**Document Control**

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<td>Amendment to responsibility under monitoring effectiveness and compliance.</td>
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<td>Revision</td>
<td>Addition of Laerdal suction machine test device in 5.1.2. and Appendix E. Removal of clinical tutor roles and responsibilities. Amendment to monitoring and compliance. Minor amendments to Appendix D. Addition of anticoagulation medications to Appendix C. Wording changed in 8.2 from responsible for signing off clinical competencies to ensuring clinical competencies are signed off.</td>
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**Main Contact**
Suction Support Therapist  
Barnstaple Health Centre  
Barnstaple, EX32 7BH

Tel: Direct Dial – 01271 341505

**Lead Director**
Director of Health and Social Care

**Superseded Documents**

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Three years

**Consulted with the following stakeholders:**
- Physiotherapy In-Patient Manager
- Respiratory Physiotherapy Advanced Practitioners
- Ward Managers
- Medical Devices Team (EBME)
- Infection Control Team
- Senior Resuscitation Officer
- Assistant Director of Nursing
- District Nurse Team Leaders
- Head of Workforce Development
- Community Team Leads
- Clinical Tutors
- Cluster Managers

Approval and Review Process
- CREADO Team

Local Archive Reference
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Suction Policy V2.0 May 2018

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1. Introduction

This document sets out Northern Devon Healthcare NHS Trust’s system for Suction via the respiratory tract. It provides a robust framework to ensure a consistent approach across the whole organisation, and supports our statutory duties as set out in the NHS Constitution.

2. Purpose

The purpose of this policy is to ensure suction can be delivered in an emergency situation across all clinical areas and to minimise the risks associated with suction when used therapeutically.

Implementation of this policy will ensure that:

- Suction can be delivered in an emergency situation across all clinical areas.
- Healthcare professionals have the support, knowledge and evidence of good practice necessary to enable them to perform safe suction techniques, using a standardised framework.
- To minimise potential complications, adverse physiological effects and patient distress during suction procedures.

Line managers are responsible for ensuring this policy is implemented across their area of work.

This policy applies to all hospital based, healthcare professionals and members of community teams who deliver suction techniques and suction training in the community.

3. Definitions

3.1. Airway Suction

Is the process that removes excess secretions from the respiratory tract by insertion of a suction catheter and the application of negative pressure.

3.2. Emergency Airway Suction

Is the clearance of secretions and or bodily fluids during resuscitation that may be occluding the airway, using a yankauer catheter and the application of negative pressure.

3.3. Suction Techniques

Suction techniques are performed via the following routes-

- Oral (using a yankauer sucker)
• Oropharyngeal with an airway
• Nasopharyngeal with or without an airway
• Tracheostomy
• Minitracheostomy
• Laryngeal Stoma
• Endotracheal tube
• Oral suction using a suction catheter (paediatric neonates)
• Meconium Aspirator

3.4. **Endotracheal Suction**

Is the removal of pulmonary secretions from a patient’s artificial airway by the insertion of a suction catheter and the application of negative pressure. There are two methods based on the selection of catheter: closed or open

3.4.1 **Closed Suction**

Uses the attachment of a sterile, closed, in-line suction catheter which passes through the artificial airway without disconnecting the patient from the ventilator.

3.4.2 **Open Suction**

Is the insertion of an open suction catheter via an artificial airway, using a sterile technique. This may involve disconnection from a ventilator.

3.5. **Shallow Suctioning**

The insertion of a suction catheter to a predetermined depth, usually the length of the artificial airway (AARC Clinical Practice Guidelines 2010)

3.6. **Deep Suctioning**

The insertion of a suction catheter until resistance is met followed by withdrawal of the catheter by 1cm before the application of negative pressure

For neonates/infants suction should only be to the tip of the endotracheal or tracheostomy tube. If meconium is present use the meconium aspirator.

3.7. **Competence**

Competence can be described as the combination of training, skills, experience and knowledge that a person has and their ability to apply them to perform a task safely.
Other factors, such as attitude and physical ability, can also affect someone’s competence (HSE 2016)

3.8. Vacuum

In engineering terms suction is referred to as vacuum. For further information refer to the Medical Gas Policy

4. Responsibilities

4.1. Role of Trust Medical Director and Director of Nursing

The Trust Medical Director, along with the Director of Nursing is responsible for ensuring that:

- Information regarding this policy is disseminated to the appropriate clinical staff.
- The policy is adhered to by staff and that resources are available to ensure effective implementation.
- To be ultimately responsible for monitoring compliance with the policy by trained clinical staff undertaking suction techniques.

