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# OB / GYN & PEDIATRICS GUIDELINES

SPEARFISH EMERGENCY AMBULANCE SERVICE, INC.

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# OB/GYN & PEDIATRICS GUIDELINES

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## GYNECOLOGICAL EMERGENCIES

### Assessment

- Symptoms: pain, cramping, passage of clots or tissue, dizziness, weakness;
  - If pregnant, inquire about swelling of face and extremities, urge to push, contractions (regularity and timing), ruptured membranes, bleeding.
- Obtain menstrual history: last normal menstrual period, duration of period, amount of flow, birth control method
- Past and present history of: hypertension (preeclampsia / eclampsia), bleeding problems, pregnancy, medications, allergies
- Vital signs and orthostatic changes
- Evidence of blood loss, clots or tissue fragments (bring tissue to the ED)/ signs of shock
- Fever
- If severe bleeding is noted, notify ALS
  - Amount of vaginal bleeding is difficult to estimate. Try to get an estimate of number of saturated pads in previous 6 hours.
  - A patient in shock from vaginal bleeding should be treated like any other patient with hypovolemic shock.
  - Always consider pregnancy as a cause of vaginal bleeding. The history may contain inaccuracies, denial, or wishful thinking.
  - Other gynecological problems causing pain include: pelvic inflammatory disease, cystitis, ruptured ovarian cyst, dysuria, mittelschmerz, endometritis, endometriosis, miscarriage, ectopic pregnancy.

### Treatment:

<b>B</b>	Initiate O <sub>2</sub> as necessary. If bleeding vaginally (moderate to heavy): <ul style="list-style-type: none"> <li>○ Inspect perineum (where privacy is possible) - <u>Observation ONLY</u></li> <li>○ Do Not pack vagina to stop bleeding. Apply peri-pad or 5X9 ABD pad</li> </ul> Contact Medical Control if concerns or complications.
<b>I<sub>85</sub></b>	Establish IV: <ul style="list-style-type: none"> <li>• If hypotensive, give fluid bolus, further fluids as directed and consider a second large bore IV.</li> </ul>
<b>A</b>	Cardiac Monitor
<b>P</b>	Cardiac Monitor

## GYNECOLOGIC - CAUSES OF ABDOMINAL PAIN

Causes	Signs & Symptoms	Treatment
Ectopic Pregnancy	ABD pain (sudden onset), vaginal bleeding	IV, fluid bolus if signs of shock
Pelvic Inflammatory Disease (PID)	Back/ABD pain, painful urination, low grade fever, difficulty ambulating ( <b>? Appendicitis, UTI</b> )	IV, fluid bolus if signs of shock Consider: sm. dose of fentanyl for pain
Toxic Shock Syndrome	High fever, body rash, headache, hypotension	Oxygen, IV - fluid bolus if signs of shock
Ovarian Cyst	Increased lower ABD/pelvic pain, vaginal bleeding, hypovolemia leading to shock.	Oxygen, IV - fluid bolus if signs of shock Evaluate orthostatic VS.
<i>differential diagnosis</i> : hematuria, appendicitis, diverticulitis, bowel obstruction, ovarian tumor, ovarian torsion, ectopic pregnancy, salpingitis (fallopian tube inflammation), PID, inflammatory bowel disease		
Vulvular Hematoma	Purplish swelling of the vulva	Apply ice, provide compression
	Monitor indwelling catheter (if in place); swelling may compress the urethra causing bladder obstruction	

## OB - NORMAL LABOR AND DELIVERY

### Assessment

- Gather history.
- Assure airway.
- Perform examination
- If delivery imminent, notify ALS

### Treatment:

<b>I<sub>85</sub></b>	Start IV NS at TKO or saline lock
<b>A</b>	
<b>P</b>	Consider Cardiac Monitor

### BLS Treatment:

If delivery **is not** imminent: Transport on left side, Monitor contractions, Be prepared for delivery

If delivery **is** imminent - Prepare for delivery:

- If crowning occurs, lightly place hand over perineal area to prevent explosive delivery
- Once baby's head delivers, suction baby's mouth/nose, prepare for resuscitation as soon as delivery is complete
- Note time of delivery, dry and warm baby by placing baby to mother's stomach
- Immediately stimulate respirations while drying and wrapping infant. Cover infant's head as soon as possible.
- Assess and record a one-minute APGAR
- Apply cord clamps once it stops pulsating. Double clamp cord at six inches and eight inches from the infant, then cut the cord.
- Control bleeding from the perineal tears with direct pressure
- Assess and record a five-minute APGAR
- Assist with delivery of placenta and retain to take to the hospital
- Massage uterus to stimulate contractions and control post-partum bleeding
- Allow nursing if desired

Transport as soon as possible

Monitor mother for excessive bleeding

Monitor infant for distress. Be prepared to assist if needed (refer to *Neonatal resuscitation guidelines*)

Contact Medical Control if concerns or complications.

## APGAR SCORE

SIGN	0	1	2
<b>APPEARANCE</b> (Color)	Blue or Pale	Body pink – extremities blue	Completely pink
<b>PULSE</b> (Heart rate)	Absent	< 100/min	>100/min
<b>GRIMACE</b> (Irritability)	No Response	Grimace	Cough, sneeze, cry
<b>ACTIVITY</b> (Muscle tone)	Limp	Some flexion of extremities	Active motion
<b>RESPIRATIONS</b> (Effort)	Absent	Slow, irregular	Good, crying

## OB WITH COMPLICATIONS

### Assessment:

- Gather history
- Perform examination
- Assure airway
- If any of the following present transport immediately;
  - Heavy bleeding
  - Limb presenting
  - Prolapsed cord
  - Multiple fetuses
  - Previous C-section

### Treatment:

<b>B</b>	<p>Initiate Oxygen by cannula (2-6 L/min) or mask (10-15 L/min).</p> <p>If patient has a prolapsed cord or limb presentation;</p> <ul style="list-style-type: none"> <li>○ Place patient in Trendelenburg</li> <li>○ <i>Prolapsed cord</i> - Insert gloved hand and hold presenting part up and off cord.</li> <li>○ Transport rapidly.</li> </ul> <p>Contact Medical Control if concerns or complications.</p> <p>If patient is experiencing post-partum hemorrhage: Massage uterus</p>
<b>I<sub>85</sub></b>	Initiate IV NS at 20cc/kg
<b>A</b>	<p>Consider PASG for severe bleeding after delivery</p> <p>Contact Medical Control for further orders.</p>
<b>P</b>	Cardiac Monitor

