

SESLHD PROCEDURE COVER SHEET



NAME OF DOCUMENT	Tracheostomy Clinical Management Procedures for Adult Inpatients
TYPE OF DOCUMENT	Procedure
DOCUMENT NUMBER	SESLHDPR/298
DATE OF PUBLICATION	February 2024
RISK RATING	High
LEVEL OF EVIDENCE	National Safety and Quality Health Service Standards: 1 – Clinical Governance 2 – Partnering with Consumers 3 – Preventing and Controlling Healthcare Associated Infections 5 – Comprehensive Care 6 – Communicating for Safety 8 – Recognising and Responding to Acute Deterioration
REVIEW DATE	February 2026
FORMER REFERENCE(S)	SESLHNPD/98 Tracheostomy Clinical Management Policy and Procedures for Adult Inpatients
EXECUTIVE SPONSOR or EXECUTIVE CLINICAL SPONSOR	Clinical Stream Director, Medicine
AUTHOR	Mary Dunford (SGH), Paula Sankey (POWH) Clinical Nurse Consultants
POSITION RESPONSIBLE FOR THE DOCUMENT	Carolyn Smith Clinical Stream Manager - Medicine Carolyn.smith1@health.nsw.gov.au
FUNCTIONAL GROUP(S)	Cardiac and Respiratory Care Critical Care and Emergency Medicine
KEY TERMS	Trachea, Tracheostomy, Tracheostomy Tube, Stoma, Cannula, Suction
SUMMARY	This document outlines procedures for the tracheostomy management for adult inpatients including (but not restricted to): tracheostomy emergency, changing a tracheostomy tube, removal of tracheostomy tube, suction, oral hygiene, decannulation and humidification.

COMPLIANCE WITH THIS DOCUMENT IS MANDATORY

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SECTION 1: PRINCIPLES**1. PROCEDURE STATEMENT**

SESLHD is committed to ensuring best quality and safety outcomes for patients by implementing best practice recommendations endorsed by relevant health related government bodies.

The Agency for Clinical Innovation (ACI) Care of Adult Patients in Acute Care Facilities with a Tracheostomy Clinical Practice Guideline [ACI Tracheostomy Care Clinical Practice Guide](#) has set best practice recommendations for health organisations in this specific clinical procedure.

Considering the above Clinical Practice Guideline and existing clinical practice across SESLHD; this procedure aims to provide clinicians with a comprehensive understanding, instruction, best practice and evidence-based recommendations for the use of Tracheostomy Tube in adult patients.

This procedure should be read in conjunction with Section 7.3, Personal Protective Equipment (PPE) [NSW Health Policy Directive: PD2023_025 - Infection Prevention and Control in Healthcare Settings](#), pages 22-25.

2. BACKGROUND

This procedure aims to implement best practice recommendations set by ACI's Tracheostomy Care Clinical Practice Guideline in the management of a tracheostomy tube inserted in a tracheal stoma in adult patients and provides further instruction on clinical management of adult patients on:

- Responding to and managing a tracheostomy emergency
- Routine management of a tracheostomy
- Communication, swallowing and oral intake
- Changing a tracheostomy tube
- Weaning and decannulation process
- Cuff deflation, tube occlusion and tube removal
- Discharge of a patient with a tracheostomy.

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3. DEFINITIONS AND KEY TERMS

Trachea	The anatomical structure used for breathing.
Tracheostomy	An artificial opening in the trachea, which may be permanent or temporary.
Tracheostomy Tube	A tube placed through a tracheostomy to provide an airway and to remove secretions from the lungs.
Stoma	An opening, either natural or surgically created, which connects a portion of the body cavity to the outside environment.
Cannula	A tube that can be inserted into the body, often for the delivery or removal of fluid or air
Suction	The use of devices to clear airways of materials that would impede breathing or cause infections.
Aseptic non-touch technique	Prevents microorganisms on hands from being introduced into a susceptible site.
Performance Capability	Equates to education, training, assessment and maintenance of a clinician in tracheostomy and emergency management by a designated assessor (determined by each hospital).

4. RESPONSIBILITIES

4.1 Clinical Staff will:

- Safely manage patients within practice limitations, attend education sessions and maintain performance capability in tracheostomy management and tracheostomy emergency response, including:
 - implementing this clinical procedure in line with the ACI Tracheostomy Care Clinical Practice Guide.

4.2 Line Managers will:

- Ensure nursing staff caring for the patient with a tracheostomy have the appropriate skills, experience and expertise in tracheostomy management and clinical response to a tracheostomy emergency.
- Ensure education resources, clinical and emergency protocols are readily available in the clinical environment.

4.3 District Managers/ Service Managers will:

- Ensure provision of clinical education in tracheostomy management and response to a tracheostomy emergency, is available to clinical staff within SESLHD facilities.

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SESLHDPR/298**4.4 Medical Management will:**

- Be responsible for medical orientation and ongoing medical education.

**5. CLINICAL STAFF PERFORMANCE CAPABILITY IN TRACHEOSTOMY
MANAGEMENT AND TRACHEOSTOMY EMERGENCIES**

- All clinical staff providing direct care must be trained and assessed in tracheostomy management procedures, including the clinical response to a tracheostomy emergency.
- Patients with a tracheostomy must be managed in a clinical setting by staff who possess the necessary skills (performance capability) to manage tracheostomies and respond effectively to tracheostomy emergencies.
- A formal assessment should be conducted to validate tracheostomy performance capability (proficiency in tracheostomy care). The assessment should be by a designated clinician with expert knowledge and skills in tracheostomy management.
(i.e., nurse educator, clinical nurse consultant, clinical nurse specialist or senior physiotherapist with the appropriate clinical expertise).
- Provision of education must include all facets of tracheostomy care, including airway emergencies.
- Senior clinicians responding to patients that require airway and/or breathing assistance with an artificial airway must be provided with ongoing education and training to manage difficult airway situations and undertake 'regular scenario-based drills, with a focus on clinical care and emergency management.

6. TRACHEOSTOMY PLAN AND ENVIRONMENT OF CARE

- All patients with a tracheostomy must have a documented management plan coordinated and collaborated by multidisciplinary team.
- Where established, tracheostomy review team members should include;
 - Medical specialist
 - Senior nurse specialist
 - Physiotherapist
 - Speech pathologist
- The Tracheostomy Plan should be reviewed by the Tracheostomy Review Team (TRT) or primary care team. If changes or recommendations are made by the TRT changes need to be brought to the notice of the nurse caring for the patient.
- Established referral processes should be developed to the multidisciplinary team to ensure timely assessment and intervention occurs.
- Patients with a long-term tracheostomy require an appropriate clinical management plan customised to the level of self-care provided and any additional assistance indicated.
- Each hospital must monitor and evaluate adverse events of patient with a tracheostomy tube. Systematic evaluation using incident monitoring systems should be used.

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7. TRANSFER OF CARE AND CLINICAL COMMUNICATION/HANDOVER

Note: The following section has been developed in line with [SESLHDPR/303 - Clinical Handover: Implementation of ISBAR Framework and Key Standard Principles](#) and [NSW Ministry of Health Policy Directive - PD2019_020 Clinical Handover](#)

- The unit transferring a patient with a tracheostomy must notify the ward and relevant clinical support personnel e.g., specialist CNE/CNC, ICU Liaison, to facilitate clinical support and education of staff and the patient.
- The transferring RN must handover clinical information using the standard key principles of handover (ISBAR). This should include visual (bed side handover), verbal and written information as follows:
 - History, including reason for the tracheostomy tube insertion, airway anatomy and physiology.
 - Date tracheostomy tube was inserted, type of tube, method of insertion, size, sutures and method of stabilising the tracheostomy tube.
 - Date of next tube change.
 - Secretion management (amount colour, consistency, ability to cough, swallow reflex and suction requirements)
 - Humidification method
 - Oxygen requirements
 - Nutrition
 - Communication method

8. DOCUMENTATION

- Written consent for the tracheostomy procedure must be obtained from the patient or next of kin and documented in the health care records.
- All patients with a tracheostomy must have a documented management plan as per [section 6](#) of this procedure.
- All tracheostomy interventions including assessments and care provided should be documented on the [Tracheostomy Management and Observation Chart SES110055](#)
- Variances or abnormal findings and management of variances should also be documented in the progress notes.

9. PATIENT PREPARATION

- Patient and caregivers are provided with written and verbal information about the reason for a tracheostomy insertion and ongoing tracheostomy care. This ensures that both patient and caregiver understand and participates in making decisions about their own care.
- A care plan should be developed in consultation with the multidisciplinary team, patient and caregiver.
 - Elective situation – preoperative assessment should be undertaken.
 - Emergency – as soon as possible following the insertion of a tracheostomy tube.
- The care plan should include:
 - education of patient and caregiver

- recognition of available psychological and psychosocial support.

10. OBSERVATIONS

- The following vital signs should be monitored at least every 4 hours on the ward: respiratory rate, respiratory pattern (including auscultation), oxygen saturations, heart rate, blood pressure, temperature and level of consciousness. These vital signs are monitored in critical care areas at frequency dictated by clinical condition.
- Ensure continuous pulse oximetry for patients with a new tracheostomy and/or any respiratory compromise. This includes patients:
 - with a new or recently changed or decannulated tracheostomy tube
 - receiving continuous oxygen
 - with variation in target respiratory parameters
 - following changes to tracheostomy tube management
 - on ventilation support
- Patients who require continuous pulse oximetry should be cared for in a suitable clinical environment where staff can continually observe the patient.
- Monitor sputum and record amount, colour and consistency on [Tracheostomy Management and Observation Chart](#)

11. ESSENTIAL BEDSIDE EQUIPMENT

Refer to the following in the [ACI Clinical Practice Guide Care of adult patients in acute care facilities with a tracheostomy](#):

To facilitate optimal clinical care and intervention under emergency circumstances, the following equipment should be available WITHIN the patient's bed space AND must be checked on a shift-by-shift basis to ensure availability:

- Tracheostomy emergency flowchart
- Personal protective equipment for standard precautions including gloves, aprons/gowns, goggles (or a full-face visor) and a fluid-resistant mask. Surgical masks are for use as per standard and droplet precautions; a P2/ N95 respirator is to be worn when providing care to patients with airborne precautions. A P2/N95 mask should also be applied during aerosol generating procedures for patients with a respiratory communicable disease ([NSW Health PD2023 025 - Infection Prevention and Control in Healthcare Settings](#)).
- High pressure wall suction
- Y- suction catheters- Size appropriate for tracheostomy tube
- Yankauer Suction handle and tubing attached to suction source
- Oxygen supply
- Tracheostomy mask and tubing
- Cuff manometer
- 10 mL syringe
- Two spare tracheostomy tubes one the same size as tube in situ and one size smaller or equivalent
- Spare inner cannula
- Equipment to clean inner cannula
- Humidification device - heat and moisture exchange, active humidification circuit and nebuliser chamber
- Bottle of sterile water to clean suction tubing after use (labelled with date and changed daily).
- 10 ml ampoules sodium chloride 0.9%
- Tracheostomy dressing
- Tracheostomy securing device, cotton tape or velcro
- Stethoscope
- Tracheal Dilators
- Pulse oximeter
- Emergency trolley including resuscitation bag and airway equipment

- Daily essential tracheostomy equipment should be available in a self-contained box, bag, or pack by the patient's bed side. This equipment should be used for transporting the patient.