4.2. Role of Respiratory/ Neurology Physiotherapy Advanced Practitioner and Respiratory/Neurology Specialist Physiotherapist

The Respiratory/ Neurology Physiotherapy Advanced Practitioner and Respiratory/ Neurology Specialist Physiotherapist are responsible for:

- Ensuring that physiotherapists are competent in performing suction techniques that are appropriate to their clinical area.
- Signing off work based suction competencies for both nurses and physiotherapists.
- Provide hospital based training to patients and carers who need to be taught suction prior to being discharged home.

4.3. Role of the Practice Educators

Clinical areas that have practice educators (A&E, ICU, Paediatrics, Theatres, MAU) are responsible for:

- Supporting the development of nurse’s competency in performing suction techniques that are appropriate to their clinical area.
• Ensuring work based competencies for nurses working within their clinical area are signed off.

4.4. **Role of the Therapist for Suction Support**

The Therapist for Suction Support is responsible for:

• Being aware of new clinical issues that impact on this policy.
• Provision of suction training for all staff (via STAR).
• Provide support and training to community staff.
• Being the author of the Suction Policy and associated Standard operating Procedures (SOP’s). Making any revisions to the policy and SOP’s and updating them every 3 years.

4.5. **Role of the Workforce Development Department**

The Workforce Development Department is responsible for:

• Log staff training records through STAR and monitor the completion of the work based competencies.

4.6. **Role of the Ward and Deputy Ward Managers**

All Ward and Deputy Ward Managers are responsible for:

• Ensuring this policy is implemented across their area of work.
• Ensuring staff that undertake suction are appropriately skilled and function in accordance with this policy.
• Ensuring staff are competent in using suction devices and have completed the medical device assessment of competency form.
• Identify staffs that require suction training and provide adequate time for them to complete the online STAR training for suction.
• Ensuring that the appropriate suction equipment can be located on the ward by those carrying out the procedure.
• Ensuring that the suction equipment is checked on each shift and is in correct working order.
• Ensuring that the maintenance and cleaning of the suction equipment is carried out.
• Ensuring that an alternative suction device is readily available should there be a fault in the suction unit being used.

4.7. Role of Staff

Staff who perform suction procedures are responsible for:

• Ensuring that they are competent to perform suction techniques.

• Complete the relevant online STAR training and work based competencies or be able to prove their competence by being able to show the relevant, up-to-date clinical competence through clinical practice.

• Staffs are responsible for keeping their competency in suction techniques up to date and identify this as a training need in their appraisal if not competent.

• Staff must report any faults in the suction equipment to EMBE and ward manager.

• Staff must be accountable for their own practice, for those to whom they delegate work and for students undertaking suction under their supervision.

4.8. Role of Students

• Students may only perform suction under the direct supervision of a competent clinician.

4.9. Role of EBME and Facilities

The EBME department is responsible for

• Maintaining suction devices in a condition to give users assurance they will work when required.

The Facilities department are responsible for:

• Maintaining the vacuum/suction system up to and including the wall outlet.
5. **Suction Management**

Suction via the respiratory tract can be administered in two different scenarios

- In an emergency: to clear an airway as part of the resuscitation procedure.
- As part of a therapeutic intervention: to clear secretions from the respiratory tract if the patient is unable to clear them independently.

Although an uncomplicated procedure to perform it is associated with well documented undesirable side effects. See Appendix A

Staff must adhere to the standardised framework set out in this policy to ensure that-

- Emergency suction can be delivered without delay when required.
- Suction procedures are carried out in a safe and effective manner.

5.1 **Suction Equipment**

Suction can be delivered via a wall suction unit or via a portable suction machine.

All persons using suction equipment should be suitably trained and have completed the appropriate Assessment of Medical Device Competency form which can be found via the EBME link on BOB.

Further information can be found in the Medical Devices; Training and Assessment of Competency Policy

The resuscitation trolley in each clinical area will have a portable suction machine on it. The suction machines along with the defibrillators must be left on charge at ALL times.

All suction machines and units used within clinical areas must be checked DAILY, and prepared ready for use in an emergency situation using the procedure below.

A log book/ written record including date and signature must be kept as record of these checks.

5.1.1 **Wall Mounted Suction Units**

- Ensure the suction regulator is for high flow suction except SCBU where a low flow regulator is used
- Visually inspect the following accessories are present, clean and in date.
  1) Suction container and disposable liner
  2) Tubing from the unit to the container
  3) Patient tubing and a yankauer suction catheter
• No fluid is in the system
• Turn the suction on and up to its maximum
• Cover the end of the patient tubing and ensure the pressure rises to more than 400mm Hg within 4 seconds
• Cover the end of the tubing once more, turn the pressure up and ensure the suction liner expands
• Turn the pressure down to:
  - 150 mm Hg/20 kPa for adults
  - 60-80 mmHg/8-11 kPa for neonates
  - 80-100 mmHg/11-13 kPa for infants
  - 90-120 mmHg/12-16 kPa for adolescents
• Switch off the suction and ensure a yankauer sucker is in place or close to hand
• Record that the suction check is complete

5.1.2 Laerdal Suction machine
All resuscitation trollies across the trust will have a Laerdal Suction Unit attached to them.

