Management of adult patients with a tracheostomy or laryngectomy

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Management of Adult Patients with a Tracheostomy or Laryngectomy

1. Introduction

There may be occasions when patients are unable to breathe via the usual normal anatomical and physiological processes. When this happens patients have an operation or procedure to create an opening in the front of their neck to breathe through, this opening is called a tracheostomy. When this occurs in conjunction with surgical removal of the patient’s voice-box or larynx, this is called a laryngectomy.

The term used to describe patients who have either a long-term tracheostomy or laryngectomy is ‘neck breathers’. It is estimated that there are in excess of over 5,000 ‘neck breathing’ patients across the UK (National Patient Safety Agency, 2005).

It is well recognised that patients with a tracheostomy or laryngectomy are at risk of death or harm if inappropriate or inadequate care is provided. Health care professionals need an awareness and understanding of how to deal with the special breathing needs of this client group (National Patient Safety Agency 2005, National Tracheostomy Safety Project 2010).

Gateshead Health NHS Foundation Trust recognises that the safety, experience and outcomes delivered to patients are our top priority and that this requires a multi-professional collaborative approach.

This policy is intended for those staff caring for adult patients with a tracheostomy or laryngectomy either regularly or occasionally. As such the policy is intended to offer safeguards and guidance to ensure patient safety and how this will be achieved.

2. Policy scope

This policy applies to all patients with a tracheostomy or laryngectomy nursed within Gateshead Health NHS Trust, excluding paediatrics.

This policy applies to all health care professionals working within Gateshead Health NHS Foundation Trust involved in the care and management of adult in-patients with a tracheostomy or laryngectomy in place.

For the purpose of this policy the term health care professional refers to nurses, doctors, allied health professionals and health care assistants.

In order to safeguard the needs of this client group, on admission they will be cared for within specifically designated areas of the Trust i.e. A+E, MAU / MAA, Ward 4, 22 or CCD. This decision has been agreed by the ward clinical teams and supported by the Trust Resuscitation and Deteriorating Patient Steering Group.

All health care professionals should ensure that the basic principles of respect, explanation, privacy and dignity apply to all patients. They must use this policy in conjunction with a range of existing national good practice guidance from professional bodies and local policies, with particular reference to:
Co-ordination of the care and management of adult patients with a tracheostomy or laryngectomy will be achieved via a multi-disciplinary team approach involving a number of professional groups. This will include the Clinical Leads for Critical Care and Respiratory Medicine, Lead Physiotherapists for Tracheostomy / Laryngectomy Care and Respiratory Medicine, Nursing and Medical teams working within wards identified as designated areas of safety and members of the Acute Response Team.

3. **Aim of policy**

The aim of this policy is to provide guidance for staff on the safe care and management of adult patients with either a tracheostomy or laryngectomy cared for within the Trust.

The policy enables the Trust to adhere to the National Patient Safety Agency (2005) recommendations in managing the risks in the care of ‘neck breathing’ patients, which recognise that there is a need to improve the care delivered to this client group.

The policy is intended to be used as a resource to help promote and facilitate the safe management of adult ‘neck breathing’ patients in the hospital environment and to aid all health care professionals in applying best practice guidance for care of these patients within the setting of Gateshead Health Foundation Trust.

It is expected that all staff will adhere to and work within these policy guidelines unless there are any exceptional circumstances where any deviation can be justified.

4. **Duties (Roles and responsibilities)**

**The Trust Board**
The Board has ultimate responsibility for providing effective healthcare services to patients. They are responsible for ensuring there is support available to ensure the safety and wellbeing of patients and the risk of patient harm is minimised to its lowest potential in our care.

**The Chief Executive**
The Chief Executive is ultimately responsible for ensuring effective corporate governance within the organization, for ensuring that policies / guidelines and systems are in place and that they are implemented and adhered to.

**The Medical Director and Director of Nursing** ensure that all staff have access to the policy via the Trust Intranet and that it is updated every two years or in line with current national / best practice guidance.
The Resuscitation and Deteriorating Patient Group is responsible for:

- Ratifying of Trust policies, procedures and guidance relating to all aspects of practice in the care and management of the acutely ill adult
- Providing advice and support on the implementation of policies and monitoring the progress of the annual agreed programme of work.

The Acute Response Team (ART) are responsible for:

- Working collaboratively with staff across the Trust by responding to requests for clinical advice and support with patient management.
- Providing advice and support to staff of all professional groups on the care and management of patients and policy interpretation.
- Acting as a source of advice to staff regarding the ongoing management of adult patients with a tracheostomy or laryngectomy.

Anaesthetists are responsible for:

- Working collaboratively with the ART by responding to requests for clinical advice and support with patient management.
- Acting as a source of expert advice regarding the ongoing management of adult patients with a tracheostomy or laryngectomy.

Divisional Managers and Divisional Directors are responsible for:

- Ensuring all members of staff understand how this policy applies to them and the patients in their care and ensuring that where necessary, local procedures are developed, to support the implementation of this policy.
- Reviewing the effectiveness of the implementation of this policy, and taking appropriate remedial action when they become aware of any acts or omissions that contravene it.
- Maintaining an overview of the effectiveness of care through the review of audit findings.

