

Tracheostomy Care in Critical Care

Aim To provide guidance on the insertion, daily care, and emergency management of tracheostomies in Critical Care

Scope All adult patients in Critical Care with a tracheostomy

Tracheostomy Insertion Checklist

Check 1: Preparation

T	Team (all introduced)	Airway Airway assistant Operator Operator assistant/runner
	Reason	Consider reason for insertion
	Risks	Consider risks if high PEEP/FiO ₂ , difficult anatomy, C-spine concerns
	Resources	Ensure all appropriate equipment present and checked
A	Airway plan	Difficult airway trolley and bronchoscope present/checked Airway management plan discussed
	Anaesthetic plan	Respiratory monitoring (including capnography) present Ventilator settings checked Patient adequately sedated and paralysed
	Aspirate	Aspirate NGT (stop insulin if running)
	Choice of tube	Consider patients BMI – is an adjustable flange tube needed? Check cuff
C	Consent	Ensure form 4 completed
	Haemodynamics	Ensure full monitoring in place
H	Haemorrhage	Ensure clotting checked and heparin stopped/omitted
	Expose and position the patient properly	Is a percutaneous tracheostomy still possible? Consider ultrasound

Check 2: Just prior to starting procedure

Right patient
Right staff present
Right equipment (including tracheostomy tube)
Right time to be doing the procedure
Right method (surgical vs percutaneous)

Is everyone present
ready to proceed?

Yes **No**

Check 3: Post procedure

Confirm tube is in airway	End tidal CO ₂ (value and waveform)
	Chest wall movement with ventilation
	Direct vision with bronchoscope
Check position of tip tube in relation to carina	Tip should be 2-5cm from the carina
Ensure inner tube in place	
Check cuff pressure	15-25cm H ₂ O
Secure tracheostomy	Dressing and ties
Ventilator settings/patient sedation	Review post procedure
Documentation	Complete CIS note, CXR if clinically indicated
	Handover to bedside nurse

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Choice of tracheostomy tube

Insertion (*insertion kits*)

Small body size

(e.g. petite elderly female)

Tracoe Twist Plus subglottic aspiration

Size 7

Default

Tracoe Twist Plus subglottic aspiration

Size 8 or 9

Large body size

Uniperc adjustable flange

Size 7 or 8

Subsequent changes on ICU

Small body size

(e.g. petite elderly female)

Tracoe Twist Plus subglottic aspiration

Size 7

Default

Tracoe Twist Plus subglottic aspiration

Size 8 or 9

Large body size

Uniperc adjustable flange

Size 7 or 8

Discharge to the ward

Note: NO SUBGLOTTIC ASPIRATION TUBES TO BE SENT TO THE WARD

Small body size

(e.g. petite elderly female)

Tracoe Twist Standard

Size 6 or Tracoe Twist Plus
Size 7

Default

Tracoe Twist Plus
Non subglottic aspiration

Size 6, 7 or 8

Large body size

Uniperc adjustable flange

Size 7 or 8

CONSIDER WHETHER
ADJUSTABLE FLANGE STILL
NEEDED

Tracheostomy daily care

Oxygen therapy & humidification

- Ensure adequate humidification delivered (ventilated **and** non ventilated patients)

Inner cannula

- Inner cannula should be removed, inspected & cleaned **every 4 hours** (*see note in text*)
- Spare inner cannula to be kept at bedside
- Dirty cannula cleaned with sterile water & left to air dry

Secretions and suctioning

- Deep suctioning should be performed as often as clinically indicated but minimum **every 4 hours** if fully ventilated
- Secretions can be suctioned from tracheostomy opening using Yankeur sucker if using trache mask

Stoma care & securing the tracheostomy

- **Minimum of once per 24 hours:**
 - Inspect stoma site for infection
 - Clean stoma with sterile gauze & saline/water
 - Change dressing and ensure tapes secure

Cuff check

- Check cuff pressure a **minimum of once per shift**
- Cuff pressure should be below 20-25cmH₂O (*bottom of green on the manometer*)
- Check more frequently as indicated

Oral care & assessment of swallowing

- Daily oral care (see DCCQ Mouth care SOP)
- Regular assessment of swallowing

Documentation

- All tracheostomy observations should be documented on CIS

Safety

- Ensure continuous capnography in place
- Ensure bedhead sign in place
- Be familiar with tracheostomy red flags and emergency algorithms

Tracheostomy daily care at a glance

Oxygen therapy & humidification

Mechanical Ventilation

Hypertonic saline, specific mucolytics (e.g. carbocisteine)

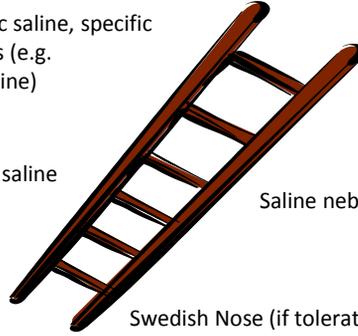
Active humidification

Saline nebulisers: 5-10mls 0.9% saline

Saline nebulisers: 5-10mls 0.9% saline



Active humidification



Swedish Nose (if tolerated)