There is a specific device test for this machine which identifies if the machine is operating satisfactorily or if it needs a service.

Please refer to the manufacturer’s instructions (Appendix B) or refer to the Laerdal Device Test video link which forms part of the suction training on STAR.

The Trust has agreed that the Device Test will be carried out once a week and a general check of the equipment as described below will be carried out daily.

5.1.3 Portable Suction Machines

There are a number of different types of portable suction machines used across the Trust. The following are general checks and may differ from those in the manufacturer’s manual.

MANUFACTURERS INSTRUCTIONS SHOULD ALWAYS BE READ AND FOLLOWED.

• Ensure all accessories as per manufacturer’s instructions are present, clean, intact and in date.
• Turn the controller dial so that suction is on the highest setting.
• Turn the machine on.

• Cover the end of the patient tubing.

• Ensure the suction pressure increases by observing the dial on the regulator, this must reach 530mmHg/70KPa.

• If present, observe the suction liner to ensure it fully expands.

• Uncover the end of the patient tubing and observe the dial to ensure a drop in pressure to below 150mmHg/20KPa.

• Cover the end of the tube once more and set the suction pressure to 150 mmHg/20KPa for adult

   60-80 mmHg/8-11 kPa for neonates

   80-100mmHg/11-13 kPa for infants

   90-120mmHg/12-16 kPa for adolescents

• Switch off the suction and ensure a yankauer suction catheter is in place or close to hand

• Record that the check is complete

5.2 Suction Accessories

When performing suction all accessories need to be present before the technique is commenced. Please refer to the appropriate SOP for all of equipment and accessories required.

Patient tubing must be replaced after every patient use.

Yankauer suckers are single use, but can be used more than once in the patient’s own home (single patient use) if flushed through after every use with cooled boiled water.

Catheters (except closed circuit catheters) are single patient use and single use and, as such a new one should be used each time. Please refer to the Single Use Policy for further information

To apply suction the catheters must have a port. Some suction catheters will have a port incorporated into them others will need a separate connector. The connector can be found inside the patient tubing packets.
5.3 Maintenance and Cleaning

Staff must always adhere to the manufacturer’s instructions.

Suction units should be cleaned after each patient use and the suction container liners discarded and replaced with new ones.

When not in use suction units should be cleaned at least weekly.

For wall suction units the filters in high use areas should be changed every 3 months. In low use areas it must be changed annually.

Please refer to the A-Z Daily Cleaning Core Equipment Decontamination of Reusable Equipment- Standard Operating Procedure (A-Z cleaning guide) via the Infection Control link on BOB.

The filters for portable suction machines should be changed following each patient use.

Please refer to the manufacturer’s instructions regarding change of filter when being used for the same patient.

All portable suction machines should have an asset number and be logged with EBME.

Portable suction machines within the community hospitals and community teams must have an annual electrical safety test and a pre-plan maintenance check, carried out by EBME to ensure they are in correct working order.

5.4 Faults

Very often faults can be rectified and are often as a result of incorrectly fitting accessories.

A troubleshooting guide is included in the E-learning Suction Training on STAR.

If the fault cannot be rectified the senior nurse on duty must be informed and an alternative suction unit be readily available and in correct working order.

The fault must be reported to EBME immediately.
6 Emergency Airway Suction

All hospital based healthcare professionals must be able to perform airway suction using a yankauer sucker in an emergency situation.

All hospital based healthcare professionals must be able to operate the suction equipment within their area of work and troubleshoot if the equipment is not working.

6.1 Emergency Airway Suction Training

All hospital based healthcare professionals must observe the Trust’s online Emergency Airway Suction E-Learning video which can be found on STAR.

7 Suction Techniques

Suction Techniques have been identified by the Trust as a Core Clinical Competency.

Suction Techniques are carried out in many different clinical areas. The type and frequency of suction techniques practised in these areas differ.

Appendix B contains a flowchart detailing the different suction techniques used within clinical areas.

Staff must adhere to the appropriate Standard Operating Procedure for the Suction Technique they are performing.

7.1 Indications

- To remove respiratory secretions, where respiratory function is compromised and the patient is unable to clear them independently.
- Prevent blockage of an endotracheal tube or tracheostomy tube.
- Obtain a sputum sample and nasopharyngeal aspirate.
- Ensure patient comfort and dignity is maintained during end of life care and where other management methods have failed.

