

Purpose: To provide a process for the assessment and management of the newborn.

M B S P

I. Assessment Information

A. History:

1. Approximate gestation age (weeks)
2. History of maternal drug usage just prior to delivery
3. Evidence of meconium in the amniotic fluid

B. Assess and Document APGAR score at 1 and 5 minutes, or with changes in the patient's presentation

- a. **APGAR and normal vitals charts are at the end of this protocol**

II. Management

A. Prevent Heat Loss:

1. Place patient in warm environment
2. **Dry off amniotic fluid and remove all wet linen.**
3. Rubber gloves filled with warm water (if available) can serve as heat packs. **DO NOT** apply directly to skin.
4. Use of chemical heat packs is prohibited unless they are specifically designed as infant warmers.
5. The umbilical cord must be tied or clamped approximately 8" from the infant's abdominal wall with a second tie or clamp 2" further. The cord should be cut between the ties / clamps.

B. Establish and Maintain an Airway

1. **Position patient** by placing patient on back with padding under shoulders to maintain head in neutral position.
2. **If the newborn is vigorous** (strong respiratory effort, good muscle tone, and a heart rate > 100 bpm), **there is no need to suction the airway.**
3. **If the newborn is lethargic, having difficulty breathing, has poor muscle tone, has a heart rate less than 100 bpm, or there is visible meconium in the airway,**
 - a. **The patient should be intubated and the lower airway suctioned via ET tube (with LOW PRESSURE (80-120mmHg) suction to the tube)**
 - b. Repeat suction with new tube each time.

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4. Provide tactile stimulation to induce breathing

- a. Flick soles of feet and gently rub back
- b. **If infant remains apneic**, tactile stimulation should be abandoned and ventilation should be initiated with 100% high flow O₂.

C. Evaluate Respirations, Heart Rate and Color

1. **If the infant is breathing, the heart rate is above 100 bpm, and the infant is pink:**
 - a. Observe and continue with routine care and evaluation.
2. **If the infant is breathing, the heart rate is above 100 bpm, and the infant is cyanotic:**
 - a. Give supplemental oxygen
 - b. If the cyanosis persists, provide ventilations, with a bag-valve mask and 100% oxygen, at 40 to 60 breaths/min when performed without compressions

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3. **If the infant is apneic or the heart rate is less than 100 and greater than 60 bpm:**
- Provide ventilations via bag valve mask with 100% oxygen
 - Rate of 40 to 60 breaths/min when performed without chest compressions
4. **If heart rate is less than 60 bpm:**
- Perform chest compressions** 3:1 compression-ventilation ratio
 - 120 events/min (90 compressions interspersed with 30 ventilations)
- P 5. **If heart rate remains below 60 bpm despite compressions and ventilations:**
- Administer epinephrine and/or volume (dosing below)
 - If evidence of maternal opiate use prior to or during delivery, administer naloxone (dosing below)
 - Evaluate blood glucose and administer 5% dextrose, if indicated.
- S P 6. **If ventilatory support is prolonged with no patient improvement endotracheal intubation should be established.**
- P 7. **Transport and Contact Medical Control**

P III. **Medication Used in Resuscitation of the Newborn**

A. **Epinephrine**

- 1:10,000** **0.01 – 0.03 mg/kg IV/IO**
 - Give rapidly
 - Repeat every 3 – 5 minutes
- ETT, up to 0.1 mg/kg
 - ETT route may be used as a last resort if IV/IO cannot be established.

B. **Volume Expanders**

- Normal Saline** **10 mL/kg IV/IO**
 - Indicated for shock
 - Give over 5 to 10 minutes
 - Reassess after each bolus

C. **Dextrose**

- Dose** **0.2 g/kg IV/IO**
- Concentration** **5% (D5W)** (may use 10% also)
- Example:** 5 kg patient gets 1 g of dextrose [0.2 g/kg x 5 kg]
 - Supplied 5% [5 g/100 mL = 1 g/20 mL]
 - 20 mL = 1 g, **give 20 mL**

D. **Naloxone (Narcan) – POST MEDICAL CONTROL ORDER ONLY**

- Dose** **0.1 mg/kg IV/IO or IM**
- Administration guidelines**
 - Establish adequate ventilation first; *not recommended for initial resuscitation*
 - Give rapidly
 - Repeat every 2 – 3 minutes as needed
 - Caution in opioid – addicted mothers

WEST MICHIGAN REGIONAL PROTOCOL

NEWBORN ASSESSMENT, TREATMENT AND RESUSCITATION PROTOCOL

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- E. **Sodium Bicarb – POST MEDICAL CONTROL ORDER ONLY**
1. **Dose** 1 to 2 mEq/kg, IV/IO
 2. **Concentration** 0.5 mEq/mL (4.2% solution)
 3. **Administration guidelines**
 - a. Only for prolonged resuscitation
 - b. Use only if infant is effectively ventilated before administration
 - c. Give slow push, minimum of 2 minutes

- M B S P**
- IV. **Special Considerations**
- A. Ventilation should always be accompanied with supplemental O₂.
 - B. Heart rate may be checked by apical pulse or feeling at the base of the cord.
 - C. Preventing heat loss in the newborn is critical (dry and discard wet linen).
 - D. APGAR score should be checked at 1 min and 5 min.
 - E. Most patients will respond well to tactile stimulation or ventilation. Intubation and meds may not be needed.
 - F. Capillary refill is an excellent indicator of perfusion in infants. Color should return in 3 seconds or less.

APGAR SCORING

Sign	0	1	2
Heart Rate	Absent	Below 100	Over 100
Respiration (effort)	Absent	Slow and Irregular	Normal; crying
Muscle tone	Limp	Some flexion of extremities	Active; good motion in extremities
Irritability	No response	Crying; some motion	Crying; vigorous
Skin color	Bluish or paleness	Pink or ruddy; hands or feet are blue	Pink or ruddy; entire body

Term Newborn Normal Vital Signs

Heart rate (awake): 100 to 180 bpm
Respiratory Rate: 30 to 60 breaths / min
Systolic blood pressure: 55 to 90 mm Hg
Diastolic blood pressure: 26 to 55 mm Hg

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