\%$  or stable/improving values consistent with clinical condition (e.g. pulse oximetry in the mid 80s post-drowning), it is acceptable to continue with basic airway measures instead of using a SGA or Intubation
- Continuous Waveform capnography is mandatory with all methods of airway management.
- Surgical cricothyrotomy is only used in patients  $>12$  years of age. Needle cricothyrotomy is utilized under this age
- It is important to secure the endotracheal tube well and utilize tube holder to better maintain ETT placement. **Manual stabilization of endotracheal tube should be used during all patient moves / transfers.**
- Many patients who cannot be intubated easily may be sustained by basic airway techniques and BVM, with stable if not optimal Oxygen Saturation, i.e. stable (not dropping) SpO2 values as expected based on pathophysiologic condition with otherwise reassuring vital signs (e.g. consistent pulse oximetry of 85% with otherwise normal or near-normal vitals in a post-drowning patient)

# Pediatric Respiratory Distress

Follow **HandTevy** dosing guidelines



Pediatric Airway Protocol(s) as indicated  
Oxygen as indicated  
(high flow via Non-rebreather, CPAP 10cm, or BVM)

Pediatric Allergic Reaction Protocol as indicated

Differential Diagnosis based on assessment:

## WHEEZING / Asthma

Albuterol Nebulizer 2.5 mg  
+/- Ipratropium 0.5 mg  
Repeat as needed x 2

Methylprednisolone (Solumedrol) 2mg/kg IV/IM (max 125mg)

Persistent & severe

Magnesium 50 mg/kg IV / IO in NS (max 2g) over 10 minutes

Imminent respiratory arrest

Epinephrine 1:1000 solution 0.01mg/kg **IM** (max dose 0.5mg)  
Repeat q 15 min. x 2 additional if needed

## STRIDOR / Croup

Albuterol Nebulizer 2.5 mg  
+/- Ipratropium 0.5 mg  
Repeat as needed x 2

Methylprednisolone (Solumedrol) 2mg/kg IV/IM (max 125mg)

STRIDOR at rest

Epinephrine **Nebulizer** 1 mg (1:1000) in 2 mL NS  
May repeat x 3  
Or Racemic Epinephrine 2.25%/0.5ml if available

Imminent respiratory arrest

Epinephrine 1:1000 solution 0.01mg/kg **IM** (max dose 0.5mg)  
Repeat q 15 min. x 2 additional if needed

## Fluid Overload

Oxygen as indicated (high flow via Non-rebreather, CPAP 10cm, or BVM) see Pediatric Airway Protocol

## Complete Foreign Body Obstruction

Conscious

- <1 y/o: 5 back blows & 5 chest compressions
- >1 y/o: abdominal thrusts

Unconscious

Start Compressions (round of 30)

Attempt removal w/ Magill forceps

Unable to ventilate w/ BVM

Exit to Pediatric Airway Protocol

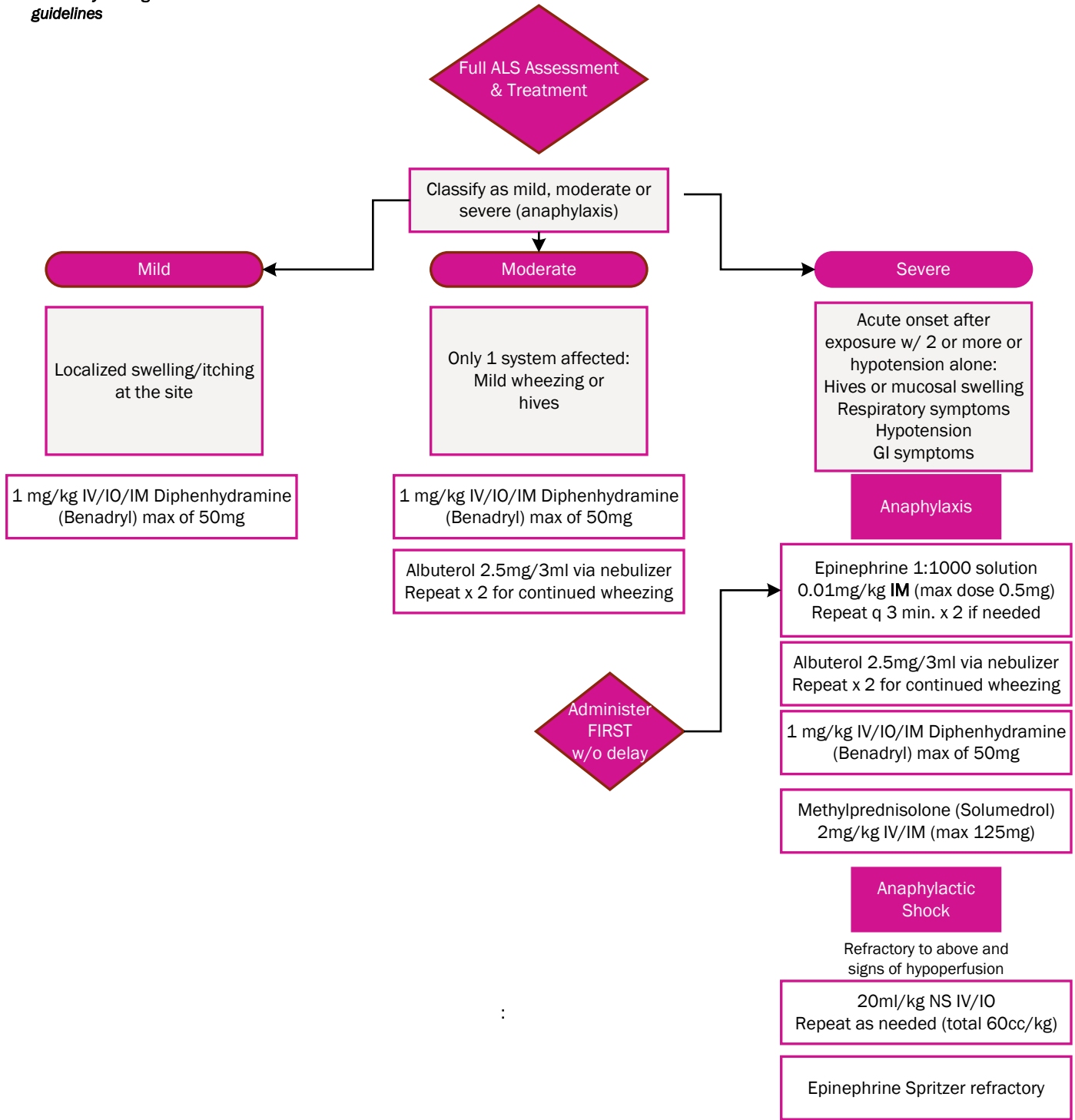
# Pediatric Emergencies

If clinical instability will not allow for safe transport to a Pediatric Comprehensive Center, proceed to the closest appropriate ED

- PEARLS**
- Important Hx: Time of onset, possibility of foreign body, fever/illness, sick contacts, hx of trauma, possibility of choking, Ingestion/OD, congenital heart disease
  - Exam findings of respiratory distress: Nasal Flaring / Retractions / Grunting
  - Do not attempt foreign body removal in partial obstruction**
  - CPAP contraindications: altered mental status & lack of spontaneous respirations
  - If epiglottitis is suspected (i.e. drooling with respiratory, contact medical control for guidance)
  - If button battery ingestion suspected and child 12 months of age and older: give 2 teaspoons every 10 minutes.** Leads to life-threatening esophageal burns and perforation.

# Pediatric- Allergic Reaction/Anaphylaxis

Follow HandTevy dosing guidelines



Pediatric Emergencies

## PEARLS

- EMT may assist in administering patient's own autoinjector
- If history of life-threatening allergic reaction to the same allergen, administer Epinephrine IM
- Epinephrine 1:1000 is appropriate for the IM route ONLY
- Recheck dosing and concentration prior to administration of Epinephrine.
- Maintain SBP >70 + (age in years x 2)mmHg
- Anaphylaxis may occur with only respiratory + GI symptoms and not have a rash/skin involvement
- Push Dose Epinephrine in Pediatrics is not the same dosing as Adults, since it is weight based. Example: take the Pediatric cardiac arrest dose (0.01mg/kg of the 1:10,000 Epi up to 1ml) and dilute in 9ml NS syringe. Administer 1 ml q 2minute= 0.5mcg/kg/min Epinephrine.

# Pediatric- Altered Mental Status

Full ALS Assessment  
& Treatment

Obtain all vital signs (including  
ETCO2 & Temp)  
Assess for signs of Trauma  
Check BGL

Differential Dx:

Blood Glucose <70 or >250

Trauma

Shock

Stroke

Seizure activity or hx of seizures

Overdose/Toxin

Cardiac Arrest

See condition appropriate protocol

See Pediatric Transport Protocol for  
destination decision

Pediatric Emergencies

# Pediatric- Behavioral



Identify underlying causes (i.e hypoxia, post-ictal, hypoglycemia) & refer to appropriate protocol

Consider multi-disciplinary coordination with LEO to attempt verbal de-escalation techniques

Apply physical restraints if needed to ensure patient/crew safety

Ensure "P-SNORES"

For severe agitation compromising patient care or patient/crew safety or continued struggle against physical restraints:

**Medications**

Chart vitals before and after administration of medications when feasible

- Position (NEVER PRONE or "hog tied")
- SpO2 Monitoring
- Nasal Capnography (ETCO2)
- Oxygen (6L)
- RASS
- EKG
- Sugar (BGL)

## Pediatric Emergencies

**Moderate RASS +2/+3**

**Severe RASS +4**

**RASS +4/ AND EXTREMELY VIOLENT= chemical takedown**

Versed  
0.1 mg/kg IV  
0.2 mg/kg IM  
2.5 mg max initial dose, 5mg max total dose

Versed  
0.1 mg/kg IV  
0.2 mg/kg IM  
2.5 mg max initial dose, 5mg max total dose

Versed  
0.1 mg/kg IV  
0.2 mg/kg IM  
5 mg max initial dose, 10 mg max total dose

**OR**  
Droperidol  
> 13 y/o  
2.5mg IV or 5mg IM

**PLUS**  
Droperidol  
> 13 y/o  
2.5mg IV or 5mg IM

**OR**  
Ketamine  
>13 y/o  
4 mg/kg IM  
0.5 mg/kg IV (50mg max)

If an inadequate response (i.e. patient remains with a RASS of +3/+4), an additional dose may be administered in 5 minutes (adhere to max)

