

The Development of a Pressure Ulcer Prevention Protocol for Patients Requiring

Non-Invasive Positive Pressure Ventilation (NIPPV)

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Introduction

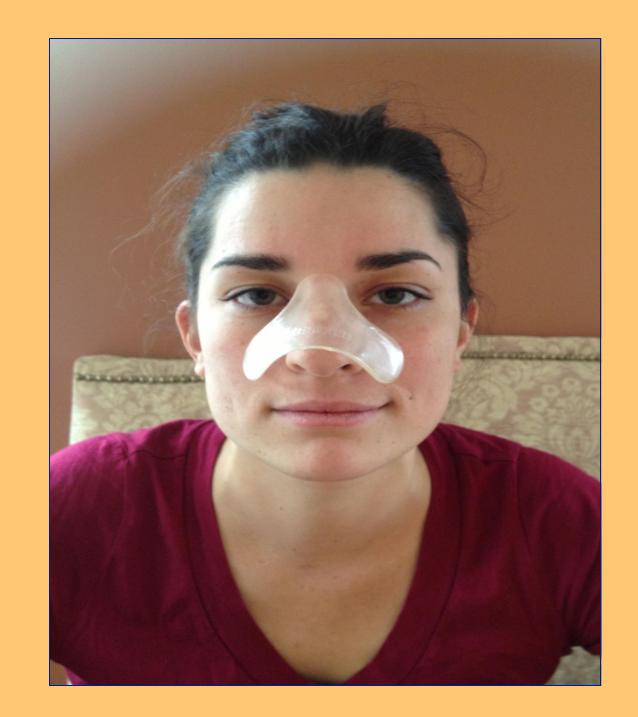
- ♦ Non-invasive positive pressure ventilation (NIPPV) is being used with increasing frequency on patients in the acute care setting.
- ♦ NIPPV is an effective treatment modality to reduce the need for intubation in the respiratory failure patient.
- ♦ The prolonged use of NIPPV therapy has been associated with skin breakdown at the point of contact, especially the nasal bridge.
- ♦ Skin breakdown may occur at the site of mask contact even after only a few hours of ventilation. The longer the mask is worn the higher the risk for skin breakdown.
- ♦ Quarterly NDNQI prevalence studies over one year (2010-2011) revealed an increase in the occurrence of Stage 3 hospital-acquired pressure ulcers (HAPU) on the bridge of the nose on patients utilizing NIPPV.

Purpose

- ♦ A task force was convened that included nursing; Certified Wound, Ostomy, and Continence (WOC) nurses; respiratory therapist, and a quality improvement nurse to evaluate the causes of the identified hospital-acquired pressure ulcers on the nasal bridge in patients utilizing NIPPV. Factors associated with HAPU nasal bridge development included:
 - ♦ NIPPV used for prolonged periods of time (over 24 hours)
 - ♦ No skin barriers applied under the mask
 - **♦** Possible improper fit of the mask
 - ♦ No consistent skin assessments performed under the mask

Intervention

Research and evaluate skin barriers for the nasal bridge. A silicone gel nasal pad was trialed and selected for use on all NIPPV patients.



- ♦ Research and evaluate current masks on the market and best practices for long term use of NIPPV.
- ♦ A full face mask was purchased to alternate with nasal mask when nasal bridge redness identified.





- ♦ Educational program for nurses and respiratory care practitioners:
 - ♦ Focusing on the proper application of masks
 - Assessment of the skin and,
 - **♦ NIPPV** protocol to prevent the development of HAPU.

Interventior

<u>Implementation of NIPPV Protocol</u>

- **♦** Respiratory Care Practitioner (RCP) properly sizes and selects the appropriate mask
- ♦ Apply no sting protective skin barrier prep to nasal bridge
- ♦ Correct sizing and application of silicone gel pad to nasal bridge
- ♦ Skin inspection of the nasal bridge prior to application of silicone gel pad and mask, and every 4-8 hours
- ♦ Rotation of types of masks to redistribute pressure if any redness on skin is identified
- ♦ Skin assessment including nasal bridge are part of nurse to nurse, and RCP to RCP hand off reports; and documented in the medical record

Results and Implications

- ♦ Since the implementation of the new protocol and skin barrier <u>NO</u> hospital-acquired nasal bridge pressures ulcers have occurred on any patients receiving NIPPV in 15 months (August 2011– November 2012).
- ♦ Collaboration between nursing and respiratory therapy resulted in reducing patient harm and improving patient outcomes.