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Implementing a Pressure Injury Prevention Bundle to Decrease Hospital-Acquired Pressure Injuries in an Adult Medical-Surgical Unit

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Implementing a Pressure Injury Prevention Bundle to Decrease Hospital-Acquired Pressure Injuries in an Adult Medical-Surgical Unit

A DNP Project Submitted to the
Graduate Faculty
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in Partial Fulfillment of the
Requirements for the Degree of
Doctor of Nursing Practice

By

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Abstract

Background: Pressure injuries affect approximately 2.5 million people in the United States and cost the American healthcare system more than $11.6 billion annually. Healthcare organizations have sanctions placed on them by government agencies to minimize the occurrence of pressure injuries to reduce financial burdens and poor patient outcomes.

Purpose: The project aimed to evaluate the effectiveness of reducing the incidence of hospital-acquired pressure injuries after implementing a pressure injury prevention bundle over eight weeks in a medical-surgical unit in a rural hospital in Alabama.

Methods: This quality improvement project consisted of three key components: educating nurses to complete a skin assessment with another nurse within two hours of admission, ensuring the turning of patients every two hours using the wall clock method, and utilizing the Braden scale tool to identify at-risk patients.

Results: Key results included statistical significance noting each participant ($t=3.29$, $p<0.001$) revealed an improvement in pressure injury reduction knowledge. Post-intervention data suggests 63.94% of the nurse participants completed the skin assessment tool reflecting a change in nursing behavior. Data extracted also showed a decline of 0.23% of HAPI's on the unit, down from 0.63% to 0.41% of average incidences.

Conclusion: The implementation of this quality improvement project met the need to decrease pressure-related injuries affecting a population admitted to an adult medical-surgical hospital unit in Alabama. The participating nurses in the unit gained knowledge about reducing HAPI's through evidence-based intervention tools.

Key Words: nurse role, pressure injury prevention, acute care hospital unit, implementation, current practice, medical-surgical unit, pressure ulcer risk, decubitus ulcer concerns.

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Implementing a Pressure Injury Prevention Bundle to Decrease Hospital-Acquired Pressure Injuries in an Adult Medical-Surgical Unit

Multiple terms are used interchangeably to describe pressure injuries, including pressure ulcers, decubitus ulcers, and bedsores. A pressure injury, the preferred wording of the National Pressure Ulcer Advisory Panel (2017), is destruction to the skin caused by a boney prominence encountering a firm surface, such as a bed or medical device, for a prolonged time. The skin can be intact, open, and painful, and the injury occurs due to pressure, shear, or friction. The volume of pressure and shear a persons' integument can tolerate is affected by factors including nutrition, perfusion, comorbidities, and initial skin conditions (National Pressure Ulcer Advisory Panel, 2017).

Pressure injuries are considered preventable but still occur too often and continue to be a significant concern in acute care hospitalizations. Despite diligent nursing care, pressure injuries in the high-risk population still happen. High-risk populations consist of the elderly, the very young, and bedridden patients. According to Padula (2017), hospitals treat approximately 2.5 million pressure injuries per year with an estimated annual treatment cost of 11 billion dollars annually in the United States (Padula, 2017). The cost of individual pressure ulcer-related care ranges from 20,000 to 150,000 dollars and is associated with 60,000 deaths per year. Since the Center for Medicare and Medicaid Services (CMS) sanctioned a non-payment for treating hospital-acquired pressure injuries, healthcare organizations have sought ways to reduce the financial burden (Agency for Healthcare Research and Quality, 2021).

This project aims to evaluate the effectiveness of reducing the incidence of hospital-acquired pressure injuries after implementing a pressure injury prevention bundle over eight weeks in a medical-surgical unit in a rural hospital in Alabama. Recent evidence suggests

pressure injuries are avoidable using pressure injury guidelines or a quality care prevention bundle, but the bundle approach yields more remarkable outcomes. Additionally, a bundled application is more reliable, easier to implement, and examinable in medical-surgical units (Tayyib & Coyer, 2017).