## COMPLICATIONS OF PREGNANCY

	Signs/Symptoms	Treatment
<b>Spontaneous Abortion</b>	Vaginal bleeding, cramping, ABD pain, hypotension	IV fluids (PRN), sanitary pads, comfort and support
<b>Abruptio Placenta</b>	Vaginal bleeding, ABD pain, back pain, uterine tenderness, shock, lack of fetal heart tones	Place patient on L side-recumbent, bleeding control, Oxygen, IV Fluids, rapid transport
<b>Placenta Previa</b>	Bright red vaginal bleeding, NO ABD pain, detectable fetal movement & heart tones	IV Fluids, oxygen, allow minimal patient movement, fetal monitoring
<b>Uterine Rupture</b>	Loss of uterine contour, palpated fetal parts, sharp-tearing ABD pain, weakness, dizzy, shock	Fetal monitoring, IV Fluids, oxygen, rapid transport

## MEDICAL CONDITIONS DURING PREGNANCY

Condition	Signs/Symptoms	Treatment
<b>Hypertension</b>	BP >140/90, proteinuria, peripheral edema	Oxygen, IV TKO
<b>Preeclampsia</b>	Hypertension, edema, proteinuria, headache, visual disturbances, ABD pain, hyperreflexia, epigastric pain, anxiety	Pt. on L side, oxygen, <b>CALM</b> Environment
<b>Eclampsia</b>	<b>Seizures, Coma</b>	IV, Valium for seizures, oxygen, Mag. Sulf (2 G. over 3-5 minutes – SLOW IV push)
<b>HELLP Syndrome</b>	Hemolytic anemia, > liver enzymes, < platelets, ABD pain, blurred vision, headache, edema	Oxygen, IV. (Hospital may have blood transfusion, Mag. Sulf. drip)

## PEDIATRICS EMERGENCIES

### PEDIATRIC PRIMARY SURVEY

**Assessment:**

- Field Primary Survey
- Establish level of responsiveness
- Evaluate airway and protective airway reflexes

**Treatment:**

- Basic airway/spinal immobilization as needed Oxygen
- Assist ventilation as needed
- Stop hemorrhage, evaluate and support circulation
- Do environmental assessment, including consideration of intentional injury
- Determine appropriate treatment protocol

**Special Considerations:** Determine scene safety. Position patient so that he/she may be cared for safely.

**Recognize signs of airway obstruction and respiratory distress, including:**

*cyanosis	*apnea or bradypnea	*nasal flaring	*choking	*tachypnea
*grunting	*intercostal retractions	*drooling	*stridor	*bradycardia

Open the airway using jaw-thrust and chin-lift (and/or head tilt if no suspected spinal trauma). Use appropriate airway, mask, or oxygen as tolerated, with child in position of comfort.

If cervical spine trauma is suspected, immobilize spine with cervical immobilization collar (appropriate for size) and backboard.

**If chest rise is inadequate, assess the following:**

*heart rate	*mental status
*skin parameters	*quality of pulse
*capillary refill	*blood pressure

**\*Check these potential reasons for inadequate chest rise:**

*Esophageal intubation	*Right main stem intubation
*Mucous plugging	*Dislodgment of ET tube
*Pneumothorax	

For CPR information – refer to the [AHA BLS](#) and [PALS](#) guidelines

## INFANT & CHILD RESUSCITATION

### Assessment:

- Elapsed time since the child was last seen in good health
- History of any recent illness
- Past medical history
- Airway: obstruction, stridor, wheezing, drooling, cough
- Breathing: Respiratory rate, skin color, chest wall movement and symmetry, work of breathing (grunting, nasal flaring, retractions)
- Circulation: heart rate, pulse, capillary filling time, skin color, extremity skin temperature
- Level of consciousness, mentation
- Associated injuries

Pediatric arrests are most likely to be primary respiratory events. The rescuer's primary attention must be directed to securing the airway and providing good ventilation before specific treatment of cardiac rhythm. Any cardiac rhythm can spontaneously convert to sinus rhythm in a well-ventilated child.

Oxygen and epinephrine are the mainstays of pediatric resuscitation. Atropine and Sodium Bicarbonate are much less likely to be effective.

Cardiopulmonary arrest in a trauma situation is treated with rapid transport and CPR en-route.

The most successful pediatric resuscitations occur before a full cardiopulmonary arrest. Assess pediatric patients carefully and assist with airway, breathing, and circulation problems before the arrest occurs.

### Treatment:

<b>B</b>	<p><b>Airway/Breathing:</b></p> <ul style="list-style-type: none"> <li>• Manage the airway. Assist bag-valve-mask ventilations 20 breaths per minute with 100% oxygen for severe respiratory depression. Use blow-by or mask with 100% oxygen for mild distress.</li> </ul> <p><b>Circulation:</b> Initiate CPR (as needed);</p> <ul style="list-style-type: none"> <li>• If signs of diminished perfusion and heart rate &lt; 80/min. in an infant, consider CPR:</li> <li>• <a href="#">See Neonatal Resuscitation guideline</a></li> </ul>
<b>I<sub>85</sub></b>	<p>Establish venous access. Infants and small children – If unable to establish an IV after 1 attempt, call AEMT or Paramedic for possible Intraosseous placement.</p>
<b>A</b>	<p>If any question of volume depletion, infuse a NS fluid bolus (20 mL/kg). Contact medical control if you feel you need a second fluid bolus.</p>
<b>P</b>	<p>Specific treatment should be focused on the etiology of the arrest or critical nature of the illness.</p> <p>Stabilizing the airway and supporting respirations is the mainstay of treatment.</p> <p>Establish vascular access with normal saline infuse per Broselow tape. If unable to establish an IV after 1 attempt, establish an IO for fluid and medication infusions.</p> <p>Arrhythmias are treated as noted in specific Arrhythmia Algorithms. See drug guidelines for pediatric doses.</p>