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SECTION 2: CLINICAL TRACHEOSTOMY PROCEDURES

This section relates to the following clinical tracheostomy procedures:

- [Responding to and managing a tracheostomy emergency](#)
- [Routine management of a tracheostomy](#)
 - [Humidification](#)
 - [Inner cannula maintenance](#)
 - [Checking cuff pressure](#)
 - [Suctioning a tracheostomy tube](#)
 - [Oral hygiene](#)
 - [Securing a tracheostomy - tape change and dressing](#)
- [Communication, swallowing and oral intake](#)
 - [Communication](#)
 - [One-way speaking valve](#)
 - [Management of swallowing and oral intake](#)
- [Changing a tracheostomy tube](#)
- [Weaning and decannulation](#)
- [Cuff deflation, occlusion and tube removal](#)
 - [Cuff deflation](#)
 - [Tube occlusion](#)
 - [Removal of a tracheostomy tube](#)
- [Discharge of a patient with a tracheostomy](#)

**Tracheostomy Clinical Management Procedures
for Adults Inpatients****SESLHDPR/298****12 RESPONDING TO AND MANAGING A TRACHEOSTOMY EMERGENCY**

In line with Emergency Care, page 31 of the [ACI Clinical Practice Guide Care of adult patients in acute care facilities with a tracheostomy](#), the following are evidence based recommendations for the tracheostomy emergency procedure

- Emergencies include but are not limited to:
 - Accidental decannulation and tube displacement
 - Blocked tracheostomy

Complications associated with a tracheostomy if not recognised and managed can lead to:

- Haemorrhage
- Cuff leak or rupture
- Tracheo-arterial fistula
- Pseudo tract or false lumen
- Subcutaneous emphysema
- Pneumothorax
- Infection
- Pressure injury
- Granuloma
- Tracheomalacia
- Tracheal stenosis

Refer to the following in the [ACI Clinical Practice Guide Care of adult patients in acute care facilities with a tracheostomy](#):

- Table 19, page 33: Recommendation for emergency care
- Table 20, page 35: Potential complications with a tracheostomy and precautions
- Appendix 2, page 56: Emergency tracheostomy
- Appendix 3, page 57: Emergency laryngectomy

<p>Tracheostomy Emergency Procedure</p>
<p>Signs of respiratory distress include:</p> <ul style="list-style-type: none"> • Difficult, laboured, gurgling or noisy breathing - in partial tracheostomy obstruction air entry is diminished and often noisy. • Decreased or no breath sounds - in complete tracheostomy tube occlusion, there are no breath sounds heard. • Use of accessory muscles - a sign of airway obstruction. In complete airway obstruction, patients often develop a see-saw pattern of breathing in which inspiration is concurrent with outward movement of the abdomen and inward movement of the chest wall and vice-versa. • No or limited expired air from the tracheostomy tube. Reduced chest movement or reduced air entry upon auscultation - all indicate a lack of air movement into and out of the respiratory tract. • Pale / cyanosed skin colour - central cyanosis is a sign of late airway obstruction • Anxiety / agitation - The patient will become anxious and agitated as they struggle to breathe and become hypoxic. • Increased pulse / respiratory rate - Increased respiratory and pulse rate are signs of illness and an indicator that the patient may suddenly deteriorate. • Clammy / diaphoretic skin - Associated with an increased work of breathing from an occluded airway and stimulation of the sympathetic nervous system causing vasoconstriction. • Stridor– Is caused by an obstruction above or at the level of the larynx • Increased work of breathing i.e., patient acutely distressed/restless, tachypnoea, stridor, accessory muscle use, diaphoretic, cyanotic • High inspiratory airway pressures/low tidal volumes if mechanically ventilated • O₂ desaturation • Unable to pass suction catheter or inner cannula
<p>Immediate action</p>
<ul style="list-style-type: none"> • Stay with patient and provide 100% high flow O₂ via tracheostomy and/or face mask and manually ventilate if indicated (it may be necessary to deflate trachea cuff) • Check O₂ source and connection, cuff inflation, humidifier • Check /change the inner cannula if in situ • Call for assistance [CODE BLUE] – emergency number x2222. <p>Dislodged tracheostomy tube in situ with suspected obstruction:</p> <ul style="list-style-type: none"> • Pass suction catheter and apply suction (change inner cannula if present, using non-fenestrated cannula if possible), if tracheostomy tube obstructed then let down cuff (if present and inflated) • Check tube patency, secretions and patient response to suctioning • If no airflow around/through tracheostomy tube then insert tracheal dilators around tube into stoma, remove tube, insert bougie or suction catheter and maintain oropharyngeal airway to achieve oxygenation

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- If the patient becomes less distressed, airflow is present and unobstructed and oxygenation is satisfactory, then undertake a full clinical assessment to establish the cause of respiratory distress

Laryngectomy patients: concentrate all measures on clearing stoma/trachea, as this is the patient's only airway access

Potential Causes:

- Airway partially/completely obstructed due to blockage
- Tracheostomy dislodgement
- Persistent cuff leak
- Faulty O₂ source or ventilation device
- Ineffective humidification
- Consider non-tracheostomy related causes for respiratory distress.

Patient distressed with tube obstructed, dislodged or cuff leaking

- 100% high flow O₂ via face mask and manually ventilate if indicated, it may be necessary to deflate the cuff
- Assemble and check equipment
- Position patient supine with head of bed elevated slightly (ensure no clinical contraindication)
- Remove pillow and extend neck (ensure no clinical contraindication)
- Consider the need for sedation – this will be indicated based on individual patient assessment and the senior medical officer orders.
- Suction oropharynx.

If no tracheostomy tube in place, then clean stoma, open and support stoma with forceps, insert new tube, inflate cuff if present, re-oxygenate and assess air entry, work of breathing and clinical status.

If tracheostomy tube in place:

Prepare for rapid tracheostomy tube exchange/placement (provide brief explanation to patient).

- **<72 hours post insertion (new stoma early change):** clean stoma, loosen ties, hold tube in place, insert bougie into tracheostomy tube, assistant deflates cuff, remove tracheostomy tube over bougie while ensuring bougie is held in situ, immediately slide new tracheostomy tube over bougie into the trachea, hold in place, remove bougie, inflate cuff, re-oxygenate and assess air entry, work of breathing and clinical status.
- **>72 hours:** clean stoma, loosen ties, hold tube in place, support open stoma with forceps, assistant deflates cuff, remove tracheostomy tube immediately slide new tracheostomy tube into the trachea stoma, hold in place, inflate cuff, re- oxygenate and assess air entry, work of breathing and clinical status.
- Correct tube placement is confirmed by checking air flow, chest auscultation, improved SpO₂ and if available end-tidal carbon dioxide (ETCO₂).

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Successful	Unsuccessful
<ul style="list-style-type: none">• Secure tracheostomy tube• Review O₂ and ventilation• Reposition patient• Provide education and further reassure the patient and family	<ul style="list-style-type: none">• Maintain oxygenation• Manually ventilate if required• Prepare for intubation or laryngeal mask airway (LMA) insertion• Intubate or place LMA• Only use stoma if laryngectomy patient

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EMERGENCY ALGORITHM

(POW staff to refer to hospital specific – Appendix 2)

Health South Eastern Sydney Local Health District	FAMILY NAME	MRN
	GIVEN NAME	<input type="checkbox"/> MALE <input type="checkbox"/> FEMALE
Facility:	D.O.B. ____/____/____	M.O.
	ADDRESS	
TRACHEOSTOMY MANAGEMENT & OBSERVATION CHART		
LOCATION / WARD		
COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE		

Emergency Algorithm
The emergency algorithm has been designed for clinicians dealing with emergencies in non-critical care areas. Each situation should be assessed and managed on an individual basis. As with any emergency, protocols should be immediately initiated.

```

graph TD
    Start([Patient with Tracheostomy]) --> A[Airway Compromised]
    A --> B[Assess and Clear Airway. (tracheostomy)]
    B --> C{Airway Patent / Breathing Present}
    C -- YES --> D[Patient in Respiratory Distress]
    C -- NO --> E[Patient in Respiratory arrest]
    D --> F{Is conditioning Immediately Life Threatening?}
    F -- YES --> G[ACTIVATE CODE BLUE CALL]
    F -- NO --> H[Remove inner cannula & clean  
Suction tracheostomy  
Oxygen to tracheostomy]
    H --> I[Remains in respiratory distress post suction and oxygen.]
    I --> J[ACTIVATE CODE BLUE CALL]
    E --> K[INITIATE BASIC LIFE SUPPORT AND]
    K --> L[ACTIVATE CODE BLUE CALL]
    
```

Signs of respiratory distress (Adapted from AlertTM 2000/St. George's Healthcare NHS Brochure)

- **Difficult, laboured or noisy breathing** - In complete tracheostomy tube occlusion, no breath sounds will be heard - however in partial obstruction air entry is diminished and often noisy
- **Use of accessory muscles** - A sign of airway obstruction. In complete airway obstruction patients often develop a see-saw pattern of breathing in which inspiration is concurrent with outward movement of the abdomen and inward movement of the chest wall and vice-versa.
- **No or Limited expired air from the tracheostomy tube. Reduced chest movement or reduced air entry upon auscultation** - All indicate a lack of air movement into and out of the respiratory tract.
- **Pale/cyanosed skin colour** - Central cyanosis is a sign of late airway obstruction.
- **Anxiety / Agitation** - The patient will become anxious and agitated as they struggle to breathe and become hypoxic.
- **Increased pulse/respiratory rate** - Increased respiratory and pulse rate are signs of illness and an indicator that the patient may suddenly deteriorate.
- **Clammy / diaphoretic skin** - Associated with an increased work of breathing from an occluded airway and stimulation of the sympathetic nervous system causing vasoconstriction
- **Stridor** - Is caused by an obstruction above or at the level of the larynx

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BINDING MARGIN - NO WRITING



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13. ROUTINE MANAGEMENT OF A TRACHEOSTOMY

13.1 Humidification

Education note
A tracheostomy bypasses the normal mechanisms for humidification. Failure to provide adequate humidification contributes to tube blockage and subsequent airway obstruction. Adequate systemic hydration via oral, nasogastric and/or intravenous is required to ensure secretions remain easy to suction or expectorate. (Burgess 1999, Clark 1995, St Georges Healthcare NHS Trust, Harkin 1998).

Education note
Humidification can be passive or active. Passive humidification includes heat and moisture exchangers (HMEs). HME work by absorbing the exhaled warmth and moisture and delivering warmth and moisture to the next inhaled breath. In active humidification air passes through a heated water reservoir to deliver warmth and moisture.

Symptoms of insufficient humidification include:

- Shortness of breath and decreased oxygen saturations (indicative of mucus plugging or micro-atelectasis)
- Increased, unproductive cough
- Change in mucous colour (clear to pale), amount or increased viscosity (i.e., a change from thin to thick, sticky consistency)
- Increased temperature (indicative of infection and impaired secretion removal)
- Blood-streaked mucous
- Noisy laboured respirations.

Care of the Heat Moisture Exchange (HME) includes:

- Educate patient to remove the HME before coughing.
- HMEs should be checked regularly to ensure they are not occluded with condensation, secretions or blood, which may obstruct airflow and increase resistance.

Humidification Recommendations

Refer to the following in the [ACI Clinical Practice Guide Care of adult patients in acute care facilities with a tracheostomy:](#)

- Table 10, page 15: Types of humidification
- Table 11, page 16: Recommendations for humidification

In line with ACI Tracheostomy Care Clinical Practice Guide the following are evidence-based recommendations for humidification:

Requirements for passive HME

Passive HMEs are suitable for patients with all the following:

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- Stable respiratory function
- Volume of secretions is low to moderate
- Double lumen tracheostomy tube
- $FiO_2 < 40\%$.

Requirements for active humidification

Active humidification is required for adult patients with:

- Hypothermia
- $FiO_2 \geq 40\%$
- Thermal injury to airway
- Single lumen, adjustable flange, or foam tracheostomy tubes
- Large volume or purulent secretions
- Irritable airways
- Airway bleeding
- Where a speaking valve is in the ventilator circuit
- As clinically indicated.