Suction must be performed as needed after a thorough assessment and not performed routinely.
It is the responsibility of the clinician after thorough assessment to make the informed clinical decision whether to proceed with suction or not.

### 7.2 Contraindications/ Precautions

Contraindications and precautions relating to suction must always be considered before carrying out suction techniques.

For a list of contraindications/ precautions refer to Appendix C.

Most contraindications are relative to the patient’s risk of developing adverse reactions or worsening clinical condition as a result of the procedure and an accurate assessment must be performed.

If contraindications and precautions are present but suction is still required, it is imperative that management is discussed with the consultant in charge.

Endotracheal suction is a necessary procedure for patients with artificial airways.

There is no absolute contraindication to endotracheal suctioning because to abstain from suctioning in order to avoid possible adverse reaction could be lethal. (AARC Clinical Practice Guidelines)

Appendix A, lists the potential complications caused through suctioning and how to avoid them.

### 7.3 Consent

Consent must be gained at each intervention.

The patient or in paediatrics the child/ parent/ carer must always be informed of the proposed procedure, what is being done, why and how long it will take and the risks involved, whatever their conscious level.

The patient must understand and consent to the procedure, before it is carried out and is able to decline at any stage.

Seeking consent in cases of a cardiopulmonary arrest the Resuscitation Policy and Procedure should be followed.

For patients who are unable to give consent the Mental Capacity and Best Interest Assessment must be completed and reviewed regularly, so that a decision to treat in best interests can be made. The form can be found on BOB.
Reference must also be made to a TEP form if a patient has one "in place" and the plan of escalating treatment taken into consideration.

For further information refer to the Consent Policy.

### 7.4 Aseptic Technique

All suction procedures must be performed as an Aseptic (Non-Touch) Technique. Other than oral yankauer suction which is a clean technique. Please refer to Aseptic and Clean Techniques Policy for further information.

### 7.5 Documentation

Whenever suction is used, it must be clearly documented in the patient’s records, in accordance with the Clinical Record Keeping Policy. If the procedure does not adhere to the Standard Operating Procedure (SOP) the clinician must justify why they have deviated from the SOP and document their clinical reasoning.

### 8 Suction Training Requirements

All staff required to undertake suction training will be identified by either their line manager or themselves.

All healthcare professionals working in the identified clinical areas in Appendix B, who perform suction techniques must be competent to do so.

Competence in suction techniques for ward based staff can be gained through the completion of the Trust’s e-Learning Suction Training on STAR followed by completion of clinical competencies located on the Workforce Development link on BOB.

Community physiotherapists, district nurses and community matrons need to be competent in oral yankauer suction prior to teaching patients and carers.

Competence for community staff can be gained by completing the Suction Training e-learning on STAR and observing the portable suction equipment checks video and the oral yankauer suction video.

Competency will be assessed in accordance with the Assessment and Maintenance of Clinical Competence in Nurses, Midwives and Support workers Policy.
8.1 E-Learning

The E-Learning training package can be found via STAR and provides a theory component followed by a multiple choice theory test. The video component includes an overview of suction equipment and accessories, how to check it is in working order and how to perform each suction technique.

8.2 Clinical Competencies

The clinical competency forms can be found on the Workforce Development link on BOB.

Ward managers and advanced physiotherapy practitioners will be responsible for ensuring clinical competencies are signed off in their appropriate clinical areas at North Devon District Hospital.

Once completed a copy of the clinical competency must be sent to Workforce Development.

All staff using suction equipment must have completed the medical device clinical competency form which can be found on the EMBE link on BOB.

9 Teaching Suction Techniques to Carers and Patients

Only clinical staff competent in performing suction techniques can teach carers and patients.

Teaching should be delivered in a hospital environment by healthcare professionals who are competent in performing the technique.

Community Nurses, Community Matrons and Physiotherapists who are competent in oral yankauer suction can teach this suction procedure to patients and carers in the community.

Staff teaching suction to carers must complete the learning toolkit and assessment of competency in suction, for a specific client found in Appendix D, one copy must be issued to the carer/s and one copy placed in the notes.
10 Loaning Suction Equipment

Every Complex Care Team across the Trust must have access to a portable suction machine and consumables which can be issued out on loan to patients when required.

It is the responsibility of the issuing clinician / clinical department to ensure that the device is returned to EBME for electrical testing and checking every 12 months as defined in policy document EBME Procedure for Maintenance, Repair and Engineering Management of Medical Devices. This can be found on BOB via the EBME web page.

When loaning out equipment a loan agreement form (Appendix E) and a medical device competency form (via EBME link on BOB) should be completed and a copy of the manufacturers guidelines provided.

The machines must also be checked to ensure they are in working order and have had a recent annual electrical safety test and a pre-plan maintenance check, carried out by EBME.