Adopting a bundled pressure injury intervention protocol to assess high-risk patients and utilizing additional barrier protection can support improved patient outcomes (Padula, 2017). Nurses have the most frequent and consistent contact with patients along with the required skills to support appropriate risk assessment interventions to evaluate the efficacy of a prevention bundle protocol (Padula, 2017). The project objectives will reduce hospital-acquired pressure injuries by implementing an evidence-based pressure injury prevention bundle, increasing pressure injury prevention compliance, and increasing overall knowledge of preventing pressure injuries.

Background

The pressure injury classification system has been evolving since the 19th century and will continue to evolve as research and understanding of the disorder progresses. Factors influencing its evolution include changes in epidemiology and demographics, advances in medical knowledge, improvements in technology, and new treatment modalities (Levine, 2019). The sequential four-stage decubitus classification introduced in 1975 by orthopedic surgeon Dr. Darrell Shea has been the cornerstone of thinking regarding pressure injuries. Although many publications have existed regarding the four-stage system since its creation, Shea's framework remains deeply embedded in today's stages (Levine, 2019).

The primary categories of pressure injuries range from stage I to stage IV. The skin is not open with a stage I pressure injury, with nonblanchable erythema present. In stage II pressure injuries, the dermis layer is exposed with partial skin loss. Stage II can present as an

intact blister or ruptured blister on the skin. Stage III presents as full-thickness skin loss with destructed subcutaneous layers of the integument. Stage IV is a pressure injury with noted full-thickness skin loss extending into the muscle or as far as the bone. Some sloughing or eschar may also be present in stage IV pressure injuries. An unstageable pressure injury is one covered in slough or eschar, which decreases the ability to view the base of the wound for adequate staging. Deep tissue injuries are deep red, maroon, or purple discolorations of the skin that may or may not have a blood-filled blister (Edsberg et al., 2016).

Definition of a pressure injury or pressure ulcer is worded by the National Pressure Ulcer Advisory Panel (2018) as "localized injury to the skin and underlying tissue usually over a bony prominence as a result of pressure, or pressure in combination with shear and friction." Pressure ischemia is the primary root cause of ulceration. Different extrinsic and intrinsic factors contributing to ulcer formation have been described in the literature and include, friction, shear, increasing age, and immobility (Ostadi et al., 2018). The development of pressure injuries, while a person is admitted to a medical-surgical hospital unit, can be averted by early identification of at-risk patients and implementation of prevention strategies. Without prevention, patients can develop pressure ulcers over boney prominences such as trochanters, scapula, coccyx, and heels (Ostadi et al., 2018).

Needs Analysis

Ultimately, to ensure the organization's health and success, internal strengths need to be maximized to seize available external opportunities, while internal weaknesses need to be overcome and external threats mitigated (Melnyk & Fineout-Overholt, 2018). A SWOT analysis was conducted to evaluate the strengths, weaknesses, opportunities, and threats to help propel the change initiative forward (Appendix A). The organization's greatest strength was its access to resources, qualified staff, and technology. The facility is dedicated to

healthcare education, patient satisfaction, improving outcomes, and technological advancement as a rural hospital. The leadership team is strong and motivated to improve care, as evidenced by their willingness to support this student to implement a quality improvement project to reduce hospital-acquired pressure injuries (Appendix B). The leadership team was undaunted by change agents and was eager to improve their evidence-based practices rather than feeling threatened by possible criticism. The most considerable organizational weakness appeared to be the stagnant corporate culture. The visible artifacts demonstrated include a lack of basic nursing skin assessment, lack of turning patients every two hours, technology underutilization, and a failure to communicate amongst the multidisciplinary team to implement best practices for pressure injury prevention.