Matrons are responsible for:

- Ensuring patients are managed in a safe clinical environment.
- Supporting ward and departmental managers in the implementation of this policy.
- Monitoring the implementation and compliance with this policy.
- Ensuring staff access training that this appropriate and relevant to their role and responsibilities.

Ward Managers / Heads of Department are responsible for:

- Implementing this policy within their clinical area
- Ensuring staff understand their accountability and responsibility in relation to complying with this policy.
- Ensuring staff have the knowledge, skills and competence to enable them to safely care for patients with a tracheostomy or laryngectomy.
- Incorporating training on the care and management of adult patients with a tracheostomy or laryngectomy into staff induction and continued professional development programmes.
Health Care Practitioners are responsible for practicing in accordance with the clinical guidance set out in this policy.

Trust staff have a responsibility to adhere to Trust policy and ensure that appropriate measures are taken to safely care for the patient with a Tracheostomy or Laryngectomy. Trust staff working in areas caring for patients with tracheostomy or laryngectomy have a responsibility to ensure they maintain their knowledge, skills and competence and attend any training to enable them to safely care for this specific client group.

5. Definitions

ART – Acute Response Team
RDPG – Resuscitation and Deteriorating Patient Group
CCD – Critical Care Department

6. Guidelines for the management of adult patients with a tracheostomy or laryngectomy

The following sections provide specific information for healthcare professionals caring for adult patients with either a tracheostomy or laryngectomy and outline the most current guidance provided for managing the specific needs of this client group.

6.1 What is a tracheostomy or laryngectomy?

A tracheostomy is an opening or hole that is placed into the patient’s trachea or ‘windpipe’ to help them breathe. Once in place, air flows directly into the lungs, through the opening bypassing the usual breathing processes. A tracheostomy can be either temporary or permanent and is performed as either an emergency or planned procedure.

A laryngectomy results from surgery to remove a cancerous tumour that has either developed in or has invaded the larynx or ‘voice box’. There is a no connection between the trachea and the larynx (voice-box) and a stoma is formed on the front of the neck that allows airflow into the lungs. A laryngectomy is always a planned and permanent procedure.

As health care professionals, it is important to be aware of the differences between a tracheostomy and laryngectomy, as the care required by patients is different.

6.2 Indications for a tracheostomy or laryngectomy

Tracheostomies are becoming increasingly commonplace both within the acute hospital setting and the community. As a result there is an expectation of increased knowledge and more advanced nursing and healthcare skills in ward staff caring for these patients.

Laryngectomies are performed for cancer of the larynx or voice box; however there are a number of reasons as to why patients may have a tracheostomy performed.
The main indications for insertion of a tracheostomy are as follows:

- to secure and protect the airway
- to allow for the removal of secretions
- to prevent aspiration of stomach contents
- to assist with rehabilitation of long-term critically ill patients

### 6.2.1 Types of tracheostomy tubes

Tracheostomy tubes can be described by the presence or absence of a cuff, an inner cannula and holes or ‘fenestration.’ Tubes can also be made of a variety of materials and have different diameters and lengths. There are a range of different suppliers of tracheostomy tubes in the UK. It is not the intention of this policy to provide an overview of all of the different types that may be seen or are available but to provide a basic understanding of the different types of that may be seen in clinical practice when caring for tracheostomy patients.

Cuffed tubes have a soft balloon around the distal end of the tube which inflates to seal the airway. Cuffed tubes are necessary when artificial mechanical ventilation is required or in situations where airway protection is essential to minimize aspiration of oral or gastric secretions. If the tracheostomy tube lumen is occluded when the cuff is inflated, the patient will not be able to breathe and should be treated as a medical emergency.

Uncuffed tubes do not have a cuff that can be inflated inside the trachea and are rarely used in acute care. They tend to be used in longer-term patients who require on-going suction to clear secretions. It is essential that patients with an uncuffed tube have an effective cough and gag reflex to protect them from aspiration.

Single cannula tubes can be cuffed or uncuffed and were traditionally the first tube to be sited in a critical care area however owing to concerns about them becoming blocked with secretions, and the difficulty in cleaning this type of tube, they are less commonly seen in practice. The system is less complicated than a double cannula tube and is usually for temporary use only.

Double cannula tubes have an outer cannula to keep the airway open and an inner cannula which acts as a removable liner to facilitate cleaning of impacted secretions. Some inner cannula are disposable, others must be cleaned and re-inserted. Patients discharged from a critical care area with a tracheostomy should have a double un-cuffed cannula in place. This type of tube is the safest to use outside the critical care environment, although to reduce the incidence of tube blockage, the inner cannula must be regularly cleaned.

Fenestrated tubes have an opening(s) on the outer cannula that look like small holes, which allow air to pass through the patient’s mouth and nose as
well as the tracheal opening. This flow of air 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.