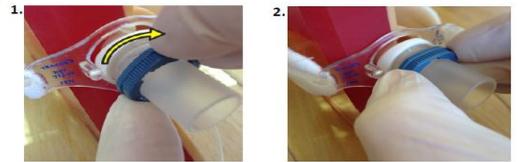
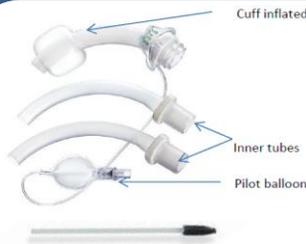


Trache mask



For all patients: Mobilisation as able, regular physiotherapy, encourage coughing if able

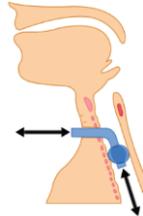
Care of inner cannula



To lock the inner tube in place, grip the outer locking ring and turn clockwise.
(To unlock twist the ring anti-clockwise)

Tracheostomy should be kept patent through regular suctioning and care of inner cannula
A blocked inner cannula = a blocked airway

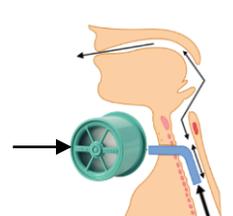
Cuff management



Cuff should be adequately inflated with cuff pressure 20-25cmH₂O



Loss of cuff pressure or new cuff leak may indicate the tracheostomy is incorrectly sited



Speaking valve should only be applied when the cuff is fully deflated

Capnography

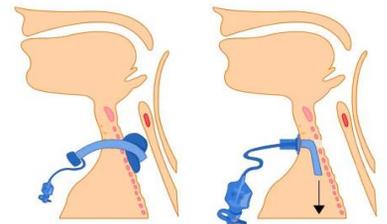
Sudden loss of waveform

- ET tube disconnected, dislodged, kinked or obstructed
- Loss of circulatory function



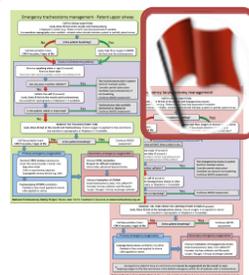
Decreasing EtCO₂

- ET tube cuff leak
- ET tube in hypopharynx
- Partial obstruction



Continuous capnography can alert to a blocked, partially blocked or displaced tracheostomy

Safety



Back - wall side

This patient has a **TRACHEOSTOMY**
There is a potentially patent upper airway (intubation may be difficult)

Percutaneous / Surgical (circle)

Performed on (date) _____

Tracheostomy tube size _____

Cuffed / uncuffed / adjustable flange (circle)

Other contacts: ICU: 0103 3087 / Ex 9792 | Anaesthetics: 3822 | ENT: Via switchboard | Cardiac arrest: 2322

Back - wall side

This patient has a **LARYNGECTOMY**
and CANNOT be intubated or oxygenated via the mouth

Performed on (date) _____

Is a tracheostomy tube in place YES / NO

Tracheostomy tube size (if present) _____

Cuffed / uncuffed / adjustable flange (circle)

Other contacts: ICU: 0103 3087 / Ex 9792 | Anaesthetics: 3822 | ENT: Via switchboard | Cardiac arrest: 2322

Emergency tracheostomy management (ICU non ventilated)



Red flags including:
Increased respiratory rate
Falling saturations
Unexplained agitation

Consider:
Blocked tracheostomy
Displaced tracheostomy
Non trache related causes

Call for appropriate help
Nurse in charge
ICU Registrar (Bleep 1987)
ICU Consultant



Look, listen & feel at the mouth and tracheostomy
Ensure capnography attached, consider using Mapleson C system



Is the patient breathing?

No

Yes

CPR if no pulse/signs of life
Refer to cardiac arrest algorithm

Apply high flow oxygen to **BOTH**
face and tracheostomy

Assess tracheostomy PATENCY

Position head in neutral position , remove speaking valve
Encourage patient to cough if able
Remove, inspect and replace inner tube

Can you pass a suction catheter easily?

Yes

The tracheostomy tube appears patent
Continue ABCDE assessment
Attach to ventilator if needed

No

Deflate the cuff
Look listen & feel at mouth & tracheostomy
Is the patient stable or improving?

