THE TROUBLE WITH TRACHS: EVERYTHING YOU NEED TO KNOW.

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DISCLOSURES

- Organizer : Tracheostomy Collaborative
- Professional membership Global Tracheostomy Collaborative

OBJECTIVES

- Review the various types of tracheostomy tubes
- Examine various pathologies related to "difficult airways"
- Discuss patient safety and educational needs in the hospital setting

- **Abstract**
- **Background**
- Tracheostomies are increasingly common in hospital wards due to the rising use of percutaneous and surgical tracheostomies in critical care and bed pressures in these units. Hospital wards may lack appropriate infrastructure to care for this vulnerable group and significant patient harm may result.
- **Objectives**
- To identify and analyse tracheostomy related incident reports from hospital wards between 1 October 2005 and 30 September 2007, and to make recommendations to improve patient safety based on the recurrent themes identified. The study was performed between August 2008 and August 2009.
- **Methods**
- 968 tracheostomy related critical incidents reported to the National Patient Safety Agency over the 2 year period, identified by key letter searches, were analysed. Incidents were categorised to identify common themes, and root cause analysis attempted where possible.
- **Results**
- In the 453 incidents where patients were directly affected, 338 (75%) were associated with some identifiable patient harm, of which 83 (18%) were associated with more than temporary harm. In 29 incidents (6%) some intervention was required to maintain life, and in 15 cases the incident may have contributed to the patient's death. Equipment was involved in 176 incidents and 276 incidents involved tracheostomies becoming blocked or displaced.
- **Conclusions**
- By identifying and analysing themes in incident reports associated with tracheostomies, recommendations can be made to improve safety for this group of patients. These recommendations include improvements in infrastructure, competency and training, equipment provision, and in communication.

B A McGrath, A N Thomas, Patient safety incidents associated with tracheostomies occurring in hospital wards: a review of reports to the UK National Patient Safety Agency, *Postgraduate Medical Journal*, Volume 86, Issue 1019, September 2010, Pages 522–525,

THE WHY?

Patient safety incidents associated with tracheostomies occurring in hospital wards: a review of reports to the UK National Patient Safety Agency

INTERDISCIPLINARY ASSESSMENT OF TRACHEOSTOMY CARE KNOWLEDGE: AN OPPORTUNITY FOR QUALITY IMPROVEMENT

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- Results
- 173 nurses, respiratory therapists, and residents participated in this study. Over 75 % of respondents identified correct answers to questions addressing basic tracheostomy care, such as suctioning and humidification. Significant variation was observed in identification and management of tracheostomy emergencies, and appropriate use of speaking valves. Only 47 % of all respondents identified all potential signs of tracheostomy tube displacement. Respiratory therapists with over 20 years of experience (p = 0.001), were more likely to answer correctly than those with less. Nurses were less likely than respiratory therapists to have received standardized tracheostomy education (p = 0.006) and were less likely than others to choose the appropriate scenario for speaking valve use (p = 0.042), highlighting the need for interdisciplinary education.

WHO IS MINDING THE STORE?

- Tracheostomy care and education in the hospital setting varies dramatically
- Respiratory Therapists (or a combination of RT's and Nursing)
- Nursing
- Speech Pathologists
- Providers
- Social Worker/Discharge planning
- Some facilities have aggressive safety and educational protocols
- Many have nothing and assume DME companies provide education post discharge

HERE A TRACH, THERE A TRACH

- Major manufacturers:
- Medtronic (formarly Covidien) Shiley
- Teleflex
- Smiths
- Cook
- Brands by rigidity:
- Jackson (metal)
- Shiley (polyvinylchloride)
- Bivona (silicone)

2021 SHILEY LEGACY DISCONTINUED

PORTEX (SMITHS MEDICAL)

BIVONA XLT (DISTAL/PROXIMAL)

JACKSON – AVAILABLE ON AMAZON

HYPERFLEX TTS TRACHEOSTOMY TUBE (WATER SEAL)

BIVONA

Air Seal / Blue Sky

Water Seal – NO SALINE –White Water (TTS)

