Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust

Please Note: This policy is currently under review.

Tracheostomy Adult Care Policy

(Guidelines for Best Practice)

This procedural document supersedes: PAT/T 20 v.5 – Tracheostomy Adult Care Policy (Guidelines for Best Practice)

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Amendment Form

Version	Date Issued	Brief Summary of Changes	Author
Version 6	14 April 2020	Policy and procedures completely. • Telephone numbers updated • Suction guidelines and equipment updated • New tracheostomy nurse practitioner • New consultant lead • Guidelines for escorting and transferring a tracheostomy patient updated • Laryngectomy care updated • Diagrams added • Procedures updated • New referral system via email or telephone updated	Lucy Brooks
Version 5	6 April 2016	• New Tracheostomy Nurse • Contact details updated • Suction guidelines and equipment updated • Training and education updated • Roles and Responsibilities updated	Janet Ryles & Lucy Brooks
Version 4	26 March 2014	• Format style updated. • New Tracheostomy Nurse • Clarification of where to get help and from whom • Contact details updated • Suction guidelines and equipment updated	Janet Ryles
Version 3	December 2011	Sister McConachie retired now replaced by Sister T Edmondson. • Revised introduction. • New title now changed to Adult Tracheostomy Policy. • Roles and responsibilities redefined. • Additional items on essential equipment check list. • New section – Tracheostomy complications including algorithm for blocked tracheostomy tubes as appendix. • Minor wording alterations re swallowing section. • References to children removed. • Weaning protocol as per IPOC. • Names removed, relevant personnel referred to by title.	Janet Ryles
Version 2	December 2008	• Title change to Tracheostomy Care Policy • Bleep system changed • Updating of staff • Introduction of Tracheostomy Care IPOC • Ward names updated • Referral clarification of different tube types and their management • Assessment and clarification of where and from whom to get help	Janet Ryles

Contents

Page No.

1. INTRODUCTION

This policy is designed to guide all hospital staff that care for patients with a tracheostomy at Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust. Tracheostomy tubes are becoming increasingly common both within the acute care setting and the community. As a result of this there is an expectation of increased knowledge and more advanced nursing and healthcare skills in ward staff caring for these patients. The principles of care in this policy can also be applied to patients who are permanent neck breathers, following a laryngectomy.

1.1 Who should read this document?

This policy is intended for all staff across the Trust (Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust) who are involved in the management of patients with a tracheostomy or laryngectomy.

1.2 Risk Management

There is always a risk that a tracheostomy tube may become blocked, dislodged, removed completely or that the patient's condition may deteriorate rapidly. All of these are emergency situations for which the patient must be closely observed. Skill mix and staffing levels should reflect these nursing requirements. If a nurse is asked to deliver care they consider unsafe or harmful to a person in their care, they should carefully consider their actions and raise their concerns to the appropriate person on the ward or unit Matron/Clinical Site Manager. We know from research that when a critical incident occurs relating to a tracheostomy, then the chance of some harm occurring is between 60 and 70%. National Tracheostomy Safety Project (NTSP, 2013)

1.3 Exclusion Criteria

This policy is not intended to be applied to the following patient groups:

- Paediatric patients (16 years and under) and neonates as the normal physiological parameters are different in these patient groups.

2. PURPOSE

The purpose of this policy is to improve the quality of care given to patients with a tracheostomy. It aims to promote safe and effective care for patients in our hospital. All staff caring for this particular group of patients has a duty and a responsibility to provide evidence based practice. Members of staff caring for patients with a tracheostomy must comply with the standards for routine and emergency care that are described in detail within this policy.

2.1 The Collaborative Approach

Tracheostomy care requires a multi-disciplinary approach and Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust is committed to ensuring that all adult patients with tracheostomies or laryngectomies are cared for safely by all members of the multi-disciplinary team (MDT). The MDT will include medical, nursing, physiotherapists, speech and language therapists that have undertaken their tracheostomy skills training package within a specified time frame. The collaborative approach aims to educate professionals in aspects of anatomy and physiology, cleaning and securing tracheostomy tubes, maintaining the patency of tracheostomy tubes, providing adequate and effective humidification for the tracheostomy patient and being able to carry out suctioning techniques both confidently and competently. It is also important to ensure that everyone has the knowledge and understanding of the weaning process through to de-cannulation.

It is expected that all staff that care for tracheostomy or patients with a laryngectomy on a regular basis MUST be competent in recognising and managing common airway complications. National Confidential Enquiry into Patient Outcome and Death (NCEPOD, 2014). It is recommended that staff working in areas who care for this group of patients on a regular basis maintain their competencies in emergency care by attending the TERRI course (Tracheostomy, Emergency, Respiratory, Resuscitation Issues) every 3 years.

3. ROLES AND RESPONSIBILITIES

3.1 Consultants

As the professional with overall clinical responsibility for the patient, the Consultant will ensure that all medical staff are aware of these guidelines, that clinical standards are maintained and any necessary deviation from this guidance is documented in the clinical notes. It is the Consultants responsibility to highlight the training needs of Junior Surgical/Medical staff.

3.2 Matrons, Ward Managers, Head and Neck Specialist Nurses

It is the responsibility of the above to ensure that: -

- All nursing staff are aware of these guidelines
- All nursing staff are competent to undertake their role in caring for a tracheostomy or laryngectomy patient.
- All nursing staff have access to and are given time for the appropriate training.
- Any adverse incident reported that relates to a patient with a tracheostomy or laryngectomy is investigated and action plans developed to prevent their future occurrence.
- Ensure that patients are managed in accordance with this policy and for escalating any situations where safe placement cannot be achieved.

3.3 All Clinical Staff

It is the responsibility of each member of staff involved in the management of tracheostomy or laryngectomy care to:

- Comply with standards set out in these guidelines.
- Ensure they adhere to the training requirements set out in these guidelines.
- Work within their own training and competence and seek advice where necessary.
- Report all issues related to tracheostomy or laryngectomy (including near miss events) using the Trust's Incident's Reporting Procedures.

These incidents should be discussed at relevant Care Group Clinical Governance meetings and any identified actions resulting from incidents should be implemented.

3.4 Tracheostomy Care Service

The multi-disciplinary team comprising of:

- ENT Consultant/Head and Neck Surgeon (Lead Clinician) Mr Shahed Quraishi and ENT Consultant/Head and Neck Surgeon Mr Omar Mulla contact via switchboard.
- Consultant Anaesthetist DCC, DRI contact via switchboard.
- Bassetlaw DCC Outreach Service Bleep 3558.
- Doncaster DCC Outreach Service Bleep 1980.
- Respiratory Physiotherapy Team DRI Bleep 1311
- Head and Neck Oncology Nurses Tel 07789 654039 or EXT 642421 Monday to Friday 9am-5pm.
- Speech and Language Therapy contact via switchboard.

4. PROCEDURE

4.1 Referral

All patients should be referred to the Tracheostomy Care Service by the Critical Care Outreach Team at DRI or Bassetlaw on the day of discharge from DCC. Referrals can be telephoned through or emailed to dbth.headandneck@nhs.net using the appropriate form (appendix 6). For patients admitted from the community with a tracheostomy or laryngectomy then a referral must be sent by the registered nurse caring for the patient to the tracheostomy service. Referrals can no longer be faxed.

4.2 The transfer of patients with a tracheostomy tube

Ward managers should liaise with the department of critical care for assessment of tracheostomy patients to ensure their needs can be met on the ward prior to transfer. If advice

is needed, speak to the tracheostomy service Mon – Fri 9am-5pm on 07789654039, out of hours liaise with the duty matron on call. Some patients with a tracheostomy have a high demand for suction and inner tube care therefore staffing ratios may have to be reviewed prior to transfer to ensure patient safety.

After a surgical tracheostomy patients are normally nursed on DCC or the ENT Ward (S12) once they have left recovery. Ward S12 has a Standard Operating Procedure to follow with regards to 'specialling' patients after surgical tracheostomy. This can be accessed via the ENT Q drive. Please note after surgical tracheostomy all patients will need one to one nursing for a period of time (refer to SOP).

4.3 Assessment

Patients will either be seen by lead clinicians, a middle grade member of the team or ENT specialist nurses within 2 working days of the referral.

Each patient will be assessed carefully and a plan or recommendation will be documented in the tracheostomy IPOC.

IMPORTANT

- Patients who are requiring CPAP/BIPAP via their tracheostomy tube will remain in the Department of Critical Care, Doncaster Royal Infirmary.
- Patients not on CPAP/BIPAP and not at risk of aspiration should have an un-cuffed tracheostomy tube in place and some form of HME – (heat, moisture, exchange).

PATIENTS LACKING CAPACITY (PAT/PA 19)

Sometimes it will be necessary to provide care and treatment to patients who lack the capacity to make decisions related to the content of this policy. In these instances, staff must treat the patient in accordance with the Mental Capacity Act 2005 (MCA 2005).

- A person lacking capacity should not be treated in a manner which can be seen as discriminatory.
- Any act done for, or any decision made on behalf of a patient who lacks capacity must be done, or made, in the persons Best Interest.
- Further information can be found in the MCA policy, and the Code of Practice, both available on the intranet.

There is no single definition of Best Interest. Best Interest is *determined on an individual basis. All factors relevant to the decision must be taken into account, family and friends should be consulted, and the decision should be in the Best interest of the individual. Please see S5 of the MCA code of practice for further information.*

5. LARYNGECTOMY OR TRACHEOSTOMY?

It is important to understand that while there are some similarities between the care of patients with tracheostomies and laryngectomies, the anatomy of these patients is completely different and the care that you give will be very different in routine and emergency situations.

Importantly in comparison, the patient with a tracheostomy has a patent upper airway as an alternative means of ventilating and oxygenating, if the tracheostomy becomes blocked or displaced, a laryngectomy patient does not.

5.1 Laryngectomy

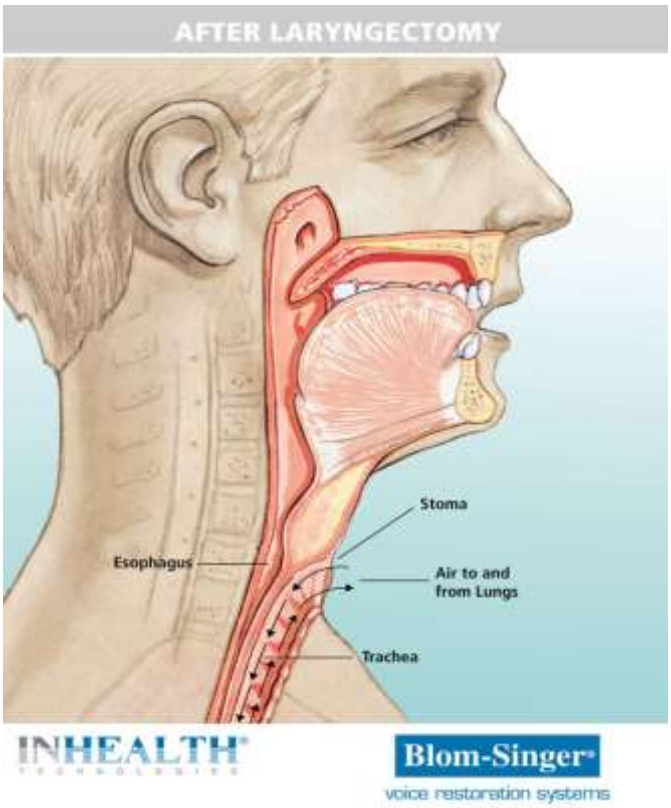
Laryngectomy is a type of tracheostomy stoma. A laryngectomy is a term used for complete removal of the larynx (voice box).

PATIENTS BREATHE ENTIRELY THROUGH THE PERMANENT STOMA IN THEIR NECK. THEY CANNOT BREATHE THROUGH THEIR MOUTH OR NOSE. AFTER LARYNGECTOMY THE TRACHEA IS SUTURERED TO THE NECK TO FORM A PERMANENT STOMA/AIRWAY

Most patients with laryngectomy are independent with their care, however when they come into hospital they may not be able to provide adequate care. We should recognise that our laryngectomy population are also seen infrequently and present unique problems. Training will be required to familiarise staff with the care of a laryngectomy patient in addition to that expected of all staff caring for patients with tracheostomies. Ideally laryngectomy and tracheostomy patients should be cared for by Ward S12 or the Respiratory Unit at Doncaster and C1 at Bassetlaw or DCC at both sites. In these areas members of staff are more familiar with this altered anatomy and their differences. These areas are classed as our “safe havens” within the trust.

A laryngectomy diagram courtesy of Blom Singer, 2018.

A PERMANENT NECK BREATHER, THE LUNGS CAN ONLY BE OXYGENATED AND VENTILATED BY THE LARYNGECTOMY OPENING "THE STOMA IN THE NECK"



The difference between a laryngectomy and a tracheostomy is very important to understand. This is vital within the hospital setting to ensure the patient receives the right medical/nursing care. Identifying this difference though is not always easy in an A&E setting or looking at the patient from the end of their bed.

RECOMMENDATIONS

To help identify if your patient has a laryngectomy or tracheostomy you can do the following: -

- Check the medical notes at the front, does it state "this patient is a permanent neck breather".
- Ask the patient.
- Ask a relative or carer.
- Does the patient wear a wrist band with a medical alert?
- Does the patient carry a medical alert card in their wallet or purse?
- Do they carry a tracheostomy or laryngectomy passport?
- Look at the type of products they are wearing.
- Within a ward setting they should have a colour coded bed head sign stating tracheostomy or laryngectomy above the bed.

A LARYNGECTOMY ALERT WRISTBAND

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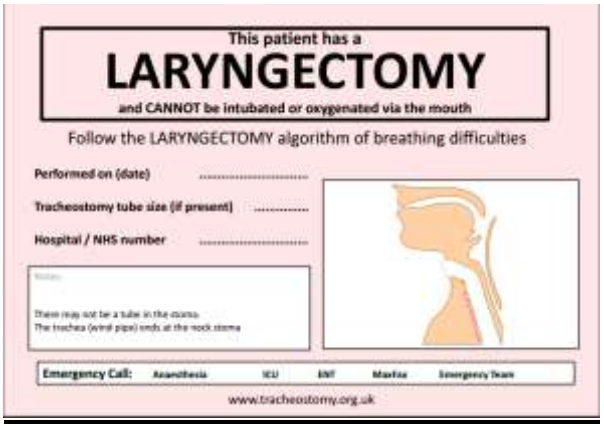
A TRACHEOSTOMY AND LARYNGECTOMY PASSPORT

A LARYNGECTOMY ALERT CARD

BED HEAD SIGNS



5.2 Laryngectomy Risk Management

After total laryngectomy the larynx has been removed and the patient breathes through the stoma in their neck. This means that the normal upper airway functions of the nose are taken away. The patient can no longer filter, moisten and warm the air that they breathe through their stoma. This means they are at risk of blocking of the trachea with secretions, blood or mucus plugs.

