KK WOMEN'S AND CHILDREN'S HOSPITAL

Policy & Procedure Manual

Title/Description:	**Integrated Tracheostomy Management and Care for Neonatal, Paediatric & Adult Patients**		
Department:	CMB	**Effective Date:**	01/01/2011
Procedure No:	65010-1480	**Revision No.:**	2
Revision Date:	03/08/2017	**Approved by:**	CMB
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1.0 PURPOSE

1.1 To provide a guideline that outlines the principles of management and care for paediatric and adult patients with a new or existing tracheostomy for professionals at KKH.

1.2 This Policy and Procedure is applicable to all departments and staff involved in the care and management of adult and paediatric tracheostomy patients, including the

- Medical team from ENT, Paediatric Medicine, Paediatric Surgery, Neonatology, Women's services
- Nurses from all paediatric and women wards, Homecare nurses in paediatrics, Neonatal Intensive Care Unit (NICU), Children's Intensive Care Unit (CICU), Women's Intensive Care Unit (WICU) and Cleft and Craniofacial Centre (CCRC)
- Allied Health professionals like Physiotherapists, Speech-Language Therapists, Respiratory Therapists

2.0 POLICY

2.1 It is a hospital policy that all paediatric and adult patients requiring tracheostomies are managed by a multi-disciplinary team for standardized and holistic care.

2.2 All professionals should have met the necessary competencies following clinical training in managing a patient with a tracheostomy and should not rely solely on these guidelines for their practice.

3.0 DEFINITION

ENT – Ear, Nose and Throat
NICU – Neonatology Intensive Care Unit
CICU – Children's Intensive Care Unit
WICU – Women's Intensive Care Unit
CCRC – Cleft and Craniofacial Centre
PT – Physiotherapist
ST – Speech Therapist
RT – Respiratory Therapist
MSW – Medical Social Worker

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CPAP – Continuous positive airway pressure
HME – Heat Moisture Exchanger
VFSS – Video Fluoroscopic Swallowing Study
BIPAP – Bi-level positive airway pressure
FEES – Fibreoptic Endoscopic Evaluation of Swallowing

4.0 PROCEDURES

4.1 TRACHEOSTOMY REFERRAL
(Criteria for the need of tracheostomy)

4.1.1 Upper airway obstruction – Congenital or acquired.

4.1.2 Loss of adequate airway protective mechanism. For example in children with:
- Cerebral palsy
- Secondary hypoxic ischaemic brain injury with pseudobulbar palsy, bulbar palsy,
- Neuromuscular disorders with bulbar muscle weakness

4.1.3 Need for prolonged invasive mechanical ventilation.

4.2 PRE-OPERATIVE MANAGEMENT
(Referral to the tracheostomy multi-disciplinary team)

4.2.1 The primary physician or ENT will refer all patients who are identified for tracheostomy (using integrated referral form) to the following professions if any of these professionals have not been involved yet, for quality of care and holistic management:

i. PT – To prevent secretion retention during the post-operative period and to teach caregivers chest physiotherapy and suctioning techniques.

ii. ST – To educate caregivers about the impact on communication, voicing, feeding and role of ST as well as do a baseline speech, language, voice and swallowing screen.

iii. Homecare Nurse – To provide psychological support, explain to caregivers on tracheostomy care and show associated devices.

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4.2.2 Preparation of equipment :

- suction machine
- suction catheters,
- pulse oximeter,
- tracheal dilators
- oxygen source

4.2.3 The primary physician will indicate the list of medical equipment needed by the patient on the homecare referral form.

4.2.4 The homecare nurse will ensure that a tracheostomy emergency kit, pulse oximeter, appropriate sized suction catheters etc. is available at the patient's bed area.

4.2.5 The primary physician will refer to MSW for financial support if appropriate.

4.3 POST-OPERATIVE MANAGEMENT FOR 1st WEEK

(Initial care of tracheostomy before 1st tracheostomy change)

4.3.1 The patient is managed in NICU, CICU or WICU in the initial post-operative period.

4.3.2 Patients return from theatre with stay sutures in situ, which should be taped to the chest and labelled left and right. They should remain in situ until the first tube change to facilitate the opening of the stoma during reinsertion of the tracheostomy tube.

4.3.3 Nursing actions during the first seven days following formation of the tracheostomy centre should focus on maintaining the correct positioning and patency of the new tube, stoma maintenance.

4.3.4 A tracheostomy card, as per 67100-Form-0056 Tracheostomy Bed Side Card 2 should be filled up by the nurse, physiotherapist or respiratory therapist in the ICU.

4.3.5 Monitor patient's vital signs including pulse, blood pressure, and respiratory rate via the apnea monitor or pulse oximetry.

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4.3.6 For adult patients, check tracheostomy cuff pressure every 8 hourly and maintain it between 15-25 cmH2O if cuffed tube is used.

4.3.7 Inspect the inner cannula at least 6 hourly to ensure patency if double lumen tracheostomy tube is used and patient is not ventilated. Clean it with sterile water.

4.3.8 1st tracheostomy tube change

i. The first tracheostomy tube change occurs after one week.

ii. The tracheostomy tube change together with the removal of stay sutures will be performed by the ENT surgeon and homecare/primary nurse.

iii. Most patients will undergo their first tracheostomy tube change while in NICU/CICU/WICU. However, on occasions, following consultation between members of the CICU/WICU, the ENT team and caregivers, children maybe transferred to a ward prior to their first tracheostomy tube change if they meet the following criteria:
- Have a non-critical airway (i.e. these children are able to breathe and maintain their airway in the event of accidental decannulation).
- Are not dependent on positive pressure ventilation/CPAP via the tracheostomy.

4.3.9 Assessment and observations

Assess tracheotomised patients for airway patency which include the absence of:
- Respiratory distress
- Abnormal breath sounds such as 'whistling', crepitus or diminished sounds.
- Irregular breathing patterns.
- Increase in coughing/inability to cough.
- Cyanosis/deterioration in oxygen saturation.

