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**Tracheostomy Policy**

**[Date of Issue]**

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| Policy Lead: | [Policy Lead] |
| Version No. | 1 |
| Date of Issue: | [Date of Issue] |
| Date for Review: | [Date of Review] |

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# Introduction

A tracheostomy is an artificial opening in the front of the neck into the trachea which a person can breathe through. There are a number of reasons why someone might have a tracheostomy, with the most common reason being to ‘secure’ a safe airway as a result of a blockage of the normal air passages (nose and mouth or at the back of the throat). Alternatively, a person may require ongoing assistance from a ventilator or not be able to safely manage food, liquid or even oral secretions (i.e., they are unable to ‘protect’ their airway) and/or have a reduced conscious level.

People with tracheostomies are now often discharged from hospital into the community and will likely require ongoing assistance from friends, family or professional carers to live with it. As a result, there is an expectation of increased knowledge and more advanced nursing and healthcare skills for staff caring for such individuals.

# Policy Statement

[Company Name] recognises that many of the problems that occur with tracheostomies are predictable and preventable. The majority of complications can also be prevented or limited by making sure that clients get high quality, basic care, provided by competent staff.

[Company Name] is committed to providing an environment that promotes the safety, privacy and dignity of clients with tracheostomies and the purpose of this policy is to identify and deliver best practice in tracheostomy care.

This policy is built on guidance predominantly from the National Tracheostomy Safety Project (NTSP) and the Global Tracheostomy Collaborative (GTC).

All staff caring for clients with tracheostomy will be trained and assessed as competent and confident to do so. No staff will be allowed to care for or manage a tracheostomy without passing the necessary competencies.

# Scope

The principles of this policy apply to all clients with a tracheostomy under our care and it includes guidance for all staff or persons working on our behalf on how to support and manage tracheostomies.

Tracheostomy care is a collaborative and multi-professional approach. It is also important to ensure everyone involved has the knowledge and understanding of direct care and management.

The Clinical Lead, [Clinical Lead Name], is responsible for supporting staff in their compliance with the principles of this policy.

This policy is applicable to clients with a tracheostomy ONLY, for information on how to manage a client with a laryngectomy, see [Company Name]’s Laryngectomy Policy.

# Definitions

**Cuffed tracheostomy -** A tube with an air-filled, low pressure, soft balloon that is inflated to seal the airway. Used where positive pressure ventilation is required or where airway protection is essential to reduce aspiration risk from oral or gastric secretions (i.e., used in ventilated individuals).

This type of tube is not in use with clients at [Company Name].

**Uncuffed tracheostomy -** A tube with no inflatable cuff, used in people who can protect their airway from aspiration, i.e., they have an effective gag reflex and cough. They allow for on-going suction to clear secretions but will not allow sustained effective positive pressure ventilation.

**Fenestrated tracheostomy –** A tube with an opening on the outer cannula that allows air to pass through the person’s oral/nasal pharynx, as well as the tracheal opening. The air movement allows the person to speak and produces a more effective cough. However, fenestrated tubes have an increased risk of oral or gastric contents entering the lungs and are not used on persons at high risk of aspiration or requiring positive pressure ventilation, unless a non-fenestrated inner cannula is used to block off the fenestrations. Fenestrated tubes can be cuffed or uncuffed.

**Double cannula tubes –** The preferable and safest, outside of a clinical environment, type of tube for a person to be discharged with. It has an outer cannula to keep the airway open and an inner cannula which can be removed to facilitate cleaning of impacted secretions. Some inner cannulas are disposable, and some must be cleaned and re-inserted. Double cannula tubes can be cuffed or uncuffed, but uncuffed is generally preferred unless there is a high risk of secretions or long-term ventilation is required.

**Adjustable flange tracheostomy –** Generally not used outside of a critical care environment and used in persons who have an abnormally large distance from their skin to their trachea where a standard tube would not fit properly. For example, oedema from surgery or burns, or persons with a very large neck girth potentially as a result of obesity.

This type of tube is not in use with clients at [Company Name].

**Sub-glottic aspiration port -** Some tubes have a small aspiration port running along the outside of the tube to just above the cuff that allows for secretions to be removed from above the cuff by aspirating the port with a syringe. This is only used in ventilated individuals and is uncommon outside of a clinical environment.

This type of port is not in use with clients at [Company Name].

**[Delete if no cuffed tubes] Cuff-pressure manometer -** A hand-held gauge that can add or remove air to the cuff, as necessary.

# Procedures

All staff involved in any aspect of tracheostomy care at [Company Name] must:

* Involve the client and/or their carer in their care as far as possible and as much as they wish to be involved, as appropriate.
* Fully inform the client of any proposed procedures, what is involved and obtain fully informed consent, where possible, otherwise referring to guidance from the Mental Capacity Act 2005.
* Maintain a clean environment and regularly undertake handwashing to prevent infection.
* Wear an appropriate level of PPE for the procedure being undertaken.
* Not undertake any procedure for which they have not been deemed competent or for which they do not feel confident to undertake.
* Clearly document all client interaction and procedures in their care plan and ensure clear handover of any significant events or findings to the next appropriate person.
* Know how to identify an emergency situation or potential emergency situation and who and when to escalate their concerns.

# Risk

Staff have an enhanced duty of care to ensure that they provide proper and safe tracheostomy support including inspecting and cleaning tubes and equipment. When improper care of a tracheostomy is administered, a number of complications are possible.

**A tracheostomy tube becoming blocked, dislodged or removed should be considered a medical emergency.**

Skill mix and staffing levels should reflect the nursing requirements of a tracheostomy tube and if staff feel they are asked to deliver care they consider unsafe or potentially harmful, they should raise their concerns immediately to the Clinical Lead or Registered Manager.