Un-cuffed, fenestrated tubes allow much more airflow to the pharynx. The fenestration (hole) can be occluded with an appropriate inner tube. These tubes are commonly seen in patients discharged to the wards from critical care.

6.3 Complications associated with tracheostomy or laryngectomy

Complications associated with tracheostomy can be divided into which occur at the time of insertion or those that arise following the procedure. These can be serious and sometimes fatal.

There are a range of complications that may be seen in clinical practice. The most common complications are listed below:

- Haemorrhage
- Partial or complete tube displacement.
- Pneumothorax
- Tube blockage with secretions or blood
- Surgical emphysema
- Loss of the upper airway
- Infection of the stoma site.
- Infection of the lungs (pneumonia).
- Risk of blockage of the tracheostomy tube in obese or fatigued patients who have difficulty extending their neck.

Complications that occur with laryngectomy are very similar to those described above and usually related to a lack of understanding in the differences in care required by these patients.

One of the commonest problems with a laryngectomy, particularly in an emergency, is that carers / staff fail to appreciate that the patient has actually has their larynx removed. Patients are mistakenly given oxygen via the face instead of via their laryngectomy stoma despite there being no connection between the face and lungs. Laryngectomy stomas usually don’t have a tube inserted into them unless they have just been formed, the patient needs invasive ventilation or requires repeated suctioning.
6.4 Emergency management of the patient with a tracheostomy or laryngectomy

Common emergencies after a tracheostomy has been inserted include blockage, partially or completely dislodged tubes. Laryngectomy patients can also be confusing for staff unfamiliar with the anatomical steps involved in removing a patient’s larynx. It is important to understand the differences between those patients who do and don’t have a larynx after a tracheostomy.

There are 3 algorithms or flow charts that have been developed, the purpose of which is to assist staff in the event of an emergency situation occurring within practice (Appendix 1a, 1b and 1c). They are available for reference at the end of the policy and cover the following situations:

1. Management of the tracheostomy patient with breathing difficulties
2. Management of the laryngectomy patient with breathing difficulties
3. Advanced tracheostomy algorithm (for experienced secondary responders)

As with any other medical emergency it is important that staff recognise the responsibilities and actions relevant to their role and seek early expert help.

Emergency Equipment
Any clinical area caring for patients with a tracheostomy must have emergency equipment immediately available. This may be in the form of a ‘blue box’ / case or similar that is kept at the bedside and accompanies the patient on transfer or wherever they go during their hospital stay. They must also be accompanied by an appropriately trained nurse / healthcare professional who is skilled and competent in using the equipment in the event of an emergency.

In order to maintain patient safety, the following emergency equipment must be kept within easy reach of the patient at all times:

- A functioning suction unit, assembled with connection tubing
- A selection of suction catheters
- Yankauer sucker
- Non-rebreathe circuit and/or adult bag-valve-mask with reservoir with tubing
- Oxygen
- Spare tracheostomy tubes (one of the same size and one a size smaller) usually the same type but must be a type that can easily be inserted in an emergency situation. If the patient has a fenestrated tube insitu spare inner cannulae should also be available.
- Tracheal dilators
- Tracheostomy disconnection wedge
- 10ml syringe
- Stitch cutter (if sutures present)
- Water-soluble gel
Patients discharged from critical care with a tracheostomy will have a ‘blue box’ which will contain all the above and also a paediatric mask for emergency purposes. All other patients who are admitted directly to A+E, MAA / MAU, wards 4 and 22 will be provided with a ‘blue box’ by the ART.

6.4.1 Symptoms of Respiratory Distress

Patients with respiratory distress may show the following signs. Some of these are detectable clinically and others will be revealed by monitors such as pulse oximetry, capnography and ECG.

- Absent breathing (apnoea)
- Noisy or difficulty in breathing e.g. grunting, snoring, stridor
- Patient talking or whispering when the tube cuff is inflated
- Increased respiratory and heart rate
- Low O₂ saturations
- Cyanosis (pale, blue colour around lips, nail beds, eyes)
- Restlessness, Confusion, Agitation, Anxiety
- Blood or blood stained secretions via the tracheostomy
- Retractions (pulling in of the skin between the ribs, and below the breast bone, above collar bones or in the hollow of the neck)
- Increased discomfort reported by the patient
- Cuff requires lots of air to remove air leaks

Any of the above signs should alert clinical staff that there is a potentially serious problem with the tracheostomy and an urgent assessment of the patient should be carried out by someone competent to do so i.e. experienced anaesthetist. This is particularly important if the patient has any signs or symptoms suggesting that the tracheostomy may be displaced. A prompt examination of the tube position is usually required and may allow the problem to be rectified before the tracheostomy becomes completely displaced or blocked.

6.4.2 Why are there different algorithms?

This is because of the potential problems posed by patients with a laryngectomy. Following a laryngectomy there is no connection between a patient’s mouth and lungs, therefore the patient relies on breathing through a stoma in the neck. It should be clear from the bedside, handover and the patient notes that the patient has had a laryngectomy.