NOTE: The active humidification circuit must be 37°C to ensure 100% relative humidity.

Provision of humidification

- For patients with thick/dry secretions, ensure 4 hourly prescriptions of normal saline nebulisers. To loosen and thin secretions, to prevent atelectasis and sputum thickening.
- Increase frequency of nebulised normal saline if sputum thickness/tenacity impairs suctioning.
- Continuous warm/active humidification device should be considered where an HME is not providing effective humidification.
- Assess systemic hydration daily – inform medical staff of inadequate fluid intake (especially if patient is nil by mouth)
- Humidification circuit must always be lower than the level of the tracheostomy tube to prevent aspiration of condensation from the tube. Sterile water for irrigation should be used for water-bath humidifiers and they must not be left to run dry.

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13.2 Inner cannula maintenance

Practice Limitations:

Registered Nurses who have completed education and achieved performance capability in the procedure.

Enrolled Nurses who have completed education, achieved performance capability and achieved 'extended scope of practice' in Tracheostomy management. The EN will provide care under the direct supervision a registered nurse.

Alert

- All ward patients with a tracheostomy tube must have an inner cannula in situ.
- The inner cannula must be removed two to four hourly to check for patency and secretion build up. It must be immediately replaced with a clean inner cannula. More frequent checks will depend on viscosity and volume of secretions.
- All patients with a tracheostomy will require four hourly normal saline nebulisers if not on continuous warm humidification.
- This procedure is a clean procedure which requires hand hygiene and full PPE.
- Inner cannula must not be cleaned at hand basins because of the risk of contamination to the inner cannula from basin organisms.

Equipment

- Clean gloves
- Facial protection and plastic apron
- Clean dry replacement inner cannula
- tracheal cleaning brush.

Refer to the following in the [ACI Clinical Practice Guide Care of adult patients in acute care facilities with a tracheostomy:](#)

- Table 14, page 21: Recommendations for care of the inner cannula

In line with ACI Tracheostomy Care Clinical Practice Guide the following are evidence-based recommendations for Inner-Cannula:

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Procedure: Changing an inner cannula		Key notes
1	Perform hand hygiene before and after donning appropriate PPE e.g., gloves, apron, full-face visor.	To reduce the risk of cross infection
2	Hyper-oxygenate or ask patient to take five deep breaths	To prevent hypoxia
3	Position patient with neck slightly extended	To provide patient comfort and ease procedure
4	Remove oxygen, remove inner cannula and insert clean spare inner cannula, replace oxygen	To maintain the airway, prevent early build-up of secretions in outer tube and to maintain oxygenation.
5	Observe the inside of the removed cannula for excessive crusting	Crusting should not occur if the tube is kept clean with the provision of adequate humidification and suction. More frequent checks will depend on viscosity and volume of secretions
6	Clean the inner cannula and flush with sterile saline or water prior to reinsertion (may require the use of a cleaning brush to remove any dried or tenacious secretions) Agitate inner cannula to remove all visible secretions prior to re-inserting into the airway/tracheostomy tube. If using a spare inner cannula store in a clean, dry identified container.	Ensure end of pipe cleaner is folded over to prevent any exposed metal scratching or damaging the inner tube
7	Document procedure and findings on Tracheostomy Management and Observation Chart	To facilitate communication and evaluation

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13.3 Checking cuff pressure

Practice Limitations:

Registered Nurses who have completed education and achieved performance capability in the procedure.

Enrolled Nurses who have completed education, achieved performance capability and achieved 'extended scope of practice' in tracheostomy management. The EN will provide care under the direct supervision a registered nurse.

Education Note:

Tracheostomy tubes may be cuffed or un-cuffed. The cuff seals the space around the tracheostomy tube and prevents aspiration of oral or gastric secretions. A cuff pressure maintained at 25-30cm H₂O prevents tracheal wall necrosis.

Alert

- Where a cuffed tracheostomy tube is in situ the cuff pressure must be checked at least once a shift using a manometer and maintained at 25-30cm H₂O
- All cuff pressure needs to be recorded as a numerical value in the tracheostomy chart.
- Cuff pressure should be measured directly using a cuff manometer:
 - at least once every eight hours and when clinically indicated
 - immediately post-tracheostomy insertion
 - on transfer of care
 - after significant patient movement
 - where there are any concerns about air leak from the respiratory system
 - post cuff inflation by a syringe.
- Where a persistent cuff leak is identified, notify either the intensive care team, admitting medical team, tracheostomy review team or ear nose throat (ENT) team to review the patient.
- Cuff deflation is not recommended (unless part of the formal weaning process) as it increases the risk of aspiration. This procedure must have a medical order.
- If cuff pressure cannot be maintained e.g., spontaneously reducing or a leak is suspected (indicated by audible gurgling) escalate to senior medical/nursing staff for assistance. The patient with a leaking cuff is at increased risk of aspiration and the tracheostomy tube may need to be changed.

Refer to the following in the [ACI Clinical Practice Guide Care of adult patients in acute care facilities with a tracheostomy:](#)

- Table 9, page 14: Recommendations for cuff management

In line with ACI Tracheostomy Care Clinical Practice Guide the following are evidence-based recommendations for Cuff pressure:

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Procedure: Checking cuff pressure		Key points
1	Inform the patient of procedure	
2	Securely connect pressure gauge to pilot balloon of the manometer	If not secure - pressure will be inaccurate
3	Determine if pressure is above or below the optimum range	Optimum is any level in the green range of the manometer
4	Above range - press the release button on the side of the pressure gauge until it returns to green	An over-inflated cuff may cause tracheal necrosis, fistulas, dilation or stenosis. 25-30cm H ₂ O is the acceptable pressure range
5	Below range - inflate balloon one depression at a time until the needle enters the optimal range 25-30cm H ₂ O	Deflated or partially inflated cuff increases risk of aspiration and may compromise respiratory status
6	Disconnect the gauge when in the optimal range. If cuff will not inflate or continues to lose pressure inform ENT/ICU Registrar, CNC Respiratory/ENT or CNC Surgery	The one-way valve will ensure that air will remain in cuff
7	If the cuff pressure is reading lower than the acceptable range, inflate the cuff and reassess within the hour to detect/confirm a cuff leak	

13.4 Suctioning a tracheostomy tube

Practice Limitations:

Registered Nurses who have completed education and achieved performance capability in the procedure.

Enrolled Nurses who have completed education, achieved performance capability and achieved 'extended scope of practice' in Tracheostomy management. The EN will provide care under the direct supervision a registered nurse.

Indications:	Persistent coughing	Respiratory distress	Audible gurgling or visible secretions
	Decreasing oxygen saturation	Increased peak inspiratory pressures for mechanically ventilated patients	Increased or decreased respiratory rate
Contraindications:	Platelets < 20	Acute pulmonary oedema	Acute respiratory haemorrhage
Potential Complications:	Tracheal trauma	Suctioning induced hypoxemia	Hypertension
	Cardiac arrhythmias	Raised intracranial pressure	Infection
	Laryngospasm	Haemorrhage	

Alert

- Suction frequency should be based on patient assessment and clinical indicators such as work of breathing, oxygen saturations and chest auscultation.
- Patients should be regularly assessed for work of breathing, oxygen saturations and chest auscultation.
- Light suction to the end of the tracheostomy tube is preferable if the patient is awake and has an effective cough.
- Deep suction (catheter fully advanced to the carina and then withdrawn 1cm before applying suction), must be used with caution as it may cause trauma to the trachea and increase intracranial pressure.
- Suction should only be applied during catheter withdrawal and should be applied continuously as opposed to intermittently.
- Suctioning should take no longer than 10-15 seconds. Longer periods of suction are associated with increased risk of hypoxemia and trauma (Wang, Tsai, Chen, et al., 2017)
- Gloves should be used when using a closed suction system.
- Suction using an open system must use aseptic non-touch technique.

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Refer to the following in the [ACI Clinical Practice Guide Care of adult patients in acute care facilities with a tracheostomy:](#)

- Table 13, page 19: Recommendations for suctioning

In line with ACI Tracheostomy Care Clinical Practice Guide, the following are evidence-based recommendations for suctioning a tracheostomy tube:

Equipment required for suctioning

- High pressure wall suction
- Oxygen as required
- Clean examination gloves and disposable apron/gown
- Eye/Facial protection/shield
- Water to wash through tubing after suctioning
- Yankuer sucker
- Suction catheter of appropriate size not exceeding 50% of the internal diameter of the tracheostomy tube.

Guide

Tracheostomy Tube Size	Suction Catheter Size (fg)
Mini- tracheostomy	8-10
Shiley 6	10 or 12
Shiley 8	12
Shiley 10	14
Portex 7	10
Portex 8	12
Portex 9	10 or 12

SESLHD PROCEDURE

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Procedure: Suctioning a tracheostomy tube		Key points
1	Assess patient clinically to determine necessity for suction	(See Indications above)
2	Perform hand hygiene. Wear eye protection and apron/gown throughout the procedure	To reduce the risk of cross infection
3	Time suctioning to occur before patient has eaten/drunk	Decrease the risk of aspiration
4	Explain procedure to the patient	To obtain consent, cooperation and confidence
5	Provide reassurance to the patient	Suctioning can produce increased levels of anxiety due to alternation of inspiration during procedure
6	Position patient in semi-fowler's if clinically appropriate	Facilitate clearance
7	Hyper-oxygenate the patient for one minute before suctioning; OR ask the patient to take five deep breaths. NB: COPD patients should be assessed for the need to hyper-oxygenate as they may only require a 20% increase of current oxygen concentration	To maintain arterial oxygenation and reduce risk of hypoxia and arrhythmias. Patients with COPD have an altered CO ₂ response mechanism and should not routinely be given 100% O ₂
8	Insert a non-fenestrated inner cannula if the patient has a fenestrated tracheostomy tube.	This prevents the suction catheter from damaging the mucosa by passing through the fenestrations
9	Select appropriately sized catheter. Do not use a catheter more than 50% of the internal diameter of the tracheostomy tube.	If sputum is tenacious it is recommended to increase the size of the suction catheter to no more than 50% of the internal diameter of the tracheostomy tube.
10	Turn on the suction at the source and attach a sterile catheter. Check there is adequate suction.	Ensure equipment is working correctly.
11	Put a clean disposable glove onto the dominant hand. At this point avoid touching anything other than the suction catheter.	This reduces the risk of cross infection and ensures the technique is as clean as possible
12	Introduce the catheter with the suction port uncovered. Suction pressure should be set at 100-150mmHg.	The catheter is inserted with the suction off to reduce the risk of trauma. Damage and infection of the respiratory mucosa can occur if the practitioner is not gentle.

SESLHD PROCEDURE

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Procedure: Suctioning a tracheostomy tube		Key points
	<p>Light Suction: Insert catheter to just past the inner most tip of the tracheostomy tube (15cm), encourage patient to cough and apply suction.</p> <p>Deep Suction: Insert catheter until resistance is felt (at the carina) or until the patient coughs. Remove 1cm and apply suction.</p> <p>The catheter tip should go no further than the patient's carina where the cough reflex is stimulated.</p>	<p>Light suction is preferable if the patient is awake with an effective cough and assessment is done to ensure all sputum and secretions have been removed.</p> <p>Higher negative pressure can cause mucosal trauma, hypoxemia and atelectasis.</p> <p>Deep suction must be used with caution as it may cause tracheal trauma and increase intracranial pressure</p>
13	Gently withdraw catheter without rotating the catheter and with continuous suction until completely removed from the tracheostomy tube. The entire process should not exceed 10-15 seconds.	<p>Continuous suctioning is the most effective technique of removing secretions. Withdrawal of the catheter without rotation reduces the risk of trauma.</p> <p>Prolonged suction will result in hypoxia.</p>
14	The same suction catheter may be used up to three times in the one suction episode prior to disregarding of catheter (providing it is not blocked with secretions or become unsterile)	
15	<p>Immediately reapply the patient's oxygen or ask the patient to take five deep breaths.</p> <p>Ask the patient to huff in order to assess whether further suctioning is required.</p>	<p>To reduce the risk of further hypoxia and restore their arterial PaO₂ immediately.</p> <p>When the patient huffs listen for harsh or gurgled breath sounds which indicates need for further suctioning.</p>
16	<p>Repeat the process until the patient is breathing comfortably and the secretions have been successfully removed.</p> <p>NB: maximum of three passes unless emergency i.e., tube blocking.</p>	To reduce the risk of infection and trauma and to ensure that secretions are removed and the patients breathing becomes more comfortable i.e., maximise removal with minimal attempts.

