Feasibility and Acceptability of a Pressure Injury Prevention Bundle

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ABSTRACT
Background: Pressure ulcers/injuries (PU/Is) are localized areas of tissue damage over bony prominences or under medical devices. Severe hospital-acquired pressure ulcers/injuries (HAPU/Is), full-thickness stage 3 and 4 PU/Is that develop or worsen in the hospital setting are considered "never events" by the Centers for Medicare and Medicaid Services (CMS). HAPU/Is may increase pain, prolong hospitalization, increase infection risk, and death. The condition cost the U.S. healthcare system $26.8 billion in 2016, which breaks down to $10,708 per patient per incident. Elderly patients, those over the age of 65, are particularly vulnerable to full-thickness stage 3 & 4 PU/Is during a hospital stay. HAPU/I prevention measures are warranted in this vulnerable population. Bundled care has been shown to improve patient outcomes.

Methods: This quality improvement project's methodology utilized a pretest only design with comparison with norms. The medical-surgical nursing staff were educated on the five bundle components as well as patient inclusion and exclusion criteria. The first aim sought to examine the number of bundle components implemented at hour 0, the day of bundle implementation, then 48 and 96 hours later. The second aim involved monitoring the project participants for the development of full-thickness stage 3 and 4 HAPU/Is. The purpose of this quality improvement project was to determine if the facility's current twenty-three page HAPU/I prevention policy can be distilled into a care bundle, which would include a multi-layer foam dressing for HAPU/I prevention.

Aim 1: Implement a 5 component HAPU/I prevention bundle and evaluate the number of pressure injury bundle components executed in the geriatric medical-surgical patients with Braden score 30 or less.

Aim 2: After bundle implementation, monitor the study participants for the incidence of full-thickness pressure injuries.

RESULTS

Purpose: The purpose of this quality improvement project was to determine if the facility's current twenty-three page HAPU/I prevention policy can be distilled into a care bundle, which would include a multi-layer foam dressing for HAPU/I prevention.

• Pressure ulcers/injuries (PU/Is) are localized areas of tissue damage over bony prominences or under medical devices and range from partial (stage 1 & 2) to full-thickness (stage 3 & 4).

• Hospital acquired pressure ulcers/injuries (HAPU/Is) during this pilot study.

• Severe HAPU/Is (stage 3 & 4) are considered identifiable and therefore preventable.

• 50,000 patients die each year from HAPU/Is.

• The condition is costly: The United States healthcare system spent $26.8 billion a year on HAPU/Is or $10,708 per patient.

• HAPU/I diagnosis increases length of hospital stay, severe disability, sepsis, and death.

• HAPU/I prevention is needed to improve patient outcomes. Bundled care is an evidence-based practice shown to improve patient outcomes.

CONCLUSIONS

No patient developed a full (stage 3 or 4) or partial (stage 1 or 2) thickness HAPU/I during this pilot study.

Bundle including multi-layer foam dressing may help prevent stage 1 & 2.

Bundle uptake shows promise.

Rationale for decrease in bundle adherence at the 96 hour mark unclear.

Future Recommendations

• Repeat this QI project over a longer time span.

• 48 - 96 hours may be insufficient time to develop a full-thickness HAPU/I.

• More intense staff education with a possible washout period.

• Hawthorne effect and the COVID-19 pandemic may have significantly impacted the findings.

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PURPOSE & AIMS

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METHODS

Design: Quasi-experimental, within-subjects

Setting: Medical-surgical units in a 200-bed rural safety net hospital

Sample: Convenience sample of 20 medical surgical patients 65 years and older

Measurements:

1. Number of bundle components implemented at time 0, 48 and 96 hours

2. Full-thickness pressure injury incidence

RESULTS

Sex, n (%)

Male 14 (70.0)

Female 6 (30.0)

Race, n (%)

American 4(20.0)

Black or African American 9(45.0)

Caucasian 7(35.0)

Hispanic or Latino 9(45.0)

CONCLUSIONS

Stage 1

Stage 2

Stage 3

Stage 4

Statistically significant uptake of bundle over time

Partial-Thickness

Full-Thickness

No patient involved in this feasibility study developed partial or full-thickness pressure injuries