

Problem & Purpose

Pressure injuries occurring in the intensive care unit has been a known complication. Although initiatives have been taken in identifying the issue of pressure injuries and implementing adequate interventions, there is a need for further interventions and follow-up.

The purpose of this quality improvement project was to implement a pressure injury prevention bundle in an intensive care unit of a level 1 trauma center.

Available Knowledge & Rationale

Immobility

- Patients admitted to the intensive care unit are more critical and often have longer lengths of stay in a hospital. Immobility amongst patients in the intensive care unit is one of the most prevalent risk factors.¹⁻²

Inadequate Tissue Perfusion and Oxygenation

- The lability of tissue perfusion and oxygenation puts patients at risk for tissue injury and then tissue ischemia which contributes to pressure injuries.¹⁻³

Advanced Age

- As humans age the epidermis and dermis begin thinning which leads to more fragile skin.²

Patient Comorbidities

- Certain comorbidities such as cerebrovascular disease, diabetes, altered mental status, and incontinence contribute to increased risk of pressure injury development.⁴

Methods

Design

- This quality improvement project utilized the PDSA theoretical framework to affirm a policy change in the intensive care unit
- 34 bed ICU
- All patients assessed were 19 years old or older
- 8 - week implementation period

Intervention

- Pressure Injury Prevention Bundle Implementation
- 2 Nurse skin assessment within one hour of admission, documentation of wound with MRN and date, and document Braden Score
- If Braden Score is 18 or less then implement q2 turns, utilization of a pressure relief overlay or specialty surface bed, and dual nurse skin assessment daily with bath

Measurement

During the eight-week period of implementation, a weekly audit of the electronic medical record was performed using the data collection tool created for this QI project. This tool was created to assess compliance to the utilization of the bundle. After the eight-week period, a post implementation survey was distributed to the intensive care nurses to assess any potential barriers with the new Pressure Injury Prevention Bundle.

Results

- 345 audits completed in 8 weeks
- 244 patients presented with Braden Score 18 or less
- 97 patients received documented Pressure Injury Prevention Bundle
- Prior to implementation 6 pressure injuries, post implementation 4 pressure injuries
- 30 surveys completed and all 30 reported the Pressure Injury Prevention Bundle to be helpful

Discussion

- Overall decreased number of pressure injuries
- Pressure Injury Bundle utilized 40% of time
- Core nursing staff had positive response to the bundle implementation and felt that it could be utilized long term

Strengths and Limitations

- Only one ICU utilized
- Compliance to bundle was 40% (Education, traveler nurses, supplies)
- Nursing had positive response to bundle
- Could be utilized in other ICUs or with floor patients

Future Implications

- Foundation for future quality improvement projects
- Influence policy change regarding pressure injury prevention
- Improve patient outcomes and decrease financial burden on hospital system

References

1. Centers for Medicare & Medicaid Services [CMS]. (2024). Hospital-acquired conditions. <https://www.cms.gov/medicare/payment/fee-for-service-providers/hospital-aquired-conditions-hac>
2. Mondragon, N., & Zito, P. M. (2024). Pressure injury. In: StatPearls. Treasure Island (FL): StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK557868/>
3. Soodmand, M., Moghadamnia, M. T., Aghaei, I., Ghasemzadeh, G., Kazemnejad Lili, E., & Homaie Rad, E. (2019). Effects of Hemodynamic Factors and Oxygenation on the Incidence of Pressure Ulcers in the ICU. *Advances in skin & wound care*, 32(8), 359–364. <https://doi.org/10.1097/01.ASW.0000553599.20444.f4>
4. World Health Organization [WHO]. (2023). Patient safety. <https://www.who.int/news-room/fact-sheets/detail/patient-safety>