## NEONATAL RESUSCITATION (A NEONATE < 30 DAYS OLD)

### BLS Treatment:

- Position the airway. Suction the mouth and nasopharynx. Administer oxygen.
- Evaluate respirations
- Assist bag-valve-mask ventilations 40-60 breaths per minute with 100% oxygen for severe respiratory depression. Use blow-by or mask with 100% oxygen for mild distress.
- Dry and keep warm with thermal blanket or dry towel. Cover scalp with stocking cap or blanket.
- Check heart rate at umbilical cord stump.
- If signs of diminished perfusion and heart rate less than 80/min. in a neonate, consider CPR

### ALS Treatment:

#### Heart rate < 60/min

- Continue with assisted ventilations
- Begin chest compressions at 120/min, 3:1
- If no improvement after 15-30 seconds, perform endotracheal intubation
- Establish vascular access with normal saline infuse per Broselow tape
- If no improvement, first dose of Epinephrine 1:10,000 per Broselow tape or epinephrine 1:10,000 dose is 0.1-0.3 mL/kg IV or ET, dilute ET dose with 1-2 ml NS.
- Reassess heart rate and respirations en-route

#### Heart rate 60-80/min

- Continue assisted ventilations
- If no improvement after 15-30 seconds of ventilation with 100% oxygen, begin chest compressions.
- Reassess heart rate and respirations en-route

#### Heart rate 80-100/min

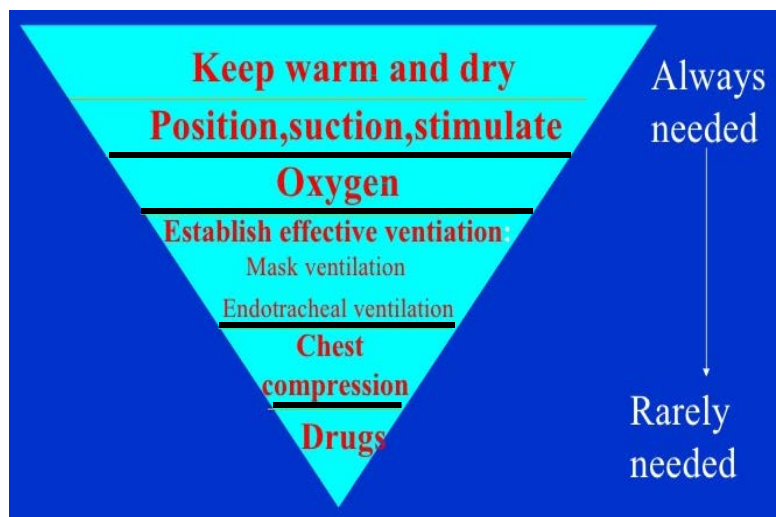
- ❖ Continue assisted ventilations and stimulate
- ❖ Reassess heart rate and respirations after 15-30 seconds. If heart rate < 100 begin assisted ventilations with 100% oxygen. Reassess heart rate after 15-30 seconds

#### Heart rate >100/min

- ✓ Check skin color. If central cyanosis, give oxygen by mask or blow-by
- ✓ Reassess heart rate and respirations en-route

### Special Neonatal Considerations

- If thick meconium is present; or thin meconium with respiratory distress, perform deep ET suction, using appropriate suction adapter if available.
- Perform chest compressions with both thumbs (with hands encircling the back) at the mid-sternum and just below the intermammary line at a depth of ½"-3/4"





## ALLERGIC REACTION/ANAPHYLAXIS

### Assessment:

- Primary field survey
- Perform Patient Assessment
- Be alert for and treat for dyspnea.
- Be alert for and treat for shock.
- Presence of edema of tongue, mouth and/or throat, dyspnea, and/or hypoperfusion are indications for immediate transport
- Obtain pertinent medical history
- Note the medications the patient has taken, how much, when, and response.

### Special Considerations

Simple hives do not require field treatment. Always reassess after each intervention. If child is intubated and only access is per ET tube, administer Epinephrine 1:1000 0.1mL/kg ET.

### Treatment:

<b>B</b>	Apply oxygen Rapid transport
<b>I<sub>85</sub></b>	<u>Mild Respiratory Distress-</u> – Cardiac Monitor – Vascular access PRN
<b>A</b>	<b>Wheezing:</b> If patient is wheezing, administer albuterol 2.5 mg in 3 cc of NS or DuoNeb by nebulizer. If child is unable or unwilling to deal with nebulizer, administer epinephrine 1:1000 SQ/IM, dose 0.01 mL/kg. Max single dose of 0.4 mL.
<b>P</b>	Severe Respiratory Distress - Advanced airway PRN - Epinephrine 1:10,000 - dose 0.1 mL/kg IV or IO over 10 minutes. Max. single dose of 0.1 mg or 1 mL. If wheezing is severe, administer albuterol 2.5 mg in 3 cc of NS or Xopenex continuously. Repeat until O <sub>2</sub> sats > 95%. For diminished perfusion administer 20 cc/kg fluid bolus IV or IO

## ALTERED LEVEL OF CONSCIOUSNESS

If time to ALS care is prolonged (30-45 minutes), evaluate LOC. Consult Medical Control if patient is alert and oriented. Consider administration of oral glucose agents for conscious diabetic with intact gag reflex.

### Assessment

- Assess and support ABC's, oral or nasal airway as tolerated
- Assess vital signs (BP, pulse, respirations, SPO<sub>2</sub>)
- Consider febrile seizure etiology
- Consider c-spine precautions as indicated

### Special Considerations

Consider etiology and appropriate protocols:  
Shock Toxic exposure/ingestion Head trauma  
Seizure Child abuse or neglect

### Treatment:

<b>B</b>	Begin high flow oxygen. Be prepared to assist ventilations if necessary. If no trauma, transport patient in recovery position to protect airway. Prepare for possible seizures. Rapid Transport as needed.
<b>I<sub>85</sub></b>	Cardiac Monitor Establish IV/IO PRN
<b>A</b>	<b>Glucose test;</b> If glucose test shows glucose < 60 (< 40 in neonates); - If patient is > 2 years old, then use D50=1 mL/kg - If patient is < 2 years old, then use D25=2 mL/kg (can dilute D50 with NS 1:1) - If patient is neonate, then use D10=3 mL/kg (is made by diluting D50 with NS 4:1) If no response to Dextrose; - consider Narcan (Naloxone) 0.4-2 mg IV/IO - If in doubt, give the D50/25/10 as appropriate. If mental status and respiratory effort are decreased, administer Narcan per Broselow or 0.1 mg/kg IV, IO max of 2 mg.
<b>P</b>	Advanced airway PRN

## BURNS

### ASSESSMENT

- ENSURE YOUR OWN SAFETY.
- Stop the burning process.
- For large burns or burns that threaten the airway, call **ALS**
- Perform Rapid Trauma Assessment.
- Be alert and treat for airway and respiratory compromise.
- Be alert and treat for shock.
- Identify mechanism of injury.
- Estimate depth of burn, length of exposure, and percent of body surface area injured.