6.5 Management of the daily care needs of patients with a tracheostomy

There are a number of key interventions that need to be performed to ensure safety and quality of care for patients with a tracheostomy in place.

These interventions will include:
- assessment of the strength of the patient’s cough
- provision of adequate humidification
- provision of regular suctioning
• provision of regular cannula care
• maintenance of oral hygiene
• maintenance of nutrition and hydration
• effective mobilisation and rehabilitation

For further guidance in the management of the patient’s daily care needs, staff should seek advice and support from the Lead Physiotherapists for Respiratory and Tracheostomy / Laryngectomy Care and ART. Guidance is also available for staff in the form of Care Standards at the end of this policy (Appendix 2 and 3 - ratification pending).

6.6 Procedure for suctioning patients via a tracheostomy or laryngectomy

In normal situations respiratory secretions are normally transported through the trachea or ‘windpipe’ up to the throat. In patients with a tracheostomy or laryngectomy this process can be disturbed for a number of reasons including:
• The loss of humidification from bypassing the nasal airway.
• The loss of a normal cough from bypassing the larynx.
• Post-surgical inflammation producing thicker secretions.

Respiratory secretions can collect in the tracheostomy, with the amount differing from patient to patient. Some patients are able to clear these out of the tracheostomy by coughing or forced expirations however others cannot. These patients will require the secretions to be removed via suctioning the tube.

There are a range of factors that suggest that a patient may require tracheal suctioning. These include:
• Noisy breathing
• Increased effort or work of breathing
• Increased or decreased respiration rate, pulse rate, blood pressure
• Reduced oxygen saturation levels
• Restlessness, changes to skin colour and sweating
• Increased or ineffective coughing
• Patient request

Suctioning should only be performed by a physiotherapist or staff who have completed the Gateshead Health NHS Trust Competency Based Assessment (ratification pending) and have been deemed competent to do so.

For further guidance on suctioning via a tracheostomy or laryngectomy staff should seek advice and support from the Trust Physiotherapy team, ART and refer to the relevant Trust care standard at the end of this policy (Appendix 2 – ratification pending).

6.7 Management of swallowing for patients with a tracheostomy tube

Assessment of the safety of the patient’s swallow is necessary as swallowing difficulties (dysphagia) can result in complications arising from a tracheostomy. To
minimize the occurrence of complications practitioners must follow best practice guidelines.

Prior to assessing the swallow of a tracheostomy patient there must be expert multidisciplinary team (MDT) agreement that the patient’s medical and weaning status indicate that they are safe to undergo a swallow assessment. Knowledge of the individual patient’s condition including indication for the tracheostomy, current nutrition and respiratory status and weaning plan should all be understood before undertaking a swallow assessment.

Swallow assessment must be performed by a Speech and Language Therapist or staff who have undergone additional training and assessment and are deemed competent to do so.

### 6.8 Weaning, changing or removing a tracheostomy

Tracheostomy tubes may cause permanent damage to the airway and therefore timely weaning, where indicated, is advantageous. The process of respiratory ‘weaning’ is a complex and should only be performed following consultation with the multi-disciplinary team and a responsible / named consultant involved in the care and management of the patient.

Prior to the start of the weaning process, there must be expert multidisciplinary team (MDT) agreement that the reason for insertion of the tracheostomy has now been resolved sufficiently. The weaning process must be led by a clearly designated, experienced and accessible Critical Care Consultant. This same team should remain the main point of contact for at least 48 hours post after removal or ‘decannulation’ of the tracheostomy (unless patient location prevents this being a viable option).

Changing a patient’s tracheostomy tube should be a multidisciplinary decision. The first change should always be performed or supervised by a suitably trained member of the medical staff.

The procedure is not without risk, and therefore any practitioner or patient who is preparing to change a tube must be suitably prepared and supported.

Patients should be assessed individually prior to each and every tube change with the risks being considered and plans identified to deal with possible complications.

If a difficult tube change is anticipated then a clinician experienced in endotracheal intubation or a clinician proficient in securing the tracheostomy should be present.

The removal of a tracheostomy should occur as soon as there is no further need for it to remain in place. The process of removing a tracheostomy tube is referred to as decannulation and should be considered only when a patient has successfully progressed through a structured weaning programme.
For further advice, support and guidance on weaning, changing and/or removal of a tracheostomy staff are advised to contact the Acute Response team via bleep 2698 or on call anaesthetist via bleep 4002 in the first instance.

6.9 Competencies for staff caring for patients with a tracheostomy or laryngectomy

All staff working in designated areas that are regularly involved in the care and management of adult patients with a tracheostomy or laryngectomy must complete the Gateshead Health NHS Trust competency based assessments relevant to this client group (ratification pending).

For further advice, support and guidance on completion of competencies staff will be signposted to their Educational Lead, Lead Physiotherapists and members of the Acute Response Team (bleep 2698).