Yes

The tracheostomy tube appears partially obstructed or displaced
Continue ABCDE assessment

No

REMOVE THE TRACHEOSTOMY TUBE

Ensure oxygen to face & cover stoma with gauze
Consider re insertion of tracheostomy (established tract), oral intubation or remain decannulated

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

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

Emergency tracheostomy management (ICU ventilated)



Red flags
Increased respiratory rate
Falling saturations
Unexplained agitation

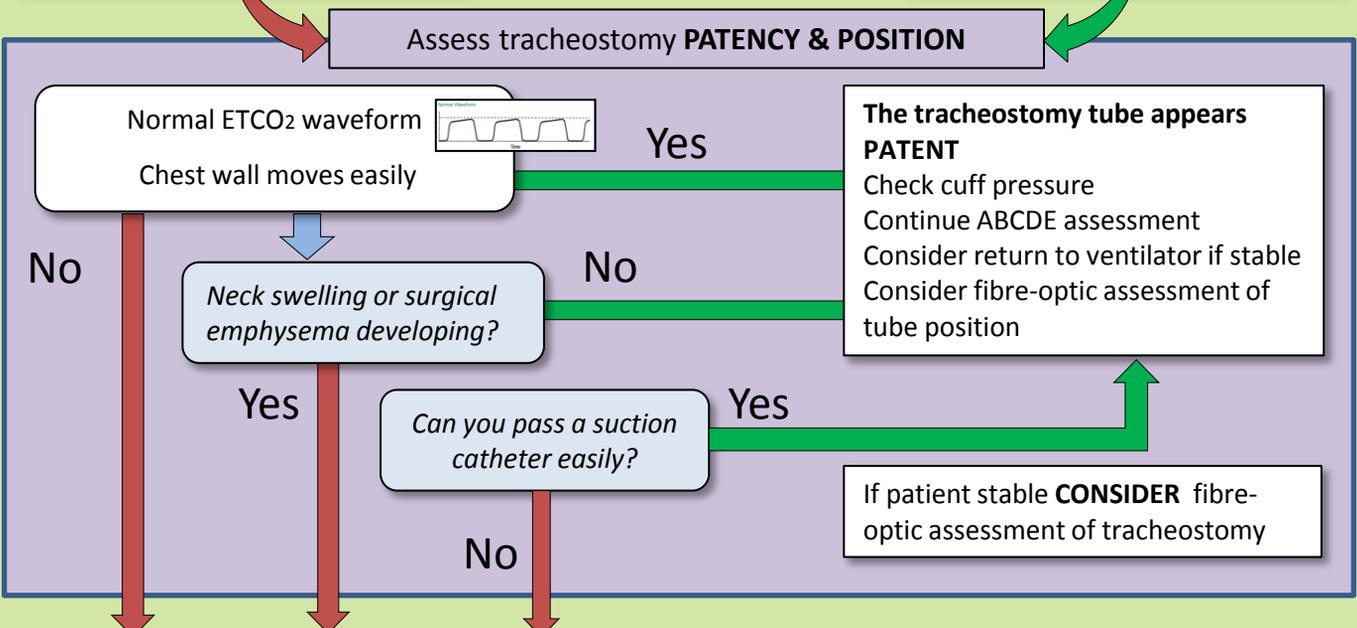
Consider
Blocked tracheostomy
Displaced tracheostomy
Non trache related causes

Call for appropriate help
Nurse in charge
ICU Registrar (Bleep 1987)
ICU Consultant

Disconnect from ventilator
Remove inspect & replace inner tube
Ensure capnography in place & ventilate gently using Water's circuit

CPR if no pulse/signs of life
Refer to cardiac arrest algorithm

Apply high flow oxygen to **BOTH**
face and tracheostomy



REMOVE THE TRACHEOSTOMY TUBE
Ensure oxygen to face & cover stoma with gauze
Plan for oral re intubation
(consider re insertion of tracheostomy IF established tract AND patient stable)

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

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 fibreoptic
'scope / Bougie / Airway exchange catheter

Tracheostomy emergency – CARDIAC ARREST (ICU)

Confirm cardiorespiratory/respiratory arrest | Call for help

Assess tracheostomy patency and provide ventilation

Position head in neutral position
Remove speaking valve (if present)
Ensure cuff inflated
Ensure capnography in place

Attach Waters circuit to tracheostomy + 15l O₂
Give 2 GENTLE inflations
Does the chest move easily with ventilation?
Is an appropriate end tidal CO₂ trace seen?

No

Remove, inspect and replace inner tube
Suction via tracheostomy
Does the chest move easily with ventilation?
Is an appropriate end tidal CO₂ trace seen?

No

Deflate the cuff
Can you ventilate via FACE using bag + mask?*

No

SPECIALIST RESPONDER

If tracheostomy **displaced** - remove tube
Cover stoma with gauze and apply pressure
Ventilate via FACE using bag + mask*
Prepare to secure airway (see over)

Start chest compressions If no/inadequate output

Fetch cardiac arrest trolley

Continue **continuous** chest compressions
100-120 per minute

Ventilate at 10-12 breaths/min

Management of cardiac arrest
as per ALS guidelines

Continue CPR rate **30:2** with facemask ventilation

Management of cardiac arrest
as per ALS guidelines

Once airway secured move to asynchronous ventilation/compressions

YES

YES

YES

YES

* Remember airway opening manoeuvres: head tilt, chin lift, jaw thrust. Consider use of oral and NP airway adjuncts
Remove tracheostomy tube if no chest wall movement and no appropriate ETCO₂ trace seen

**REMEMBER LARYNGECTOMY PATIENTS CANNOT BE INTUBATED VIA THE MOUTH
INSERT ORAL ENDOTRACHEAL TUBE OR TRACHEOSTOMY INTO STOMA TO VENTILATE**

Emergency tracheostomy management - Patent upper airway

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

Is the patient breathing? (No/Yes)

Call Resuscitation Team
CPR if no pulse / signs of life

Apply high flow oxygen to **BOTH**
 the face and the tracheostomy

Assess tracheostomy patency

Remove **speaking valve or cap** (if present)
 Remove **inner tube**
 Some inner tubes 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
 Ventilate (via tracheostomy) if not breathing
 Continue ABCDE assessment

Deflate 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?