### Special Considerations

- ❖ Apply 100 % oxygen by non-rebreather mask for potential inhalation injury.
- ❖ Do not apply cold dressings or allow environmental exposure, since hypothermia can result.
- ❖ Transport immediately.
- ❖ Consider consulting Medical Control for direct diversion to burn center when appropriate.

### Treatment:

<b>B</b>	<p>Remove jewelry, clothing and shoes.</p> <p><b>If chemical is dry:</b></p> <ul style="list-style-type: none"> <li>• brush off, then flush with copious amts of water.</li> </ul> <p><b>If liquid:</b></p> <ul style="list-style-type: none"> <li>• flush with copious amounts of water.</li> </ul> <p><b>If eye involvement:</b></p> <ul style="list-style-type: none"> <li>• flush continuously with saline during transport.</li> </ul> <p>Apply clean dry dressings to involved areas.                  Minor burns or involving &lt; 10 % can utilize burn gel.                  Rapid transport</p>
<b>I<sub>85</sub></b>	Cardiac Monitor
<b>A</b>	Establish IV NS, TKO
<b>P</b>	<p>Advanced airway PRN</p> <p>Cardiac monitor</p> <p>Consider Lidocaine 1 mg/kg for Ventricular ectopy</p> <p>Consider pain management</p> <p>Consider nebulized NS, Albuterol or DuoNeb for inhalation burns</p>

## RESPIRATORY DISTRESS

### Assessment:

Primary field survey  
 Perform patient assessment  
 Consider foreign body airway obstruction

### Special considerations

- ❖ If basic airway cannot be established, consider foreign body obstruction and proceed with appropriate airway clearance maneuvers, based on patient age.
- ❖ If attempts at clearing obstructed airways with maneuvers are unsuccessful, proceed with appropriate surgical airway.
- ❖ Other non-obstructive causes of respiratory insufficiency
- ❖ Naloxone per Broselow tape or Naloxone [0.1 mg/kg] if narcotic OD is suspected.
- ❖ Naloxone in newborns is indicated for children of mothers who have been given or abused narcotics.

### Treatment:

<b>B</b>	<ul style="list-style-type: none"> <li>– Monitor O2 saturation</li> <li>– Oxygen 15L NRB or nasal cannula</li> <li>– Position of comfort. Enlist help of child’s caretaker, if distress is mild-moderate</li> <li>– Consider BVM in child with significant distress or inadequate (too slow or fast) respiratory rate or depth.</li> <li>– Rapid transport</li> </ul>
<b>I<sub>85</sub></b>	Secure airway as needed
<b>A</b>	Cardiac monitor
<b>P</b>	<p>Secure airway as needed.</p> <p>Administer albuterol 2.5 mg in 3 cc of NS or DuoNeb by nebulizer. Consult MD for consequent nebulizer treatments.</p> <p>If child is not able to cooperate with nebulizer use Epinephrine 1:1000 per Broselow tape <u>or</u> Epinephrine 1:1000 dose 0.01 ml/kg SQ.</p> <ul style="list-style-type: none"> <li>– Maximum dose 0.4 ml, every 20-30 minutes times 3 doses PRN.</li> <li>– Do not use this if the child has already been treated with epinephrine in the preceding 15 minutes. Max. dose of 0.3 mg. May repeat once.</li> </ul>

## SEIZURES

### Assessment

- Perform Patient Assessment.
- Obtain pertinent medical history.
  - Medical alert tag, known seizure disorder.
  - Medications, what and when last taken.
- Recent trauma.
- Note fever, particularly in children under 5 years old.
  - Obtain rectal or oral temp as practical
- Note number and duration of seizures
- Protect patient from injury

### Special Considerations

Be prepared to support ventilations with oxygenation via BVM or by advanced airway.

### Treatment:

<b>B</b>	Apply oxygen, UNIMPROVED ventilations or seizure > 5 minutes, initiate BVM ventilations
<b>B</b>	Remove nearby objects that could injure child. Position on side if possible and gently support head of child to prevent further injury. Rapid transport
<b>I<sub>85</sub></b>	Consider Cardiac Monitor Establish IV PRN
<b>A</b>	<b>Glucose test;</b> If glucose test shows glucose < 60 (< 40 in neonates); <ul style="list-style-type: none"> <li>- If patient is &gt; 2 years old, then use D50=1 mL/kg</li> <li>- If patient is &lt; 2 years old, then use D25=2 mL/kg (can dilute D50 with NS 1:1)</li> <li>- If patient is neonate, then use D10=3 mL/kg (is made by diluting D50 with NS 4:1)</li> </ul> If no response to Dextrose; <ul style="list-style-type: none"> <li>- consider Narcan (Naloxone) 0.4-2 mg IV/IO</li> <li>- If in doubt, give the D50/25/10 as appropriate.</li> </ul> If mental status and respiratory effort are decreased, administer Narcan per Broselow or 0.1 mg/kg IV, IO max of 2 mg.
<b>P</b>	Actively seizing patients should receive Valium 0.02 mg/kg Max dose of 5 mg If unable to establish IV, administer Valium 0.5 mg/kg rectally Cardiac monitor

## SHOCK

### Assessment:

- Primary field survey
- Perform Patient Assessment
- Pulse oximetry
- ❖ Distributive, Sepsis & Anaphylaxis  
Fluid boluses at 20 cc/kg IV or IO  
If history of fever or suspected infection, administer additional boluses at 20 cc/kg PRN, maximum 60 ml/kg.  
If suspected allergic reaction, follow anaphylactic protocol.
- ❖ Cardiogenic-  
Consider rhythm disturbances.  
Fluid bolus at: 10 cc/kg IV or IO