BIVONA FOAM CUFF

MONTGOMERY "T" TUBE

LARYNGECTOMY "LARY" TUBE

BIVONA DISTAL AND PROXIMAL XLT'S

- Distal Use
- Long tracheal anatomies
- Tracheal Stenosis
- Tracheal Malacia
- Flexible material
- Inner cannula is disposable

- Proximal Use
- Excessive skin or tissue under the chin
- Large distance between the outer skin layer and trachea
- Flexible material
- Inner cannula is disposable

HYPERFLEX TTS

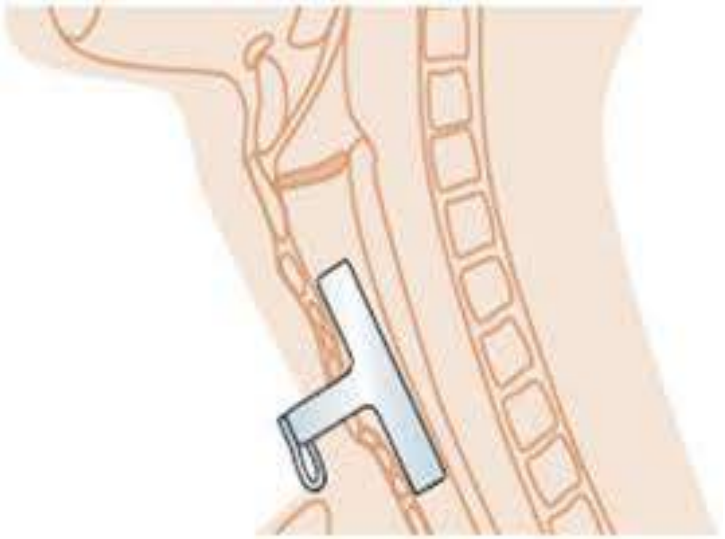
- Anatomical abnormalities – kyphosis or scoliosis
- Obesity
- Malignant neoplasm
- Adjustable flange is intended for temporary usage
- Wire reinforced and is kink and crush resistant
- MRI safe under certain equipment specifications

BIVONA FOAM CUFF

- Used when patients have persistent cuff leaks
- Seals without excessive tracheal wall pressure, despite exposure to high pressure ventilation
- Used for anomalies
- Self expanding foam that must be deflated by manual extraction of air by utilizing the deflation line.
- Cap on pilot line is left OPEN to ambient air when cuff is inflated and capped to maintain deflation if air has been evacuated.
- Can be used with syringe placed on the inspiratory side of a mechanical ventilator to inflate on inspiration and deflate during expiration

MONTGOMERY "T" TUBES

- Combination of tracheal stent and artificial airway
- Prevents post operative stenosis after laryngotracheal surgery
- To assist in patency of subglottic stenosis
- To maintain structural integrity of the trachea due to trauma and collapse



LARYNGECTOMY "LARY" TUBE

- Full or partial removal of the larynx due to cancer, damage or other health condition
- Complete laryngectomy results in loss of speech (complete removal of larynx which houses vocal cords)
- Speech is possible with implanted prosthetic device or electrolarynx
- Complete loss of connection with upper airway for a complete.

