

SECTION: PM- 10

PROTOCOL TITLE: General Newborn Care

REVISED: November 1, 2017

GENERAL COMMENTS: Care is focused around an Assessment→ Action →Reassessment Cycle. These Critical re-assessments are done every 30-60 seconds (referred to as the “Golden Minute”), moving up and down the Inverted Pediatric Pyramid as needed.

BLS SPECIFIC CARE: See General Pediatric Care Protocol PM-1

Critical Assessments

- Critical reassessments include:
 - Heart Rate
 - Respiratory Effort/Vigor
 - Peripheral and Central Perfusion

Critical Interventions

- **Heat Conservation and Stimulation**
 - Dry, warm and use “Port-a-warm Mattress”
 - Tactile Stimulation (rub back)
 - Place in plastic wrap/bag over extremities and trunk. *Leave head/airway assessable.*
- **Oxygenation and Ventilations**
 - Ventilation with a properly fitting mask is the single most important intervention, and may prevent further deterioration is promptly administered.
 - Titrated O₂ (See Pearls)
 - Properly pad under shoulders to maintain good airway alignment
- **Chest Compressions:** 3 compressions:1 ventilation ratio
 - Initiate for complete cardiac arrest and for HR <60 refractory to Drying, warming, stimulation, oxygenation and ventilations
 - “Two thumb” method is preferred.

AEMT/O.M. Specific Care: See General Pediatric Care Protocol PM-1

- Advanced airway placement in a newborn or pre-term neonate should be deferred to ALS providers or specialists.

ALS SPECIFIC CARE: See General Pediatric Care Protocol PM-1

- Oxygenation and Ventilation
 - ETT placement for patient’s refractory to BLS measures.
 - Trans-tracheal suction of meconium prior to ventilation.
 - OG to decompress stomach

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Pharmacologic therapy:

- **Epinephrine:**

- Indicated if heart rate remains < 60 bpm despite adequate ventilation with 100% oxygen and chest compression
- IV/IO:
 - 0.01-0.03 mg/kg 1:10,000 every 3-5 minutes as needed
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- **Dextrose**

- For neonatal hypoglycemia.
- Blood glucose level < 40 mg/dl
 - 2 ml/kg D₁₀

- **Narcan (naloxone)**

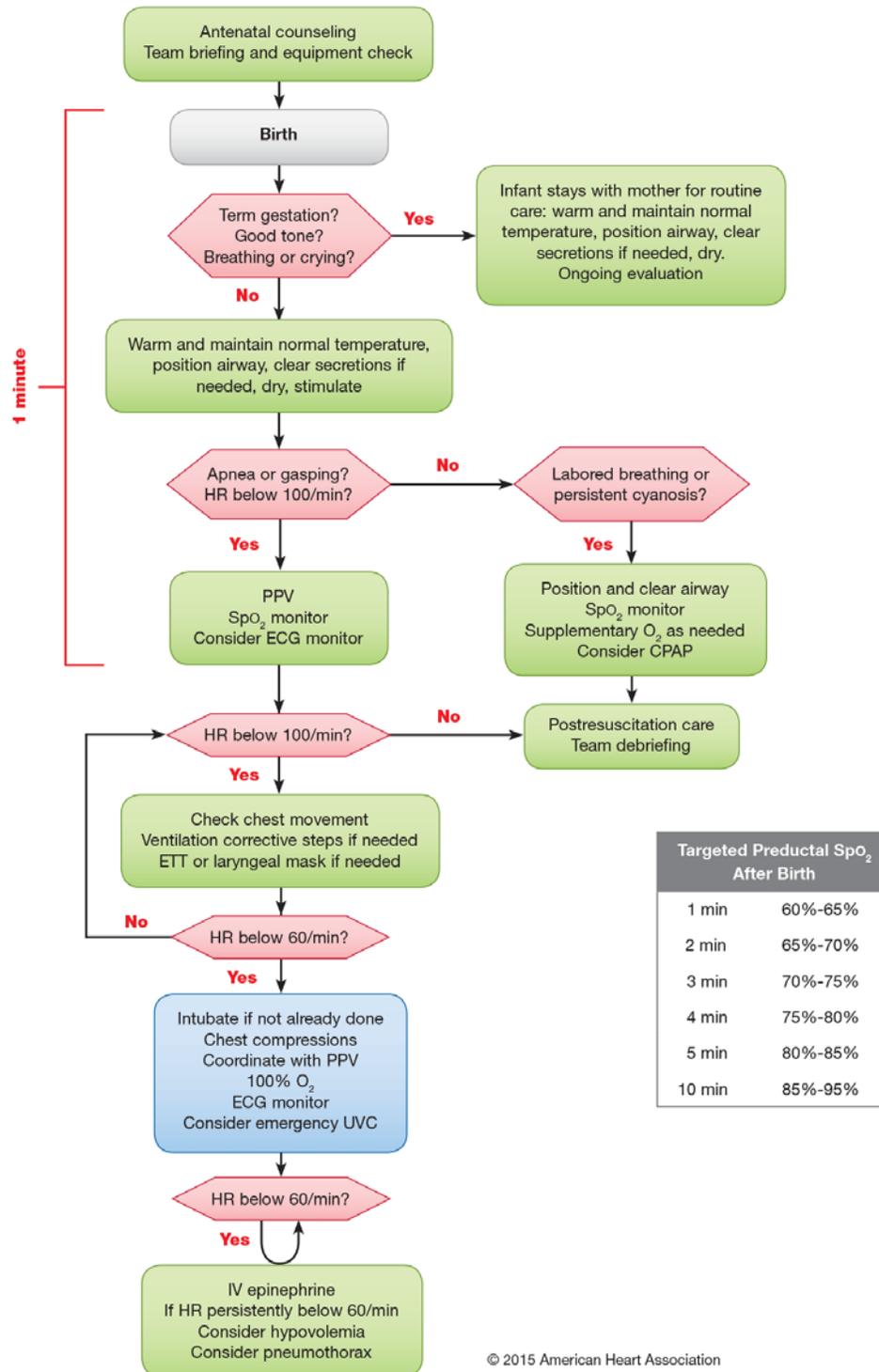
- 0.1 mg/kg
- **Do not** administer to newborn of a mother with history of narcotics dependence
- Indicated if **both** of the following are present:
 - Continued respiratory depression after positive pressure ventilation has restored normal heart rate and color
 - History of maternal narcotic administration/ingestion within the last 4 hours