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Procedure: Suctioning a tracheostomy tube		Key points
	<p>If repeating allow patient at least five breaths between catheter passes.</p> <p>Dispose of catheter by wrapping catheter around hand and turning glove inside out over dirty catheter.</p> <p>Clear suction tubing with tap or bottled water.</p> <p>Perform hand hygiene.</p>	<p>Cleaning the tubing to minimise risk of infection and prevent the circuit from blocking.</p>
17	<p>Reattach heat moisture exchanger.</p> <p>Return oxygen flow to pre oxygenated level.</p>	<p>If the patient is comfortable and there are no signs of respiratory distress, return oxygen to flow level prior to procedure to prevent oxygen toxicity.</p>
18	<p>Record secretion volume, consistency, and colour on tracheostomy chart.</p> <p>If secretions are thick and tenacious increase humidification and consider more frequent use of nebulised saline.</p>	

13.5 Oral hygiene

Refer to the following in the [ACI Clinical Practice Guide Care of adult patients in acute care facilities with a tracheostomy](#):

- Table 17, page 16: Recommendations for oral hygiene

In line with ACI Tracheostomy Care Clinical Practice Guide the following are evidence-based recommendations for oral hygiene during a tracheostomy:

The oral cavity should be cleaned at least twice daily to reduce colonisation with nosocomial organisms and promote oral hygiene. Patients with a tracheostomy have an increased risk of aspiration.

Alert:

- Check the cuff pressure prior to oral hygiene to (if applicable) ensure the pressure is 25-30cmH₂O to prevent micro aspiration.

Oral hygiene should include:

- Brushing of the teeth, gums, tongue, and hard palate with a soft toothbrush to remove and prevent plaque development.
- Inspect the oral cavity at least once a shift, notify the medical officer if there is any evidence of fungal infection or thrush. As oral thrush may affect the integrity of the tracheostomy tube and cause the patient discomfort on coughing and swallowing, and lead to an increase in granulating tissue.

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13.6 Securing a tracheostomy – tape change and dressing

Practice Limitations:

Registered Nurses who have completed education and achieved performance capability in the procedure.

Enrolled Nurses who have completed education, achieved performance capability and achieved ‘extended scope of practice’ in Tracheostomy management. The EN will provide care under the direct supervision a registered nurse.

Alert

- Securing and positioning of the tracheostomy tube must prevent dislodgement and maintain alignment, particularly during patient repositioning and suctioning.
- Educate the patient to not manipulate the tape and/or tracheostomy tube to reduce the risk of tracheostomy dislodgment or misalignment.
- Cloth tape is the preferred method to secure tubes (rather than Velcro) for the newly formed (<72 hours) tracheostomy.
- Any patient at risk of upper airway obstruction, caused by accidental decannulation, must have the tracheostomy tube secured with cloth tape (not Velcro) and tied securely.
- Cloth tape should be changed daily or whenever soiled/moist and always fastened using a double knot
- Tension of tapes should be tested by putting small finger between the tape and the patient’s neck (with the patient’s neck in a neutral position)
- Tracheostomy tube must not move more than 1cm in any direction from the midline
- Two clinicians are required when changing tapes - one to hold the tube, the other to perform the procedure. One clinician should be a registered nurse who has achieved performance assessment in procedure.
- **Dressing frequency:** First 24 hours post insertion - Avoid changing the tracheostomy dressing (to reduce the risk of bleeding)
 - Next 24-48 hours - every shift or PRN
 - Post 48 hours – Dressing may not be required. Stoma site needs to be cleaned every eight hours or more frequently if evidence of discharge or secretions
- Cotton balls or material that has not been pre-cut by manufacturers must **NEVER** be used to clean around the stoma due to the potential for inhalation of loose fibres.
- If the tube is an **adjustable flange tube:**
 - Flange position marked and documented in eMR and on the tracheostomy management chart each time the tube is assessed
 - documented in eMR to identify tube lock confirmed, orientation, position
 - NB: if tube migration has occurred notify medical officer immediately.
- Following **neck surgery**, pressure on any part of the neck must be avoided. In these cases, the tracheostomy tube should be sutured to the skin through the tracheostomy flange.
- Flange sutures and stoma integrity must be assessed daily. This should be documented in the health records.
- Position of **stay sutures**, if present, in tracheal cartilage must be documented (north and south or east and west) and must be easy to access in the event of an emergency.

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- Where the tube is sutured in, scissors or a suture cutter must be by the bedside in the event of partial tube displacement occurring.

Refer to the following in the [ACI Clinical Practice Guide Care of adult patients in acute care facilities with a tracheostomy](#):

- Table 8, page 12: Recommendations for maintaining patient airway - Tube position

In line with ACI Tracheostomy Care Clinical Practice Guide, the following are evidence-based recommendations for positioning and maintaining the tube for a tracheostomy:

Equipment

- Normal saline sachet (sodium bicarbonate if skin is ulcerated, red or swollen)
- Dressing pack
- Gauze squares
- Clean gloves
- Face shield, mask and eye protection
- Plastic apron
- Cloth tape (13mm wide, 2 x 1 metre lengths)
- Tracheostomy dressing (Foam or Split drainage gauze dressing)
- Split gauze dressing (required for initial 48 hours or until no ooze from stoma).

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Procedure: Tracheostomy tape change and dressing		Key points
1	Remove soiled dressing and tapes It is essential that two clinicians are present when tapes are changed to avoid dislodgment of tube one clinician must have completed a performance assessment in the procedure.	Wet tapes predispose to growth of bacteria such as pseudomonas
2	Inspect stoma site for signs of infection, swelling, bleeding, maceration or excoriation. If any of these signs are present or if the patient is at increased risk of infection sterile dressing technique must be used.	
3	Initial 24-48 hours: <ul style="list-style-type: none"> • Clean with normal saline if skin is ulcerated, red or swollen. • Apply a single split dressing under the flange After 48 hours: <ul style="list-style-type: none"> • Clean site eight hourly or PRN with warm tap water and a clean, soft cloth 	Dressing only required for the initial 48 hours or until no ooze. Review skin integrity around stoma.
4	Assistant holds tracheostomy flange during procedure.	
5	Fasten tapes to each flange leaving one end longer on each side.	
6	Take long end of tape on one side of neck to short end of tape on other side. Fasten using a double knot. Repeat. Test tension of tapes by putting two fingers between the tape and the patient's neck (with the patient's neck in a neutral position). Do not tie over the carotid artery.	Unequal traction will cause pressure on one side and may cause tissue damage. Pressure over the carotid artery may compromise cerebral perfusion.

14. COMMUNICATION, SWALLOWING AND ORAL INTAKE**14.1 Communication**

The presence of a tracheostomy may limit verbal communication. To optimise communication, whether verbal or non-verbal a speech pathologist is recommended to review the patient. A variety of verbal and non-verbal systems are available. Success of the communication system is dependent on the patients' clinical condition (e.g., respiratory function, level of alertness, cognitive status), ENT anatomy, physical dexterity, co-morbidities and environmental factors (e.g., staffing limitations and skills) and patient preferences, language and cultural background.

Education Note

Verbal communication is mechanically impossible for patients with an inflated tracheostomy cuff unless a specialised tracheostomy tube is used. An inflated cuff blocks air from the lungs, preventing passage of air to the vocal cords and thus production of voice.

Non-verbal communication can be enhanced by the following aids:

- Pen and paper or whiteboard and marker
- Generic communication board
- Strategies to maximise communication e.g., Encourage the patient to exaggerate lip movement and use short complete sentences to facilitate lip reading.

In line with ACI Tracheostomy Care Clinical Practice Guide, the following are evidence-based recommendations for improving communication with patients during a tracheostomy:

- Pre-operative communication assessment is recommended for all patients when speech is likely to be temporarily lost/impaired to improve psychological and communication success post-surgery. Assessment should include the choice of appropriate augmentative communication system(s).
- All conscious patients without speech should have access to alternative communication systems (e.g., pen/paper, whiteboard, communication board) at all times, to supplement mouthing and gesture.
- Where simple alternative communication methods are not effective, the patient is experiencing significant distress with their communication or no speech is expected for an extended period, patients should be referred for a communication assessment by a Speech Pathologist or similar person with skills in alternative and augmentative communication (AAC) devices.
- Where an effective communication system has been established, consistent use should be encouraged.
- A variety of communication methods should be available during communication assessment to ensure individual patient needs are met including voice output devices, picture boards, and electrolarynxes.

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- Consultation by specialised communication services should be considered when an effective communication system has not been able to be established, for patients, and in particular, for long-term patients without speech.
- The effectiveness of communication methods needs to be evaluated on an ongoing basis, in accordance with patient’s preferences and clinical status.
- Communication assessment should be considered by all members of multidisciplinary team with engagement of the patient and caregivers.
- Communication assessment should occur as soon as clinically indicated.
- Verbal speech should be used where possible. However, when it is not possible, alternative communication strategies should be trialled.

Voice production may be achieved by the following:

- **Cuff Deflation** – Deflation of the cuff facilitates voice, by allowing air to pass into the upper airway on expiration. Phonation may be achieved as air is directed up into the larynx. The strength of the voice is usually weak as some air passes out of the open tracheostomy by the reduced airflow and resistance created by the tracheostomy tube and the deflated cuff.
- **Fenestrated Tracheostomy Tube** – A fenestrated tracheostomy tube may allow additional air to pass into the upper airway on expiration and improve voice production when the cuff is deflated. It is recommended that a fenestrated inner cannula is used with a fenestrated outer cannula.
- **Intermittent Finger Occlusion** – Intermittent occlusion of the tracheostomy tube with a gloved finger when the tracheostomy cuff is fully deflated.
- **Downsizing of Tracheostomy Tube** – Use of a smaller tracheostomy tube, which increases passage of air between the tube and the tracheal walls on exhalation, may facilitate improved voice production. Decisions regarding tube downsizing should be a multidisciplinary decision.
- **Specialised Tracheostomy Tube/Use of subglottic suction aid** - In patients who are unable to tolerate cuff deflation there are a variety of specialised tracheostomy tubes available to achieve speech. Speaking tracheostomy tubes work by directing the flow of air, above the level of the tracheostomy cuff, to allow phonation without cuff deflation. These include use of ‘talking tracheostomy tubes’ (e.g., Portex Blue Line Trach-talk™), use of a subglottic suction tube aid, or the use of specialised ‘speaking inner cannula’ tubes. These tracheostomies should be used for short periods initially and the tolerance and comfort of each patient monitored closely.

Alert

The Speech Pathologist, in consultation with the multidisciplinary team, will provide information and advice regarding the most appropriate communication system for the patient.

