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Implementation of an Evidence-Base Hospital Acquired Pressure Injury Prevention Program

Brenda Miner

bminer3@patriots.uttyler.edu

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Miner, Brenda, "Implementation of an Evidence-Base Hospital Acquired Pressure Injury Prevention Program" (2023). *MSN Capstone Projects*. Paper 267.

<http://hdl.handle.net/10950/4276>

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Implementation of an Evidence-Base Hospital Acquired Pressure Injury Prevention Program

A Paper Submitted in Partial Fulfillment of the Requirements

For NURS 5382: Capstone

In the School of Nursing

The University of Texas at Tyler

by

Brenda Miner

August 6, 2023

Executive Summary

The healthcare industry has been dramatically impacted by Covid-19, particularly in terms of its financial stability. These effects have been long-lasting and noticeable. According to *The Financial Impact of COVID-19 on Texas Hospitals (2022)*, the number of Texas hospitals at risk of closing has doubled since 2020 due to financial constraints. The financial constraints are even more significant for rural hospitals, with 26% of rural hospitals compared to 5% of urban hospitals at risk of closing. In 2022, expenses for Texas hospitals were \$33.2 billion higher than at pre-pandemic levels due to increased labor and medical supply costs (*The Financial Impact of COVID-19 on Texas Hospitals, 2022*). Hospital-acquired pressure injuries (HAPI) are estimated to account for \$9.1-11.6 billion annually in the United States, adding additional financial strain to healthcare organizations (Agency for Healthcare Research and Quality, 2014).

Implementing a pressure ulcer prevention bundle (PUPB) in a healthcare facility facing challenges can increase revenue by reducing hospital-acquired conditions and ensuring better pay for Medicare-admitted patients. Lowering the number of HAPIs can also result in shorter hospital stays, lower morbidity and mortality rates, and ultimately provide patients with high-quality care. Moreover, a PUPB has the potential to boost morale among medical professionals by providing them with a straightforward plan to deal with a life-altering condition.

Effects of a Pressure Ulcer Prevention Bundle

Throughout covid, many healthcare organizations struggled to keep up with the pandemic's demands. This delayed addressing quality care concerns, such as hospital-acquired pressure injuries (HAPI). This project addresses one hospital's increase in HAPI rates. When patients develop hospital-acquired conditions such as pressure injuries, this can lead to an increased length of stay in the hospital for the patient and an increase in mortality rate, which all lead to a decrease in reimbursement from the patient's payor source. HAPIs are estimated to affect 1.3 to 3 million adults resulting in 0.4% to 12% of hospitalizations (Wassel et al., 2020). The patient population most susceptible to PIs are elderly, malnourished, and often hospitalized for extended periods. Pressure injuries can result in extensive harm, including chronic wounds and about 60,000 deaths annually (Padula & Delarmente, 2019). The Agency for Healthcare Research Quality (AHRQ) estimated the cost of HAPIs in America to be \$9.1-\$11.6 billion annually. Identifying the cause of HAPIs and working to decrease incidences of these events is imperative to improve patient outcomes, increasing revenue for the organization.

Rationale for the Project

A wound incurred during an inpatient hospital stay, is isolated to one area, and involves the skin and underlying tissue is defined as a HAPI (Rondinelli et al., 2018). HAPIs significantly impact many factors in the healthcare industry, such as increased costs, prolonged hospitalizations, pain, and an increased risk of death in the United States. Critically ill patients are prone to pressure injuries (PI). Therefore, preventing HAPIs in the ICU remains a clinical challenge (Santamaria et al, 2013).

At the end of 2021, as quality projects began to make their way back to the forefront at a 152-bed rural hospital, the quality department noticed an increase in the rate of HAPIs. The quality department classified the HAPIs as 11 stage-one, 17 stage-two, two-stage-three, and zero stage-four PIs. Two were unstageable, and five were suspected of deep tissue injuries (DTI). This inquiry into HAPIs aims to determine if implementing an evidence-based HAPI program will decrease the incidence of HAPIs. Asking the question: In Adult patients admitted to the Intensive Care Unit (P), how does the standardized implementation of a Hospital Acquired Pressure Injury care bundle (I) compared to routine pressure injury care (C) affect Hospital Acquired Pressure Injuries (O) over one month (T)?

Literature Synthesis.

