Prevention of Tracheostomy-related Pressure Ulcers in Children


Synopsis
A large academic children’s hospital conducted a rapid-cycle, Plan-Do-Study-Act (PDSA) in response to a high rate of device-related pressure ulcers in pediatric tracheostomy patients on a 18-bed ventilator unit. The intervention bundle included: an extended tracheostomy tube to reduce pressure, a hydrophilic foam dressing placed under the flanges to reduced moisture at the skin-device interface, frequent skin and device assessments as well as staff education. Wound-care experts staged the ulcers within 24 hours. Data compiled included: the stage, description and duration of the ulcers as well as bundle compliance. Over a 29 month period between 2008-2010, tracheostomy-related ulcers decreased from 8.1% to 0.3% and the percentage of tracheostomy patient days related to the ulcers decreased from 12.5% to 0.2%.

Additional notable discussion
- In 2010, a prevalence of 2.29% for hospital-acquired pressure ulcers was reported by NDNQI for “step down” units at academic pediatric hospitals.
- One study found that skin breakdown was responsible for 27% of complications prior to the first tube change.
- Increased pain, infection, prolonged hospitalization, and potentially permanent scarring may result from pressure ulcers in any patient but especially in children.
- Pediatric tracheostomy patients are often at very high risk due to reduced mobility and neurologic impairment.
- The constant pressure from the tube as well as moisture from sweat and secretions cause the ulcerations. Also problematic is anatomy where the neck is not clearly exposed in the neutral position and some behaviors of the children where the tube gets driven into the sternum.
- Mepilex® Lite, a hydrophilic foam was cut to fit under the flanges.
- Flexible, extended tubing, designed to meets the needs of the ventilator-dependent children, was used primarily. Storage procedures were refined to ensure tube availability at all times.

Manufacturer’s Note: A more absorbent form of this dressing, Mepilex® is also available as is a silver absorbent foam; Mepilex® Ag for patients with heavier secretions.