TRACHEOSTOMY - USE OF HEAT MOISTURE EXCHANGERS (HME’S)

Staff this document applies to:

- Nurses, Medical Staff, Speech Pathologists, Physiotherapists on all campuses including ICU and outpatients.

State any related Austin Health policies, procedures or guidelines:

- Humidification of inspired gases in patients with a tracheostomy
- Suctioning via the Tracheostomy Tube
- Recognising & Clearing a Blocked Tracheostomy Tube
- Tracheostomy e-Learning Package – Humidification

Who is authorised to perform this procedure?:

- The decision to progress from a heated water humidifier to a heat moisture exchanger (HME) needs to be made by a Senior Physiotherapist, Clinical Nurse Consultant or member of Medical Staff.
- All members of nursing, medical, physiotherapy and speech pathology staff can place an HME on a patient’s tracheostomy tube.

Definition:

- HME’s can be placed directly onto the hub of a tracheostomy tube. The HME traps the moisture and heat from exhaled gas allowing it to be recycled on inspiration.
- The most commonly used type of HME at Austin Health is a “Thermovent T” (Smiths Medical Code 70088). There are other forms of HME available, such as foam HME’s.

Clinical Alert:

- HME’s provide less humidification than heated water humidifiers. If the patient is inadequately humidified, they are at risk of tracheostomy occlusion and/or sputum retention.
- Patients with large amounts of secretions are not suitable for HME use as they can block the tracheostomy with secretions when the HME is in place.
- HME’s may not be tolerated by some patients as they marginally increase work of breathing. Patients should be monitored for dyspnoea, fatigue and O₂ desaturation.
- HME’s should not be mistaken for Passy Muir Valves which offer no humidification

Rationale:

- To provide a convenient and portable form of humidification to patients who have a tracheostomy.
**Expected Outcome:**

The patient’s airway will be adequately humidified during the period that the HME is in use.

**Procedure:**

- Suction the patient if necessary to ensure a clear airway prior to placing the HME.
- Place the HME on the hub of the patient’s tracheostomy tube.
- Picture (a) shows a Thermovent T™, which requires a specific green oxygen connector to be clipped over the top to deliver low flow supplemental oxygen (picture b).
- Picture (c) shows a foam HME which can connect oxygen tubing directly to the side port.

![Image](a)
![Image](b)
![Image](c)

**Post Procedure:**

- Ensure the patient is adequately humidified whilst the HME is in use. Signs that the patient is inadequately humidified include:
  - Thick or tenacious sputum.
  - An irritable cough.
  - Difficulty coughing up or suctioning secretions.
  - Secretions are collecting and drying within the tracheostomy tube.
  - Secretions are very slow to move up the catheter during suctioning.
  - Secretions are collecting on the outside of the catheter during suctioning.
- The HME should be discarded when visibly soiled with secretions or every 24 hrs.
- Humidification may be augmented by the use of regular saline nebulisers. The HME should be removed whilst nebuliser is being delivered.
- Document in the patient’s history.

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(updated May 2018)
Legislation/References/Supporting Documents:


Authorised/Endorsed by:

Tracheostomy Policy and Procedure Review Committee

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