### Treatment:

<b>B</b>	If trauma; stop external ongoing bleeding Apply oxygen by non-rebreather at 10 LPM Rapid transport
<b>I<sub>85</sub></b>	Hypovolemia, Trauma, dehydration and burns- Cardiac monitor Vascular access; Fluid bolus via IV (or IO for AEMT) of NS at a rate of 20 cc/kg
<b>A</b>	- If suspected history of volume loss and no improvement after initial fluid bolus, administer additional boluses at 20 cc/kg PRN to 60 cc/kg max
<b>P</b>	Advanced airway PRN If IV cannot be established, consider IO infusion

## TOXIC EXPOSURE

PROTECT YOURSELF FROM POSSIBLE EXPOSURE

### ASSESSMENT

- Perform Patient Assessment.
- Obtain pertinent history
- Identify time of exposure, contaminant & quantity.  
If possible, take empty containers to hospital.
- Medical control may provide specific information about individual toxic exposures and treatments.
- Rapid Transport

### Special Considerations

- ❖ Consider hazardous material exposure and consultation with appropriate advisory agency, prior to decontamination or patient contact procedures.
- ❖ If suspected opiate overdose in non-neonate, administer Narcan per Broselow tape *or* 0.1 mg/kg max 2 mg IV/IO

### Treatment:

<b>B</b>	Be alert for and treat respiratory difficulty. Be alert for and treat shock. Be alert for and treat seizures
<b>I<sub>85</sub></b>	Cardiac Monitor
<b>A</b>	Establish IV PRN
<b>P</b>	Advanced Airway PRN Cardiac monitor

## TRAUMA

### Assessment:

Primary field survey.  
Perform Patient Assessment

### Special Considerations

Immobilize spine of patients with mechanism, signs or symptoms suspecting spinal trauma.

If avulsed tooth, transport tooth in milk or normal saline.

Remember inline stabilization when intubating trauma patients.

See [shock guideline](#) if shock present

### Treatment:

<b>B</b>	<ul style="list-style-type: none"> <li>– Control external hemorrhage with direct pressure.</li> <li>– If extremity amputated, place amputated part in moist saline gauze in sterile container and place container on ice if available.</li> <li>– Penetrating Trauma: Seal sucking chest wounds</li> <li>– Be alert for and treat shock.</li> <li>– Spinal immobilization and Splints PRN</li> <li>– Rapid transport</li> </ul>
<b>I<sub>85</sub></b>	Hypovolemic shock:
<b>A</b>	Establish IV (or IO for AEMT), NS - Consider fluid challenge at 20 cc/kg
<b>P</b>	Secure Airway if needed. Cardiac monitor Suspected tension pneumothorax with severe respiratory distress: Consider chest decompression

**BROSELOW EMERGENCY TAPE AND PEDIATRIC REFERENCE**

Do not commit pediatric protocols to memory, Utilize quick reference guides whenever pediatric calls are encountered.

In pediatric resuscitation the patient's body weight should be used to calculate medication and fluid therapy dosage. In an emergency, paramedics may need to estimate the age and weight of an infant or child before a drug dose can be calculated. This often leads to inaccurate drug dosing and the use of inaccurate drug dosing and the use of incorrect resuscitation equipment and supplies. The *Broselow Tape* is a practical method of estimating weight from length.

This tape is based on analysis of the weight and height of more than 20,000 children to determine the 50<sup>th</sup> percentile for weight based on heights. This data was then used to make a measuring tape divided into boxes containing the estimated weights, pre-calculated drug doses, and size equipment appropriate for the child of that length.

**Procedure:**

- Place the patient supine
- Using the tape, measure the patient from the crown to heel. Place the red end with an arrow at the crown of the child's head and stretch the tape to the child's feet.
- Note the box on the tape, which the child's heel falls.
- If the measurement falls on a line, the box below the line is used to generate the drug doses and equipment needed for resuscitation
- The tape should be disinfected after use.
- Note: The range for the Broselow Tape is from 3 kg to 34 kg (approx. 7 to 75 lbs). For patients who are above the range for this reference, utilize pediatric drug dosing which is listed in brackets [ ]. There is also a drug reference for this population located in the envelope that holds the Broselow Tape. If there is ever a question in regards to pediatric drug doses or equipment size, contact medical control.
- It is important to note that the volume of epinephrine administered is 0.1 mL/kg whether conventional or high dose epinephrine is provided. The dose of epinephrine is determined by the concentration of the drug.
- Conventional dose: 0.1 mL/kg of 1:10,000
- High dose: 0.1 mL/kg of 1:1000 (All doses other than initial dose)
- All endotracheal doses of epinephrine are high dose.
- Once IV or IO route available, begin with epinephrine at first dose 0.1 mL/kg of 1:10,000.

**Standing Orders**

Contact Medical Control early on for cardiac arrests, cardiac rhythm disturbances, shock or trauma. If there are any problems, contact Medical Control.

**Medical Control Considerations**

Medical Control contact is required for any procedure or medication not listed in the following pediatric protocols.

## INTRAOSSUEOUS INFUSION

Intraosseous access is a type of vascular access used in children under seven years of age that are in critical condition and where IV cannulation has been unsuccessful. *This is the most common vascular method of access for pediatric arrests, but peripheral IV is the first choice.* The procedure is outlined in the American Heart Association Pediatric Advanced Life Support Text.

### Precautions:

- In a child that is conscious, local anesthesia should be used.
- Do not perform on known or suspected fractured bones.

### Possible complications include:

- Subperiosteal or subcutaneous infusion
- Leaking around the puncture site
- Bone growth plate injury
- Osteomyelitis and/or fat embolism

### Considerations:

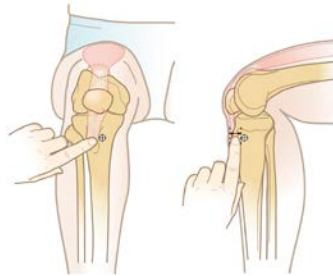
- Flow rates of up to 1200 cc/hr can be achieved with pressure infusion.
- If initial site fails, utilize other tibia or femur, using new needle for each site.
- All medications and fluids used in peripheral lines may be given IO.