11 Monitoring Compliance with and the Effectiveness of the Policy

11.1 Standards/ Key Performance Indicators

Key performance indicators comprise:

- 70% completion by staff of the e-learning training on STAR
- 50% completion of clinical competencies
- 70% completion of suction checks on the resuscitation trollies

11.2 Process for Implementation and Monitoring Compliance and Effectiveness

Monitoring Arrangements

Compliance with this policy will be monitored using audits of the daily equipment checks (which include a suction equipment check) carried out on the resuscitation trollies by the resuscitation team.

Compliance with work based competencies will be monitored and recorded through the annual appraisal process. Personal development plans will be monitored by line managers to ensure these reflect competence development in line with this policy.
Where clinical skills are being taught, competencies will be monitored through a review of the Area Specific Training and Competence Log Book by line managers.

Any identified areas of non-compliance will be addressed and an action plan developed.

**Responsibility**

The resuscitation team are responsible for carrying out the resuscitation trolley audits. Individual areas are checked daily and the checklists are reported to the resuscitation team weekly.

Audits are taken to the Prevention and Resuscitation Group who meet every other month.

Individuals, line managers and workforce development will be responsible for the clinical competencies.

**Reporting Arrangements**

Failure of the KPI for suction equipment checks will be fed back to the Assistant Director of Nursing and the Senior Nurses and Midwifery Forum.

Where non-compliance is identified, support and advice will be provided to improve practice.

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### 12 Equality Impact Assessment

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<td>Gender Reassignment</td>
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13 References


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- Resuscitation Council (UK) January Advanced Life Support Guidelines


• Knox T, 2011, practical Aspects of oronasopharyngeal suction in children, Nursing children and young people vol 20, no 7, pages 14-17)

• Adult, Paediatric and Neonatal Airway Suction Policy, (March 2012) St George’s Healthcare NHS Trust

• (https://northeast.devonformularyguidance.nhs.uk/formulary/chapters/2.-cardiovascular/2-8-anticoagulants-and-protamine)

14 Associated Documentation

Medical Devices; Training and Assessment of Competency Policy

Single Use Policy

Decontamination of Reusable Equipment- Standard Operating Procedure (A-Z cleaning guide)

Consent Policy

Assessment and Maintenance of Nurses, Midwives and Support workers Policy

Aseptic and Clean Techniques Policy

Resuscitation Policy

Medical Gas Policy
# Appendix A

## Potential complications

<table>
<thead>
<tr>
<th>Complication</th>
<th>Reason</th>
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<tbody>
<tr>
<td>Hypoxia</td>
<td>Due to obstruction of the airway and reducing the patient’s oxygen supply during the procedure. This may be prevented or minimised by pre-oxygenation, using appropriate size catheter and not prolonging the procedure.</td>
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<tr>
<td>Patient distress</td>
<td>Suction can be uncomfortable for the patient and should only be used when absolutely necessary. Explain and re-assure the patient each time.</td>
</tr>
<tr>
<td>Atelectasis</td>
<td>Due to a fall in pulmonary compliance and tidal volume, it may be prevented by taking deep breaths or using positive pressure to inflate lungs.</td>
</tr>
<tr>
<td>Bronchospasm/ Laryngospasm</td>
<td>Insertion of a catheter into the trachea may produce laryngospasm or bronchospasm as a reaction to the foreign body and precipitate an acute hypoxic episode. Careful technique will reduce this.</td>
</tr>
<tr>
<td>Infection (to patient or carer)</td>
<td>Sterile technique and single use of catheters will help prevent introduction of infection to the patient. Universal infection control procedures are used for suctioning patients.</td>
</tr>
<tr>
<td>Soft tissue damage</td>
<td>E.g. tracheobronchial trauma, epistaxis, mucosal damage, bleeding and ulceration. Appropriate vacuum pressures, careful technique and catheter selection may avoid these.</td>
</tr>
<tr>
<td>Raised intra-cranial pressure (ICP)</td>
<td>High blood pressure, coughing, vomiting and hypoxia may increase ICP. If the patient is neurologically unstable, any of these may cause further instability.</td>
</tr>
<tr>
<td>Hypertension</td>
<td>Usually due to patient distress, should settle quickly after procedure is completed.</td>
</tr>
<tr>
<td>Vasovagal stimulation causing arrhythmias and hypotension</td>
<td>Most common in unstable patients. Suctioning to correct depth with care and pre oxygenation will help.</td>
</tr>
<tr>
<td>Gagging/ vomiting</td>
<td>Most common in oral or nasal suction. Careful technique will help reduce this.</td>
</tr>
<tr>
<td>Pneumothorax</td>
<td>Most common in infants and neonates secondary to perforation of segmental bronchi by suction catheters. Suctioning to correct depth will help prevent this.</td>
</tr>
</tbody>
</table>
Appendix B - Suction procedures across clinical areas

The flow chart below displays different clinical areas and the suction techniques carried out within them. Theatres and recovery, ICU / HDU and Accident and Emergency have both adult and paediatric patients.