With laryngectomy the airway is more secure than a patient with a tracheostomy because the stoma is permanently sutured to the neck. It can however still become compromised if it is a new laryngectomy stoma or if the patient is at risk of stoma collapse/shrinkage.

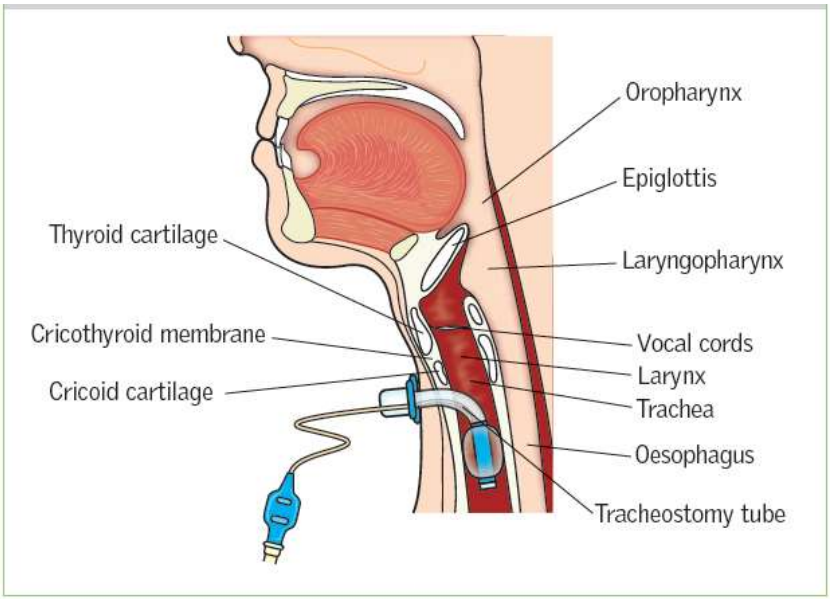
Laryngectomy stomas are usually simple open stomas without any tube inserted. There are a number of laryngectomy products including laryngectomy tubes, buttons, base plates and filters and other humidification devices that can make distinguishing between a laryngectomy and a tracheostomy very difficult. Sometimes tracheostomy tubes are inserted into laryngectomy patients for invasive ventilation, and some laryngectomy patients may wear a tracheostomy tube if their stoma is at risk of stenosis (narrowing), or if they have recurrent disease and tumour at their stoma site.

Many incidents have been reported on wards in an emergency situation and in Emergency Departments when staff have not established that the patient is a permanent neck breather and oxygen has been administered via the face. Or clinicians fail in attempts at managing the upper airway because there is no connection between the face and the lungs.

To ensure this does not happen we encourage our laryngectomy population to wear a wristband or carry an alert card to aid their safety. At DBTH we have also adapted the colour coded bed-head signs and emergency algorithms to identify laryngectomy and tracheostomy patients as recommended by the NTSP (2013).

6. TRACHEOSTOMY

A Tracheostomy is an opening in the front of the Trachea that can be temporary or permanent and can be formed by a surgical or percutaneous procedure. Within our hospital adult patients may require a tracheostomy insertion for a number of clinical reasons. This may be an elective procedure as part of a management plan, for example in head and neck surgery where the tumour obstructs the airway. Within the critical care setting percutaneous tracheostomies are often performed to facilitate weaning of patients requiring ventilation (The Intensive Care Society, 2014).



Tracheostomy with cuff inflated diagram courtesy of NTSP, 2013

6.1 Indications for Tracheostomy

- To secure and maintain a patent airway when there are injuries to the face, head or neck and following certain types of surgery to the head and neck.
- Head and neck cancer where the tumour obstructs the airway.
- Acute laryngeal oedema caused by radiotherapy.
- To protect the airway of patients who are at risk of aspiration, that is patients with incompetent laryngeal and tongue movement on swallowing e.g. neuromuscular disorders, unconsciousness, head injuries, stroke etc.
- To enable long-term mechanical ventilation of patients within an ICU setting.
- To remove bronchial secretions where there is poor cough effort with sputum retention.
- Tracheal stenosis which can be the result of an over inflated cuff/long term intubation.

6.2 Tracheostomy Risk Management

Problems associated with tracheostomies in hospitals are quite common. Between January 2005 and December 2008 over 1,700 incidents were reported to the National Patient Safety Agency (NPSA 2005), these events included over 30 deaths.

Problems can occur at the time of insertion, airway problems, bleeding, and lack of oxygen or damage to adjacent structures, and around 80% of problems occur after insertion. Tracheostomy tubes may become blocked or displaced and sometimes this is not always obvious. Later complications include problems with the wound (stoma) or narrowing or weakness of the trachea itself (NTSP 2013).

All of these potential situations mean the patient must be closely observed.

Patients with a tracheostomy are at risk of the following:

- Bleeding from the stoma site or trachea.
- Blockage by a blood clot or mucus plug.
- Pneumothorax.
- Displaced tracheostomy tube.
- Cuff over inflated - tracheomalacia, necrosis to the tracheal wall or ulceration.
- Accidental de-cannulation.
- Infection at the stoma site.
- Pressure damage at the stoma site from the base plate or neck from wearing ties too tight.
- Over granulation at the stoma site.
- Candida at the stoma site.
- Surgical emphysema.
- Equipment incidents.
- Lack of knowledge, skills and competency.
- Communication breakdown.

RECOMMENDATION AND BEST PRACTICE

ALL TRACHEOSTOMY INCIDENTS MUST BE REPORTED VIA THE DBTH DATIX REPORTING SYSTEM

KEY PRACTICE POINTS

- New and established stomas are at risk of complications but good routine care should avoid complications.
- A blocked tracheostomy is a life threatening event.

6.3 Techniques for Tracheostomy Tube Insertion

At DBTH we use two techniques to insert tracheostomy tubes, a surgical incision which is usually performed by ENT surgeons or by percutaneous technique usually performed by anaesthetists on critical care.

Surgical

- Usually carried out in theatre by ENT surgeons where conditions are sterile and lighting is good.
- A surgical opening is made into the neck where the tube is placed.
- The tube initially will be sutured to the skin and secured with ties.
- Usually carried out under GA but can be performed under LA.

Percutaneous

- Usually performed in critical care.
- A needle is inserted through the neck into the trachea followed by a guide wire through the needle.

The needle is removed and the tract is dilated gradually until the stoma is large enough to fit a suitable tube. Tapes and sutures secure this.

Cricothyroidotomy (mini tracheostomy)

- Assists with secretion clearance only and does not provide any airway protection like a tracheostomy.

6.4 Types of Tracheostomy Tubes

There are many different types of tracheostomy tubes and that can be confusing. However, specific tubes have different functions, all of which can help patients to breathe, communicate and keep safe. NTSP, (2013).

Tubes can be made of different materials and they can be different diameters and lengths. Most modern tubes are made from medical grade polyvinyl chloride, polyurethane, silicone or a combination of these materials. Some are lined with special films to reduce the 'biofilm' that may develop inside the lumen. There are tubes with a cuff at the end and tubes without a cuff. There are single lumen tubes and tubes with a double lumen (dual cannula). There are tubes with a hole in (a fenestration) and tubes without a hole (non fenestrated). There are illustrations and diagrams of the different functions and range of tubes at **www.tracheostomy.org.uk**

IMPORTANT INFORMATION:
PLEASE NOTE PATIENTS WITH A SINGLE LUMEN TRACHEOSTOMY TUBE MUST BE CARED FOR IN A CRITICAL CARE ENVIRONMENT ONLY DUE TO AN INCREASED RISK OF THIS TYPE OF TUBE BECOMING BLOCKED OFF. SINGLE LUMEN TUBES ARE NOT ACCEPTABLE ON GENERAL WARDS. IF A PATIENT IS ADMITTED TO A WARD WITH A SINGLE LUMEN TUBE CONTACT THE ENT REGISTRAR ON CALL OR THE HEAD AND NECK SPECIALIST NURSES IN THE FIRST INSTANCE FOR ADVICE.

6.5 Cuffed Tubes

Cuffed tubes have a soft balloon around the distal end of the tube which inflates to seal the airway. Cuffed tubes may be used for: -

- ✓ When positive pressure ventilation is required.
- ✓ Airway protection to minimise aspiration of oral or gastric secretions (although all cuffs are not an absolute barrier to secretions).
- ✓ Post operatively after surgical tracheostomy to prevent blood entering the lungs.

REMEMBER

If the tracheostomy tube becomes blocked with a blood clot or mucus plug when the cuff is inflated the patient will NOT be able to breathe at all. The pressure of a cuff may cause damage to the tracheal mucosa reducing perfusion and may lead to tissue necrosis and tracheal stenosis. These risks are increased with over inflated or excessive cuff pressures. Most tracheostomies are made with low pressure cuffs. To reduce this risk, cuff pressures should be checked and documented every shift (NTSP, 2013).

A CUFFED TRACHEOSTOMY TUBE COURTESY OF NTSP, 2013

6.6 Un-Cuffed Tubes

Un-cuffed tubes do not have a cuff that can be inflated inside the trachea and tend to be used in longer term patients who require on going suction to clear secretions. These tubes will not allow sustained effective positive pressure ventilation as the gas will escape above the tracheostomy tube. It is essential that patients have an effective cough and gag reflex to protect them from aspiration, as there is no cuff to 'protect' the airway. Un-cuffed tubes are rarely used in the critical care setting.

AN UN-CUFFED TRACHESOTOMY TUBE COURTESY OF NTSP, 2013

IMPORTANT INFORMATION

ALL PATIENTS WITH A TRACHEOSTOMY SHOULD HAVE AN OUTER TUBE AND A REMOVABLE INNER TUBE PRIOR TO BEING TRANSFERRED TO A WARD FROM THE DEPARTMENT OF CRITICAL CARE TO PREVENT AIRWAY OBSTRUCTION CAUSED BY BLOCKING OF THE TRACHEOSTOMY TUBE (NPSA, 2008).

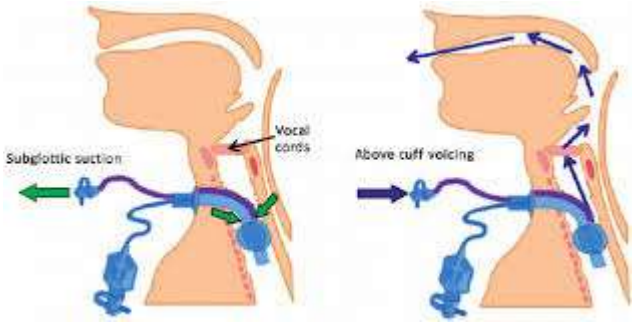
6.7 Mini Trache Tube

These are a much smaller tube with a 4mm internal diameter, they have no cuff. They are designed for secretion clearance/airway toilet but can facilitate delivery of oxygen if required. They are too small to provide any ventilation or removal of carbon dioxide and so can only be considered an emergency method of oxygenation. Mini traches are sometimes used when preparing to de-cannulate a patient. The mini trache can remain in the stoma and keep it patent in case a tracheostomy tube needs to be re-inserted. Mini traches can also be inserted through the cricothyroid membrane. Specialised insertion kits are available for this in an emergency.

MINI TRACHE TUBE COURTESY OF KAPITEX, 2018

6.8 Tracheostomy Tubes with Sub-Glottic Suction

These tubes allow continuous or intermittent suction of any material that accumulates above the inflated cuff of a tracheostomy tube. These tubes are only used in specialist areas like DCC. The NTSP 2013 reports that these tubes should always be changed to a simpler device when leaving a specialist area as the extra tubing can be confusing to carers. **There is one report of the sub-glottic suction port being connected to an enteral feed in error.**



A TUBE WITH SUB-GLOTTIC SUCTION DIAGRAM COURTESY OF RESEARCH GATE. NET, 2012

6.9 Adjustable Flange Tracheostomy Tubes

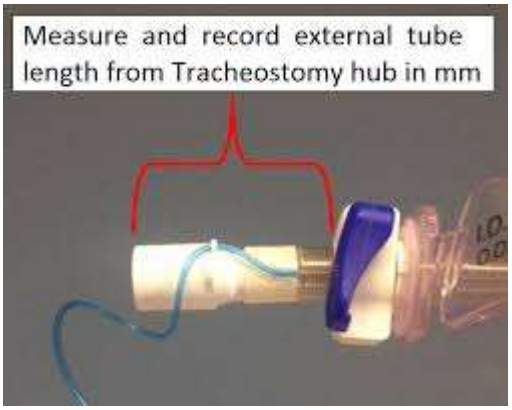
These tubes are used in patients who have an abnormally large distance from their skin to their trachea, and a standard tube would not fit properly. There are now dedicated kits for inserting these tubes. Standard tubes may not be the correct size for many critical care patients. In head and cancer; patients with large tumours may also benefit from wearing this type of tube. Clinical examination, ultrasound and endoscopic inspection before and after tracheostomy procedure may help to decide which patients require these types of tubes.

Particular indications for an adjustable flanged tube are: -

- Patients with very large neck girth including bariatric patients.
- Oedema caused by burns classically, or a capillary leak syndrome (sepsis etc).
- Actual or anticipated oedema after surgical procedures (including tracheostomy itself).

TRACHEOSTOMY WITH AN ADJUSTABLE FLANGE, DIAGRAM COURTESY OF PORTEX, 2014

It is essential to review the position of the flange (hence the length of the tube) on a daily basis. If the patient has neck swelling, as this worsens or resolves, the flange may need adjusting by a senior Anaesthetist or ENT Surgeon **ONLY** (see diagram below). The image below shows where to measure from and to for patients with an adjustable flange tracheostomy tube. Newer adjustable flange tracheostomy tubes do have an inner tube. Patients within a ward area will not usually have an adjustable flange tube.



COURTESY OF AUSTIN HEALTH TRAMS, 2016

ADJUSTABLE FLANGE TRACHEOSTOMY TUBES ARE MORE DIFFICULT TO USE AND ARE ASSOCIATED WITH ADDITIONAL COMPLICATIONS, SOME OF WHICH MAY BE LIFE THREATENING

6.10 Silver Negus Tracheostomy Tubes

These tubes are made of 100% sterling silver. The Silver Negus tube has an outer cannula, inner cannula with speaking valve, spare inner cannula and introducer. Silver Negus tubes are often seen as an economical long term tube and have the benefit of allowing maximum air flow into the airway due to its ultra thin walls. The Silver Negus tube comes in various sizes. Silver Negus tubes are often worn by patients that require a permanent tracheostomy tube. There natural properties also prevent granulation tissue developing. They can also be worn more discreetly.

