



Airway Suctioning - Clinical Practice Standard

1. Purpose

The purpose of this policy is to establish minimum practice standards for the care and management of airway suctioning throughout the WA Country Health Service (WACHS). Removing unwanted variation in clinical practice and following best practice guidelines has been found to reduce inappropriate care (overuse, misuse and underuse) thus improving health outcomes, reducing preventable harm and decreasing wastage.

The appendices cover the different types of suctioning available:

- [Oropharyngeal and Nasopharyngeal Suctioning with Yankauer Sucker](#)
- [Suctioning with Y – Suction Catheter via Airway Adjunct](#)
- [Nasopharyngeal suction:](#)
 - [without an airway](#)
 - [suction with an airway](#)
- [Tracheal suctioning using a Y Catheter](#)
- [Tracheal Suctioning Using a Closed System](#)

This policy is to be used in conjunction with [Adult Airway Management Clinical Practice Standard](#).

For paediatric patients, refer to [the Perth Children's Hospital Clinical Practice Guidelines](#):

- [Oxygen and Suction Maintenance](#)
- [Suctioning of the Endotracheal Tube \(ETT\) – Critical Care Policy Set](#)
- [Nasopharyngeal and Throat Swab Collection](#)

For neonatal patients, refer to [Women and Newborn Health Services](#), and the [ANZCOR Neonatal Guidelines](#):

- ANZOR Guideline 13.4 – Airway management and Mask Ventilation of the Newly Born Infant August 2016 (1.1, 1.2.2, 1.2.2)

Further information relating to specialty areas including Child and Adolescent Health Service (CAHS), Women and Newborn Health Services (WHNS) can be found via [HealthPoint](#).

2. Scope

All medical, nursing, midwifery and allied health staff employed within the WACHS.

All health care professionals are to work within their scope of practice appropriate to their level of training and responsibility.

Further information may be found via [HealthPoint](#) or the [Australian Health Practitioner Regulation Agency](#).

3. Pre-Procedural Considerations

Emergency suctioning to clear an airway of material is a life-saving procedure and must be carried out immediately to clear any obstruction, however if time allows, consider the key points below, prior to commencing non-emergency procedure:

- Review patient history and diagnosis for clinical conditions, medications and physiological factors that could influence procedure
- Refer to previous observation parameters, if available, for comparison
- Explain the procedure/s to the patient, family and/or carer and gain appropriate consent if able to do so. Explanation to the patient is required prior to each suctioning event, even if unconscious
- Always maintain standard safety precautions for infection control by using appropriate Personal Protective Equipment (PPE) -Eye protection goggles/face mask/visor, gloves, gown and dispose of following standard precaution. See [PPE Procedure 2017](#)

4. General Information

Suctioning is the mechanical aspiration of fluid such as blood, vomit or secretions from the nasopharynx, oropharynx or trachea to establish a patent airway and/or reduce the risk of aspiration.

A blocked airway needs urgent suction so you can clear the obstruction/mucus and promote a patent airway. Promoting and maintaining a patent airway is the first step after sending for help as per Basic Life Support algorithms.

Routine suctioning should be avoided. Clinical indicators such as auscultation assessment and visual inspection should be used to determine the need for suctioning^{1,5-7} If a patient is able to cough up their own secretions, they should be encouraged to do so.¹ Consider referral to physiotherapist for ongoing management.

Oropharyngeal or nasopharyngeal suctioning may be required in the unconscious or minimally responsive patient who has an ineffective cough.

Endo/nasopharyngeal suctioning is indicated for reducing the risk of consolidation and atelectasis that may lead to inadequate ventilation.

Consider pre-oxygenation of patient prior to procedure if there is previous evidence of increased work of breathing, indicators of respiratory distress, tachypnoea or de-oxygenation during or after prior suctioning procedures which may indicate the need to pre-oxygenate.