All patients must have a RASS level documented after administration

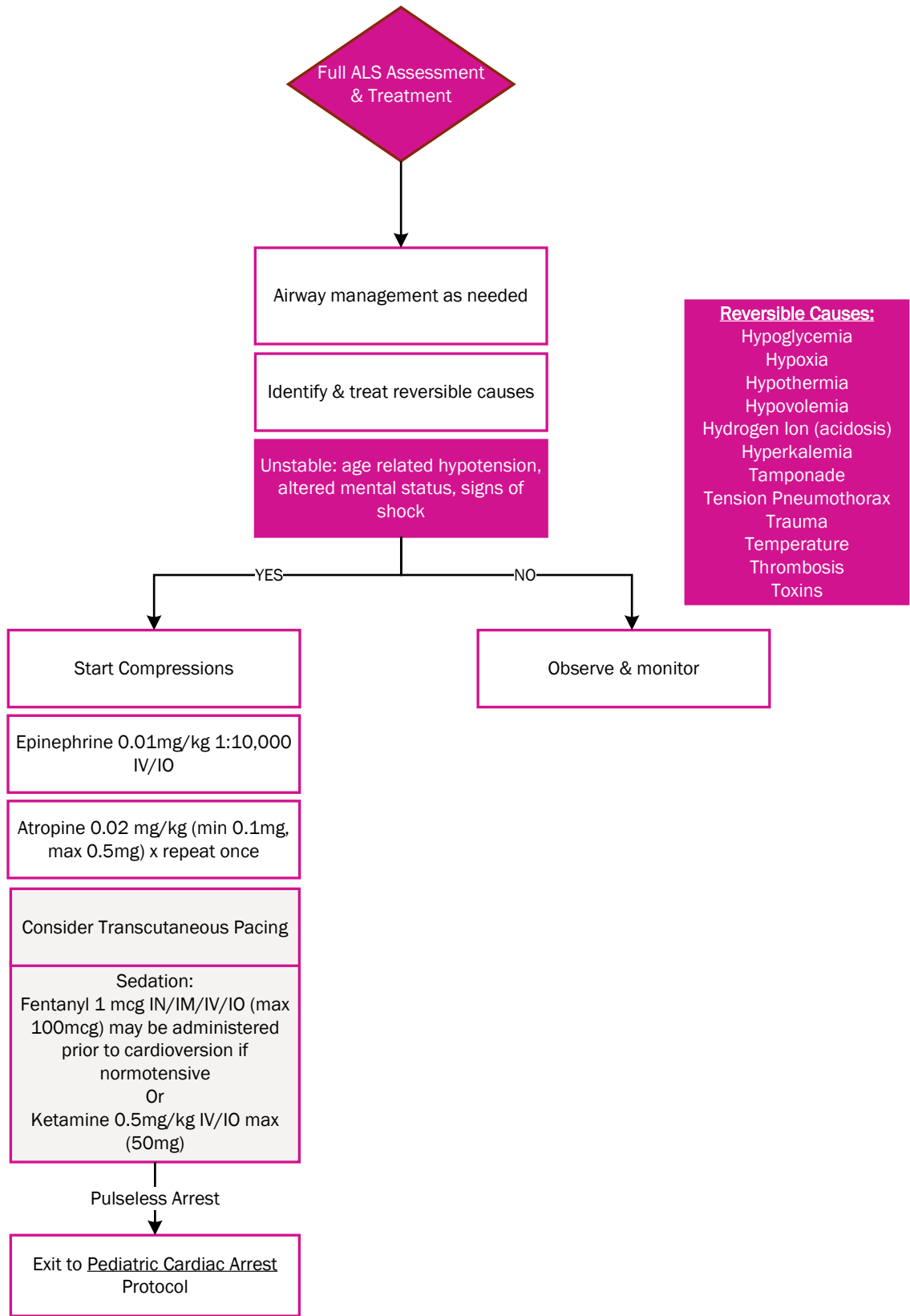
\*Airway equipment must be readily available

\*Any patient who is handcuffed by LEO & transported by EMS must be accompanied by LEO

- PEARLS**
- Limit stimuli, genuine respect for feelings/circumstances, use your body language to convey listening, ask open-ended questions
  - Antipsychotics are best for history of psychiatric emergencies or acute alcohol intoxication
  - Versed is best for sedation when drug use is suspected
  - Droperidol is contraindicated in pregnancy
  - **RASS +4** Combative | **+3** Very Agitated | **+2** Agitated | **+1** Restless | **0** Alert & Calm
  - **RASS -5** Unarousable | **-4** Deep Sedation (movement to stimulation) | **-3** Moderate Sedation (eye opening to voice w/o eye contact) | **-2** Light Sedation (brief eye contact to voice) | **-1** Drowsy (eye opening & contact >10 seconds)

# Pediatric Bradycardia <60

Follow **HandTevy** dosing guidelines

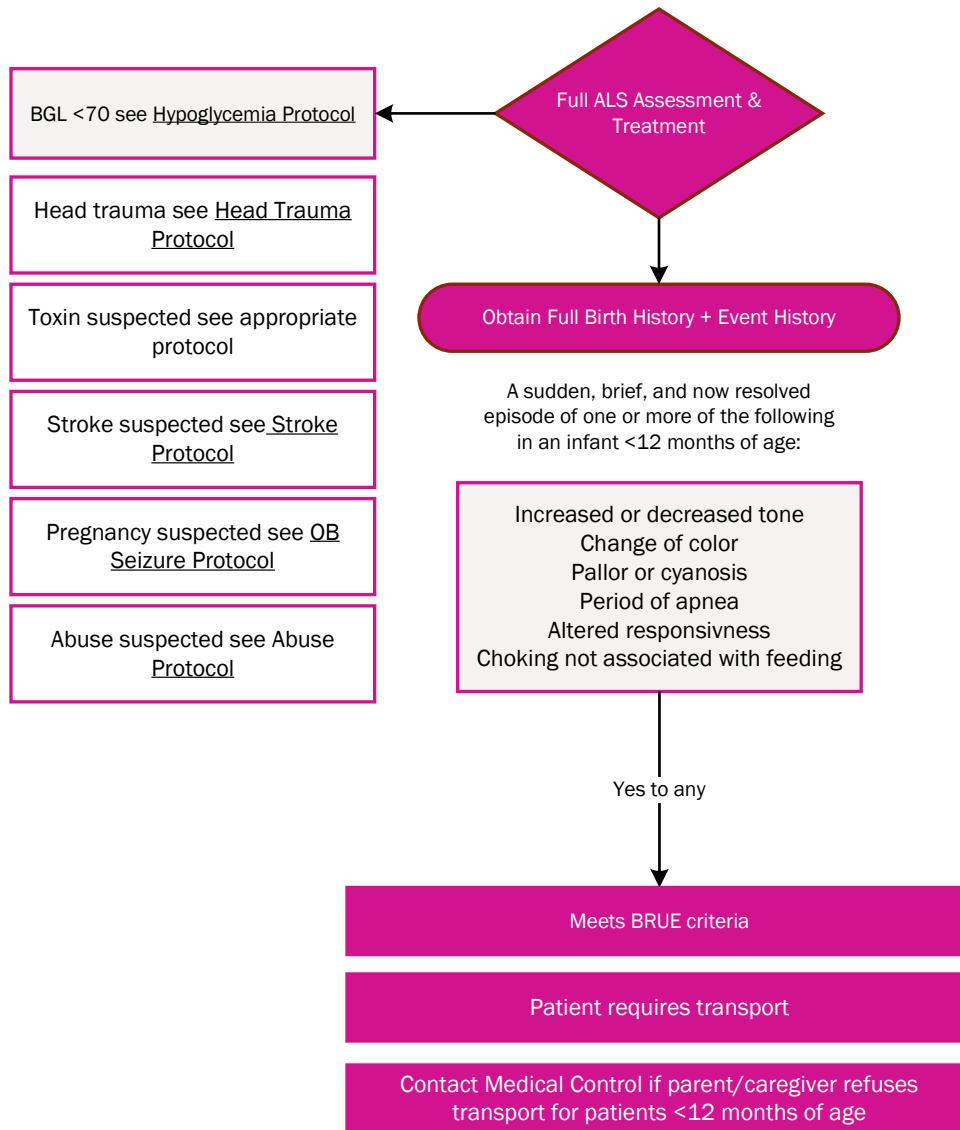


**Pediatric Emergencies**

## PEARLS

- Set pacemaker to age-appropriate heart rate:
- infant: 120 bpm
- Child: 100 bpm
- Adolescent (>13): 80 bpm