A SILVER NEGUS TRACHEOSTOMY TUBE

COURTSEY OF KAPITEX.COM, 2018

6.11 Fenestrated Tracheostomy Tubes

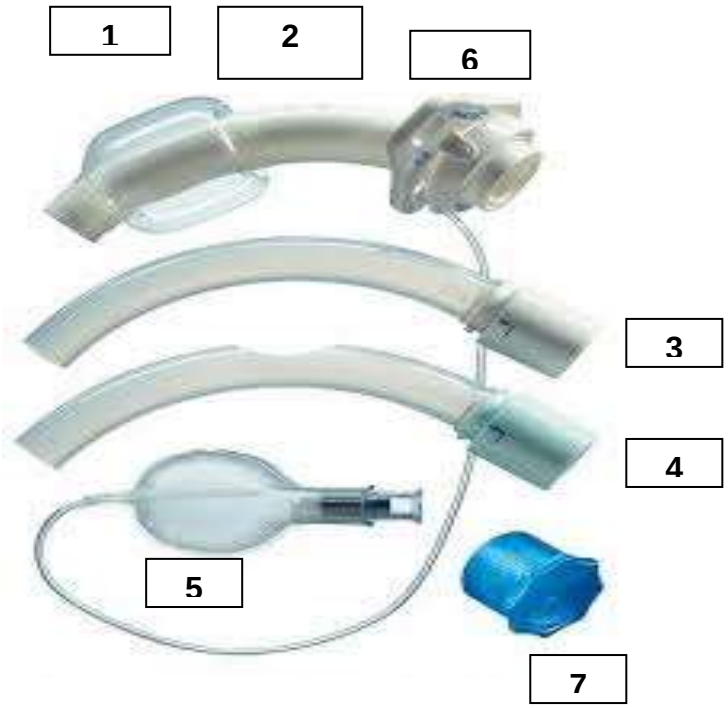
Fenestrated tubes have an opening (s), on the outer cannula, which allows air to pass through the patient's oral/nasal pharynx as well as the tracheal opening. The air movement allows the patient to speak and produces a more effective cough. However, the fenestrations increase the risk of oral or gastric contents entering the lungs. It is therefore essential that patients who are at high risk of aspiration or on positive pressure ventilation do not have a fenestrated tube, unless a non-fenestrated inner cannula is used to block off the fenestrations. Suctioning with a fenestrated tube should only be performed with the non-fenestrated inner cannula in-situ, to ensure correct guidance of the suction catheter into the trachea.

The inner tube below has a fenestration in it which lines up with the fenestration in the outer tube. Air can then flow through the tube as before, but in addition, some air can flow through the holes and out through the patient's mouth. The air flow through the fenestration into the upper airway allows the patient to talk. If positive pressure needs to be given to the patient to aid ventilation, for example in the event of a cardiac arrest or worsening respiratory function, then the tracheostomy inner tube without the fenestrations should be fitted, this allows positive pressure airflow to enter the lungs rather than escape through the mouth and nose.

FENESTRATED TUBES

- ✓ To aid communication speech.
- ✓ Allows air to pass through oral/nasal pharynx and tracheal opening.
- ✓ Produces a more effective cough.
- ✓ Can be worn with a one-way phonation valve (CUFF MUST BE DEFLATED).

The diagram below and the tube in the middle is a non-fenestrated inner tube which has no hole (or fenestration) so air flow is allowed straight through the tube from one open end to the other. When this is tube is in place, minimal amounts of air pass through the patient's upper airway. This inner tube should be in place when the patient is suctioned as there is a small risk of a suction catheter passing through the fenestration which may damage the tracheal mucosa if the fenestrated tube is in place.



This is a cuffed tracheostomy tube with a fenestration. It has two inner tubes one that is fenestrated (4) and one that is non-fenestrated (3).

It has a pilot balloon (5) and a blue cap (7).

Diagram courtesy of Kapitex , 2014.

1, **CUFF**- This is the balloon at the distal part of the tracheostomy outer tube that is inflated following insertion to provide a seal to enable positive pressure ventilation and provide some protection against aspiration of secretions. Shiley and Tracoe tubes come with an external pilot balloon that indicates to the healthcare worker if the cuff is inflated or deflated (a flat external pilot balloon means the cuff is deflated).

2, **THE MAIN TUBE-** This is the main body of the tracheostomy tube, this varies in length and width to accommodate various sizes and shapes of patients.

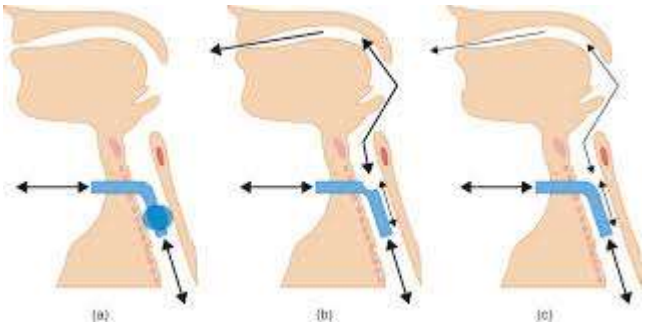
3 & 4, **Inner tubes** 3, **NON FENESTRATED (NO HOLE)** this is a removable tube that fits inside the outer tube. The inner tube should be removed and replaced with a clean inner tube at least every four hours. If secretions are very thick and sticky, the inner tube may require cleaning more frequently to prevent airway obstruction from a blocked inner tube. This tube has no hole in it or fenestration. This tube should always be used to perform suction because the catheter can be passed easily and not escape through a fenestration causing trauma to the trachea. 4, **FENESTRATED INNER TUBE** these are multiple holes or just one along the shaft of the outer tube that line up with the holes in the inner tube that provide air flow through the tube to the larynx, pharynx, mouth and nose. This enables some speech and reduces the work of the breathing when the cuff is deflated by allowing air to pass over the vocal cords. Patients requiring ventilator support or those at risk of aspiration should not have a fenestrated tube in place due to associated risks (ICS, 2014).

5, **PILOT BALLOON**- an external balloon connected by an inflation line to the internal cuff. When the internal cuff is inflated the pilot balloon is also inflated and vice versa.

6, **THE FLANGE-** A flange supports the tube and prevents downward displacement of the tube. It also provides information on the type of tube and size of tube in mm. The flange also provides an area to secure the tube to the neck. Tracheostomy ties are usually worn of various makes and they are most comfortable for the patient. However, cotton ties may also be used to provide extra security. Tracheostomy tubes are sutured to the skin after surgical insertion. If sutures are in place it should be documented in the medical notes along with the date for suture removal (usually 5 days).

7, **THE CAP-** This is only used by patients that are being weaned off their tracheostomy tube. A full MDT/ENT assessment must take place prior to using any cap on a tracheostomy tube. The care plan for weaning must be documented by a competent practitioner in the tracheostomy IPOC of care.

The picture below is courtesy of the national tracheostomy safety project (2013). It shows airflow patterns with a cuffed tube, a fenestrated cuffless tube and non-fenestrated cuffless tube.



A- Air flow in and out of the tracheostomy tube ONLY.
B- Air flow in and out of the tracheostomy tube, around the tracheostomy tube and through the fenestration of the tracheostomy tube.
C- Air flow through and round the tracheostomy tube only.

6.12 Double Lumen Tubes

Double lumen tubes have an outer tube to keep the airway open and an inner tube which acts as a removable liner to facilitate cleaning of secretions. Inner tubes must be cleaned a minimum of every 4 hours in sterile water and a clean one re-inserted immediately to ensure airway patency. Inner tubes may need changing and cleaning more frequently for patients with productive secretions. Patients discharged from specialist areas must have a double lumen tracheostomy tube in place. Regular care of the inner tube can prevent a build up of secretions and reduce the risk of tube blockage and infection. A spare inner tube should be kept in a clean dry container at the patient's bedside when not in use. Videos demonstrating inner tube care and cleaning can be found by following the NTSP website.

IMPORTANT INFORMATION

If a patient is transferred or admitted with any other type of tracheostomy or a single lumen tube out of hours you should contact the ENT Registrar, Anaesthetist or Physiotherapist on-call. The Head and Neck Specialist Nurses can be contacted on 07789 654039 or 642421 Mon-Fri for advice. There is also the ENT Ward S12. Airway problems associated with tracheostomies occurring out of hours should be referred to the on call Senior Anaesthetist or ENT Registrar. In the event of a respiratory arrest call Dial 2222.

For further information on different tracheostomy tubes or for general advice contact

- Head and Neck Specialist Nurses 07789 654039 or 642421.
- Critical Care Outreach Team DRI Bleep 1980.
- Critical Care Outreach Bassetlaw Bleep 3558.
- Ward S12 ENT Ext 642412 or 642413.
- On call Physio Bleep 1311.

7. TRACHEOSTOMY CARE

Every patient with a tracheostomy tube must have a fully stocked tracheostomy unit at their bedside and this should be checked at the beginning of every shift, documented as checked and missing items or non-working equipment be replaced. At DBTH good care starts with preparation before a patient arrives. It is too late to realise an essential piece of equipment is missing in an emergency (NTSP, 2013).

Any clinical area caring for patients with a tracheostomy must have emergency equipment immediately available. Some of this will be in the tracheostomy unit at the bedside as it is required for routine care, whilst other equipment is provided on the ward within the resuscitation trolley if 2222 is required due to an arrest situation.

7.1 Bedside Tracheostomy Equipment

- Spare tracheostomy tubes.
- 1x same size.
- 1x size smaller.
- 1x same size with cuff (if required in an emergency resuscitation situation or in the event of bleeding).
- Tracheal dilators.
- Catheter mount.
- 10ml syringe.
- Hand held pressure gauge.
- A variety of suction catheters.
- Suction equipment.
- Sputum trap.
- 0.9% saline ampules.
- Yankauer suction.
- Oxygen with tracheostomy mask/humidification equipment.
- Swedish Nose/Trachephone (HME).
- Scissors and stitch cutter (if tracheostomy tube is sutured in place).
- Sterile water for cleaning the suction tube (date/time when opened, change every 24 hours).
- Sterile water for cleaning tracheostomy tubes (date/time when opened, change every 24 hours).
- Water soluble lubricating jelly.
- Sterile gauze.
- Swabs/brushes for inner tube cleaning.
- Clean pot with lid for spare inner cannula (**DO NOT COVER POT WITH GLOVE)** as this creates a moist atmosphere that encourages bacteria to grow).
- Sterile dressing pack.
- Tracheostomy dressings.
- Tracheostomy tapes or cotton ties.

- Personal protective equipment (gloves, aprons, eye protection).
- Clinical waste bag.
- Sterile gloves for performing deep suction and non-sterile gloves.
- Nurse call bell (the patient may be unable to call for help).
- Communication aids, the patient may not be able to verbalise.
- Bedside equipment checklist.
- Tracheostomy emergency care algorithm.
- Tracheostomy bed sign.
- Paediatric face mask for resuscitation if Silver Negus tube in-situ to create a better seal

IMPORTANT

Additional airway equipment is available from the cardiac arrest trolley and a fibre optic scope is available on the ENT Ward (S12)

7.2 Escorting a tracheostomy patient to another area within the hospital and equipment required

When a patient is transferred to a different location within the hospital then the accompanying staff member is responsible for ensuring that any equipment that may be required in an emergency is available at the destination and also en route.

A blue TRACHI-CASE should accompany the patient that is fully stocked and checked prior to leaving. Suction equipment and a variety of suction catheters should also be taken, a portable oxygen supply, and humidification equipment. Spare inner tracheostomy cannula should also be taken in a clean sealed container, and the spare tracheostomy bedside tubes.

AN APPROPRIATELY TRAINED PERSON WHO IS COMPETENT TO USE THE EQUIPMENT IN AN EMERGENCY MUST ACCOMPANY THE PATIENT AT ALL TIMES

The case should contain:

- 10ml syringe.
- Scissors.
- Stitch cutter.
- Tracheostomy ties.
- Lubricating jelly.
- Dilators.
- Allevyn adhesive dressing.
- Sterile gloves.
- Tracheostomy dressing.
- Saline 0.9% x 5.
- Tube cleaning brush.
- Catheter mount.

8. SUCTION

The type and frequency of suction will vary between patients and will also depend on their current status. Each patient requires individual assessment and should be regularly reassessed to establish the required frequency of suctioning (NTSP, 2013).
Each suction procedure should be recorded in the tracheostomy IPOC.

Indications that the patient may require suctioning include:

- Noisy and or moist respirations
- Increased respiratory effort

- Prolonged expiratory breath sounds
- Restlessness
- Reduced oxygen saturation levels
- Increased or ineffective coughing
- Increased used of intercostal muscles
- Patient request
- More sinister signs of airway obstruction such as hypoxia and cardiovascular changes

(NTSP, 2013)

8.1 Suction catheter selection

Tracheal damage and hypoxia may be caused during tracheal suction. This can be minimised by using the appropriate sized suction catheter. The NTSP 2013 recommended that the diameter of the catheter should be no more than half the internal diameter of the tracheal tube. If the catheter is too small, it will not be adequate to remove secretions so repeated attempts will be necessary which have also been shown to damage the trachea.

The correct size of suction catheter can be calculated as follows:
Add 4 to current tube size e.g. size 8 tube = size 12 suction catheter

8.2 Suction and frequency

Practitioners should note that thick, tenacious secretions may require a larger suction catheter. The above suction calculation acts as a guide only and should be used in conjunction with individual patient assessment. There is no clear consensus on how frequently a patient should receive suctioning. This will be dictated by the various patient factors related to their ability to spontaneously clear their own secretions. The number of times a patient is suctioned in one period should be dependent on the patients' secretion level and ability to tolerate the suction procedure. Caution should be shown in order to prevent hypoxia during suctioning and trauma evident by secretions becoming blood stained. If the patients' secretions do become blood stained, advice regarding the size of the suction catheter and frequency of suctioning should be reviewed by ward physiotherapist or the head and neck specialist nurses.

8.3 The depth of suctioning

The National Tracheostomy Safety Project advises that passing a suction catheter to the tip of the tracheostomy tube can be considered 'shallow' suctioning. This is often all that is required if the patient is known to have reasonably loose secretions which can be coughed towards the end of the tube. Passing a suction catheter any further is considered as 'deep' suctioning and may be required if more shallow suctioning does not clear the secretions adequately. The length of the tracheostomy tube in situ needs to be known so that a suction catheter is inserted to an appropriate distance. If resistance is felt, then the catheter should be withdrawn by 1cm before applying suction as the catheter may have come into contact with carina. This policy recommends measurement of the suction catheter to ensure that only one third of the catheter length is inserted.

8.4 Suction pressures

The Tracheostomy Safety Project (2013) recommends a pressure of no greater than: -

Magnitude
-150mmHg or -20kPa (see suction procedure below for further detail)

8.5 Equipment for suctioning

Functional suction unit 15-20 kPa, 100-150 mmHg (maximum pressures for tracheal suctioning)
Sterile suction catheters (appropriate sizes)
Sterile gloves and latex free disposable gloves
Apron
Protective eyewear
Oxygen therapy and wall flow meter and tracheostomy mask
Oxygen saturation monitor
Sterile water and bowl/jug to wash through the suction system (the water must be emptied in the sluice and the bowl dried after each procedure)
Yankaur suction

8.6 Closed suction

Closed suction systems allow the suction tubing from the wall mounted suction unit to be constantly connected to the catheter assembly. Closed suction requires to be changed every 24 hours or according to the manufacturer's instructions. Closed suction is frequently used on DCC. Refer to their guidelines.