5. Indications for Procedure

Patients who have an ineffective cough and who are unable to clear their secretions will require suctioning, and may have the following:

- Blocked airway – vomitus, sputum, blood etc.
- Audible or visible secretions in the airway such as vomit, food or blood
- Coarse, reduced or absent breath sounds on auscultation
 - Reduced air entry
 - Prolonged expiratory breath sounds
- Increased respiratory effort, rate or fall in oxygen saturations and/or arterial blood gas values
- Change in pulse rate or blood pressure
- Cyanosis, redness or pallor
- Collection of sputum specimens
- Maintenance of airway patency
- Stimulation of the cough reflex in unconscious patients
- Increasing airway pressures (ventilated patients)
- Chronic airway management requiring physiotherapy

6. Procedural Information

- [Suction Canister Wall Assembly](#)
- [Suction Unit Trouble Shooting](#)
- [Oropharyngeal and Nasopharyngeal Suctioning with Yankauer Sucker](#)
- [Suctioning with Y – Suction Catheter via Airway Adjunct](#)
- [Nasopharyngeal suction:](#)
 - [without an airway](#)
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- [Tracheal Suctioning Using a Closed System](#)

7. Clinical Communication

Clinical Handover

Information exchange is to adhere to the Department of Health [Clinical Handover Policy](#) using the iSoBAR framework.

Critical Information

Critical information, concerns or risks about a consumer are communicated in a timely manner to clinicians who can make decisions about the care.

Documentation

An individualised management plan is to be documented in the patient's health records as soon as practicable, in regard to this CPS.

Suctioning procedure documentation

- Indications for suctioning
- Pre & post observations
- Time of suctioning
- Type of equipment used
- Number and duration of suction attempts
- If pre-oxygenation is required
- Amount, colour and consistency of material suctioned
- Any escalation of care during or after the procedure

Refer to the WACHS [Documentation](#) CPS.

Provide the opportunity for an accredited interpreter and/ or Aboriginal Liaison Officer where appropriate to the patient's language or communication requirements. (See [WA Health Language Services Policy](#)).

8. Patient Monitoring

Individualised management plan must be documented in the patient's health records as soon as is practicable.

At a minimum the plan must consider:

- Diagnosis
- Presence of comorbidities and treatment protocol requirements
- Any restriction to intervention associated with advanced health directives (AHD) or the like
- Monitor and assess the patient to establish if suctioning is needed as per clinical indications.
- During procedure, monitor patient for cough or gag response.
- Assess haemodynamic parameters (including end tidal CO₂ if available and O₂ saturations immediately following suctioning)

9. Staffing Requirements

Consider the role of the physiotherapist, where a physiotherapist is available, who may be able to assist the patient to clear secretions, with positioning, cough facilitation and/or physical movement without the need for suctioning

For suctioning to be undertaken safely, appropriate levels of staffing must match the clinical condition of the patient.

10. Suction Equipment

Specific sites may have pre prepared equipment packs and contents may vary, however at a minimum:

- Yankauer Sucker
- Y-Catheters in a range of sizes
- Oropharyngeal airways in a range of sizes
- Nasopharyngeal airways (if in use) in a range of sizes
- Bottle of sterile water for rinsing suction tubing, post suction

It is recommended, at a minimum, that wall suction units are checked:

- Once per clinical shift usually by the staff member taking over responsibility and accountability for that patient or area
- Prior to admission or transfer of a patient into a bed space within a ward/ area
- Post emergency care
- After changing suction canister and tubing when volume capacity is reached
- After changing suction canister and tubing between patients

The maximum occluded suction pressure should be limited	
Adult	Neonates/Paediatrics
80-150mmhg/10-20kPa ⁹	80-100mmhg/10-13kPa ¹⁰

It is recommended, at a minimum, that Twin-O-Vac/Laerdal suction units are checked:

- Prior to use
- Daily if part of resuscitation trolley - Emergency equipment should be checked on a regular basis and replaced if not in good working order
- Suction tubing is present, set up ready for use and functioning (3 metres of suction tubing is attached to patient suction port)
- Equipment must be cleaned, checked, serviced and calibrated in accordance with manufacturer's recommendations to ensure reliability and accuracy.

