

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

Initial Date: 08/09/2017

Revised Date: 12/30/2022

Section 4-3

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

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- 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**.

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