4.3.10 Professionals should also monitor for the following, to rule out potential initial complications:
- Check that the tape holder tension is adequate enough to hold the tracheostomy tube securely
- Observe any neck swelling (surgical emphysema).
- Check for air entry through tube – place finger above tube opening and feel

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for a passage of air.
- Inspect the chest for bilateral chest movement.
- Auscultate the chest for equal air entry.

4.3.11 Other initial complications:

i. Accidental decannulation (tube dislodgement)

Tube dislodgement is displacement of tracheostomy tube by unintentional and unplanned tube removal. The displacement or dislodgement can be a partial or complete tube coming out of the stoma or out of the trachea into the soft tissue of the neck.

- For adult patients (Singapore Ministry of Health Nursing Clinical Practice Guidelines, 2010) - ***Refer to Annex 1 for algorithm.***
  - Establish presence of spontaneous breathing when tube dislodgement is confirmed.
  - If breathing is present, ensure cuffed tube is deflated and provide patient with supplement oxygen via facemask.
  - ENT team must be contacted immediately to review tube position.
  - Emergency oral intubation may be indicated if reinsertion of a new tracheostomy tube fails.
- For paediatric patients – ***Refer to Annex 2 for algorithm.***
  - Establish presence of spontaneous breathing when tube dislodgement is confirmed.
  - If breathing is present, tube can be reinserted but must not be forced. On reinsertion, air entry must be checked and confirmed.
  - ENT team must be contacted immediately to review tube position.
  - Ensure tube is correctly secured and does not become displaced.
  - Emergency oral intubation may be indicated if reinsertion of a new tracheostomy tube fails.

ii. Haemorrhage

- May be primary, reactionary or secondary. A large haemorrhage may be fatal.
- Secretions may initially be blood stained but will settle within a few hours, if it continues, practitioners should contact the ENT team.

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iii. Tube blockage

Acute dyspnoea is commonly caused by partial blockage or complete blockage of the tracheostomy tube by a mucous plug.

- For paediatric and adult patients (Singapore Ministry of Health Nursing Clinical Practice Guidelines, 2010) - ***Refer to Annex 3 for workflow.***
    - Ask the patient to cough.
    - Remove inner cannula (if in-situ).
    - Apply suctioning to remove the secretions.
    - Ventilate the patient (and secure airway patency).
    - Deflate the cuff tube (if in-situ), bag and mask patient.
    - Call for medical help.
    - Prepare for change of tracheostomy tube or oral intubation.
    - Provide suctioning when necessary for the first 12-24 hours.

iv. Surgical emphysema

- Air may leak around the tube into the surrounding tissue.
- This is problematic if the patient has had neck sutures inserted.
- Check tape tension to confirm that the tube is correctly secured and check if it appears tighter due to the swelling.
- Inform the ENT team

4.4 HUMIDIFICATION

4.4.1 Devices

Humidify the inspired gas using on the of the following devices:

- Humidifier system – heated or non-heated
- Heat Moisture Exchanger (HME filter)

4.4.2 Methods of Humidification

Use the following criteria to determine the methods of humidification:

1.5.2 Heated Humidifiers – recommended for patients with:

- New tracheostomy tubes
- Dehydration
- Immobility
- Tenacious secretions
- Prolonged mechanical ventilation (>7days)
- Hypothermia

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2.5.2 HME – recommended for patients with:

- Adequate hydration
- Mobility
- Less copious secretions

3.5.2 Anticipation for discharge

Contraindications for HME – Not suitable for patients with:

- Thick, copious or bloody secretions.
- An expired tidal volume less than 70% of delivered tidal volume and patients with Chronic Obstructive Pulmonary Disease.
- Weak respiratory muscles, who will be difficult to wean off ventilator.

4.4.3 Care for the various methods of humidification systems:

i Heat Moisture Exchanger - change HME daily and whenever visibly soiled or according to manufacturer's recommendation.

ii Heated Humidification – check, empty and discard condensate along the tubing of the heated humidification system. Do not drain condensate into the humidifier reservoir.

iii Humidifier Water – use only sterile water to fill the reservoir of humidifier or use single reservoir unit with closed water feed system.

iv Humidifier Circuit Tubing – Change the circuit when it is visibly soiled.

4.5 **SUCTIONING** (refer to Annex 4)

4.5.1 Frequency for the need to suction:

The need for suction relies on an accurate respiratory assessment and should be carried out only when necessary and not on a routine basis.

4.5.2 Prepare necessary equipment:

i. Sterile suction catheter
ii. Sterile water – for suction catheter
iii. Suction equipment
iv. Sterile disposable gloves
v. Sterile distilled water – for humidifier
vi. Sputum trap
vii. Stand-by emergency equipment as necessary – spare tracheostomy tube,

tracheostomy ties, resuscitation bag and oxygen source

viii. Suction pump:
- Suction Pressure – The lowest possible vacuum pressure should be used to reduce complications. Increasing the amount of negative pressure does not improve aspiration efficiency.
- Magnitude
- 80-100mmHg/10-15kPa for children
- 100-120mmHg/15-20lPa for adults

ix. Suctioning catheter:
- Size -
  - Paediatrics -

Tracheostomy tube size (in mm)	3.0 mm	3.5 mm	4.0 mm	4.5 mm	5.0 mm	6.0 mm	7.0 mm
Recommended suction catheter size (Fr)	6	6	8	8	10	10-12	12

  - Adult – Recommended suction catheter size = Inner diameter of tracheostomy /2 x 3
- Depth of insertion – Measured length of tracheostomy tube + length external connectors

4.5.2 Steps:

i. Ensure feeding completed at least 1 hour prior to suctioning (for planned suctioning only).

ii. Pre-oxygenate patient prior to suctioning procedure (if patient on oxygen).

iii. Observe for patient's response, vital signs and oxygen saturation level before, during and after the procedure.

iv. Wash hands.

v. Connect suction catheter to suction machine tubing (within pressure range of paediatrics: 80-120 mmHg; adult: 100-120mmHg).