Problem Statement

Patients admitted to the medical-surgical unit within a community hospital in Alabama are not exempt from pressure injuries despite current interventions. A quality improvement director, nurse manager, and this student identified an increase in hospital-acquired pressure injuries on a unit in a local rural hospital. The implementation of the quality improvement project sought to meet the need to decrease pressure-related injuries affecting a population admitted to an adult medical-surgical hospital unit in Alabama. The population is vulnerable to pressure injuries because of factors about age, restricted mobility, poor nutrition, and other identified comorbidities. The problem data revealed a rise from a zero percent average rate of hospital-acquired pressure injuries (HAPI's) to an average of 0.64 percent in a specific medical-surgical unit (Alabama Rural Hospital, 2021). The increase reflects an average of one to two hospital-acquired pressure injuries each month on the unit, warranting the need for an evidence-based practice change. This principal investigator also identified a problem with a lack of pressure injury reduction knowledge among the nursing

staff, a reduction in thorough skin assessment with Braden Scale scoring, and an inconsistent turning schedule of hospitalized patients.

The current standard of care preventative strategies used at the community hospital include Braden scale scoring, turning measures, and specialty mattresses for patients with known pressure injuries upon admission. Despite efforts, the rate of pressure ulcers continued to increase. The rise motivated quality improvement and nurse managers to prioritize efforts to decrease the growth rate in the adult medical-surgical unit.

The question answered throughout this quality improvement project was: For patients at risk for developing pressure-related injuries admitted to an adult medical-surgical hospital unit (P), does the implementation of a pressure injury prevention bundle (I) compared to current pressure injury prevention practice (C) impact pressure injuries on the adult medical-surgical hospital unit (O) over eight weeks (T)?

Aims and Objectives

The overarching aims of this project were to:

1. Reduce hospital-acquired pressure injuries among patients in an acute care unit in eight weeks.
    a. To increase nurse knowledge about pressure ulcer prevention.
    b. To implement a pressure ulcer prevention bundle.
    c. To increase pressure ulcer prevention compliance.
2. Increase nurse knowledge of preventing pressure injuries in eight weeks.
    a. To improve nurse awareness of a wall clock turning schedule.
    b. To improve nurse awareness of the completion of the two-nurse skin assessment on admission.
    c. To improve nurse awareness of the need for accurate Braden Scale documentation.

3. Increase pressure injury prevention compliance in eight weeks.

    a. To improve nurse utilization to a wall clock turning schedule.

    b. To improve nurse utilization and adherence to the completion of the two-nurse skin assessment on admission.

    c. To improve nursing documentation of the Braden Scale during hospitalization.

    d. To enhance nurse utilization and adherence to the pressure ulcer prevention bundle.

Review of Literature

A literature review was conducted to provide a synthesis of evidence supporting using a pressure injury prevention bundle to reduce hospital-acquired pressure injuries (Appendix C). The databases searched were Cochrane Database**,** ProQuest, Medscape, MedlinePlus, PubMed, and CINAHL using master headings and Mesh. The CINAHL and PubMed databases provided the best evidence results for the project. The following key terms were used in CINAHL: *nursing role in pressure ulcer prevention, acute care hospital unit, pressure injury risk, implementation, current practice, medical-surgical unit, decubitus ulcer concerns,* with a total of 180 potential sources found through different term combinations. Results were narrowed using peer-reviewed, academic journals with limits within the last 10 years, reducing potential sources to 39 findings. Additional articles were eliminated due to content irrelevance, full-text unavailability, and interventions outside a hospital setting. The following Mesh key terms were applied in PubMed: *nursing role in pressure ulcer prevention, acute care hospital unit, pressure injury risk, implementation, current practice, medical-surgical unit, decubitus ulcer concerns,* with 638 hits. The same inclusion and exclusion criteria were applied to this search for articles. References of the selected articles were searched and evaluated for application to the project problem statement. Results were narrowed to works published in the last five years. Evidence quality was determined using

Melnyk and Fineout-Overholt's level of the evidence rating system and Newhouse's quality of evidence rating system (White, Dudley-Brown, & Terhaar, 2016).

Miller, Emeny, and Freed (2019) conducted a descriptive three-year study using a multidisciplinary assigned group design to measure the reduction in hospital-acquired pressure injuries. The assigned groups set out to evaluate and record all hospital-acquired pressure injuries, reduce preventable full-thickness pressure injuries, and create institutional-wide protocols to prevent pressure injuries. Evidence in the study revealed a multidisciplinary team approach, reflecting significant results in lowering hospital-acquired pressure injuries in hospitalized patients. Although gaps in pressure injury and assessment knowledge were noted among the teams, the wound care nurses accrued a greater understanding of prevention and staging skills (Miller, Emeny, & Freed, 2019).