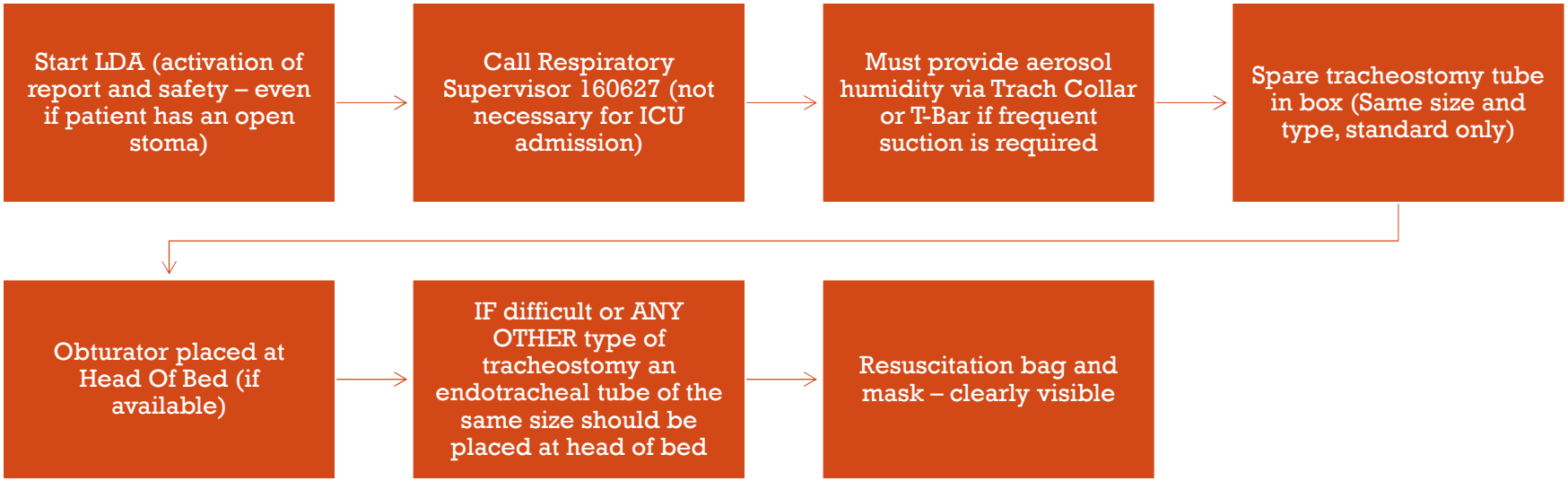
HOSPITALIZED TRACHEOSTOMY PATIENTS

- Patients may be seen and discharged from the Emergency Room
- Patients may be directly admitted to general floors or ICU
- Patients may receive surgical airways during an admission due to prolonged mechanical ventilation or pathology
- What safety measures are in place?
  - Are ALL tracheostomy patients seen despite of admitting diagnosis?
  - Who is responsible (in any) for caring for and following these patients during the stay?
  - What is the process for decannulation either intentional or accidental during the admission?
  - Who is responsible for educating tracheostomy patients and their families if this is a new surgical airway?
  - Has this tracheostomy patient ever received formalized education regarding their airway care and what to do at home in the event of an emergency?
  - Who has provided the education to the staff responsible for caring for these patients in your facility?

