Evaluating Efficacy of a Low Air Loss Bed Replacement Program in Decreasing Hospital Acquired Pressure Ulcers (HAPU’s) in Medical-Surgical Units

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Disclosure

The speaker has no financial or other conflicts of interest to report
Background

- In 2006, the Centers for Medicare and Medicaid (CMS) identified Hospital Acquired Pressure Ulcers as a “never event” which lead to reimbursement restriction to HAPU’s related treatment which began in October 1, 2008.
Background

- The increase number of HAPU’s, financial impact of the reimbursement restriction, and high cost of specialty surface rental for pressure ulcer prevention generated urgency from senior leadership to implement a low air loss bed exchange program as part of a comprehensive pressure ulcer prevention initiative.
Pressure Ulcers affects 2.5 million patients per year

COST: $9-11.6 Billion per year in the US

Individual cost to treat ranges from $20,900 - $151,700 per ulcer

Mortality: 60,000 patients die as a result of pressure ulcer

AHRQ, 2014
Background

- Hospital Acquired Pressure Ulcers is a leading cause of morbidity and mortality in the United States and significantly contributes to increase in length of stay and health care cost.  
  

- Low air loss surfaces provides a flow of air to assist in management of moisture and skin temperature (microclimate)  
  NPUP (2007)
Background

- Low air loss surfaces - air permeable which allows even distribution of air through the cover across the skin.  
  *Bryant and Nix (2012)*
- Experts recognized that pressure-redistribution support surfaces can aid to decrease the incidence of pressure ulcers.  
  - May help to improve healing rates of pressure ulcers.  
  *McInnes, Jammali-Blasi, Bell-Syer, Dumville, & Cullum (2011)*
Purpose

- To investigate the efficacy of implementing a low air loss bed technology bed exchange program in the prevention of Hospital Acquired Pressure Ulcers (HAPU’s) in the Medical Surgical units.
**Method**

- A retrospective chart review of patients that developed HAPU’s in 2012, before and 2013, after the implementation of the low air loss surface replacement to compare if the intervention made an impact to decrease HAPU’s.
- Data was obtained from monthly prevalence studies and Peminic occurrence reporting software.
- The investigator obtained HAPU rates using MedCalc software.
2013 Medical-Surgical HAPU's

N = 28
Results

- 58% Reduction of HAPU’s in Medical Surgical Unit in the Post-Implementation

- Conservative Estimate to treat PU:
  2012 PU: 67 x $20,900 = $1,400,300

- Facility investment: $10,000 x 100 = $1,000,000

- 2013PU: 28 x $20,900 = $585,200

- $1,400,300 - $585,200 = $815,100
### Results

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<tbody>
<tr>
<td><strong>2012 M/S HAPU’s Incidence Rate</strong></td>
<td>0.04373</td>
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<tr>
<td><strong>95% Confidence Interval</strong></td>
<td>0.03389 to 0.05554</td>
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<tr>
<td><strong>2013 M/S HAPU’s Incidence Rate</strong></td>
<td>0.01859</td>
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<tr>
<td><strong>95% Confidence Interval</strong></td>
<td>0.01235 to 0.2687</td>
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<td><strong>Incidence Rate Difference</strong></td>
<td>0.02514</td>
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<td><strong>95% Confidence Interval</strong></td>
<td>0.01256 to 0.03772</td>
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<td><strong>P value</strong></td>
<td>0.0001</td>
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<td><strong>Incidence Rate Ratio</strong></td>
<td>2.3522</td>
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<tr>
<td><strong>95% Confidence Interval</strong></td>
<td>1.4925 to 3.7984</td>
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**2012 Total Patient Surveyed = 1532**  **No. of HAPU’s in 2012 = 67**  
**2013 Total Patient Surveyed = 1506**  **No of HAPU’s in 2013 = 28**
Conclusions

- After Low Air Loss surface replacement in 2013 HAPU’s was reduced by 58% in Medical-Surgical units.

- Further research is needed to study the effect of low air loss technology in preventing pressure ulcers in Medical-Surgical units.
Implications to Practice

- Ongoing staff education on this innovation and monitoring of compliance utilizing surface features.
- Continued staff involvement in conducting monthly prevalence studies is imperative.
- Low air loss technology can be utilize as part of a total program of prevention and treatment
- Technology can be implemented to other clinical areas with patients that are at risk for HAPU’s.
- Initially may be an investment for facilities to take but may outweigh the benefits of HAPU’s reduction which would ultimately reduce cost and will improve quality of care.
References