11. Pre-Procedure Key Points

- Ensure choice of equipment is appropriate for the age, size and condition of the patient
- Pre-oxygenation may be considered for patients who are at risk of desaturation^{1,6}. Monitor oxygen saturations, respiratory and haemodynamic status before, during and after procedure^{1,7}.
- Minimum/maximum suctioning time to be between 10-15 seconds adults and 10 seconds for paediatrics and 5 seconds for neonates
- The patient/carer has received information relating to the purpose/rationale of the suctioning procedure, and has given appropriate consent where able
- Patient identification and procedure matching processes are undertaken.
- Consider patient's privacy and dignity.
- Staff are to comply with the specific requirements for hand hygiene, aseptic non-touch technique and personal protective equipment, in alignment with the WACHS [Infection Prevention and Control Policy](#).

12. Post-Procedure Key Points

- Assess the patients respiratory rate, skin colour and oxygen saturations
- Discard the catheter in the appropriate rubbish bin
- Assess the need for repeat suction procedure
- Flush the tubing with sterile water and discard remaining sterile water and disposable cup
- If an airway adjunct has been used to facilitate suctioning, remove if appropriate and discard as single item use
- Dispose of used single use equipment & PPE
- Document in health records, as per [7. Clinical Communication](#)

13. Potential Problems During or Post Procedure

- Suctioning may cause airway trauma, stimulate coughing or gagging, laryngospasm, bronchospasm, hypoxia from delays in ventilation with tracheal tube suctioning and/ or vagal stimulation which can result in bradycardia and hypotension
- Repetition of suctioning, vigour of insertion, level of suction applied, and continuous or intermittent suction may all contribute to tracheal tissue damage.
- Increased suction pressure and duration of suctioning has been shown to increase tracheal trauma and loss of lung volume/ atelectasis¹
- Suction depth should be the minimum level required to effectively remove secretions
- Use the lowest pressure setting to effectively clear secretions to prevent mucosal damage and/or alveolar collapse

14. Compliance Monitoring

Evaluation, audit and feedback processes are to be in place regionally to monitor compliance.

Failure to comply with this policy may constitute a breach of the WA Health Code of Conduct (Code). The Code is part of the Employment Policy Framework issued pursuant to section 26 of the Health Services Act 2016 (HSA) and is binding on all WACHS staff which for this purpose includes trainees, students, volunteers, researchers, contractors for service (including all visiting health professionals and agency staff) and persons delivering training or education within WACHS.

WACHS staff are reminded that compliance with all policies is mandatory.

15. Records Management

[Health Record Management Policy](#)

16. Relevant Standards

- National Safety and Quality Health Service Standards (Second edition 2017) Recognising and Responding to Acute Deterioration Standard

17. Related WA Health Policies

- [Western Australian Patient Identification Policy 2014](#)
- [Clinical Handover Policy](#)
- [Clinical and Related Waste Management Policy](#)
- [Correct Patient, Correct Site and Correct Procedure Policy and Guideline for WA Health Services \(2nd Edition\)](#)
- [WA Health Consent to Treatment Policy](#)
- [National Hand Hygiene Initiative in Western Australian Healthcare Facilities](#)
- [Recognising and Responding to Acute Deterioration Policy](#)

18. Relevant WACHS documents

- [Clinical Observations and Assessments Clinical Practice Standard \(Physiological, neurovascular, neurological and Fluid Balance\)](#)
- [MR 140 Adult Observation and Response Chart](#)
- [MR 140B Maternal Observation and Response](#)
- [Documentation Clinical Practice Standard](#)

- [Clinical Escalation of Acute Physiological Deterioration Including Code Blue Medical Emergency Response Policy](#)
- [Paediatric Observation & Response Charts MR 140d to MR 140i](#)
 - [MR 140e Paediatric Observation and response Chart under 3 months](#)
 - [MR 140f Paediatric Observation and Response Chart 3-12 months](#)
 - [MR 140g Paediatric Observation and Response Chart 1-4 years](#)
 - [MR140h Paediatric Observation and Response Chart 5-11 years](#)
 - [MR 140i Paediatric Observation and Response Chart 12 + years](#)
- [MR142 WACHS Neonatal/Paediatric Respiratory Observation Chart](#)
- [MR 140d Newborn Observation and Response Chart](#)

19. WA Health Policy Framework

[Clinical Governance, Safety and Quality Policy Framework](#)

20. Acknowledgement

Acknowledgment is made of the previous SMHS / WACHS site endorsed work used to compile this Airway Suctioning Clinical Practice Standard.