# Daily Checks

The client’s tracheostomy type, tube size and any prescriptive information (e.g., ventilation) must be clearly recorded and documented within the client’s care plan, along with contact numbers for members of the specialist team.

Clients with tracheostomies need diligent observation and assessment. Upon each attendance, staff should undertake checks to ensure that the client is maintaining their baseline clinical condition and that the tracheostomy/any machinery is functioning appropriately.

The clients care plan should be reviewed daily and updated if there is any change. Any concerns or confusion around the client’s care plan should be escalated to the Clinical Lead/On Call Duty Manager as appropriate.

At each attendance staff should also carry out a full assessment of the client, which should include:

* Why do they have a tracheostomy?
* When was the tracheostomy performed (if known)?
* Was it surgical or percutaneous (if known - may have implications for ease of re-insertion) and does the client have a larynx? (i.e do they have a communication between the oral airway and the lungs?).
* Type and size of tracheostomy tube & availability of spare & emergency equipment.
* Cough effort.
* Ability to swallow, including any SALT assessments.
* Sputum characteristics (Colour, Volume, Consistency, Odour).
* Check and change inner cannula for any build up of secretions (is present).
* Check tracheostomy holder is secure and clean.
* Check stoma dressing is clean.
* Routine observations, where possible.

This assessment should be documented on the care plan.

# Skin and Stoma Care

Taking care of the skin around the tracheostomy and stoma is one of the most important parts of the care provided. The stoma site needs to be cleaned often. The skin must be kept clean and dry. Regular skin care should be done at least twice a day.

Procedure:

* Collect and set up all the supplies and equipment. Wash your hands. Have the client lay or sit up in a comfortable position. This position should extend the neck, allow you to see the tracheostomy site easily, and to allow easier tracheostomy care.
* Look closely at the skin around the stoma for signs of granulation, skin breakdown, infection or irritation.
* Wet the swabs, if the skin is intact use sterile or cooled boiled water, if the skin is broken use saline.
* Clean the area around the stoma by cleaning away from the stoma. You may need to be firm to loosen and get rid of any dried secretions or blood. Be sure to clean completely around the whole area. Clean the neck flange of the tracheostomy tube, especially the sides that lie against the client’s skin.
* Pat dry with a dry cotton swab or gauze pad.
* A tracheostomy dressing may be placed under the flange of the tube to protect the skin, any dressing must not have any loose fibres.
* Check the tracheostomy tube is still in place and ties are secure.

# Humidification

Humidity, or the amount of moisture in the air, will have a big effect on secretions. Breathing through a tracheostomy, the air is not filtered, warmed or humidified. Without added moisture, secretions may become thick and difficult to cough out. The type of environment both inside and outside the home will affect secretions. Heating during winter and air conditioning in the summer months can dry out the air, so, more humidity is often needed.

As a tracheostomy bypasses the nose and upper airway along with the body’s natural humidification process, those with a tracheostomy require some form of humidification tailored to their needs. Inadequate humidification can result in a number of physiological changes which can be serious and life-threatening.

The adequacy and effectiveness of the current humidification should be assessed with an individual assessment being undertaken to establish:

* The frequency of suctioning and/or cleaning of the inner cannula.
* The tenacity of secretions (should pass freely up the suction catheter, not be sticky or coloured, have no odour and no evidence of blood).
* Whether there is evidence of airflow via the tracheostomy.
* The respiratory rate and use of accessory muscles.
* Whether the individual cough is ineffective or excessive.
* Whether there is any requirement for supplementary oxygen.

High risk clients include those with reduced or thickened secretions and those with a longer length and/or single lumen tube. These clients should be cared for with extra vigilance in order to minimize the risk of tube blockage.

**Methods of humidification and the humidification ladder**

The chosen method of humidification will:

* Provide adequate humidification of chest secretions.
* Help maintain body temperature.
* Be convenient and cost effective.
* Be physically suited to the client.

Staff must be trained and assessed as competent before caring for a client with a particular humidification device. All devices should be used in accordance with the manufacturer’s guidelines.

The level of humidification required by clients will change depending on their clinical state, level of respiratory support required and their degree of hydration. If staff feel the current degree of humidification is inadequate, they should inform the package nurse/Clinical Lead/Registered Manager for liaison with the referring clinician/hospital/team to discuss ‘stepping up’. Saline nebulisers or mucolytics and adequate hydration should also be considered if secretions are not improving.

The humidification ladder supported by [Company Name] is as follows with the lowest level first:

* **Heat Moisture Exchanger (HME):** suitable for:
	+ Self-ventilating individuals (no oxygen)
		- **Buchanon bib -** contains a foam layer which absorbs moisture from the individual’s expired gases. Less bulky and conspicuous and are able to completely obscure the tube from sight.
		- **Swedish nose** - placed directly onto the end of the tracheostomy conserves heat and moisture on expiration.
* **Cold water bath** - bubbles gas through cold water delivering a relative humidity of around 50% at ambient temperatures, suitable for:
	+ self-ventilating individuals (on oxygen)
* **[Delete if no ventilated clients] HME for breathing circuit:** placed directly into the breathing circuit conserves heat and moisture on expiration. Require changing every 24 hours and checking regularly to ensure they are not occluded by secretions, suitable for:
	+ Ventilated individuals with minimal secretions (replace every 24 hours).
	+ Monitor effectiveness (less likely to be effective if required for more than 5 days).
* **[Delete if no ventilated clients]** **Heated water bath** (active humidification) - actively increases the heat and water vapour content of inspired gas. Should be used if a HME is not adequate, suitable for:
	+ ventilated individuals with thick secretions
	+ self-ventilating individuals (on oxygen) with thick secretions.