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## **Sites for Insertion:**

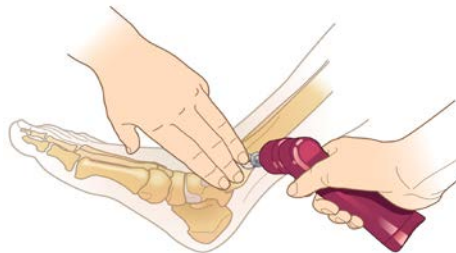
### **Proximal Tibia:**

Anterior medial surface of the tibia  
1 cm (1 finger width) medial to the  
tibial tuberosity on the flat, broad  
portion of the tibia.



### **Distal Tibia:**

Measure up about three finger breadths  
superior to the end of the medial malleolus (AD).



# OB/GYN & PEDIATRICS GUIDELINES

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REFERENCE CHARTS			
Apgar Score			
Sign	<u>0</u>	<u>1</u>	<u>2</u>
Heart Rate (bpm)	Absent	Slow (<100)	≥ 100
Respirations	Absent	Slow, irregular	Good, crying
Muscle Tone	Limp	Some flexion	Active motion
Reflex irritability	No response	Grimace	Cough, sneeze, cry
Color	Blue or pale	Pink Body w/ blue extremities	Completely pink
TERM NEWBORN VITAL SIGNS		ET TUBE SIZE	
Heart Rate (awake):	100 to 180 bpm	Size: for children >1 yr	Age in yrs + 4
Respiratory Rate:	30 to 60 breaths/min		4
Systolic blood pressure:	55 to 90 mm Hg	Depth of insertion (cm)	Age in yrs + 12
Diastolic blood pressure:	26 to 55 mm Hg	for children >2 yrs	2
VITAL SIGNS IN CHILDREN			
Age	Awake Rate	Mean	Sleeping Rate
Newborn to 3 months	85 to 205	140	80 to 160
3 months to 2 years	100 to 190	130	75 to 160
2 to 10 years	60 to 140	80	60 to 90
> 10 years	60 to 100	75	50 to 90
PEDIATRIC TRAUMA SCORE			
Category Value			
Patient Characteristics	+ 2	+ 1	- 1
Weight (kg)	>20	10 to 20	< 10
Airway	Normal	Maintained	Unmaintained
Systolic BP (mm Hg)	> 90	50 to 90	< 50
Central Nervous System	Awake	Obtunded	Coma/decerebrate
Open Wound	None	Minor	Major/penetrating
Skeletal Trauma	None	Closed fractures	Open, multiple fractures
<i>Add the value for each patient characteristic. Highest possible total score is +12, and lowest possible score is -6.</i>			
RESPIRATORY RATE (BREATHS/MIN)		BLOOD PRESSURE	
Age	Rate	Typical Systolic BP in children 1 to 10 (50th %) <b>90 mm Hg +(child's age in years X 2) mm Hg</b>  Lower limits of systolic BP in children 1 to 10 (5th %) <b>70 mm Hg + (child's age in years X 2) mm Hg</b>	
Infant	30 to 60		
Toddler	24 to 40		
Preschooler	22 to 34		
School-age child	18 to 30		
Adolescent	12 to 16		

DEHYDRATION ASSESSMENT			
Clinical Findings	Mild	Moderate	Severe
Heart Rate	Normal	Increased	> 130 / min.
Respiratory Rate	Normal	Increased	Tachypneic
Blood Pressure	Normal	Normal	Systolic < 80
Peripheral Pulses	Normal	Diminished	Absent
Capillary Refill	Normal	2-3 seconds	> 2 seconds
Mental Status	Alert	Irritable	Lethargic
Fontanelle	Flat	Depressed	Sunken
Turgor	Norm - slightly decreased	Decreased	Markedly decreased
Mucous membranes	Dry	Very Dry; may see tears	Parched; No tears
Temperature	Warm	Cool	Cool; clammy
Eyes	Normal	Darkened; sunken	Sunken; soft
Thirst	Increased	Intense	Intense; if conscious

## DIFFERENCES BETWEEN CROUP AND EPIGLOTTITIS

<u>Croup</u>	<u>Epiglottitis</u>
Usually caused by viral infection	Usually caused by bacterial infection
Usually occurs during late fall and early winter	No season preference
Occurs in ages 3 months - 3 years	Occurs in ages 3-7 years (can develop in adults)
Slow onset	Rapid onset
Patient will either lie down or sit up	Patient will sit upright in a tripod position
Barking cough present	No barking cough
No drooling	Pain on swallowing causing drooling
Temperature > 104* F	Temperature > 104* F

