SECTION: Obstetrical/Gynecological Emergencies

PROTOCOL TITLE: Medical - Newborn/Neonatal Resuscitation

REVISED: 06/2017

Protocol
6-3

NEONATAL RESUSCITATION

OVERVIEW:
The majority of newborns will require only warmth, stimulation, and occasionally some oxygen after birth. That treatment is recommended before attempting the more aggressive interventions of Positive-Pressure Ventilation (PPV) and chest compressions. Remember that a newborn's cardiac output is rate dependent. Bradycardia usually is the result of hypoxia. Once the hypoxia is corrected, the heart rate may spontaneously correct itself. A "newborn" is defined as within one month of age post-delivery.

	EMR	EMT	A	I	P
1. If obvious obstruction to spontaneous breathing or requires positive pressure ventilation, gently suction the newborn's mouth, then nostrils, with a bulb syringe for 3 to 5 seconds. Don't routinely suction an active baby.	•	•	•	•	•
2. Evaluate respirations, heart rate (apical pulse or pulse at the base of the umbilical cord), and state of oxygenation. Obtain 1 minute APGAR.	•	•	•	•	•
3. If respirations are inadequate, HR > 100 bpm:					
a. Initiate positive-pressure ventilation with a BVM NOT attached to oxygen. Deliver 40 to 60 breaths per minute. Use only enough volume to make the newborn's chest rise.	•	•	•	•	•
b. If the newborn is vigorous (strong respiratory effort, good muscle tone, and a heart rate greater than 100 bpm), no routine suctioning is required.	•	•	•	•	•
4. If respirations are inadequate and HR less than 100 bpm:					
a. If the newborn is NOT vigorous (poor or absent respiratory effort, flaccid, lethargic), consider immediate meconium aspiration via endotracheal suctioning. Suctioning of meconium should not distract from the need for emergent oxygenation and ventilation of the newly born. In the patient with meconium aspiration and respiratory failure or apnea, quickly suction meconium and then begin BVM ventilations.				•	•
b. Initiate positive-pressure ventilation with a BVM on room air. If no increase in HR after 90 seconds, administer 100% oxygen.	•	•	•	•	•
c. If HR is below 60 bpm, begin compressions.	•	•	•	•	•

Protocol 6-3 Continued

NEONATAL RESUSCITATION

APGAR Score – 1st and 5th Minute Post Birth			
Sign	**0 Points**	**1 Point**	**2 Points**
Activity (Muscle Tone)	Flaccid	Some Flexion	Active Motion
Pulse	Absent	< 100	> 100
Grimace (Reflex Irritability)	No Response	Some	Vigorous
Appearance (Skin Color)	Blue, Pale	Blue Extremities	Fully Pink
Respirations	Absent	Slow, Irregular	Strong Cry

Supportive Care
Maintain airway. Suction as needed with bulb syringe. Obtain blood glucose sample. If BGL is < 40 mg / dL, administer Dextrose 10% 2cc / kg (0.5 g / kg) slow IV / IO push. Repeat as necessary. Maintain warmth via blankets and / or skin-to-skin.

Procedure for making Dextrose 10% if IV bag not available
In 50 ml syringe, mix 10 ml of Dextrose 50% with 40 ml Normal Saline. Mixture will yield 50 ml of Dextrose 10%