In line with ACI Tracheostomy Care Clinical Practice Guide, the following are evidence-based recommendations for managing cuff deflation:

- Cuff deflation in a non-ventilated patient should be assessed/conducted with an understanding of the potential risks of aspiration. Further management and planning for cuff

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deflation for speech should be managed within a team approach considering appropriate parameters/contingency plans that allow for changes to the patient's clinical condition.

- If intermittent finger occlusion is recommended, education on the importance on hand hygiene is needed to patient, carer or staff. A one way speaking valve may be considered as a way to reduce infection risk.
- Using a fenestrated tracheostomy (or inner cannula), downsizing a tracheostomy tube, or inserting a cuffless tracheostomy tube may be considered as methods to facilitate/improve speech with less respiratory effort.
- Specialised tracheostomy tubes with speaking inner cannula, may be considered in patients who are ventilator dependent and unable to tolerate cuff deflation to achieve speech with agreement of patient's primary clinical team.
- Subglottic suction aid tracheostomy with air redirection may be considered to facilitate voice in patients who are ventilator dependent and unable to tolerate cuff deflation to achieve verbal speech.

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14.2 One way speaking valve

Education Note

One Way Speaking Valve: this device contains a diaphragm which opens during the inhalation phase and closes on forced exhalation i.e., ‘neck breathing’ on inhalation and upper airway when exhaling, coughing and speaking.

Contraindications include:

- Inability to tolerate cuff deflation
- Severe tracheal/laryngeal stenosis
- Airway obstruction
- End stage pulmonary disease
- Unstable pulmonary status
- Laryngectomy
- Cognitive dysfunction.

Alert

- Patients requiring a speaking valve should be referred to Speech Pathology
- Speech Pathology will liaise with the medical/nursing team and ENT
- Speaking valves should be used with a fenestrated outer and inner cannula
- Baseline respiratory rate and oxygen saturation must be monitored and documented prior to the procedure.
- The speaking valve must be removed at night or when the patient is asleep
- A trial period using the one-way speaking valve must be conducted.

NOTE: In line with ACI Tracheostomy Care Clinical Practice Guide, the following are evidence-based recommendations for one-way valves:

A one-way speaking valve should be considered in an acute and chronic non-ventilated population to promote phonation. Manufacturers’ guidelines need to be adhered to. There are **risks of barotraumas, respiratory arrest and death if the valve is placed on an inflated cuff**. Additional external humidification may be considered in patients with a one-way speaking valve in situ.

Remove the one-way speaking valve if any of the following occur:

- Respiratory difficulty (e.g., respiratory rate increase)
- Decrease in SpO₂
- The patient becomes fatigued/wants to sleep
- Patient request
- Inadequate clearance of secretions
- Deterioration in chest/medical status.

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Procedure: One way speaking valve		Key points
1.	Monitor SpO ₂ and respiratory rate prior and during trial.	To obtain the patient's baseline status.
2.	Explain the procedure and gain consent. Check for patient comprehension.	To gain cooperation and reduce patient anxiety which can influence the success of the voice production.
3.	Encourage patient to cough and clear secretions. Suction as required – both above and below cuff.	To reduce risk of aspiration of saliva and remove secretions.
4.	Deflate tracheostomy tube cuff completely (See procedure on Weaning and Decannulation BEFORE deflating cuff).	To ensure the patient can breathe (i.e., exhale) when speaking valve placed.
5.	Encourage the patient to cough. Suction only as required – below cuff as indicated.	To remove secretions and aspirated saliva.
6.	Once suctioning is not indicated, remove non-fenestrated inner cannula and replace with fenestrated inner cannula if applicable.	Insert fenestrated inner cannula to promote improved air flow for voice.
7.	Place speaking valve firmly on the hub at the end of the tracheostomy tube.	
8.	Once one way speaking valve is in situ, instruct the patient to breathe in (via the tracheostomy tube) and blow out through the mouth.	Reassure the patient that this may feel different, as they may not be used to breathing through their upper airway.
9.	Begin trial attempts at phonation by asking the patient to count from one to five.	Automatic speech such as counting is often easier for the patient than spontaneous speech.
10.	If the patient's voice sounds 'wet' or 'gurgly' ask them to cough and clear secretions.	This will be usually coughed out of the mouth when speaking valve on.
11.	During the trial period Monitor and document vital signs and remove one way valve as indicated. Observe for complications.	
12.	Liaise with the other team members regarding the length of time the speaking valve remains in situ, and the tracheostomy decannulation weaning plan.	
13.	Remove one way speaking valve at the end of the trial period.	

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14.3 Management of swallowing and oral intake

Education Note

Research suggests there is not a causal relationship between tracheostomy tubes and dysphagia however the patient’s clinical condition, comorbidities, or the original reason for the tracheostomy insertion itself, can be risk factors for swallowing dysfunction.

- Dysphagia may be present post removal of the tracheostomy tube, as the patient’s clinical condition or co-morbidities may also result in dysphagia.
- When the cough reflex is impaired or absent, aspiration of saliva, food, drink or gastric secretions can occur without overt signs of aspiration. The risk of aspiration is increased by prolonged tracheal intubation which can desensitise the airway.
- Clinical consequences of aspiration include transient hypoxemia, chemical pneumonitis, pulmonary infection or obstruction.

Alert

- All patients who are at risk of dysphagia or aspiration, (e.g., Stroke, Head and Neck cancer Trauma or COPD), must be referred to Speech Pathology prior to commencing oral intake or cuff deflation.
- For all other patients with a tracheostomy, a referral to Speech Pathology is highly recommended prior to commencing oral intake or cuff deflation. Speech Pathology will document drinking and feeding instructions in the progress notes, compliance with instructions is mandatory (i.e., use of one-way speaking valve or capping of tracheostomy during feeding or drinking).

Risk factors for dysphagia and aspiration include:

- Decreased level of consciousness
- Neurological impairment, including cognitive impairment
- Dependence for feeding
- Dependence for oral hygiene
- Poor oral hygiene
- Prior history of aspiration pneumonia
- History of head and neck cancer
- Respiratory compromise.

In line with ACI Tracheostomy Care Clinical Practice Guide, the following are evidence-based recommendations for managing swallowing and oral intake:

Management of Swallowing and Oral Intake

- Consideration should be given to the patient’s underlying clinical status as this will be a major factor that will impact on swallowing function.

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- The presence of a tracheostomy tube should therefore not preclude an assessment of swallowing.
- Patients should undergo a swallowing assessment by a speech pathologist if any swallowing dysfunction is observed or if requested by the treating team.

Swallowing Assessment

Where dysphagia is suspected or identified a speech pathologist should assess the patient’s swallowing function. Swallowing assessments may use a combination of clinical and instrumental assessment techniques. Generally, it is recommended that the patient undergo a swallowing assessment with the cuff deflated however, there are situations where it may be recommended that the patient undergo a swallowing assessment with the cuff inflated.

Blue food dye assessments, for example the Modified Evan’s Blue Dye Test (MEBDT), are no longer recommended as part of a swallowing assessment, as evidence indicated that this has been shown to be an unreliable assessment.

In the first instance a bedside (clinical) assessment will be undertaken and if deemed necessary an instrumental assessment of swallowing using video fluoroscopy termed a Modified Barium Swallow (MBS) or Video fluoroscopic Swallow Study (VFSS) may be recommended. A fibre optic endoscopic evaluation of swallow (FEES) is an alternative objective assessment that may be recommended particularly following ENT surgery, in the ICU setting or where a VFSS is unable to be performed. A FEES appears to be a far more sensitive assessment than a clinical examination alone and provides an objective opportunity to observe how well the patient can tolerate saliva.

In line with ACI Tracheostomy Care Clinical Practice Guide (pages 48-50), the following are evidence-based recommendations for assessing swallowing:

- Swallowing assessment by a speech pathologist is required in adult patients to determine whether changes to tracheostomy tubes (cuff up/down, tube occlusion, use of speaking valve) change patient’s swallowing status. Cuff deflation should be assessed/conducted with an understanding of the potential risks of aspiration. Further management and planning for cuff deflation should be managed within a team approach considering appropriate parameters/contingency plans that allow for changes to the patient’s clinical condition.
- An instrumental assessment using VFSS or FEES may be required to guide the patient’s swallowing management of saliva and oral intake, as well as trials of cuff deflation, tube occlusion and the use of one-way speaking valve.

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15. CHANGING A TRACHEOSTOMY TUBE (Routine)

Practice Limitations:

Medical staff, registered nurse and allied health staff who have completed education and achieved performance capability in the procedure.

Education Note

Factors which may complicate tube change include: immature tracheostomy tract (7-10 days), obesity, a short neck, anatomical abnormalities, granulation tissue, viscous secretions and peri-tracheal oedema.

Alert:

A tracheostomy tube should **not** be changed within 72 hours of insertion.

- Elective early tracheostomy tube changed (within 72 hours of the formation of the tracheal stoma) may be hazardous and should be avoided, particularly in patients with a history of difficult intubation.
- The decision to change a tracheostomy tube must be made by the multidisciplinary tracheostomy team (MDT) in conjunction with the primary care team (or critical care team in sites without an MDT).
- For **first** tracheostomy tube change, a medical officer with advance airway skills must be present for the procedure.
- Prior to inserting or changing a tracheostomy tube a “Clinical Procedure Safety Check List 2” must be performed as per the [NSW Health Policy Directive: Clinical Procedure Safety \(PD2017_32\)](#).
- Tracheostomy tube changes are only to be performed by a medical officer with advance airway skills (i.e., an Anaesthetist, ENT, ICU Registrars); a Clinical Nurse Consultant, Clinical Nurse Specialist 2 (i.e., ENT, Respiratory, Neurosciences or ICU Liaison Nurse); a Senior Physiotherapist or Nurse with expertise in this skill.
- The patient should be nil by mouth for six hours prior to a planned tube change. A patient receiving parental nutrition via a PEG or PEJ must have their feeds stopped 4 hours prior to change and tube aspirated if indicated.
- Notify primary care team prior to commencing tube change. The **Intensive Care Services [ICS] and/or ENT team** should be made aware that a tracheostomy tube change is being performed.
- This procedure requires a minimum of two skilled clinicians.
- Document the procedure in the progress notes and on the Tracheostomy Management and Observation Chart including tube size, type of tracheostomy and next tracheostomy change due. Also, document and notify medical officer of any problems during the change (i.e., bleeding, trauma or difficult insertion).
- The patient should be physically monitored for 30 minutes post-first tracheostomy change. Clinical observations including continuous pulse oximetry and full set of vital signs, completed hourly for four hours, then four-hourly for 24 hours or as clinically indicated.

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- Manufacturers recommend that a tube with an inner cannula should not remain in situ for more than 30 days. The frequency of a tracheostomy tube change should take into consideration the manufactures recommendation and be guided by the medical team or TRT responsible for the change of the tracheostomy tube.

Refer to the following in the [ACI Clinical Practice Guide Care of adult patients in acute care facilities with a tracheostomy:](#)

- Table 15, page 22: Recommendations for changing the tracheostomy tube

In line with ACI Tracheostomy Care Clinical Practice Guide, the following are evidence-based recommendations for changing a tracheostomy tube:

Equipment Required

- Dressing pack
- Suction catheter (with Y connection removed)
- Correct size tracheostomy tube and one size smaller,
- Tracheostomy tube holder/tracheostomy tape
- Manometer if tube is cuffed
- Sterile water-soluble lubricant
- Sterile normal saline
- Pre-cut slim line keyhole dressing (i.e., drain sponge)
- Sterile or clean gloves, apron, and protective eye wear/face visor
- Tracheal dilators
- suction
- Functioning suction unit and appropriately sized suction catheters
- Stethoscope
- Resuscitation equipment.