21. References

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22. Definitions

Carer	A person who provides personal care, support and assistance to another individual who needs it because they have a disability, a medical condition (including a terminal or chronic illness) or a mental illness, or are frail and/or aged
Patient	A person who is receiving care in a health service organisation

23. Appendices

1. Suction Canister Wall Assembly
 - Portable Electric Suction Units
 - Cleaning of Wall and Portable Suction Units
 - Canister
2. Suction Trouble Shooting
 - Twin-O-Vac Suction
 - Wall Suction Unit
 - Portable Suction Unit
3. Oropharyngeal Suctioning with Yankauer Sucker
4. Suctioning with Y – Suction Catheter via Airway Adjunct
5. Nasopharyngeal suction:
 - without an airway
 - suction with an airway
6. Tracheal suctioning using a Y Catheter
7. Tracheal Suctioning Using a Closed System

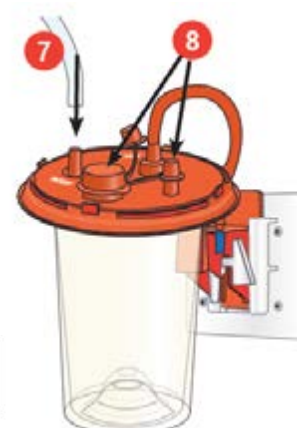
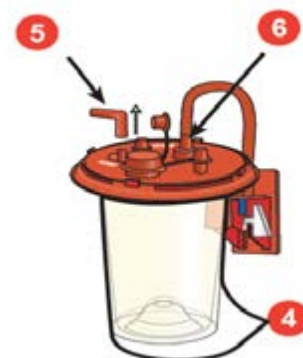
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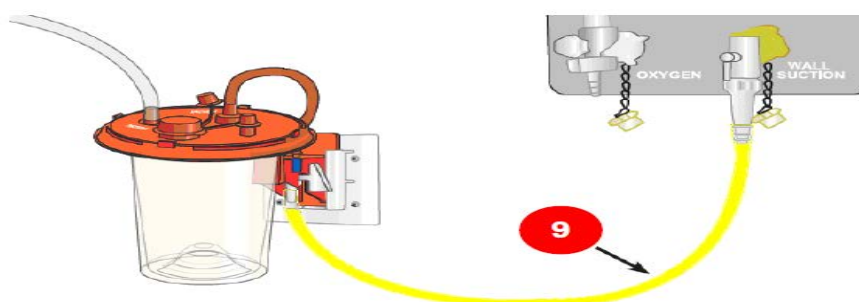
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Appendix 1: Suction Canister Wall Assembly

- 1 Clip red suction canister lid into position on the suction liner making sure all four 'clips' are engage
- 2 Place one suction liner inside the outer canister that is mounted on the bracket
- 3 Ensure that the white tap on the outer canister is 'ON' in the vertical position. Suction will not operate if this tap is 'OFF'
- 4 Check that there are no cracks in the outer canister especially where the red mounting is attached. Suction will not work if there is a crack in the outer canister
- 5 The elbow connector can be removed if suction tubing is in a position where it may be at risk of kinking. If left in place the elbow connector must be firmly secured. Check tubing for kinks
- 6 Connect the red hose to the vacuum port on the canister lid
- 7 Connect the suction tubing to the patient port on the canister lid. Tubing should be at least 3 metres in length.
- 8 Make sure the 2 other ports on the canister lid are sealed



