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## ***Newborn & Neonatal Assessment and Resuscitation***

**Aliases:** newborn assessment, newborn treatment, newborn resuscitation, neonatal resuscitation.

**Purpose:** Infants less than 30 days old are considered neonates. This protocol is intended for assessment of newly born infants, and/or the resuscitation of newly born infants less than 30 days old.

### **ASSESSMENT OF NEWLY BORN INFANTS**

1. History
  - A. Date and time of birth
  - B. Onset of symptoms
  - C. Prenatal history (prenatal care, substance abuse, multiple gestation, maternal illness)
  - D. Birth history (maternal fever, meconium, prolapsed or nuchal cord, bleeding)
  - E. Estimated gestational age (may be based on last menstrual period)
2. Immediate Assessment & Procedures
  - A. **Respiratory (R of APGAR)**
    - i. Assess rate and effort (strong, weak, or absent; regular or irregular)
    - ii. Absent
      - a. If the baby does not breathe spontaneously, stimulate by gently rubbing its back or slapping the soles of its feet.
    - iii. Respiratory distress (grunting, nasal flaring, retractions, gasping, apnea **OR** no return of spontaneous breathing after stimulation.
      - a. position airway (sniffing position) and clear airway as needed
      - b. If thick meconium or secretions present suction mouth then nose
      - c. Initiate ventilation with appropriately sized equipment and 21% oxygen (room air)
  - B. **Heart rate/pulse (P of APGAR)**(fast, slow, or absent), auscultation of chest is the preferred method
    - i. If heart rate >100 beats per minute
      - a. Monitor for central cyanosis, provide blow-by oxygen as needed
      - b. Monitor for signs of respiratory distress. If apneic or significant distress:
        - 1) Initiate bag-valve-mask ventilation with room air at 40-60 breaths per minute
    - ii. If heart rate < 100 beats per minute
      - a. Initiate bag-valve-mask ventilation with room air at 40-60 breaths per minute
      - b. Primary indicator of improvement is increased heart rate
      - c. Only use minimum necessary volume to achieve chest rise
      - d. If no improvement after 90 seconds, provide ventilations with supplemental oxygen (100%) until heart rate normalizes (100 or above)
    - iii. If heart rate < 60 beats per minute

**Michigan Emergency Protocol  
OBSTETRICS AND PEDIATRICS  
NEWBORN/NEONATAL ASSESSMENT  
AND RESUSCITATION**

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Section 4-3

- a. Ensure effective ventilations with supplementary **oxygen** and adequate chest rise
  - b. If no improvements after 30 seconds, initiate chest compressions
    - 1) Two-thumb-encircling-hands technique is preferred
  - c. Coordinate chest compressions with positive pressure ventilation (3:1 ratio, 90 compressions and 30 breaths per minute)
  - d. Per MCA selection, consider intubation per **Airway Management-Procedure Protocol**
- C. Color/Appearance (first A of APGAR)** (central cyanosis, peripheral cyanosis, pallor, normal)
- a. Administer blow-by oxygen for a few minutes until baby's core color is pink.
- D. Grimace (G of APGAR)**
- E. Muscle tone/activity (second A of APGAR)**(poor or strong)
3. APGAR score for witnessed deliveries, based on above assessment should be noted at one minute and five minutes after delivery.
- i. A – appearance (color)
  - ii. P – pulse (heart rate)
  - iii. G – grimace (reflex irritability to slap on sole of foot)
  - iv. A – activity (muscle tone)
  - v. R – respiration (respiratory effort)
  - vi. Each parameter gets a score of 0 to 2.

**APGAR SCORING**

Sign	0	1	2
Appearance – skin color	Bluish or paleness	Pink or ruddy; hands or feet are blue	Pink or ruddy; entire body
Pulse – heart rate	Absent	Below 100	Over 100
Grimace – reflex irritability to foot slap	No response	Crying; some motion	Crying; vigorous
Activity – muscle tone	Limp	Some flexion of extremities	Active; good motion in extremities
Respiratory effort	Absent	Slow and Irregular	Normal; crying

- 4. Prevent heat lost
  - A. Maintain warm environment
  - B. Keep infant dry and covered with dry blankets
  - C. Keep infant's head covered with infant cap
  - D. Swaddle infant to mother skin to skin if infant is stable until transport
- 5. For patient transport, refer to **Safe Transportation of Children in Ambulances-Treatment Protocol.**