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vi. Place sterile glove on dominant hand.

vii. For normal routine suctioning, gently insert the suction tubing till the estimated length of tracheostomy tube, then apply suction.

viii. For deep suctioning, when secretion is thick and profuse, gently insert suction tubing until resistance is felt withdraw 0.5 cm, then apply suction.

ix. NO SUCTION APPLIED ON INSERTION.

x. Apply suction onto the suction catheter only when withdrawing the tubing slowly in rotating movement.

xi. Duration must not exceed 10-15 seconds per suction. Allow patient to recuperate in between each suction.

xii. Discard suction catheter and rinse suction tubing with sterile water.

xiii. Assess the patient's tolerance after suctioning.

4.6 STOMA CARE

4.6.1 Frequency of dressing change:

- Stoma care should be carried out daily or more often if skin is infected or continuously moist from mucus oozing from stoma site.
- Keep stoma area dry and change dressing when wet.

4.6.2 Prepare necessary equipment:

- Sterile water / Normal saline
- Sterile Cotton buds/Gauze
- New dressing
- Suction devices – suction tubing and machine
- Stand-by emergency equipment as necessary – spare tracheostomy tube/ties, resuscitation bag, oxygen source, tracheostomy dilator

4.6.3 Steps (Refer to Annex 6):

i. Wash hands.

ii. For paediatrics and adult, ensure patient is held in place. Wrap infant snugly with blanket and place neck roll to hyperextend the neck.

iii. Remove the old/soiled dressing if necessary, making sure one hand is holding on to the tracheostomy tube to prevent it from dislodging.

iv. Examine the skin area, cleanse with sterile cotton bud/ gauze dipped in sterile water/ normal saline

v. Dry area around the stoma with dry cotton bud/ gauze.

vi. Apply new dressing if required.

vii. Suction tracheostomy if necessary.

4.6.4 Stoma Infection:
Inform ENT if the following signs and symptoms of stoma infection are observed:

- Excessive leakage of secretion
- Foul smell
- Erythema around the stoma site
- Erosion of stoma site

4.7 TRACHEOSTOMY TUBE CARE

4.7.1 Sterilisation of tracheostomy/inner tube procedure (refer to Annex 5):

i. Wash tracheostomy tube (both inside and outside) and introducer after change under running water.

ii. Dry thoroughly with paper towel and then soak~~ed~~ in disinfectant solution (as instructed on the container) for 1 hour.

iii. After 1 hour, pour away the disinfectant solution, air-dry it first before keeping it in a dry container or zip-lock bag.

iv. On the day of tracheostomy change, soak the tracheostomy tube again in disinfectant solution for 1 hour, rinse with sterile water before use.

4.7.2 Tracheostomy tie change (refer to Annex 7)

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i. Prepare necessary equipment:
- Inclusive of all equipment necessary for stoma care
- New tie
- Spare tracheostomy tube
- Neck roll

ii. Steps:
- Perform hand hygiene.
- Have an assistant to hold the patient's neck if possible.
- Position patient with neck slightly hyper-extended with neck roll. Wrap patient if necessary.
- Wash hands thoroughly with soap and water.
- Remove old ties, always with one hand holding on to tracheostomy tube to prevent it from dislodging.
- Carry out steps stated in stoma care.
- Insert new tracheostomy ties and fasten securely, allowing for one little finger space under the tie.

4.7.3 Second and subsequent tracheostomy tube changes (refer to Annex 8)

i. Frequency of tracheostomy tube change:
- Tracheostomy tubes should be changed every 7-14 days, however, if there is secretion blockage, frequency of change can be increased.
- Frequency can be decreased once the secretions are lessened and stoma is clean.
- Tracheostomy tube changes can be performed by the Homecare or Ward nurses trained in tracheostomy tube change. Certified caregivers can also perform tracheostomy tube changes only for their child.
- Changing of tracheostomy tubes should be done before feeding or 2-3 hours after feeding

v. Prepare requisites:
- Tracheostomy tube – correct size and one size smaller (one size each)
- Tracheal dilator for newly created stoma
- Sterile gauze 1 packet
- Sterile water for rinsing disinfected tube
- Normal Saline 20ml x 1 vial
- Aqua Gel
- Tracheostomy tie/holder
- Suction catheters and tubing
- Stand-by E-Kit, resuscitation bag and oxygen source

- Sterile gloves
- Micropore tape (one inch)
- Suction machine on standby

vi. Steps
- Suction patient
- Wrap the child if indicated.
- Attach pulse oximeter on child's finger or toe
- Place the child on his back with a small neck roll under his shoulders to hyperextend the neck.
- Perform hand hygiene.
- Open sterile dressing set, and place all requisites in tray without touching the insides of tray.
- Perform Hand-rub, done on sterile gloves
- Inspect all tubes before use.
- Insert obturator into disinfected/new tube.
- Place a small amount of sterile water-soluble lubricant (KY Jelly) on end of new tracheostomy tube and place tube in clean tray until ready for use.
- Clean stoma site with gauze wet with N/Saline
- Slowly detach the tape around the tracheostomy tube; hold tube in place when tapes are not secure.
- Remove old tracheostomy tube.
- Insert new tracheostomy tube in a smooth curving motion.
- Remove the obturator while holding the tube securely.
- Attach the tapes securely, allowing one little finger space between the neck and tape.
- Assess the patient's tolerance post-insertion by auscultation, observing respiratory effort, oxygen saturations and colour of patient.
- Suction if necessary.

4.8 FEEDING

4.8.1 Swallowing assessment

i. ST (Rehab) will assess suitability to commence oral feeding after surgical procedure, following approval by medical team that patient is medically fit for oral trials.

