Device-Related Pressure Ulcers
Reducing device-related pressure ulcers of the nose and mouth in adult critical care patients
Device-Related Pressure Ulcers

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Special Appreciation

- Susan Lacey, PhD, RN, FAAN, AACN CSI Program Director
- Adrienne Olney, AACN CSI Program Manager
- Gloria Wiser, MSN, RN, NEC-C, CNML, Clinical Manager
- Jennifer Dunscomb, MSN, RN, CCRN and Tracy Spitzer, MSN, RN, CCRN, CSI Coaches
- Jill Dillon, MSN, RN, ACNS-BC, CCRN
- Linda Q. Everett, PhD, RN, NEA-BC, FAAN, Chief Nursing Executive IU Health
- Linda Chase, PhD, RN, NEA-BC, Chief Nursing Officer Methodist Hospital
- Most Importantly: Our fellow staff, registered nurses and respiratory therapists
50% of pressure ulcers identified in 2012 were related to devices of the nose and mouth.

12 of the 222 patients assessed during monthly skin audits on the Adult Critical Care (ACC) Unit in 2012 acquired pressure ulcers during their hospital stay.

- 7 of these identified ulcers were related to devices.

- 6 out of the 7 device-related ulcers were on the nose and mouth – from nasogastric tubes, feeding tubes, endotracheal tubes, and endotracheal tube fasteners.
Device-Related Pressure Ulcers

- It takes less than 2 hours for skin to break down from device-related pressure.
- Device-related pressure ulcers are most often preventable with vigilant nursing care.
- We can reduce our prevalence of hospital-acquired pressure ulcers by changing our methods of caring for patients with medical devices.
Purpose

The purpose of this project was to decrease the prevalence of hospital-acquired device-related pressure ulcers, specifically on the nose and mouth, among patients in the adult critical care unit.

50% of the pressure ulcers acquired on the ACC Unit last year were from medical devices of the nose and mouth. By reducing the pressure from these devices, we hope to eliminate a large portion of unit-then hospital-acquired pressure ulcers.
Purpose

Putting it into Practice

- Implemented new NG/feeding tube taping method
  - Method originated in IU Health Methodist Neuro Critical Care
- Increased collaboration with respiratory therapy staff to ensure repositioning of the endotracheal tube (ETT) every 2 hours.
Face the Pressure

Protect from the Devices
Action Plan

- **December 10-24, 2012**
  - Conducted surveys among our staff nurses
- **December 13, 2012**
  - Presented to Methodist Critical Care Quality and Safety Council
- **January 15, 2013**
  - Held project kick-off party on the unit
Action Plan

- **February 14, 2013**
  - Completed first round of audits and distributed gifts of mugs to staff
- **July 11, 2013**
  - Created an ETT repositioning schedule as a guide for RNs and RTs
- **November 6, 2013**
  - Presented to statewide CNO meeting
Goals

- **3 months after project implementation**
  - Decrease hospital-acquired device-related pressure ulcers on the nose and mouth by 30%

- **6 months**
  - Decrease hospital-acquired device-related pressure ulcers by 50%

- **9 months**
  - Decrease hospital-acquired device-related pressure ulcers by 80%

- **Long term**
  - Continue to strive for ultimate goal of zero device-related ulcers
  - Implement project in other units throughout the hospital
FACE THE PRESSURE

Face The Pressure

It takes less than 2 hours for skin to breakdown from device related pressure.

Ultimate Goal:
Zero Device-Related Pressure Ulcers

Proper taping every 2 hours.