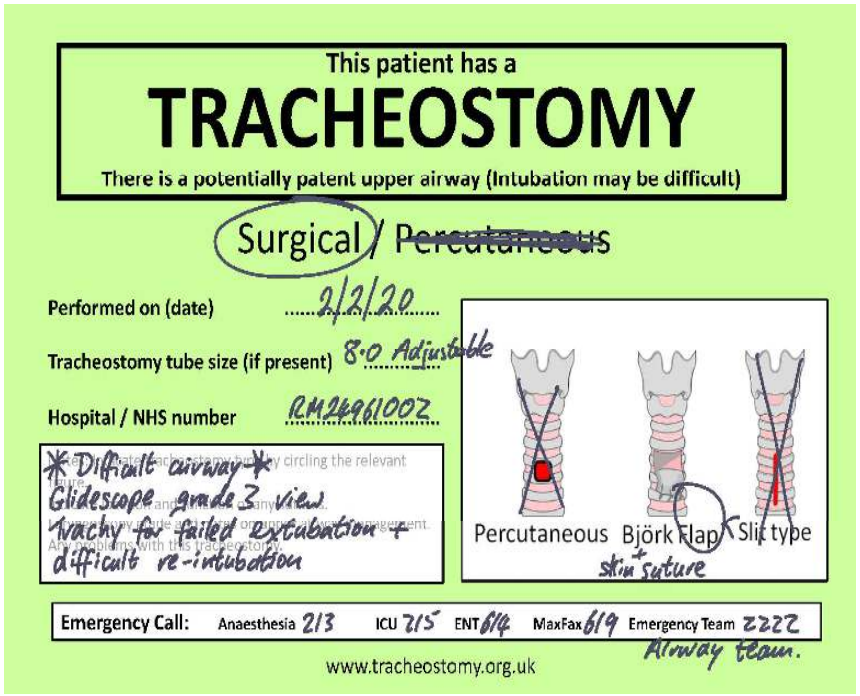
THE STORY OF ONE HOSPITAL

- All patients with artificial airways are seen and assessed daily by RT's.
- Report is generated every morning – GPU patients are seen by a Therapist or "Trach Navigator"
- ICU tracheostomy patients are cared for by Therapists (vented or nonvented- includes tracheostomy care, tracheostomy changes (cuffed to uncuffed) exception: difficult airway or initial tracheostomy change: percutaneous to standard.
- Capping trials ICU and GPU performed by RT, decannulation performed by RT or surgical staff
- Daily floor assessments are documented in the EHR and include site assessment, FI02 (if using) humidification type, spare tracheostomy or ETT tube, suction, resuscitation bag/mask
- RN/RT discussion if any concerns or signs of tissue breakdown caused by device or ties.
- Appropriate safety signage posted at head of bed

THE STORY OF ONE HOSPITAL



TRACHEOSTOMY SAFETY EXAMPLES



This patient has a

TRACHEOSTOMY

There is a potentially patent upper airway (Intubation may be difficult)

Surgical / ~~Percutaneous~~

Performed on (date) 2/2/20

Tracheostomy tube size (if present) 8.0 Adjustable

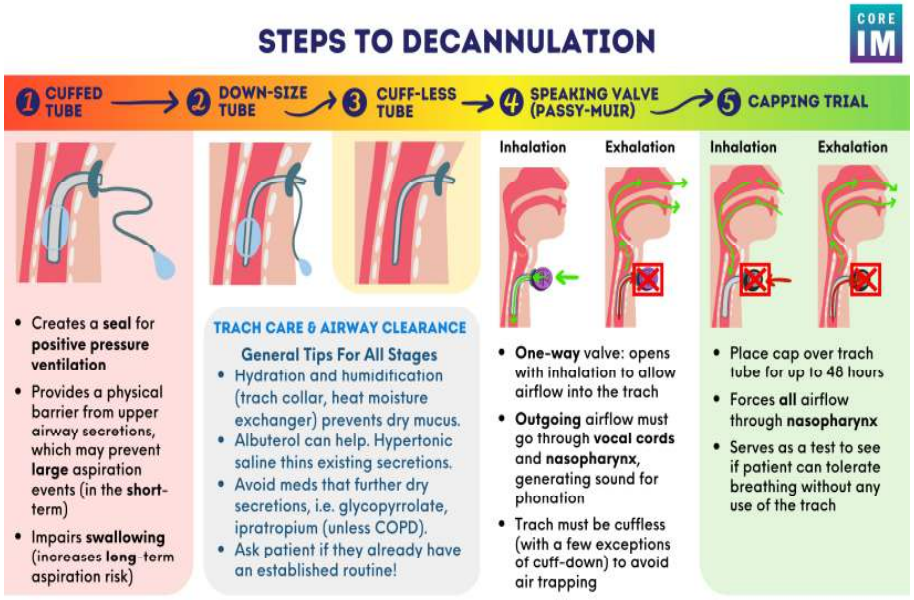
Hospital / NHS number RM26961002

* Difficult airway *
Glidescope grade 3 view
Trachy for failed extubation +
difficult re-intubation