6.10 Discharge planning for patients with a tracheostomy or laryngectomy

Patients with a tracheostomy discharged from Critical Care will have an un-cuffed tracheostomy tube with an inner cannula sited. In order to ensure that the receiving ward can make all necessary preparations to safely accept responsibility for the patient, at least 24hours notice must be given to the bed management team/receiving ward when a patient is being discharged from Critical Care.

All patients discharged from Critical Care to or nursed in designated ward areas with either a tracheostomy or laryngectomy to will receive follow-up care from staff within the Acute Response Team and a designated Critical Care Consultant, along with the patient’s ‘parent’ medical team.

For patients who require long term tracheostomy or laryngectomy care in the community there must be discussion between the ‘parent’ medical consultant, designated critical care consultant and the discharge liaison team at the earliest opportunity as part of the discharge planning process. Ideally there should be a ‘clinical huddle’ where there is representation from key staff across both acute and community teams with clearly agreed outcomes prior to discharge.

Guidance is available for reference for staff in the form of Care Standards at the end of this policy (Appendix 4 and 5 - ratification pending).

7. Training

Gateshead Health NHS Foundation Trust advocates the use of guidance, as published by the National Tracheostomy Safety Project (2010), as its basis for treatment of adult patients with a tracheostomy or laryngectomy.

An awareness of the policy will be promoted at Nursing / Medical / AHP team meetings and local ward / department induction to ensure that all staff working within the designated areas have an understanding of their role in the management of these patients.
Members of staff who are involved in the management of adult patients with a tracheostomy or laryngectomy must have undergone an appropriate and agreed period of training and support in order to ensure that they develop the competencies required to care for these patients.

Tracheostomy training and education will be available to staff in the form of a 1-day face-to-face course that will cover a range of objectives in managing the specific needs of this client group. The training will be delivered by a faculty of staff from a range of disciplines across the Trust and will combine theoretical sessions and practical application of skills using a simulation based approach.

For the purposes of continuity, consistency, fairness and equity, staff access to face-to-face training will be administered via a designated member of the Tracheostomy and Laryngectomy training faculty.

8. Equality and diversity

The Trust is committed to ensuring that, as far as is reasonably practicable, the way we treat members of staff and patients reflects their individual needs and does not discriminate against individuals or groups on the grounds of any protected characteristic.

This policy is therefore intended to offer safeguards to both patients and members of staff involved in the management of adult patients with a tracheostomy or laryngectomy.

In this way, the policy promotes equality of opportunity and values diversity. The policy adopts a human rights approach by considering a wide variety of situations, and encourages supportive, reasonable arrangements to promote fairness, respect, equality, dignity and autonomy.

9. Monitoring compliance with the policy

<table>
<thead>
<tr>
<th>Standard/process/issue</th>
<th>Monitoring and audit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy complies with OP27 – Policy for the development, management and authorisation of policies and procedures</td>
<td>Monitoring and audit method: OP27 Checklist, By: Bev Wilkinson, Andy Rooks, Committee: Resuscitation and deteriorating patient (RDPG) steering group, Frequency: Upon review</td>
</tr>
<tr>
<td>Audit against policy standards / recommendations</td>
<td>Monitoring and audit method: Retrospective and prospective audit measured against policy standards, By: Members of ART and training faculty, Committee: Resuscitation and deteriorating patient (RDPG) steering group, Frequency: Quarterly</td>
</tr>
</tbody>
</table>
10. **Consultation and review**

This policy was developed following consultation with the following staff and members of the Trust Resuscitation and Deteriorating Patient Steering Group (RDPG):
- Medical Lead, Critical Care
- Medical Lead, Respiratory Medicine
- Consultant Intensivists
- Consultant Physicians
- Matron, Critical Care
- Senior Clinical Lead, Acute Response Team
- Senior Sisters and Nursing staff, Ward 4, 22 and CCD
- Respiratory Physiotherapists

The policy will be reviewed in accordance with Trust guidance on clinical operational policies.

11. **Implementation of policy (including raising awareness)**

The Resuscitation and Deteriorating Patient Group is responsible for overseeing the development and implementation of the policy, including the development of training, information and promotion. However individual healthcare professionals have a responsibility to ensure they understand their role in the management of ‘neck breathers’ and take appropriate steps to implement this policy effectively, including reporting any concerns as appropriate.

The policy has been implemented following the OP27 policy for the development, management and authorisation of policies and will be made available to staff via the Trust intranet and circulated by the Trust secretary.

12. **References**

St George’s Healthcare NHS Trust – Tracheostomy guidelines.

13. **Associated documentation**

Policy for the Development, Management and Authorisation of policies – OP27
Resuscitation policy – RM27a
Acute Response Team - Operational Policy – (ratification pending).
Appendix 1a - Management of the tracheostomy patient with breathing difficulties

[Diagram showing emergency tracheostomy management - Patent upper airway flowchart]

1. **Call for airway expert help**
   - Look, listen & feel at the mouth and tracheostomy
   - A Mapleson C system (e.g. 'Waters circuit') may help assessment if available
   - Use waveform capnography when available: exhaled carbon dioxide indicates a patent or partially patent airway

2. **Assess tracheostomy patency**
   - Remove speaking valve or cap (if present)
   - Remove inner tube
     - Some inner tubes need re-inserting to connect to breathing circuits

3. **Can you pass a suction catheter?**
   - Yes
     - Expel the cuff (if present)
     - Look, listen & feel at the mouth and tracheostomy
     - Use waveform capnography or Mapleson C if available
     - Is the patient stable or improving?