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Procedure: Changing a tracheostomy tube		Key points
1	<p>Nil by mouth for six hours prior to tube change.</p> <p>Patient observation must be taken and recorded in EMR prior to tracheostomy change. Observation must be Between the flags (BTF) prior to change.</p> <p>Complete Clinical procedure safety checklist 2</p> <p>Aspirate naso-gastric tube if present</p> <p>If oxygen is required attach O₂ to tracheostomy</p> <p>Ensure appropriate PPE</p>	<p>To reduce the risk of aspiration while airway is unprotected.</p> <p>Ensure safety and reduce infection prior to commencing the procedure</p>
2	<p>Two skilled clinicians should perform the procedure. Both must wear eye protection, gloves and apron/gown.</p>	<p>To ensure a swift and safe procedure.</p>
3	<p>Explain the procedure and rationale to the patient.</p> <p>The ICS and/or ENT team should be made aware that a tracheostomy tube change is being performed.</p>	<p>The patient should give their verbal consent to the procedure, unless unable or an emergency procedure.</p> <p>Ensuring the availability of a medical officer with advanced airway skills is safe practice should problems arise.</p>
4	<p>Position patient in semi-recumbent position, extending the neck, remove any obstructive clothing.</p>	<p>Extending the neck will make the removal and insertion of the tube easier.</p> <p>To ensure adequate view of patient's neck.</p>
5	<p>If the patient is dependent on oxygen, hyper-oxygenate the patient with 100% oxygen and monitor oxygen saturations.</p> <p>Assess COPD patients for need to hyper-oxygenation as they may only require a 20% increase of their oxygen concentration.</p>	<p>During tube change the patient will be at risk of hypoxia.</p> <p>Patients with COPD have an altered CO₂ response mechanism and should not routinely be given 100% O₂.</p>
6	<p>If the new tracheostomy tube is cuffed, check the cuff by inflating it with air, and observe cuff for leakage. Deflate cuff fully. Ensure a smaller tracheostomy tube is available.</p>	<p>To check for air leaks and spontaneous deflation.</p> <p>In case the same size tube cannot be inserted easily.</p>

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Procedure: Changing a tracheostomy tube		Key points
7	Check obturator can be removed.	To become familiar with removing obturator prior to insertion.
8	Lubricate the tube sparingly with a water-soluble lubricant. Place on sterile surface.	To facilitate insertion and maintain sterility.
9	Remove old dressing and tapes, observe site and clean around stoma site.	To clean skin of debris and potential skin contaminants. To enable removal of the tracheotomy tube.
10	Suction patient if required. Suction oro-pharyngeal secretions. Using the synchronized cuff deflation and suction technique deflate the cuff with a 10ml syringe.	Pooled secretions above the cuff may enter the lungs when the cuff is deflated. A fully deflated cuff reduces the risk of trauma on removal of the old tube.
11	Remove old tube in a firm upwards and downwards motion on expiration. Observe the stoma site.	To cause minimal trauma and reduce the risk of coughing. To identify signs of stoma infection and granulation tissue.
12	With clean gloves insert the new tracheostomy tube with the obturator in place as the patient exhales.	The obturator guides the tracheostomy tube along the contour of the trachea. Relaxation of the neck muscles makes insertion easier.
13	Remove the obturator immediately.	The patient will be unable to breathe with the obturator blocking the lumen.
14	Inflate the cuff using the minimal occlusion technique and check with a cuff pressure gauge.	An inflated cuff reduces the risk of aspiration. Correct inflation reduces the risk of tracheal wall damage.
15	Insert inner cannula if using a two-piece system.	To prevent secretions collecting on the inside of the outer cannula.
16	Observe the patient for respiratory distress. Feel for respiration via the tube, where able, ask the patient to breathe deeply and observe for chest movement.	There should be airflow via the Tracheostomy tube if the tube is correctly positioned in the airway.

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Procedure: Changing a tracheostomy tube		Key points
		NB: If tube insertion fails or patient becomes compromised and cyanosed initiate Tracheostomy Emergency Procedure
17	Listen for equal air entry.	To ensure bilateral inflation of the lungs.
18	Clean stoma site if required, renew dressing and secure tracheostomy tube with cotton tapes.	To reduce the risk of dislodgement, maintain patient comfort and reduce the risk of infection.
19	If the patient is comfortable and there are no signs of respiratory distress, return oxygen to levels prior to procedure and observe respiratory rate and oxygen saturation.	
20	Record tube change on Tracheostomy Care Chart and progress notes, document time, date, size, type of tube and any complications.	To ensure effective communication.
21	There may be a small amount of bleeding post tube change. If there is excessive bleeding, ensure cuff is inflated and call for immediate medical assistance [Code blue] .	Trauma can occur to stoma site during a tube change. An inflated cuff will protect the patient's airway whilst controlling the bleeding.

16. WEANING AND DECANNULATION PROCESS

In line with ACI Tracheostomy Care Clinical Practice Guide, the following are evidence-based recommendations for undertaking the weaning/decannulation process. Refer to [Table 18, page 29-30: Recommendations of weaning to decannulation](#).

Recommendations for weaning to decannulation

- Weaning and the process of decannulation must be a collaborative decision involving the admitting medical team and TRT, multidisciplinary team, patient and carer.
- The weaning and decannulation plan should be documented in the health record, reviewed at least daily and updated as required.

Patients will be considered for decannulation if:

- The patient is hemodynamically stable
- The patient is free from ventilatory support for >24 hour period.
- The airway has been assessed as patent with cuff deflation and digital occlusion/one way speaking valve(described below) and or nasendoscopy visualisation of the airway.
- A cuff is not required to protect the lower airway from oral secretions
- The patient has a strong cough and is able to clear secretions spontaneously
- The original reason and any other reasons for the tracheostomy has resolved.

Alert

- Clinicians involved must have, or be supervised by a clinician with, tracheostomy knowledge, emergency tracheostomy management and experience to decannulate the patient.
- The decision to decannulate all head and neck patients, must be in consultation with, the ENT surgeon and multidisciplinary team.
- The patient should be fasted for a minimum of six hours prior to removal of the tracheostomy. If a nasogastric tube is present, this should be aspirated to empty the stomach.
- An occlusive dressing should be applied to the stoma after the tracheostomy tube is removed and is required to be:
 - assessed at least daily
 - large enough to cover the stoma
 - changed if odorous, contaminated by secretions or if no longer airtight.
- Post-decannulation clinical observations including continuous pulse oximetry and full set of vital signs. Vital signs must occur hourly for four hours, then four-hourly for 24 hours or as clinically indicated.
- An electrocardiogram dot may be applied centrally over the top of the dressing, for the patient to apply digital pressure when coughing and talking. (Garcia-Rodriguez et al., 2017)
- The patient is recommended to occlude the tracheostoma dressing when coughing and voicing until the stoma is closed.

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- The procedure must be documented in the patient’s health record, tracheostomy management plan and eMR and should include:
 - any complications or problems arising during procedure, the condition of the tracheostomy stoma and the surrounding skin, e.g. over-granulation or wound breakdown.
- Once stoma is closed [airtight], clean and dry, dressings should cease.

Observations: Pre, During and Post decannulation

These parameters are MINIMUM requirements, and each patient MUST be individually assessed.	
Constant presence of clinician	For 30 minutes after any changes including: Capping or insertion of speaking valve Cuff deflation Removal of Tracheostomy Tube.
Assessment	The nurse responsible for the care of the patient must visually assess that the patient is tolerating the change at least hourly.
Vital signs	Pulse oximetry: Continuous for 24 hours Review at 24 hours BTF observations: [Respiratory rate Pulse, BP, temperature] All observations should be recorded hourly for the first 4/24 and then every 4/24 for 24 hours

17. CUFF DEFLATION, OCCLUSION AND TUBE REMOVAL

Practice Limitations:

Registered Nurses, Physiotherapists, Speech Pathologists who have completed education and achieved performance capability in the procedure.

Enrolled Nurses who have completed education, achieved performance capability and achieved 'extended scope of practice' in tracheostomy management. The EN will provide care under the direct supervision a registered nurse.

The patient must meet the following clinical criteria prior to the weaning process:

- Clinical indications for tracheostomy are resolved, nil deterioration within last 24 hours
- Stable chest status – nil deterioration within last 24hrs per physio and medical team
- Absence of respiratory/chest infection
- Oxygen requirement – self ventilating with or without oxygen (as per medical order)
- Minimal suctioning requirements
- Adequate airway protective mechanisms, i.e., ability to cough and clear airway secretions via tracheostomy or by mouth
- No granulation tissue, oedema around tracheostomy site
- Patent upper airway e.g., absence of oedema, no obstructions
- Agreement by all members of the MDT.

17.1 Stage 1: Cuff Deflation

Alert:

- Cuff deflation is only recommended as part of the weaning process or in an emergency due to occlusion, as it may increase the risk of aspiration and hypoxia
- If cuff deflation is unsuccessful the cuff must be reinflated using the cuff manometer
- This is a two-person procedure.
- Weaning is a progressive, three stage process. The patient must successfully achieve cuff deflation and tube occlusion (for at least 24–48-hour period), before the tracheostomy tube can be removed.

OR

- An alternative to assess suitability for decannulation, when not appropriate or safe to occlude the tracheostomy, is for the patient to tolerate continuous cuff deflation for a 24–48-hour period without need for tracheal suctioning.

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Procedure: Cuff deflation		Rationale
1	Encourage the patient to cough and clear secretions.	To reduce the amount of secretions in the airway.
2	<i>Person 1</i> If the patient has a tracheostomy tube with a sub glottic 'above cuff suction port', suction above the cuff before deflating the cuff.	To reduce the amount of oropharyngeal saliva that may be further aspirated when the cuff is deflated.
3	<i>Person 1</i> If the patient requires a tracheal suction prior to cuff deflation, pass a sterile catheter into the tracheostomy tube, approximately 0.5 cm longer than the tracheostomy tube tip. This should not be conducted unless indicated.	To minimise the risk of cross infection and trauma.
4	<i>Person 2</i> Advise the patient that they may cough after cuff deflation and this is normal. Deflate the cuff steadily, removing all air from the balloon. <i>Person 1</i> may need to suction post cuff deflation if indicated.	To prepare the patient for what to expect. Suction post deflation may be indicated to assist the patient if they have had saliva previously pooling above the tracheostomy cuff.

Indicators of successful cuff deflation
<ul style="list-style-type: none"> • SpO₂ maintained at or above 90% or within 5% of baseline • Respiratory rate within breaths/minute above the pre-procedure baseline • Blood pressure (BP) and heart rate within 10% of patient's baseline • No increase in shortness of breath • No uncontrollable coughing post deflation (after the first five minutes) • No increase in suctioning requirements or secretions.

17.2 Stage 2: Tube Occlusion

Alert:

- Successful cuff deflation must be achieved prior to tracheostomy tube occlusion.
- Tube occlusion is based on individual patient assessment and is an MDT decision.
- Ensure cuff is completely deflated before the tube is occluded.
- When occluding the tube for the first time, stay and observe the patient for a minimum of 15 minutes post occlusion.
- Continuously monitor patient’s oxygen saturation
- If occluding tracheostomy as a method to assess suitability for decannulation, occlusion must be tolerated for a minimum of 24-48 hours without the need to remove the tracheostomy cap for suctioning or respiratory purposes, before tracheostomy tube removal is considered.

OR

- An alternative method to assess suitability for decannulation (**when not appropriate or safe to occlude the tracheostomy**) is for the patient to tolerate continuous cuff deflation for 24-48 hours without need for tracheal suctioning.

Observe for:	If present:
<ul style="list-style-type: none"> • Increase in heart rate • Decrease in oxygen saturation • Signs of respiratory distress • Irritation, confusion or agitation • Cyanosis 	<p>Remove cap and activate appropriate management including escalating for assistance if necessary.</p>

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17.3 Stage 3: Removal of Tracheostomy Tube

Practice Limitations:

Registered Nurses, Physiotherapists who have completed education and achieved performance capability in the procedure.