According to a qualitative study conducted by a researcher on all patients admitted to the thirty-two-bed adult medical-surgical telemetry unit, a bundled approach to pressure injury prevention decreased or eliminated hospital-acquired pressure injury incidences in hospitals. The study began in June 2014 by implementing a comprehensive prevention program using bundled interventions, including two-nurse skin assessments, prophylactic foam border dressings per Braden scoring, safe patient handling while turning, and mandatory pressure injury prevention training. There was a decline in hospital-acquired pressure injury rates in the unit during the project from June 2014 to June 2017. During this time, the department achieved 1,000 days without a hospital-acquired pressure injury and no hospital-acquired pressure injury incidence and prevalence for more than three years (Amon, 2019).

A collaborative effort performed through the Veteran Health Administration National Center for Patient Safety used a twelve-month virtual breakthrough series for a quality improvement project to address the need of reducing pressure injuries. The intervention

project was implemented in Veteran Health Administration acute, and long-term care facilities in the United States with a collaboration of teams made up of nurses, physicians, and researchers. Results show that applying a multifaceted intervention approach and participants' positive attitudes are essential for changing, understanding, and working more preventatively. Feedback discussions among the staff regarding the care provided are imperative for making changes. The execution of a pressure ulcer prevention project must be carefully planned to achieve a shared understanding among nurses regarding the quality of care for improved outcomes (Zubkoff et al., 2020).

Researchers in Qatar reported a quality improvement program implemented in several hospital units, including a 12-bed cardiac intensive care unit serving post-cardiac surgery patients, one intensive care unit, and four high dependency units. Several risk assessment teams were formed to implement a pressure injury prevention bundle, including the surface, skin inspection, keep moving, incontinence, and nutrition components. The incidence of pressure injuries dropped from 6.1/1000 patient days to 1.1/1000 patient days, an 83.5% reduction. The interventions were proven successful, reducing pressure injuries by greater than 80%. The outcomes were sustained for four years. A few limitations included a lack of understanding of the risk management tool used, minimal staff motivation, and limited availability of barrier cream (Gupta et al., 2020).

Several research studies related to patient repositioning schedules and best practices for reducing hospital-acquired pressure injuries were reviewed. Historically, frequent repositioning is recommended to prevent pressure injuries, but the research varies regarding the duration between position changes and the degree of patient positions. A recent Cochrane review of randomized controlled trials in acute care settings assessing the effects of various types of repositioning revealed repositioning patients every two to three hours along with

adjusting the height of the bed to a 30-degree tilt reduced the incidence of pressure injuries compared to every four to six-hour repositioning and raising the head of the bed to a 90-degree tilt. The interventions in the studies were reported to be cost-saving compared with previously reported standard care (Gillespie et al., 2020).

Many dressings such as foams, films, and hydrocolloids typically used to manage open wounds have been investigated and used to prevent pressure injuries in various clinical settings. The appropriate use of dressings for pressure injury prevention is intended to augment existing measures. Standard prevention measures must be implemented and continued even when a dressing is applied. The use of dressings to prevent pressure injuries should not replace standard prevention policies (World Union of Wound Healing Societies, 2016).

In a current observational cohort study, records were reviewed of adult patients 18 years of age and older hospitalized for at least five days within 38 acute care hospitals of the University Health System Consortium in the United States. Eligible subjects had an identified hospital-acquired pressure injury. The study examined the effectiveness and worth of prophylactic five-layer foam sacral dressings to prevent hospital-acquired pressure injury rates in medical-surgical unit settings. Profound pressure injury reductions were noted in association with adopting prophylactic five-layer foam sacral dressings within a preventative protocol. The study concluded that hospitals implementing the dressings to their pressure injury prevention protocols should expect great value. The authors referred to a lack of hospital data limiting the discernment of causality between prophylactic foam dressing use and pressure injury prevention (Padula, 2017).