Tracheostomy tube partially obstructed or displaced
 Continue ABCDE assessment

REMOVE 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

Call Resuscitation team
CPR if no pulse / signs of life

Is the patient breathing? (No/Yes)

Continue ABCDE assessment

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
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Tracheostomy care on the Critical Care Unit

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Quick reference guide:

Daily tracheostomy care

Note: One shift = One 8 hour period

Oxygen therapy & humidification

- Ensure adequate humidification delivered (ventilated **and** non ventilated patients)

Inner cannula

- Inner cannula should be removed, inspected & cleaned **every 4 hours** (*see note in text*)
- Spare inner cannula to be kept at bedside
- Dirty cannula cleaned with sterile water & left to air dry

Secretions and suctioning

- Deep suctioning should be performed as often as clinically indicated but minimum **every 4 hours** if fully ventilated
- Secretions can be suctioned from tracheostomy opening using Yankeur sucker if using trache mask

Stoma care & securing the tracheostomy

- **Minimum of once per 24 hours:**
 - Inspect stoma site for infection
 - Clean stoma with sterile gauze & saline/water
 - Change dressing and ensure tapes secure

Cuff check

- Check cuff pressure a **minimum of once per shift**
- Cuff pressure should be below 20-25cmH₂O (*bottom of green on the manometer*)
- Check more frequently as indicated

Oral care & assesement of swallowing

- Daily oral care (see DCCQ Mouth care SOP)
- Regular assessment of swallowing

Documentation

- All tracheostomy observations should be documented on CIS

Safety

- Ensure continuous capnography in place
- Ensure bedhead sign in place
- Be familiar with tracheostomy red flags and emergency algorithms

1. INTRODUCTION

A tracheostomy is placed for a number of reasons. The tracheostomy may be a means of creating a patient airway in the case of upper airway obstruction, it may be used in the weaning of patients from mechanical ventilation, it may be placed for patients who are unable to protect their own airway or it may be inserted as part of a head and neck surgical procedure.

Most of the tracheostomies placed on the ICU are temporary and are removed prior to discharge, however some patients may be admitted with a permanent tracheostomy or have a tracheostomy that subsequently becomes permanent. Although most are removed prior to discharge, some patients may be discharged to the ward with a tracheostomy still in place.

While the tracheostomy is in place it needs to be cared for to maintain the patency of the tube, to prevent infections and to prevent or manage complications associated with a tracheostomy.

The elements of care associated with a tracheostomy together form a care bundle and fall under the following headings.

1. Assessment of the patient
2. Maintenance of the tracheostomy and stoma
 - a. Humidification to prevent secretions blocking the tracheostomy
 - b. Regular cleaning and inspection of inner tube to prevent narrowing and blockage
 - c. Regular suctioning to prevent secretion build up
 - d. Change of tracheostomy dressing and attention to tracheostomy tapes/ties
3. Infection control
 - a. Correct method of suctioning to avoid introduction of infection
 - b. Regular assessment of tracheostomy stoma
 - c. Regular assessment of respiratory secretions
4. Safety
 - a. Check list of essential bedside equipment
 - b. Use of bedhead signs containing key information regarding the tracheostomy for use in an emergency

2. PURPOSE

This document has been developed to:

- Guide ICU staff in the care of adult patients with temporary tracheostomies while they are on the Intensive Care Unit
- To provide best available local/national evidence for the management of tracheostomies.
- To help reduce potential complications associated with tracheostomies.
- To provide clear guidance in identification of warning signs (red flags) associated with the tracheostomy and emergency management.

3. SCOPE

This guideline applies to all patients on the Intensive Care Unit having a tracheostomy inserted and all those who have a tracheostomy in place (regardless of the location of its insertion).

This guideline does not apply to paediatric patients with tracheostomies.

4. DEFINITIONS

Tracheostomy: A tube placed through an incision at the base of the neck into the trachea.

Airway: This refers to the structures that air passes through leading from the nose and mouth down to the lungs.

Patent airway: An airway that allows free flow of air down to the lungs, and allows expelled air to pass from the lungs back out again is called a patent airway.

Obstructed airway: This is an airway where there is complete or partial obstruction to the free flow of air. This could be due to a blockage (e.g. tumour, swelling) or due to reduced muscular tone leading to the collapse structures.

Protected airway: This is an airway where reflexes are in place to prevent fluid (e.g. stomach contents, drink) going into the lungs. An airway can be patent yet not protected.

NTSP: National Tracheostomy Safety Project, national guidelines for management of patients with tracheostomies.