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ii. For patients with cleft palate, when patient is able to maintain oxygen saturation >95% at rest, ST (Rehab) will refer the patient to the CCRC nurse for appropriate feeding assessment and management of oral or non-oral feeding.

iii. An objective assessment of patient's swallowing via VFSS or FEES will be carried out to rule out any trace or silent aspiration during feeding. The ST will request for VFSS or FEES referral from the primary doctor when deemed necessary.

iv. In instances where the patient is not suitable for an objective assessment, a Blue Dye test will be carried out during the swallowing assessment, to rule out large amounts of aspiration. However, as the Blue Dye test is not reliable in detecting trace aspiration, an objective assessment (i.e. VFSS or FEES) will need to be administered once patient is suitable (Brady et al., 1999).

4.8.2 Procedure for feeding

i. For patients with inflated cuffed tracheostomy, the following should be carried out before commencing feeding (Ding and Logemann, 2005):
- Ensure that patient can tolerate cuff deflation
- Deflate cuff before feeding.

ii. For all patients (including patients with cuffed tracheostomies, single lumen tracheostomies etc.):
- Suction prior to feeding orally or via tracheostomy tube if appropriate.
- Sit patient up with head slightly flexed or carry patient with adequate head support.
- Ensure oxygen saturation and heart rate monitoring throughout.
- If patient has been given a speaking valve, place speaking valve on (refer to steps 4.9.3) before feeding as improved subglottic pressure may help reduce the risk of aspiration.
- Feed patient with oral feeds recommended by ST (e.g. amount of oral intake, consistency of feeds). Apply the necessary feeding strategies recommended by the ST to reduce risk of aspiration.

4.9 COMMUNICATION

4.9.1 Speaking Valve

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i. Criteria for suitability to trial speaking valve
   - Stable medical/pulmonary status
   - No airway obstruction
   - Able to tolerate cuff deflation (if patient is on cuffed tracheostomy)
   - Ability to manage own secretions

ii. All patients are to be referred to ST for consideration of speaking valve placement.

iii. ST will liaise with ENT to determine suitability for the use of a speaking valve. If ENT is agreeable, ST will proceed to assess if patient is able to tolerate a speaking valve.

iv. Based on assessment, ST will recommend appropriate use of Speaking Valve.

v. Procedure for all staff for commencement of speaking valve use:
   - Prepare the necessary equipment:
     - Oxygen saturation, heart rate and respiratory monitoring
     - One-way speaking valve
     - Suction equipment (Ensure nurse or PT present to perform suctioning)
   - For cuffed tracheostomies, cuff should be deflated.
   - For fenestrated tube, a fenestrated inner, uncuffed tube should be in situ.
   - Inform the patient about impending placement of speaking valve.
   - Occlude the tracheostomy for about 1 to 2 seconds. This helps to prepare patient for change in respiration when speaking valve is placed.
   - If patient tolerates well, place speaking valve.
   - Monitor patient's vital stats.
   - If patient is having difficulty in breathing or appears in distress, oxygen saturation drops or if patient requests, remove speaking valve. Document schedule of use of speaking valve on Annex 11.
   - Remove speaking valve when patient is asleep.

v. Cleaning of speaking valve
   - Speaking valve should be cleaned with mild soapy water and air dried overnight.
   - Do not use hot water, peroxide, bleach, vinegar, alcohol, brushes, sterilising tablet or cotton buds.

4.9.2 ST will provide therapy and recommendations for communication as appropriate

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4.9.3 All staff to communicate with the patient using the recommended communication method, as determined by the ST

4.10 **DECANNULATION AND WEANING** (refer to Annex 10)

4.10.1 Criteria for decannulation:

- Reversal of the medical condition that originally necessitated intubation/tracheostomy
- Breathing spontaneously without the use of CPAP/BIPAP
- Adequate ventilatory reserve
- Patent upper airway
- Adequate nutritional state
- Ability to cough and clear airway secretions
- Absence of respiratory infection
- Presence of psychosocial support

4.10.2 If patient meets ALL of above criteria AND able to tolerate at least 12 hours of cuff deflation (if cuffed tracheostomy in place), consult ENT, primary and ward doctors before commencing weaning/decannulation.

4.10.3 Decannulation:

Patient will be admitted into High Dependency during the entire decannulation procedure and will be on continuous pulse oximetry.

Day 1	ENT will perform MLB to rule out any upper airway obstruction notably suprastomal granulation. If no obstruction, may proceed with downsizing of tube. Observe for at least 24 hours.
Day 2	Cap in the morning and keep occluded for a minimum of 24 hours. Record schedule of spigotting on Annex 12.
Day 3	If capping is tolerated, proceed with decannulation in the morning. Observe the patient for 24 hours.

4.10.4 Weaning:

If capping trial is not successful, trial speaking valve. Patient should tolerate use of speaking valve for at least 24 hours.

Determine schedule for next decannulation trial.

4.11 **OVERNIGHT OXIMETRY**

Consider overnight oximetry as appropriate. Refer to Respiratory team if deemed

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necessary.

4.12 **DISCHARGE PLANNING**

i. Ward doctors/Primary Nurse to inform all relevant professionals involved to commence caregiver training, at least 2-3 weeks before planned discharge date.

ii. PT for suctioning procedure and chest physiotherapy.

iii. ST to provide parent training for feeding, speech, language, voice and use of speaking valve.

iv. Homecare nurse to provide parent training for:
- Tracheostomy tube change (refer to Annex 8)
- Equipment training for caregivers
- CPR lesson for caregivers
- Orientation to CE, DI, Rehabilitation department and SOC
- Provide caregivers with written materials and useful contact numbers for stoma care, tracheostomy care and other nursing care required.

4.13 **OUTPATIENT FOLLOW-UP**

i. Patients on ventilators will be followed-up at the Homecare Clinic.
- Homecare resource nurse will assess the tracheostomy site, contact the ENT and subspecialty doctors/ allied health specialty to review the patient if needed.

ii. Patients without ventilators will be followed-up at the Multi-disciplinary (ENT, ST, PT, Homecare) tracheostomy clinic (STRACHY).
- Purpose of the clinic will be to assess and review tracheostomy site, determine suitability for speaking valve or decannulation, assess and manage swallowing and feeding, provide any gross motor development or chest physiotherapy services.
- Dieticians will also review patients at this clinic when required.
- Follow-up with all other disciplines as appropriate in other clinics.