# Pediatric- BRUE/ALTE

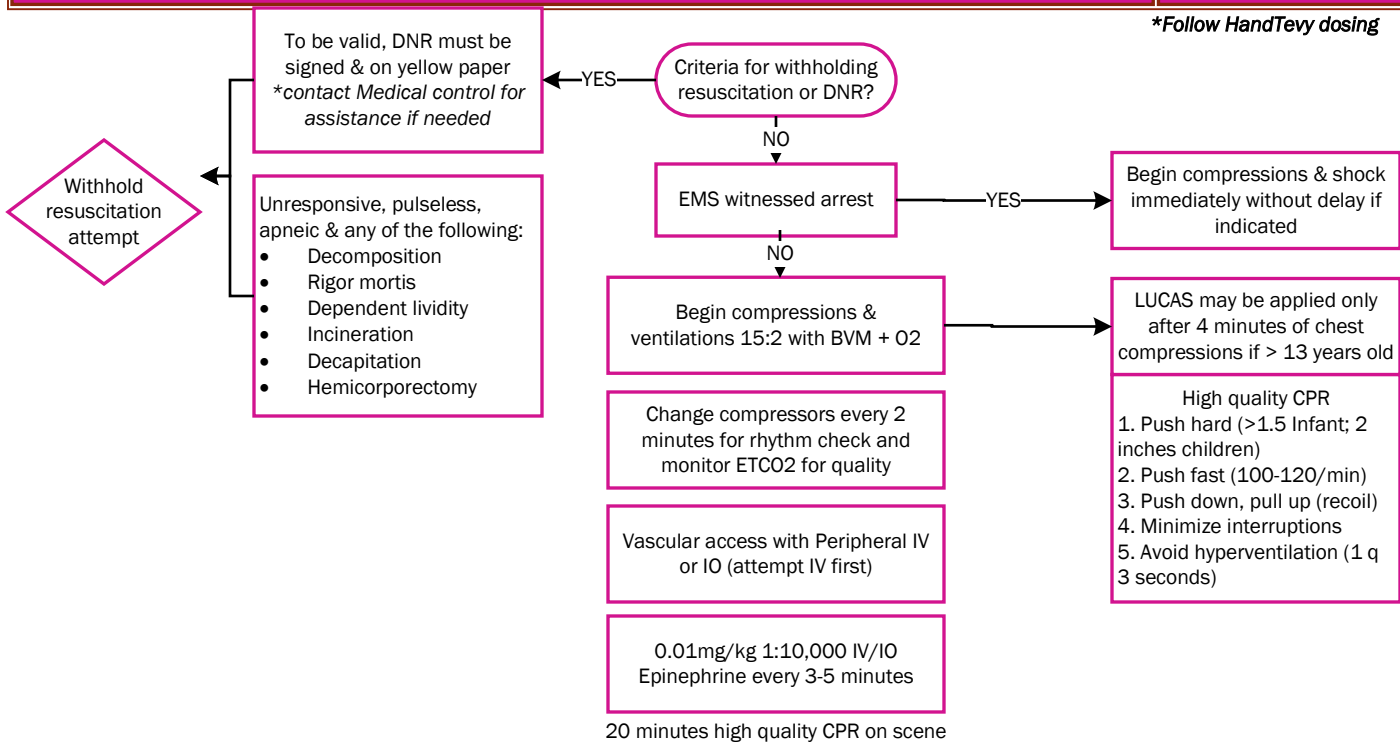


## PEARLS

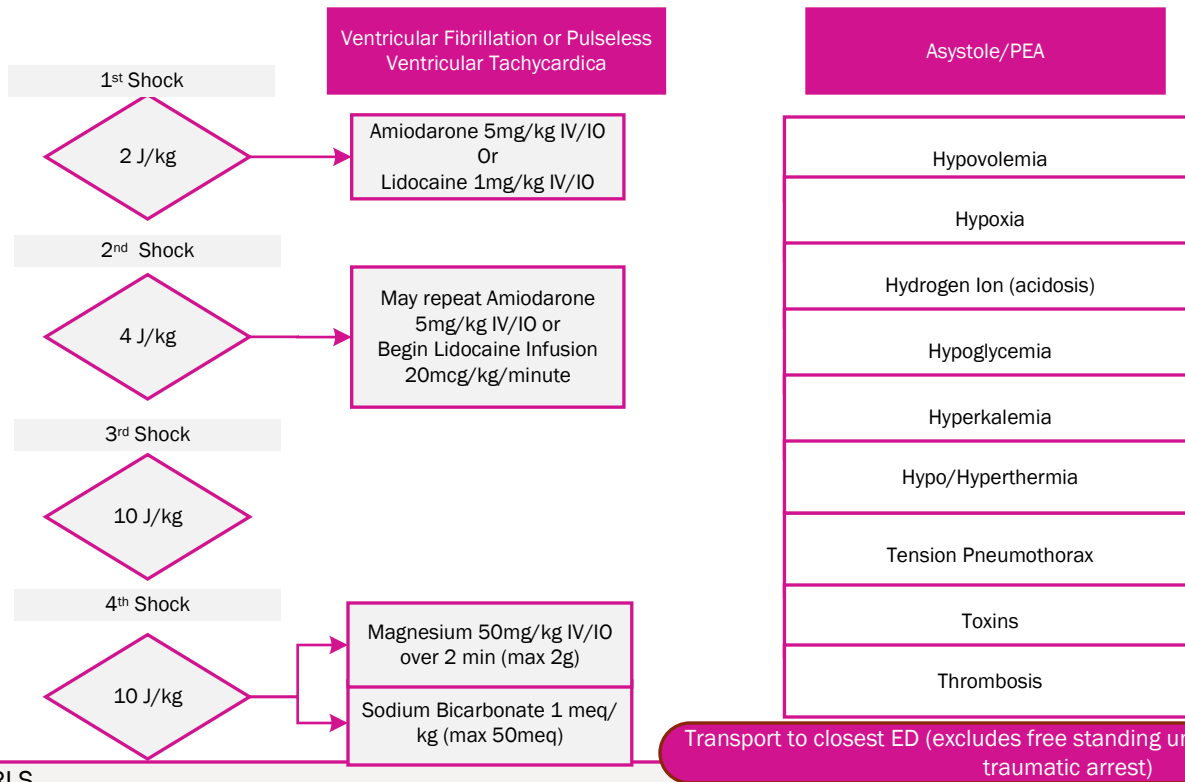
- History: Prematurity, complications at birth, circumstances surrounding event, length of episode, any parental intervention required, previous episodes, family hx of sudden infant death syndrome (SIDS), vaccine history, position of sleeping, recent infections, GERD, recent trauma, inappropriate mixture of formula
- Patients with BRUE criteria will have at least 1-2 hours of continuous pulse ox & cardiac monitoring in the ED. Higher risk infants are likely to be admitted.
- BRUE can be caused by many different entities; many of which can be life threatening. These include undiagnosed congenital heart disease, respiratory disease, seizures, infection, and many more. This is why it is paramount that these children be evaluated.

# Pediatric Cardiac Arrest <13 years old

\*Follow HandTevy dosing



## Pediatric Emergencies

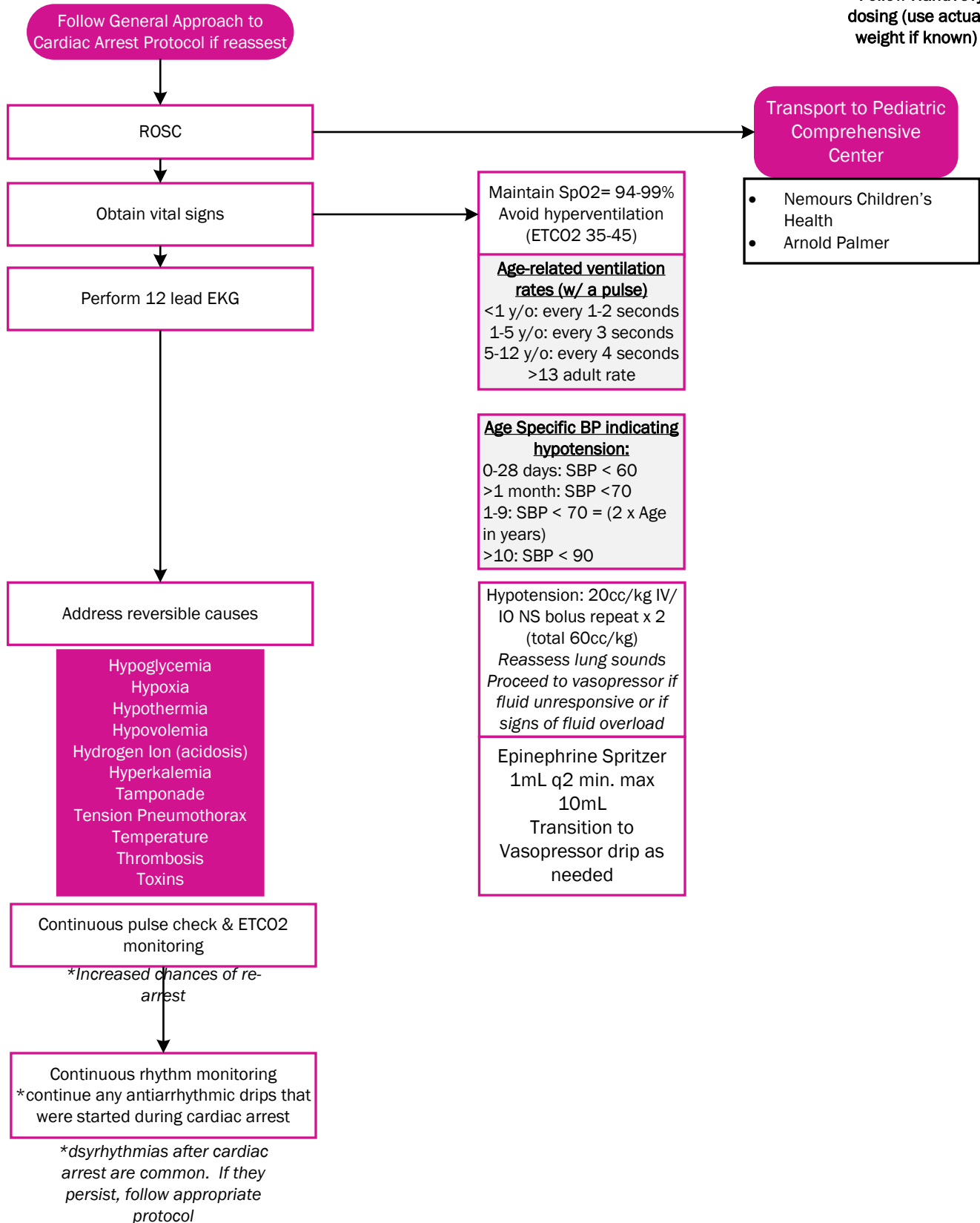


### PEARLS

- Utilize Newborn Resuscitation Protocol if <31 days old
- When the scene is safe, ALL cardiac arrest resuscitation attempts should be worked **on scene** for 20 minutes prior to transport unless refractory v-fib or v-tach.
- Distal Femur is the preferred IO site in children less than 10 years old**
- If pads overlap or within 1 inch of each other, use anterior and posterior placement
- Continue compressions while charging for defibrillation
- If ETCO2 <10 improve chest compressions
- Special Considerations
  - Maternal arrest: >20 weeks gestation, manually displace the uterus to the left.
  - Renal Failure/Dialysis patient: consider hyperkalemia: Calcium Chloride 20mg/kg slow IV/IO max 1 gm, Sodium Bicarbonate
  - Toxins: TCA Overdose- Sodium Bicarbonate; Opiate/Clonidine- Narcan;
  - Beta Blocker- Glucagon, Calcium Chloride, Sodium Bicarbonate; Calcium Channel Blocker- Calcium Chloride

# Post-Resuscitation (ROSC)

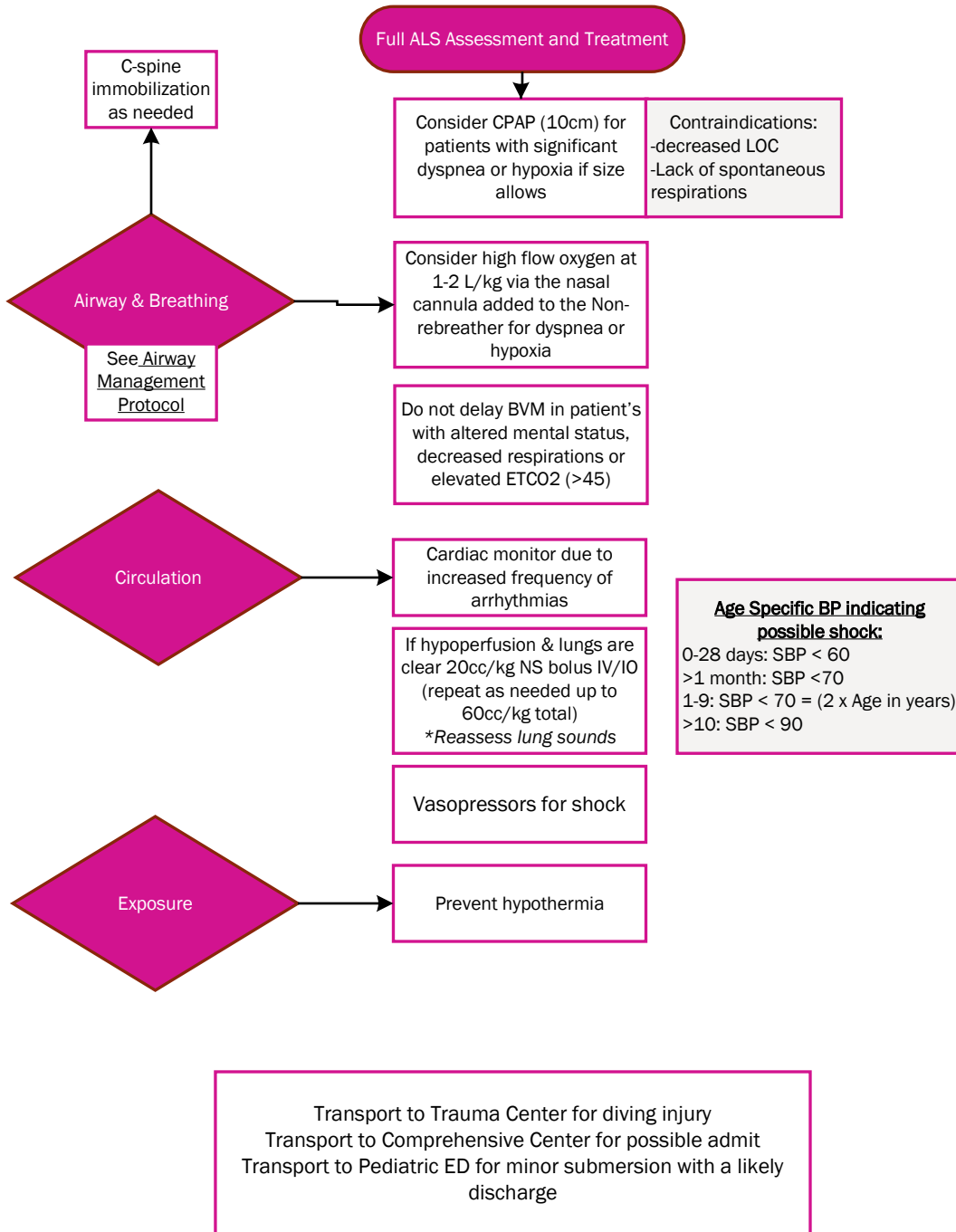
\*Follow HandTevy dosing (use actual weight if known)



Pediatric Emergencies

- PEARLS**
- Keep a finger on the pulse to quickly identify re-arrest.
  - Preferred vasopressor in Pediatric cold shock (cool, clammy, cyanotic)= Epinephrine 0.05-5mcg/kg/min IV/IO; Preferred vasopressor in warm shock (warm, vasodilated)= Norepinephrine 0.1-2mcg/kg/min IV/IO

# Pediatric- Drowning



Medical Control contact required if parental refusal

## PEARLS

- Even if the patient looks well they should be transported. There is a delayed risk of pulmonary edema
- Pediatric Drownings are not considered trauma alerts unless they meet the specific Trauma Alert criteria
- When feasible, transporting the patient to the definitive care destination is best
- Push Dose Epinephrine in Pediatrics ("Epinephrine Spritzer") is not the same dosing as Adults, since it is weight based. Example: take the Pediatric cardiac arrest dose (0.01mg/kg of the 1:10,000 Epi up to 1ml) and dilute in 9ml NS syringe. Administer 1 ml q 2min until = 0.5mcg/kg/min Epinephrine
- Norepinephrine IV/IO 0.1-2 mcg/kg/min. Titrate to age appropriate BP