8.7 Suction Procedure

	Action	Rationale
1	Assess the patient's requirement for suctioning: ➢ Abnormal breath sounds (excessive expiratory/inspiratory wheeze) ➢ Irregular respiratory pattern and evident accessory muscle activity ➢ Inability of the patient to effectively clear the airway(gurgling/coughing) ➢ Changes in secretions ➢ (tenacity/quantity/colour) ➢ Changes in SPO2 levels ➢ Colour of skin (cyanosis) ➢ Chest auscultation ➢ Heightened anxiety	**Suction should not be routinely performed** Suction according to the patients inability to successfully remove secretions and clear the airway (NTSP,2013)
2	Reassure and explain the procedure to the patient and gain verbal consent if possible. Document in IPOC that consent was gained. Close bedside curtains.	To obtain consent, confidence, co-operation and to reassure them. To perform a private dignified procedure.
3	Wash hands using the 5 step technique.	To reduce the risk of infection and comply with the trusts infection control policy.
4	Clean hands, put on clean disposable gloves, apron and eye protection.	To reduce the risk of patient infection and cross infection.
5	Optimise oxygenation if necessary. You may suction via the tracheostomy mask porthole or drop the mask down allowing oxygen to continue to flow past or near the tracheostomy.	To maintain adequate SPO2 and reduce the risk of hypoxia and cardiac arrhythmia. (NTSP,2013)
6	Ensure non fenestrated tracheostomy inner tube is in place prior to suctioning.	This prevents the suction catheter going through the fenestration and damaging the tracheal mucosa.

7	Turn on the suction equipment and set the pressure. Check there is a good seal. Check the vacuum pressure is between 15-20Kpa /100-150mmHg, maximum pressures. Attach correct size sterile suction catheter to suction tubing, ensure the sterile catheter remains in the sterile packaging. Put on the sterile glove over the gloved dominant hand and prepare to withdraw the catheter from the packaging.	To reduce the risk of mucosal trauma, hypoxaemia and atelectasis (lung collapse) (Intensive Care Society 2014). To minimise the risk of cross infection to patient or healthcare worker. To aid removal and replacement of fresh gloves per each suction episode.
8	With the catheter suction port not occluded by thumb, insert the catheter slowly and gently via the airway, advancing till cough reflex is elicited or resistance is felt at the carina, then withdraw the catheter approximately 1cm before occluding the suction port with the gloved thumb and suction on removal of suction catheter (no need to rotate on removal as catheters have circumferential holes)	Suctioning while introducing the catheter causes mucosal irritation, damage and hypoxia (NTSP, 2013). Prolonged suctioning can result in hypoxia and trauma. N.B Not all patients are stimulated to cough.
9	The period of suction should not exceed 10 seconds.	To reduce the risk of mucosal damage and hypoxaemia.
10	Release suction, wrap catheter in dominant hand, enclose the glove and discard in clinical waste. **Do not reuse or reinsert catheter into the trachea or mouth** and allow adequate recovery time in between suction episodes. A new catheter must be used on every suction episode.	To discard waste according to local policy, and maintain a safe and clean environment. To prevent ongoing hypoxia and ensure adequate infection control standards are met.
11	Evaluate the secretions removed during suctioning and the secretions adhered to the catheter (tenacity, amount and colour) document this in patient IPOC. Monitor the patients' response to the procedure: • Oxygen saturations (SPO2) • Respiratory rate • Skin colour • Listen to breath sounds • Cardiovascular stability	To determine patient humidification and oxygen status requirements: • Adequate hydration • Humidified oxygen • Saline nebulisers • Physiotherapist or tracheostomy practitioner nurse referral To monitor patients observations throughout the procedure.

12	Place the end of the suction tubing with yankauer attached in the jug of sterile water and flush through. DO NOT USE TAP WATER. Dispose of any dirty water in the sluice.	To reduce tube blockage and the risk of infection and to give an indication as to how tenacious the secretions are.
13	Reassess the patient's requirements for further suctioning. If the procedure needs to be repeated, fresh clean gloves and clean sterile catheter will be needed and the process should be followed once again.	Suctioning should not routinely be performed. Suction according to the patients inability to successfully remove secretions and clear the airway (NTSP, 2013).
14	It is recommended that no more than 3 episodes of suctioning are carried out in succession (NTSP, 2013). Difficulties in suctioning tenacious mucus may be due to inadequate humidification. Try a more effective humidifier. Consider use of nebuliser, mucolytics and concurrent physiotherapy. Consider ultra sonic nebuliser or Airvoe system (always seek advice from physiotherapist or tracheostomy nursing service first). The NTSP, (2013) advise saline instillation may be useful in some situations however at DBTH an assisted cough product is now the preferred method (see physiotherapist for advice).	To limit side effects and maximise recovery period.
15	Always document assessment and evaluation in the relevant section of the tracheostomy IPOC of care.	To enable ongoing assessment, planning, implementation and evaluation of care.

9. TRACHEOSTOMY INNER TUBE CLEANING

Cleaning the inner tube of the tracheostomy aims to remove secretions from the inner cannula to reduce the risk of potential obstruction with sputum and reduce the risk of infection. Secretions can adhere to the internal lumen of a tracheostomy tube and severely reduce the inner lumen diameter over time. This can potentially increase the work of breathing and/or obstruct the patient's airway (NTSP, 2013).

The inner tube should be removed and inspected at least 4 hourly but this may be required more frequently and should be based on an individual patient assessment. Tracheostomy inner tubes should be cleaned more frequently if there is evidence of tenacious secretions or copious secretions, bleeding etc. All these events should be documented in the tracheostomy IPOC of care.

Some tracheostomy tubes (Shiley XLT) used in the trust do have a disposable inner cannula. This inner tube can be removed and disposed of in the clinical waste bag and a new inner tube can then be reinserted each time.

IMPORTANT INFORMATION

When an inner tube is removed for cleaning purpose, another clean inner tube should be immediately inserted, this ensures the tube is patent at all times.

Essential equipment required for cleaning tracheostomy inner tubes:

- **Clean, disposable gloves**
- **Clean and dry replacement inner cannula**
- **Tracheostomy cleaning device (sponge or brush)**
- **Sterile dressing pack**
- **Sterile bottled water**
- **Clean and dry container with lid for storing clean inner tubes**

PLEASE NOTE

DO NOT USE GLOVES to store inner cannula or to cover the dry container. Gloves can prevent evaporation of moisture and so increase the risk of infection. You may use a sterile plastic bowl or sterile jug kept within its cover.

9.1 Procedure for changing inner tubes

	Action	Rationale
1	Explain and discuss the procedure with the patient, and gain verbal consent if possible. Document consent was gained in the tracheostomy IPOC.	To relieve patient anxieties and gain patient consent and co-operation.
2	Check all equipment is in place prior to commencing the procedure, the spare clean inner tube must be available to use.	To reduce discomfort to the patient and perform the task safely.
3	Wash hands and put on a disposable apron and gloves.	To reduce the risk of cross contamination and infection.
4	Perform tracheal suction if necessary.	To ensure airway is clear prior to procedure commencing.
5	With one gloved hand stabilise the outside of the tracheostomy tube. Remove the inner tube with the other hand.	Removal of the inner tube with minimal movement of the tube on inner cannula removal.

6	If the inner tube is clean and clear of secretions, simply reinsert.	No further cleaning required.
7	If the inner tube requires cleaning remove this/unlock this and immediately replace with clean/spare inner cannula. Assess and evaluate the secretions in the removed inner tube (tenacity/amount/colour/crustation).	The tracheostomy should always have an inner cannula to prevent blockage. Reduces the risk of secretions building up inside the inner tube and prevents blockage of the inner tube. Re-evaluation of patient humidification may be required after tube inspection - use knowledge and skills.
8	Inner tubes must be cleaned in a sterile container and with sterile water.	Tap water carries a potential risk of waterborne contamination. The remaining solution (dirty water) should be disposed of in the sluice not the sink to avoid contamination.
9	If the tracheostomy tube is fully or partially blocked with secretions use a tracheostomy cleaning brush or tracheostomy cleaning swab with the sterile water to clean the inner tube. Once clean rinse through with sterile water. Shake off the excess water gently. Place in covered clean container to dry prior to re-use.	To remove secretions that may block the tube, this may become a source of infection. Cleaning devices must be used with caution and care not to cause abrasion to inner surface of inner cannula. (mouth-care swabs should never be used). To minimise the risk of introducing excess moisture into the lower respiratory tract. To ensure a clean and dry inner cannula is available for use.
10	When an inner tube is re-inserted it should twist and lock into the hub.	To prevent the cannula dislodging.
11	NEVER LEAVE INNER TUBES SOAKING IN WATER IN BETWEEN CHANGES.	To reduce infection with pseudomonas.
12	Document this procedure and findings in the patient's tracheostomy IPOC of care.	To ensure adequate records are maintained as per trust policy.
13	Dispose of all contaminated water in the ward sluice. DO NOT USE THE SINK IN PATIENT BAY.	To reduce the risk of infection. To reduce the risk of infection.

10. TRACHEOSTOMY DRESSINGS AND SKIN INTEGRITY

Tracheal secretions can build up underneath the tracheostomy dressing. If the tracheostomy tube cuff is inflated secretions can ooze from above the cuff onto the skin. This can cause a wet/moist environment which can lead to skin maceration, excoriation and infection.

DBTH use a variety of tracheostomy dressings of different thickness, shape and size. Tracheostomy dressings are used to absorb drainage and secretions at the tracheostomy site. They also provide protection against pressure damage from the tracheostomy flange. The dressing helps to prevent dislodgment, promotes healing of the surgical incision, prevents infection and promotes patient comfort, reducing irritation from the tube rubbing on the skin (NTSP, 2013).

A key element of tracheostomy management includes the assessment of peri stomal skin integrity. Excessive moisture from secretions, perspiration, pressure and friction from the tracheostomy collar, flange or stabilisation ties may contribute to the breakdown of peri stomal skin. It is important that skin integrity is checked each shift Early/Late/Night, these checks and findings should be documented in the tracheostomy IPOC. If secretions are excessive or skin maceration is an issue, then Cavilon no sting barrier (1ml foam applicator) may be used on the skin under dressings. **NEVER USE ANY SPRAYS NEAR THE AIRWAY**. Surgical sutures or stay sutures may also cause soreness and discomfort for the patient. These areas can be gently cleaned with 0.9% saline and sterile gauze (always refer to medical notes as to when sutures may be removed) if stay sutures are in place seek advice from ENT or tracheostomy service.

REMEMBER a tracheostomy tube is considered to be an invasive device that can cause pressure damage, refer to DBTH Prevention of Medical Device-Related Pressure Ulcers (MDRPU).

10.1 Wound Care Protocol

Wound assessment of the tracheostomy site should take place each shift (Early/Late/Night) and this should be documented accordingly using the tracheostomy IPOC. The tracheostomy dressing should be checked every shift (Early/Late/Night). It should be changed **minimum requirement once per day** but some patients may have more secretions then others and may need more frequent changes for dignity and to maintain skin integrity and prevent infection.

A pre-cut tracheostomy dressing should be used. Dressings available include: -

- Advazorb Plus (T) & Lite Fenestrated Hydrophilic Foam Dressing.
- Trachi-Dress(F) Sterile Hydrophilic Tracheostomy Cannula Foam Dressing.
- Tracheostomy Foam Dressing Activheal.
- Kapitex Trachi-Dress Tracheostomy Dressing – All Sizes.
- Silver Dressings are also available; however seek advice from tracheostomy nurses prior to their use.
- Metalline.

Our purpose is always to promote healing and prevent infection/peri stomal skin breakdown, adhering to infection control policy at all times.

10.2 Risk Factors

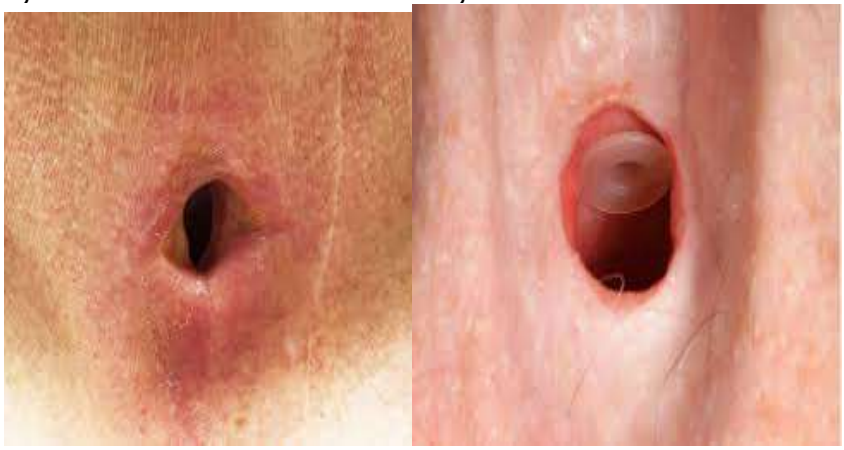
- Excessive moisture at tracheostomy site
- Perspiration/Lymphoedema
- Pressure from baseplate of tracheostomy tube
- Poor nutritional status or Bariatric patient
- Tracheostomy construction resulting in wide stoma
- Immunosuppression (steroid therapy or chemotherapy)
- Over granulation tissue of peri stomal site

IMPORTANT INFORMATION

AFTER SURGICAL TRACHEOSTOMY THE SURGEONS INCISION MAY CAUSE TRAUMA TO THE SKIN AND UNDERLYING TISSUES. THIS CREATES A SURGICAL WOUND WHICH NEEDS CAREFUL ASSESSMENT USING THE DBTH WOUNDCARE IPOC. SURGICAL SUTURES THAT ARE IN PLACE MAY CREATE DIFFICULTY IN MANAGING THE WOUND. ALWAYS REFER TO THE TRACHEOSTOMY NURSING SERVICE FOR ADVICE IF YOU ARE UNSURE.

PLEASE NOTE A SURGICAL TRACHEOSTOMY INCISION IS NOT A PRESSURE ULCER-ALWAYS REFER TO TRACHEOSTOMY NURSING SERVICE OR WARD S12 OUT OF HOURS FOR ADVICE.