Several studies have discussed methods to decrease HAPIs, but singular interventions have not been successful in reducing their incidence. A combination of interventions must be implemented to improve patient outcomes by lowering the occurrence of HAPIs. The studies, including those listed below, support the creation of a PUPB aimed at decreasing HAPI rates in acute care settings.

Floyd et al., 2021, used three strategies to reduce HAPIs. The three strategies comprised an evidence-based care bundle with risk assessments upon admission to the ICU (such as Braden Score), unit-based skincare expertise, and staff education with auditing feedback. The research showed that care bundles decreased the incidence of HAPI rates by 42%, with a mean reduction of 82%. This article shows that care bundles significantly impact reducing HAPIs and provides supportive data to use the research for this article.

Gaspar et al., 2019 is a systematic review that provides information on a care bundle that includes prophylactic dressings applied to bony prominences, education, preventive skin care,

and system reminder for turning patients. 26 studies were used to review these strategies and their effectiveness in decreasing PIs. Though this article did not have definitive data on the reduction of PIs, it guides the study in support of using multiple tactics to decrease HAPIs. Single strategies such as support surfaces and repositioning did not prove to continually decrease HAPIs. Risk-assessment tools did not show to decrease HAPI incidence but helped to identify individual risk factors. Reminder systems helped to remind the staff to turn patients and to ambulate the patients. Prophylactic dressings were effective in decreasing HAPI rates as well. This article has promising results from individual interventions, and when they are combined will decrease the prevalence of HAPIs.

Pickham et al., 2016, is a randomized clinical trial that studied the effectiveness of a wearable patient sensor (WPS) to increase the effectiveness of turning/repositioning patients. This article proved effective with an odds ratio of -.33 with a 95% confidence interval. After speaking with the administrative team, we are unable to initiate the WPS product in the organization. This has been tabled for a later date and time to determine if it is needed to help the organization decrease the incidence of HAPIs.

Roberts et al., 2016, conducted a qualitative descriptive study that researches the nurse's perception of PUPB. Staff buy-in/understanding is essential for changes to be effective. This study found that the nurses who were educated and able to provide education in a way the patient understood found that they participated in their care and were more likely to be cooperative. The team that enacted the PUPB met with the nursing team to discuss any perceived barriers to initiation. They worked alongside the team through the study to ensure they had the tools to continue using the PUPB. The nursing staff found it helpful for the nurses and the patients

through improved awareness, communication, and participation in care related to pressure ulcer prevention.

Santamaria et al., 2013 conducted a randomized controlled trial of multi-layered foam dressings in critically ill patients. Four hundred forty critically ill patients admitted to the ICU were studied. The study found significantly fewer patients in the intervention group than the control group that developed HAPIs. Five in the intervention group compared to 20 in the control group, $P=0.001$. This was a 10% difference in incidence between groups; ten patients needed to be treated to prevent one PU.

Project Stakeholders

To initiate change at the bedside, the leader must identify key stakeholders. Suva et al. (2018) states that a team-based approach is best facilitated by educating and training team members. The World Health Organization (WHO) states that education should not be limited to health-related information; however, it should foster motivation, skills, and confidence in the patient to take action to improve their health (O'Connor et al., 2021, p. 18). Patients and family members are essential to this PUPB because they are at risk of a poor outcome if they refuse the measures to decrease HAPI. This poor outcome is one that, unfortunately, affects not only the patient but the organization as well. The nursing staff must ensure that education is provided to the patient and the family and reinforced as needed.

The internal stakeholders include the ICU leadership team, the quality department, central supply, nursing informatics, wound care RN (WCRN), and dietary and therapy services (physical therapy (PT) and occupational therapy (OT)). The quality department will work with the ICU leadership team by reporting HAPI rates at the end of the 30 days. The project leader will run a report that pulls all patients with a Braden score of 14 or less daily, except for Saturday

and Sunday. They will then round in the ICU to ensure patients with a Braden score of 14 or less have all interventions in place; if they do not, the project leader will ensure proper documentation is in the system as to why they are not in place. During these rounds, the project leader will provide education about the PUPB to RNs and families as needed. Central Supply's role in this program will be to ensure adequate foam-boarder dressings are always supplied in the clean supply room. Nursing informatics will be responsible for ensuring the electronic medical record (EMR) possesses the capability to correctly capture wounds present on admission as well as interventions that are in place. The WCRN will round on all patients with a Braden score of 14 or less Monday through Friday. During rounds, the WCRN will reinforce the education provided to the patient, family member, or bedside RN as needed. He will bring any WCRN concerns to the project leader to ensure they are addressed promptly. The dietary team will monitor intake and ensure that patients with low Braden scores receive adequate nutrition to decrease their risk of HAPI. Our therapy services will collaborate with the patient, their family, and the nursing staff to promote early ambulation and help with transferring the patient to a chair on a daily basis. This will help prevent pressure points from prolonged bed rest.