Percutaneous Björk Flap + skin suture Slit type

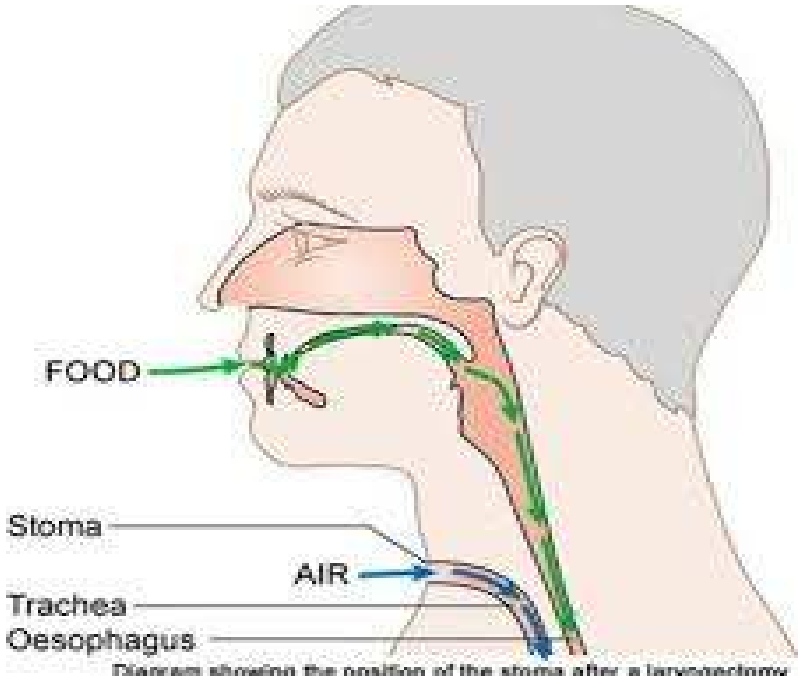
Emergency Call: Anaesthesia 213 ICU 215 ENT 614 MaxFax 619 Emergency Team 2222
Airway team.

www.tracheostomy.org.uk



There can be a lot of clinician and institutional variability to decannulation pathways.
This is a general roadmap.

TRACHEOSTOMY SAFETY EXAMPLES



COLLABORATIVE TEAM EDUCATION

- Speech Pathology is responsible for swallow studies and assessments necessary for determination of speaking valve.
- Mechanically ventilated patients have, on occasion, have used inline speaking valves
- Ventilator alarms need to be adjusted and patients monitored closely
- More commonly seen in long term facilities
- RT's "train the trainer" Nurse educators on the GPU. The nurse educators in turn train the floor nurses to provide basic tracheostomy care.
- Sutured tracheostomy tubes, cuffed tubes and capping trials are only allowed in specific areas where more advanced education has been provided and nurses have more experience with tracheostomy patients (IE: post operative areas)

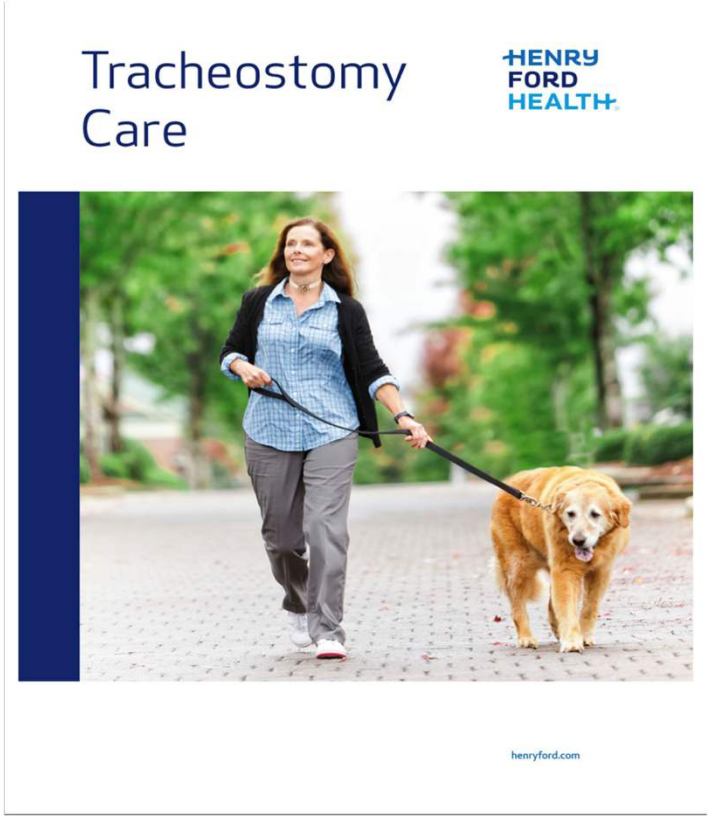
ICU NURSING STAFF EDUCATION

- Provided monthly by the RT Clinical Educator
- Focus on different types of tracheostomy tubes
- Cuffed versus cuffless tracheostomy tubes
- Communication with RT if transferred to outside facility or GPU
- Tracheostomy emergencies : obstruction, accidental decannulation, spontaneously breathing patients, nonbreathing patients
- Safe suctioning
- Skin integrity