Theoretical Model

Successful change of practice in a healthcare setting involves the removal of barriers to change, assigning leadership support, and encouraging the sustainable adaptation of the practice change. Kurt Lewin's Change Theory aligns well with changes related to healthcare because it is precise and easy to understand. Lewin's Change Theory provides a framework for prompting individuals within healthcare systems to evaluate and accept changes that may be necessary, consider the possible alterations, and then implement the changes into policy or practice. The theory lays out three steps to the change process: unfreezing, change, and refreezing (Appendix D). The first step in changing practice behaviors is identifying a need for change and readiness for change. The second step of change or transition involves providing continuing education to the healthcare providers regarding the change taking place. The final stage of Lewin's theory is refreezing. The goal of the refreezing step is to support the change process and provide encouragement to the team of providers as the new changes are adopted. Open communication, guidance, leadership, and consistent feedback are critical for sustainable success (Meleis, 2018).

Methodology

This project implemented an evidence-based pressure injury prevention bundle, increased pressure injury prevention compliance, and increased overall knowledge of preventing pressure injuries over eight weeks in a medical-surgical hospital in Alabama. Before initiation, approval from Jacksonville State University's Institutional Review Board was obtained (Appendix E). This student provided an educational session about the pressure ulcer prevention bundle to enhance the nurse's knowledge of prevention using the new bundle intervention (Appendix F). The pressure ulcer prevention bundle consisted of three key components. The first component of the pressure ulcer intervention bundle involved training

nurses in completing a skin assessment with another nurse within two hours of admission. The second component of the bundle ensured the turning of patients every two hours using the wall clock method. Thirdly, nurses utilized the Braden scale tool to identify patients with a Braden score of less than 15, then applied a sacral foam dressing and a pressure reduction mattress during hospitalization.

The educational session provided to the participating staff nurses on the unit addressed the prevention of hospital-acquired pressure injuries based on adult learning principles, the level of the information supplied, and the mode of delivery. The National Pressure Injury Advisory Panel approved the use of the injury images for the educational session (Appendix G). The following areas were included:

■ The definition of pressure ulcers.

■ The staging of pressure ulcers.

■ Reasons to implement a pressure injury reduction program.

■ Roles and responsibilities of team members concerning pressure ulcer risk assessment, prevention, and documentation.

■ Components of the bundle.

■ Skin assessment, including two-nurse skin assessments on admission.

■ Demonstration of positioning techniques using the wall clock turn schedule to decrease the risk of tissue breakdown.

■ Use of the Braden scale for predicting pressure score risk.

■ Instruction on accurate documentation of pertinent data.

■ Measurement of outcomes.

Before the educational session, a baseline of the nurse's general pressure ulcer knowledge was assessed using the Pressure Ulcer Baseline Assessment Tool questionnaire developed by Iowa Health Des Moines (Institute for Healthcare Improvement, 2021) (Appendix H). Upon completing the eight-week project, the nursing staff was reassessed using the same questionnaire developed by Iowa Health Des Moines (Appendix I) to evaluate changes in education related to pressure ulcer prevention practices. The data was collected on paper by the principal investigator and analyzed using a statistician to ensure the accuracy of the data.

Setting

The project site was a 150-bed rural hospital in Alabama. As one of the largest employers in the residing county, the hospital system employs a medical group of providers with many locations offering various services. The project was implemented in one of the medical-surgical units experiencing increased pressure injuries over the last year. The unit contains thirty-one beds with patients admitted with various diagnoses. The patient population on the unit is vulnerable to pressure injuries because of age, restricted mobility, poor nutrition, and chronic diseases including cancer, heart failure, and diabetes.

Population

Full-time day shift and night shift staff nurses employed in the medical-surgical unit embodied the population of interest for the project. The day shift staff roster included 21 employees who were either full-time, part-time, or listed as needed. The night shift staff roster included 16 employees who were either full-time, part-time, or listed as needed. The unit supervisor and charge nurses were excluded from the project, making the potential sample size 40, but only 20 nurses volunteered to participate in the project.

