

Non Invasive Respiratory Support – continuing respiratory care and minimisation of complications

Standard:

All infants who receive non-invasive respiratory support will have it administered safely and effectively.

Equipment:

Refer to Non-Invasive Respiratory Support (nursing guidance).

Obstruction of nasal airways and tube/prongs (from condensation, mucus plugging or kinking/pulling)

1. Oro/naso pharyngeal suctioning – assess
 - the nares for obstruction 6 hourly, tap out any moisture in the prongs/mask
 - carry out oro/naso pharyngeal suctioning as required
 - clean/change prongs if obstructed or weekly whichever occurs first
2. Temperature and humidity – check:
 - the humidifier temperature is set at the correct temperature
 - there is adequate water in the chamber
 - hourly for excessive condensation and remove excess water as required
 - the temperature probes are correctly positioned within the circuit
 - the temperature probes are covered with a reflective tab if baby is nursed under a radiant heater
3. Tube positioning – check circuit for:
 - trapping in incubator door
 - twisting or tension that can be remedied by re-positioning or using clips/circuit holders

Skin trauma

4. Assess hat, and prong/mask size – (see Non-Invasive Respiratory Support for measurement guidance)
5. Assess tightness of mask/prong fitting – check that the mask and prong ties are not causing indentations on the skin
6. Undertake and record skin integrity assessment 6 hourly
7. Carry out skin care 3-6 hourly
 - dry the nares and face with routine cares
 - remove mask/prongs and inspect and assess skin integrity (nasal bridge, columella, philtrum and upper lip)
 - gently wipe/massage the skin to relieve pressure
 - re-position the CPAP prongs so that they are not resting against the columella or upper lip
 - alternate between using prongs and mask if appropriate

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- remove hat once per shift; inspect and wash with warm water and pat dry the skin around the ears, forehead and neck. Securing devices (hats and tapes) may cause indentation, pitting or periorbital oedema, skin ulceration and ear deformities.

Abdominal distension & feed intolerance

8. Insert and secure an orogastric tube for gastric decompression if baby is not already receiving gastric feeds. Tube aspiration should be performed 3-6 hourly.
9. If there is fed intolerance the tube can be left on 'high' free drainage.

Respiratory compromise

10. Evaluate position of the prongs and mask – check:
 - that the hat is the correct size and there is no slippage
 - that the prong/mask tapes are properly positioned
 - that the prongs/mask the correct size
 - that the prongs are inserted to an adequate length but not resting on the upper lip or columella
 - that the required pressure is being delivered
11. Undertake a respiratory assessment to assess the need for suction. Oral suction is often required more frequently than nasal suction.
12. Position baby prone initially but once stable on CPAP/HFNC, use $\frac{1}{4}$ and $\frac{1}{2}$ turns (side lying) to support optimal expansion of lungs and reduce V/Q (ventilation/perfusion) mismatching whilst preventing positional deformities and pressure point injury.
13. Positioning aids (shoulder/neck/chest rolls) will help to promote head and neck alignment (to ensure a patent airway) and shoulder support to prevent pressure on the face from the circuit tubing.
14. Hand to chin positioning may help keep the mouth closed, maintaining airway pressure and reducing the need for chin straps. If chin straps are used, they should be released with 'cares' for mouthcare and skin assessment. Excessive pressure can increase the work of breathing, give rise to pneumothorax and reduce cardiac output secondary to impeded venous return.
15. Use of comfort measures, such as swaddling, use of a dummy and environmental modification may settle the baby and reduce the likelihood of the nasal CPAP from being displaced.

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