   - No
     - Deflate the cuff (if present)
     - Look, listen & feel at the mouth and tracheostomy
     - Use waveform capnography or Mapleson C if available
     - Tracheostomy tube partially obstructed or displaced
     - Continue ABCDE assessment

4. **REPLACE THE TRACHEOSTOMY TUBE**
   - Look, listen & feel at the mouth and tracheostomy
   - Ensure oxygen re-applied to face and stoma
   - Use waveform capnography or Mapleson C if available

5. **Primary emergency oxygenation**
   - Standard ORAL airway manoeuvres
     - Cover the stoma (swabs / hand)
     - Use: Bag-valve-mask
     - Oral or nasal airway adjuncts
     - Supraglottic airway device e.g. LMA

6. **Secondary emergency oxygenation**
   - Attempt ORAL intubation
     - Prepare for difficult intubation
     - Uncut tube, advanced beyond stoma
   - Attempt intubation of STOMA
     - Small tracheostomy tube / 6.0 cuffed ETT
     - Consider Aintree catheter and fiberoptic scope / Bougie / Airway exchange catheter

This patient has a TRACHEOSTOMY

There is a potentially patent upper airway (Intubation may be difficult)

Surgical / Percutaneous

Performed on (date) ...........................................

Tracheostomy tube size (if present) .................

Hospital / NHS number .................................

Notes: Indicate tracheostomy type by circling the relevant figure.
Indicate location and function of any sutures.
Laryngoscopy grade and notes on upper airway management.
Any problems with this tracheostomy.

Emergency Call: Anaesthetics, Bleep 4002

Acute Response Team, Bleep 2698

www.tracheostomy.org.uk
Appendix 1b – Management of the laryngectomy patient with breathing difficulties

Emergency laryngectomy management

Call for airway expert help
Look, listen & feel at the mouth and laryngectomy stoma
A Mapleson C system (e.g. ‘Waters circuit’) may help assessment if available
Use waveform capnography whenever available: exhaled carbon dioxide indicates a patent or partially patent airway

Is the patient breathing?

No

Call Resuscitation Team
CPR if no pulse / signs of life

Yes

Apply high flow oxygen to laryngectomy stoma
If any doubt whether patient has a laryngectomy, apply oxygen to face also*

Assess laryngectomy stoma patency

Most laryngectomy stomas will NOT have a tube in situ
Remove stoma cover (if present)
Remove inner tube (if present)
Some inner tubes need re-inserting to connect to breathing circuits
Do not remove a tracheoesophageal puncture (TEP) prosthesis

Can you pass a suction catheter?

Yes

The laryngectomy stoma is patent
Perform tracheal suction
Consider partial obstruction
Ventilate via stoma if not breathing
Continue ABCDE assessment

No

Deflate the cuff (if present)
Look, listen & feel at the laryngectomy stoma or tube
Use waveform capnography or Mapleson C if available

Is the patient stable or improving?

Yes

Continue ABCDE assessment

No

REMOVE THE TUBE FROM THE LARYNGECTOMY STOMA if present
Look, listen & feel at the laryngectomy stoma. Ensure oxygen is re-applied to stoma
Use waveform capnography or Mapleson C if available

Call Resuscitation Team
CPR if no pulse / signs of life

Is the patient breathing?

No

Primary emergency oxygenation

Yes

Continue ABCDE assessment

Secondary emergency oxygenation

Laryngectomy stoma ventilation via either
Paediatric face mask applied to stoma
LMA applied to stoma

Attempt intubation of laryngectomy stoma
Small tracheostomy tube / 6.0 cuffed ETT
Consider Aintree catheter and fibroptic scope / Bougie / Airway exchange catheter

Laryngectomy patients have an end stoma and cannot be oxygenated via the mouth or nose
Applying oxygen to the face and stoma is the default emergency action for all patients with a tracheostomy

This patient has a
LARYNGECTOMY
and CANNOT be intubated or oxygenated via the mouth
Follow the LARYNGECTOMY algorithm of breathing difficulties

Performed on (date) ........................................
Tracheostomy tube size (if present) .................
Hospital / NHS number .................................

