



Chapter 38

CARE OF A VENTILATED INFANT

Ensure A Patent Airway

1. Establish correct ETT position
 - Appropriate auscultation of breath sounds
 - Check for appropriate placement in trachea with end tidal CO² monitor
 - < Black line at cords
 - < Tip of tube ½ way between clavicle and carina on chest x-ray
2. Assess every 1 hour and PRN
 - Continuous O² saturation monitor
 - < Vital signs including BP
 - < Colour
 - < Respiratory rate, effort, breath sounds
3.
 - a) Suction PRN using appropriate size of suction catheter

Magill ETT Size	Suction Catheter - Fr Size
2.5	6
3	6.5
3.5	8
4	8

In most newborns, it is rarely necessary to suction more often than every 6 hours for RDS; more often for meconium or pneumonia; and then the frequency is dependent upon chest signs. If surfactant is given suctioning is not recommended for 1st 6 hours unless absolutely necessary.

- b) Suction to end of endotracheal tube NOT below
 - < To obtain this length, note last number on ETT next to blue connector, add 3.5 cms for the connector
 - < Note the depth to suction in the chart at the bedside
- c) When applying suction:
 - < Use aseptic techniques
 - < Limit suction pressure to 80-100 mm/Hg
 - < Apply suction only when withdrawing catheter
 - < Reconnect ventilator/bag quickly
 - < Auscultate chest, repeat suction procedure if required
 - < Do not apply suction for more than 5 seconds
- d) Some infants may require pre-oxygenation 5% to 10% above their ordered FiO₂ and/or extra breaths or Apuffs@following suction
- e) Note colour and consistency of secretions obtained
- f) 0.5-1 ml of normal saline can be instilled into the ETT immediately prior to applying suction to help clear thick secretions

**** Remember the infant is unable to breathe when suction is applied**

4.

- a) Ventilation maintained as ordered
- b) Record ventilated settings hourly
- c) Maintain heated humidity in ventilator system @ 37°C
- d) Keep ventilator tubings empty of water
- e) Do NOT cut the ETT after x-ray confirmation of correct tube placement, to facilitate use of High Frequency Ventilation if necessary.
- f) Prevent tubings from kinking or becoming trapped in isolette doors
- g) Check stabilization of ETT - request retaping as needed
- h) Support patient connector of ventilator tubing to prevent traction

- i) Maintain baby connected to ventilator circuit whenever possible to maintain FRC (Functional Residual Capacity)
 - j) Gently nest baby to settle
 - k) Observe for signs of pneumothorax/pneumomediastinum; keep emergency pneumo@set at bedside
 - l) Insert feeding tube, as per policy and leave open to free drainage
5. See Manual Chapter 33 - Oxygen Therapy@

In Addition To Usual Newborn Care

1. **Plan care** to minimize stress (Developmental Care)
 - < Assess effects of handling and procedure on infant's colour and general status
2. **Reposition** every 2 to 4 hours as conditions permit
 - < Turn head from side to side
 - < Nurse supine or prone (if no umbilical catheter is in situ)
 - < Use positional aids (rolls) PRN
3. Provide **passive range of motion** to all limbs q 2 to 4 hours and PRN
4. Provide **skin care**
 - < Inspect for abrasions, redness, etc.
 - < Change soiled linens and diapers promptly
5. Provide **mouth care** when care given
6. Provide a **neutral thermal environment**
 - < See Manual Chapter 19, Newborn Thermoregulation@
 - < In addition, small infants in an incubator may benefit from wearing a hat and booties
7. **Observe** for signs of sepsis or intraventricular hemorrhage

Fluid and Electrolyte Balance

1. Maintain record of intake and output
2. Increased insensible water losses require altered fluid requirements
 - < Increase 20 cc/kg/day while under radiant heat source
3. Weigh daily or as tolerated
4. Test urine every 8 to 12 hours, or more often
 - < Weigh diapers - 1 gm of weight increase = 1 ml of urine
 - < Report to physician urine output of less than 1 ml/kg/hr and/or specific gravity of > 1.015
5. Monitor serum electrolytes
6. Assess for signs of dehydration or edema
 - < Tachypnea
 - < Sunken fontanelle and eyes
 - < Poor skin turgor
 - < Dry mucous membranes
 - < Decreased urinary output
 - < Fine crackles, decreased breath sounds
 - < Laboured breathing
 - < Increased FiO₂, etc.