**[Delete if not used in service]** Condensation from heated or cold humidification should be considered infectious waste and disposed of appropriately. Cold or heated water circuits should be changed weekly.

Saline nebulisers or mucolytics, if prescribed, can also be considered if secretions are not improving. Ensure the individual is adequately hydrated, as this is essential to managing their secretion load, and, if possible, encourage careful mobilisation.

**Nebulisers**

Nebuliser units convert saline (or some mucolytics) into a supersaturated aerosol of liquid droplets which penetrates the lung moistening the airways.

* Saline nebulisers help to reduce the viscosity of secretions, making them easier to remove by suctioning or coughing.
* Mucolytics via nebuliser (e.g., hypertonic saline or acetylcysteine) reduce the ‘thickness’ of secretions by breaking down some of the bonds that exist between the mucus.

If the client is requiring supplemental oxygen, then the gas driving the nebuliser should be oxygen and not air.

Nebulisers should only be administered in line with the client’s care plan and prescription.

**Fluid (Liquid) intake**

Staff will need to check the amount of fluid taken each day as plenty of fluid is needed to keep the mucus loose. Sometimes it may be difficult to ensure enough fluid intake. Sickness with fever, diarrhoea, sweating, or vomiting is of special concern and can reduce fluid intake – this should be monitored and/or escalated to the senior team as appropriate.

**Mobilisation**

Clients with a tracheostomy should be encouraged to mobilise as often as possible (within each client’s capability) to help improve the clearance of secretions.

**Saline instillation (Salt Water Squirts)**

**[Delete if service does not deliver this support]**

Squirting saline straight into a tracheostomy tube is an important part of tracheostomy care. This helps clear the mucus. The amount of saline in use will be different with the age and size of each individual. Clients should already have a management plan in place for this. If this is not in place, staff must liaise with the referring clinician/hospital/team and obtain administration and management information. They will advise how much saline to use and how often this should be done. Saline should be squirted into the tracheostomy tube slowly as the individual breathes in to give the most amount of saline to the airway and to avoid too much coughing.

# Loosening Secretions and Suctioning

**[Delete if not doing CPT and only needing suctioning]** There are two methods that can be used to help loosen and move mucus up and out of the airway. These are:

1. Suctioning
2. Chest Physical Therapy (CPT)

**Suctioning**

Suctioning the airway is an essential part of routine care for clients with a tracheostomy, as a tracheostomy compromises the bodies ability to deal with secretions and mucus in the airway can become too thick or too much to be cleared by the client themselves. Suctioning aims to keep the airway clear by removing secretions and preventing infection. The frequency of suctioning is dependent on an individual client and should be performed as required and in line with the client’s care plan.

In the first instance, clients should be encouraged to cough up the secretions, thereby reducing excessive suctioning. This should be supported by good positioning (unless contraindicated), as well as checking for other contributing factors such as pain or hydration.

There are a few indicators that a client may benefit from suctioning:

* Noisy and or moist respirations.
* Increased respiratory effort.
* Prolonged expiratory breath sounds.
* Restlessness.
* Reduced oxygen saturation levels.
* Increased or ineffective coughing.
* Increased use of intercostal muscles.
* Client request.
* More sinister signs of airway obstruction such as hypoxia and cardiovascular changes.

Staff should only undertake suctioning unsupervised following the completion of the appropriate competencies. Suctioning procedures should be performed in line with standards for best practice and manufacturer instructions.

**The inability to pass a suction catheter indicates the airway is not patent.**

**If the tube is blocked/displaced or passing blood this needs immediate attention and follow up.**

**Catheter selection -** Suctioning carries the risk of tracheal damage and hypoxia; this risk is minimised by selecting the correct size of suction catheter.

The recommended catheter size is one that equals:

 (Tracheostomy tube size – 2) x 2

(i.e., no more than half the internal diameter of the tracheal tube). Please note, 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 catheter size should be clearly indicated within the client’s care plan.

**Depth of suctioning -** Unless otherwise indicated, ‘shallow’ suctioning to clear secretions should be attempted in the first instance. This involves passing a suction catheter to the tip of the tracheostomy tube and is possible if the client has reasonably loose secretions that can be coughed towards the end of the tube.

‘Deep’ suctioning is indicated where more shallow suctioning fails to clear the secretions adequately. Staff should familiarise themselves with the length of the cannula to help inform depth of suctioning, but the recommendation is also to insert the catheter until it reaches the carina, the catheter should then be withdrawn slightly before commencing suctioning.

Pressure of suctioning should follow the client’s care plan but not exceed -150mmHg or 20 kPa.

Further information on suctioning and step-by-step procedures including videos can be found on the NTSP website: <https://www.tracheostomy.org.uk/healthcare-staff/basic-care/suctioning>

**Bulb Suctioning -** Bulb suctioning is for the removal of secretions and mucus that collects in and around the flange end of the tracheostomy tube. Bulb suctioning may be performed as often as needed. This will not remove secretions from the airway.

**Procedure:** Wash your hands. Squeeze the back of the bulb with your thumb to squash the syringe. Place the tip of the syringe at the tracheostomy tube opening. Slowly release your thumb. This will cause the syringe to suck and the secretions and mucus will be suctioned up into the bulb. Remove the bulb syringe from the tracheostomy tube and squeeze the syringe to push out any secretions into a facial tissue. Repeat the process and remove all secretions from the stoma.

**Remember:**

**Suctioning requires the use of aseptic technique***.* You must take care not to touch anything with the catheter while suctioning. Do not re-use disposable equipment or catheters. Single use suction catheters are best practice.