5.0 REFERENCES

Brady, S.L., Hildner, C.D. and Hutchins, B.F. (1999) Simultaneous Videofluoroscopic Swallow Study and Modified Evans Blue Dye Procedure: An Evaluation of Blue Dye

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Applies To:	All Divisions and Departments		

Amendments:		
☐ New document	⊗ content change	☐ Reviewed with no changes on _DD/MM/YY_

Visualization in Cases of Known Aspiration. *Dysphagia.* 14: 146-149.

Ding, R. and Logemann, J.A. (2005). Swallow physiology in patients with trach cuff inflated or deflated: A retrospective study. *Journal of the Sciences and Specialities of the Head and Neck.* 27(9): 809-813.

Singapore Ministry of Health Nursing Clinical Practice Guidelines (2010) Nursing Management of Adult Patients with Tracheostomy.

Stanley, Terry MSN, RN: Alter, Laura RN, BSN Putting Evidence Into Practice: A Tracheostomy Improvement Team: 018. Journal of Paediatric Nursing. 21(2): 131-132, April 2006.

6.0 RECORDS

67100-Form-0056 Tracheostomy Bedside Card 2

7.0 ANNEXES

- Annex 1: Algorithm for Management of Emergency – Tube Dislodgement for Adult patients
- Annex 2: Algorithm for Management of Emergency – Tube Dislodgement for Paediatric patients
- Annex 3: Algorithm for Management of Emergency – Tube Obstruction
- Annex 4: Tracheostomy suctioning
- Annex 5: Sterilisation of Tracheostomy tube
- Annex 6: Tracheostomy Care
- Annex 7: Changing of Tracheostomy Ties
- Annex 8: Changing a Tracheostomy Tube
- Annex 9: Tracheostomy Decannulation
- Annex 10: Form 1 – Speaking valve monitoring chart
- Annex 11: Form 2 – Spigotting monitoring chart

8.0 SPECIAL INSTRUCTION

NIL

Title/Description:	**Integrated Tracheostomy Management and Care for Neonatal, Paediatric & Adult Patients**		
Department:	CMB	**Effective Date:**	01/01/2011
Procedure No:	65010-1480	**Revision No.:**	2
Revision Date:	24/07/2017	**Approved by:**	CMB
Applies To:	All Divisions and Departments		

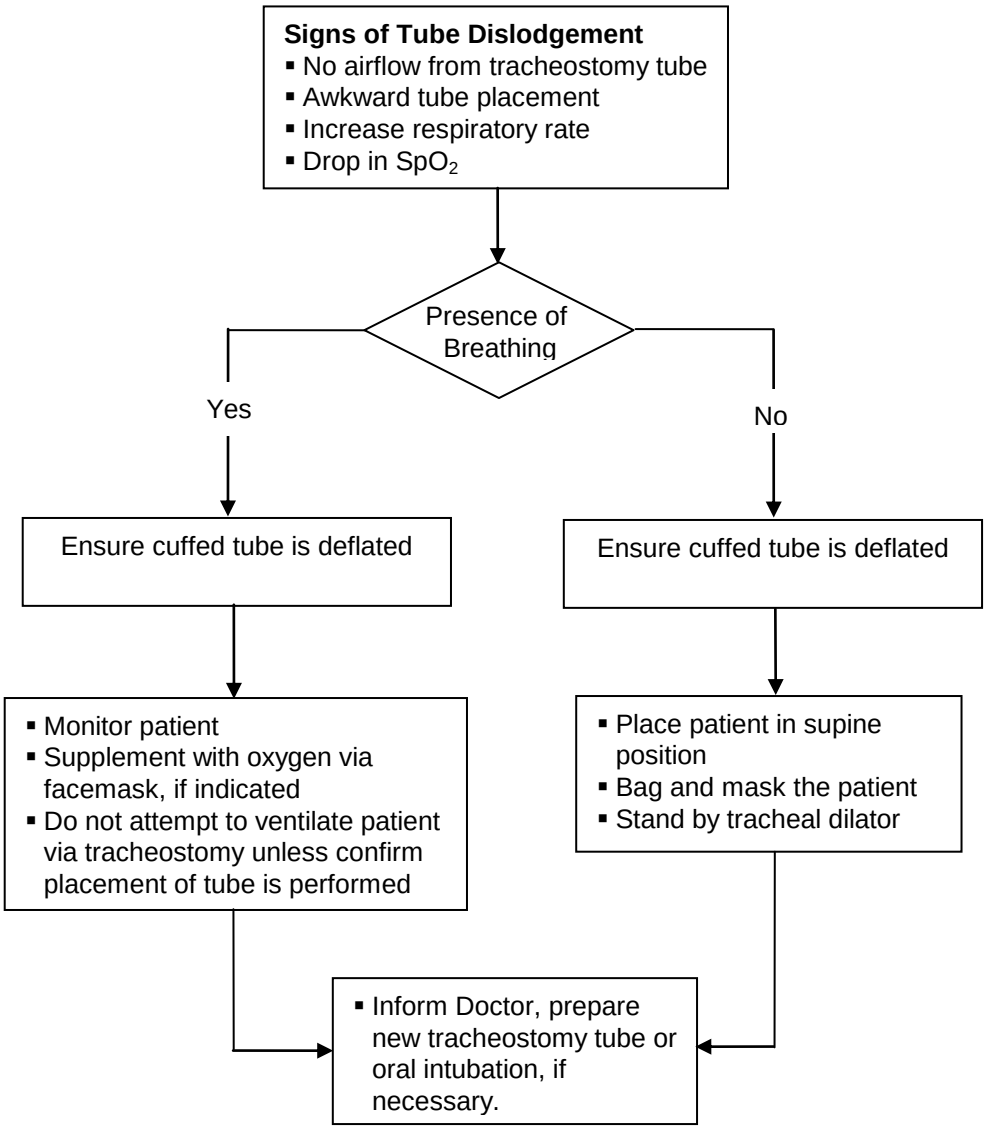
Amendments:		
☐ New document	⊗ content change	☐ Reviewed with no changes on _DD/MM/YY_