PATIENT EDUCATION

- Who is responsible for providing education to the patient post tracheostomy?
- Considerations:
- Is patient discharging to home or long term facility?
- Who orders supplies for home ? Case Manager? Social Work? Midlevel? Provider?
- Does the patient live alone or with family?
- Is the patient insured with access to equipment and supplies?
- What education/support does the DME provide ?

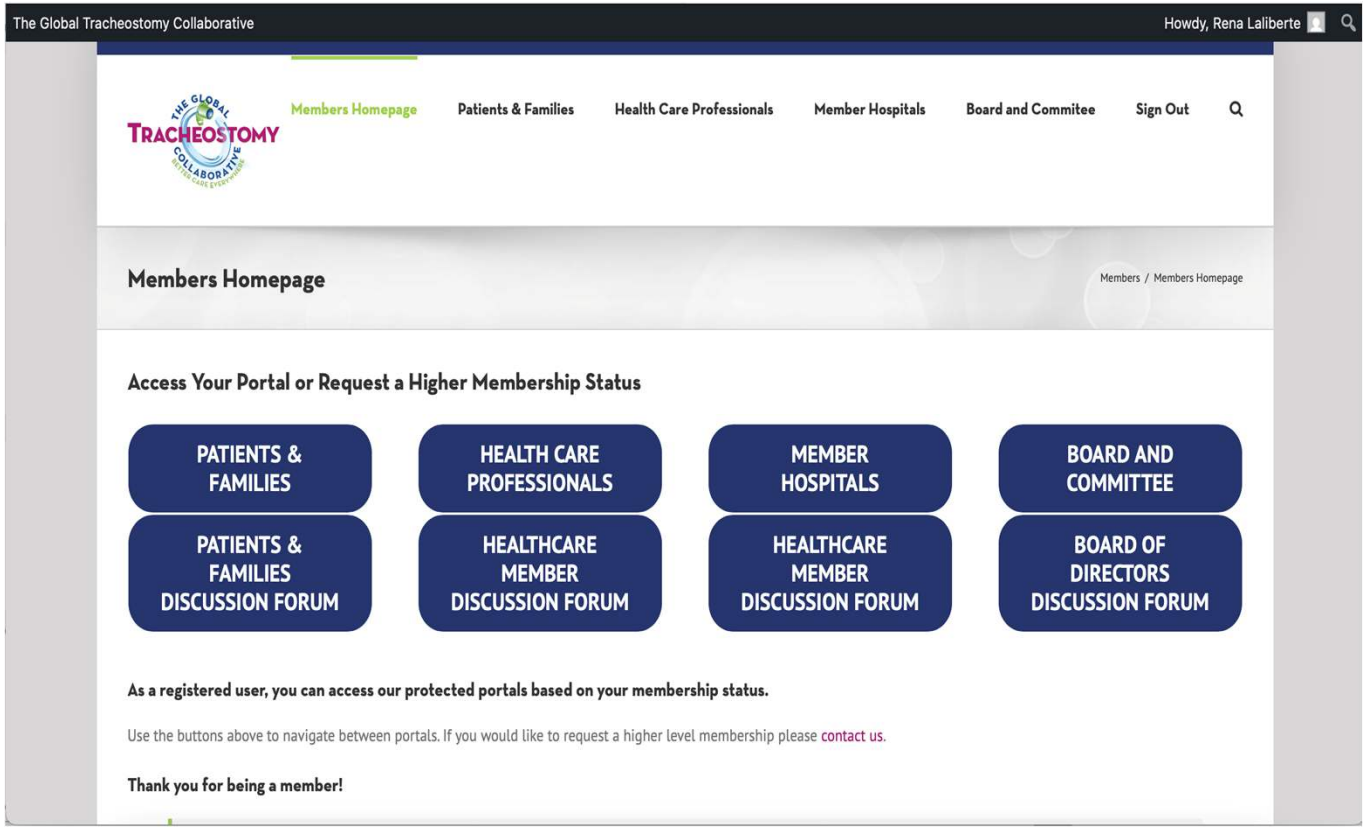
PATIENT EDUCATION



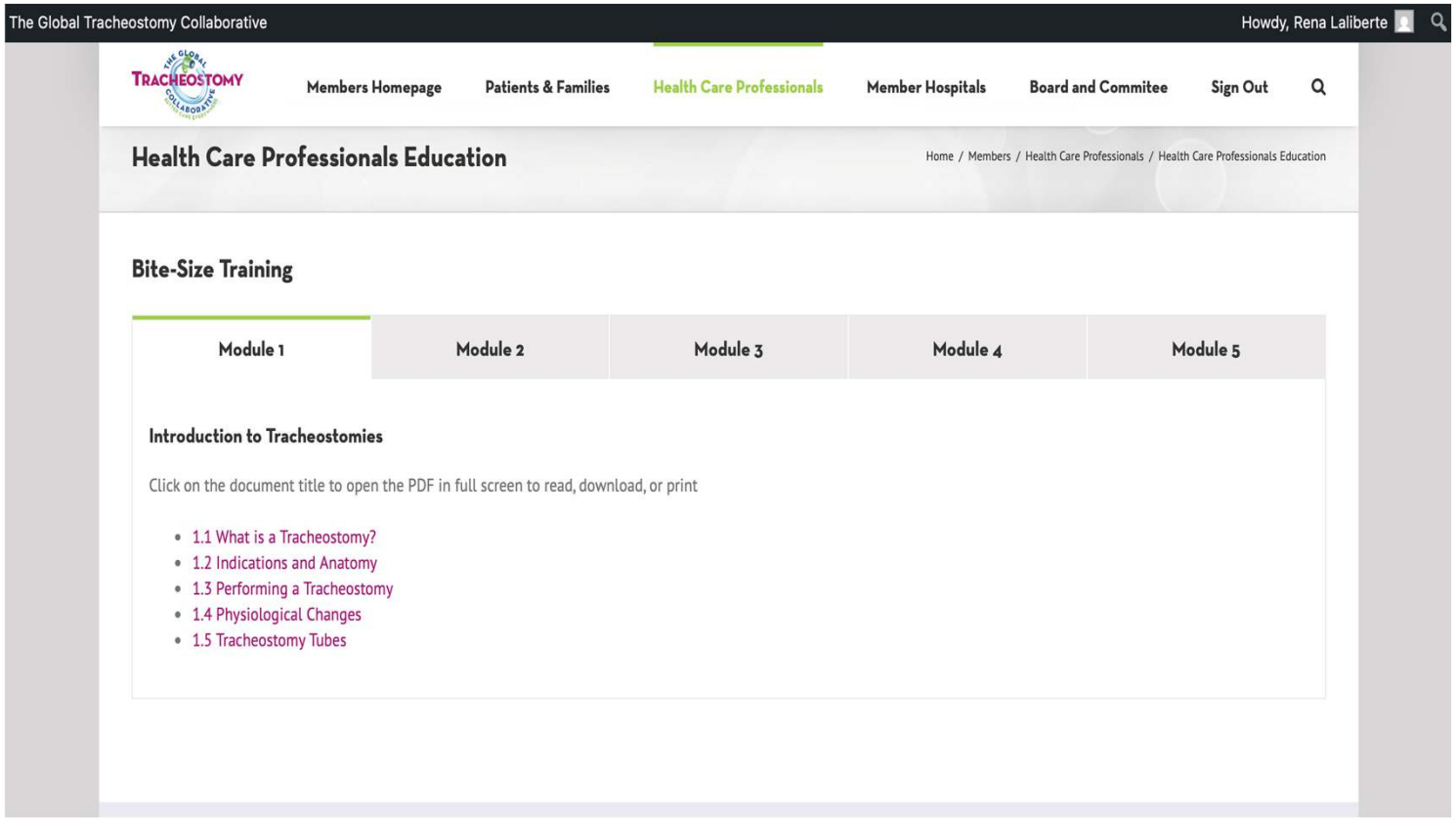
TRACH NAVIGATOR?