**[Delete if not applicable] Chest Physical Therapy (CPT)**

CPT is a way to loosen the secretions or mucus in the lungs. It combines manual cupping or clapping and shaking to move the secretions away from the walls of the small breathing tubes and into the larger breathing tubes where they can be either coughed out or suctioned. If this procedure is advised for the client, then staff will be shown how to do it. Alternative therapy to chest physical therapy could be Vibratory Positive Expiratory Pressure (VPEP). VPEP produces expiratory pressure and vibratory oscillations that help loosen and mobilize secretions.

# Inner Cannula Care

**[Delete section if service does not support clients with inner cannulae]**

Staff must ensure they are familiar with the tube type, its removal and locking procedures, as well as whether there must always be an inner cannula in place, before considering removing the inner cannula. Staff must also ensure they are competent and confident to undertake both assessment and procedure.

An assessment on the need for inner cannula care should be performed upon each attendance, with the frequency of care being dependent upon the individual and the level and viscosity of their secretions. Ideally, the inner cannula should be removed and inspected once every 8 hours (4 hours for children with an inner cannula tracheostomy) to assess the need for cleaning and prevent any obstruction. Those with thick or copious secretions will require more regular cleaning. When cleaning the inner cannula staff should:

* Ensure the client is in an upright position with the neck slightly extended.
* Ensure the airway is clear and perform tracheal suction, if necessary.
* Stabilise the outside of the tube, removing the inner tube with the other hand.
* If the inner tube is clean and clear of secretions, reinsert.
* If in need of cleaning, replace with a clean/spare inner cannula (if necessary) and clean the soiled inner tube in [insert water type (i.e., under running hot water and, if necessary, a tracheostomy cleaning brush or sponge (do not soak or scrub) or sterile water)].
* Shake excess water from the inner cannula, place in a covered clean container to dry.
* If the tube is coated with dried secretions it may need to be disposed of.
* Replace the spare inner cannula, if needed, and lock into place.

Inner tubes must not be left to sit in water as this can lead to bacterial growth.

Abrasive wire brushes must not be used for cleaning purposes as these may cause scratch marks on the inside of the tube and risk colonisation.

More information on cleaning the inner cannula can be found here from the NTSP: <https://www.tracheostomy.org.uk/healthcare-staff/basic-care/inner-cannula-care>.

# Changing the Tracheostomy Tube

Tracheostomy tubes should be changed according to the manufacturer’s instruction and will be performed by:

* **[Delete as appropriate]** Nursing staff trained and competent in doing so.
* **[Delete as appropriate]** External professionals organised in advance of a tube change being needed. Staff at [Company Name] will not change tracheostomy tubes.
* **[Delete as appropriate]** Client’s trained and competent to do so.

**[Delete paragraph as appropriate]** There may be instances where a client is able to change their own tracheostomy tube. After being taught the procedure before home admission, and practicing, they should feel confident about doing this themselves. Staff should ensure that a client is confident, competent and willing to change their own tracheostomy tube before care plans are amended to reflect this.

Staff should make sure an extra tube is available and ready to change if it is needed in an emergency. The time interval between changes depends upon the special needs of each individual and the manufacturer’s instructions. The tracheostomy tube should always be changed to a new one if the tube has become blocked and suctioning will not quickly clear it.

**[Delete paragraph if staff never change a tracheostomy tube]** [Company Name]’s nursing staff will only undertake tracheostomy changes for well-established stomas that have had uneventful tube changes documented previously, and by following the NTSP’s ‘Blind’ insertion procedures: <https://www.tracheostomy.org.uk/healthcare-staff/basic-care/changing-a-tracheostomy-tube>.

**NOTE:** There is usually a need for suctioning after a tracheostomy change. The individual will need to rest after the change. Allow time needed to rest and recover. Changing the tracheostomy tube can often produce more secretions over the next several hours. It is also common for the change to cause a little irritation to the airway, and pinkish secretions are usually suctioned after the change. These pinkish secretions should disappear within a few hours of the change.

# Changing the Tracheostomy Tube Ties

Tracheostomy tubes will generally be held in place with a velcro tie. These should be regularly changed whenever they become wet or dirty. When retying the ties, do not pull them too tight, as you may decrease the blood flow to the individuals head and cause too much pressure to the skin of the neck.

Tracheostomy tie changes should always include someone to change the tie and another person to support the tube securely in place and prevent it from falling out.

**Procedure:** Prepare all equipment. Wash your hands. Decide who will do what. Position the client in a comfortable way so that the tracheostomy tube and stoma area are easily reached.

* Person A: Hold the tracheostomy in place with tips of fingers.
* Person B: Cut or unstick the old ties. Check the skin and clean it appropriately. Dry the skin completely and apply barrier cream if needed.
* Person A: Continue to support the tube to prevent it from falling out.
* Person B: Replace the tracheostomy ties:
	+ Thread the tape through one side of the wing (flange) eyelet and secure.
	+ Bring the other end of the trach tie around the neck and insert the end through the second eyelet on the opposite side.
	+ Pull (carefully) so the tie is snug and flat against the skin and secure. The top thin strap must sit on the thicker strap underneath.
	+ Check the tie is not too tight, should be loose enough to barely allow one finger beneath the tie.
* Person A: let go of the tracheostomy tube.

**NOTE:** The tracheostomy tie should be tight enough so that the tube will not pull out, but loose enough so that you can slide your little finger under the tie. Be sure to follow the manufacturer instructions.

# Cuff Management

**[Delete section as appropriate]**

Cuff pressure should be maintained in line with the prescription from the discharging hospital/respiratory/ENT Team.