# Pediatric- Hypoglycemia & Hyperglycemia

Full ALS Assessment & Treatment

Altered mental status, combative, diaphoresis, seizures, abdominal pain, nausea/vomiting, rapid breathing, weakness, dehydration

BGL  $\leq$ 69

Hypoglycemia

BGL  $\geq$ 250

Hyperglycemia

Awake, alert, tolerates oral agent: give oral glucose solution

If ETCO<sub>2</sub> < 25 consider Diabetic Ketoacidosis

IV/IO established: Dextrose 10% (Follow HandTevy dosing)

10ml/kg IV/IO NS Bolus if signs of hypoperfusion

Unable to obtain IV/IO Glucagon 0.5-1mg IM/IN (Follow HandTevy dosing)

Reassess q 5 minutes until BGL >80

Medical Control contact required for Refusal after ALS intervention unless

- Patient with known hx of Diabetes & not taking any oral diabetic agents
- Baseline mental status and no new neurological deficits
- Adult caregiver must be with patient
- BGL >80 plus ability to eat & availability of food on scene
- Parent/caregiver has the capacity to make informed health decisions

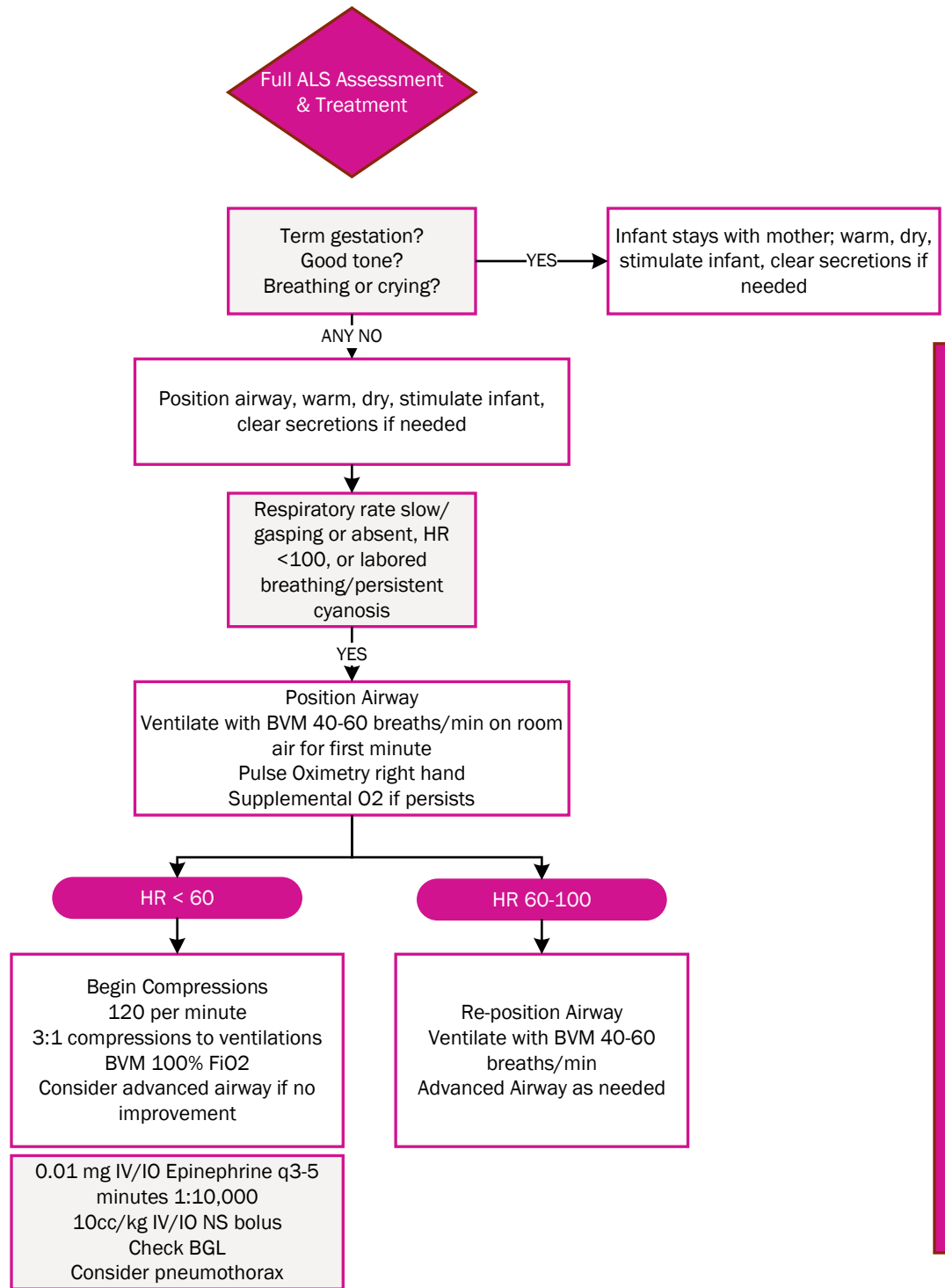
Pediatric Emergencies

## PEARLS

- New onset DKA can present as flu like illness with normal lung sounds and tachypnea. Take precaution to check BGL in these patients if appropriate.
- DKA is usually precipitated by an acute illness (infection, dehydration)
- Patients on long-acting oral medications and long acting Insulin places the patient at risk for recurrent hypoglycemia even after normal BGL established. Metformin is not a long-acting oral medication.

# Pediatric- Newborn Resuscitation

Follow *HandTevy* dosing guidelines



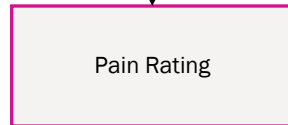
Pediatric Emergencies

## PEARLS

- BVM is the most important treatment with poor respirations or persistent bradycardia
- Compressions- 2 thumbs encircling the chest and back
- Document 1 and 5 minute APGAR however do not delay resuscitation to obtain APGAR score
- If labored breathing or persistent cyanosis with a normal heart rate, consider CPAP
- Targeted SpO2 after Birth for infants requiring resuscitation
  - 1 min 60%-65%
  - 2 min 65%-70%
  - 3 min 70%-75%
  - 4 min 75%-80%
  - 5 min 80%-85%
  - 10 min 85%-95%

# Pediatric- Pain Management

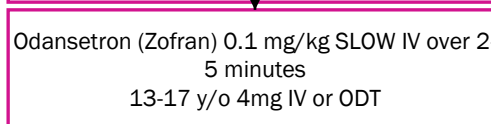
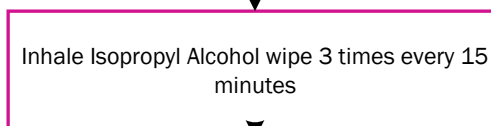
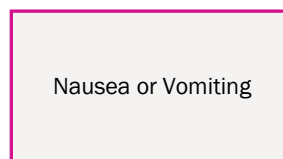
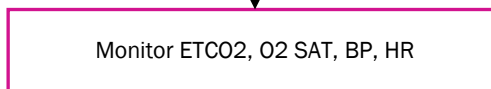
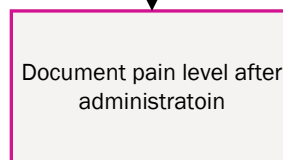
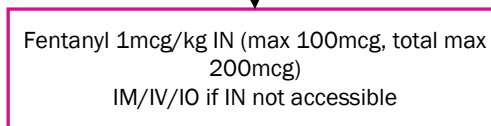
Follow HandTevy dosing guidelines



## Wong-Baker FACES® Pain Rating Scale



MODERATE TO SEVERE



Pediatric Emergencies

# Pediatric- Refusals/Non-Transports

## CAPACITY ASSESSMENT & MEDICAL CONTROL CALL GUIDE FOR HIGH RISK REFUSALS

VERBALIZE EACH POINT DURING YOUR MEDICAL CONTROL CALL WHEN ASSESSING FOR A PATIENT'S CAPACITY TO REFUSE TRANSPORT.

### CAN THIS PATIENT REFUSE TRANSPORT?

Reason for the med control call? **1**

- Unsure of the patient's capacity
- Sure of capacity but wants physician input
- Required by protocol to call

**2**

Who called 911?

Reason for 911 call? **3**

**4**

Patient's Reason for refusal?

AAO x 4? **5**

**6**

Speaking clearly?

Ambulates normally? **7**

**8**

Understands their condition?

Absence of Psychiatric crisis? **9**

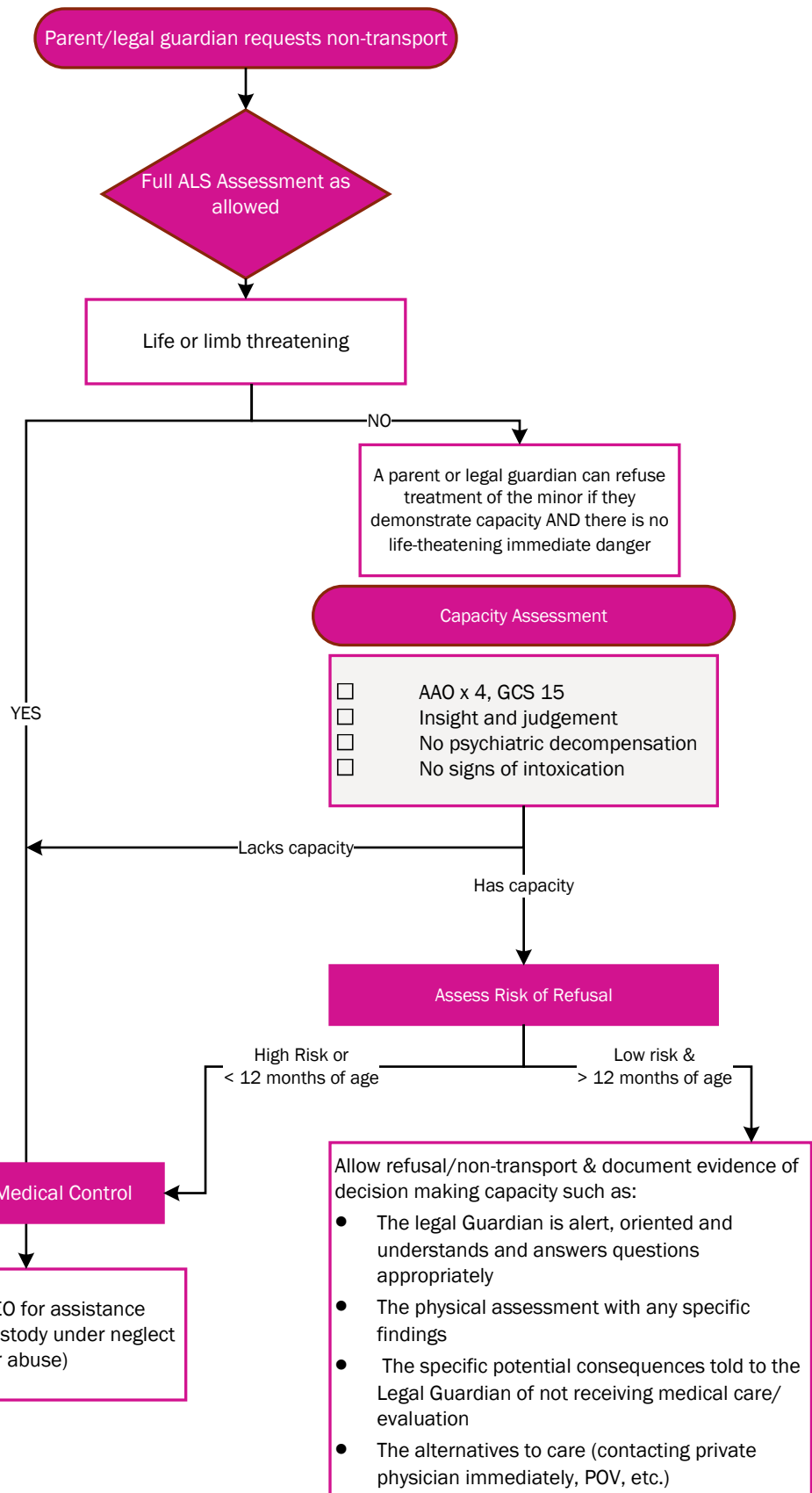
**10**

Absence of abnormal vitals that could affect insight & judgement?

