St George's University Hospitals NHS
NHS Foundation Trust

PICU at St George's

PICU tracheostomy protocol

This protocol is based on the joint Royal Brompton & Harefield NHS Trust and Great Ormond Street Hospital for Children NHS Trust, Great Ormond Street Hospital Manual of Children's Nursing Practice, 2012), National Tracheostomy Safety Project (NTSA-paediatrics) and St Georges University Hospital NHS Foundation Trust Policy on Tracheostomy- Care of neonates, infants and children with tracheostomy tubes. Printed copies may not be the most up-to-date, please use the NTSA website to download the most current forms in use. In addition, use the 'my tracheostomy plan' at the end of this document where applicable.

All with established and/or non-familiar tracheostomy tubes must have a copy of the 'my tracheostomy plan' clearly and visibly displayed at the bedside.

All patients on PICU and PSDU admitted with a tracheostomy must have the following documentation displayed prominently above the bed-space.

1. New tracheostomy or tracheostomy sign detailing tube type and specifications. This must be printed out in colour in its original format to promote consistency and familiarity.
2. Emergency Paediatric Tracheostomy Management must be printed out in colour in its original format and placed above the patient's bed-space.
3. 'TRACHE' essentials list for tracheostomy patients
4. Tracheostomy equipment checklist
5. All essential contact details (e.g. ENT surgeons) must be included in the nurses hand-over sheet and displayed prominently over the patient's bed-space
6. Stay sutures for new tracheostomy patients must be clearly visible and labelled. This must be clearly documented in the nurse's assessment and evaluation notes.
7. All electronic documentation relating to the tracheostomy e.g. bedside checklist must be fully completed. Any discrepancies or problems must be recorded and reported to the nurse-in-charge and doctor. A plan for managing this must be clearly identified and documented.

Access the most up-to-date forms, checklists and algorithms from this website: http://www.tracheostomy.org.uk/Templates/NTSP-Paeds.html

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Recommended suction pressures for different age groups

Age	Suction pressure
Neonate	8 to 11 kPa
	(60 to 80 mmHg)
Child (3-10 years)	11 to 15 kPa
	(80 to 112 mmHg)
Adolescent (10-18 years)	15-20 kPa
	(112-150 mmHg)
Saline instillation	0.25 mls in neonate to maximum 2 mls in older child

For care of the LTV child ventilated via a tracheostomy, refer to extended guidelines on the joint Royal Brompton & Harefield NHS Trust and Great Ormond Street Hospital for Children NHS Trust. This is the document recommended by respiratory CNS at St Georges. It is the responsibility of the nurse-in-charge and the nurse or health care assistant caring for the patient at any point (e.g. covering for the patient's break) to familiarise themselves with the ventilator in use and its management, as for any other medical device used on PICU and PSDU. The type of humidification must be specified as HME or wet circuit. Only one or the other is in use, not both as this will obstruct the child's airway.

If the patient has a speaking valve, this must be checked for patency and integrity. A clicking sound must be heard on shaking the speaking valve and when in use. The speaking valve must be removed if the patient exhibits any signs of distress. There must be a clearly documented plan of care for the speaking valve and inner cannula if in situ.

The inner cannula must be cleaned and stored according to Trust policy. Inner cannula are cleaned minimal four-hourly, more frequently if secretions are thick and tenacious. If the patient exhibits signs of distress, the inner cannula must be removed. In some instances, the inner cannula will need to be reinserted prior to manual hand ventilation, so this must be checked and documented clearly in the bed-side checklist.

Infection control is paramount. Personal protection equipment (PPE) includes gloves, apron and eye goggles which must be easily accessible at the patient's bedside. Face masks are indicated in special circumstances. Refer to infection control policies.

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The shift leader for PICU and PSDU must be tracheostomy trained and tracheostomy competent. They must have undertaken at least 2 tube changes. This can be demonstrated through simulated practice.

All new shift leaders must have undergone in-house training provided by the respiratory CNS before taking charge of PICU or PSDU on their own. This must occur within 6 months of being appointed as a new shift-leader. In the event that this is not possible, there must be at least one other senior nurse who is tracheostomy competent on the unit for that shift.

Nurses and health-care assistants caring for tracheostomy patients must either be tracheostomy trained or inform the nurse-in-charge if they are not so that they can be appropriately supported at the bed-side.

Do's & Don't of Suction

Planned suction may be required in some circumstances. Reasons for this must be clearly documented in goals of care and patient notes.

DO…….

1. Do observe the length and type of tracheostomy tube and calculate the required length of suction tubing
2. Do use graduations on the suction catheter to guide insertion length (the adult technique is different and does not apply to PICU)
3. Do observe infection control measures and use of PPE including goggles
4. Do suction new tracheostomies 2-4 hourly routinely for the first 24 hours unless instructed by consultant/ENT surgeons not to do so
5. Do insert an inner (non-fenestrated) tube for fenestrated tracheostomies
6. Do observe for excessive pressure when suctioning as this causes trauma, hypoxaemia and atelectasis
7. Do observe for improvement or deterioration in heart and respiratory rate, work and quality of breathing , colour and oxygen saturation (and end-tidal CO_2) and patient tolerance and before, during and following suction
8. Do maintain sterility of the suction catheter and handle only the proximal end. If the distal end of the catheter is touched, discard and use a new catheter.
9. Do apply suction only on withdrawal and withdraw without rotating the catheter.
10. Do use a maximum duration of 5-10 seconds only