As a guide cuff pressure is usually kept between 15–25cmH2O (10–18mm Hg), with the accepted pressure being the minimum required to prevent a cuff leak but which **must not** exceed 35cmH2O.

Staff must check a client’s cuff pressure every [Insert (e.g., visit, 8 hours, shift)] and record this in the client’s care plan.

The majority of clients discharged from hospital with a tracheostomy will be done so with an uncuffed tube and as such, will not require cuff management.

However, [Company Name] also accepts clients with cuffed tubes. Some examples of clients that may be discharged into the community with a cuffed tube are those who:

* Require long term ventilation, either continually or intermittently (e.g. overnight).
* Have a reduced conscious level or neuromuscular or mechanical problems affecting the pharynx. The airway is at risk of aspiration of gastric contents and a cuffed tube can provide a degree of protection against this.
* Have excessive oral secretions that cannot be managed by the person’s own efforts.

Staff caring for clients with a cuffed tracheostomy must monitor the cuff pressure carefully. Over or under inflated cuffs can lead to both minor and life-threatening complications.

Complications from the continued use of an over inflated cuff include, for example:

* 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-oesophageal fistula (an un-planned communication between the rear wall of the trachea and the oesophagus which lies behind. This can lead to gastric contents contaminating the airway).
* Tracheo-inominate artery fistula (an artery near the trachea can get damaged due to prolonged pressure).
* De-sensitisation of the larynx, a reduced cough reflex and loss of voice or sound production.

Complications from an under inflated (too low a pressure) cuff will cause an air leak leading to ineffective positive pressure ventilation. As well as develop folds which permit micro-aspiration of secretions that have collected above the cuff, increasing the risk of nosocomial pneumonia.

**Cuff leaks**

Cuff leaks can come from a number of sources and may also be associated with a partially displaced tube. Sources of leaks include:

* Defective or damaged cuff (sometimes occur on insertion of the tube).
* Cuff not adequately inflated (see above).
* Client 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.

Adding more air to the cuff or precariously positioning the tube or client is not a solution to an intermittent cuff leak.

Staff should consider all potential options when locating the source of a cuff leak, including those that may not be directly associated with the tube. If an intermitted cuff leak is identified staff must escalate this to the Clinical Lead and consider specialist input.

**Cuff deflation**

**[Delete section as appropriate]**

Cuff deflation will only occur after a review by the multidisciplinary team and by appropriately trained and skilled staff. Clients who may require cuff deflation include those:

* prior to tube removal
* prior to assessment of their ability to manage oral secretions
* prior to eating or drink (where swallowing is assessed as safe)
* using a speaking valve or occlusion (decannulation) cap
* on a structured weaning programme.

Cuff deflation must be undertaken with two appropriately skilled and experienced staff present as follows:

* Suction via tracheostomy and/or mouth (where necessary).
* Deflate the cuff slowly using a clean syringe to aspirate air from the cuff via the pilot balloon - the client should be asked to take a breath in and exhale strongly or cough as the cuff is deflated (or time with the expiratory phase for ventilated clients).
* Perform tracheal suction as necessary while deflating the cuff.
* Assess client comfort, respiratory rate and oxygen saturation throughout the procedure.
* Assess the need for re-inflation and re-inflate if required.

Cuff deflation is not always a benign process and clients must be adequately monitored.

# Tracheostomy Emergencies

WHEN IN DOUBT, SHOUT! Start emergency care procedures, and if the emergency is not quickly resolved, call 999. Use clinical judgement to determine which service is needed.

Staff must notify the Clinical Lead/On Call Duty Manager as soon as it is safe to do so in the event of a potential or actual emergency.

Tracheostomy emergencies can develop rapidly into life threatening situations and [Company Name] aims to ensure staff have the right knowledge, equipment and support to manage these in a structured way.

**Emergency equipment**

While some clients discharged home with a tracheostomy will have the necessary emergency equipment in place to support their tracheostomy and situation in the event of an emergency, it is possible that not all clients will have this. [Company Name] are responsible for assisting clients in obtaining access to emergency equipment to manage their neck airway at home.

The equipment within these kits will vary from client to client and staff are responsible for familiarising themselves with the equipment available, considering what equipment is necessary and/or may still be needed and checking that items within the kit remain present and in date every [insert (how often, e.g., day, week)].

In general emergency kits will contain:

* Spare trachy tubes (same size, plus one smaller size)
* Suction catheters
* Scissors
* Stitch cutter
* Lubricating jelly
* Tapes

Some clients may also have basic airway equipment such as oxygen, oxygen masks, self-inflating bags, oral and nasal airways.

# Adult Tracheostomy Red Flags and Resuscitation

**[Delete the above ‘Adult Tracheostomy Red Flags and Resuscitation’ header if no paediatric section being used in this policy]**

**Red Flags**

There are often warning signs, or ‘red flags’ that can alert staff that there may be a problem with a tracheostomy. Staff are responsible for swiftly investigating and addressing any problems before they develop.

If a problem with the airway is present and staff are unsure or do not have the skills to manage and/or address this contact the emergency services (999) immediately.

Any red flag should be immediately escalated to the Clinical Lead/On Call Duty Manager to consider specialist involvement if not a 999 emergency.

Tracheostomy red flags can be divided into:

* **Airway flags:**
	+ For any tracheostomy type grunting, snoring or stridor are signs of an airway problem.
	+ **[Delete as appropriate]** For cuffed tracheostomies, a client who is able to talk or has audible air leaks or bubbles of salvia seen or heard at the mouth or nose suggests gas is escaping past the cuff.
* **Breathing flags:**

Listening to the client or observation of any ventilation machinery may show that the client:

* + Is not breathing.
	+ Has difficulty in breathing (or with ventilation), and may have:
		- accessory muscle use
		- increased respiratory rate
		- higher airway pressures
		- lower tidal volumes.
	+ Has hypoxia.
	+ Is making whistling noises or has noisy breathing.
* **Specific tracheostomy flags:**

Careful observation may show that the client:

* + has a visibly displaced tracheostomy tube
	+ has blood or blood-stained secretions around the tube
	+ 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
		- the tube may be displaced and the cuff needs hyper-inflation to keep it ‘sealed’.
* **General flags:**

Any physiological change 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.