5. DUTIES AND RESPONSIBILITIES

The authors and Tracheostomy Support Team

6. PROCESS – see following

1. ASSESSMENT OF PATIENT

As part of patient assessment at the start of each shift, the tracheostomy should be specifically discussed and important points communicated.

When taking over the care of a patient with a tracheostomy: Think **TRACHE**

T	Time/type	When was it inserted? What type of trache? Surgical/perc, adjustable flange
R	Reason	Why was it inserted? E.g. airway obstruction, slow wean, neuromuscular condition
A	Airway	Are there any concerns regarding intubation? What are the secretions like?
C	CO₂/cuff	Is continuous capnography in place (value + trace) What is the cuff pressure? Any problems?
H	Help	Do I know who to ask for help?
E	Emergency	Do I know what to do in an emergency?

2. MAINTENANCE OF TRACHEOSTOMY AND STOMA

A. Humidification

Inadequate humidification may lead to life-threatening blockage of the tracheostomy tube



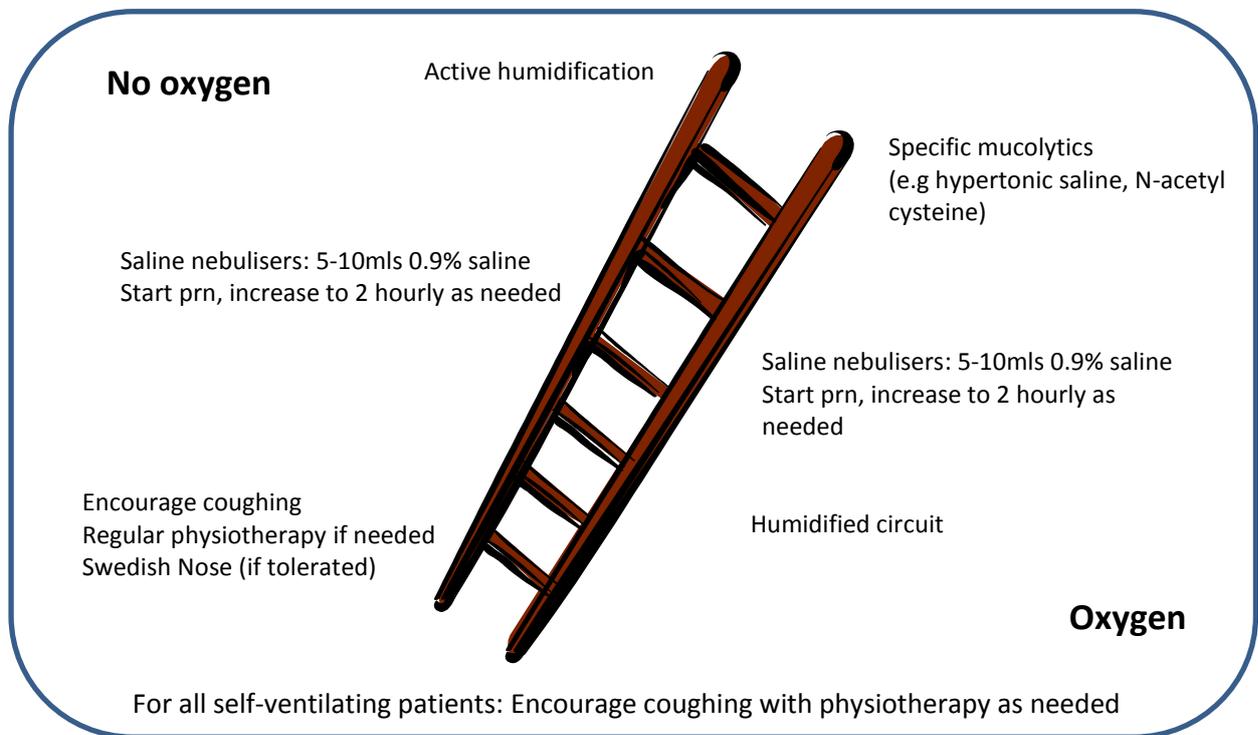
Increasingly thick secretions may indicate new infection and/or inadequate humidification. Thick secretions may lead to blockage of the tracheostomy so should be managed promptly and appropriately.

All patients on the ICU

Action	Rationale
Mobilization as able Early referral to physiotherapy if indicated Encourage coughing where appropriate (especially self-ventilating patients)	To aid removal of secretions
All patients should have a humidified circuit if ventilated Ensure inspired oxygen is humidified if self-ventilating via a tracheostomy mask	To moisten inspired gases. To ensure adequate humidification. Warm water carries a greater relative humidity than cold water Tracheostomy HME filters can be considered in

	self ventilating patients
If secretions remain problematic consider nebulized saline	To aid removal of secretions
Review daily the degree of humidification needed (refer to humidification ladder)	To reduce unnecessary interventions and to assess whether present level of humidification adequate

The degree of humidification can be shown as a ‘humidification ladder’ with a stepwise increase, or decrease in the intensity of humidification depending on the clinical situation. (Modified from NTSP 2013).