9 suction from wall the white outer cani

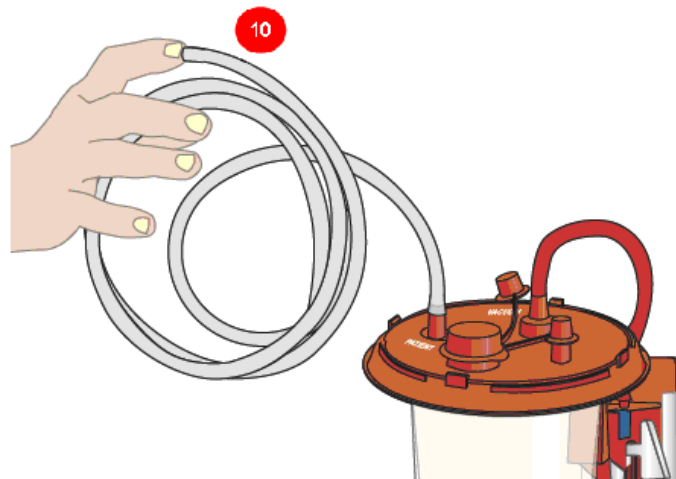


Connect tubing outlet to port on the

10

To check function:

- Turn suction on at the wall
- Place finger over the end of the tubing
- Suction will be felt
- The red canister lid will 'bow' slightly. When canister lid bows for first time, a white line may appear around the edge of the red canister lid which is normal
- There should not be a sound of rushing air which would indicate a leak



Portable Electric Suction Units

All information listed under wall suction applies to the portable electric suction units except:

- Tubing from electric motor is attached to white port on red mounting of canister
- To check function, place finger over end of suction tubing to occlude and check gauge for pressure reading
- Gauge should not read more than minus 90 kPa
- Laerdal portable suction units are also used within WACHS [refer to local guideline].

Cleaning of Wall and Portable Suction Systems

- All tubing and suction canisters are single patient use only
- PPE should be used during the cleaning and disposal of used suctioning equipment
- Flush suction tubing with sterile water after each use and change daily when in use, or more frequently if visibly soiled

Canister:

- When used, change inner liner when $\frac{3}{4}$ full or at least daily
- Outer canister is not disposed of unless it is faulty or for infection control reasons
- Seal all ports with attached caps prior to moving full/ partially full canister to prevent contamination if fluid escapes through opening
- Dispose of canister in yellow clinical waste bag for incineration

- Canister and tubing is to be damp dusted daily as part of bed/ trolley area cleaning

Guide to Correct Set Up of Twin-O-Vac Suction Unit

Oxygen cylinder must be at least half full for Inhalo® **system** or filled to at least 10,000 kPa for regulator controlled system. Cylinder must be secured in a vertical position except in home and domiciliary use.

Collection jar must be firmly screwed onto the black Twin-O-Vac body.

Suction tubing to be approximately 3 metres in length.

Twin-O-Vac Suctioning Unit Function Checking

Turn oxygen cylinder on:

- If using an inhalo system, turn the 'ON' dial a minimum of 90° (a quarter turn) to ensure a full flow of oxygen
- If using regulator controlled system, turn fully on
 - If suction is activated, a hissing noise will be heard
 - Place finger over the end of the suction tubing to occlude and check gauge for pressure reading. It should read greater than minus 45 kPa.

Turn oxygen cylinder off and empty the oxygen remaining in the system by:

- Inhalo system- turn yellow suction control on and allow all oxygen to escape before turning off
- Regulator controlled system- turn yellow suction control on and allow all oxygen to escape. The turn yellow suction control off firmly ensuring the oxygen gauge returns to '0'



Cleaning of Twin-O-Vac Unit After Use

- Discard all disposable items and arrange for replacement of Twin-O-Vac unit. Refer to site protocols for replacement guidelines.
- Clinical staff to empty collection jar of gross contamination into sluice using PPE.
- Place the used Twin-O-Vac in a plastic bag and send for cleaning. Refer to site protocols for cleaning guidelines.
- After a clean device has been fitted, check the function of the Twin-O-Vac as per [function checking section](#).

