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Patrick Alridge
Richard.alridge@vcuhealth.org

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Using Silicone Mesh to Mitigate Forehead Pulse Oximeter-Related Pressure Injuries

R. Patrick Alridge, BA, RN, CWON
Wound Care Team, Virginia Commonwealth University, Richmond, VA

VCU Health™

Background

- Pulse oximeter probes on the forehead are used to obtain O2 saturation readings
- Silicone mesh is used beneath wet-to-moist dressings and negative pressure wound therapy sponges to prevent adherence of the product to the wound bed
- Medical device-related pressure injuries (MDRPI) were occurring on the forehead despite rotating the probe *more* frequently than manufacturer guidelines

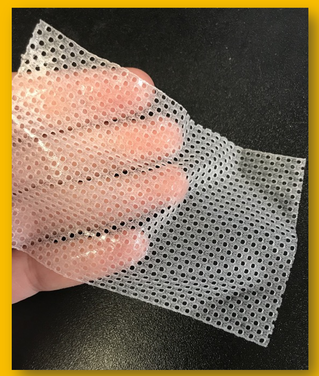
Methods

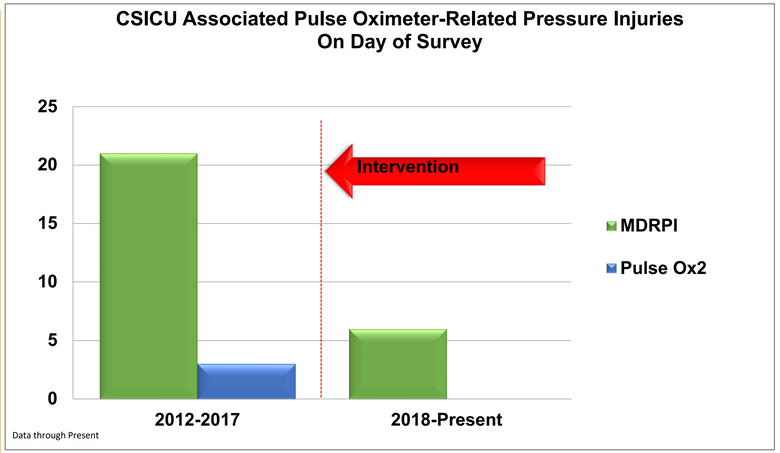
- Implemented application of silicone mesh under the forehead probe
- Monitored accuracy of pulse oxygenation readings before and after placement of mesh
- Continued to rotate pulse oximeter probe with mesh every 2 hours per unit protocol

Results

- Application of silicone mesh under the forehead pulse oximeter probe eliminated this medical device-related pressure injury in the Cardiac Surgery Intensive Care Unit (CSICU)
- Pulse oximeter medical device-related pressure injuries were reduced from **11%** (2012-2017) to **0%** (2018- present) in the CSICU

Silicone mesh barrier led to 100% reduction in forehead pulse oximeter related pressure injuries





VCU Pulse Oximetry Sensor Decision Tree*

Pulse Oximetry Required
- Choose pulse oximetry sensor in the order listed below.
- Goal: Application of the sensor that yields an accurate pulse oximetry reading, while exposing the patient to the least amount of risk to skin integrity.

Nellcor MAXA™ Adhesive Sensor
- Apply to finger.[3]
- Assess skin at location site daily.[3]
- If unable to obtain accurate pleth, escalate to Nellcor™ Adult Velcro SC-A.

Nellcor™ Adult Velcro SC-A Sensor
- Apply to finger[1]
- Inspect skin integrity at location site every 8 hours.[1]
- If unable to obtain accurate pleth, escalate to Xhale Nasal Alar™ nasal clip.

Xhale Nasal Alar™ Nasal Clip
- Apply to nare. Rotate location every 2 hours; do not apply to nasal septum.[4,5]
- Accurate pleth only guaranteed when applied to nares, rectangle to outside.[4,5]
- If unable to obtain accurate pleth, escalate to Nellcor FASTMAX™ sensor.
- Assess daily for readiness to de-escalate to alternative probe.

Nellcor™ MAXFAST™
- Apply to forehead.[2] Place a layer of silicone mesh between pulse ox and forehead.
- Ensure pulse oximetry is reliable and not affected by the silicone mesh.
- Rotate location on forehead every 2 hours. (VCUH recommendation based on patient pressure injury survey outcomes.)
- Assess daily for readiness to deescalate to alternative sensor.

* Above image is a portion of an internal reference document utilized by our ICUs which describes the process and product use at VCU Medical Center. No endorsement of these products is given..

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