Fluid therapy: IV/IO

- Indicated if neonate appears to be in shock, there is evidence of blood loss (e.g. placental abruption/previa or blood loss from umbilical cord, or exceptionally pale appearance) and is unresponsive to resuscitation
- 10 ml/kg normal saline over 5-10 minutes
- Administer a second dose if necessary

2015 Neonatal Care/Resuscitation (for reference only)

Neonatal Resuscitation Algorithm—2015 Update



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PHYSICIAN PEARLS:

Basic Newborn Care is focused around respiratory support with hypothermia and hypoglycemia close seconds.

Heart Rate: During resuscitation, an increase in the newborn's heart rate is considered the most sensitive indicator of a successful response to each intervention. Therefore, identifying a rapid, reliable, and accurate method to measure the newborn's heart rate is critically important.

- EKG monitoring is considered more reliable than SPO2 *for monitoring HR*, when available.

Oxygen Administration: Even in healthy newborns, it may take 10 minutes to reach "normal" SPO2 after birth. Therefore oxygen administration should be based on heart rate and vigor, rather than SPO2 in the first few minutes of life. Even brief exposure to high flow O2 may be problematic. It is permissible, and occasionally preferred to provide ventilation on room air. Oxygen administration should be titrated to "Pre-ductal SPO2" in the vigorous infant.

Targeted Pre-Ductal 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%

Compressions: Compressions are indicated for HR < 60 despite interventions. The **3:1** ratio is considered standard practice for newborn resuscitation. It is still suggested that compressions and ventilations be coordinated to avoid simultaneous delivery. The chest should be allowed to re-expand fully during relaxation, but the rescuer's thumbs should not leave the chest. The "2-thumb" technique generates higher blood pressures and coronary perfusion pressure with less rescuer fatigue, the 2 thumb-encircling hands technique is suggested as the preferred method. If the patient requires compressions, then 100% SPO2 should be administered regardless of SPO2.

Heat Retention: Newborns lose heat rapidly and need to be kept warm to decrease oxygen demands and prevent metabolic acidosis. In resource-limited settings, simple measures to prevent hypothermia in the first hours of life (use of plastic wraps, skin to-skin contact, and even placing the infant after drying in a clean food-grade plastic bag up to the neck) may reduce mortality.

ETT/LMA placement: When dealing with such a short trachea, remember that movement less than 1 centimeter in airway position can result in inadvertent extubation. Consider immobilization of entire head and neck to protect tube placement.