9.0 DISTRIBUTION LIST

As per 'Applies To'

Annex 1

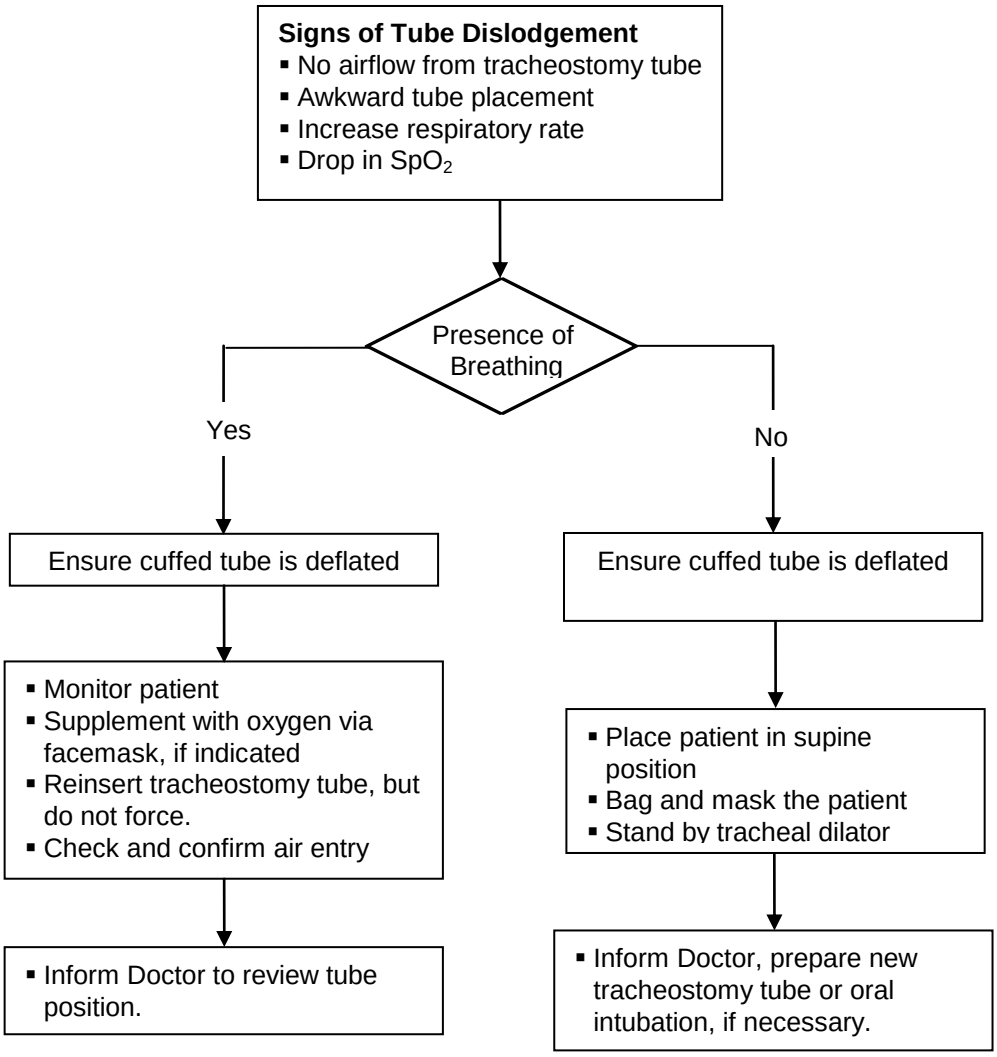
Algorithm for Management of Emergency Tube Dislodgement/Accidental Decannulation for ADULT patients



Reference: Singapore Ministry of Health Nursing Clinical Practice Guidelines (2010) Nursing Management of Adult Patients with Tracheostomy.

