BACKGROUND

• The development of Hospital Acquired Pressure Ulcers (HAPUs) is a common adverse complication associated with immobilization and prolonged hospitalization. An estimated 2.5 million pressure ulcers are treated each year in acute care facilities in the United States alone. HAPUs are associated with adverse health outcomes such as increase in hospital length of stay, mortality rates, and higher treatment costs.

• According to our semi-annual Trauma Quality Improvement Program (TQIP) report in 2014 our institution identified HAPUs as an outlier complication.

• Our institution employed a hospital-wide initiative to improve patient's outcomes by implementing a seven step novel structural care-based platform and preventive measures to reduce the incidence and prevalence of HAPUs among our trauma patient population.

OBJECTIVE

Our intervention's main goal was to:

• Improve our patient’s outcomes by reducing incidence and prevalence of HAPUs among our trauma population.

• Assess and evaluate the effect of the implemented measures on the incidence of HAPUs.

METHODS

• Our intervention targeted measuring the effects of the change through a review of prospectively collected dataset for adult trauma patients > 15 years old, in the period from 2014 through 2016 utilizing our institution’s Trauma Registry.

• We evaluated the effects of implementing novel structural care-based platform and preventive measures on reducing HAPUs rates in our trauma patients.

• Demographic and outcome variables were collected and compared.

• Our primary outcome included reducing incidence and prevalence of HAPUs among our trauma populations.

• Paired-sample t-test and Chi Squared analyses were used with significance defined as p<0.05.

RESULTS

• A total of 9,755 total patients were admitted in the period from 2014 to 2016. Hospital acquired pressure ulcers ≥ Stage 2 developed in a total of 89 patients ranging from 15 to 93 years old with an average age of 57.9 years.

• The Injury Severity Score (ISS) ranged from 1 to 75 with an average of 19.9 which is indicative of the higher severity of injuries among our patient study population.

• The incidence and prevalence of HAPUs ≥ Stage 2 at our institution significantly dropped from 1.36% to 0.39% from 2014 to 2016 (p = 0.002) compared to both TQIP and NTDB.

Table 1: Demographic Characteristics and Outcome Variables

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total # of Trauma</td>
<td>3,054</td>
<td>3,455</td>
<td>3,246</td>
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<tr>
<td>Admissions</td>
<td></td>
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<tr>
<td>Total # of Trauma</td>
<td>42</td>
<td>34</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Patients with HAPUs ≥</td>
<td></td>
<td></td>
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<td>ns</td>
</tr>
<tr>
<td>Stage 2</td>
<td></td>
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<tr>
<td>Age (years) mean</td>
<td>59.1</td>
<td>60.7</td>
<td>50.9</td>
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<tr>
<td>Average ISS</td>
<td>28.4</td>
<td>26.1</td>
<td>24.2</td>
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<tr>
<td>Incidence of HAPUs</td>
<td>1.36%</td>
<td>0.91%</td>
<td>0.39%</td>
<td>0.003</td>
</tr>
</tbody>
</table>

Figure 1: Pressure Ulcer ≥ Stage 2 Prevalence Comparing TQIP vs. NTDB 2014 through 2016

DISCUSSION

• The process changes were implemented in 2014 and have continued over a three-year period with ongoing re-evaluation and process adjustments as necessary. Implemented changes were sustained through an ongoing seven step novel preventive practices which included: 1) Pressure reducing beds, 2) Improved and protocolized nutritional support, 3) Mandatory 2-hour change of posture, 4) Turning clocks, 5) Early surgical intervention, 6) Spot checks by our wound care nurse and 7) Education to patients and care givers.

• In addition to improved resource utilization and adequate equipment that were implemented in 2014, a quarterly evaluation by our Quality Assessment and Improvement team has led to a sustainable and significant decrease in our hospital acquired pressure ulcers rates.

CONCLUSION

Our data indicates a significant decrease in HAPUs incidence and prevalence after execution of the process changes. Implementing our novel care-based pressure ulcer preventive measures proved to be an effective way to improve our patients’ outcomes.

REFERENCES