1, **2,**



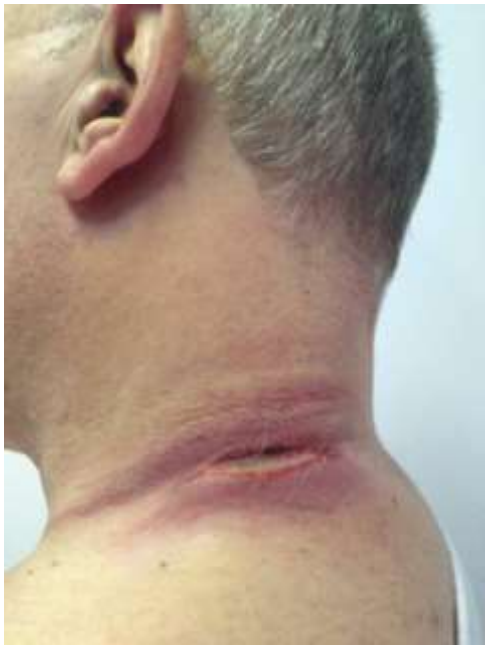
1, TRACHEOSTOMY STOMA 2, LARYNGECTOMY STOMA WITH SPEAKING VALVE. (BOTH ARE VERY SIMILAR IN APPEARANCE).

11. TRACHEOSTOMY TAPES

Tracheostomy tapes or collars are essential in ensuring that dislodgment/misplacement of the tracheostomy does not occur. It is the registered nurses' responsibility to ensure that the tracheostomy remains secure at all times. Tapes should be used even in the presence of sutures. Tapes should be checked for their security at the beginning of every shift. If there is evidence of soiling, stretching or other degeneration of material, they must be immediately replaced (NTSP, 2013).

Checking the necks skin integrity is an important part of practice. Neck skin integrity should be checked every 24 hours as tracheostomy tapes that are wet or too tight can cause pressure damage.

Pressure ulceration from wet, tight tracheostomy tapes (NTSP, 2013).



11.1 Procedure for changing a dressing and tapes

Equipment:

- Functioning suction unit
- Appropriate sized suction catheters
- Gloves, eye protection and aprons (PPE)
- Dressing pack
- Normal saline
- Microbiological swab if infection suspected
- Pre-cut tracheostomy dressing (as per list in policy)
- New tapes
- Scissors
- Clinical waste bag

Changing tracheostomy dressing and tracheostomy tapes

	Action	**Rationale**
1	Check emergency equipment. Two healthcare practitioners must be present at all times during this procedure. One nurse to hold the tube the other to carry out the procedure.	To maintain safety. Patient may cough out tube unless it is held securely in position.
2	Explain and discuss the procedure with the patient and or his/her family and obtain consent. Pull curtains around the bed to maintain privacy and dignity.	To ensure the procedure is understood and reduce anxiety. To maintain the patients dignity and comfort during the procedure.
3	Assess and select the appropriate dressing which will protect the peri-stomal area while keeping the stoma edges moist.	To maintain skin integrity and prevent infection. To maintain patient comfort.
4	Both nurses to clean hands, put on aprons and gloves and protective eyewear (PPE).	To reduce the risk of cross infection.
5	Position patient on their back with their neck slightly extended (if their condition allows) or semi recumbent.	Allows easy access to stoma. Neck extension may be contraindicated if patient has spinal injury.
6	Suction the patient if required prior to carrying out the procedure	To reduce the risk of patient coughing while tapes are removed.
7	Prepare all equipment prior to commencing the procedure.	To reduce the risk of patient infection and cross contamination.
8	Remove old stoma dressing and discard. One practitioner must hold the tracheostomy tube on either side of the flange throughout the procedure. (oxygen can be held in place if required). The other practitioner can remove the old soiled tapes. If the tracheostomy tube is cuffed take care not to cut the external balloon of the cuff.	Allows easy access to tapes. To reduce the risk of dislodgement and make it easier for the practitioner doing the dressing to maintain a clean environment. If the cuff is deflated the seal will not be maintained and the tube will need replacing by a competent practitioner.

9	Assess the stoma site and evaluate for swab analysis. Check the peri-stomal skin condition and integrity. Document findings in the patients' tracheostomy IPOC.	To monitor for any complications • Bleeding • Pain • Stoma size increase • Maceration, cellulitis, granulation • Stoma infection, inflammation, tissue breakdown • Nature and quantity of exudates • Offensive odour • Allergic reactions to dressing products
10	Clean around the dressing using 0.9% sodium chloride and sterile gauze. Dry thoroughly with sterile gauze.	0.9% sodium chloride does not irritate the tracheal mucosa and gauze has fewer loose fibres. Wet skin is prone to infection.
11	Apply the keyhole dressing from below the tracheostomy tube. Ensure the dressing is applied with the correct side to the skin (read dressing packet for advice).	The dressing will absorb the tracheal secretions preventing accumulation of moisture around the stoma site.
12	Secure the tracheostomy flange with new Velcro tapes. Do not fasten too tightly; two fingers should be a comfortable fit between the patients' neck and fastening.	For patient comfort and to prevent migration of the tube. To minimise the risk of a reduction in blood flow.
13	Ensure the patient is comfortable.	
14	Dispose of equipment in a clinical waste bag seal and dispose.	To prevent environmental contamination.
15	Document the procedure in the patient's tracheostomy IPOC. **<u>Refer to medical notes for care of sutures and day of removal or consult tracheostomy nurses.</u>**	To aid communication and good record keeping.

12. TRACHEOSTOMY CUFF MANAGEMENT

It is usual that the initial tracheostomy tube inserted will be a cuffed tube. The cuff provides a sealed airway. A cuffed tube is usually a temporary measure until a patient is weaned from a ventilator and the patient can control their own secretions, but may be required long term if the underlying condition does not improve sufficiently.
Examples include:

- Patient requires long term ventilation; either continually or intermittently (e.g. overnight).
- The patient has a reduced conscious level or neuromuscular or mechanical problem affecting the pharynx. In these cases, the airway is at risk of aspiration of GI contents and a cuffed tube can provide a degree of protection against this.
- Patient has excessive oral secretions that cannot be managed by their own efforts.

Management of the cuffed tracheostomy tube focuses on the appropriate management of the distal cuff. Tracheal capillary pressure lies between 20-30mmHg and an impairment of this blood flow will be caused by an obstruction between 22-33mmHg. The complications from the continued use of an over inflated cuff include:

- Tracheal stenosis (scarring and narrowing of the trachea).
- Tracheomalacia (the cartilaginous structure of the trachea becomes weakened and the trachea is prone to collapse).
- Tracheo-oesphageal fistula (an un-planned communication between the rear wall of the trachea and the oesophagus which lies behind. This can lead to GI contents contaminating the airway.
- Tracheo-inominate artery fistula – an artery near the trachea can get damaged due to prolonged pressure.

In addition, a patient with an inflated cuff may experience de-sensitisation of the larynx, a reduced cough reflex and loss of voice or sound production.
Too low a cuff pressure will cause an air leak and lead to ineffective positive pressure ventilation. The cuff will develop longitudinal folds which permit micro-aspiration of secretions which have collected above the cuff. This subsequently increases the risk of nosocomial pneumonia. The accepted pressure is the minimum pressure required to prevent a leak but which must not exceed 35cmH20. Recommendations suggest that the cuff pressure should be kept between 15-25cmH20 (10-18mm Hg). Regular cuff pressure checks should be carried out every 8 hour shift by a competent practitioner.

12.1 Cuff Leaks

A cuff leak can vary in its significance from being irritating to staff and the patient owing to ventilator alarms, through to life threatening complications from aspiration or ventilation failure. The leak can come from a number of sources and importantly, may be associated with a partially displaced tube.

Sources of leaks include:

- **Defective or damaged cuff (sometimes occurs on insertion of the tube)**

- **Cuff not adequately inflated**
- **Patient is requiring high ventilator pressures and/or PEEP/CPAP which exceed the sealing capacity of the cuff**
- **Tube does not fit the airway: -**
  - **Simply too small**
  - **Positional changes cause a leak**
  - **Tracheomalacia or wound breakdown**

Simply adding more air to a cuff or precariously positioning the tube or patient is not a solution to an intermittent cuff leak. Sometimes the weight of an attached ventilator circuit may contribute to partial displacement of a tube, and when assessing the patient to locate the source of the cuff leak, remember to think about problems that may not be directly associated with the tube. A fibre optic inspection of the tube, stoma or trachea may be indicated if clinical assessment cannot determine the source of the problem. A trial of a different or a larger tube may be indicated. If the patient is receiving high levels of respiratory support or oxygen, the decision to change the tube is balanced against the risks of leaving a potentially unsecured airway device in situ.

13. CARE OF A PATIENT WITH A CUFFED TRACHEOSTOMY TUBE

When the balloon at the distal end of the tracheostomy tube is inflated it provides a seal to enable positive pressure ventilation and provide some protection against aspiration of secretions. The external pilot balloon indicates if the cuff is inflated or deflated.

RECOMMENDED PRACTICE

The cuff pressure of the tracheostomy tube should be checked every shift E/L/N. The reading should be documented in the tracheostomy IPOC. The pilot balloon should also be observed at least once per shift to ensure it is inflated or deflated as per patient care plan (NTSP, 2013).

CUFF PRESSURE SHOULD NOT EXCEED 30cms H2O as this will occlude blood flow to the tracheal tissues. However, cuff pressure should be inflated to the minimum level to ensure there is a seal and to avoid aspiration. Routine cuff deflation unless part of the weaning process is not recommended as it increases the risk of aspiration and hypoxia (NTSP, 2013). Healthcare practitioners caring for patients with a tracheostomy should have received training in the management of monitoring cuff pressures as part of their clinical skills competencies in tracheostomy care.

A Portex Cuff Manometer (Courtesy of Portex, 2019)

For advice on how to use a cuff manometer contact the head and neck specialist nurses or physiotherapy Mon – Fri 9am – 5pm or Ward S12 (ENT) out of hours

13.1 Measuring cuff pressure using a cuff pressure gauge

	Action	Rationale
1	Explain and discuss procedure with the patient if appropriate.	To allay patient anxieties where possible.
2	Wash hands and put on a clean apron and pair of gloves.	To reduce the risk of cross infection.
3	Apply the gauge to the pilot balloon and record the number/pressure displayed on the gauge. The reading should be taken at the end of expiration.	To ensure accurate records are maintained. Monitor any loss of cuff pressure as this may indicate a fault with the cuff.
4	If the cuff pressure exceeds 30cms H2O then the patient should be suctioned orally PRIOR to removing the air from the cuff. More air should be added blindly if a leak is suspected.	This is to prevent oral secretions from entering the lungs. If an air leak is occurring but the cuff pressure is at the maximum, inform doctor on call as the tube may need changing.
5	Document the cuff pressure in the patient's tracheostomy IPOC.	To ensure adequate records are maintained.

6	There is an automatic deflate button on the side which is RED on the Portex Cuff manometer, be careful not to deflate the cuff accidently. **NOTE after surgical tracheostomy follow the surgeon's instruction documented in the medical notes as to when to deflate the tracheostomy cuff. (Usually six hours post op).**	This will cause an aspiration risk and a need to re-inflate the cuff.

14. HUMIDIFICATION

During normal breathing, inspired air is warmed, filtered and moistened by ciliated epithelial cells in the nose and upper airways. When a tracheostomy or laryngectomy is formed these humidifying functions are bypassed and air inspired will be cold and dry. Inadequate humidification can result in a number of physiological changes which can be serious to the patient and potentially fatal.

IMPORTANT INFORMATION

It is mandatory that a method of artificial humidification is utilised when a tracheostomy tube is in situ, for patients requiring oxygen therapy – 'dry' oxygen should never be given to someone with a tracheostomy or laryngectomy (NTSP, 2013).

Failure to adequately humidify could result in tube or stoma blockage as secretions become dry and viscous, forming a crust around the tracheostomy (NTSP, 2013).

Systematic hydration is also important and a dehydrated patient is at a greater risk of developing problems, due to thick dry secretions (NTSP, 2013).

There are a number of methods of humidification that can be used according to the patient's individual needs. Patients with minimal or low oxygen requirements can receive adequate humidification via a heat moisture exchanger (HME) or cold water humidification system. Patient's with more tenacious sputum, or who require high flow oxygen therapy will require additional saline nebulisers which must be prescribed on JAC and heated water humidification using a Fisher and Paykel system (NTSP, 2013).

RECOMMENDED PRACTICE

At DBTH we recommend all patients with a tracheostomy or laryngectomy have 0.9% sodium chloride nebulisers prescribed 4-6 hourly on JAC. The need for their use can be assessed by observing the patients' secretions in terms of viscosity, colour and amount.

DBTH have a variety of humidification systems available. A patients' humidification requirements should be assessed a minimum of every 24 hours or sooner if their condition deteriorates.

DBTH humidification devices include

- **Saline nebuliser**
- **Swedish nose**
- **Trachephone**
- **Cold water system**
- **Bibs**
- **Ultra sonic nebuliser (consult physio / tracheostomy nurses prior to use)**
- **Airvoe (consult physiotherapy advice prior to use)**
- **Heated humidification system**

14.1 Heated Humidification

A heater and water bath system is shown below. These systems are indicated for tracheostomy patients requiring mechanical ventilation or oxygen therapy for > 96 hours. This type of humidification is more effective then HME filters for those patients receiving artificial ventilation and should be used if the HME is inadequate (NTSP, 2013).

Diagram courtesy of NTSP, 2013

14.2 Cold Humidification

Cold humidification bubbles gas through cold water, but only delivers a relative humidity of around 50% at ambient temperatures. For tracheostomy patients on high respiratory flow rates of oxygen with tenacious secretions or patients complaining of subjective dryness, a heated device is indicated (NTSP, 2013).

RECOMMENED PRACTICE

Condensation from heated or cold humidification should be considered infectious waste and disposed of according to hospital policy using strict universal precautions. Because condensate is infectious waste, it should never be drained back into the humidification reservoir.

14.3 Saline Nebuliser

A saline nebuliser helps to reduce the viscosity of secretions which makes them easier to remove by suction or cough. A nebuliser involves administration of 5 to 10mls 0.9% sterile normal saline into the nebuliser acorn. Nebulisers must be connected to a gas source with a flow rate of 6-8 litres per minute. If a patient requires supplementary oxygen the gas driving the nebuliser should be oxygen and not air. Ensure nebulisation is given via the tracheostomy (NOT A FACE MASK). A nebuliser can be attached to a tracheostomy mask or T-piece circuit.

A Tracheostomy and Nebuliser (Acorn) Courtesy of NTSP, 2013)

14.4 Heat Moisture Exchangers (HME's)

These products can be placed directly on the end of the tracheostomy tube. They conserve heat and moisture on expiration via the tube. They need to be checked regularly to ensure they are not occluded by secretions which may obstruct the airway. They must be changed every 24 hours or when contaminated with secretions. They must be checked regularly. Some HME systems have a small port or inlet so oxygen can be administered via the HME system.

14.5 HME's used at DBTH

Swedish Nose and Trachephone (HME's) (Courtesy of NTSP, 2013)

14.6 Filters and Bibs

These products contain a foam layer which absorbs moisture from the patients' expired gases. THEY SHOULD NEVER BE USED AS A BIB TO COLLECT/ABSORB RESPIRTAORY SECRETIONS THAT ARE COUGHED UP.
They should be changed every 24 hours or sooner if they are soiled. They are designed for wearing over the tracheostomy tube or laryngectomy stoma as a form of HME.

