



CLINICAL PRACTICE GUIDELINE  
NEWBORN EMERGENCY TRANSPORT SERVICE (NETS WA)

## Respiratory Distress Syndrome (RDS) / Hyaline Membrane Disease (HMD)

This document should be read in conjunction with the [Disclaimer](#)

### Definition

Respiratory distress persisting >4 hours of age, with typical CXR features of bilateral air bronchograms with a ground glass or reticulo-granular appearance in the lung fields.

### Management

#### CPAP vs Intubation and Ventilation

CPAP has been successfully used as first-line treatment of HMD in infants with mild-moderate respiratory distress for many years. A period of observation on CPAP (15-30 minutes) is required to determine whether the baby improves and whether CPAP is tolerated.

Traditionally, CPAP has been commenced with a starting pressure of 5cm H<sub>2</sub>O, but many transport services and NICU's commence CPAP at 7 cmH<sub>2</sub>O. Commencing CPAP at a higher level may reduce the need for subsequent intubation.

The following neonates may be suitable for CPAP.

Note: this is a guide, and the on-call neonatologist should be consulted:

- Gestation > 32 weeks, & FiO<sub>2</sub> ≤0.4 after stabilisation.
- Gestation < 32 weeks, & FiO<sub>2</sub> ≤0.3 after stabilisation.

**Contraindications** for CPAP (indications for intubation):

- Incipient collapse.
- Severe respiratory distress.
- Rising PaCO<sub>2</sub> (> 60mmHg) and pH <7.25 (arterial).
- Recurrent apnoea.
- Neonates with air leak should be discussed with the consultant to determine their suitability for CPAP.

**If the neonate is suitable for CPAP**, we recommend a starting pressure of **6-7cmH<sub>2</sub>O**. Note that the starting pressure will be at the discretion of the on-call consultant, and it is not mandatory to start at the higher pressure.

If the neonate requires ventilation, the following are suggested settings:



### Guide to initial ventilator settings for HMD (Stephan transport ventilator).

	Term Baby	Preterm Baby
<b>Flow</b>	8 L/min	6-8 L/min
<b>PIP</b>	20-25cm H <sub>2</sub> O	18-20 cm H <sub>2</sub> O
<b>PEEP</b>	6 cm H <sub>2</sub> O	5 cm H <sub>2</sub> O
<b>Inspiratory Time</b>	0.4 secs	0.3-0.35 secs
<b>Rate</b>	30-40/min	50-60/min

### Surfactant administration on transports

- Always discuss with the on-call neonatologist. **Usual practice is to administer on transport for ventilated babies with significant respiratory distress.**
- When the return transport is expected to take <30 minutes, and FiO<sub>2</sub> is <40%, surfactant administration can be deferred until arriving at PMH.

If a CXR can be readily obtained, it is preferable to do so before administering surfactant. If not, clinical examination may suffice to determine tube placement. Make sure that air entry is equal, i.e. avoid right main stem bronchus intubation/unilateral surfactant administration.

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