Alert

- This procedure requires at least two clinicians, one clinician who has completed education and performance capability in the procedure.
- Weaning is a progressive, ongoing process. The patient must successfully achieve cuff deflation and tube occlusion before the tracheostomy tube can be removed.
- Tracheostomy MDT consultation should inform the decision to remove a tracheostomy tube. Medical orders need to be documented in patient medical record prior to tube removal.
- In a ward area, tracheostomy tube removal should only be attempted before 12midday Monday to Thursday.
- Stay with the patient for a minimum of 15 minutes post tube removal or until the patient is stable, whichever is the longer.

Equipment

Emergency airway resuscitation equipment immediately available:

- Clean gloves
- Disposable apron
- Protective eyewear
- Disposable drawsheet
- Yankauer sucker
- 10ml syringe if cuffed tube
- Large steristrip
- Sleek tape/occlusive dressing O2 if required via face mask or nasal prongs.

Note: Prior to tube removal the patient must have an effective cough, patent airway, and be effectively swallowing oral secretions.

Procedure: Removal of a tracheostomy tube	
1	Sit patient up at 60-degree angle and pre oxygenate
2	Don PPE and perform 5 moments of hand hygiene
3	Thoroughly suction oropharynx with Yankauer sucker
4	Suction Tracheostomy tube
5	The role of the assistant is to undo the ties deflate cuff with syringe and support the tube
6	Remove tube, with consistent firm but gentle digital pressure
7	If required, give O ₂ via facial mask
8	Observe for signs of respiratory distress and airway obstruction
9	Clean stoma with normal saline
10	Apply airtight dressing to the stoma (as per MDT preference)
11	Check tube for blood or damaged cuff.

17.4 Management post tube removal

- Encourage patient to breathe via mouth and nose
- Explain to patient that they can now talk
- Remind patient to manually press over dressing to adequately occlude stoma when speaking or coughing.
- Request patient to try to vocalise and try a strong cough
- Daily dressing for three to five days until wound discharge decreased, and then PRN until complete wound closure.
- The stoma may be left exposed when clean and dry and there is no evidence of air leak.

18. DISCHARGE OF A PATIENT WITH A TRACHEOSTOMY

In line with ACI Tracheostomy Care Clinical Practice Guide, the following are evidence-based recommendations for discharging a patient with a tracheostomy:

- If a tracheostomy has to remain in situ post discharge an appropriate facility or carer giver need to be identified and appropriate education provided by the discharging hospital.
- Adult patients will be responsible for their own care; however, an individual's dexterity and cognitive abilities need to be taken into consideration.

Essential components of patient and carer education program

- Explain reasons for and purposes of the tracheostomy
- Describe the type and size of the current tracheostomy tube
- Describe and demonstrate TT stabilisation
- Demonstrate safe and effective suctioning of the tracheostomy tube including:
 - Size of suction catheter/apparatus
 - Insertion depth of catheter
 - Length of suction procedure
 - Use of suction equipment
 - Assessment of outcomes of procedure
 - Normal and abnormal sputum, especially tenacity and infection.
- Demonstrate safe and effective care of the tracheostomy stoma and the skin of the neck including:
 - Cleaning of stoma
 - Application of dressing products, if applicable
 - Listing signs of infection and poor skin integrity.
- Provide effective humidification of inspired gases including:
 - Explanation of the purposes of humidification
 - Demonstration of attachment of humidification devices including passive humidification attachment
 - When why and how to use nebulised saline
- Identifies and justifies essential equipment to be with person at all times.
- Demonstrates safe and effective care of all equipment including:
 - Correct use, cleaning and maintenance
 - Identification of contact person for malfunctioning equipment.
- Demonstrates safe and effective care where home ventilation will be used, including:
 - Correctly assembling ventilator equipment and circuit components
 - Correctly switching ventilator on and off
 - Correctly attaching/removing ventilator to/from tracheostomy
 - Demonstrate competence with inflating/deflating cuff and changing inner cannula (e.g., Between fenestrated and non-fenestrated) as needed to correctly attach/remove ventilator, as prescribed by home ventilation specialist.
 - Demonstrate awareness of ventilator alarms and how to respond to them.

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- Demonstrate awareness of possible problems requiring immediate intervention that may arise during ventilation via tracheostomy, and appropriate knowledge of how to respond to these problems.
- Knowledge of how and when to clean equipment, change disposable items and perform basic machine maintenance such as changing filters.
Note: This competency only applies to patients on home ventilation.
- Identifies, articulates, and demonstrates the appropriate action (on an airway mannequin) for emergencies including:
 - Dislodged tube
 - Blocked airway
 - Acute respiratory distress.
- Demonstrates the following clinical skills on airway mannequin and patient:
 - Changing of tracheostomy tube
 - Suctioning
 - Changing of tapes
 - Application of oxygen.
- Describes and demonstrates effective infection prevention principles including:
 - Hand hygiene
 - Cleaning and storage of reusable equipment
- Where to get further equipment consumables.
- When it is necessary to come to the Emergency Department

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20. AUDIT

Auditing undertaken at a site level.

21. EDUCATION RESOURCES

- My Health Learning Course Code 445928270 - Care of adult patients with a tracheostomy or laryngectomy
- Tracheostomy Emergencies available at <https://app.emergencyprocedures.org/>

22. REFERENCES

1.	NSW Ministry of Health Policy Directive - PD2019_020 Clinical Handover
2.	SESLHDPR/303 - Clinical Handover: Implementation of ISBAR Framework and Key Standard Principles
3.	NSW Agency for Clinical Innovation. Care of adult patients in acute care facilities with a tracheostomy: Clinical Practice Guide. Sydney: ACI; 2021, available https://aci.health.nsw.gov.au/networks/icnsw/clinicians/acute-tracheostomy
4.	SGH BR 600 Tracheostomy - Management Of The Patient With A Tracheostomy - Confirmed Or Suspected COVID-19
5.	Smith S. A report on a literature review for the care of adult patients with a tracheostomy for the clinical practice guideline update. Sydney: Western Sydney University; 2017.
6.	Clinical Excellence Commission. Review of Incident Information Management System (IIMS) data 2016-2018. Sydney: CEC; 2019.
7.	Hockey C, Van Zundert A, Paratz J. Does objective measurement of tracheal tube cuff pressures minimise adverse effects and maintain accurate cuff pressures? A systematic review and meta-analysis. <i>Anaesthesiol Intensive Ther.</i> 2016;44(5):560-70.
8.	Esquinas A. Humidification in the intensive care unit: The essentials. Germany: Springer Science and Business Media; 2011.
9.	NSW Ministry of Health Policy Directive – PD2017_032 Clinical Procedure Safety
10.	Wang CH, Tsai JC, Chen SF, et al. Normal saline instillation before suctioning: A meta-analysis of randomized controlled trials. <i>Aust Crit Care.</i> 2017;30(5):260-5.
11.	Gillies D, Todd DA, Foster JP, et al. Heat and moisture exchangers versus heated humidifiers for mechanically ventilated adults and children. <i>Cochrane Database Syst Rev.</i> 2017 (9).
12.	American Association for Respiratory Care. Endotracheal suctioning of mechanically ventilated patients with artificial airways 2010. <i>Respir Care.</i> 2010;55(6):758-64.
13.	Clinical Excellence Commission. Hand hygiene governance [Internet]. Sydney: NSW Health [cited 2020]. Available from: https://www.cec.health.nsw.gov.au/keep-patients-safe/infection-prevention-and-control/healthcare-associated-infections/hand-hygiene

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14.	Wong C, Shakir A, Farboud A, et al. Active versus passive humidification for self-ventilating tracheostomy and laryngectomy patients: a systematic review of the literature. <i>Clinical Otolaryngology</i> . 2016;41(6):646-51.
15.	O'Toole TR, Jacobs N, Hondorp B, et al. Prevention of tracheostomy-related hospital acquired pressure ulcers. <i>Otolaryngology Head Neck Surg</i> . 2017 Apr;156(4):642-51. DOI: 10.1177/0194599816689584
16.	Yue M, Lei M, Liu Y, et al. The application of moist dressings in wound care for tracheostomy patients: A meta-analysis. <i>J Clin Nurse</i> . 2019 Aug;28(15-16):2724-31. DOI: 10.1111/jocn.14885
17.	NSW Ministry of Health Policy Directive PD2023_025 - Infection Prevention and Control in Healthcare Settings
18.	Zhao T, Wu X, Zhang Q, et al. Oral hygiene care for critically ill patients to prevent ventilator associated pneumonia. <i>Cochrane Database Syst Rev</i> . 2020 Dec 24;12:CD008367. DOI:10.1002/14651858.CD008367.pub4
19.	Garcia-Rodriguez L, Miah T, Lindholm J, et al. EKG electrode as a tactile locator of stoma after decannulation: A pilot study. <i>Otolaryngol</i> .2017;1(1):1-4.
20.	Cook TM, Woodall N, Harper J, et al. Major complications of airway management in the UK: results of the Fourth National Audit Project of the Royal College of Anaesthetists and the Difficult Airway Society. Part 2: intensive care and emergency departments. <i>Br J Anaesth</i> . 2011 May;106(5):632-42. DOI: 10.1093/bja/aer059
21.	Mallick A, Bodenham A, Elliot S, et al. An investigation into the length of standard tracheostomy tubes in critical care patients. <i>Anaesthesia</i> . 2008;63(3):302-6.
22.	NSW Ministry of Health Policy Directive PD2020_018 - Recognition and management of patients who are deteriorating
23.	Goff D, Patterson J. Eating and drinking with an inflated tracheostomy cuff: A systematic review of the aspiration risk. <i>Int J Lang Commun Disord</i> . 2019 Jan;54(1):30-40. DOI: 10.1111/1460-6984.12430
24.	Skoretz SA, Riopelle SJ, Wellman L, et al. Investigating swallowing and tracheostomy following critical illness: A scoping review. <i>Crit Care Med</i> . 2020;48(2):e141-e51.