## DIFFERENCES BETWEEN ASTHMA AND BRONCHIOLITIS

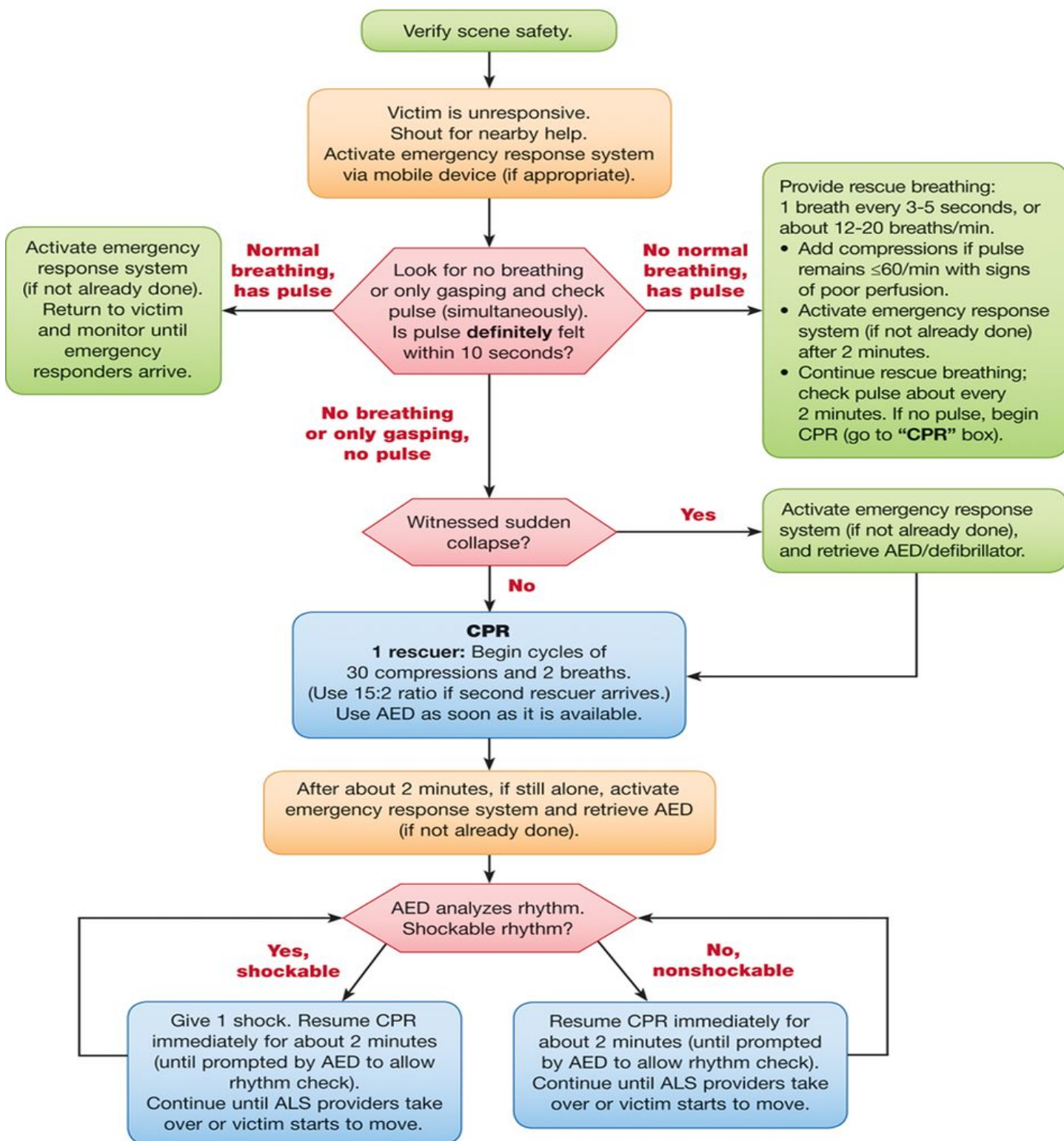
<u>Asthma</u>	<u>Bronchiolitis</u>
Occurs at any age	Occurs between 6-18 months of age
Occurs in winter and spring	Can occur at any time
Response to allergy, exercise, or infection	Caused by a virus
Family history of asthma	Usually no history of asthma
Drugs reverse bronchospasm	Drugs may not always be effective



## BLS HEALTHCARE PROVIDER - PEDIATRIC

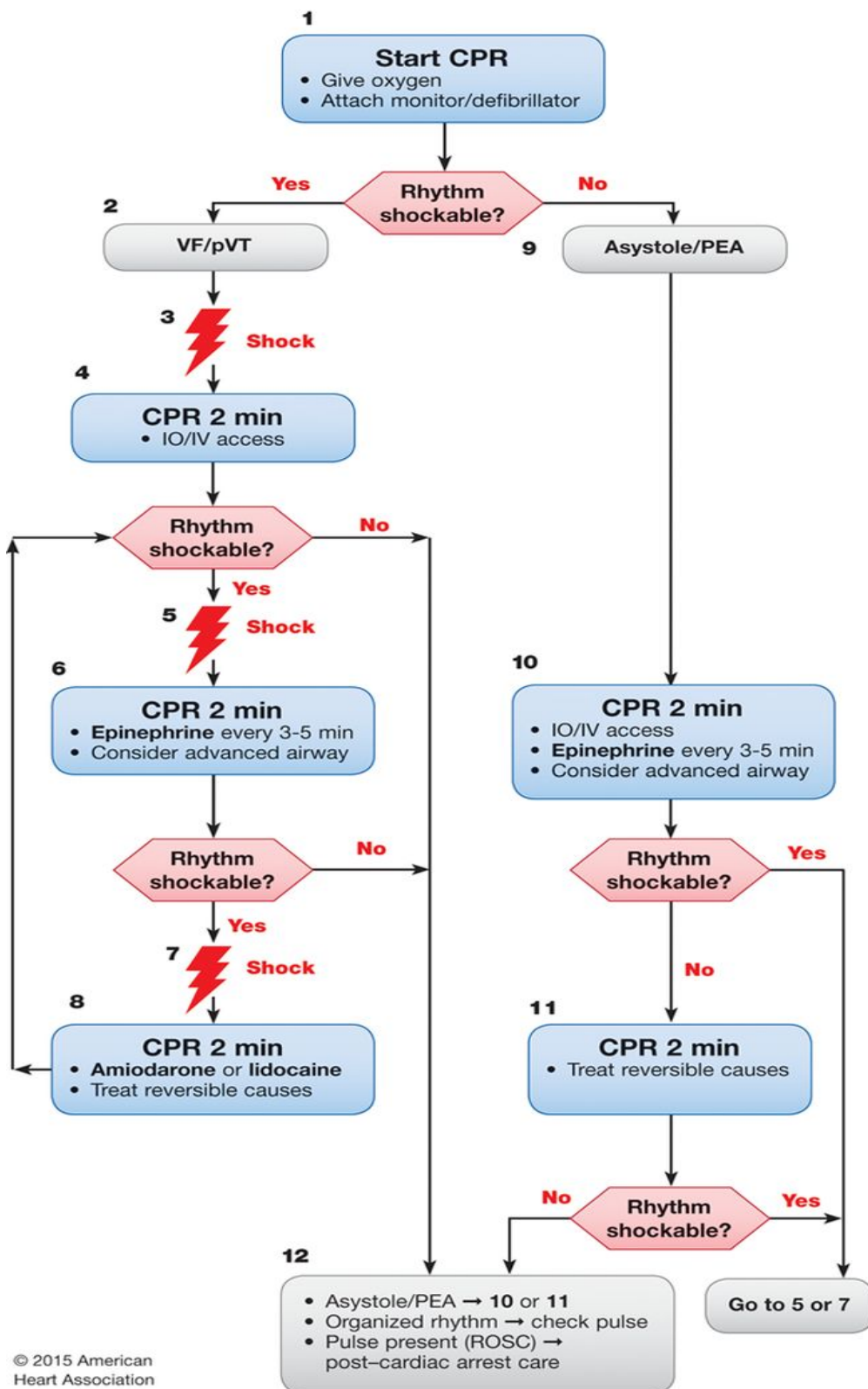
### BLS Healthcare Provider

### Pediatric Cardiac Arrest Algorithm for the Single Rescuer—2015 Update



## PALS – PEDIATRIC ADVANCED LIFE SUPPORT

### Pediatric Cardiac Arrest Algorithm – 2015 Update



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#### CPR Quality

- Push hard ( $\geq 1/3$  of anteroposterior diameter of chest) and fast (100-120/min) and allow complete chest recoil.
- Minimize interruptions in compressions.
- Avoid excessive ventilation.
- Rotate compressor every 2 minutes, or sooner if fatigued.
- If no advanced airway, 15:2 compression-ventilation ratio.