Acute Stroke Unit (ASU)
- Nasopharyngeal
- Tracheal via tracheostomy
- Oral yankauer suction
- Oropharyngeal

Medical & Surgical Wards
- Nasopharyngeal
- Tracheal via tracheostomy
- Oropharyngeal
- Oral yankauer suction

Theatres Recovery
- Oral yankauer suction
- Tracheal via tracheostomy
- Endotracheal via ET tube or trache
Accident & Emergency

- Tracheal via tracheostomy
- Nasopharyngeal suction
- Oropharyngeal suction
- Oral yankauer suction

Community setting

- Oral yankauer suction
Appendix C

Contraindications and Precautions

Contraindications

**Endotracheal**  
None if indicated

**Nasopharyngeal**  
Stridor, laryngospasm or severe bronchospasm  
Base of skull fracture and leakage of cerebral spinal fluid  
Craniofacial surgery/ injury  
Haemangioma (paediatrics)  
Undrained pneumothorax  
Severe epistaxis  
Tracheo/oesophageal fistulae  
Occluded nasal passage  
Severe cardiovascular instability/ acute cardiac event  
Epiglottitis or croup

**Oropharyngeal**  
Stridor, laryngospasm or severe bronchospasm  
Orofacial surgery/ trauma  
Undrained pneumothorax  
Severe cardiovascular instability/ acute cardiac event  
Tracheo/oesophageal fistulae  
Haemangioma (paediatrics)  
Epiglottitis or croup
**Precautions**

**Endotracheal**

Anticoagulated patients or those with clotting disorder (normal limits INR 0.9-1.1 and platelets 150-400). Anticoagulant drugs include:

- Parental anticoagulants – Clexane (Enoxaparin), Tinzaparin, Heparin Sodium
- Oral anticoagulants – Warfarin, Phenindione, Apixaban, Dabigatran, Edoxaban, Rivaroxaban

Oesophageal/tracheal surgery within last 3 months due to potential anastomosis damage, should be discussed with relevant surgeon

Severe cardiovascular instability

Severe hypoxaemia with high levels of Positive End Expiratory Pressure (PEEP)

Following surfactant administration in neonates

Dependency on high oxygen demand

Acute pulmonary oedema, consider other forms of medical management

**Nasopharyngeal**

Anticoagulated patient or those with clotting disorder (normal limits INR 0.9-1.1 and platelets 150-400)

Acute pulmonary oedema (see above)

Oesophageal or tracheal surgery (see above)

Irritable airways (uncontrolled cough, chest tightness, wheeze, bronchospasm)

Latex allergy (consider latex free NP airway)

**Oropharyngeal**

Anticoagulated patient or those with clotting disorder (see above)

Intact gag reflex, caution must be taken to avoid gagging on the airway

Oesophageal/tracheal surgery (see above)

Acute pulmonary oedema (see above)

Recent oesophageal or tracheal surgery (see above)

Irritable airways (uncontrolled cough, chest tightness, wheeze, bronchospasm)

**Oral Yankauer**

Head or neck surgery or facial fractures

Haematological conditions

Sore mouth/damaged mucosa

Fitting patient

Confusion or distress

Spasms or increased muscle tone of the face and neck muscles
Appendix D

Teaching Suction Techniques to Carers: A Toolkit

Contents:

- Lesson Plan and Learning Objectives
- Suggested Teaching Plan
- Assessment of competency in performing suction, for a specific client
- Suction parameters
- Competency assessment form

Lesson Plan and Learning Objectives

- Discuss Learning Objectives
- Theory relating to indications, hazards and the specific suction procedure for this client
- Highlight policies relating to suction (e.g. glove and waste policies)
- Practical session with practice model (from clinical skills lab)
- Observation for assessment of competence, (this can be repeated until the carer and professional are satisfied)

Learning Objectives:

- Learn how to suction a named client with the technique appropriate for that client
- List the risks of suction therapy
- State the main factors to be considered when planning to use suction therapy
- Practice suction technique and equipment checks in a simulated environment
- Learn how to monitor client during and after procedure and respond appropriately

Suggested Teaching Plan

This teaching plan is aimed at being a simple aide-memoire for professionals competent in suctioning but will need adapting to individuals’ needs and carers abilities.
Theory

Why does the client need suctioning?