- Hypoxia
- Tachycardia
- Hypotension
- Fever
- Low End Tidal

PATIENTS MAY STILL HAVE THE CAPACITY TO REFUSE WITH ABNORMAL VITALS, HOWEVER A MORE CAREFUL ASSESSMENT SHOULD BE COMPLETED TO ENSURE CAPACITY.

MEETS ALL ABOVE CRITERIA & MEDICAL CONTROL CONTACTED FOR HIGH RISK PATIENTS--> REFUSAL CAN BE GRANTED ONLY AT PATIENT'S REQUEST

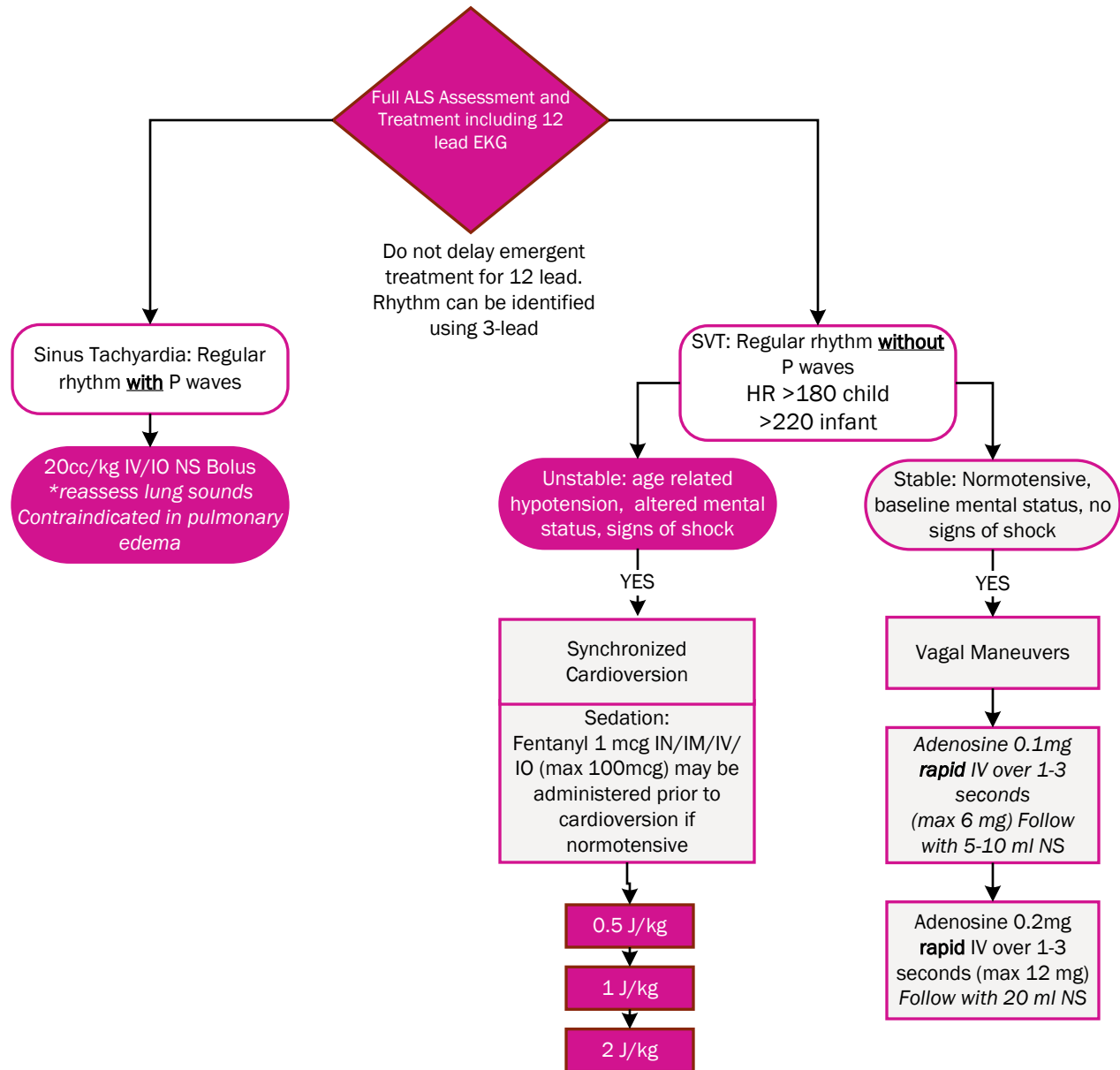


Pediatric Emergencies

### PEARLS

- See Care of Unaccompanied Minor Protocol as needed
- Laws regarding informed consent are state specific. It is important to be familiar with your state's regulations.
- See infographic above for important elements to include in medical control consultation
- Medical control contact not required for a minor MVC in <12 months of age where 911 was activated by an outside party and there are no complaints or injuries in any of the passengers and the infant has a normal assessment and is without injury.

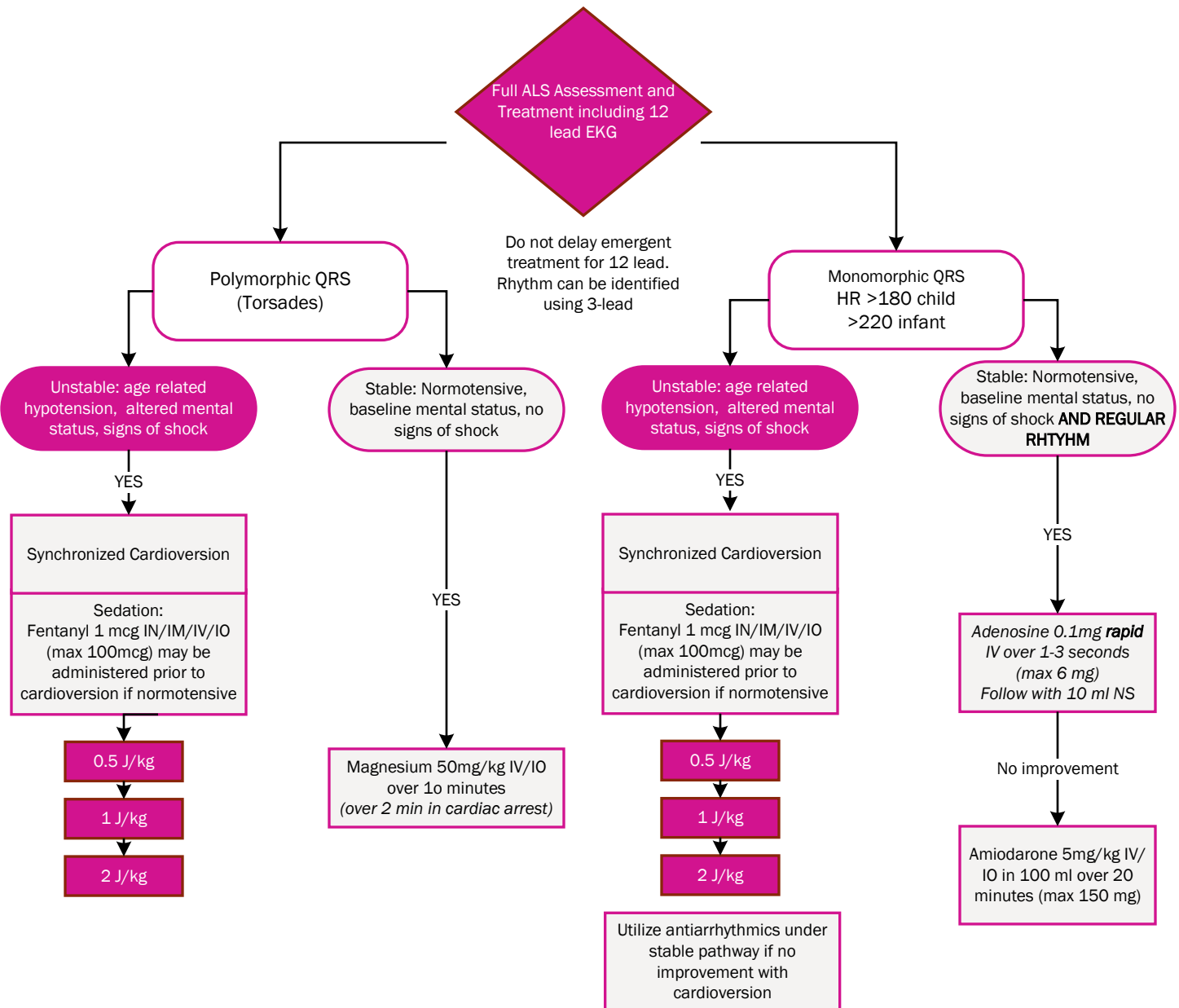
# Regular Narrow Complex Tachycardia



## PEARLS

- DDx: Arrhythmia, Dehydration, Sepsis, Fluid Overload, Pulmonary Embolism, Thyrotoxicosis, Toxin/Ingestion, Acute Coronary Syndrome, Electrolyte abnormality
- Sinus tachycardia can be a compensatory mechanism for an underlying illness. Removing this compensation by treating with medications or cardioversion may cause the patient to acutely decompensate. For this reason, it is important to analyze the rhythm carefully. If the rhythm is regular and there are no P-waves, it is safe to treat as Supraventricular Tachycardia.
- Treat only if symptomatic, otherwise monitor and reassess
- Unstable/Cardiopulmonary compromise= weak, thready or absent peripheral pulses, decreasing consciousness, tachypnea/respiratory difficulty, central cyanosis and coolness, hypotension