#### Shock Energy for Defibrillation

First shock 2 J/kg, second shock 4 J/kg, subsequent shocks  $\geq 4$  J/kg, maximum 10 J/kg or adult dose

#### Drug Therapy

- **Epinephrine IO/IV dose:** 0.01 mg/kg (0.1 mL/kg of 1:10 000 concentration). Repeat every 3-5 minutes. If no IO/IV access, may give endotracheal dose: 0.1 mg/kg (0.1 mL/kg of 1:1000 concentration).
- **Amiodarone IO/IV dose:** 5 mg/kg bolus during cardiac arrest. May repeat up to 2 times for refractory VF/pulseless VT.
- **Lidocaine IO/IV dose:** Initial: 1 mg/kg loading dose. Maintenance: 20-50 mcg/kg per minute infusion (repeat bolus dose if infusion initiated >15 minutes after initial bolus therapy).

#### Advanced Airway

- Endotracheal intubation or supraglottic advanced airway
- Waveform capnography or capnometry to confirm and monitor ET tube placement
- Once advanced airway in place, give 1 breath every 6 seconds (10 breaths/min) with continuous chest compressions

#### Return of Spontaneous Circulation (ROSC)

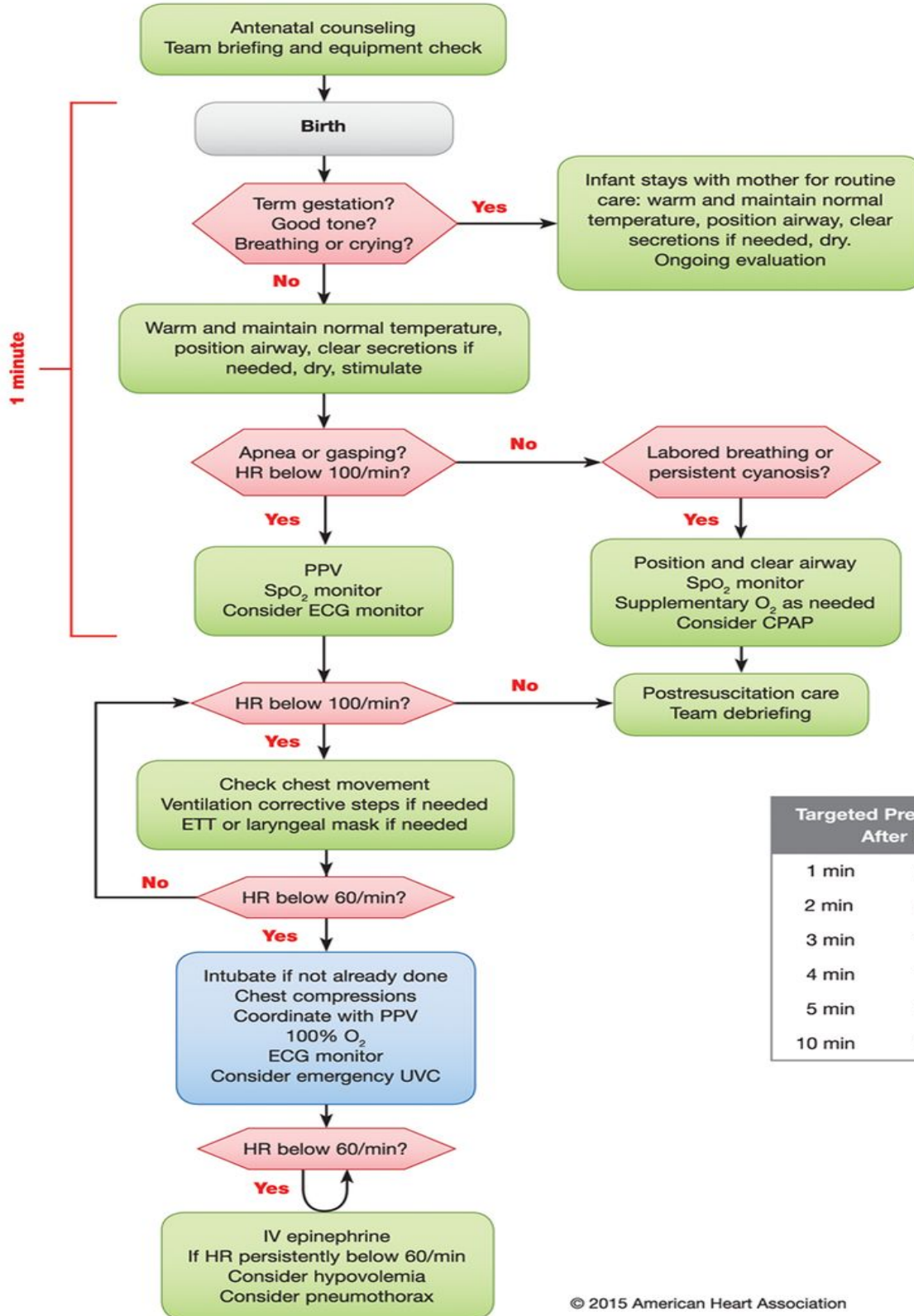
- Pulse and blood pressure
- Spontaneous arterial pressure waves with intra-arterial monitoring

#### Reversible Causes

- **Hypovolemia**
- **Hypoxia**
- **Hydrogen ion (acidosis)**
- **Hypoglycemia**
- **Hypo-/hyperkalemia**
- **Hypothermia**
- **Tension pneumothorax**
- **Tamponade, cardiac**
- **Toxins**
- **Thrombosis, pulmonary**
- **Thrombosis, coronary**

## NALS – NEONATAL ADVANCED LIFE SUPPORT

### Neonatal Resuscitation Algorithm – 2015 Update



Targeted Preductal SpO <sub>2</sub> 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%

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