Appendix 2: Suction Unit Trouble Shooting

Twin-O-Vac Suction Unit

TWIN-O-VAC SUCTION UNIT	
INSTRUCTIONS FOR USE	TROUBLE SHOOTING
<p>Ensure oxygen cylinder</p> <ul style="list-style-type: none"> • Is closed • Is secured in vertical position <p>Ensure</p> <ul style="list-style-type: none"> • Collection jar firmly screwed to lack Twin-O-Vac body • 3 metres of tubing attached <p>Turn oxygen cylinder on</p> <ul style="list-style-type: none"> • Turn Open/Close dial at least ¼ turn (90 degrees) • Ensure cylinder is as least ½ full or replace <p>Turn suction on fully</p> <ul style="list-style-type: none"> • Occlude end of tubing with finger to feel suction, gauge should read greater than minus 45kPa of pressure • Correct functioning of the Twin-O-Vac results in a hissing noise which is normal <p>Turn suction off and close oxygen cylinder</p>	<p>1. Oxygen cylinder empty or less than half full Change the oxygen cylinder</p> <p>2. Air is leaking where the collection jar screws onto the black Twin-O-Vac body Readjust the collection jar, if this does not rectify the leak, replace the Twin-O-Vac</p> <p>3. Pressure gauge reads less than minus 45kPa of pressure Pressure should reach greater than minus 45kPa of pressure when tube is occluded. If it reads less than minus 45kPa replace the Twin-O-Vac</p>

Wall Suction Unit

WALL SUCTION UNIT	
INSTRUCTIONS FOR USE	TROUBLESHOOTING
<p>Ensure</p> <ul style="list-style-type: none"> • Suction unit is vertical • Inner liner present • All 4 clips are securing the lid of the canister • Clips that are missing or broken are replaced • Red vacuum hose attached to vacuum port • If the elbow connector is used ensure it is secured (screwed) tightly • 3 metres suction tubing is attached to patient port • All unused ports are sealed • Yellow tubing from wall is attached to white port on red mounting of canister • White tap on outer canister in ON position (vertical) <p>Turn suction on</p> <ul style="list-style-type: none"> • Occlude end of tubing with finger until lid ‘bows’ and sound of rushing water disappears • Ensure plastic wall bracket is not broken or cracked, or multi-rail bracket is not damaged 	<p>1. Suction not felt or is ineffective The porous plastic valve may be wet. Replace canister and lid, ensure canister is mounted securely in vertical position and all tubing is firmly attached. Retest suction, and if problem continues, unit must be replaced</p> <p>2. Inner liner collapsed Disassemble and remove the inner liner(s). Replace with new liner and lid, then retest suction</p> <p>3. Outer red rim of inner liner missing Replace with new liner and ensure outer rim in place</p> <p>4. Cracks in the outer canister/ sound of rushing air Replace outer canister and reassemble</p> <p>5. Unused ports not sealed Seal ports with attached connections</p> <p>6. Plastic wall bracket cracked or broken Unit must be replaced</p> <p>7. Multi-rail bracket damaged or without modified locking system Report to appropriate department for attention</p>

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Portable Suction Unit

PORTABLE SUCTION UNIT	
INSTRUCTIONS FOR USE	TROUBLESHOOTING
<p>Ensure</p> <ul style="list-style-type: none"> • Suction unit is vertical • Inner liner present • All 4 clips are securing the lid of the canister • Clips that are missing or broken are replaced • Red vacuum hose attached to vacuum port • If the elbow connector is used ensure it is secured (screwed) tightly • 3 metres suction tubing is attached to patient port • All unused ports are sealed • Yellow tubing from wall is attached to white port on red mounting of canister • White tap on outer canister in ON position (vertical) <p>Plug into AC power and ensure regulator is on full</p> <ul style="list-style-type: none"> • Occlude end of tubing with finger until lid ‘bows’ and sound of rushing water disappears. Gauge should read greater than minus 90kPa of pressure • Ensure plastic bracket (if used) is not broken or cracked 	<ol style="list-style-type: none"> 1. Suction not felt or is ineffective The porous plastic valve may be wet. Replace canister and lid, ensure canister is mounted securely in vertical position and all tubing is firmly attached. Retest suction, and if problem continues, unit must be replaced 2. Inner liner collapsed Disassemble and remove the inner liner(s). Replace with new liner and lid, then retest suction 3. Outer red rim of inner liner missing Replace with new liner and ensure outer rim in place 4. Cracks in the outer canister/ sound of rushing air Replace outer canister and reassemble 5. Unused ports not sealed Seal ports with attached connections 6. Plastic wall bracket cracked or broken Unit must be replaced 7. Pressure gauge reads less than minus 90kPa when checking Report to appropriate department for attention