Tracheostomy Bib Courtesy of Kapitex, (2019)

14.7 Self Ventilating patients requiring Oxygen Therapy

	Action	Rationale
1	All patients require cold water humidification. Check water supply 2 hourly and change system every 24 hours. Review needed daily.	To moisten inspired gases. To ensure adequate humidification and reduce infection risk. To reduce risk of water running out.
2	Ensure saline nebuliser are prescribed 4-6 hourly on JAC in addition to cold water system.	To loosen and thin secretions, to prevent atelectasis and sputum thickening. To reduce unnecessary interventions and to assess whether present level of humidification is adequate.
3	For patients with difficult to clear secretions or evidence of consolidation, replace cold water system or HME with heated humidification system, ultra-sonic nebuliser or Airvoe (consult physiotherapy first for advice/review). Review needed daily.	To reduce unnecessary interventions and to assess whether present level of humidification system is adequate.

14.8 Self- Ventilating patients not requiring Oxygen Therapy

	Action	Rationale
1	For patients with loose or no evidence of secretions ensure an HME is in situ. Review the need for saline nebuliser every 4-6 hours.	To provide adequate filter and moisture of inspired gases. Secretion viscosity can change.
2	For patient with thick/dry secretions, ensure 4- 6 hourly prescribed saline nebuliser is administered. Review systematic hydration. Review needed daily. Patients with sticky, thick secretions may require a Mucolytic agent to be prescribed, e.g. Carbocisteine. Refer to ward doctor/consult BNF.	To loosen and thin secretions, to prevent atelectasis and sputum thickening. To aid secretion clearance and patient comfort. To prevent any unnecessary interventions.

15. WEANING

Tracheostomy tubes are often only used as a temporary measure and should be removed as soon as they are no longer needed. This process can take several days or even weeks for the patient to progress through the stages of weaning in order to meet the criteria for allowing successful de-cannulation.

The term weaning is a generic term used for the period of time that it takes for the patient to progress towards de-cannulation (NTSP, 2013).

Considerations prior to commencing weaning

- Is the upper airway patent? may require endoscopic assessment by ENT
- Can the patient maintain and protect their airway spontaneously?
- Are they free from ventilatory support?
- Are they haemodynamically stable?
- Consider checking blood chemistry e.g. platelets
- Are they absent of fever or infection?
- Is the patient consistently alert?
- Do they have a strong consistent cough? (able to cough secretions into their mouth)
- Do they have control of saliva?
- Are there any planned procedures requiring general anaesthetic in the next few days?
- Does the patient have any specific clinical concerns? (NTSP,2013).

Patients with potential risks also include:

- Poor management of own saliva – drooling
- Neurological conditions
- Anatomical changes post-surgery to oral cavity, larynx or pharynx
- Any cranial nerve damage affecting lip, tongue, soft palate or larynx
- Weak or absent cough
- Any patient with swallowing problem (refer to speech and language therapy)

BEST PRACTICE

In order to facilitate de-cannulation and discharge planning, multi-disciplinary care needs to be established as part of the routine pathway for ALL tracheostomy patients (National Confidential Enquiry into Patient Outcome and Death 2014). At DBTH we have a multi-disciplinary approach to weaning and advice should always be sought from physiotherapy, critical care outreach, head and neck specialist nurses, ENT, speech and language therapy. Patients cared for on Ward S12, Respiratory Unit or C1 with a tracheostomy should always be referred to the tracheostomy nursing service for advice on weaning.

16. DE-CANNULATION / REMOVAL OF TRACHEOSTOMY TUBE

- **DE-CANNULATION SHOULD ONLY BE PERFORMED BY PRACTITIONERS VERIFIED AS COMPETENT.**
- **IT SHOULD NEVER BE PERFORMED ON A FRIDAY, BANK HOLIDAY OR A WEEKEND.**
- **IT IS AN MDT DECISION.**
- **THE TRACHEOSTOMY IPOC SHOULD BE FOLLOWED.**

Suggested criteria for de-cannulation

- ✓ The patient is able to independently protect their airway
- ✓ Patient has a patent upper airway
- ✓ Adequate swallow
- ✓ Coping with oro-pharyngeal secretions
- ✓ Patient has adequate cough and ability to clear oral and chest secretions effectively and independently
- ✓ GCS (Glasgow Coma Scale) to be assessed on an individual basis
- ✓ Absent of fever or active infection
- ✓ Un-cuffed tracheostomy tube in-situ
- ✓ Down sized by specialist's ENT/Critical Care outreach to un-cuffed tube
- ✓ Cuff deflated at least 24 hours
- ✓ All members of the multidisciplinary team informed
- ✓ Phonation valve tolerated

- ✓ Has been considered clinically stable for the last 24 hours (NTSP,2013)
- ✓ Respiratory system stable
- ✓ Patient is receiving 35% oxygen or less
- ✓ Cardiovascular system stable

BEST PRACTICE

The tracheostomy weaning process within the IPOC should always be followed

Equipment

For all de-cannulation procedures standard bedside equipment and:

- Oxygen available
- Oxygen saturation monitor
- Tracheostomy tubes (size 4 and size 4 cuffed tubes available by the bed side post-decantation for 48 hours)
- Tracheal dilators
- Suction equipment
- Sterile dressing pack and 0.9% saline
- Occlusive semi-permeable dressing
- MDT documentation
- Resuscitation equipment should be locally available
- Access to advanced airway expert

16.1 Procedure for tracheostomy de-cannulation

Decannulation is a two-person procedure. After checking all relevant equipment, the patient is placed in a comfortable position with access to the neck. A full explanation is required as this is often a great time of anxiety for the patient (NTSP,2013).

The NPSA, 2013's expert working group have devised actions and rationale with regards to de-cannulation, see below: -

16.2 Tracheostomy Decannulation

	Action	Rationale
1	Discuss the procedure with the patient, have communication aids available interpreter needed?	To ensure consent, understanding and reduce anxiety.
2	Initiate continuous oxygen saturation monitoring for the procedure.	To identify and alert staff to any desaturation following the procedure.
3	Ensure patient is in a semi recumbent position.	To promote chest expansion and reduce the risk of aspiration.

4	Stop any naso-gastric feed or oral intake pre-procedure.	To minimise the risk of aspiration and / or acute desaturation.
5	While holding onto the tracheostomy tube, undo ties and remove all dressings in preparation for tube removal.	To prepare tube for removal.
6	Remove the tracheostomy on expiration.	To minimise the risk of alveolar collapse.
7	Using a sterile dressing technique, clean the stoma site with saline and dress site with a semi-permeable occlusive dressing. Ensure close observation of patients' respiratory status post-procedure. Commence 1 hourly observations for 4 hours, contact ENT/CCOT or Anaesthetist on call if respiratory distress occurs.	To reduce the risk of infection and optimise wound healing. To reduce patient risk and promptly identify and treat complications. To observe for signs of respiratory distress e.g. increased respiratory rate, desaturation and abdominal airway noises such as stridor.
8	Update MDT post-procedure and clarify further monitoring requirements, dressing needs and alert to possible complications. Document the procedure in the patients' tracheostomy IPOC.	To optimise team communication and safe patient rehabilitation.

Following decannulation equipment should stay by the patient's bedside for 48 hours. If there are any concerns regarding the patient's ability to swallow after de-cannulation keep Nil By Mouth and refer to Speech and Language Therapy

16.3 Wound care following Decannulation

Once the tracheostomy tube has been removed it is important that appropriate wound care continues until the site has completely healed.

Wound care continues to be:

- A sterile technique
- PRN (as needed) according to the amount of secretions /or at least daily
- Continue to clean the site with 0.9% sodium chloride and sterile gauze
- Assess the wound for any signs of infection or over granulation
- Apply semi-permeable dressing to site
- If skin maceration or redness are present apply simple cavilon barrier stick
- Always advise the patient to press onto wound site with fingers when speaking or coughing as this assists the healing process
- Document each dressing change and any observation/problems in the patients IPOC
- For over granulation at site seek advice from tracheostomy service

If you have any concerns regarding any aspect of tracheostomy care do not hesitate to contact the tracheostomy service. Details on how to contact members are in the front of this policy.

17. SPEECH AND LANGUAGE THERAPY GUIDELINES

17.1 Communication

Enhancing communication for the patient with tracheostomy is essential. It serves to meet many patient needs including social interaction, information giving, reassurance, discussion of feelings, asking questions about their care and contributing to decision making. The purpose of communication for critically ill patients is to help them maintain their identity as well as psychological, structural, personal and social integrity. The psychological status of the patient must be considered; as if they are unable to speak they will often be anxious in the hospital environment.

There are many factors which affect someone's ability to communicate effectively with a tracheostomy in place, these include:

Factors	Possible causes
Mechanical/physiological	Inflated tracheostomy cuff Vocal cord paralysis Inadequate air volume
Patient's condition (inc. neurological deficit)	Dysarthria Dyspraxia Dysphasia Cognitive difficulties
Environmental/medical/psychological	Disorientation/confusion Depression Levels of alertness Anxiety Decreased motivation

POINTS TO CONSIDER

- Where appropriate, the patient/relatives should be informed, before the tracheostomy procedure, that they may be unable to speak while the tracheostomy tube is in place, as air is no longer passing through the vocal cords. They should be reassured, that it is expected that the voice will return once the tube is removed or changed to a fenestrated one (except when a laryngectomy has been performed). The AHP's, nursing, medical staff and relatives will provide the patient with an alternative means of communication until then.
- For tracheostomised patients, the initial assessment should include a focus on the patient's ability to see, hear, touch, write, understand or use facial expressions such as smiling and blinking (ICS 2014).
- Some tracheostomy patients may only be able to communicate by mouthing words or by use of a predetermined coded blink.

- If lip-reading is used, ask the patient to exaggerate their lip movements and to speak in short but complete sentences in order to make the message clearer.
- Watch the patient's facial expressions and gestures for clues, and listen for key words which may indicate what the patient is saying.
- If a coded eye-blink is the only means of communication available, instruct the patient to blink once for 'YES' and twice for 'NO' in response to your questions.
- Use alphabet picture boards and phrase books in conjunction with the above methods. Make individualised boards to correspond with the patient's need.
- Electronic larynx and electronic communication aids may be appropriate. The speech and language therapist will assess the patient for the appropriate equipment and advise the patient and their carers on how to use them. Use paper and pen if patients are able. Wipeboards/ LCD writing boards are also available on Ward S12.

MANIPULATION OF THE TRACHEOSTOMY TUBE FOR COMMUNICATION

Voice production may be achieved in patients with a tracheostomy tube by using one or more of the following:

- Cuff deflation will allow air to pass around the tube into the upper airway on expiration. Phonation is achieved as the air is directed into the larynx, however the strength of the voice may be weaker as some air will pass through the open tracheostomy.
- Using a smaller tracheostomy tube will allow increased passage of air between the tube and tracheal walls in exhalation resulting in a stronger voice.
- The use of fenestrated tracheostomy tubes allow air to pass into the upper airway through the tracheostomy tube on expiration thus producing voice.
- Intermittent finger occlusion.
- One-way speaking valves have a one-way mechanism that allows air to be inhaled via the tube opening but not exhaled through this route. Airflow is then redirected, either through the fenestrations or back down to the tube tip and up into the larynx on exhalation permitting vocalisations.

The use of a valve is entirely dependent on the patient's ability to tolerate cuff deflation and fenestration. A valve should only be used when the cuff is deflated and there is a fenestrated tube in place. (Guideline for the Care of Adult Patients with a Tracheostomy and Laryngectomy, February 2016)
Failure to deflate the cuff when the speaking valve is applied will result in total occlusion of the patient's airway and respiratory arrest (NTSP, 2013).
There are different types of speaking valve available including a Rusch and a Passy Muir. Passy Muir valve should be considered for use on ventilator dependent patients.
Seek advice regarding one way speaking valves from Respiratory Physiotherapists, Tracheostomy nurses or speech and language therapists.

CONTRA-INDICATIONS FOR SPEAKING VALVE USE

- Inability to tolerate cuff deflation.

- Airway obstruction.
- Unstable medical/pulmonary status.
- Laryngectomy.
- Severe anxiety/cognitive dysfunction.
- Anarthria.
- Severe tracheal/laryngeal stenosis.
- End stage pulmonary disease.
- Excessive secretions.

If the patient displays any of these symptoms or simply wishes to have the speaking valve removed:

- Difficulty in breathing or appears in distress.
- O2 saturation levels drop.

Remove the speaking valve, clean, dry (refer to manufacturer's guidelines) to prevent fatigue and deterioration in status, and store in a sealed container.

If communication is particularly difficult, please contact the Speech & Language therapy department at Doncaster Royal Infirmary on Ext 644218, or at Bassetlaw District General Hospital on Ext 572313.

17.2 Swallowing

Patients with tracheostomies may experience problems with swallowing.

Before considering oral intake for a patient with a tracheostomy there are some minimum requirements. You must ensure the patient is medically stable, alert, can sit upright comfortably for the duration of an assessment, can tolerate cuff deflation, can manage their secretions and can cough adequately.

Guidelines for the initiation of oral intake in patients with a tracheostomy

- Confirm that the patient can tolerate cuff deflation.
- Sit the patient up with head slightly flexed and deflate the cuff.
- Suction as necessary.
- Give time for the patient to tolerate cuff deflation comfortably.
- If using a fenestrated inner and outer tracheostomy tube, use of a one way speaking valve or Passy-Muir system is recommended.
- Ensure the patient can clearly voice (not wet) and cough.
- Sips of sterile water can initially be given and if tolerated without cough, desaturation, fatigue or signs of aspiration on tracheal suctioning, then the patient's usual diet and fluids should be introduced with care and supervision (Intensive Care Society Standards 2014.)
- Monitor for coughing, wet voice, desaturation, increased tracheal secretions or food/fluid in suctioned secretions, increased respiratory rate, and pallor change. If any of

these occur, stop. If possible, keep the patient nil by mouth and refer to Speech and Language Therapy as soon as possible.

Risk factors for swallowing problems in patients with a tracheostomy

- Neurological injury e.g. bulbar palsy, CVA, TBI, Hypoxia.
- Disuse atrophy.
- Head & Neck Surgery/cancer.
- Previous swallowing problems.
- Evidence of aspiration of enteral feed or oral secretions on tracheal suctioning.
- Increased secretion load, or persistent wet/weak voice, when cuff is deflated.
- Coughing and/or desaturation following oral intake.
- Patient anxiety or distress during oral intake.

In cases as these listed above, or in any other problematic cases, consider referral to Speech and Language Therapy.

Thickened fluids should not be prescribed without full assessment by Speech and Language Therapy.

Feeding with an inflated cuff can be contraindicated due to risks of tracheal wall trauma and undetected aspiration. Any decision to feed with an inflated cuff should be made on an individual patient basis after swallowing assessment. The patient should be regularly reviewed for evidence of aspiration. Whilst oral intake may be permitted with an inflated or partially deflated cuff for psychological well- being and to help establish enteral feeding early, the presence of an inflated cuff can compress the oesophagus and damage tracheal walls, make swallowing more difficult and increase the risk of aspiration. The risk is greatest in those patients with associated neurological or mechanical causes of dysphagia, or those with significant on-going respiratory failure.

