Queensland Paediatric Emergency Care

Skill Sheets

Endotracheal Tube (ETT) Suctioning - Open Suction

Entotracheal tube (ETT) suctioning is an essential skill when caring for a child who is intubated. Suctioning removes secretions from the artificial airway, enabling airway patency. This skill sheets decribes the traditional open line suction. See Endotracheal Tube (ETT) Suctioning - Closed Suction for details on ETT closed line suctioning.

Some common clinical indications for suctioning include:

- Visible, audible or auscultated ETT secretions
- Increasing ventilator peak pressures or decreased tidal volumes (depending on ventilator mode)
- Increasing CO_2 and/or decreasing SpO_2
- History of thick ETT secretions
- Concern that the ETT is blocked or no longer patent.

ALWAYS ensure there is working oxygen and suction at the bedside. If transferring a patient, working portable suction and oxygen should accompany the patient. ETT suctioning ALWAYS requires a minimum of TWO clinicians.

1 GATHER EQUIPMENT

The correct sized suction catheter is double the size of the ETT.

If that size is not available, choose the size below.

For example: Size 5.5 ETT x 2 = 11FR suction catheter.
Since 11FR does not exist, use 10FR suction catheter.

Please ensure that hand hygiene is attended to throughout. Personal Protective Equipment (PPE) is used and appropriate for the patient's infection control risk.

2 PROCEDURE

Set suction unit to correct pressure for age of child.

Suction Negative Pressure Settings

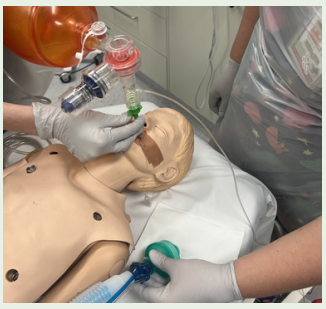
Age	Pressure
Infants (<1 year)	60 to 80 mmHg
Children (1 to 8 years)	80 to 120mmHg
Children (>8 years)	120 to 150 mmHg

Table 1: Suction Negative Pressure Settings from the QCH PICU Intubation and Ventilation Guideline

Perform suction using aseptic non-touch technique (ANTTTM) in the appropriate PPE.

3

Disconnect ventilator circuit from ETT. Drain onto disposable cloth and connect circuit to test lung.



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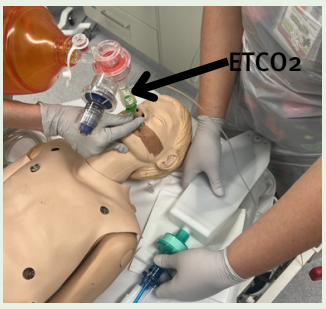
Ensure that ETCO2 monitoring remains attached to bag during disconnection from ventilator.

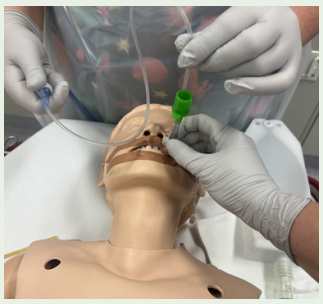


5

Insert catheter 0.5cm beyond the end of ETT. (Add 0.5cm to the length depth of the ETT at the teeth). This avoids contact with the carina.

6

Apply continuous suction during withdrawal only. Suction pressure should be appropriate to age (see previous page). Apply suction for no longer than 5 seconds in total.



ALERT

Allow pause of 1-2 minutes before passing the catheter again to avoid hypoxia. Continue ventilation during this pause. Recommence mechanical ventilation, immediately post suction.

Tips on Suctioning

- Mild recruitment manoeuvres should be considered to reduce hypoxia, consisting of increase in PEEP by 2-5cm H2O for a period, to allow alveolar re-recruitment (wait until SaO2 increases and return to baseline settings).
- Increasing the FiO2 prior to suction and immediately following suctioning will assist with oxygen recruitment and the prevention of suction related hypoxia.

References:

Children's Health Queensland (2022). Intubation and Ventilation - Management in Paediatric Intensive Care Unit. https://qheps.health.qld.gov.au/__data/assets/pdf_file/0023/725252/gdl-01405.pdf/_nocache

This Queensland Paediatric Emergency Skill Sheet was developed and revised by the Emergency Care of Children working group.
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- Supporting consumer rights and informed decision making in partnership with healthcare practitioners including the right to decline intervention or ongoing management.
- Advising consumers of their choices in an environment that is culturally appropriate and which enables comfortable and confidential discussion. This includes the use of interpreter services where necessary.
- Ensuring informed consent is obtained prior to delivering care.
- Meeting all legislative requirements and professional standards.
- Applying standard precautions, and additional precautions as necessary, when delivering care.
- Documenting all care in accordance with mandatory and local requirements.

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