**Emergency resuscitation procedures**

In the event of an emergency staff should follow the following algorithm created from the [National Tracheostomy Safety Project: Emergency Care (Adults)](https://www.tracheostomy.org.uk/healthcare-staff/emergency-care) in [Appendix 1: Emergency Tracheostomy Management (Adult) – Patent Upper Airway](#_Appendix_1:_Emergency).

These emergency procedures assume that the person has a potentially patent upper airway, meaning that it is anatomically possible for the upper airway to connect to the trachea and allow ventilation by this route (NOT for persons with a laryngectomy).

However, always note the original reason for the tracheostomy as it may have been due to a difficult or even impossible upper airway.

Staff must only respond and act within their scope of expertise, skills and experience.

If a client is not breathing, staff should start by treating them as they would any other collapsed person not breathing.

Staff should be aware of and follow the principles of ABCDE assessment and airway management/CPR as detailed in the Medical Emergencies and Deteriorating Person Policies, as well as the following acknowledging that clients with a tracheostomy are likely to have two airways (the native upper airway and the tracheostomy):

1. Open the airway using head tilt and chin lift. If there is a risk of cervical spine injury use a jaw thrust instead (chin lift can be used with manual in-line stabilisation, if there are enough people available). If life-threatening airway obstruction persists, add a head tilt in small increments until the airway is open.
2. Maintain the airway and in under 10 seconds look, listen and feel to determine if the client is breathing (if appropriately trained check for carotid pulse at the same time):
	* look for chest movement (breathing or coughing)
	* look for any other movement or signs of life
	* listen at the client’s mouth and tracheostomy tube for breath sounds
	* staff should feel for air on their cheek.

**[Delete whole paragraph if Mapleson C not available]** If present and available, a Mapleson C breathing system attached to a face mask placed over the face or tracheostomy stoma can offer visual clues to confirmation of respiration. **[Delete if capnography not available]** Waveform capnography, if available, can also be used to assess breathing.

If the client is not breathing and/or there are no signs of life staff should call the emergency services (999) and ask for an ambulance immediately and then identify whether there is a primary tracheostomy cause.

Check tracheostomy patency as follows:

1. Remove any device attached to the tracheostomy tube in this first instance. This is to check for the inappropriate use of obstructing (decannulation) caps or obturators attached to the tracheostomy tube, as well as any incorrectly used speaking valves or humidifying devices blocked with secretions in the first instance.
2. Remove any inner tube, if present, to check for obstruction.
3. Pass a soft suction catheter through the tracheostomy to establish whether the tube is patent.

If the suction tube passing easily into the trachea, then the tracheostomy can be assumed to at least be partially patent and ABCDE assessment and/or CPR should continue as per the Medical Emergencies Policy, with only gentle hand resuscitation (do not use a breathing circuit) being used during ventilation phases (in case of partial displacement).

Effective ventilation via the tracheostomy for a client not breathing requires an inflated cuff (with unfenestrated inner tube, if necessary) to seal the trachea and allow positive pressure to be delivered to the lungs.

If the suction catheter will not pass, the tracheostomy can be reasonably assumed to be blocked or displaced. Staff should perform the following actions to attempt to regain airflow:

1. **Deflate the distal cuff**, if present: in a partially displaced tracheostomy, deflating the cuff may allow for airflow to reach the lungs from the upper airway. If following deflation the airway is patent, continue with the ABCDE assessment and await emergency service attendance.
2. **Remove the tracheostomy tube**: if deflating the cuff has no effect, the tube may either be completely blocked or displaced, preventing the client being able to adequately breathe around the tube. The tracheostomy tube should be removed (the benefits of removing the tube outweigh the complications of a difficult airway in a rapidly deteriorating client) and reassess the clients breathing from both mouth and stoma. This may resolve the immediate airway problem and allow staff to continue an ABCDE assessment and await emergency services.
3. **Emergency oxygenation:** if the client fails to improve after removing the tracheostomy tube, primary oronasal emergency oxygenation may be achieved. The choice of route is dependent upon the expertise of the attending staff member:
	* occlude the tracheal stoma and ventilate the upper airways
	* occlude the client’s nose and mouth and ventilate the tracheal stoma with a small paediatric or laryngeal mask
	* if sufficient staff present, ventilate both the tracheal stoma and upper airways simultaneously.
4. **Secondary emergency oxygenation:** secondary emergency oxygenation procedures, such as oral intubation and tracheostomy stoma intubation, require persons trained in intubation and should not be performed by [Company Name] staff. Staff should await emergency services attendance.

Waveform capnography should be used to confirm effective ventilation in all of the above situations. Staff should prepare to handover to emergency services using either a SBAR (Situation, Background, Assessment, Recommendation) or RSVP (Reason, Story, Vital signs, Plan) format.

# Paediatric Tracheostomy Red Flags and Resuscitation

**[Delete section AND Appendix 2 if not applicable]**

**Red Flags**

As within the adult section of this policy, there are often warning signs, or ‘red flags’ that can alert staff that there may be a problem with a tracheostomy. Staff are responsible for swiftly investigating and addressing any problems before they develop.

If a problem with the airway is present and staff and/or the child’s parents are unsure or do not have the skills to manage and/or address this contact the emergency services (999) immediately.