Inclusion/Exclusion Criteria for Nurses

Inclusion criteria:

- All-day shift and night shift registered nurses on the medical nursing unit
- Employment status: full-time, part-time, or per diem

Exclusion criteria:

- Float nurses
- Licensed practical nurses
- Unit administrators

Recruitment

A flyer was developed and placed in the nurse break room, providing information on the educational sessions with specified dates and times (Appendix J). The two educational sessions occurred on one-weekday shift and one-weekend shift at the beginning of the shift change and at the end of the shift change to ensure coverage of most staff nurses. Light refreshments were provided, and educational materials were distributed to all attended staff.

Consent

Consent was obtained from all project participants before the intervention sessions (Appendix K). The principal investigator was also required to complete the CITI Program training program before implementing the project to understand further the necessity of protecting human rights (Appendix L). It was emphasized the quality improvement project was a student-run project to reduce the incidence of pressure injuries. The principal investigator heading the project had no influence over administrative responsibilities in the medical nursing unit concerning scheduling, staffing, evaluations, or promotions. The staff nurse participants were informed that the department and hospital management had no

influence or participation in the project. It was communicated the principal investigator would maintain privacy and confidentially of all information collected for the project.

Design

The Plan-Do-Study-Act (PDSA) cycle was employed to test changes at the medical-surgical hospital unit for the project. The tool steered the change process to determine if the change improved the incidences of pressure ulcers. Through the PSDA cycle, this writer identified, monitored, measured, and evaluated changes throughout the project (Appendix M). The evidence-based framework is structured as an algorithm to reach quality improvement goals through learned experiences and intentional actions. The steps of the cycle consist of integrated parts such as team formation, setting aims, establishing measures, selection of changes, testing the changes, implementation of the changes, and spreading the differences across the organization (Provost, 2019).

Many hospitals have successfully used this cycle model to improve numerous patient outcomes, including reducing hospital-acquired pressure injuries (Institute for Healthcare Improvement, 2021). Utilization of the PDSA method allowed the principal investigator to evaluate the success of an intervention and move on to the next part of the cycle. Also, the use of the PDSA cycle offers simplicity, applicability, and accessibility for nursing staff with minimal quality improvement training or experience (Provost, 2019).

Chart Review

A pre-intervention chart review was conducted upon IRB approval before the launch of the quality improvement project to identify current pressure ulcer prevention tools being utilized on the unit. The electronic medical record system used at the rural hospital was CPSI. The principal investigator did not access the electronic medical record during the project. The unit also uses physical charts stored at the nurse's station for protocols and tools. For the

project, data maintenance and security measures were used to identify nurse compliance with utilizing the intervention skin assessment tool. The skin assessment tool was kept in a secured binder on the unit and deemed not part of the patient's medical records (Appendix N).

Risks and Benefits

There was minimal potential risk for any nurses participating in this project, and it was regarding confidentiality. Any risk regarding confidentiality and questionnaire responses was mitigated by the principal investigator's security of the results and assurance that participation would not affect their job status. Benefits to the staff nurses included improving standards of nursing care and improving patient outcomes.

The project guidelines adhered to all ethical standards required to protect the nurses involved. The project observed the principles of non-maleficence and beneficence by acting in the best interest of the participants while minimizing the risk of harm. The principle of autonomy was reflexed by honoring freedom of choice to participate in the project. The principle of justice was encouraged by treating all participants equitable, regardless of age, gender, religion, race, or ethnicity (Yoder-Wise, 2018).

Compensation

All nurse participants were offered light refreshments and other supporting educational handouts during the educational sessions. Educational posters were also posted throughout the unit (Appendix O).

Timeline

The timeline established expectations by providing an overview of the project process including planning, development, implementation, and evaluative dissemination. The timeline allowed the principal investigator to practice time management and organization throughout

the project. The timeline also served as a valuable tool for assessing needs and changes during the project (Appendix P).