Appendix 3: Oropharyngeal Suctioning with Yankauer

- Attach yankauer sucker to suction equipment and turn suction on at wall or portable unit
- Ask patient to open mouth if able
- For unconscious or sedated patients, insertion of an oropharyngeal airway may facilitate airway suctioning
- Gently insert yankauer sucker convex side along the roof of oral cavity and guide to the oropharynx without applying suction
- Do not force sucker between teeth and avoid touching the posterior pharyngeal wall of the soft palate
- Once in position, apply suction to remove debris by occluding hole on side of yankauer sucker
- **Do not suction for longer than 10-15 seconds at a time**
- During procedure, monitor patient for cough or gag response. Assess respiratory rate, skin colour and if clinically indicated, monitor oxygen saturations
- Turn suction off when disconnecting the yankauer sucker and discard. Replace with new yankauer sucker at end of procedure, and clean tubing

Appendix 4: Suctioning with Y-Suction Catheter via Airway Adjunct

Airway adjuncts may be required to facilitate suctioning of the oropharynx or nasopharynx in unconscious patients with an absent gag reflex. When choosing catheter size, consider that the catheter should not completely occlude the airway.

- Open suction catheter at the Y port, peeling apart packaging to expose the Y port. Avoid contaminating the catheter and ensure the sleeve is not occluding the port
- Connect the catheter to suction tubing and leave the catheter in the packaging
- Maintain the sterility of the catheter by sliding the green sleeve down the shaft of the catheter to enable it to be removed from the packaging without contaminating the tip of the catheter
- If required lubricate tip of catheter with sterile lubricant
- Turn suction on at the wall or suction unit
- With the Y piece not occluded insert the catheter into the airway adjunct until it enters the pharynx
- Apply suction by occluding the Y port and gently withdraw the catheter
- **Do not suction for longer than 10-15 seconds**¹. Caution must be taken when the patient is hypoxic
- If an airway adjunct has been used to facilitate suctioning, remove if appropriate and discard as single item use

Appendix 5: Nasopharyngeal Suctioning

Nasopharyngeal suction without an airway*

- If a Yankauer sucker is used, it is recommended it be inserted with the convex side along the roof of the pharynx taking care to prevent trauma to the mucosa⁴.
- Consider an angle tipped catheter to insert through the nose especially if the patient has an effective cough with facilitation.
- If the patient requires suction further down the trachea, then a nasopharyngeal airway suction with straight catheter may be more comfortable and effective

Nasopharyngeal suction with an airway*

- Airway selection is dependent on the size of the nostril and indication for airway adjunct. If the patient does not require the airway for patency, then consider using the smallest feasible size to minimise trauma.

As a guide- small nostril: 6.0 mm (FG 10-12), medium nostril: 7.0 mm (FG 12), large nostril: 8.0 mm (FG 12-14). (See CPS 01 Airway management)

* Not recommended with paediatric patients

Appendix 6: Tracheal Suctioning

- Y-Suction catheter is required when the patient has an endotracheal or tracheostomy tube insitu.
- The distal tip has several openings for secretion removal and the proximal end contains a thumb port that the clinician occludes to activate the suction. The distal tip is blunt to avoid trauma to the mucosa or perforation of the tracheobronchial tree. Y-Suction catheters are transparent to allow visual inspection of secretions, rigid enough to pass through the ETT and pliable enough to transverse the airways without damaging the mucosa⁵.
- A suction catheter should be used that occludes less than 50% of the artificial airway^{1,8}

Size of appropriate suction catheter = (Size of artificial airway x 2) – 2
OR Double the size of the ET/tracheal tube and subtract 2
For example: if you have an ETT size 7.0, multiply (7x2) – 2 = 12.
Therefore choose a size 12 FG suction catheter.