Any red flag should be immediately escalated to the Clinical Lead/On Call Duty Manager to consider specialist involvement if not a 999 emergency.

Paediatric red flags most often include signs of significant respiratory distress, i.e., a child who has:

* noisy breathing
* recession
* fast and/or laboured breathing
* cyanosis
* hypoxia/dropping saturations (where saturations monitor is present).

In the presence of any of the above red flags, staff should attempt to pass a suction catheter and assess the tracheostomies tubes patency. If a suction catheter cannot be passed the tube is likely occluded and emergency procedures should be followed.

**Emergency resuscitation procedures**

In the event of an emergency staff should follow the following algorithm created from the [National Tracheostomy Safety Project: Emergency Care (Child)](https://www.tracheostomy.org.uk/healthcare-staff/emergency-care-child) in [Appendix 2: Emergency Paediatric Tracheostomy Management](#_Paediatric_Tracheostomy_Red).

These emergency procedures assume that the child has a potentially patent upper airway, meaning that it is anatomically possible for the upper airway to connect to the trachea and allow ventilation by this route (NOT for children with a laryngectomy).

However, always note the original reason for the tracheostomy as it may have been due to a difficult or even impossible upper airway.

Staff must only respond and act within their scope of expertise, skills and experience.

If a child is not breathing, staff should start by treating them as they would any other collapsed child not breathing.

Staff should be aware of and follow the principles of ABCDE assessment and airway management/CPR as detailed in the Medical Emergencies and Deteriorating Person Policies, as well as the following acknowledging that children with a tracheostomy are likely to have two airways (the native upper airway and the tracheostomy):

1. If the child is not responding normally or to stimulation shout for help and/or call emergency services (999).
2. Open the airway using head tilt and chin lift, use a pillow or towel under the shoulders to help. If life-threatening airway obstruction persists, add a head tilt in small increments until the airway is open.
3. Maintain the airway and in under 10 seconds look, listen and feel to determine if the child is breathing (if appropriately trained check for carotid pulse at the same time):
	* look for chest movement (breathing or coughing)
	* look for any other movement or signs of life
	* listen at the child’s mouth and tracheostomy tube for breath sounds
	* staff should feel for air on their cheek.
4. Apply high flow oxygen to both the tracheostomy and the face as soon as oxygen is available.
5. **[Delete if not available]** If available, use waveform capnography, to check to exhaled carbon dioxide which may indicate a patent airway.

Check tracheostomy patency as follows:

1. Remove any device attached to the tracheostomy tube in this first instance, for example humidifier (HME) and speaking valves.
2. Remove any inner tube, if present, to check for obstruction.
3. Pass a soft suction catheter through the tracheostomy to establish whether the tube is patent.

If the suction tube passing easily into the trachea, then perform tracheal suction and the tracheostomy can be assumed to at least be partially patent and ABCDE assessment and/or CPR should continue as per the Medical Emergencies Policy, with only gentle hand resuscitation (do not use a breathing circuit) being used during ventilation phases (in case of partial displacement).

Effective ventilation via the tracheostomy for a child not breathing requires an inflated cuff (with unfenestrated inner tube, if necessary) to seal the trachea and allow positive pressure to be delivered to the lungs.

If the suction catheter will not pass, the tracheostomy can be reasonably assumed to be blocked or displaced. Staff should perform the following actions to attempt to regain airflow:

* **Deflate the distal cuff**, if present: in a partially displaced tracheostomy, deflating the cuff may allow for airflow to reach the lungs from the upper airway. If following deflation the airway is patent, continue with the ABCDE assessment and await emergency service attendance.
* **Change the tracheostomy tube**: if deflating the cuff has no effect, the tube may either be completely blocked or displaced, preventing the child being able to adequately breathe around the tube. The tracheostomy tube should be changed as follows:
	+ 1st change – same size tube
	+ 2nd change – one-half size smaller tube
	+ 3rd change – over suction catheter to guide.

If the tracheostomy tube is successfully changed and the child is breathing, continue to provide oxygen, stabilise, reassess, review and await emergency service attendance.

* **Remove the tracheostomy tube:** if changing the tube was unsuccessful, remove the tube (the benefits of removing the tube outweigh the complications of a difficult airway in a rapidly deteriorating child) and reassess the child’s breathing from both mouth and stoma. This may resolve the immediate airway problem and allow staff to continue an ABCDE assessment and await emergency services.

If the child is not breathing and/or there are no signs of life and staff have not already done so, staff should call the emergency services (999) and ask for an ambulance immediately.

* **Resuscitation:**
	+ give 5 rescue breaths - if upper airway is patent use the nose/mouth, if the upper airway is obstructed, use the tracheostomy/stoma.
	+ If no signs of life start CPR as per the Medical Emergencies Policy.
* **Emergency oxygenation:** if the child fails to improve after removing the tracheostomy tube, primary oronasal emergency oxygenation may be achieved. The choice of route is dependent upon the expertise of the attending staff member:
	+ occlude the tracheal stoma and ventilate the upper airways
	+ occlude the child’s nose and mouth and ventilate the tracheal stoma with a small paediatric or laryngeal mask
	+ if sufficient staff present, ventilate both the tracheal stoma and upper airways simultaneously.
* **Secondary emergency oxygenation:** secondary emergency oxygenation procedures, such as oral intubation and tracheostomy stoma intubation, require persons trained in intubation and should not be performed by [Company Name] staff. Staff should await emergency services attendance.

Waveform capnography should be used to confirm effective ventilation in all of the above situations. Staff should prepare to handover to emergency services using either a SBAR (Situation, Background, Assessment, Recommendation) or RSVP (Reason, Story, Vital signs, Plan) format.