Implementation Plan

According to Melnyk and Fineout-Overholt (2019), quality improvement is defined as a data-driven approach that is geared toward improving specific internal systems, processes, costs, productivity, and quality outcomes (p.211). This project aims to decrease the incidence of HAPIs and was brought to the ICU leadership team as a quality initiative. This change process has five phases that help guide the measurement of the effectiveness of changes aimed at improving healthcare outcomes.

Phase One: Identifying the problem

This phase begins with the recognition of a problem. In this case, the identified problem was an increase in HAPIs. During this phase, the project leader will need to research factors that have led to the increase of HAPIs by talking with bedside staff to understand what measures they are currently using to decrease HAPIs in critically ill patients and researching the current policies to decrease HAPIs. The current standard of care to prevent pressure ulcers at this facility is to turn critically ill patients every two hours while in the hospital. However, no published research studies support every 2-h turning as the only method to decrease HAPIs in the critically ill (Pickham et al., 2016).

Phase Two: Review and appraise the evidence

During this phase, the project leader will determine if the problem lies in the current interventions used to decrease HAPIs, lack of education, inadequate supplies to decrease HAPIs or a combination of these.

Phase Three: Creating a Pressure Ulcer Prevention Bundle

Once phase three is initiated, the project leader should understand where the problem lies and begin looking for EBP that supports the creation of a PUPB. At the end of phase three, the project leader should have a completed PUPB to present to the bedside staff. For this change project, the PUPB is outlined below.

Care bundles typically encompass three to five components (Floyd et al., 2021). In this study, the Braden Scale will determine those at risk of developing a HAPI upon admission and continue to be assessed daily. The Braden Scale is a valuable tool to help nurses determine patients at risk of developing a HAPI (Floyd et al., 2021). The project leader and WCRN will round on all patients with a Braden score of 14 or less to accurately assess the risk of PI development and assess the patient's skin for any wounds present on admission that the primary

RN may have missed. The following measure in the PUPB will be foam preventive dressings applied upon admission to the ICU on all patients with a Braden score of 14 or less. Foam dressings will be prophylactically applied to the patient's coccyx, bilateral heels, and bony prominences at high risk of PI. Application of foam dressings upon admission to the ICU, combined with Braden scoring and other evidence-based pressure ulcer prevention strategies, has shown a 10% reduction in PI occurrence (Santamaria et al., 2013). The final measure that will be a part of the PUPB is turning every two hours. Since this measure is already in place, this will be the easy part of the change project. According to Pickham et al. (2016), optimal turning allows for at least 15 minutes of tissue decompression when rolled every two hours. The RNs will use foam wedges when turning patients every two hours to ensure this occurs.

Phase Four: Product Availability

The project leader must meet with the central supply department to ensure that the necessary supplies are available for the PUPB. After confirming that the supplies are in central supply, the project leader should verify that enough items are stored in the ICU for the bedside staff to follow the PUPB easily.

Phase Five: Presenting EBP to bedside staff

During this phase, the project leader will present their proposed PUPB to the bedside staff to ensure the workflow will not hinder patient care and ensure it is feasible for them to follow 100% of the time.

Phase Six: Dissemination of the PUPB

The project leader will present the final PUPB to the bedside staff and other stakeholders. One on One education will be provided to the bedside RNs in the ICU by the project leader as

well as sharing the new PUPB in their unit-based council meeting. Their leadership will educate the interdisciplinary teams, such as PT and OT, via flyers created by the project leader.

Timetable/Flowchart

When quality metrics were being tallied for the calendar year 2021, it was noted that the ICU at a 152-bed rural hospital significantly increased HAPIs. The quality department reported that the ICU had 37 HAPIs in 2021. These were classified as 11 stage-one, 17 stage-two, two-stage-three, and zero stage-four pressure injuries (PI). Two were unstageable, and five were suspected of deep tissue injuries (DTI).