B. Care of inner cannula

The inner cannula must be removed, inspected and cleaned at least 4 hourly to prevent narrowing and blockage.



Blockage of the inner tube may be caused by respiratory secretions - this may be a complete or partial blockage and may lead to respiratory distress



Signs of respiratory distress:

- Unexplained increased respiratory rate
- Unexplained fall in tidal volumes
- Falling saturations
- Change in end tidal CO₂ value/tracing
- Indicating they cannot breath properly (where able)

Action	Rationale
Explain procedure to patient	To gain verbal consent, co-operation and reassure the patient
Pre oxygenate with 100% (oxygen breath)	To prevent hypoxia
Wash and dry hands, don apron, gloves and goggles	To reduce cross infection.
With one hand stabilize the actual tracheostomy tube and with the other hand remove the inner cannula and insert clean inner cannula Ensure that the clean inner cannula is locked in position	To maintain airway, prevent early build up of secretions and to maintain oxygenation.
Clean inner cannula with sterile water/saline, use cleaning brush if heavily soiled Dry and store in a dry clean container If very heavily soiled then dispose of and replace a new inner cannula at the bedside	To reduce infection risk Cannula should not be left to soak in water as it is an infection risk
Document procedure on CIS	To facilitate communication and evaluation.

C. Suctioning

Any difficulty in passing the suction catheter should lead to consideration that the tube may be partially blocked or misplaced and requires immediate attention.



Difficulty in passing a suction catheter through the tracheostomy into the trachea may indicate the inner cannula is blocked or the tracheostomy is displaced. This requires urgent attention.

Blood on suctioning requires urgent attention

Suctioning via tracheostomy (using in-line suction catheter)

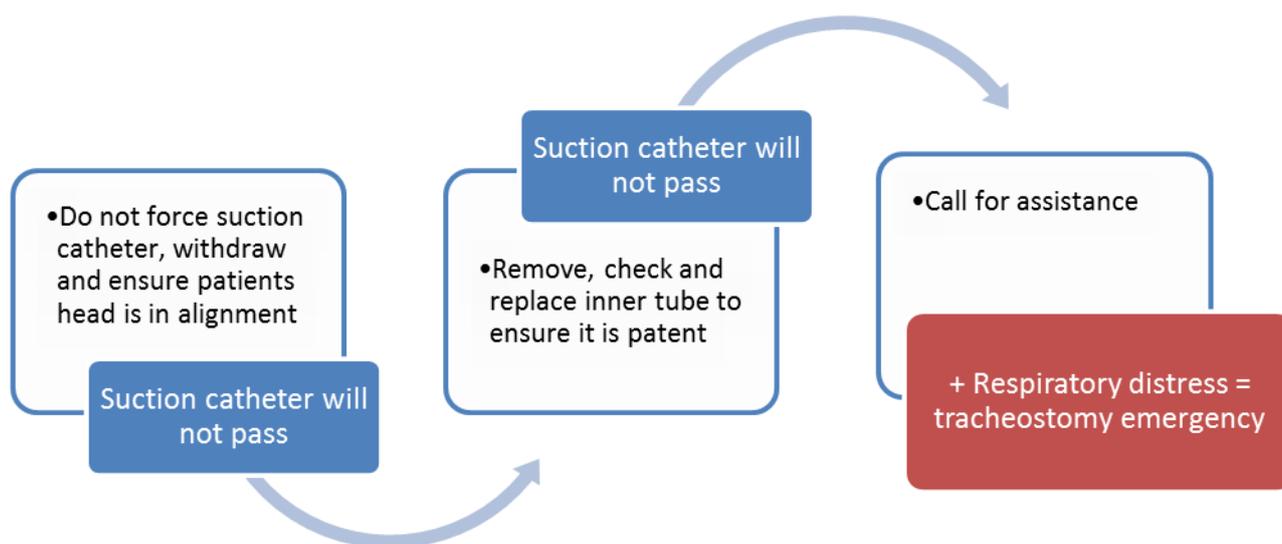
Action	Rationale
Explain the procedure to the patient	To obtain consent, co-operation and reassure the patient
Wash hands and don apron and gloves. Goggles should be worn if in-line suctioning is not being used	To reduce the risk of cross infection.
Pre oxygenate with 100% (oxygen breath)	To prevent hypoxia
Ensure head is in neutral alignment	To provide patient comfort and ease procedure
In line suctioning should be used for all mechanically ventilated patients. Ensure the circuit is the correct size and in date Suction pressure on circuit occlusion should not exceed - 150mmHg (20 kPa pressure) Suctioning should be performed with the inner cannula in place Repeat as clinically indicated	Too great a suction pressure can cause prevent mucosal trauma, hypoxaemia and atelectasis
Observe the patient throughout the period to ensure no adverse effects	Tracheal suction may cause vagal stimulation (leading to bradycardia), hypoxia and stimulate bronchospasm
Record the procedure on CIS	To facilitate communication and evaluation