- Weak cough
- Excess secretions which are distressing to patient
- Secretions can be reached with catheter

<table>
<thead>
<tr>
<th>Risks of suctioning</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Damage to soft tissue within mouth and airway from catheter contact or high vacuum pressures.</td>
<td>Use gentle technique and as low pressures as possible.</td>
</tr>
<tr>
<td>Infection risk</td>
<td>Clean or aseptic technique</td>
</tr>
<tr>
<td>Spasm of upper airway (Laryngospasm)</td>
<td>Stop suction, call for urgent help</td>
</tr>
<tr>
<td>Stress of procedure can affect BP and HR.</td>
<td>Use gentle technique</td>
</tr>
<tr>
<td>Gagging/Vomiting</td>
<td>Use gentle technique</td>
</tr>
</tbody>
</table>

Preparation

- Explanation to client and gain consent
- Correct equipment available and nearby:
  - Gloves
  - Catheter(s)
  - Suction Unit, plugged in
  - Tubing
  - Clean water in jug for rinsing tubing
- (Oxygen and mask available if client uses it)
- Correct tubing set-up
- Check vacuum pressure setting and test on your gloved finger. (Aim as low as possible to be effective but may require greater pressure if secretions are very thick and sticky).

Technique

Refer to SOP for the accurate procedure for each type of suction technique.

Cleaning

- Dispose of catheter and glove immediately
- Rinse tubing, and yankauer if used, with clean water (distilled or cooled, boiled water) after every episode of use.
- Empty and wash suction unit bottle daily.
Assessment of competency in performing suction, for a specific client

Date..................................... Time.................................. Location..........................................

Name of Carer (being taught).................................................................................................

Name of Client ....................................................................................................................... 

This form is to be completed when teaching patients and or carers how to perform suction techniques. A copy should be kept within the patient notes and one issued to the patient/carer.

**Suction Parameters:**

<table>
<thead>
<tr>
<th>Suction machine model and serial number</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure .................................. kPa</td>
<td></td>
</tr>
<tr>
<td>Catheter Type ..................................</td>
<td></td>
</tr>
<tr>
<td>Catheter Size ............................... FG</td>
<td></td>
</tr>
<tr>
<td>Suction Route ..................................</td>
<td></td>
</tr>
<tr>
<td>Indications for treatment .................</td>
<td></td>
</tr>
</tbody>
</table>
### Assessment of competency in performing suction, for a specific client

<table>
<thead>
<tr>
<th>Task</th>
<th>Performed without prompting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepares all equipment</td>
<td>Yes/ No</td>
</tr>
<tr>
<td>Prepares oxygen/ pre-oxygenates patient</td>
<td>Yes/ No/NA</td>
</tr>
<tr>
<td>Positions patient appropriately</td>
<td>Yes/ No</td>
</tr>
<tr>
<td>Reassures patient and gains consent</td>
<td>Yes/ No</td>
</tr>
<tr>
<td>Switches on equipment and check vacuum setting</td>
<td>Yes/ No</td>
</tr>
<tr>
<td>Measures length of catheter to be inserted</td>
<td>Yes/ No/NA</td>
</tr>
<tr>
<td>Insert catheter/ yankauer gently with thumb off suction port (no suction)</td>
<td>Yes/ No</td>
</tr>
<tr>
<td>Does not pass the pre-determined depth or back of the teeth</td>
<td>Yes/ No</td>
</tr>
<tr>
<td>Applies suction whilst withdrawing catheter in a timely manner</td>
<td></td>
</tr>
<tr>
<td>Removes suction catheter/yankauer and cleans or disposes of correctly</td>
<td>Yes/ No</td>
</tr>
<tr>
<td>Effectively monitors patient post procedure and is aware of hazards/ complications that may be experienced</td>
<td>Yes/ No</td>
</tr>
<tr>
<td>Assesses whether repeat suction is required</td>
<td>Yes/ No</td>
</tr>
<tr>
<td>Flushes suction tubing with sterile water</td>
<td>Yes/ No</td>
</tr>
<tr>
<td>Assembles equipment appropriately for next use</td>
<td>Yes/ No</td>
</tr>
<tr>
<td>Performs procedure in an aseptic non touch or clean manner</td>
<td>Yes/ No</td>
</tr>
</tbody>
</table>

I confirm that the procedure was performed unprompted and that the above named person has been assessed as competent in performing this task today.

**Assessor**

Name…………………………………………
Signature ……………………………
Job title ……………………………
Date ……………………………

**Carer**

Name…………………………………………
Signature ……………………………
Relationship ……………………………
Date ……………………………
LOAN AGREEMENT
(This agreement should be used in conjunction with the Medical Device Checklist)

Please Note:
This equipment is being loaned to you and remains the property of Northern Devon Healthcare NHS Trust.

This item requires an annual electrical safety test and pre-plan maintenance check and can be recalled at any time for these tests to be carried out.