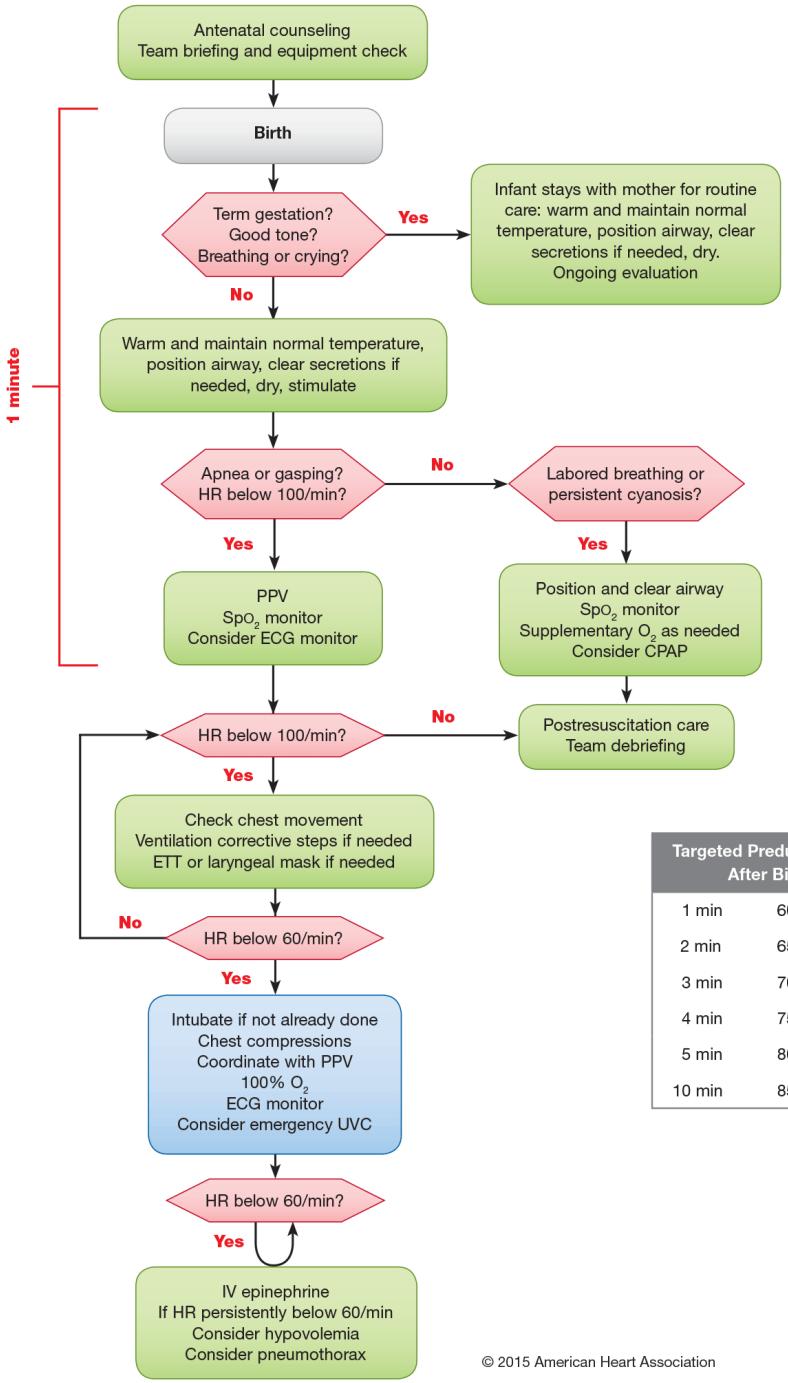
Age	Pre-Term	Term
Weight (lb / kg)	3.3 lbs 1.5 kg	6.6 lbs 3.0 kg
Epinephrine 1:10,000 (1 mg / 10 ml) 0.01 mg / kg	0.015 mg	0.03 mg
Dextrose 10% 2.0 ml / kg	3.0 ml	6.0 ml

PEARLS:

1. The primary measure of adequate initial ventilation is prompt improvement in heart rate.
2. In the presence of thick meconium and an infant who is limp, aggressive suctioning is required.
3. A 3:1 ratio of compressions to ventilations with 90 compressions and 30 breaths should be used to achieve approximately 120 events per minute to maximize ventilation at an achievable rate. Each event should be allotted approximately ½ second, with exhalation occurring during the first compression following ventilation.
4. Arterial saturations of a term infant at birth can be as low as 60% and can require more than 10 minutes to reach saturations of > 90%. Hyperoxia can be toxic, particularly to the preterm baby.

AHA Neonatal Resuscitation

Neonatal Resuscitation Algorithm—2015 Update



Targeted Preductal SpO_2 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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