Sequence of events for non in-line suctioning

1. Pre oxygenate the patient, explain procedure and apply personal protective equipment
2. Ensure inner cannula in place
3. Put a sterile glove on dominant hand (double glove)
4. Insert suction catheter without applying suction until approximately 1/3 of the catheter is in situ or until the patient coughs
5. Withdraw the catheter 0.5-1cm and apply suction by occluding the suction port with gloved thumb
6. Continue withdrawing the catheter applying continuous suction until it is removed from the tracheostomy tube
7. The entire process should not exceed 10 seconds
8. Remove glove from dominant hand by inverting over used catheter, dispose of in clinical waste bag
9. Reattach oxygen within 10 seconds
10. If another suction is needed a new sterile catheter and sterile glove must be used
11. No more than 3 suction in succession
12. Flush through the connection tubing with clean water and wash hands after
13. Record procedure and secretions on CIS

Note: For self-ventilating patients on a tracheostomy mask, if the patient is able to cough secretions to the opening of the tracheostomy then a Yankeur sucker can be used to suction the secretions from the opening rather than perform a deep suction.

Emergency note for suctioning: Unable to pass suction catheter



Significant blood noted on suctioning = tracheostomy emergency

D. Tracheostomy dressing and ties

This is a two person procedure which needs to be performed at least once per 24 hour period. The tracheostomy should be adequately secured to prevent displacement.

Action	Rationale
Explain procedure to patient where appropriate	To gain verbal consent, co-operation and reassure patient.
Wash and dry hands, don apron, clean gloves and goggles.	To reduce the risk of cross infection.
One practitioner should hold the tube and oxygen (if required) while the other removes tapes and dressing and discards dirty gloves.	To reduce the risk of dislodgement.
Assess tracheostomy site for signs of trauma, infection or maceration Take a swab if there are clinical signs of infection (e.g. purulent discharge, odour, cellulitis and discolouration) Observe the back of the neck for signs of redness/soreness from tapes.	To take further action if required.
Gently clean around stoma using sterile gauze squares soaked in saline and then pat dry Apply new tracheostomy dressing starting from below the stoma with shiny side to skin.	To remove debris while not causing irritation. To protect area around stoma.
Secure in place with tracheostomy tapes/holder. Not too tightly - 2 fingers should be a comfortable fit between the tapes and patients neck	For patient comfort and to prevent migration of the tube.
Dispose of all soiled dressings as per trust policy.	To reduce infection risk.
Document assessment and procedure on CIS	To facilitate communication and evaluation.

E. Cuff pressure check

The cuff pressure should be checked a minimum of once every 8 hour shift



An ongoing/worsening cuff leak despite continual inflation of air to maintain adequate pressures should raise the possibility of tube movement or cuff herniation

Action	Rationale
Check pressure in cuff using pressure device Cuff pressure should be 20-25cmH ₂ O (below the green zone)	To ensure cuff is not over or under inflated

If there is no air present when the cuff is fully deflated this suggests an incompetent cuff - in all other situations the position of the cuff should be checked

F. Continuous capnography

For all ventilated patients with a tracheostomy, continuous capnography should be in place with the waveform and the value displayed on the monitor



An unexplained loss of ETCO₂ waveform or change in value may indicate a blocked or displaced tracheostomy. It should be investigated urgently.

3. SAFETY

BEDHEAD SIGNS

These should be in place for every patient. They will be initially completed by the doctor performing the tracheostomy. The front side (facing out) indicates that the patient has a tracheostomy, but the reverse side provides relevant airway information which may be very important to be aware of in an emergency.

Back – wall side

This patient has a
TRACHEOSTOMY
There is a potentially patent upper airway (Intubation may be difficult)

Percutaneous / Surgical (circle)

Performed on (date)

Tracheostomy tube size

Cuffed / uncuffed / adjustable flange (circle)

Difficult airway YES / NO
Is there an airway management plan documented YES / NO
Notes regarding tracheostomy (e.g. complications, insertion)

(circle as appropriate)



Percutaneous Surgical (window)

Sutures YES / NO

Emergency Call: ICU: Bleep 1987 / Ex 5752 | Anaesthetics: 1622 | ENT: Via switchboard | Cardiac arrest 2222

Summary of RED FLAGS



Increasingly thick secretions may indicate new infection and/or inadequate humidification. Thick secretions may lead to blockage of the tracheostomy so should be managed promptly and appropriately.



Blockage of the inner tube may be caused by respiratory secretions - this may be a complete or partial blockage and may lead to respiratory distress



Difficulty in passing a suction catheter through the tracheostomy into the trachea may indicate the inner cannula is blocked or the tracheostomy is displaced. This requires urgent attention. **Blood on suctioning** requires urgent attention



An ongoing/worsening cuff leak despite continual inflation of air to maintain adequate pressures should raise the possibility of tube movement or cuff herniation



An unexplained loss of ETCO₂ waveform or change in value may indicate a blocked or displaced tracheostomy. It should be investigated urgently.