# Wide Complex Tachycardia

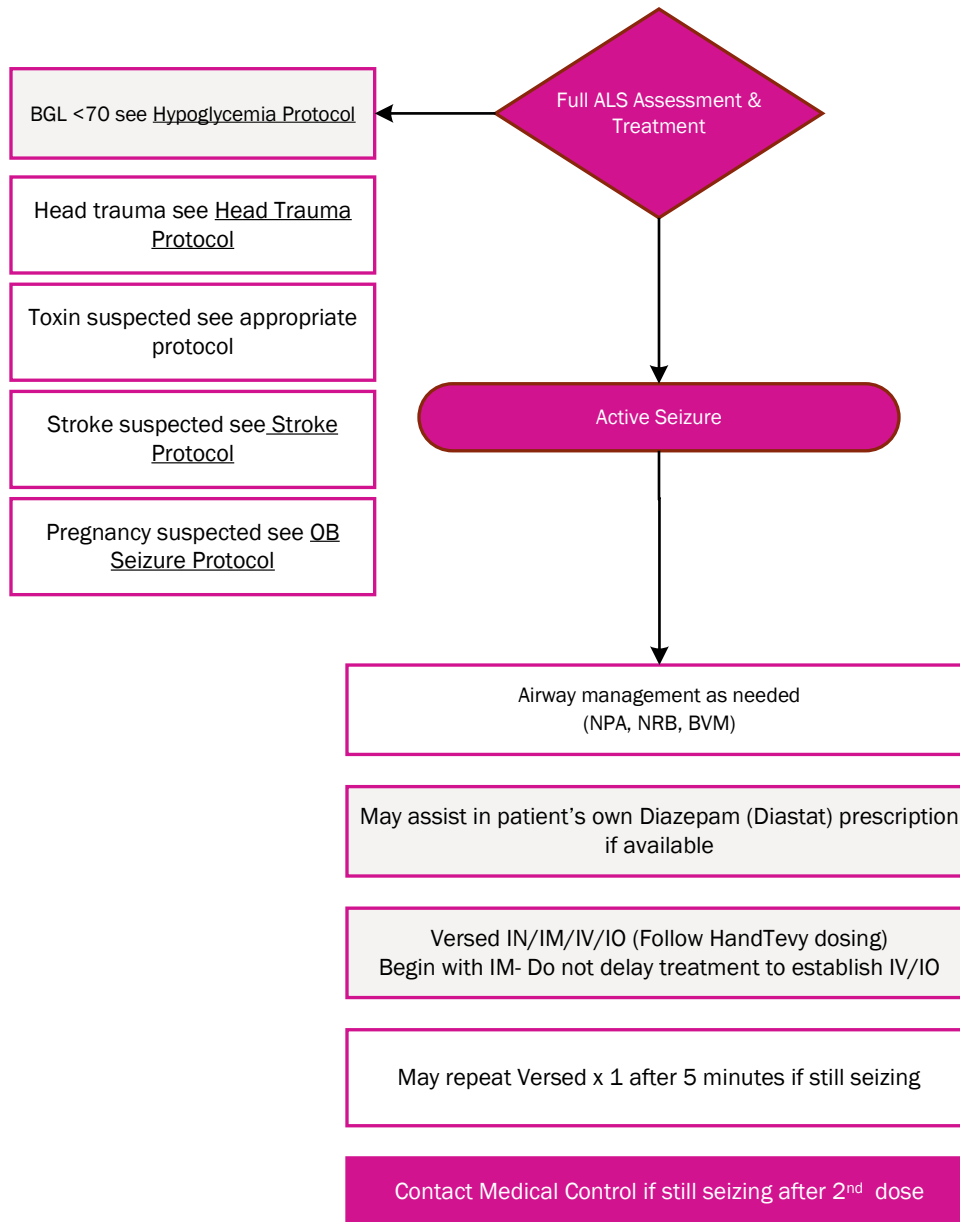


Pediatric Emergencies

## PEARLS

- DDX: Arrhythmia, Dehydration, Sepsis, Fluid Overload, Pulmonary Embolism, Thyrotoxicosis, Toxin/Ingestion, Acute Coronary Syndrome, Electrolyte abnormality
- Wide Complex is usually SVT with Aberrancy in kids. Vtach is typically in patients with underlying heart disease.
- Sinus tachycardia can be a compensatory mechanism for an underlying illness. Removing this compensation by treating with medications or cardioversion may cause the patient to acutely decompensate. For this reason, it is important to analyze the rhythm carefully. If the rhythm is regular and there are no P-waves, it is safe to treat as Supraventricular Tachycardia.
- Treat only if symptomatic, otherwise monitor and reassess
- Unstable/Cardiopulmonary compromise= weak, thready or absent peripheral pulses, decreasing consciousness, tachypnea/respiratory difficulty, central cyanosis and coolness, hypotension

# Pediatric- Seizures

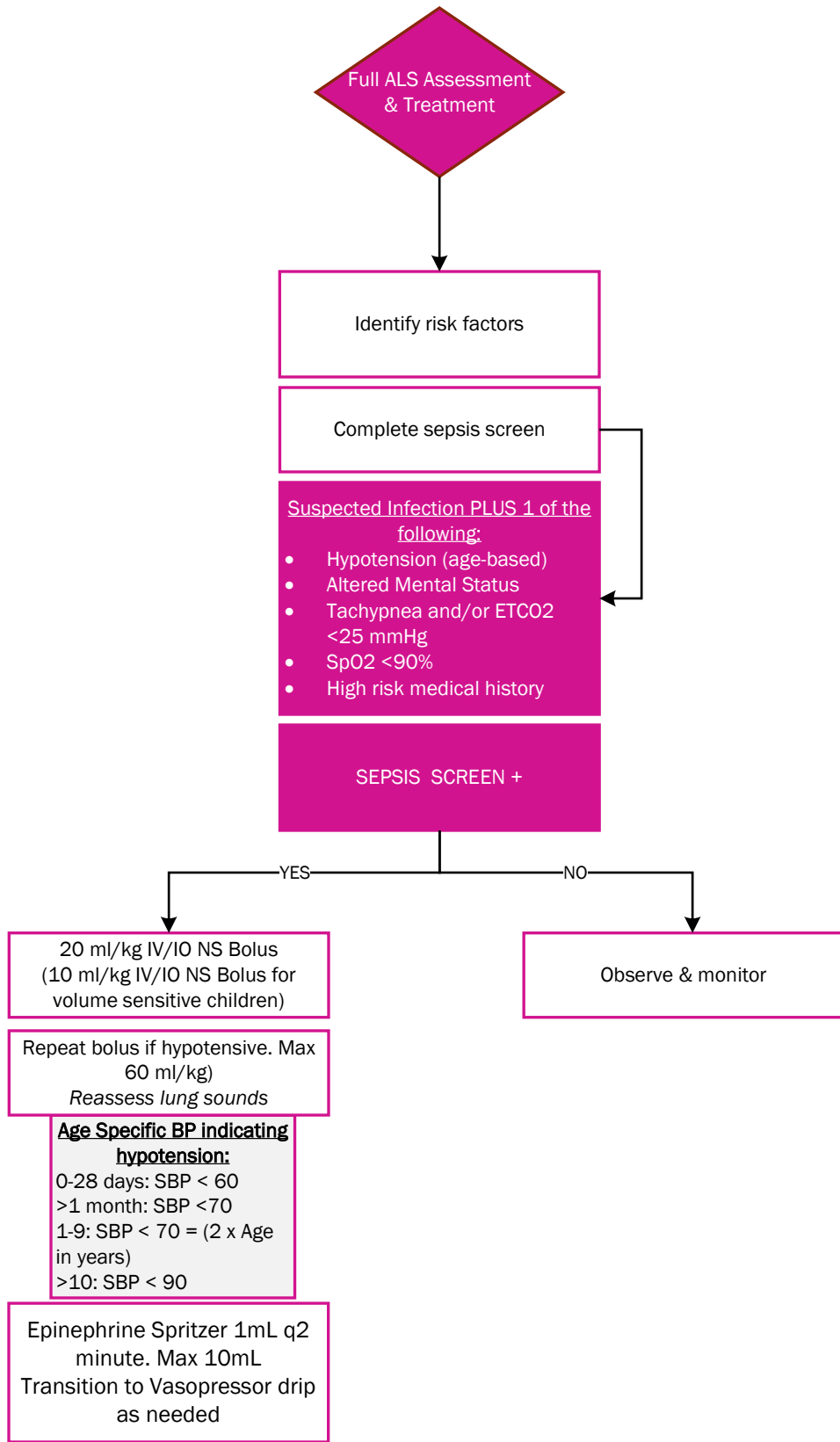


## PEARLS

- Ddx: Epilepsy (Hx of seizures), medication non-compliance, toxin, hypoxia, hypoglycemia, fever, head trauma, infection
- Febrile seizures: diagnosed in kids 6 months- 5 years old
- Status Epilepticus: two or more episodes of seizure activity between which the patient does not regain consciousness or a seizure lasting longer than 5 minutes
- Some patients with a diagnosed seizure disorder will have their own Diazepam rectal gel (Diastat). This can be given if no IV is available.

# Pediatric Suspected Sepsis

Follow HandTevy dosing guidelines



Pediatric Emergencies

## PEARLS

- High risk medical history: altered mental status, asplenia, organ transplant, cancer, cerebral palsy, sickle cell, indwelling catheters, immunodeficient, bed bound, mental delay, organ transplant, indwelling catheter
- Volume-sensitive children: neonates, congenital heart disease, chronic lung disease, chronic renal failure
- Norepinephrine IV/IO 0.1-2 mcg/kg/min. Titrate to age appropriate BP
- Push Dose Epinephrine in Pediatrics ("Epinephrine Spritzer") is not the same dosing as Adults, since it is weight based. Example: take the Pediatric cardiac arrest dose (0.01mg/kg of the 1:10,000 Epi up to 1ml) and dilute in 9ml NS syringe. Administer 1 ml q 2min te= 0.5mcg/kg/min Epinephrine

# Pediatric- Shock

Full ALS Assessment and Treatment

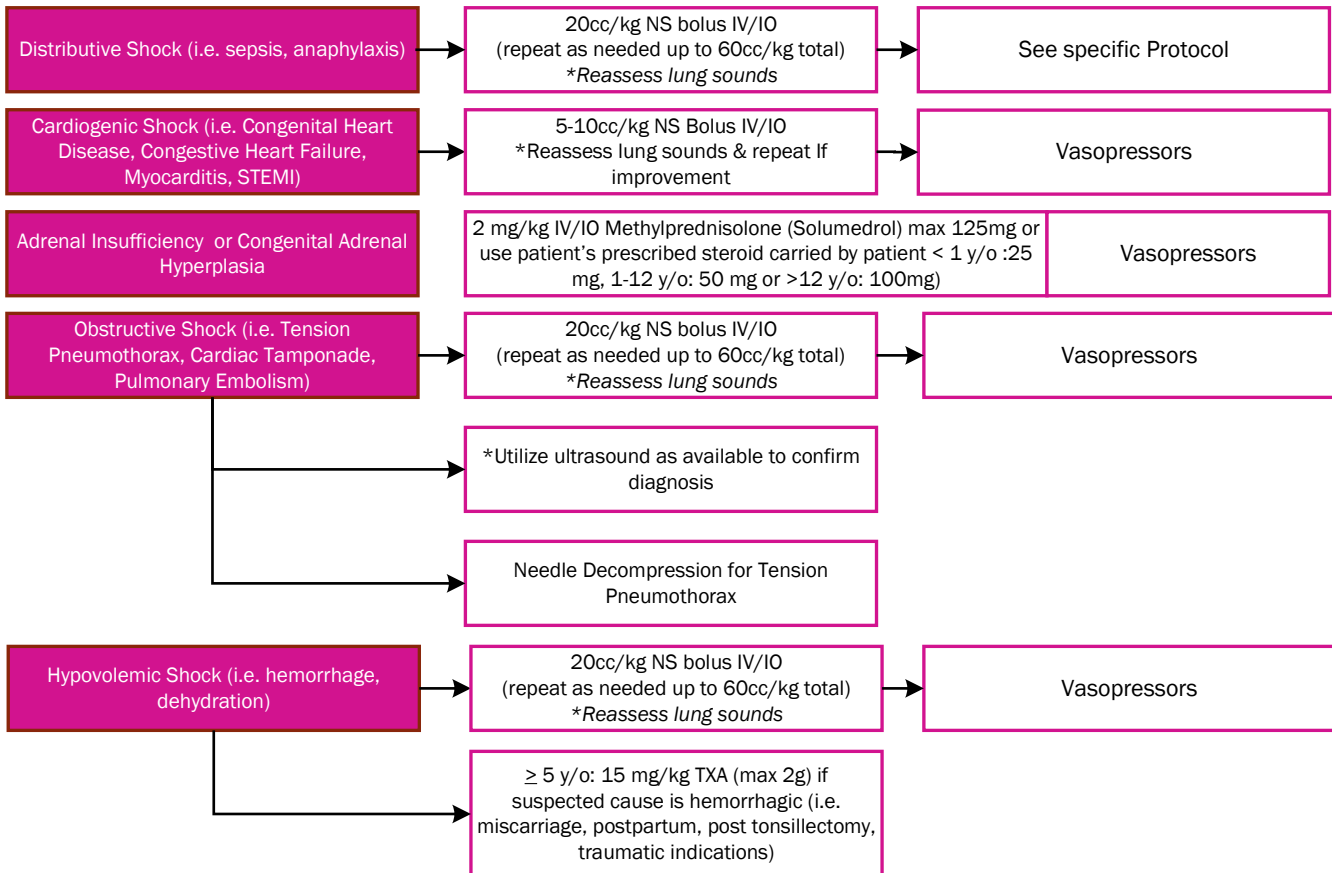
Evaluate for signs and symptoms of Shock