Notes:
There may not be a tube in the stoma.
The trachea (wind pipe) ends at the neck stoma

Emergency Call:    Anaesthetics, Bleep 4002  Acute Response Team, Bleep 2698
www.tracheostomy.org.uk
Appendix 1c – Advanced tracheostomy algorithm (for experienced secondary responders)
### Appendix 2 – Care standard for suctioning via a tracheostomy

<table>
<thead>
<tr>
<th>Care Standard</th>
<th>Suctioning a Patient via a Tracheostomy Tube</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>For tracheostomy care the ability to remove secretions is reduced as the patient is unable to cough effectively, secretions may become thick and dry due to the natural mechanisms of warming and humidifying air being by passed. This potentiates factors that may lead to blockage of the tracheostomy tube. It is therefore essential that tracheal suctioning is an integral component of managing secretions to maintain a patent airway and respiratory function.</strong></td>
<td></td>
</tr>
</tbody>
</table>

1. Explain the procedure and ensure that the patient is physically and psychologically prepared, nursed in a comfortable position.
2. In conjunction with this care standard all staff will comply with Hand Hygiene Policy IPC no.4 and Personal Protective Equipment Policy IPC no.2

#### Indications

3. The presence of audible or visible secretions, decreased oxygen saturations or diminished breath sounds during the assessment may indicate the need for suction and assessment of the patient is carried out to determine the presence and location of any secretions and the patient’s ability to cough and clear secretions.

#### Procedure

4. The procedure will be performed by a practitioner who has undergone ward based training and has been assessed as being competent in performing the procedure.
5. The practitioner will ensure infection prevention and control standards are adhered to before, during and after the procedure.
6. The appropriate personal protective equipment including eye protection will be worn and an Aseptic Non Touch Technique will be used during the procedure
7. Explanation of the procedure and consent is gained from the patient
8. If a fenestrated outer tube is used ensure that an unfenestrated inner tube is used whilst suctioning to prevent trauma to the tracheal wall.
9. The patient is hyper oxygenated for 3 minutes pre procedure if oxygen dependant to minimise the risk of acute hypoxaemia.
10. Suction pressure is set to the recommended level between 13-16 kpa to minimise atelectasis.
11. The correct size suction catheter is used not exceeding ½ the internal diameter of the tracheostomy tube to prevent hypoxia occurring and mucosal damage.

#### The use of the following formula is recommended

12. **Suction catheter size (Fg) = (size of tracheostomy tube – 2) x 2**  
   *E.g. 8.00mm ID tube = (8-2) x2 =12Fg*
13. The patient is not suctioned for more than 10 seconds to prevent hypoxaemia, cardiac arrhythmias, and mucosal trauma.
14. Oxygen is reapplied immediately if the patient is oxygen dependant to prevent hypoxia.
15. If repeated suctioning is required the patient is allowed sufficient time to recover between each suction pass using new gloves and suction catheters for each episode to reduce the risk of reintroducing infection.
16. No more than three suction passes should be attempted during one episode unless in an emergency such as tube occlusion to reduce the risk of hypoxaemia.
17. The patient’s respiratory rate, oxygen saturations and heart rate and signs of bleeding are observed closely over the 15 minutes post suctioning to detect possible signs of hypoxaemia, bradycardia, mucosal damage and bleeding.
18. The procedure including frequency, secretion type and any complications relating to the procedure will be documented in the patient’s nursing/medical notes to ensure safe continuity of care.
19. Ensure that you have considered making reasonable adjustments to help to meet the needs of patients with disabilities.
20. Ensure that the patient’s privacy and dignity is maintained throughout their hospital stay.

#### References:
The Royal Marsden Hospital Manual of Clinical Nursing Procedures 8th Edition Chapter 10: Respiratory Care
The National Tracheostomy Safety Project (NTSP) 2010
**Appendix 3 – Care Standard for Tracheostomy Care**

<table>
<thead>
<tr>
<th>Care Standard</th>
<th>Gateshead Health NHS Foundation Trust</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracheostomy Care</td>
<td></td>
</tr>
</tbody>
</table>

1. Explain the procedure and ensure that the patient is physically and psychologically prepared, nursed in a comfortable position.

**Stoma Care and Securing the Tracheostomy tube**
2. Dressings for the patient should be changed at least daily or more often if the dressing becomes soiled.
3. Sterile gauze soaked in Saline should be used to clean the stoma site and around the tube to remove secretions and crusting.
4. Apply a thin layer of barrier cream if the skin is at risk of excoriation.
5. It is advised for 2 staff to assist with changing dressings/ tube tapes to prevent unintentional decannulation.
6. Observe for signs of infection or/and hyper granulation.
7. Checks of the tapes/sutures will help prevent the tube becoming displaced.
8. Sutures should not be removed until instructed.
9. Ensure infection prevention and control measures are adhered to at all times, especially before and after patient contact.