Daily tracheostomy care

Note: One shift = One 8 hour period

Oxygen therapy & humidification

- Ensure adequate humidification delivered (ventilated **and** non ventilated patients)

Inner cannula

- Inner cannula should be removed, inspected & cleaned **every 4 hours** (*see note in text*)
- Spare inner cannula to be kept at bedside
- Dirty cannula cleaned with sterile water & left to air dry

Secretions and suctioning

- Deep suctioning should be performed as often as clinically indicated but minimum **every 4 hours** if fully ventilated
- Secretions can be suctioned from tracheostomy opening using Yankeur sucker if using trache mask

Stoma care & securing the tracheostomy

- **Minimum of once per 24 hours:**
 - Inspect stoma site for infection
 - Clean stoma with sterile gauze & saline/water
 - Change dressing and ensure tapes secure

Cuff check

- Check cuff pressure a **minimum of once per shift**
- Cuff pressure should be below 20-25cmH₂O (*bottom of green on the manometer*)
- Check more frequently as indicated

Oral care & assesment of swallowing

- Daily oral care (see DCCQ Mouth care SOP)
- Regular assessment of swallowing

Documentation

- All tracheostomy observations should be documented on CIS

Safety

- Ensure continuous capnography in place
- Ensure bedhead sign in place
- Be familiar with tracheostomy red flags and emergency algorithms

7. TRAINING REQUIREMENTS

Training and competency will be disseminated through the Critical Care teaching team.

A 'Guide to tracheostomies on the ICU' providing further background reading is also available.

8. REFERENCES AND ASSOCIATED DOCUMENTATION

Documents used when preparing this care bundle are:

1. National Tracheostomy Safety Project <http://www.tracheostomy.org.uk/>
2. Standards for the care of adult patients with a temporary tracheostomy. Intensive Care Society 2008. http://www.ics.ac.uk/intensive_care_professional/standards_and_guidelines/care_of_the_adult_patient_with_a_temporary_tracheostomy_2008

This document will be updated as further evidence becomes available.

9. EQUALITY IMPACT STATEMENT

Portsmouth Hospitals NHS Trust is committed to ensuring that, as far as is reasonably practicable, the way we provide services to the public and the way we treat our staff reflects their individual needs and does not discriminate against individuals or groups on any grounds.

This policy has been assessed accordingly

10. MONITORING COMPLIANCE WITH PROCEDURAL DOCUMENTS

This document will be monitored to ensure it is effective and to assurance compliance.

Minimum requirement to be monitored	Lead	Tool	Frequency of Report of Compliance	Reporting arrangements	Lead(s) for acting on Recommendations
Presence of continuous capnography	Dr Sara Blakeley - Consultant Critical Care	Observation audit	2 yearly	<ul style="list-style-type: none">Through DCCQ annual audit report	Dr Sara Blakeley - Consultant Critical Care
Compliance with tracheostomy care standards (all elements)	Dr Sara Blakeley - Consultant Critical Care	Observation audit	2 yearly	<ul style="list-style-type: none">Through DCCQ annual audit report	Dr Sara Blakeley - Consultant Critical Care

APPENDIX A: STANDARD EMAIL FOR DISTRIBUTION OF RATIFIED TRUST PROCEDURAL DOCUMENTS

To: CSC General Managers/Heads of Corporate Functions

Dear Colleagues

RE: *Tracheostomy care on the Critical Care Unit*

Please find attached a copy of the above recently revised/developed* procedural document. I should be grateful if you would ensure:

- Withdrawal of any paper copies of the previous document entitled, dated (*delete if new document*)
- Appropriate distribution of the attached document throughout your area of responsibility.
- That processes are in place so that staff can access the document: either electronically or in hard copy.

Yours sincerely

Risk Management Team

APPENDIX B: TRUST PROCEDURAL DOCUMENT RATIFYING COMMITTEES/GROUPS

POLICY CATEGORY	RATIFICATION BODY
Full Board approval required	Trust Board
Trust Procedural Document - Quality	Governance and Quality Committee
Blood Related Procedural Document	Hospital Transfusion Committee
Clinical Procedural Document – Nursing	Nursing & Midwifery Advisory Committee
Clinical Procedural Document – Medical	Clinical Directors Forum
Education and Training Procedural Document	Learning and Development Team
Emergency Preparedness Procedural Document	Major Incident Planning Committee
Health & Safety Procedural Document	Health & Safety Committee
Human Resources Procedural Document	Human Resources Policy Group
Infection Control Procedural Document	Infection Control Management Committee
Information Governance Procedural Document	Information Governance Steering Group
Financial Procedural Document	Trust Board
Medicines Related Procedural Document	Formulary and Medicines
Medical Devices Procedural Document	Medical Devices Management Committee
Patient Safety	Patient Safety Steering Group
Procurement Related Procedural Document	Director of Procurement and Commercial Services; and Director of Finance and Investments
Research Governance Procedural Document	Research and Governance Committee
Resuscitation Related Procedural Document	District Resuscitation Committee
Risk Management Procedural Document	Risk Assurance Committee

This list is not exhaustive: any advice can be obtained from the Risk Management team