Budget and Resources

The costs incurred throughout the project were minimal and paid by the principal investigator. The organizational site did not incur any financial expenditure for the project. The meeting space and technology needed for each session were provided by the facility. The participants did not receive any monetary benefit for attending the educational sessions (Appendix Q).

Evaluation Plan

Evaluation is vital to determine the success of the project. The components of the evaluation process include identifying, monitoring, and measuring the outcomes to determine the overall success of the change project. Most importantly, evaluation provides valuable information about the extent of goals met and efficient utilization of resources during the implementation of the project (Zaccagnini & White, 2017). A reputable statistician employed at a community college agreed to guide the selection and application of the statistical tests for data analysis. Descriptive statistics consisting of frequency, percentage, mean, variance, and standard deviation were employed to organize quantitative data. The initial planning and effective project management assisted in managing extraneous variables.

The principal investigator provided feedback and bedside support to the nursing staff to encourage implementing a pressure injury prevention bundle in the adult medical-surgical unit to reduce pressure injuries potentially. Precise calculation of the incidence rates was used to evaluate outcomes of the bundle implementation on reducing the incidence of pressure injuries in the adult medical-surgical unit (Sylvia & Terhaar, 2018). Incidence rate refers to the total number of hospital-acquired pressure injuries in the unit in a specific timeframe

multiplied by 100 and divided by the total number of patients in the same timeframe (Sylvia & Terhaar, 2018).

Adherence to the implementation of the pressure injury reduction bundle was monitored through weekly chart reviews (Appendix R). The compliance rate was calculated to reveal the percentage of instances the nurses completed the skin assessment tool during the project. Feedback was provided weekly to encourage the accurate completion of the skin assessment tool. The nurse participants used a private token system to motivate one another.

Analysis of differences in knowledge gained from the educational intervention, pre-education, and post-education was conducted using a paired t-test in Excel. The test compares the means of two measurements retrieved from the same participant (Sylvia & Terhaar, 2018). For this project, the paired t-test was utilized to determine the difference between the means of the pre and post-results using the Pressure Ulcer Baseline Assessment Tool questionnaire (Institute for Healthcare Improvement, 2021).

Data Maintenance and Security

All efforts were made to keep personal information in the research record confidential. No names or personal data were collected before, during, or after the project. Only a distinct identification code was placed on each participating nurse's pre and post-questionnaire without the addition of any other personal identifiers for the educational intervention component. The identification codes were randomized using a random number function through Excel, allowing this student to compare and contract questionnaire results. The primary investigator administered the questionnaires, and the master list of identification codes linked to the participant nurses was kept separately in a secured locked box in the unit office. Questionnaires were also stored within the hospital unit in a locked box. The principal

investigator was the only person accessing the locked box containing the participant questionnaires.

A pre-intervention chart review was conducted before the launch of the quality improvement project to identify current pressure ulcer prevention tools being utilized in the unit. The unit uses physical charts stored at the nurse's station, and only the last four digits of the medical record number were used to identify nurse compliance with using the skin assessment tool for the project. By only using the last four digits of the medical record number, no patient information was identifiable in the project data. The intra-intervention chart reviews began the first week after the educational session for the nursing staff. They continued weekly for eight weeks to evaluate compliance and guide opportunities to reinforce the change practices. The skin assessment tool was kept in a designated secured file folder for review by the principal investigator. Upon completion of the project, the IRB was closed, and the final manuscript was submitted; all information collected for the project was destroyed following the University's guidelines.

Results

HAPI Rates from Project Site Data

The pre-intervention data revealed a rise from a zero percent average rate of hospital-acquired pressure injuries (HAPI) to an average of 0.64 percent over the past year in a specific medical-surgical unit in the facility (Alabama Rural Hospital, 2021). The increase reflected an average of one to two hospital-acquired pressure injuries each month on the unit, warranting the need for an evidence-based practice change. Eight weeks after the project implementation, data extracted showed a decline of 0.23% HAPI's on the unit, down from 0.63% to 0.41% average incidences (Alabama Rural Hospital, 2022). The results can infer that the prevention bundle reduces HAPI development (Appendix S).