**Cleaning of the Inner Cannula**
10. Inner Cannula should be removed, inspected and replaced with a cleaned or new inner cannula every 8 hours. *(This period of time will vary according to individual patients needs)*.
11. Clean inner cannula with sterile water or 0.9% normal saline only. Do not soak. Insert a cleaning swab and remove with a twisting action to clean the inner lumen. Dispose of swab in a safe manner.
12. Inspect the inner cannula to ensure it is free from contamination.
13. Allow to dry naturally. Once clean and dry it should be stored free from particulate matter in a washable container.
14. Care should be taken to ensure that the inner cannula does not become kinked or damaged during the cleaning process and that no damaged or kinked inner cannula are re inserted into the tracheostomy tube.
15. Only re use if the same patient.
16. Communicate effectively to inform patients and carers of treatment and progress.
17. Provide support and reassurance at all times.
18. Ensure that the patient’s privacy and dignity is maintained throughout their hospital stay.
19. Ensure that the infection control standards are adhered to at all times, especially before and after patient contact.
20. Involve the patient and their relatives/carers in the decision making process around their care needs.
21. Ensure that the patient is aware of their condition / disease process in order to promote independence and self-management.
22. Ensure you have considered making reasonable adjustments to meet the needs of patients with disabilities.

**References:**
The Royal Marsden Hospital Manual of Clinical Nursing Procedures 8th Edition Chapter 10 : Respiratory Care
The National Tracheostomy Safety Project (NTSP) 2010

Management of adult patients with a tracheostomy or laryngectomy v1
### Appendix 4 – Transfer checklist for adult patients with a tracheostomy or laryngectomy.

<table>
<thead>
<tr>
<th>Name:</th>
<th>Unit Number</th>
<th>Date of transfer from CCD to ( )</th>
<th>Transferred with patient from CCD</th>
<th>Supplied by ward</th>
<th>Training and Equipment Discussed With ward staff</th>
<th>Training and Equipment Received from CCD</th>
<th>Date returned To CCD</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITEMs NEEDED</td>
<td>Yes/No/NA</td>
<td>Yes/No/NA</td>
<td>CCD Sign and date</td>
<td>Nursing Staff sign and date</td>
<td>CCD sign and date</td>
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<td>Tracheostomy tube- same size ( )</td>
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<td>Inner tubes</td>
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<td>Tracheal dilators</td>
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<td>Oxygen saturation monitor</td>
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<td>Re-breath bag and tubing</td>
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<td>Tracheostomy mask</td>
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<td>Cuff pressure gauge</td>
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<td>Lyofoam dressing</td>
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<td>Tracheostomy tapes</td>
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<td>Dressing pack</td>
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<td>Suction unit</td>
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<td>Closed circuit suction ( ) size</td>
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<td>Suction control</td>
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<td>Suction tubing</td>
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<td>1 Bottle sterile water for suction</td>
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<td>1 Box unsterile gloves</td>
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<td>1 Box clear sterile gloves</td>
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<td><strong>FOR CLEANING INNER TUBE</strong></td>
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<td>Tracheostomy swab/brushes</td>
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</tbody>
</table>

**NB ALL equipment loaned from CCD must be returned when no longer needed.**
## Appendix 5 - Care standard for discharge planning of patients with a tracheostomy or laryngectomy

<table>
<thead>
<tr>
<th>Care Standard</th>
<th>Gateshead Health NHS Foundation Trust</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharge planning of patients with a tracheostomy or laryngectomy.</td>
<td></td>
</tr>
</tbody>
</table>

1. Ensure proactive discharge planning commences as soon as possible via an individual holistic assessment of needs incorporating a social history and establishing current level of support.
2. Ensure discussion between parent medical team, designated critical care consultant and discharge liaison team with regards to patient discharge at earliest possible time.
3. Identify the severity of the patients discharge needs.
4. Establish with members of the MDT (multi disciplinary team) an estimated date for discharge within 24 hours of admission and review on a daily basis.
5. Ensure MDT approach with representation from key staff across both acute and community teams with clearly defined outcomes prior to discharge.
6. Ensure effective communication strategies are adopted at both ward level and with the patient/ family/ carer regarding the disgorge plan whilst maintaining the patients privacy and dignity.
7. Complete the appropriate referrals to other members of the MDT according to identified needs of the patient
8. Ensure that any identified equipment has been delivered and installed prior to the patients discharge.
9. Establish a mode of transport required for the patients discharge and book an ambulance if indicated.
10. Ensure North East Ambulance Service (NEAS) have been alerted that a patient with a tracheostomy or laryngectomy is being discharged home. Fax a notification letter to (0191 4302081) or (0191 4302080)
11. Discuss with Acute Response Team any inter-hospital transfers or discharges home and liase with discharge liaison team
12. Ensure that the discharge letter/script have been fully completed and is available at the time of the patients discharge.
13. Discuss with the patient/family/carer their discharge medication and check their level of understanding in order to promote self awareness of their condition.
14. Explain to patient/ family/carer regarding any advice or instructions required post discharge and explain any follow up appointments.
15. Patient/ family/carer to be advised to contact the ward if they have any concerns post discharge.
16. Please complete patient discharge summary on discharge and provide the patient with a copy
17. Ensure that the patient’s privacy and dignity is maintained at all times.
18. Ensure that the infection prevention and control standards are adhered to at all times, especially before and after patient contact.
19. Involve the patients and their relatives/carers in the decision making process around their care needs.
20. Ensure the patient is aware of their condition/disease process in order to promote independence and self management.
21. Ensure you have considered making reasonable adjustments to meet the needs of patients with disabilities.