18. TRACHEOSTOMY RED FLAGS ADAPTED FROM NTSP, 2013

Like most critical incidents, warning signs often precede tracheostomy related clinical problems. Because these signs are sometimes only apparent with hindsight, it is essential that you know what to look out for, so that you can trouble shoot at an early stage and stop minor problems escalating. Tracheostomy related clinical problems are called ‘tracheostomy red flags’, although some are applicable to laryngectomy patients too (NTSP, 2013).

It is easy to develop a false sense of security when a patient has a tracheostomy tube in situ. Remember though that this is an artificial airway, just like an endotracheal tube. Problems that arise are therefore airway problems and can develop quickly and dramatically into life threatening situations, especially if the patient is ventilator dependent or critically ill.

18.1 What should you do if you detect a red flag?

- A prompt assessment of the tracheostomy and the patient should be made by someone who is competent to do so.
- In the case of a patient with a tracheostomy, there **may be two airways to consider, or with a laryngectomy only one** (in the front of the neck not the face).
- Consider interventions e.g. patient reassurance, fibre optic inspection of the tube or airways, or replacement of the tracheostomy tube.
- As with all acutely unwell patient assessment should always start with **A for airway.**

Any airway problem can cause the patient to become unwell and show signs of distress. Conversely, patients with tracheostomies can become unwell with all the problems that other patients get too. It is easy to become fixated with the tracheostomy (NTSP, 2013).

The 'flags' can be divided up into different categories:

- Airway flags.
- Breathing flags.
- Specific tracheostomy flags.
- General flags.

18.2 Airway Flags

If the patient has a cuffed tracheostomy correctly sited in the trachea, no gas should escape through the mouth. If the patient is talking to you, or audible air leaks or bubbles of saliva are seen or heard at the mouth or nose, then gas is escaping past the cuff. This may imply that the cuff is damaged or the tube tip is not correctly sited. Grunting, snoring or stridor are also signs that there is an airway problem.

18.3 Breathing Flags

Listening to the patient, or observation of the patient or instrumentation, may show that the patient:

- Is not breathing (apnoea), which is detected by capnography or clinically.
- Has difficulty in breathing (or with ventilation), which may be reported by the patient or observed clinically.
- Accessory muscle use.
- Increased respiratory rate.
- Higher airway pressures.
- Lower tidal volumes.
- Has hypoxia.
- Is making whistling noises or has noisy breathing.

18.4 Specific tracheostomy flags

Careful observation may show that the patient:

- Has a visibly displaced tracheostomy tube. If this is an adjustable flange tube, check to see where it was last positioned.
- Has blood or blood-stained secretions around the tube – a recently formed or changed tracheostomy bleeds a little, but if in doubt, it should be assessed.
- Reports increased discomfort or pain.
- Requires a lot of air to keep the cuff inflated, which may be because:
- The cuff is damaged or has an air leak (in which case it needs to be replaced).
- The tube may be displaced and the cuff needs hyper-inflation to keep it “sealed”.

18.5 General flags

Any physiological changes can be due to an airway problem. Specifically changes in:

- Respiratory rate.
- Heart rate.
- Blood pressure.
- Level of consciousness.

Anxiety, restlessness, agitation and confusion may also be due to an airway problem.

REMEMBER PATIENTS WITH LARYNGECTOMIES ARE NECK BREATHERS AND THEREFORE OXYGEN AND VENTILATION NEEDS TO BE GIVEN VIA A PAEDIARTIC MASK APPLIED OVER THE LARYNGECTOMY STOMA

19. TRAINING AND SUPPORT

Staff should have the knowledge and fitness to practice in relevant clinical procedures. Specialist training takes place at regular intervals throughout the year.

- Tracheostomy Master Class held annually.
- Tracheostomy Study Day, held annually.
- Tracheostomy Lunchtime Training, in Education Centre.
- TERRI Course (Tracheostomy, Emergency, Respiratory, Resuscitation Issues) contact simulation centre at Montague Hospital, sessions throughout the year.
- Tracheostomy Clinical Skills Training Package.

IT IS RECOMMENEDED THAT ALL STAFF CARING FOR PATIENTS WITH A TRACHEOSTOMY ON A REGULAR BASIS ATTEND THESE COURSES AND ALSO ATTEND REGULAR UPDATES

Clinical skills packages for tracheostomy care can also be accessed via the DBTH website for nursing staff and healthcare assistants who work in specialist areas. All training will be monitored and recorded on the OLM system.

20. MONITORING COMPLIANCE WITH THE PROCEDURAL DOCUMENT

What is being Monitored	Who will carry out the Monitoring	How often	How will this policy be reviewed and who will the changes in this policy be reported to
The policy will be reviewed in the following circumstances:-	Head and Neck CNS ENT Lead Tracheostomy Consultant Peer Review	Every three years routinely, unless: New national guideline, Newly published evidence demonstrates a need for change to current practice, Action required for root cause analysis or serious incident investigation report	Approved Procedural Document (APD) database Regular audits will take place to check if the policy is being followed by ward areas, audits to take place at least twice a year by the Tracheostomy Nurse Practitioner or Head and Neck CNS Review at ENT Governance and Peer Review
Compliance with Policy to ensure best practice	Head and Neck Tracheostomy Nursing Service, Ward Managers Medical/Surgical teams All staff involved in caring for Tracheostomy/Laryngectomy patients	Annually & continual by visiting ward areas with this type of patient As required	Audit of Tracheostomy IPOC Review OLM system Any adverse incidents reported on DATIX
Training Needs for Tracheostomy Care	Ward Managers/ Matrons, individual staff/Head and Neck Tracheostomy Nursing Service. Medical and Surgical Teams, Education Department	Annually or as identified	Staffs Professional Development Appraisal, Attendance will be captured by via the OLM system Adverse Incidents reported on DATIX

Compliance with Tracheostomy policy	Ward and Department Managers. Head and Neck CNS/Tracheostomy Sister	On going	Adverse incidents reported on DATIX Audits

21. DEFINITIONS

BIPAP – Biphasic Intermittent Positive Airway Pressure.
CNS – Clinical Nurse Specialist.
CPAP – Continuous Positive Airway Pressure.
CCOT – Critical Care Outreach Team.
DCC – Department of Critical Care.
DBTH – Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust.
ENT – Ear, Nose and Throat.
MDT – Multi-Disciplinary Team.
NMC – Nursing and Midwifery Council.
OLM – Oracle Learning Management
TERRI – Tracheostomy, Emergency, Respiratory, Resuscitation, Issues.
GA – General Anaesthetic.
LA – Local Anaesthetic.
IPOC – Integrated Pathway of Care
HME – Heat Moisture Exchange
JAC – JAC (an electronic prescribing system)
PEEP – Positive End Expiratory Pressure

22. EQUALITY IMPACT ASSESSMENT

The Trust aims to design and implement services, policies and measures that meet the diverse needs of our service, population and workforce, ensuring that none are disadvantaged over others. Our objectives and responsibilities relating to equality and diversity are outlined within our equality schemes. When considering the needs and assessing the impact of a procedural document any discriminatory factors must be identified.

An Equality Impact Assessment (EIA) has been conducted on this procedural document in line with the principles of the Equality Analysis Policy (CORP/EMP 27) and the Fair Treatment for All Policy (CORP/EMP 4).

The purpose of the EIA is to minimise and if possible remove any disproportionate impact on employees on the grounds of race, sex, disability, age, sexual orientation or religious belief. No detriment was identified. (See Appendix 8)

23. ASSOCIATED TRUST PROCEDURAL DOCUMENTS

- Standard Infection Prevention & Control Precautions Policy – PAT/IC 19
- Cleaning and Disinfection of Ward Based Equipment – PAT/IC 24
- Glove Use Latex Policy - HSFS 13
- Hand Hygiene - PAT/IC 5
- Mental Capacity Act 2005 Policy and Procedure, including Deprivation of Liberty Safeguards (DoLS) - PAT/PA 19
- Privacy and Dignity Policy – PAT/PA 28
- Pathology Specimens- Collection and Handling of Pathology Specimens - PAT/IC 11
- Waste Policy and Manual - CORP/HSFS 17
- Management of Sharps Injuries and Blood and Body Fluid Exposure Incidents - PAT/IC 14
- Equality Analysis Policy - CORP/EMP27
- Fair Treatment for All Policy - CORP/EMP4

24. DATA PROTECTION

Any personal data processing associated with this policy will be carried out under 'Current data protection legislation' as in the Data Protection Act 2018 and the General Data Protection Regulation (GDPR) 2016.

For further information on data processing carried out by the trust, please refer to our Privacy Notices and other information which you can find on the trust website: https://www.dbth.nhs.uk/about-us/our-publications/uk-data-protection-legislation-eu-general-data-protection-regulation-gdpr/

25. REFERENCES

Department of Constitutional Affairs
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National Patient Safety Agency, (2008) Protecting patients who are neck breathers, http://www.nrls.npsa.nhs.uk/resources/?entryid45=59793

Nursing and Midwifery Council. (NMC), (2008). The Code: Standards of Conduct, Performance and Ethics for Nurses and Midwifes. London: NMC.

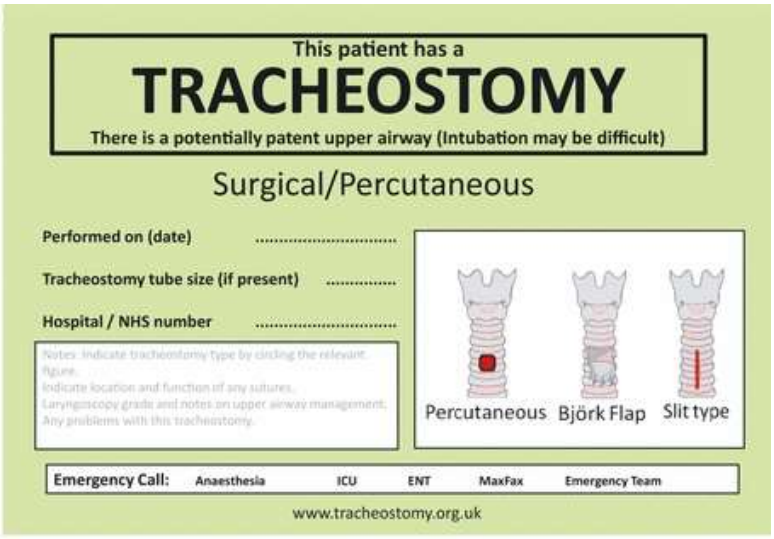
Saint Georges Healthcare NHS Trust (2020) Guidelines for the care of patients with tracheostomy tubes London: St Georges Healthcare Trust.

Saint Georges Healthcare NHS Trust. Tracheostomy guidelines [online](Accessed 21 February 2020) https://www.stgeorges.nhs.uk/gps-and-clinicians/clinical-resources/tracheostomy-guidelines/

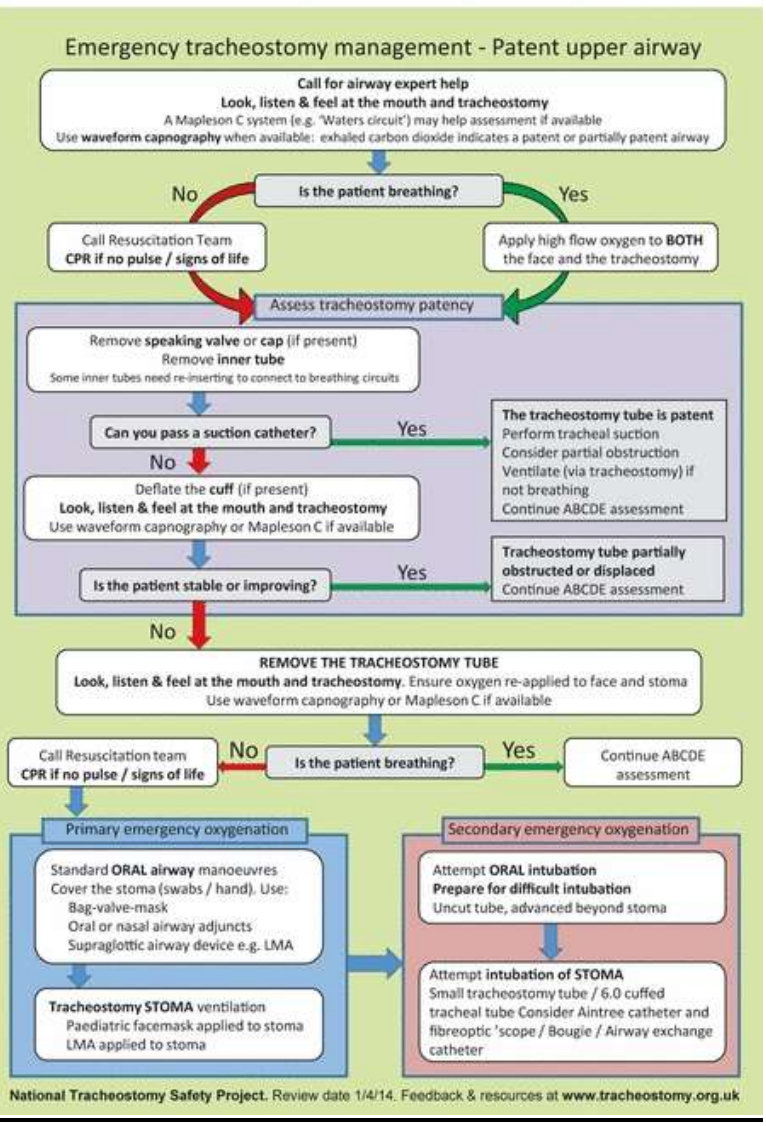
http://www.ncepod.org.uk// (2014)

APPENDIX 1 - TRACHEOSTOMY EMERGENCY CARE AND BED HEAD SIGN

(a)

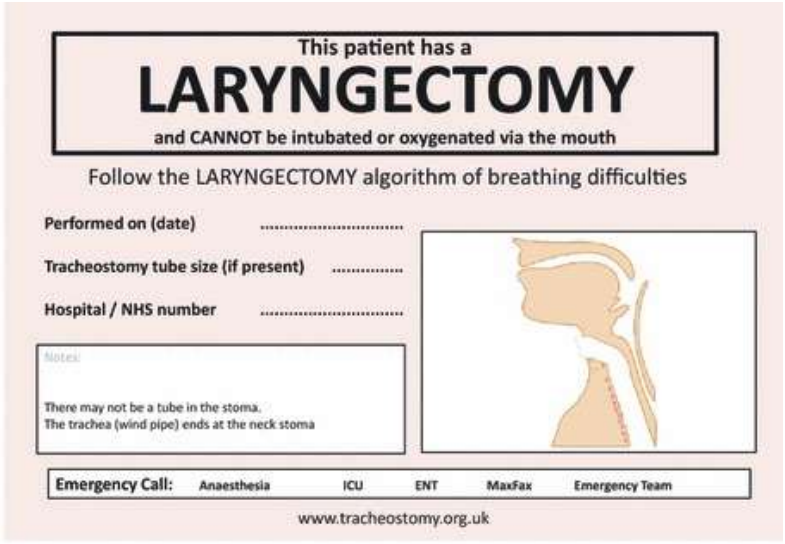


(b)