- Hypotensive for age (although late sign)
- Bradycardia or Tachycardia
- Cool extremities
- Mottled skin appearance
- Pallor
- Delayed capillary refill
- Diaphoresis
- Altered mental status
- Poor feeding

**Age Specific BP indicating possible shock:**

- 0-28 days: SBP < 60
- >1 month: SBP < 70
- 1-9: SBP < 70 = (2 x Age in years)
- >10: SBP < 90

Treat possible causes of Shock

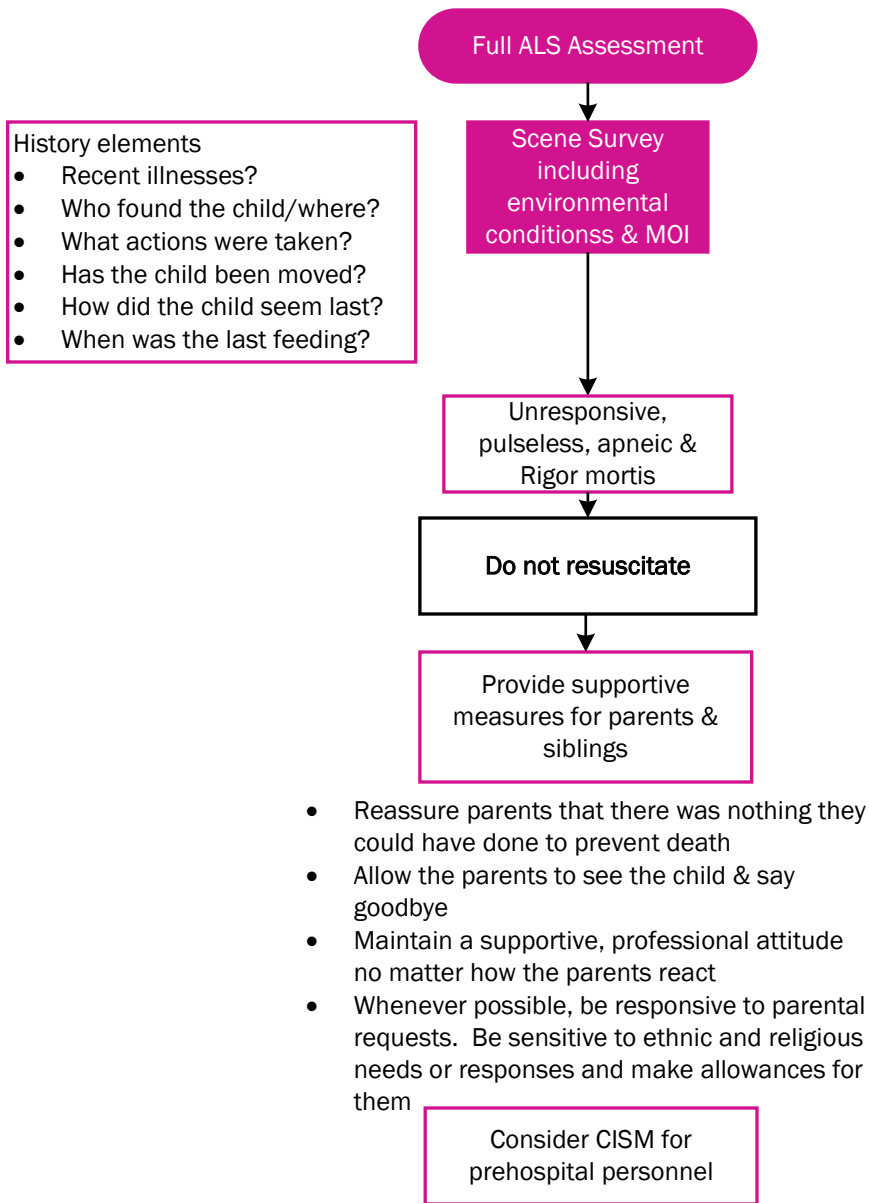


Pediatric Emergencies

## PEARLS

- Shock may be present with normal blood pressure
- Tachycardia may be the first and only sign of Pediatric shock
- Push Dose Epinephrine in Pediatrics ("Epinephrine Spritzer") is not the same dosing as Adults, since it is weight based. Example: take the Pediatric cardiac arrest dose (0.01mg/kg of the 1:10,000 Epi up to 1ml) and dilute in 9ml NS syringe. Administer 1 ml q 2minu te= 0.5mcg/kg/min Epinephrine.

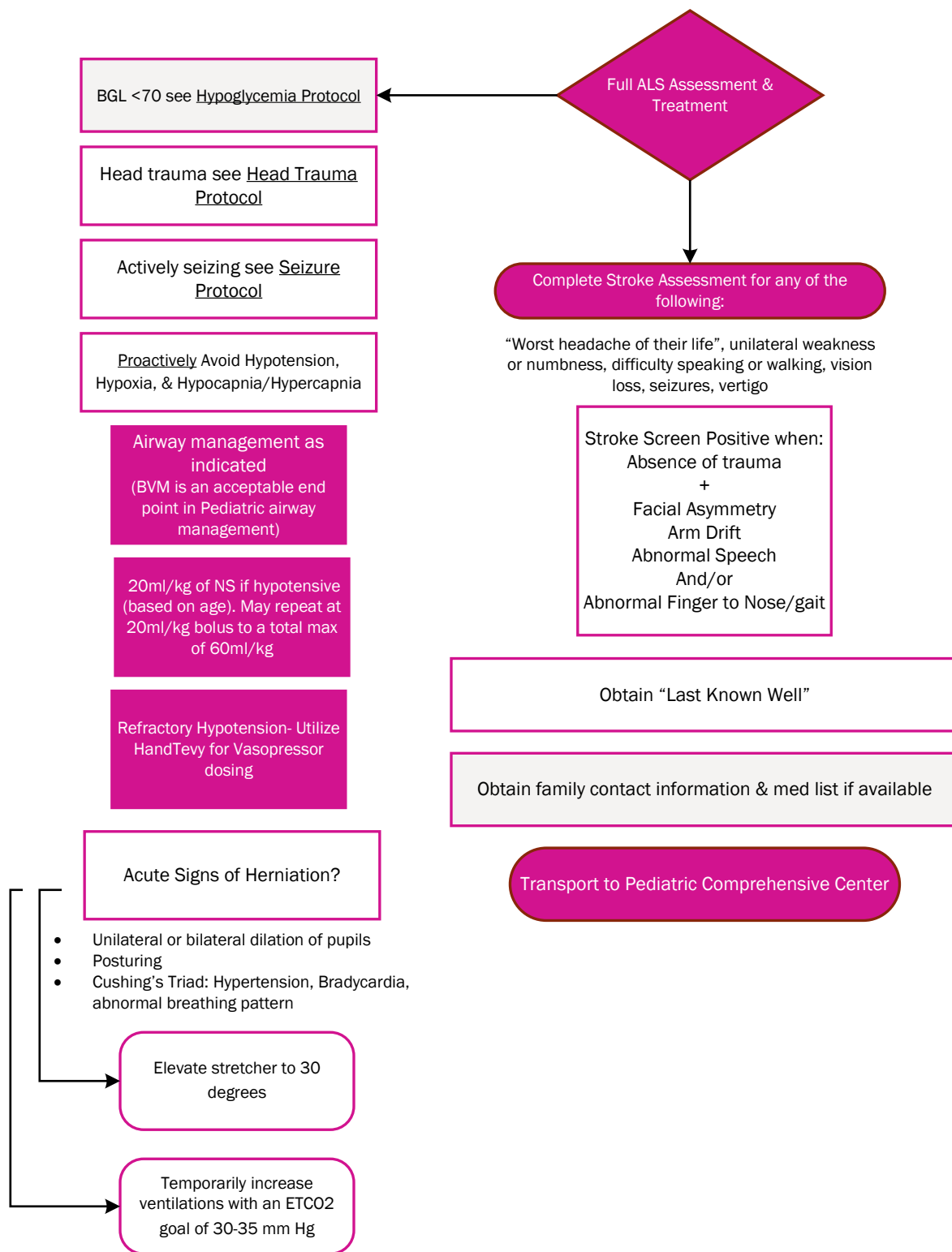
# Death of a Child & Sudden Infant Death (SIDS)



## PEARLS

- SIDS is the leading cause of infant mortality in the United States and the causes are unknown
- Refrain from asking judgmental or leading questions. Do not place blame or make accusations

# Pediatric- Stroke



Pediatric Emergencies

- PEARLS**
- Ddx/Causes: Subarachnoid Hemorrhage, Intraparenchymal Hemorrhage, TIA, Seizure, Todd’s Paralysis, Hypoglycemia, Tumor, Trauma, Sickle Cell Anemia, other causes of altered mental status (toxin, infection, hypoxia, shock)
  - “Last Known Well” or “Time of Onset” (report an actual time, i.e. 16:45)
  - Attempts at establishing a “last known well” is important on scene, as family may arrive to the hospital later. Without this information, patients may not be able to receive htrombolytics or intervention.
  - “Wake Up Stroke”: time starts when patient was last awake or symptom free

# Pediatric- Suspected Abuse & Neglect

All health care clinicians are obliged by law to report cases of suspected child or vulnerable adult abuse and/or neglect to local police or adult/child protective service agencies.  
Please call DCFS (1-800-25-ABUSE) (1-800-252-2873) and also report suspicions to the ED physician & ED charge nurse

Full ALS Assessment and Treatment

Treat obvious injuries & refer to condition specific protocol

Document:  
Environmental surroundings  
Child's interaction with parents  
Caretakers description of event  
Physical assessment findings  
Discrepancies in history and injuries

Physical

- Unexplained bruises
- Numerous bruises
- Cigarette burns
- Bleeding, irritation or pain of the genitals
- Child with repeated injuries/multiple calls to the same address
- Flat/bald spots on head (infants)
- Unexplained wet clothing

Behavioral

- History of minor incident inconsistent with major injury
- MOI inconsistent with developmental age
- Inappropriate fear of parent
- Inconsistent explanation for injury
- Nervous disorders (rash, hives, stomachaches) Age-inappropriate behaviors (bedwetting)
- Lack of adult supervision
- Delay in seeking medical care

Sexual Abuse

- May be present without apparent signs of physical abuse
- Discourage patient from going to the bathroom
- Don't allow patient to change clothes or wash
- Bring clothing to hospital

**Parent/caregiver requests refusal:**  
If possible, remain at the scene  
Call police to request protective custody  
Do not confront caregivers  
Call Medical Control

