Trach the Pressure Down a Notch: Implementation of a Tracheostomy Pressure Injury Prevention Care Bundle

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Introduction

• Pressure injuries are a painful, costly, and preventable complication.
• Pressure injury prevention is now expanding to include pressure injuries related to medical devices (Black & Kalowes, 2015). Includes:
  - Tracheostomy tubes
  - Naso-gastric tubes
  - Gastric tubes
• Tracheostomy sites present a unique challenge for adult head/neck oncology patients.

Fig 1: Tracheostomy Site, March 2017
Background

- 8 pressure injuries related to tracheostomy tubes
  - CY2015: 0
  - CY2016: 3
  - January – May 2017: 5
- 6 of the 8 pressure injuries performed by head/neck surgeons
- Identified need to develop and implement process to mitigate risk of pressure injury development in adult surgical head/neck oncology patients

Fig 2: Pressure Injury Related to Tracheostomy January 2015 to May 2017
Materials and Methods

• Interdisciplinary team assembled to investigate and evaluate additional measures to mitigate pressure injury development related to medical device – tracheostomy tube.

• Completed review on
  • Current standard practice
  • Evidence-based practice
    o NPUAP/EPUAP
    o Society of Head/Neck
  • Assessment of adult surgical head/neck population
  • Assessment of supplementary products addressing
    o Pressure
    o Moisture

• Development of pressure injury prevention care bundle for tracheostomy.
Outline

• **IRB Approved Study**
  o Exploratory study comparing pre and post patient population receiving tracheostomy from designated surgeon providers.

• **Patient population**: 40 head/neck surgical oncology patients receiving tracheostomy over the age of 18.

• **Timeline**: June 2017 to Present.

• **Purpose**
  o Describe the effects of a nurse driven evidence based postoperative tracheostomy pressure injury prevention care bundle on pressure injury occurrence at the tracheostomy site.

• **Research Question**
  o In postoperative head/neck service line tracheostomy patients staying in the hospital after surgery does application of a nurse driven evidence based tracheostomy pressure injury prevention care bundle compared to standard of care postoperative tracheostomy care lead to less pressure injury as measured by number of pressure injuries at the tracheostomy site?
Tracheostomy Care Bundle Components

1. Placement of a Mepilex Lite dressing between the flange of the tracheostomy and the patient’s skin at time of tracheostomy placement in the Main Operating Room.

2. An interdisciplinary approach to tracheostomy tube changes in the ICU and 1 North unit to include physicians, physician assistants, and clinical staff nurses.

3. Wound Care RN rounding on all tracheostomy tubes placed and application of Marathon skin protectant as needed by patient’s needs in ICU and 1 North.

4. Diligent clinical assessment of the peristomal skin by all care providers in Main Operating Room (PeriOperative Services), ICU, and 1 North. Including clinical staff nurses, wound care nurses, respiratory therapists, surgeons, and physician assistants.
Education

- Provided by RN Oncology Clinical Coordinator and Assistant Nurse Manager to clinical staff:
  - Unit Based Practice Councils
  - One on One education opportunities
  - Education Hand Outs

**Marathon Skin Protectant**

Marathon is designed to be used under the Medline "Marathon" Full. Full must be applied on the appropriate patient:

- Skins with lesions
- Recently performed biopsy or procedure
- Recent surgery
- Poorly healing wounds
- Wound with necrotic tissue
- Wound with signs of bacterial infection

**Education Hand Outs**

- Unit Based Practice Councils
- One on One education opportunities
- Education Hand Outs
Data Collection

• Weekly rounding by:
  o RN Oncology Clinical Coordinator to ICU and 1North
  o OR Assistant Nurse Manager to Operating Room
  o PeriOp CNS as needed

• Retrospective chart review to assess care bundle compliance by
  o RN Oncology Clinical Coordinator
Clinical Application

Fig 7: Lateral View of Tracheostomy Site

Fig 8: Anterior View of Tracheostomy Site
Outcomes

- **33** head/neck surgical oncology patients enrolled in IRB approved study and received care bundle

- **0** pressure injuries related to tracheostomy tube

![Graph showing Tracheostomy Pressure Injury Prevention Care Bundle Pre-Post Pressure Injury Occurrence](image)

**Fig 9: Pre/Post Care Bundle Intervention Implementation Occurrences**
Patient Age

Average age 62.91 years

Fig 10: Patient Age Range
More male patients than female patients
Patient History of Cancer Diagnosis

Cancer diagnosis more prevalent than no diagnosis

Fig 12: Patient history cancer diagnosis
Key Findings from Audit

• Early Implementation Gaps
  • Component #2 - Multidisciplinary Care
    o Changing of Mepilex Lite at tracheostomy tube changing on inpatient unit
  • Component #3 – Wound Care Order
    o Consistency - Input of wound care order into Electronic Health Record

• Current State Gaps
  • Documentation
    o Mepilex Lite
    o New clinical team members
Conclusions

• Use of the Tracheostomy Pressure Injury Prevention Care Bundle may be an effective nurse driven evidenced-based care bundle in the prevention of pressure injuries
  o Zero pressure injuries

• Implications for Practice
  o Utilization of care bundle for all surgical tracheostomy patients beyond selected patient population for study
  o Potential adaptation for other medical devices

• Next Steps
  o Postoperative order set inclusion
References


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