# Documentation

All clients with a tracheostomy will have a robust and detailed management and treatment plan in place. This should be reviewed daily and changes handed over. A daily care record should include the (below) elements and continuity of care. It should be easy to locate specific documentation and instructions relating to (where appropriate):

* Speech and Language Therapy (SALT) - swallowing assessment and instruction.
* Plans for downsizing and decannulation.
* Physiotherapy plans.
* Risk Assessments.

It should contain care plan bundles such as (but not limited to) tube care, resus, airway, stoma care, humidification, environment, communication, mouth care and swallowing and nutrition.

# Monitoring

The effectiveness of this policy will be monitored through routine audit of client outcomes, as well as any client/carer and staff feedback/complaints/incidents.

# Related Policies

* Consent Policy
* Infection Prevention and Control Policy
* Person-Centred Care Policy
* Resuscitation Policy

# Legislation and Guidance

**Guidance**

* NTSP: Emergency Care (Adults): <https://www.tracheostomy.org.uk/healthcare-staff/emergency-care>
* NTSP: Emergency Care (Child): <https://www.tracheostomy.org.uk/healthcare-staff/emergency-care-child>
* NTSP: Basic Care (Adults): <https://www.tracheostomy.org.uk/healthcare-staff/basic-care>
* NTSP: Basic Care (Child): <https://www.tracheostomy.org.uk/healthcare-staff/paediatric>

# Summary of Review

|  |  |
| --- | --- |
| Version | 1 |
| Last amended | [Date of Issue] |
| Reason for Review |  |
| Were changes made? |  |
| Summary of changes |  |
| Target audience | Care staff, Managers |
| Next Review Date | [Date of Review] |

# Appendix 1: Emergency Tracheostomy Management (Adult) – Patent Upper Airway

**Continue ventilation and resuscitation as able.**

**Await emergency services attendance.**

**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

**Tracheostomy STOMA** ventilation. Paediatric face mask applied to stoma / LMA applied to stoma.

**NO**

**REMOVE THE TRACHEOSTOMY TUBE**

**Look, listen and feel at the mouth and tracheostomy.** Ensure oxygen re-applied to face and stoma.

Use waveform capnography or Mapleson C if available.

**Is the client breathing?**

**Call 999 start CPR If no pulse/signs of life.**

**Continue ABCDE assessment.**

**YES**

**NO**

**NO**

**YES**

**YES**

Remove **speaking valve** or **cap** (if present).

Remove **inner tube (if present).**

Some inner tubes need re-inserting to connect to breathing circuits.

**Can you pass a suction catheter?**

**Tracheostomy tube is patent.**

Perform tracheal suction.

Consider partial obstruction.

Ventilate (via tracheostomy) if not breathing.

Continue ABCDE assessment.

Deflate the **cuff** (if present).

**Look, listen and feel at the mouth and tracheostomy.**

Use waveform capnography or Mapleson C if available.

**Is the client stable or improving?**

**Tracheostomy tube partially obstructed or displaced.**

Continue ABCDE assessment.

**Assess tracheostomy patency.**

Shout for help if nearby and available – consider 999 call in all airway situations.

**Look, listen and feel at the mouth and tracheostomy.**

Use waveform capnography if available – exhaled CO2 indicates a patent or partially patent airway.

**Is the client breathing?**

**YES**

**NO**

**Call emergency services (999) start CPR If no pulse/signs of life.**

**Apply high flow oxygen, if available, to both the face and the tracheostomy.**

# Appendix 2: Emergency Paediatric Tracheostomy Management

**SAFETY – STIMULATE – SHOUT FOR HELP - OXYGEN**

**SAFE:** **Check safe area, Stimulate and Shout for help.**

**AIRWAY:** **Open child’s airway:** head tilt / chin lift / pillow or towel under shoulders may help.

**OXYGEN:** Ensure **high flow oxygen** to the **tracheostomy AND face** as soon as oxygen is available.

**CAPNOGRAPHY:** Exhaled CO2 waveform may indicate a patent airway, if available.

**SUCTION TO ASSESS TRACHESOTOMY PATENCY**

**Remove attachments: humidifier (HME), speaking valve.**

**Change inner tube (if present).**

Inner tubes may need re-inserting to connect to breathing circuits.

**Can you pass a SUCTION catheter?**

**The tracheostomy tube is patent.**

Perform tracheal suction.

Consider partial obstruction.

**CONTINUE ABCDE ASSESSMENT.**

**YES**

**NO**

**EMERGENCY TRACHEOSTOMY TUBE CHANGE**

**Deflate cuff (if present). Reassess patency after any tube change.**

**1st change – same size tube.**

**2nd change – one-half size smaller tube.**

**3rd change – over suction catheter to guide.**

**IF UNSUCCESSFUL – REMOVE THE TUBE**

**5 RESCUE BREATHS**

**Patent Upper Airway – use the nose/mouth.**

**Obstructed Upper Airway – use the tracheostomy/stoma.**

**NO SIGNS OF LIFE? START CPR**

**IS THE CHILD BREATHING? – Look, listen and feel at the mouth and tracheostomy/stoma.**

**Continue oxygen.**

**Stabilise.**

**Reassess.**

**Review.**

**Plan for definitive airway if tube change failure.**

**CALL FOR HELP: Emergency services 999**

**NO**

**YES**

**15 Compressions : 2 Rescue breaths**

**Ensure 999 emergency services have been called.**

**Continue ventilation and resuscitation as able.**

**Await emergency services attendance.**

**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

**Tracheostomy STOMA** ventilation. Paediatric face mask applied to stoma / SGA to stoma.