Clinical Considerations

- If the patient has a fenestrated tracheostomy tube and inner cannula, change to a non-fenestrated inner cannula before suctioning
- Total time of suctioning from introduction of catheter to removal should **not exceed 15 seconds**¹
- If using an angle tipped suction catheter you require appropriately sized gloves if there is no sterile sleeve on these catheters
- **Instilling sodium chloride 0.9% into the artificial airway is not recommended as routine practice**⁸
- Routine use of lubricant is unnecessary and if used the minimal amount should be applied

Tracheal Suctioning Using Suction Catheter

- Wipe the catheter entry point on catheter mount with alcohol swab
- Switch on high flow suction. Check suction level is less than -150mmHg/ -18kPa¹
- Open distal end of suction catheter packet to expose connector. Leaving most of suction catheter inside packet, connect suction catheter to suction tubing
- Remove remainder of catheter from packet using dominant hand to hold catheter by green sleeve to optimise sterility
- Lubricate tip of suction catheter by dipping end into opened packet of sterile lubricant (only if deemed necessary)
- If ventilated, silence alarm just prior to suctioning
- Support the ETT or tracheotomy tube with your non-dominant hand
- Introduce suction catheter through catheter entry point on catheter mount using dominant hand
- Advance suction catheter gently until either resistance is felt or cough is noted. **Do not apply suction whilst inserting catheter**^{1,8}

- Explain to the patient, even if unconscious, that cough is imminent. Should the patient be capable of expectorating secretions this should be encouraged. In this case the suction catheter need only be advanced as necessary to clear patient secretions
- Catheter should then be withdrawn 1-2cm
- Apply continuous suction and gently withdraw the catheter, while continuing to support the catheter.
- **Rotation of the catheter on withdrawal is not required.**

Post Suctioning Considerations

- Monitor effect of suction on hemodynamic parameters and oxygen saturation immediately following suction.
- If the patient shows respiratory compromise, consider pre-oxygenation on subsequent suction
- If ventilated, ensure inspired oxygen level has reverted to normal value (should automatically default to previous setting)

Appendix 7: Tracheal Suctioning using a Closed System

Consideration should be given to the use of closed suction for patients with infectious respiratory disease process or patients who are receiving ventilated medication therapy such as nebulised prostacyclin's or gentamicin.

Closed Suction Catheters

- Closed suction catheters are available in two lengths:
 - 580mm for endotracheal tubes
 - 365mm for tracheostomy tubes.
- These catheters must be labelled with date and time they were connected to the patient and changed every 72 hours,(dependant of product used).
- Assess ETT or tracheostomy tube to determine correct depth of suction:

Observe number on ETT nearest ET adaptor tip (i.e. 30cm) then add 8 cm to determine correct depth to suction for this particular patient. For example, 30cm + 8 cm = 38cm

- Whilst supporting ETT or tracheostomy tube, rotate the access valve on closed suction system so that suctioning port is open. Using the catheter sleeve gently introduce the suction catheter through the access valve. Continue feeding catheter via sleeve until the correct depth is visible in window adjacent to irrigation port. At this point catheter tip will be 1cm past the end of the ET/trachea tube.
- Should the patient be capable of expectorating secretions this should be encouraged. In this case the suction catheter need only be advanced as necessary to clear patient secretions.
- Warn patient that cough is imminent.
- As the patient coughs, or when resistance is felt, draw back slightly before pressing suction button continuously whilst firmly, but gently, removing the catheter
- **Total time from introduction of suction catheter to withdrawal should be no longer than 15 seconds. Rotation of the catheter is not required**
- On completion of suctioning, pull catheter back until black stripe is visible within suction sleeve before rotating access valve into flush position. This will ensure suction catheter remains clear of patient's airway when not in use
- Observe patient to ensure that ventilation has resumed. Check for rise and fall of patients chest and/ or adequate tidal volume on ventilator
- Reassess the patient's respiratory and hemodynamic status
- Should the patient show respiratory compromise it may be appropriate to consider pre-oxygenation on subsequent suctionings
- Repeat suction procedure if clinically indicated
- Observe/document nature of sputum
- Rinse suction tubing by attaching the 20cc syringe filled with sodium chloride 0.9% to irrigation port and pressing the suction button
- Turn suction button to off
- Ensure inspired oxygen level has reverted to normal value (should automatically default to previous setting).