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11. Do allow child to rest after maximum of 3 attempts before any further suctioning.
12. Do reuse the suction catheter if immediate suction is required, the catheter is not occluded and the end of the catheter has not been contaminated
13. Do flush the suction tubing with water following the suction procedure
14. Do observe and document the type of and volume of secretions and the child's tolerance of the procedure and risk assessments
15. Do wrap the used suction catheter around your gloved hand and discard as per unit/Trust policy for clinical waste

DO NOT……

16. DO NOT use excessive pressure during suction unless a risk assessment has been undertaken and agreed
17. DO NOT use the adult technique for suctioning PICU children
18. DO NOT apply intermittent suction withdrawal, withdraw the catheter straight out slowly
19. DO NOT rotate the suction catheter on withdrawal
20. DO NOT perform deep suction routinely
21. DO NOT instil saline routinely. Use as clinically indicated following a risk assessment.

<u>CHANGING TAPES</u>

This is a 2-person procedure, one trained member must ideally be competent in managing a dislodged tube and tracheostomy complications

1. All staff must tie/secure tapes in the same way
2. Parents/carers may adopt another method and can be continued following a risk assessment which must be documented
3. Tapes are changed daily for established tracheostomies (not new tracheostomies)
4. Staff must be trained and competent in changing tapes
5. If junior staff are assisting with tape changing, a senior member of team with ability to manage complications must be informed prior to the procedure
6. Prepare the equipment needed, emergency equipment, gauze swabs and warmed saline satches, 'round'-ended scissors, PPE and hand hygiene
7. Prepare your new tape/ties
8. Place a rolled-up towel to place under the child's should and position the child to access the tracheostomy area, shoulder and above should be exposed
9. A blanket may be required to swaddle the baby, comforter, dummy an older child may require other approaches
10. The assistant should be holding the tracheostomy tube

11. Clean the site and observe the stoma area for skin integrity and pressure complications
12. Change the tape as taught whilst the assistant continues to hold the tube in position
13. Check the tape tension whilst the assistant continues to hold the tube
14. With the baby/child's head bent forward, you should be able to slip one finger comfortably between the ties and neck at the back
15. Assist may release the tube ONLY when instructed to do so
16. Ensure the child is comfortable
17. Clear everything away as per unit policy
18. Wash hands
19. Restock used items without delay
20. Document the procedure

TUBE CHANGE

The **FIRST** tube change is performed by the ENT surgeon when stay sutures are removed and the stoma is more stable. Tube change is a 2-person procedure for subsequent tube changes:

1. Ensure there is one member around who is competent in airway management
2. Inform senior staff that you are undertaking a tube change
3. Assess how cooperative the child is likely to be and consider swaddling, comforter, dummy/or other approaches to manage the child. Do not undertake this procedure in a very distressed child until the child is more settled unless this is an emergency.
4. Perform hand-hygiene and PPE as per unit policy
5. Expose the child's shoulders and above
6. Lubricate the new tube on the outside bend of the tube
7. Insert obturator (introducer) into the tube
8. Position child with rolled up towel to hyper-extend neck, exposing stoma
9. Place clean tapes
10. Assistant to hold tube whilst you undo the tapes
11. Remove dirty tape/ties
12. Remove tube from stoma with a curved action and dispose
13. Quickly insert new tube with curved action
14. REMOVE obturator- this is an obstruction and the child will not be able to breathe with it in
15. The assistant then takes over and holds the tube in position.
16. The stoma site and back of neck is cleaned and dried with water and gauze using a clean technique. Observe for skin integrity and pressure.
17. Tie the tapes as per unit policy.

Escorting out of unit

Nurses escorting patients out of the unit MUST be tracheostomy trained and tracheostomy competent and a check-list completed and adhered to prior to leaving the PICU or PSDU.

Calculating required oxygen for a journey

Total amount of oxygen needed for a journey is:

a. Journey time X prescribed oxygen requirement
b. Double the amount for safety

Example

Journey time: 1 hour (60 minutes)

Child is in 2L /min

Oxygen required = 60 X 2L = 120 L

120L X 2 = 240L

Total amount of oxygen required = 240L

Tracheal dilators are no longer recommended for use but there is a small supply in the PICU store room.

Staff competencies criteria and document can be accessed through the intranet for staff.

MY TRACHEOSTOMY PLAN (this is a sample of original version

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NAME: MRN:

I HAVE A TRACHEOSTOMY TUBE SIZE _____ **MAKE:** _____

CUFF? YES ☐ NO ☐ **PLEASE INFLATE CUFF WITH** _____**MLS AIR/WATER** (delete as appropriate)

PLAN FOR CUFF MAINTENANCE:

_____

_____

_____

INNER TUBE? YES ☐ NO ☐

PLAN FOR INNER TUBE:

_____

_____

LAST TUBE CHANGE: _____ **NEXT TUBE CHANGE DUE:** _____

PLEASE SUCTION MY TUBE WHEN NEEDED

SIZE _____ **FR CATHETER** **TO** _____ **CM**

PLEASE CONTINUE TRACHEOSTOMY CARE AS PER HOSPITAL GUIDELINES

CONTACT RESPIRATORY NURSES BETSI (BL. 8550) OR JOY (BL. 8240) IF CONCERNED

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