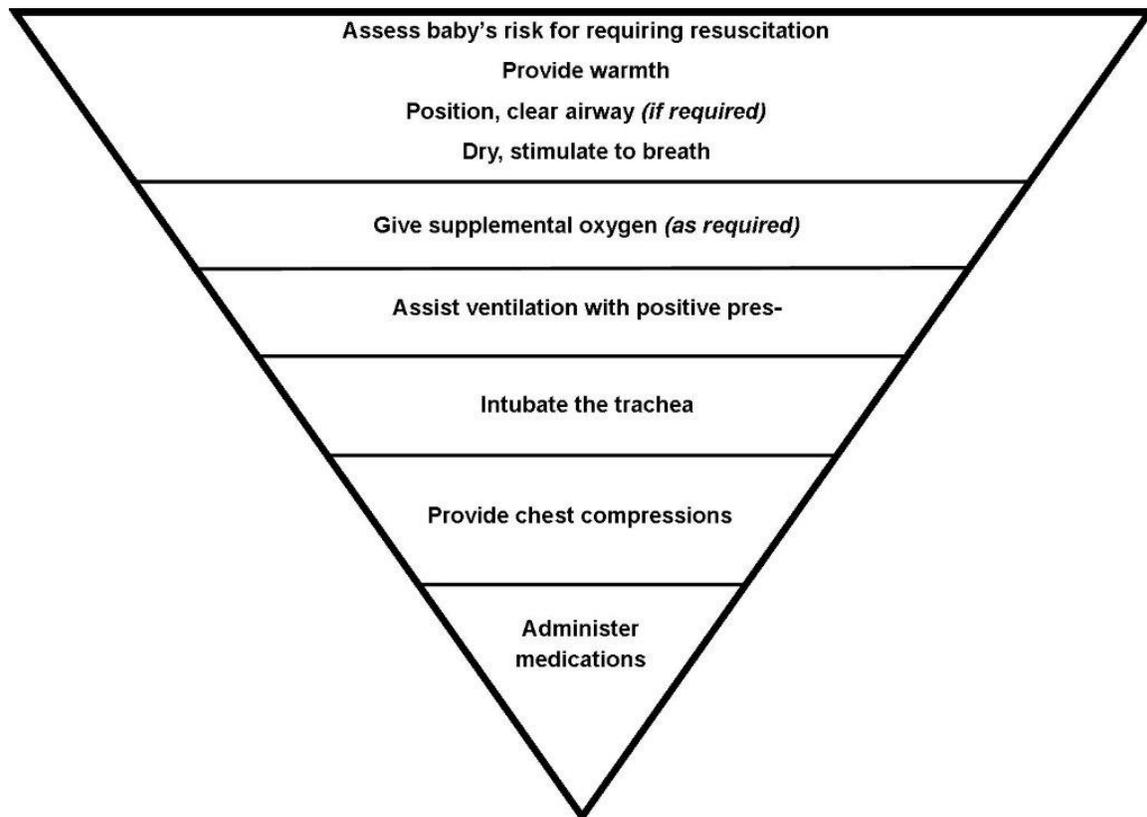
Meconium Staining: "Routine" intubation for tracheal suction is no longer suggested because there is insufficient evidence to continue this recommendation. Appropriate intervention to support ventilation and oxygenation should be initiated as indicated for each individual infant. This may include intubation and suction **if the airway is obstructed**. Discard the ET tube used to suction the meconium and intubate with a clean ET tube.

Delayed cord clamping: 2015 guidelines suggest delayed cord clamping **after 30 seconds** is reasonable for both term and preterm infants **who do not require resuscitation at birth**. Those who require resuscitation should have their cord clamped and cut immediately to facilitate resuscitation.

Always be prepared for resuscitation at childbirth. Risk factors, while important, are poor predictors of birth asphyxia. **Up to half of newborns** that require resuscitation have no identifiable risk factors before birth. Every birth should have at least one person dedicated to newborn care, if possible. Consider extra resources early.

APGAR score: Perform 1 and 5 minute APGAR assessment

Sign	0	1	2
Heart Rate	Absent	<100	>100
Respirations	Absent	Slow, ineffective, irregular	Good and Crying
Muscle Tone/activity	Limp	Some Flexion	Active Motion
Reflex Irritability /Grimace	None	Grimace	Cough or sneeze Pulls away
Color	Central Cyanosis Blue/Pale	Central Pink Peripheral Blue	Completely Pink



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