

Research - R176

Oral

Abstract Title:

The Use of the Mepilex® Sacral Border (MSB) Decreased the Rate of Sacral Decubiti and had a Positive Financial Impact on the Hospital

Authors:

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Background & Purpose:

Quality nursing care includes the prevention of skin breakdown. Each nurse must ensure appropriate patient positioning, skin assessment and prevention techniques for all patients. The cost of decubiti care in the United States is estimated at 11 billion annually. In order to improve patient care and reduce negative financial implications, skin care and methods to reduce decubiti were required. In 2009, the Surgical Intensive Care Unit (SICU) implemented a protocol that placed MSB on all trauma patients on admission to the SICU. Our hypothesis is that the use of the MSB would decrease the rate of sacral decubiti and have a positive financial impact to the hospital.

Study/Project Design:

Retrospective observational study

Setting:

Academic, Level 1 trauma accredited center in an urban setting

Sample:

All trauma patients admitted to the SICU from July 1, 2004 to June 30, 2013

Procedures:

We retrospectively reviewed all trauma patients admitted to the SICU that developed sacral decubiti from July 1, 2004 to June 30, 2013. The following are an example of the data points that were collected: use of MSB, mechanism of injury (blunt/penetrating), injury severity score (ISS), SICU length of stay (SICULOS), hospital length of stay (HLOS), date and stage of decubitus ulcer when identified, stage of decubitus ulcer upon discharge, decubitus ulcer days, approximate cost to treat decubitus ulcer, and general demographic data. From July 1, 2004 to January 22, 2009 the MSB was not utilized. Beginning January 23, 2009, the MSB was placed on all trauma patients on admission to the SICU. We then empirically compared the two groups on decubiti rate and its associated cost to the hospital utilizing various statistical methods.

Findings/Results:

In the non-MSB group, 2,409 trauma patients were admitted to the SICU and 57 sacral decubiti were identified (2.37%). In the MSB group, 2,591 patients were admitted to the SICU and 22 sacral decubiti were identified (0.85%). This yielded a raw odds ratio (OR) of 2.83 for developing a sacral decubitus ulcer between the non-MSB group and the MSB group ($p < .001$). This represented a 64% decrease in sacral decubiti. The approximate cost of the MSB was \$287,446. The approximate median (mean) per patient cost to treat the sacral decubitus ulcer for the non-MSB group was \$85,900 (\$130,500) while only \$54,000 (\$76,500) for the MSB group. This reached marginal statistical significance ($p = 0.087$). The potential positive financial impact on the hospital due to the use of the MSB was \$5,441,811. This was based on cost estimates of \$2,770 to treat stage 1 and 2 decubiti, and \$5,672 to treat stage 3 and 4 decubiti. No association was identified between the stages of decubitus ulcer and SICULOS or HLOS.

Discussion/Conclusions/Implications:

Our study has shown that the implementation of MSB decreased the rate of sacral decubiti for trauma patients admitted to the SICU and had a significant positive financial impact on the institution. Limitations to this study were the lack of nutritional information, exclusion of pre-existing conditions and non-skin related complications. These factors warrant additional review and analysis. However, based on these results, future plans are to implement the use of MSB for all patients admitted to all intensive care units at our hospital.