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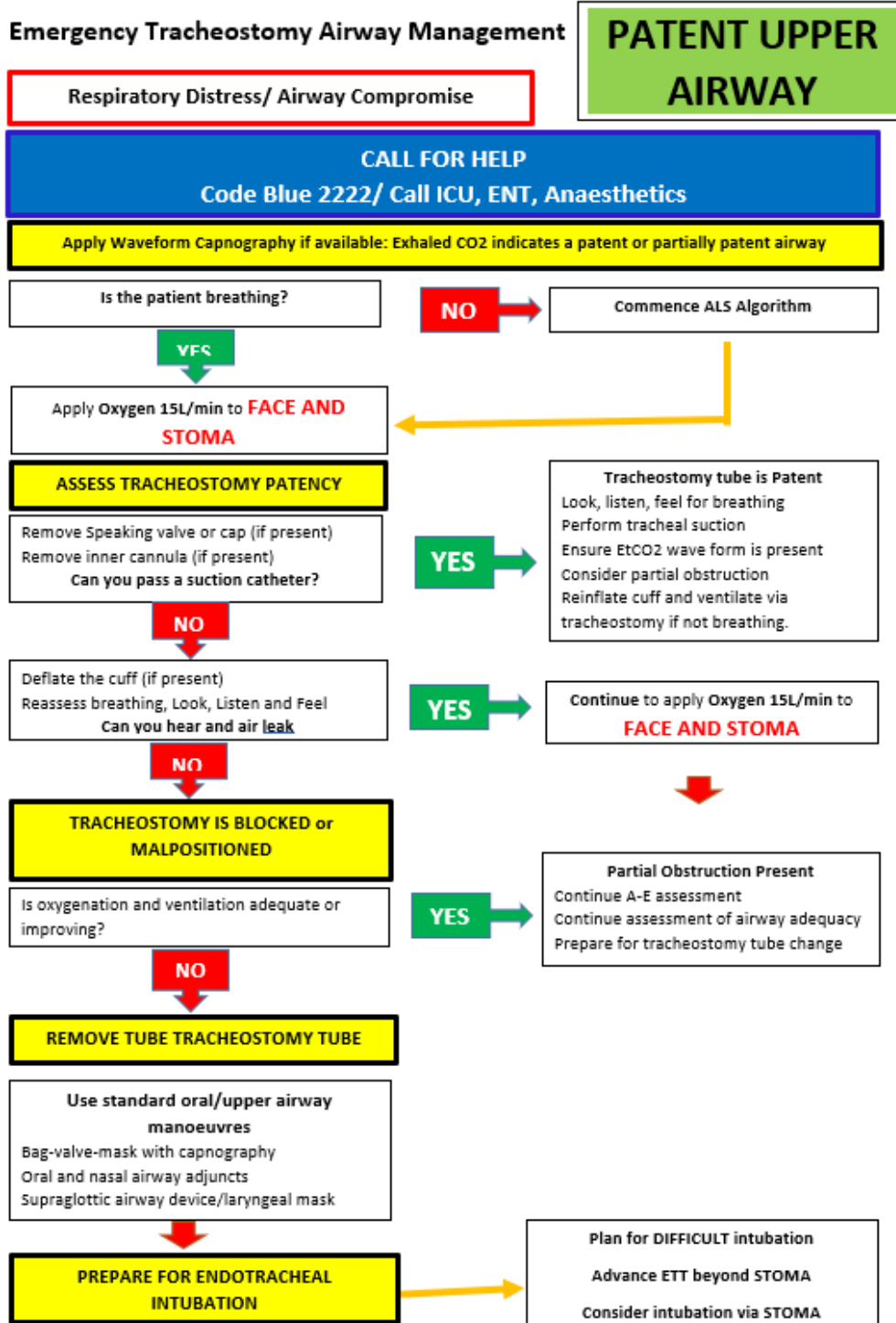
23. VERSION AND APPROVAL HISTORY

Date	Version	Version and approval notes
February 2014	2	Converted to Procedure by Perioperative, Surgery and Anaesthetics Clinical Stream Nurse Manager Vision, one developed by the SESLHD tracheostomy working group.
March 2014	2	Reviewed and aligned with 'NSW Agency for Clinical Innovation (ACI): Care of Adult Patients in Acute Care Facilities with a Tracheostomy' by Mary Dunford, Respiratory CNC, Paula Gunner CNC Neck & Surgery and District Policy Officer
November 2014	2	Endorsed by SESLHD Clinical and Quality Council
November 2016	3	Review undertaken – minor changes. Approved for Draft for Comment.
August 2017	3	Processed by Executive Services for publishing following a minor review.
March 2018	4	Reviewed and aligned with 'NSW Agency for Clinical Innovation (ACI): Care of Adult Patients in Acute Care Facilities with a Tracheostomy' by Mary Dunford, Respiratory CNC, Paula Sankey CNC Neck & Surgery and District Policy Officer
April 2020	5	Minor review to update the procedure with BTF terminology (PACE Tier 2 Call replaced by Code Blue call). Cuff pressure amended to 25-30 cm.
October 2020	5	Approved by Executive Sponsor. Published by Executive Services.
15 February 2024	6.0	Major review and aligned with 'NSW Agency for Clinical Innovation (ACI): Care of Adult Patients in Acute Care Facilities with a Tracheostomy' by Mary Dunford, Respiratory CNC and Paula Sankey CNC Neck & Surgery. Added section 21 – Education Resources. Approved by SESLHD Clinical and Quality Council.

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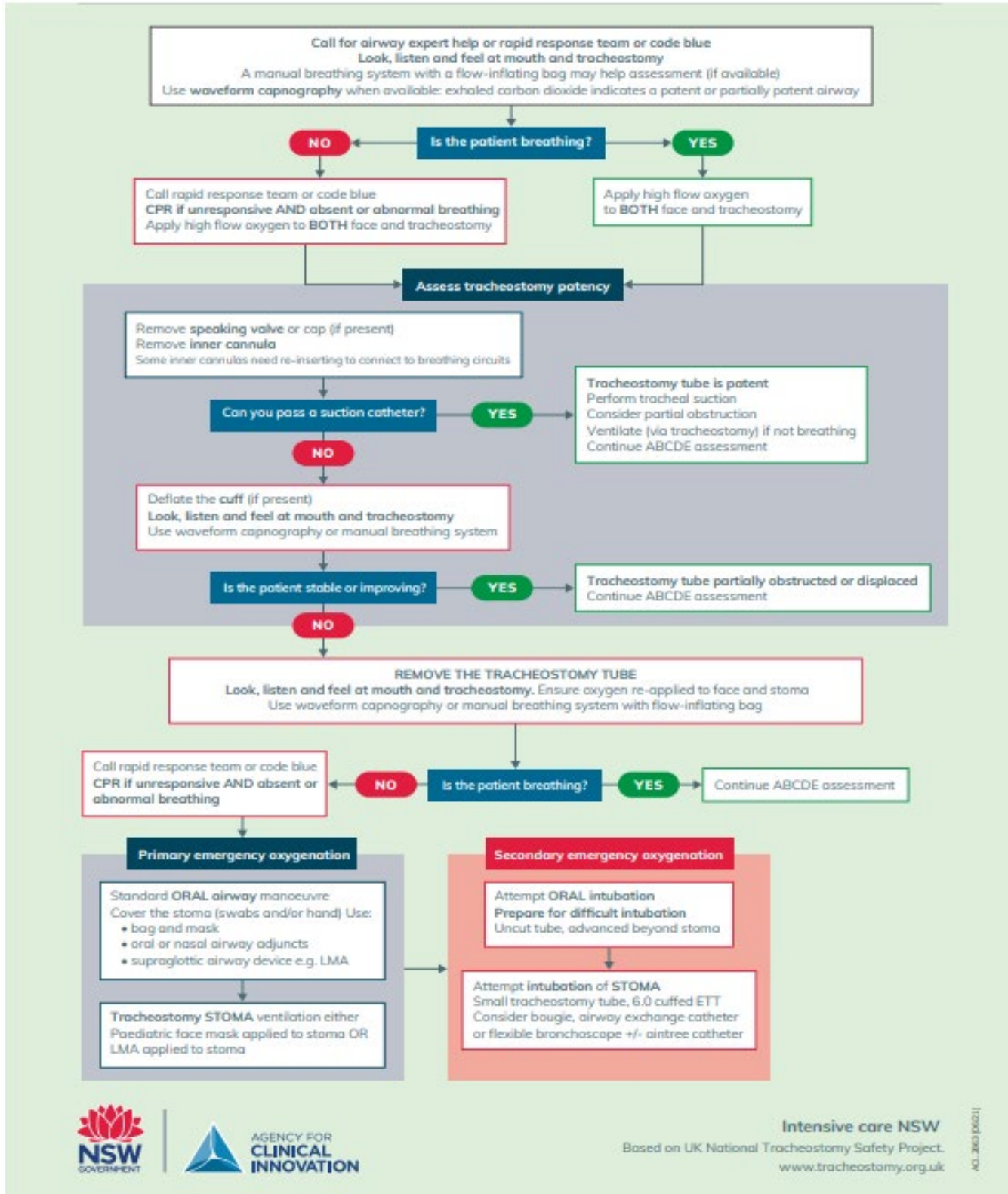
Appendix 1: Emergency Tracheostomy Airway Management POWH



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Appendix 2: ACI guidelines - Emergency tracheostomy algorithm – patent upper airway

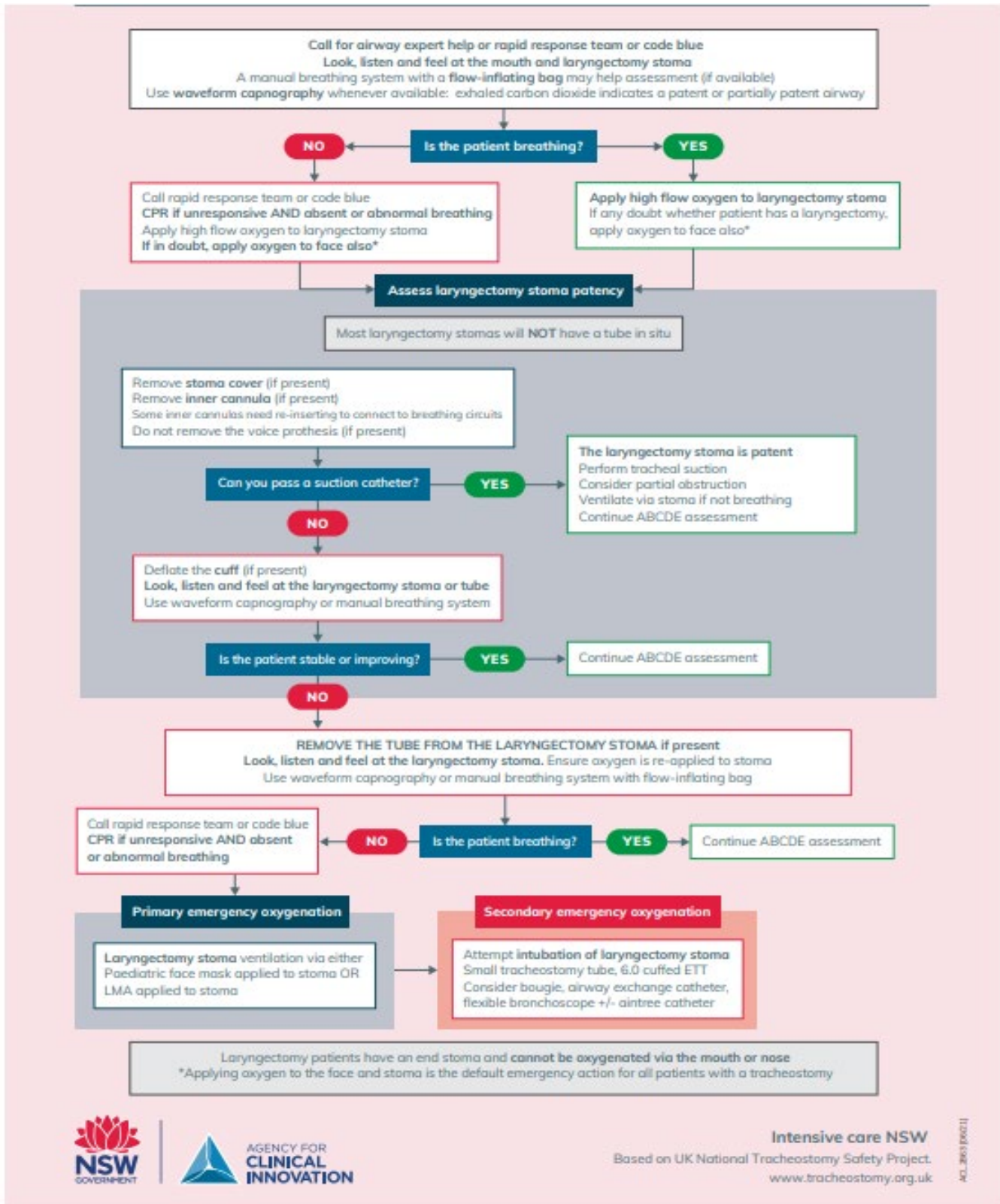


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Appendix 3: ACI guidelines - Emergency laryngectomy algorithm



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