Respiratory distress

**Signs of respiratory distress**
- Increased work of breathing
- O₂ requirement > 30%

**Work of breathing**
- Tachypnoea
- Chest recession (sternal, intercostal, lower costal)
- Nasal flaring
- Audible expiratory grunt

**O₂ saturations**
- Target:
  - Preterm 90–95%
  - Term 92–98%
- Measure preductally—right hand

**Signs of respiratory distress?**
- Yes
  - Commence CPAP
    - MAP: 8 cm H₂O
    - Check capillary blood gas
    - Observe for CPAP failure
    - O₂ to maintain oxygen saturations
    - O₂/air:
      - Flow 8–10 L/minute
      - Humidified/warm (37 ºC)
    - Refer to QCG:
      - Neonatal respiratory distress including CPAP
      - Neonatal resuscitation

- No
  - Assess and monitor clinical condition

**Baby breathing spontaneously?**
- Yes
  - Commence IPPV
    - ETT size and insertion depth—refer to QCG: Neonatal resuscitation
    - Pressures:
      - PIP 18–20 cm H₂O
      - PEEP 7–8 cm H₂O
      - O₂ to maintain oxygen saturations
    - Flow: 6–8 L/minute
    - IT: 0.3–0.4 seconds
    - Rate: 40–60 bpm

    - Yes
  - Wait for retrieval
    - Chest x-ray
    - Continue ongoing care as indicated
    - Discuss changes in condition with RSQ

- No
  - No

**Signs of CPAP failure**
- O₂ requirement > 50%
- Increased work of breathing
- Respiratory acidosis—pH < 7.25 or PaCO₂ > 60 mmHg
- Increasing apnoea and/or bradycardia
- Consider total clinical presentation

**Signs of CPAP failure?**
- Yes
  - Contact RSQ
    - Intubate if indicated
      - ETT size and insertion depth—refer to QCG: Neonatal resuscitation
      - Pressures:
        - PIP 18–20 cm H₂O
        - PEEP 7–8 cm H₂O
        - O₂ to maintain oxygen saturations
      - Flow: 6–8 L/minute
      - IT: 0.3–0.4 seconds
      - Rate: 40–60 bpm
    - Wait for retrieval
      - Chest x-ray
      - Continue ongoing care as indicated
      - Discuss changes in condition with RSQ

- No

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**BPM**: breaths per minute; **cm H₂O**: centimetres of water; **CPAP**: continuous positive airway pressure; **ETT**: endotracheal tube; **IPPV**: intermittent positive pressure ventilation; **MAP**: mean airway pressure; **IT**: inspiratory time; **PaCO₂**: partial pressure of carbon dioxide; **PEEP**: positive end expiratory pressure; **PIP**: peak inspiratory pressure; **QCG**: Queensland Clinical Guidelines; **RDS**: respiratory distress syndrome; **RSQ**: Retrieval Services Queensland; <: less than; >: more than