Annex 2

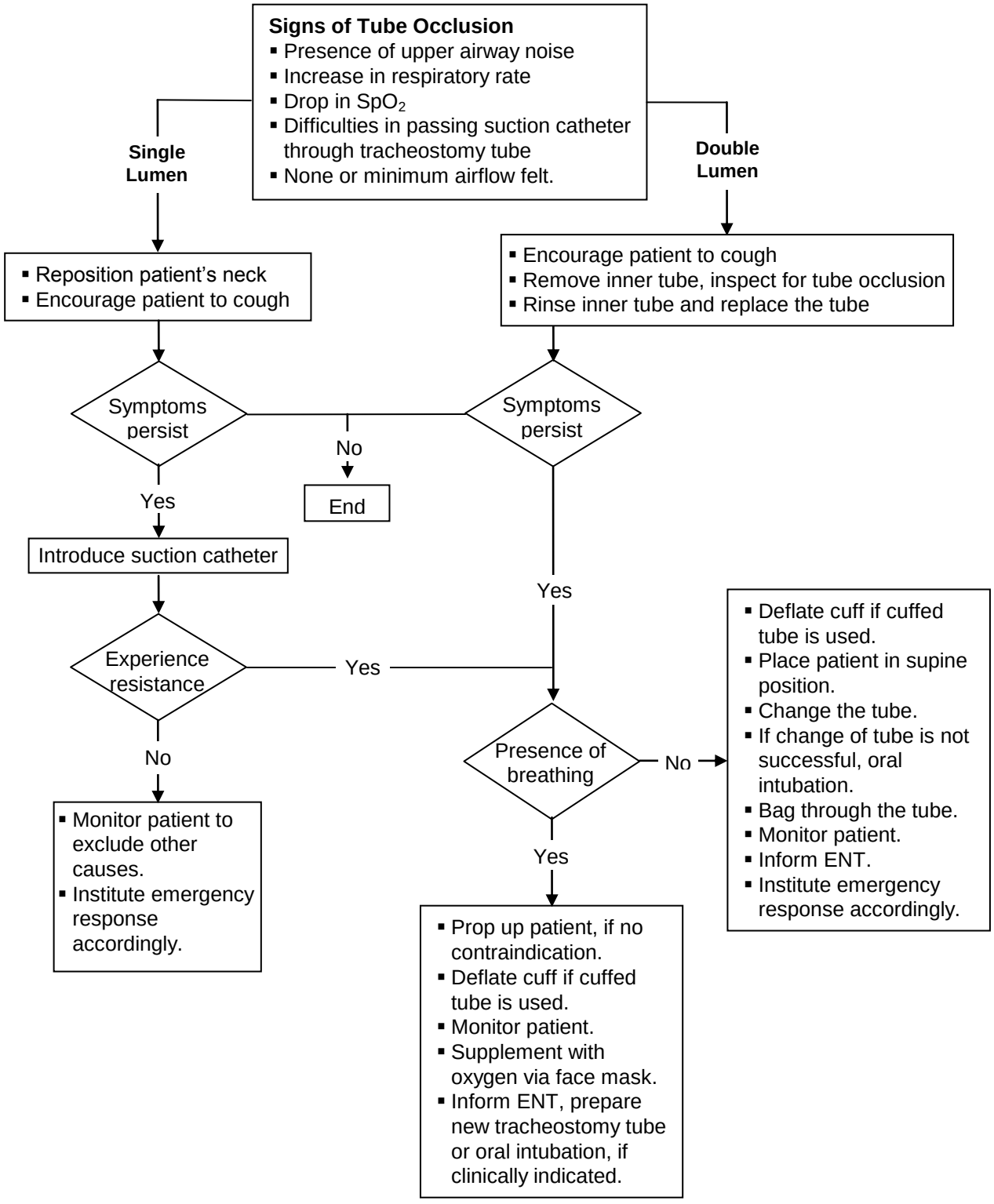
Algorithm for Management of Emergency Tube Dislodgement/Accidental Decannulation for PAEDIATRIC patients



Reference: Singapore Ministry of Health Nursing Clinical Practice Guidelines (2010) Nursing Management of Adult Patients with Tracheostomy.

Annex 3

Algorithm for Management of Emergency Tube Obstruction



Reference: Singapore Ministry of Health Nursing Clinical Practice Guidelines (2010) Nursing Management of Adult Patients with Tracheostomy.

Annex 4

Tracheostomy Suctioning For Homecare Training

TRACHEOSTOMY SUCTIONING

a) Prepare all equipment
- Clean suction catheter
- Cooled boiled water or Normal saline 0.9%
- Suction equipment
- Stand-by emergency equipment as necessary – "E" kit with spare tracheostomy tube, tracheostomy ties, resuscitation bag and oxygen source

b) Wash hands.

c) Connect suction catheter to suction machine tubing (within pressure of 80-120mmhg).

d) For normal routine suctioning, gently insert the suction tubing till the estimated length of tracheostomy tube, **then apply suction**.
For deep suctioning, when secretion is thick and profuse, gently insert suction tubing until resistance is felt withdraw 0.5cm- 1cm, **then apply suction**.

e) NO SUCTION APPLIED ON INSERTION

f) Apply suction onto the suction catheter only when withdrawing the tubing slowly in rotating movement.

g) Duration must not exceed 10-15 secs per suction. Allow patient to recover in between each suction.

h) Assess patient's tolerance after suctioning.

Annex 5

Sterilisation of Tracheostomy Tube (Homecare Procedure)

STERILIZATION OF TRACHEOSTOMY TUBE

a) Wash tracheostomy tube (both inside and outside) and introducer after change under running water.

b) Dry thoroughly with paper towel and then soak in Presept solution (¼ tab of Pureen to 500 ml water) for an hour.

c) After an hour, pour away the Pureen solution, air-dry the tracheostomy tube first before keeping it in a dry container or zip-lock bag.

d) Before next change, soak the tracheostomy tube again in Pureen solution for an hour, rinse with sterile water or cooled boiled water before use.

Annex 6

Tracheostomy Care (Homecare Procedure)

TRACHEOSTOMY CARE (daily or more often if skin is infected or large amount of secretions)

a) Prepare all requisites
- Cooled boiled water or Normal saline
- Sterile gauze or cotton buds
- Suction devices - suction tubing and machine
- Stand-by emergency equipment as necessary – spare tracheostomy tube/ties, resuscitation bag, oxygen source

b) Wash hands thoroughly with soap and water.

c) Wrap infant or child snugly with blanket if needed. Place neck roll to hyperextend the neck.

d) Remove the old gauze if necessary, making sure one hand is holding on to the tracheostomy tube to prevent it from dislodging.

e) Examine the skin area, cleanse it with gauze or cotton bud dipped in cooled boiled water.

f) Dry area around the stoma with dry gauze or cotton bud.

g) Apply new gauze if required.

h) Suction tracheostomy if necessary.

Annex 7

Changing of Tracheostomy Ties (Homecare Procedure)

CHANGING OF TRACHEOSTOMY TIES

NB: Changing of tracheostomy tubes should be done before feeding

a) Prepare all requisites
- New tie holder
- Suction equipment / tubing
- Neck roll
- Stand-by emergency equipment as necessary, "E" kit with spare tracheostomy tubes, resuscitator bag and oxygen cylinder

b) Position patient with neck slightly hyper-extended with neck roll. For infants, wrap patient if necessary.

c) Wash hands thoroughly with soap and water.

d) Remove old ties, always with one hand holding on to tracheostomy tube to prevent it from dislodging.

e) Perform stoma care (see Annex 6).

f) Insert new tracheostomy ties and fasten securely, leaving room for one finger space under the tie.

