

### ABSTRACT

The Global Tracheostomy Collaborative (GTC) is an international consortium of hospitals and healthcare providers working together to improve the quality of care for tracheostomy patients using evidence-based best practices to improve outcomes. There has been evidence that suggests multi-disciplinary teams can work together to improve patient care outcomes. A common multi-disciplinary education base enhances patient care outcomes after review and implementation of evidence-based best practices. Common goals shared through multi-disciplinary education provided by research from quality improvement collaboratives seem to play a part in encouraging safety and quality of care.

### INTRODUCTION

Keeping up to date on current best practices can occasionally be challenging in itself while implementing these changes in a multi-disciplinary setting can be downright difficult. Healthcare providers make up a team of various disciplines with differing duties and responsibilities. It can be difficult for these different disciplines to work synergistically and changes can be made to longstanding standards of care to include various providers for a better outcome.

Tracheostomy is a common procedure in critically ill patients who require mechanical ventilation for respiratory failure or other airway disorders.<sup>1</sup> The Global Tracheostomy Collaborative (GTC) is an international consortium of hospitals and healthcare providers working together to improve the quality of care for tracheostomy patients. The GTC uses evidence-based best practices to improve outcomes.

There is evidence suggesting that teams of people from different disciplines working together can improve patient care outcomes.<sup>2</sup> Recommendations of the Institute of Medicine (IOM) focus on the need for multi-disciplinary education and systematic review of care to translate evidence into practice. Providing a common educational base both in Continuing Education and the institutional academic curriculum is the first step toward enhancing multi-disciplinary evidence-based practice efforts.<sup>3</sup>

Our Institution's effort to improve evidence based practice understanding between various healthcare disciplines to enhance patient safety is the basis of this report.

### SETTING

Joe DiMaggio Children's Hospital (JDCH) is part of the Memorial Healthcare System in Broward County, Florida, which is the 3<sup>rd</sup> largest public healthcare system in the United States. JDCH joined the GTC in April 2014 and has worked to educate staff and standardize the care of tracheostomy patient.<sup>4</sup> A review of the literature reveals the importance of properly caring for patients with a tracheostomy because inappropriate or inadequate care is associated with increased morbidity and mortality.<sup>5</sup>

### EVIDENCE-BASED PRACTICE CHANGES

JDCH, a regional institution with a level 1 trauma center and a level 3 NICU, based the changes to tracheostomy standards of care on a model developed by St. Mary's Hospital in London. Some of the changes included a tracheostomy care bundles that consisted of:

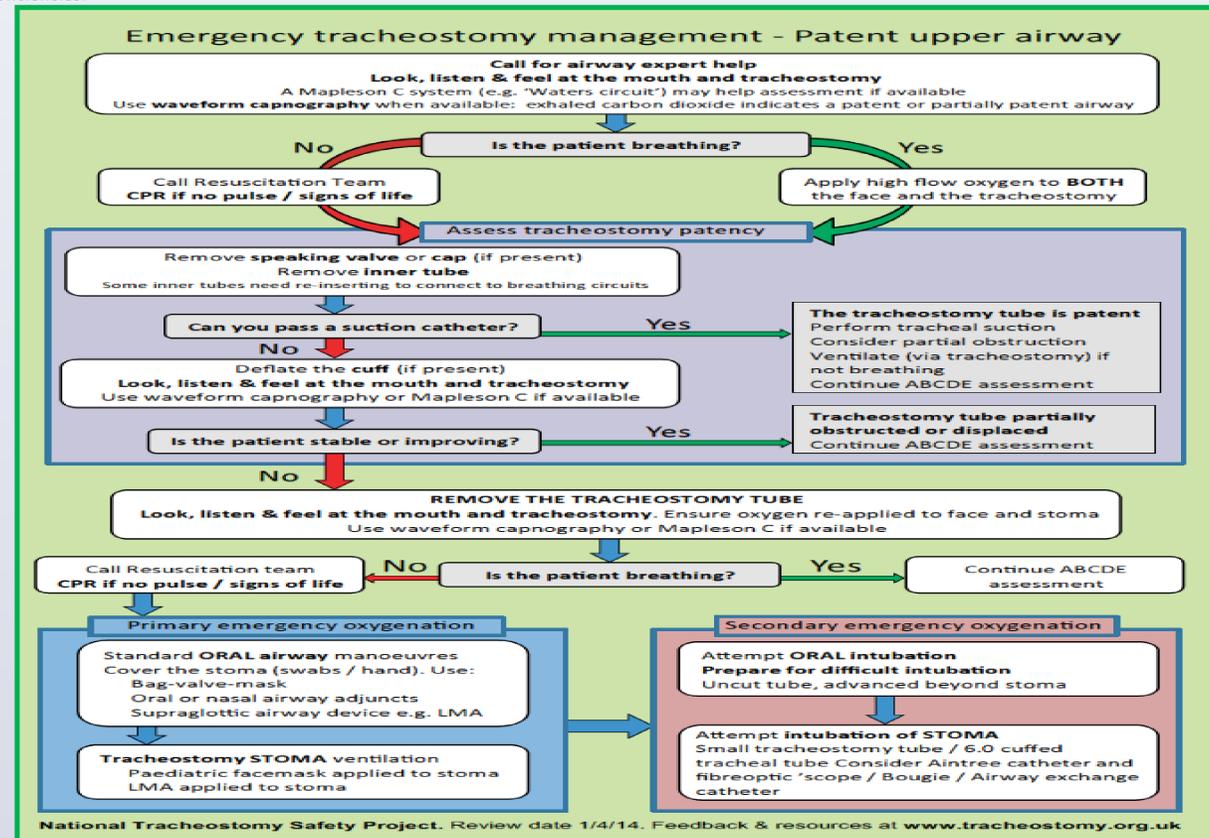
- Humidification checked every 3 to 4 hours
- Tube patency checked for secretion build up every 2 to 3 hours and PRN
- Cuff integrity checked every 12 hours
- Dressings and ties checked and changed every 12 hours and PRN
- Safety equipment at bedside to be checked every 12 hours<sup>6</sup>

