

## HAPI Panel of Experts Topic of the Month – June 2019

### Medical Device-Related Pressure Injuries (MDRPI)

#### Introduction

Medical devices are an important tool in patient-care delivery, but they are also a common contributor to the development of hospital-acquired pressure injuries.

#### What types of devices contribute to MDRPI?

Almost any medical device that is worn by or connected to a patient can contribute to the development of MDRPI. Panelists identified several common culprits: respiratory devices (endotracheal tubes, CPAP/BiPAP masks, O<sub>2</sub> tubing), forehead SaO<sub>2</sub> probes, orthopedic braces, c-collars, TED hose, and tubings.

#### What risk factors contribute to MDRPI?

Risk factors for MDRPI include patient factors, device factors, and staff knowledge deficits.

- *Patient factors* include impaired sensory perception, impaired ability to communicate, edema, increased skin moisture, skin folds, altered circulation, medical comorbidities, medications, and immobility.
- *Device factors* include rigidity/inelasticity of devices, skin obscured from observation, altered skin microclimate, and risks associated with repositioning or removing.
- *Staff knowledge deficits* include incorrect sizing or selection, incorrect securement, inadequate skin assessment, lack of removing/repositioning device, lack of identifying edema impact, placing device over already compromised skin, lack of awareness a device is under an immobile patient.

#### What interventions help prevent MDRPI?

Interventions to prevent MDRPI can be grouped into three categories: those that take place at the time the device is placed, those that occur during the time the device is in use, and general interventions.

##### *At Time of Device Placement*

- Proactively utilize foam, hydrogel, or other preventive dressings to protect places where devices come in contact with vulnerable areas such as the bridge of the nose (CPAP), under the chin (c-collar), or beneath trach collars.
- Use foam pads behind ears with nasal cannula oxygen tubing or consider using a less rigid type of tubing that places less pressure on the skin.
- Obtain an order to remove extrication c-collars and replace with acute care rigid collars. Secure the device to decrease movement.
- Assure that medical and securement devices are not placed over fragile or impaired skin.
- Use wider foam securement ties.
- Assess that equipment fits properly.



### *During Time the Device is in Use*

- Frequently assess pressure points and document findings. Remember to assess mucosa.
- Reposition or rotate medical devices when possible, making certain there is no change in proper positioning (i.e. the endotracheal tube remains at the same depth).
- Ensure that equipment continues to fit properly, resizing when edema is present.
- Trace tubing and be sure devices are not positioned beneath a bedridden or immobile patient.

### *General Interventions*

- Provide staff education on correct use of devices and prevention of skin breakdown.
- Develop standardized practice and incorporate into policy.
- Communicate and collaborate with other healthcare providers (OT, PT, RT)
- Perform random audits and reporting findings.

### Additional Resources

- Evidence-based practice: Medical device-related pressure injury prevention. <https://www.americannursetoday.com/medical-device-pressure-injury-prevent/>
- Prevention of pressure ulcers due to devices. [https://www.mnhospitals.org/Portals/0/Documents/patientsafety/PU\\_Med\\_dev/device\\_prevention\\_article.pdf](https://www.mnhospitals.org/Portals/0/Documents/patientsafety/PU_Med_dev/device_prevention_article.pdf)
- HealthEast: A Guide to Device Skin Inspection. [https://www.mnhospitals.org/Portals/0/Documents/patientsafety/PU\\_Med\\_dev/HealthEast\\_device\\_skin\\_assessment.pdf](https://www.mnhospitals.org/Portals/0/Documents/patientsafety/PU_Med_dev/HealthEast_device_skin_assessment.pdf)
- Barnes Jewish Hospital: Skin Care Needs of Patient Wearing a Cervical Collar. [https://www.mnhospitals.org/Portals/0/Documents/patientsafety/PU\\_Med\\_dev/Sample\\_Policy\\_Cervical\\_Collar.pdf](https://www.mnhospitals.org/Portals/0/Documents/patientsafety/PU_Med_dev/Sample_Policy_Cervical_Collar.pdf)
- *Video* - Medical Device-Related Pressure Injury: AHRQ Preventing Pressure Ulcers in Hospitals Toolkit. <https://www.youtube.com/watch?v=ohOl8pg90s8&feature=youtu.be>
- *PowerPoint Presentation* - Medical Device Related Pressure Ulcers: The Hidden Epidemic Across the Lifespan. <https://www.npuap.org/wp-content/uploads/2012/01/pdf.-Baharestani-Medical-Device-Related-Pressure-Ulcers-1The-Hidden-Epidemic-Across-the-Lifespan.pdf>

The HAPI Panel of Experts is a group of wound care and quality professionals that represent hospitals of varying sizes and geographic regions of Tennessee. The Panel convenes monthly to discuss a topic specific to pressure injury prevention and share their practices and recommendations.

#### **Panel of Experts**

**Jennifer Vandiver**, BSN, RN, CWON - West Tennessee Healthcare

**Julie Brandt**, MSHA, BSN, RN, WOCN - Erlanger Health System

**Lauren White**, MBA, BSN, RN - Vanderbilt University Medical Center

**Robert Summey**, BSN, RN, CWOWN - Holston Valley Medical Center

**Sonya Clark**, RN, CWOCN - Henry County Medical Center

**Suzanne Kuhn**, RN, CWS - Delta Medical Center

If you would like to suggest a topic for the Panel to discuss, please email your request to Rhonda Dickman at [rdickman@tha.com](mailto:rdickman@tha.com).