You may be liable for repair / replacement expenses if the equipment incurs damage over and above that which is deemed normal levels of wear and tear.

There will be a charge for any unreturned equipment.

I acknowledge that the ……………… (serial number ) received by me on …………………… is the property of the Northern Devon Healthcare NHS Trust, …………………… Department. I undertake to return it to this department when required to do so, or when it is no longer in use.

I have been instructed on the use and cleaning of the equipment and how often to replace any consumables. I acknowledge that I have been given a copy of the manufacturer’s instructions.

I understand that I must return the equipment for electrical safety testing when required and may have to pay replacement expenses if I fail to do so.

I agree to arrange for the return of the equipment to the issuing team when it is no longer required. There will be a charge for any unreturned equipment.

Department contact details and telephone number-

SIGNED (PATIENT/ CARER / GUARDIAN) PRINT NAME:
……………………………………………………………………………………………………………………………………

DATE:
……………………………………………………………………………………………………………………………………
Appendix E: Laerdal Device Test Instructions

Device Test

The Device Test is a user initiated test program to identify whether the LSU operates satisfactorily or if it needs service. If the device is not in frequent use (i.e. less than once a month), the Device Test should be performed both on a monthly basis and after each Cleaning and Assembly process.

The program runs 4 different tests:
1. Occlusions - Blockages in the Suction System including canister and tubing
2. Vacuum efficacy - How much vacuum builds up in the Pump System within 3 seconds
3. Maximum vacuum level - The maximum achievable vacuum level of the LSU within 10 seconds
4. Leaks - Air leakages in the Pump System including canister and tubing

Before Device Test Checklist:
- Ensure the LSU is correctly assembled and the Patient Suction Tubing is unwound.
- The Suction Catheter Adapter is removed from its holder (if applicable).
- Ensure the battery is not being charged (the device is not connected to AC/DC power source).

Note
If you need to interrupt the test and revert to normal operation, turn the Operating Knob to another position and then select the required setting.

Device Test Indicators

- Running Test 3
  Testing the maximum achievable vacuum level of the LSU

- Running Test 4
  Testing for air leakages in the Pump System

- Running Test 1
  Testing for occlusions in the Suction System

- Running Test 2
  Testing the vacuum build-up efficacy of the Pump System
Device Test

Run the Test

1. Press and hold the Test Button while turning the Operating Knob to 500* mmHg.

2. Hold the Test Button in for 2 seconds.

3. The test will start immediately. During test mode, the Power On Indicator will flash rapidly.

4. When LED 2 lights up, block the Patient Suction Tubing with your thumb.
5. Keep the tubing blocked while LED 2, 3, and 4 light up. Release the tubing when LED 1 lights up again.

**Notes**

- If the tubing is not blocked within 2 minutes, the test will be interrupted. During interrupted device test, the Power On Indicator will flash slowly.
- To restart the test, set the Operating Knob to “0” and start over again.
- To evaluate test results, do not turn off the LSU after running Device Test.
Device Test

**Evaluation of Device Test Results**

After the test is completed, the Vacuum Indicator will display the results. Press the Test Button to scroll through the results of each test to display the results.

<table>
<thead>
<tr>
<th>Test No.</th>
<th>Test result indication</th>
<th>Action if test failed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test 1 - Occlusions</td>
<td>X</td>
<td>• Check possible blockages (e.g., twisted tubing, blocked filter, or tube in the filter) and run the Device Test again.</td>
</tr>
<tr>
<td></td>
<td>✓ Test passed &lt;100 mmHg</td>
<td></td>
</tr>
<tr>
<td>Test 2 - Vacuum efficiency</td>
<td>X</td>
<td>• Check connector, tubing, and canister lid for leakage or damage.</td>
</tr>
<tr>
<td></td>
<td>✓ Test passed &gt;300 mmHg</td>
<td>• Check exhaust outlet for occlusion and run the Device Test again.</td>
</tr>
<tr>
<td>Test 3 - Maximum vacuum</td>
<td>X</td>
<td>• Check connector, tubing, and canister lid for leakage or damage.</td>
</tr>
<tr>
<td></td>
<td>✓ Test passed &gt;500 mmHg</td>
<td>• Check exhaust outlet for occlusion and run the Device Test again.</td>
</tr>
<tr>
<td>Test 4 - Leaks</td>
<td>X</td>
<td>• Check connector, tubing, and canister lid for leakage or damage.</td>
</tr>
<tr>
<td></td>
<td>✓ Test passed &gt;450 mmHg</td>
<td>• Check exhaust outlet for occlusion and run the Device Test again.</td>
</tr>
</tbody>
</table>

After evaluating the test results, turn the Operating Knob to ‘0’ to exit the Device Test.