History
- Due date and gestational age
- Multiple gestation (twins, etc.)
- Meconium
- Delivery difficulties
- Congenital disease
- Medications (maternal)
- Maternal risk factors (substance abuse, smoking)

Signs and Symptoms
- Just born
- Uncut umbilical cord
- Respiratory distress or apnea
- Peripheral cyanosis or mottling (normal)
- Central cyanosis or mottling (abnormal)
- Altered level of responsiveness
- Bradycardia

Differential
- Hypothermia
- Airway failure (secretions, respiratory drive)
- Infection
- Maternal medication effect
- Hypovolemia
- Hypoglycemia
- Congenital heart disease

AT ANY TIME
Return of spontaneous circulation

Term gestation? Breathing or crying? Good muscle tone?

Yes
- Provide warmth/dry infant
- Clear airway if necessary
- Measure APGAR score at time of birth and again after 5 minutes
- Monitor and reassess

No
- Warm, dry, and stimulate
- Clear airway if necessary

Heart rate > 100
- Warm, dry, and stimulate
- Clear airway if necessary
- Measure APGAR score at time of birth and again after 5 minutes
- Monitor and reassess

Heart rate < 100 or apnea / labored breathing or persistent cyanosis
- Supplemental oxygen
  - BVM ventilations
    - If repeating cycle, take corrective action by changing BVM position or technique.
    - Reassess after 30 seconds and be prepared for continued intervention
  - Maintain warmth
  - Measure APGAR score at time of birth and again after 5 minutes
  - Monitor and reassess
  - Cardiac monitor

Heart rate < 60
- Supplemental oxygen
  - BVM ventilations
    - If repeating cycle, take corrective action by changing BVM position or technique.
    - Reassess after 30 seconds and be prepared for continued intervention
  - Begin chest compressions
    - 3:1 ratio
  - Maintain warmth
  - Measure APGAR score at time of birth and again after 5 minutes
  - Monitor and reassess
  - Cardiac monitor
  - IV/IO procedure
  - Epinephrine 1:10,000 IV/IO every 3-5 minutes as needed
  - If age-dependent hypotensive
    - Normal Saline bolus IV/IO
    - May repeat x2

Notify receiving facility.
Consider Pediatric Base Hospital for medical direction
Pearls

- Newborns born outside of the hospital can often present with no respiratory effort (apnea) and require the first steps of neonatal resuscitation (warm, dry, and stimulate). Newborns are often hypothermic, depending on the birthing event, and will respond well to warming measures, which is why warming is emphasized over airway intervention.
- Most newborns requiring resuscitation will respond to ventilation/ BVM, compressions, or Epinephrine. If not responding, consider hypovolemia, pneumothorax, or hypoglycemia (< 40mg/dl).
- Wait at least 30 seconds after delivery before clamping cord.
- Transport mother WITH infant whenever possible.
- Do not place hot packs directly on baby’s skin as it may cause severe burns.
- Common pediatric terms used to describe children are defined as:
  - Newly born are ≤ 24 hours old
  - Neonates are ≤ 28 days old
  - Infants are ≤ 1 year old
- Term gestation, strong cry/ breathing and with good muscle tone generally will need no resuscitation.
- Most important vital signs in the newly born are respirations/respiratory effort and heart rate.
- Place baby skin-to-skin on mother.
- It is extremely important to keep an infant warm.
- Maternal sedation or narcotics will sedate an infant.
- Naloxone is no longer recommended for use in the newly born who may be sedated from maternal medications.

### APGAR Scoring

<table>
<thead>
<tr>
<th>Indicator</th>
<th>0 Points</th>
<th>1 Point</th>
<th>2 Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity (muscle tone)</td>
<td>Absent</td>
<td>Flexed arms and legs</td>
<td>Active</td>
</tr>
<tr>
<td>Pulse</td>
<td>Absent</td>
<td>Below 100 bpm</td>
<td>Over 100 bpm</td>
</tr>
<tr>
<td>Grimace (reflex irritability)</td>
<td>Floppy</td>
<td>Minimal response to stimulation</td>
<td>Prompt response to stimulation</td>
</tr>
<tr>
<td>Appearance (skin color)</td>
<td>Blue; pale</td>
<td>Pink body, blue extremities</td>
<td>Pink</td>
</tr>
<tr>
<td>Respiration</td>
<td>Absent</td>
<td>Slow and irregular</td>
<td>Vigorous cry</td>
</tr>
</tbody>
</table>