Face The Pressure

Protect from the Devices

New NG/Corpak Taping
*Effective January 15, 2011*

attach to nose

fold in

wrap around tube

The tube is now free-floating, taking the pressure off the nose. Date and time the tape, change QH and arm.
Challenges

- Staff acceptance of new NG tube taping method
  - Remembering to date and time the tape on patient
- Discomfort from movement of the tube in alert patients
  - The tube is free floating in the nare with the new taping method, resulting in movement of the tube in the pharynx
- Communication with RT to establish who is repositioning
  - RT moving with vent rounds vs. RN moving with assessments/turns
- Charting
  - Documenting position of ETT every 2 hours
  - Documenting repositioning of tape at least every 24 hours
Overcoming the Challenges

- Staff acceptance of new NG tube taping method
  - Frequent discussions and re-education of the taping method and purpose for the change
- Discomfort from movement of the tube in alert patients
  - Use nursing judgment
  - If the movement is causing pain or gagging, use the old method. If the patient is awake, he/she is not likely to have the tube in long-term
Overcoming the Challenges

- Communication with RT to establish who is repositioning the endotracheal tube
  - Created repositioning guide, which includes RT moving the ETT to the left and right side of the mouth every 4 hours (time 8, 12, & 4) and RN moving the ETT to the center of the mouth every 4 hours (time 10, 2, & 6)
  - Continued communication is key

- Charting
  - Audits, frequent discussions, re-education
Baseline Data for 2012

Data from monthly skin audits in 2012

- 222 patients were assessed during monthly skin audits
- 12 unit-acquired pressure ulcers were identified
- 6 of the 12 ulcers found were related to devices on the nose and mouth
  - From endotracheal tubes and nasogastric tubes

50% of pressure ulcers acquired on ACC Unit in 2012 were device related.
Cost of Pressure Ulcers

- According to the National Pressure Ulcer Advisory Panel (NPUAP), pressure ulcers in the US cost $9.1 billion to $11.6 billion per year.  
- The cost of individual patient care for pressure ulcers is between $20,900 and $151,700 per ulcer.  
  - In 2012, IU Health Methodist ACC had 6 device-related pressure ulcers located on the nose or mouth, with an estimated cost between $125,400 and $910,200.
- The Agency for Healthcare Research and Quality (AHRQ) estimates the cost to be $43,180 per pressure ulcer.
Post-Project Implementation

- We implemented our project on January 15, 2013, and collected data through September.
- Through monthly skin audits, we found a total of 3 device-related pressure ulcers in 2013.
  - January - 1 ulcer on the tongue from an endotracheal tube
  - March - 1 ulcer on the nare from an NG tube
  - July - 1 ulcer on the nare from an NG tube
Post-Project Implementation

Reaching Goals

- Two of the 3 device related-ulcers in 2013 occurred within the first 3 months of project implementation.
- After the first 3 months, we had only 1 device-related pressure ulcer.

We reduced device-related pressure ulcers by 50% among patients in the ACC Unit. Additionally, our taping method and ETT repositioning vigilance spread to other critical care units – which we presume resulted in decreased pressure ulcers among their patients.
ACC Device Related Ulcers

2012

2013

0 ulcers from feeding tubes in 2013

NG
ETT
Feeding Tube

20% REDUCTION
NG, ETT, Feeding Tube Rates

![Graph showing the rates of NG, ETT, and feeding tube over time. The graph includes a line indicating education training and a linear trend showing the feeding tube rate.](image-url)
NG/Feeding Tube Audits

- Taped correctly: 90%
- Taped labeled with date/time: 90%
- Charted Q24hr: 57%
Fiscal Impact

- According to the AHRQ, pressure ulcers cost individual patients $43,180 per ulcer. \(^2\)
- In 2012, the ACC Unit had 6 device-related pressure ulcers located on the nose or mouth, costing $259,080.
- Due to the implementation of our project, we were able to decrease our prevalence of unit-acquired device-related pressure ulcers among patients in the ACC Unit by 50%.
- The estimated fiscal savings to our organization is $129,540.
Appreciation

Thank you again to everyone who contributed to and supported our project.

Thank you to the American Association of Critical-Care Nurses for the opportunity to learn about quality improvement initiative, and how to empower bedside nurses to improve outcomes for our patients.
References