By February 2022, the project leader began auditing charts with the quality department to understand the reason for the increase in HAPIs. In the spring of 2022, a work group was put together to determine the cause of the increase in HAPIs. Upon auditing charts, it was found that staff were documenting the turning of the patient every two hours, which was the current policy for the organization, and utilizing the pressure prevention tools available to them.

In Summer 2022, the project leader presented an EBP PUPB to the workgroup. The HAPI workgroup and the project leader collaborated, and Evidence-Based Practice was presented to the HAPI workgroup, as well as input from the bedside staff in ICU. Approval of the PUPB was granted in September 2022. With the approval of the PUPB, education with the bedside staff began in October 2022. Education was provided to the ICU team via the unit-based council meeting, and one-on-one education was conducted with all 60 RNs employed full-time in the ICU. January 2023, the PUPB was initiated into the ICU workflow. The flowchart of this change project can be seen in Appendix A.

Data Collection Methods

No amount of planning will matter if a plan is not made to ensure the change is effective. The project leader must monitor three areas to ensure the change project is successful. The first item the project leader must monitor is compliance with the PUPB. This will be completed by rounding on all patients with a Braden score of 14 or less. These rounds will be completed by the project leader as well as the WCRN. During rounds, the primary RN, the project leader, and WCRN will complete a head-to-toe assessment to ensure all PUPB facets are in place.

After completing head-to-toe assessments, the WCRN and project leader will assess for proper documentation of wounds and interventions as laid out by the PUPB. This data must be collected to ensure bedside staff understand the PUPB and know when and how to use it.

After the 30-day project, the project leader will work with the quality department to evaluate the effectiveness of the PUPB. The total number of HAPIs for the ICU will be reported to the project leader. The project leader will then further evaluate the charts reported as HAPIs. During this time, the project leader will verify that the PUPB was followed and look at the reason for the fall-outs to identify the weak areas of the PUPB.

Cost/Benefit Discussion

According to Dzioba and Vitale, LFACHE (2021), the cost of treating a single HAPI can be as high as \$70,000. Therefore, decreasing the occurrence of HAPIs in the ICU will save the organization a large sum of money. Since the PUPB does not require any new products to be purchased and all supplies are already stocked in the hospital and the ICU department, there is no increase in cost associated with this program. The benefit of the PUPB is a decrease in hospital-acquired conditions leading to shorter hospitalizations, an increase in reimbursement from the patient's payor source, and increased patient satisfaction. From a cost/benefit analysis, the PUPB is highly beneficial to the organization.

Discussion of Results

At the end of the 30 days, the quality department reported 23 HAPIs for the ICU. Upon further review of these charts, there were inconsistencies with what the quality department qualified as HAPIs. The inconsistencies included incorrect admit times and missed wound documentation on admission by the nursing staff. The error in admission time was attributed to 14 HAPIs; nursing missed documentation of the PI present on admission attributed to seven HAPIs. That means that 21 of the HAPIs attributed to the ICU have components that need to be better defined and can be corrected. At the end of the month, the unit had a total of two true HAPIs.

The project leader educated the admitting nurses for the seven patients with missed documentation of PI present on admission on proper/timely documentation of wounds upon admission to the hospital. Of these seven patients, the PUPB was followed; however, when rounding occurred on the patients with low Braden scores, the eight-hour window had already passed to correct the admission. This project was successful as the reported number of HAPIs was drastically reduced once researched. Ultimately, patients, families, and the medical staff caring for critically ill patients were provided education.

Conclusions/Recommendations

The next steps for this project are to continue monitoring the incidence of HAPIs and work to understand the recommendation for timeliness in reporting PIs present on admission. Each of the seven PIs missed on documentation were caught in the first 24 hours of admission. If clarity can be gained on the industry standard for documentation within the first 24 hours of admission, these seven would not have been figured into the HAPI numbers for January and help ensure correct numbers are captured in the future.

With the EBP presented, a successful PUPB was created and is being used in the ICU. The number of HAPIs has decreased tremendously, but this is primarily due to clarifying the documentation processes on admission and presenting EBP to the quality department. In conclusion, this project was successful in decreasing HAPI rates and will continue to be monitored and reporting corrected once industry standards are clarified.

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Appendix A

Flowchart