The tracheostomy bundle was then applied to the airway section of the EMR to be completed every 12 hours by the respiratory care practitioner responsible for the care of the patient that shift.

### STRATEGIES FOR MULTI-DISCIPLINARY EDUCATION FOLLOWING PARTICIPATION IN THE GTC

In September of 2014, following organizational review of current literature on tracheostomy care produced by the steering committee members of the GTC, changes to standards of tracheostomy care at JDCH were discussed by administration, physicians, nursing, and respiratory care representatives. A two-step process was discussed to implement the changes: changes to the policy and procedure to reflect the evidence provided as well as an educational platform to present the changes to all staff. A mandatory 1 hour class with accompanying CEU was required of all respiratory therapy and nursing staff. From September 2014 to April 2015, 55 classes were given to a total of 704 RT and nursing staff. In addition, approximately 50 physicians, nurse practitioners and physician assistants representing neonatologists, pediatric intensivists, pediatric emergency physicians, inpatient pediatricians and pediatric surgeons received training in the updated standards of care. Included in the class was the introduction of the EMR based tracheostomy bundle; emergency equipment required to accompany any tracheostomy patient at all times; safety considerations of patient with new surgical tracheostomies; the emergency algorithms created by the NTSP of the UK, and a customized postoperative order set in the EMR for "fresh" tracheostomies.

An important part of the education program was staff participation in a non-emergent tracheostomy change on either an adult or infant manikin. A pre-tracheostomy change "time out" was also implemented in which 2 people were required to verify patient, tracheostomy ID, OD, and length, and delegation of responsibilities (who takes trach out, who puts trach in, who assess placement, who secures trach). Each subsequent year, all staff are required to demonstrate proficiency during a "blitz" of other proficiencies.



An improvement to patient safety was the "bedhead sign" or Head of Bed sign (figure 2). In 2013, McGrath, B.A. et al reported there was a reduction in hard to tracheostomy patients after introduction to the National Tracheostomy Safety Project (NTPS) of the U.K. The signs provide immediate details of the tracheostomy tube.<sup>7</sup>

At JDCH, included on the Head of Bed sign is the measured suction depth appropriate for each patient's specific indwelling tracheostomy tube.

Most adult catheters are 48 to 56 cm in length to allow deep suctioning in which the catheter may be passed into the trachea and/or mainstem bronchi beyond the tip of the endotracheal or tracheostomy tube. With shallow or measured suctioning, the suction catheter is measured to prevent passage beyond the tip of the endotracheal tube or tracheostomy tube, thereby preventing airway trauma.<sup>8</sup> In 2010, the American Association of Respiratory Care published Clinical Practice Guidelines that recommends shallow suctioning to prevent trauma to tracheal mucosa.<sup>9</sup>

**THIS PATIENT HAS A**

**THERE IS A POTENTIALLY PATENT UPPER AIRWAY**

**INTUBATION MAY BE DIFFICULT**

**TRACHEOSTOMY**

HI MY NAME IS \_\_\_\_\_

MY TRACHEOSTOMY SIZE IS \_\_\_\_\_

IT IS \_\_\_\_\_ CUFFED \_\_\_\_\_ UNCUFFED

THE LENGTH IS \_\_\_\_\_

IT HAS A FLEX EXTENSION \_\_\_\_\_ YES \_\_\_\_\_ NO

IT WAS A SPECIAL ORDER \_\_\_\_\_ YES \_\_\_\_\_ NO

DO NOT SUCTION PAST \_\_\_\_\_ ON THE SUCTION CATHETER

### ADDITIONAL SUPPLIES & RESOURCES

The updated standards of care had an immediate financial cost in that individual patient's bedside emergency equipment was increased from only 1 spare trach at the bedside to the following:

- 1 spare trach same size
- 1 spare trach 1 size smaller
- Suction catheter
- Water based lubricant
- 10 ml syringe
- Scissors
- Spare tracheostomy holder
- Appropriate sized bag and mask.

In addition, all patients are required to travel throughout the hospital with portable oxygen and suction at all times.

### CONCLUSIONS

Quality improvement collaboratives seem to play a part in encouraging safety and improving care by sharing evidence-based best practices. Participating institutions can use objective data to improve the standards of care and increase safety. The GTC has led the way for JDCH to develop, educate and implement such standards.

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