Patient Safety Together:
learning, sharing and improving

PATIENT SAFETY SUPPLEMENT

PSS001/2024

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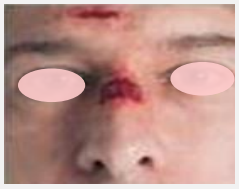
Medical Device Related Pressure Ulcers

A pressure ulcer (PU) can have a serious negative impact on a person's quality of life, affect their mental health, cause pain and can lead to infection. Resource implications can be significant[1] including increased length of hospital stay. This Patient Safety Supplement (PSS) focuses on medical device related pressure ulcers (MDRPU). It aims to support healthcare staff and patients/service users to identify the risk factors for developing MDRPU and reiterate how everyone can be proactive in helping to prevent these often avoidable injuries.

MDRPU is a localised injury to the skin or underlying tissue as a result of sustained pressure from a medical device. PU damage from medical devices can often occur in areas that are not easily visible or in areas with minimal soft tissue such as the bridge of the nose and ears. Respiratory devices (to help with breathing) such as oxygen tubing and masks are linked with a high number of MDRPU. Other devices that may cause MDRPU include urinary catheters (to drain urine from the bladder), splints, casts, vascular access devices (to give medications or fluids through veins) and tubing including nasogastric tubing (from nose to stomach).

Hugh's Story

Hugh* was admitted to hospital with chronic respiratory failure and severe pneumonia. While in hospital Hugh was started on non –invasive ventilation (NIV) to help improve his oxygen level and a continuous positive airway pressure mask (CPAP) was applied to deliver the oxygen needed. Hugh reported that the mask felt very tight and sore on his nose and forehead. Unfortunately his skin was not examined by the healthcare staff at this time and he was told that it was normal to feel some tightness. Additionally a formal inspection of Hugh's skin had not been documented prior to the commencement of the CPAP. On day three of his admission, Hugh complained of worsening pain on his nose and forehead. On examination, two Stage 2** pressure ulcers were noted on Hugh's nose and forehead. Hugh was given pain relief, his wounds were cleaned, the CPAP mask was refitted to prevent further pressure damage and a gel strip barrier was applied between the mask and Hugh's nose and forehead. Using the open disclosure process it was explained to Hugh that he had medical device related pressure ulcers and an apology was given to Hugh that this had happened. Hugh was also informed that this incident would be reported. Hugh was very upset and was worried the wounds would become infected, not heal, or leave a permanent scar. With Hugh's consent a care plan was developed, necessary wound care continued and the MDRPU wounds healed without scarring within two weeks. The local Tissue Viability Nurse also used the learning from Hugh's care to educate staff within the hospital of the risks of MDRPU and how to help prevent them developing.



Stage 2* Pressure Ulcers from CPAP mask

*Not real name / **A Stáirthóireacht um Ardchaighdeáin agus Sábháilteacht Othar | National Quality and Patient Safety Directorate

What are the risk factors and how can we help prevent MDRPU?

MDRPU can occur in and impact all age groups, however there are a number of contributing factors to consider. Contributing factors may include potential wider health system issues including for example variations in, and limitations to; procurement (purchasing) processes, available policies, resources (staff and equipment), quality assurance processes etc. Below are some key risk factors that can be addressed locally:

Risk factors

What helps reduce the risk?

Medical Device

- Poorly fitting generic sized devices
- Inflexible materials
- Length of time the device is required for
- Need to secure the device tightly
- Moisture build up
- Insufficient application guidance

Ensure the device:

- is suitable for the intended use
- is properly sized and fitted
- is rotated/repositioned frequently
- is positioned on clean and dry skin
- is removed when medically feasible
- is used in line with manufacturer's instructions

<u>If it will not affect</u> the performance of the device, or breach manufacturer's instructions for use, consider using barrier dressings or gel sheets

Healthcare Service

Potential gaps in awareness of need for:

- MDRPU education and audit
- Patient understanding of risk and treatment
- Correctly fitting and securing devices
- Repositioning of devices regularly
- Use of other options such as full face masks to deliver oxygen
- Timely access to correct devices
- Reporting of MDRPU

- MDRPU education and audit resources
- Inform patient (where apt) of MDRPU risk and what to look out for
- Get consent to use a tailored care plan
- Assess and record MDRPU risk
- Inspect the skin under and around the device twice daily
  - Increase frequency where patients are vulnerable to oedema (swelling)
- Reposition the device regularly
- Be aware of pressure points on patients in prone position (lying face-down)
- Report any MDRPU

Person

- Physical wellbeing or medical condition
- Difficulty in feeling pressure or friction (rubbing) due to medical condition, sedation, position or age
- Unable to reposition the device themselves
- Lack of knowledge on the risk of MDRPU

- Know the signs of potential MDRPU
- Report any of the following immediately:
  - Discomfort
  - Pain
  - Swelling
  - Redness or discolouration of the skin

Reporting of MDRPU

It is essential that ALL MDRPU are reported on the National Incident Management System (NIMS) and communication and open disclosure of the incident with the patient/service user occurs promptly. There were over 375 MDRPU relating to respiratory medical devices affecting the nose, ears and chin reported on NIMS between Jan 1st 2020 and Dec 31st 2023. However, expert advice suggests there is potentially under-reporting of MDRPU generally. The reporting of MDRPU while enabling incident analysis also gives an opportunity to link with associated medical device companies to consider improvements to help reduce the risk of future MDRPU occurring. In cases where the MDRPU is considered related to a defective medical device and/or inadequate instructions for use, this should be reported to the Health Products Regulatory Authority (HPRA). NIMS is being updated in 2024 to make it easier for staff to report incidents where medical devices contributed to injuries to enable better data, insight and learning.

Key Messages - PREVENTION

Remember

- Risk assessments for PUs should be part of routine practice, including inspecting skin at the site of the medical device
- Patients being managed with medical devices should be considered at high risk of developing MDRPU, same should be reflected in an appropriate care plan
- Move or adjust the device to inspect the skin when the patient reports discomfort or pain
- Report ALL MDRPU on NIMS. If the device is considered defective and/or instructions for use are inadequate, also report to the HPRA and the manufacturer
- Inform the Tissue Viability Nurse, and/or procurement/HSE Medical Devices if there are frequent PU issues with a particular device
- Education/training initiatives targeting both staff and patient/family are essential

References, Resources and Strategies

1. Costing pressure ulcer care in an Irish acute care setting: a feasibility study, Wounds International (Nov 2021)
2. HSE National Wound Management Guidelines 2018
3. Pressure Ulcers: A practical guide for review (2022)
4. Device-related pressure ulcers: SECURE prevention Journal of Wound Care (2022)

This Patient Safety Supplement was developed by:

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Approved for publication by the HSE National Patient Safety Alert Committee and the National Clinical Director, NQPSD

For further information on Patient Safety Supplements, see www.hse.ie/pst
For further information on wound management see HSE National Improvement Programme for Wound Management
All feedback on content or format of this supplement is welcome and can be sent to patientsafetytogether@hse.ie