A Nursing and Respiratory Collaboration Prevents BiPAP-Related Pressure Ulcers

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Synopsis

BiPAP, a form of NONINVASIVE VENTILATION (NIV) is a frequent mode of respiratory support, particularly in the pediatric population but the therapy can fail due to mask discomfort and skin injury. Breakdown occurs most often at the nasal bridge and forehead. The patient’s ability to tolerate the mask interface is key to success.

This article describes a quality improvement project implemented by an interdisciplinary team to reduce the incidence of BiPAP-related pressure ulcers in a large pediatric hospital. A major focus was to develop a collaborative process between the nursing and respiratory departments for shared accountability on BiPAP support.

Interventions included piloting new masks, a change from a hydrocolloid to a foam dressing interface between the mask and the skin, skin assessments every 4 hours, a notification process if redness was found, and weekly rounding and communication by nursing and respiratory leadership. Incidence decrease rapidly. Only 1 ulcer related to the use of BiPAP has occurred since the end of 2013 indicating a sustainable change in practice.

Additional notable discussions:

- Medical device-related pressure ulcers cause more than 50% of all hospital-acquired pressure ulcers in children.
- The problem identification process revealed that: approaches to both the choice and the application of the mask were not standardized, workflow sheets didn’t cue the essential skin assessments and nurses feared dislodgement if they moved the device to assess the skin.
- A literature review on the hydrocolloid dressing indicated that its purpose was to create a moist environment and promote autolytic debridement, not to redistribute pressure.
- Mepilex™ foam dressing was implemented as a barrier between the mask and the skin based on the review of literature indicating that foams had better pressure redistributing properties compared to a hydrocolloid dressing such as DuoDerm®
- Mepilex® foam dressing is able to absorb moisture, cushion against friction and shear and allow for visualization of the skin without causing pain on removal.
- A template with different sizes helped to ensure a correct fit of the foam dressing to the patient’s face.
- Both the nurse and the respiratory therapist became responsible for skin assessments, documentation of assessments and intervention and notification of the wound nurse and leadership if redness occurred.
- Timely documentation of skin assessments and proper use of the barrier underneath the mask were audited with one-on-one education follow-up for noncompliance
- Weekly communication between nursing and respiratory leadership informed both teams of all patients receiving BiPAP therapy
- Leadership’s emphasis on teamwork and collaboration was key to success as was celebration of reduced incidence milestones