Annex 8

Changing a Tracheostomy Tube (Homecare Procedure)

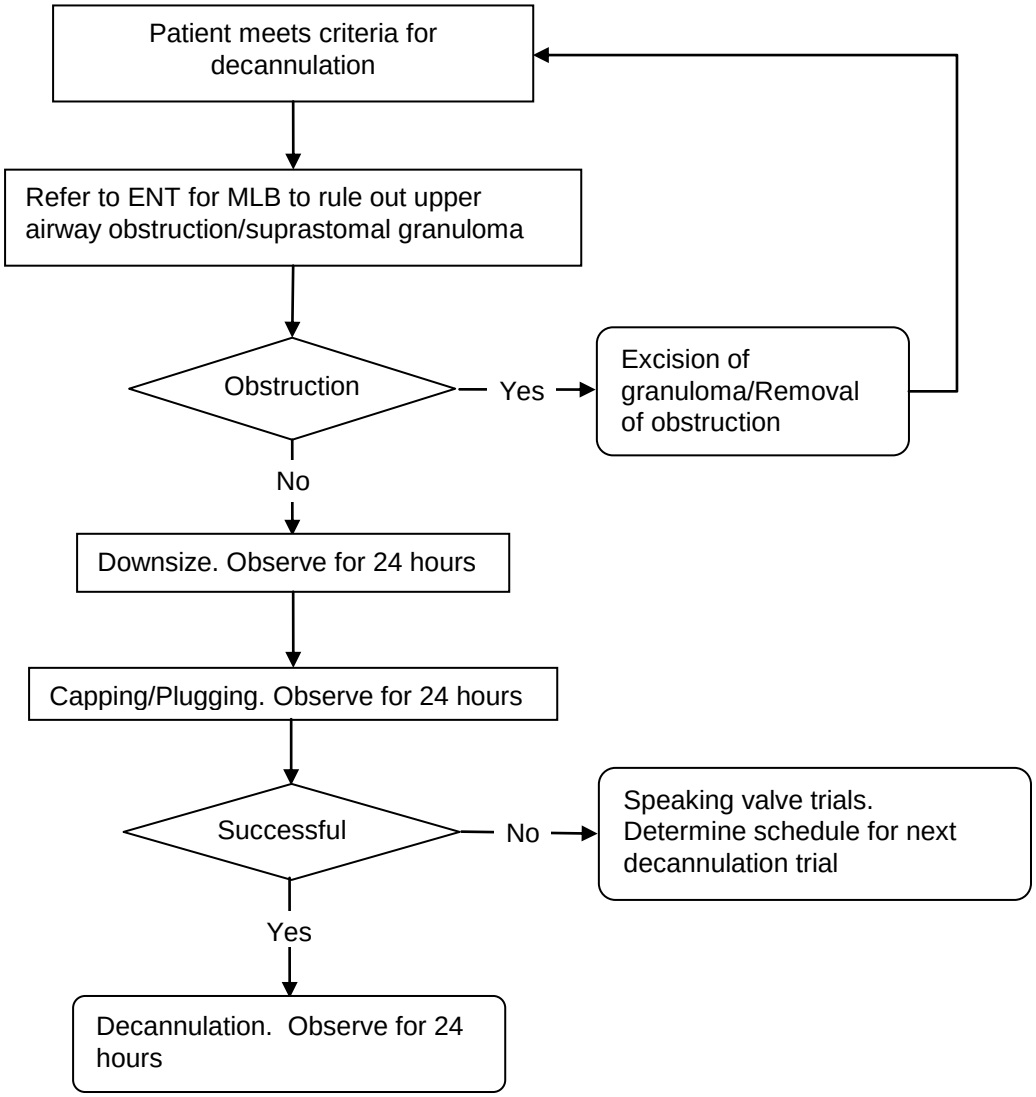
CHANGING A TRACHEOSTOMY TUBE

a) Prepare requisites
- Disinfected tracheostomy tube with obturator
- Sterile dressing set
- Sterile Gauze
- Sterile plastic gloves
- Micropore tape
- Normal Saline 0.9%
- Aqua Gel lubricant
- Tracheostomy tie
- Suction machine and catheter
- Stand-by emergency equipment as necessary – "E" kit, resuscitation bag, oxygen cylinder

b) Suction patient
c) Wrap the child if indicated.
d) Attach pulse oximeter on child's finger or toe
e) Place the child on his back with a small neck roll under his shoulders to hyperextend the neck.
f) Perform hand hygiene.
g) Open sterile dressing set,and place all requisites in tray without touching the insides of tray.
h) Perform Hand-rub, don on sterile gloves
i) Perform hand hygiene.
j) Open sterile dressing set,and place all requisites in tray without touching the insides of tray.
k) Perform Hand-rub, don on sterile gloves
l) Inspect all tubes before use.
m) Insert obturator into disinfected/new tube
n) Place a small amount of sterile water-soluble lubricant (KY Jelly) on end of new tracheostomy tube and place tube in clean tray until ready for use.
o) Clean stoma site with gauze wet with Normal Saline
p) Slowly detach the tape around the tracheostomy tube; hold tube in place when tapes are not secure.
q) Remove old tracheostomy tube.
r) Insert new tracheostomy tube in a smooth curving motion.
s) Remove the obturator while holding the tube securely.
t) Attach the tapes securely, allowing one little finger space between the neck and tape.
u) Assess the patient's tolerance post-insertion by auscultation, observing respiratory effort, oxygen saturations and colour of patient.
v) Suction if necessary.

Annex 9

Tracheostomy Decannulation



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SingHealth

ANNEX 10

Sticky Label

FORM 1: SPEAKING VALVE USE MONITORING CHART

***Please remove speaking valve when patient is sleeping**

Date	Time Speaking Valve was		Reason for removal	Comments (e.g., vital stats changes, discomfort)	Nurse/ST
	Put ON	Taken OFF			

KK Women's and Children's Hospital
SingHealth

Sticky Label

FORM 2 - SPIGOTTING MONITORING CHART

Date	Time Trachy Cap was		Reason for removal	Comments (e.g., vital stats changes, discomfort)	Nurse
	Put ON	Taken OFF			