- Pilot position
- Similar to COPD Navigator ?
- Responsible for providing support and education to new tracheostomy patients
- Also provides support to existing tracheostomy patients who have ”fallen through the cracks”
- Conducts tracheostomy rounds
- Receives referrals from providers
- Goal permanent position, certification? Education?
- Part of a multidisciplinary team consisting of case management, nursing, speech pathology and Physican.

RESOURCES? HTTPS://WWW.GLOBALTRACH.ORG



GLOBAL TRACHEOSTOMY COLLABORATIVE



GLOBAL TRACHEOSTOMY COLLABORATIVE

Bite-Size Training

Module 1 | Module 2

Tracheostomy Maintenance

- 2.1 Daily Checks and Humidification
- 2.2 Suctioning
- 2.3 Stoma Care
- 2.4 Inner Cannula Care
- 2.5 Oral Care and Swallowing
- 2.6 Cuff Management
- 2.7 Changing a Tracheostomy Tube
- 2.8 Weaning, Downsizing and Speaking Valves
- 2.9 Decannulation
- 2.10 Bedside Equipment
- 2.11 Laryngectomy Humidification

Health Care Professionals Education

Bite-Size Training

Module 1 | Module 2 | Module 3

Tracheostomies in Paediatrics

- 4.1 Paediatric Tracheostomy Management
- 4.2 Paediatric Tracheostomy- Initial Care
- 4.3 Paediatric Tracheostomy- Routine Care
- 4.4 Paediatric Tracheostomy- Career Competencies
- 4.5 Paediatric Tracheostomy- Basic Emergency Care
- 4.6 Paediatric Tracheostomy- Advanced Emergency Care
- 4.7 Paediatric Tracheostomy- Discharge Planning

RESOURCES

- Online education for healthcare providers, caregivers and families through various hospitals and other organization
- YouTube videos
- Manufacturer websites
- Make sure the information you are accessing are from credible resources and based in evidence.
- Some of the best multidisciplinary education and rounding models are from the UK.

CONSIDERATIONS FOR PATIENTS AT HOME

- Patient age ranges from infant to adult, each has it's own special considerations
- Patients may need to care for themselves, caregivers need instruction on how to care for their loved one
- What equipment is needed in the home? Suction? Oxygen? Ventilator? Humidification type? Ties? Inner Cannulas? Disposable or Nondisposable
- What is needed when a patient travels? Emergency Bag – what items should be included
- What if a patient is home alone and cannot speak? If 911 is called has local police, fire, EMS been notified of this home address and the patients inability to speak?
- Is there an emergency plan in place? Security Cameras? Emergency Device? Contact Person with access to the home

THE WORK IS BEING DONE

- Many organizations are taking steps to improve care, safety and education for patients with tracheostomies.
- Multidisciplinary teams are the best choice for covering all the steps necessary to decrease length of stay and time to decannulation or SAFE discharge to home.
- Know your patients and the WHY for the need for tracheostomy and if this will be a temporary or more permanent solution to a pathology.
- Do not assume "someone" is taking care of the patient and providing education to them or their caregivers.
- Do not assume the proper equipment is being sent to their home and that they will know how to use it once there.

RESPIRATORY THERAPISTS

- Respiratory Therapists are the airway experts
- There is no other service that received the level of education that we do regarding artificial airway care and how to handle emergencies
- Are you part of a tracheostomy team at your facility? If not, why?
- Has there been safety issues occurring at your facility regarding patients with a tracheostomy? Can this be a safety initiative for your department?
- Is your experience with tracheostomy patients limited? There are resources available to expand your knowledge – you will never know where or when you will need to use it.
- Remember always, if you do not have a seat at the table, you may be on the menu.

THANK YOU RT'S !