Neonatal respiratory distress and CPAP ≥ 32 weeks GA

**Respiratory distress**

**Signs**
- Tachypnoea > 60 breaths/minute
- Audible expiratory grunt
- Sternal, intercostal, lower costal recession
- Nasal flaring
- Cyanosis/Oxygen need
- Increased respiratory effort

**Oxygenation**
- Maintain SpO2 92-96%
- Monitor continuously SpO2 (preferably probe on right hand), respiratory rate, heart rate

**Blood gas**
- PCO2 may assist assessment

**Principles of care**
- Supportive care
- Family centred approach
- Observe unclothed in incubator
- Thermoneutral environment
- Minimal handling
- Developmental care

**Consult/Refer/Transfer**
- As indicated

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**CPAP**

**Capability**
- Level 4 neonatal service or above
- Appropriate equipment and human resources available

**Indications**
- Signs of respiratory distress or
- O2 requirement ≥ 30% to maintain SpO2 92-96%

**Commence**
- CPAP at 8 cm H2O
- O2 to maintain SpO2 92-96%

**Neonatal care**
- Monitor continuously:
  - SpO2 (preferably right hand)
  - Respiratory rate
  - Heart rate
  - PiO2
- Monitor hourly:
  - Vital signs + work of breathing
  - CPAP pressure
  - Gas flow
  - Humidifier and circuit temperature
  - Water level in humidifier
  - Vigilant surveillance and record hourly
  - CPAP interface positioned correctly
  - Septal columellar integrity
  - Eyes are clearly visible
  - Securing devices not causing indentation, pitting or peri-orbital oedema

**Signs of failure**
- O2 > 50% to maintain SpO2 92-96%
- A rapid rise in O2 requirement ~ 10% over 2 hours (e.g. an increase from 30% to 40%)
- A respiratory acidosis (e.g. pH < 7.25 with a normal base excess, or PaCO2 > 60 mmHg)
- Recurrent apnoeic episodes requiring stimulation
- Increased work of breathing (sternal and intercostal recession, grunting, tachypnoea)
- Agitation that cannot be relieved

**Signs of improvement**
- Decreased
  - O2 requirement
  - Grunting
  - Sternal/intercostal recession
  - Nasal flaring
  - O2 requirement
- Improved
  - Blood gas
  - Chest x-ray
  - Patient comfort

**Wean**
- O2 until 21% then
- Pressure 1 cm every 2-4 hours until 5 cm

**Cease**
- If stable in 21% O2 and
- CPAP 5 cm H2O

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Guide for consultation and referral

**Contact a level 6 neonatal service**
- Level 1-5 neonatal service
  - As desired/required

**About respiratory distress**
- Level 2-3 neonatal service
  - If O2 > 30% to maintain SpO2 92-96%
  - If O2 requirement rapidly increases
  - If < 35 weeks GA

**About CPAP**
- Level 4 neonatal service
  - Commencing CPAP > 24 hours of age
  - O2 > 50%
  - PaCO2 > 60 mmHg / pH < 7.25
  - Birth weight < 1500 g
  - GA < 32 weeks
- Level 5 neonatal service
  - Commencing CPAP > 24 hours of age
  - O2 > 50%
  - PaCO2 > 60 mmHg / pH < 7.25
  - Birth weight < 1000 g
  - GA < 29 weeks

Ongoing care as indicated
- Clinical assessment
- Supportive care
- Consult with higher level service
- Transfer/retrieval
  - Coordinate via QCC phone 1300 799 127
  - Intubation and mechanical ventilation

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Queensland Clinical Guideline: Neonatal respiratory distress including CPAP. Guideline No: MN14.3-V5-R19

Queensland Clinical Guidelines, Guidelines@health.qld.gov.au

Department of Health

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