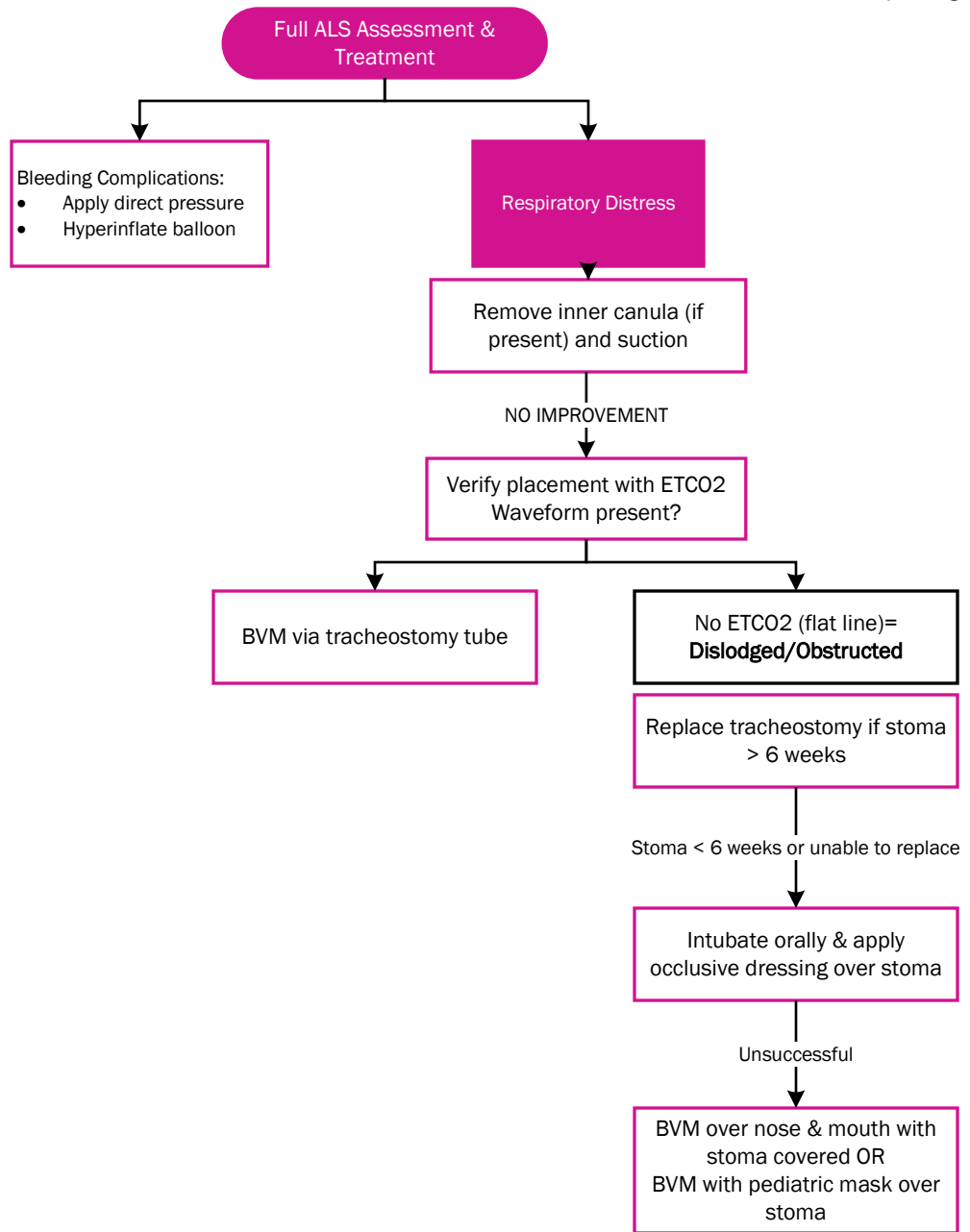
Pediatric Emergencies

## PEARLS

- The following are some common forms of neglect:
- Environment is dangerous to the child (e.g. weapons within reach, playing near open windows without screen/guards, perilously unsanitary conditions, etc.).
- Caretaker has not provided, or refuses to permit medical treatment of child's acute or chronic life-threatening illness, or of chronic illness, or fails to seek necessary and timely medical care for child.
- Caretaker appears to be incapacitated (e.g. extreme drug/alcohol intoxication, disabling psychiatric symptoms, prostrating illness) and cannot meet child's care requirements.
- Child appears inadequately fed (e.g. seriously underweight, emaciated, or dehydrated) inadequately clothed, or inadequately sheltered.
- Child is found to be intoxicated or under the influence of an illicit substance(s).

# Tracheostomy Complications

\*Follow HandTevy dosing



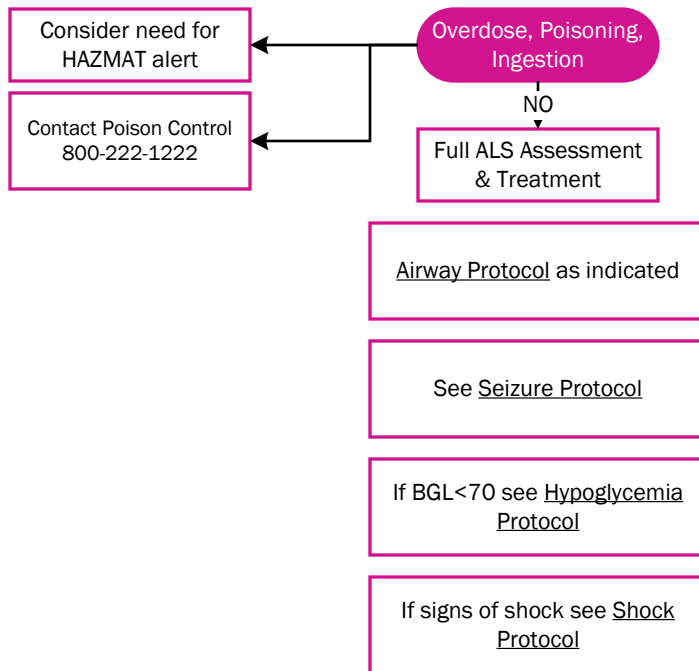
Pediatric Emergencies

## PEARLS

- If laryngectomy patient, you will only be able to ventilate with BVM at the stoma site. Oral intubation is also not possible
- Many caregivers will have extra appropriately sized tracheostomy tubes
- If ventilatory dependent, first detach the ventilator and administer Bag Valve Mask ventilations

# Toxin/Overdose

\*Follow HandTevy dosing



## Pediatric Emergencies

Beta Blocker/Calcium Channel Blocker	Organosphosphate	Carbon Monoxide/ Cyanide	TCA's	Opiate
<p>Glucagon 0.1 mg/kg IV/IO as available</p> <p>Calcium Chloride 20 mg/kg IV/IO over 2 minutes <i>Contraindicated in Digoxin</i></p> <p>See <u>Bradycardia Protocol</u></p> <p>Treat signs of Hyperkalemia</p> <ul style="list-style-type: none"> <li>Calcium Chloride 20 mg/kg IV/IO over 2 minutes</li> <li>Albuterol 2.5mg via nebulizer</li> <li>(signs of acidosis) Sodium Bicarbonate 1 meq/kg (max 50meq)</li> </ul>	<p>Atropine 0.02 mg/kg IM/ IV/IO repeat every 5 minutes until dry secretions &amp; adequate oxygenation</p>	<p>High Flow Oxygen</p> <p>Consider transport to Hyperbaric facility</p> <ul style="list-style-type: none"> <li>CO level &gt;25%</li> <li>CO level &gt; 15% &amp; pregnant</li> <li>CO level &gt; 15% + AMS</li> <li>CO level &gt;15% + syncope or seizures</li> </ul> <p>Consider Cyanokit for serious smoke inhalation victims (altered, hypotension, respiratory failure, dysrhythmias)</p>	<p>Sodium Bicarbonate 1 meq/kg (max 50meq) Repeat every 3-5 minutes until QRS narrows</p>	<p>Narcan 0.1mg/kg IN/IM/ IV/IO</p> <p>Titrate to adequate ventilation &amp; oxygenation <i>(not to restore consciousness)</i></p>

### PEARLS

- Always try to obtain TIME of ingestion
- Bring bottles/contents to the ED
- Beta Blockers (Atenolol, Timolol, Carvedilol, Metoprolol)- bradycardia, hypotension, altered mental status, seizure, hypoglycemia
- Calcium channel blocker (Amlodipine)- bradycardia, hypotension
- TCA (Amitriptyline): seizure, dysrhythmias, hypotension, altered mental status
- Stimulants: tachycardia, hypertension, hyperthermia, dilated pupils, seizures (Versed is the drug of choice for severe symptoms)
- Anticholinergic: tachycardia, hyperthermia, dilated pupils, altered mental status
- Opiates/Depressants: bradycardia, hypotension, hypothermia, respiratory depression
- Insecticides (Cholinergics/Organophosphates): increased secretions, nausea, vomiting, diarrhea, pinpoint pupils, bronchospasm, defecation
- Contraindications to Hyperbaric chamber: cardiac arrest, burns, trauma
- Odors: Almond=Cyanide, Fruit=Alcohol, Garlic= Arsenic, Parathion, Mothballs= Camphor, Rotten eggs= Hydrogen Sulfide, Wintergreen= Methyl Salicylate

# Pediatric- Transport

## Safe Transport

Any child who fits on a length-based resuscitation tape must be properly restrained in a safety seat or harness

Child where spinal immobilization is not required:  
Size appropriate child restraint system (CRS) that complies with FMVSS 213 for passenger vehicles, cot mounted devices, commercial immobilization devices and long board/harness immobilizer systems.

Condition where Spinal Immobilization and/or lying flat is required:  
Secure board w patient to the stretcher head first with three horizontal restraints across torso & vertical restraint across each shoulder.

Multi-patient scenario:  
When possible transport each as a single patient according to the above. For mother & newborn, transport newborn in appropriate CRS device in rear-facing provider seat w/ forward facing belt path that prevents forward & lateral movement, leaving stretcher for mother.

It is unacceptable to transport a Pediatric patient in the arms of an adult.

## Destination

### Closest ED/Freestanding ED

- Medical Cardiac Arrest (excludes Freestanding ED's)
- Minor injuries, stable vitals, no O2 requirement, not likely to be admitted
- Unstable where additional transport time to Specialty center could negatively impact care (excludes Freestanding ED's)
- Unstable/Non-patent airway
  - Unable to successfully oxygenate/ventilate with airway adjuncts & BVM techniques by most experienced
  - Advanced airway immediately required to prevent death

Pediatric Emergency Departments:  
-Advent Celebration  
Pediatric Comprehensive Centers:  
-Nemours Children's  
-Arnold Palmer  
Pediatric Trauma/Burn Center:  
-Arnold Palmer

### Pediatric Comprehensive Center

- Post-ROSC
- Stroke
- Likely to be admitted (see examples)
- Emergency related to a known condition previously treated at their medical home

Ex. Admits  
-altered mental status  
-more than 2 seizures w/o known hx  
-respiratory distress  
-BRUE  
-fever less than 60 days old  
-shock with abnormal Pediatric Assessment Triangle  
-prolonged or unstable submersion

### Pediatric Trauma Center

- Meets Trauma Alert Criteria
- Meets any 1 red criteria
- Meets any 2 blue criteria alone
- Meets any 1 local criteria
- Meets Trauma Gray criteria
- Meets any 1 blue criteria with a high risk mechanism
- Multisystem injury
- Pelvic or Femur Fracture
- Complex hand or wrist fractures
- Chest wall instability
- Blunt abdominal injury (seatbelt sign or firm or distended abdomen)
- Death in the same vehicle
- Any crash > 35mph with pregnancy
- Fall from 10 foot height or more
- Ejected from vehicle
- Pedestrian/Bicyclist thrown, crushed, run over, or with significant impact (with complaints)
- Paramedic Judgement

# Pediatric- Unaccompanied Minor

Unaccompanied Minor < 18 years old

All efforts should be made to contact the parent(s) or legal guardian to obtain informed consent

Emergency evaluation and treatment may begin while attempting to obtain consent, only in cases of life or limb threatening emergencies. This falls under "implied consent".

If unavailable

Delay all nonurgent diagnostic and treatment decisions until the parent or legal guardian can be reached for informed permission or consent.

If available

EMS personnel should document all informed consent discussions, including the identity of the person providing consent and the efforts made to obtain consent from the patient's legal guardian, if unavailable.

Florida decision makers

1. Parent or Step-parent
2. Grandparent
3. Adult Sibling
4. Adult aunt or uncle

Emancipated Minors

- Married
- Pregnant when decision relates to pregnancy
- Legally emancipated

Parent/caregiver requests refusal:

If possible, remain at the scene  
Call police if needed  
Call Medical Control if high risk

Pediatric Emergencies

## PEARLS

- Treat emergently if delay in medical care would endanger the health or well-being of the minor
- Although unemancipated minors are unable to provide consent, it is important to include them in the plan of care, as appropriate for the patient's age, stage of development, and level of understanding.