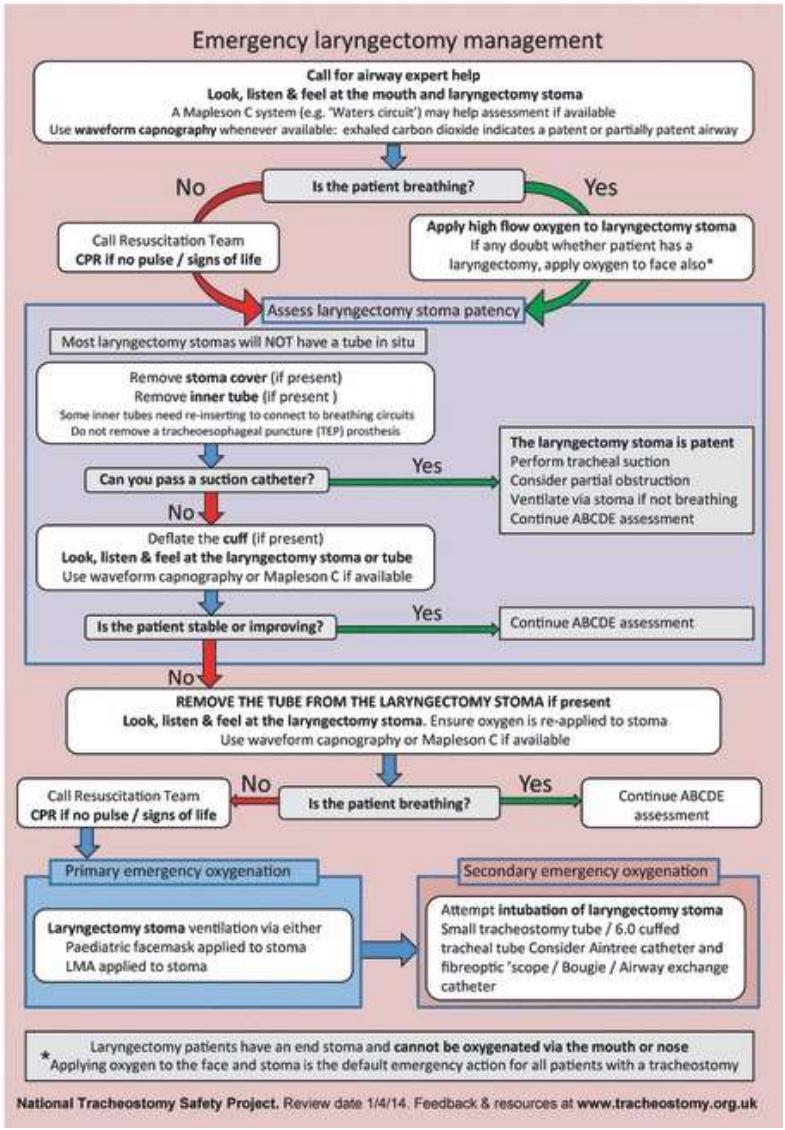


APPENDIX 2 - LARYNGECTOMY EMERGENCY CARE AND BED HEAD SIGN

(a)



(b)

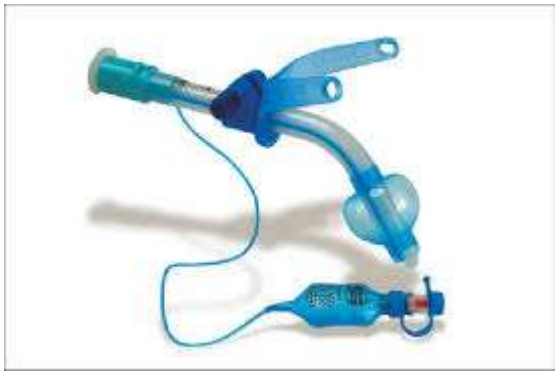


APPENDIX 3 - TUBES USED AT DBTH AND LARYNGECTOMY PRODUCTS

Shiley Tracheostomy Tube, Courtesy of Shiley, (2014)

Shiley XLT Tracheostomy Tube, Courtesy of Shiley, (2014)

Silver Negus Tracheostomy Tube, Courtesy of Kapitex, (2019)



Adjustable Flange Tracheostomy Tube, Courtesy of Portex, (2014)

Cuffed Tracheostomy Tube, Courtesy of Portex, (2014)

Laryngectomy Tubes, Courtesy of Provox, (2019)

Laryngectomy Buttons, Courtesy of Medisiel, (2019)

Laryngectomy Buttons, Courtesy of Kapitex, (2019)

Tilley Forceps essential for Laryngectomy patients available from ENT department

A Good Light Source for Stoma Inspection

A Paediatric Face Mask for Laryngectomy Resuscitation- this will ensure good air seal

APPENDIX 4 - TRACHEOSTOMY EQUIPMENT CHECKLIST FOR WARDS

EQUIPMENT	RATIONALE
Spare tracheostomy tubes. 1x same size and type. 1x size smaller and same type.	To enable swift change in the event of emergencies such as occlusion/dislodgement
1x same size cuffed trache tube.	To insert for ventilation in the event of an emergency resuscitation situation i.e. cardiac or respiratory arrest or bleeding.
Tracheal dilators.	To maintain stoma opening in the absence of a tube.
Catheter mount.	To connect the trache tube to the ambu bag in the event of a cardiac/respiratory arrest.
10ml syringe.	To inflate/deflate the cuff if a cuffed tube is in-situ.
Hand held pressure gauge. – cuffed tube only.	To monitor pressure of inflated cuff to prevent pressure damage to trachea.
A variety of suction catheters.	Size of trache tube and add 4. EG 6 tube need 10 catheter
Suction equipment.	To aspirate secretions.
Sputum trap.	To obtain a sample via suction.
0.9% Sodium Chloride ampoules.	To use for nebulisation to moisten secretions.
Yankauer suction.	For mouth care and to remove oral secretions.
Oxygen with tracheostomy mask/nebuliser acorn/humidification equipment. Respiflo heater.	To provide humidified O2 therapy if needed especially immediately post op and for nebuliser therapy.
Scissors and stitch cutter (if tracheostomy tube is sutured in place).	To ensure swift removal of tracheostomy tube in an emergency situation.
Sterile water and bowl for cleaning the suction tube (Sterile water - date/time when opened, change every 24 hours).	To clean suction tubing and flush inner tube.
Sterile water for cleaning tracheostomy tubes (date/time when opened, change every 24 hours).	To clean inner cannula, not to use tap water and sinks.
Water soluble lubricating jelly.	To apply to trache tube for ease of insertion.
Swedish nose/Trachephone.	Humidifies air taken in to prevent dry secretions.
Sterile gauze and Normasol.	To clean around stoma to maintain skin integrity.
Swabs/brushes for inner tube cleaning.	To remove secretions inside the tube which cannot be removed with just water.
Clean pot with lid for spare inner cannula	To ensure inner tubes are kept safe. **DO NOT COVER POT WITH GLOVE** as this creates a moist atmosphere that encourages bacteria to grow.
Sterile dressing pack.	Infection control measure for cleaning tracheostomy tubes in.
Tracheostomy dressings.	To protect skin around stoma.
Tracheostomy tapes or cotton ties.	To ensure tube stays in place.

Personal protective equipment (gloves, aprons, eye protection).	Infection control measures
Adhesive Allevyn dressing.	To cover stoma at de-cannulation and provide air tight seal.
Clinical waste bag.	To dispose of clinical waste as per Trust policy.
Sterile gloves for performing suction and non-sterile gloves.	Suctioning of a new tracheostomy should be an aseptic technique to prevent infection.
Nurse call bell.	The patient may be unable to call for help.
Communication aids.	The patient may not be able to verbalise.
Bedside equipment checklist.	Patient safety and availability of equipment
Tracheostomy emergency care algorithm.	Patient safety, airway assistance
Tracheostomy bed sign.	Awareness of tracheostomy patient
Paediatric face mask.	For resuscitation if Silver Negus tube is in-situ to aid seal

APPENDIX 5 - LARYNGECTOMY EQUIPMENT CHECKLIST FOR WARDS

EQUIPMENT	RATIONALE
Suction catheters various sizes (8,10,12,14,16)	To aspirate secretions from stoma if needed
Suction Equipment	To aspirate secretions
Sterile water and bowl for cleaning the suction tube (Sterile water - date/time when opened, change every 24 hours)	To clean suction tubing
Suction tubing	To change daily if in use
Sputum trap	To obtain a sample via suction
Yankauer suction	To remove oral secretions
Sterile and non-sterile disposable gloves	To prevent wound infection and for stoma care and suctioning
Sterile dressing pack	For cleaning stoma buttons and tubes
Clinical waste bag	Infection control measures
Personal protective equipment (gloves, aprons, eye protection).	Infection control measures
Nebuliser mask and acorn	To provide humidification
Oxygen tubing	To renew as needed
Oxygen with tracheostomy mask/nebuliser acorn/humidification equipment	To provide humidified O2 therapy if needed
Sodium Chloride 0.9% ampoules	To use for nebulisation to moisten secretions
Sterile water and container	To clean suction tubing
Clean pot with lid	To store spare stoma buttons and Laryngectomy tubes
Gauze swabs and Normasol	To clean the Stoma and maintain skin integrity
Tilley forceps	To remove plugs/crusting from the stoma
Torch	To provide a light source into the stoma
Stoma buttons or Laryngectomy Tube	To maintain adequate stoma size (seek advice from Head and Neck Clinical Nurse Specialist or Ward S12 for items)
Sterile water for cleaning laryngectomy tubes/buttons (date/time when opened, change every 24 hours)	To clean laryngectomy tubes and stoma buttons, not to use tap water and sinks.
Swabs/ brushes for cleaning stoma buttons/tubes	To aid removal of secretions
Lubricating gel	To apply to the stoma button for ease of insertion
Paediatric face mask.	To ensure good air seal for laryngectomy resuscitation
Laryngectomy bed sign and Emergency Algorithm and equipment checklist	For patient safety and identification of altered anatomy
Nurse call bell	Patient may be unable to call for help
Communication aids	Patient may not be able to vocalise

APPENDIX 6 - PATIENT TRANSFER INFORMATION SHEET

HMR 4
60

Doncaster and Bassetlaw Hospitals NHS Foundation Trust

TRANSFER INFORMATION FOR A PATIENT WITH A TRACHEOSTOMY

AFFIX LABEL HERE IF AVAILABLE

NHS Number: .....
District Number: .....
Surname: .....
Forename(s): .....
Address: .....
.....
D.o.B.: .....

Hospital: ☐ Doncaster ☐ Montagu ☐ Bassetlaw ☐ Tickhill Road

Ward: ..... Consultant: ..... Date of discharge from ICU/HDU: .....

Date tracheostomy inserted: / /

Type of tracheostomy:
- ☐ Percutaneous
- ☐ Surgical
- ☐ Mini

Reason for tracheostomy:
- ☐ Airway maintenance
- ☐ Secretion clearance
- ☐ Risk of aspiration
- ☐ Other

Type of tube in situ at ICU/HDU discharge:
NB: Single lumen tubes only accepted on ENT ward. General wards should only accept patients with double lumen tubes.
- ☐ Standard single-lumen portex with cuff
  Reason for not changing: .....
- ☐ Shiley fenestrated
- ☐ Shiley uncuffed
- ☐ Adjustable flange
- ☐ Other

Management at discharge:

Oxygen concentration: ..... %

Delivery system	**Humidification**
☐ Thermovent	☐ HME
☐ Trache mask	☐ Sodiium Chloride 0.9% nebuliser
☐ T-piece	☐ Cold water
☐ CPAP	
☐ BIPAP	

Cuff inflated? ☐ Yes ☐ No

Speaking valve with fenestrated cannula? ☐ Yes ☐ No

Patient's swallowing ability
- ☐ No problems; may eat and drink
- ☐ Nil by mouth; awaiting Speech Therapy assessment
- ☐ Speech Therapy advice recorded in notes

Continuing care

Date of review: ..... Name of Reviewer: .....

Date tube changed	Type and size of tracheostomy tube

Designation & Name: ..... Signature: ..... Date & Time: .....

Send this form to: Lead Tracheostomy Nurses, Ward S12, Doncaster Royal Infirmary **Fax: 01302 647081**

WPR22873
Feb 2014
CREAM

APPENDIX 7 - SAFETY EQUIPMENT FOR PATIENT ESCORT

Portable Suction Machine and Suction Catheters

Tracheostomy Case (contents in policy)

Humidification (mask and oxygen unit)

APPENDIX 8 - EQUALITY IMPACT ASSESSMENT PART 1 INITIAL SCREENING

Service/Function/Policy/Project/ Strategy	Division/Executive Directorate and Department	Assessor (s)	New or Existing Service or Policy?	Date of Assessment
PAT/T 20 v.6 – Tracheostomy Adult Care Policy	Surgical and Cancer	Lucy Brooks CNS Head and Neck	Existing Policy	11 March 2020

1) Who is responsible for this policy? Collaborative Tracheostomy Service

2) Describe the purpose of the service / function / policy / project/ strategy? Who is it intended to benefit? What are the intended outcomes? Safe and effective care for patients with a Tracheostomy or Laryngectomy

3) Are there any associated objectives? Legislation, targets national expectation, standards - No

4) What factors contribute or detract from achieving intended outcomes? – Non-compliance of policy

5) Does the policy have an impact in terms of age, race, disability, gender, gender reassignment, sexual orientation, marriage/civil partnership, maternity/pregnancy and religion/belief? Details: [see Equality Impact Assessment Guidance] - No

- **If yes, please describe current or planned activities to address the impact** [e.g. Monitoring, consultation] –

6) Is there any scope for new measures which would promote equality? [any actions to be taken] No

7) Are any of the following groups adversely affected by the policy?

Protected Characteristics	Affected?	Impact
a) Age	None	Neutral
b) Disability	None	Neutral
c) Gender	None	Neutral
d) Gender Reassignment	None	Neutral
e) Marriage/Civil Partnership	None	Neutral
f) Maternity/Pregnancy	None	Neutral
g) Race	None	Neutral
h) Religion/Belief	None	Neutral
i) Sexual Orientation	None	Neutral

8) Provide the Equality Rating of the service / function /policy / project / strategy – tick (✓) outcome box

Outcome 1 ✓	Outcome 2	Outcome 3	Outcome 4

Date for next review: March 2023

Checked by: Shahed Quraishi (Head and Neck Consultant) Date: 09 March 2020