Results of Chart Review

Out of the 52 charts reviewed pre-intervention, zero had a pressure injury intervention tool documented by nurses on the medical-surgical nursing unit. Post-intervention chart review examined 244 charts over eight weeks to evaluate compliance rates using the two-nurse skin assessment tool within two hours of new patient admissions. Post-intervention data suggests 63.94% of the nursing staff completed the skin assessment tool reflecting a change in nursing behavior. There was a numerical increase in the number of completed charts for the pressure reduction prevention documentation: from zero pre-intervention to 156 post-intervention (Appendix T).

Results of Questionnaire Responses

Analysis of differences in knowledge gained from the educational intervention, pre-education, and post-education was conducted using a paired t-test for the 20 participants using questionnaires. An alpha level of 0.05 was chosen for the sample size (n=20). The first paired t-test (pre-M=72, SD=6.96/post=M=91, SD=5.53) investigated each participant's pre and post-intervention questionnaire results (Appendix U). The results indicated each participant ($t=3.29$, $p<0.001$) revealed a statistically significant improvement in pressure injury reduction knowledge between the pre and post-intervention scores on the questionnaires. Of the 20 participants, 19 demonstrated a gain in knowledge, supporting the hypothesis that providing an educational session to increase nurse knowledge about pressure ulcer prevention would be efficacious.

Discussion

This project sought to reduce hospital-acquired pressure injuries, increase nurses' knowledge of preventing pressure injuries, and increase pressure injury prevention compliance. The outcomes were met in all aspects of the bundle; however, the need for

improvements was evident. The results of the educational intervention were encouraging. Each participant revealed a statistically significant improvement in pressure injury reduction knowledge between the pre and post-intervention scores on the questionnaires for the educational session provided to reduce hospital-acquired pressure injuries (HAPI). Nineteen of the twenty nurse participants demonstrated a gain in knowledge, supporting the hypothesis that providing an educational session to increase nurse knowledge about pressure ulcer prevention would be effective.

The quality improvement project provided initial support in establishing a HAPI prevention bundle to identify and improve the outcomes of patients at risk and implement preventative methods to cease pressure injury development. Results conveyed an improvement in the rate of incidences of hospital-acquired pressure injuries. Eight weeks after the project implementation, data showed a decline of 0.23% HAPI's on the unit, down from 0.63% to 0.41% average incidences (Alabama Rural Hospital, 2022). The results can infer the prevention bundle contributes to reducing HAPI development. Bundled approaches are frequently used for pressure injury prevention because of the ease of incorporating multi-facet intervention methods (Tayyib & Coyer, 2017).

The project exhibited changes are achievable when a problem is paired with evidence-based practices and institutional goals. Compliance with the bundle implementation practices was critical to meeting the project outcomes. The intra-intervention chart reviews began the first week after the educational session for the nursing staff. They continued weekly for eight weeks to evaluate compliance and guide opportunities to reinforce the change practices. Post-intervention chart review examined 244 charts over eight weeks to assess compliance rates using the two-nurse skin assessment tool within two hours of new patient admission. Post-intervention data suggests 63.94% of the nursing staff completed the skin assessment tool

reflecting a change in nursing behavior. Barriers, including lack of staffing, forgetfulness, and time management, mirror recent research explaining the lack of 100% bundle compliance with completing the two-nurse intervention tools (Amon, 2019).

Implications

Implications for Clinical Practice

The project's aims were met regarding clinical practice by demonstrating improvement in nurse knowledge and adherence to preventing pressure injuries through education and implementation of a pressure injury prevention bundle. The project contributed to the existing evidence highlighting the importance of educating healthcare staff on pressure injury prevention and the effectiveness of reducing pressure injuries in a medical-surgical unit environment. The education of health care professionals is a nationally recognized component of pressure injury guidelines which influences behavioral change to encourage preventative modalities (Porter-Armstong et al., 2018).

Implications for Healthcare Policy

Various policies currently exist through major government agencies, such as The Centers for Medicare and Medicaid Services, regarding pressure injury prevention measures hospitals must meet. Still, there are always opportunities for change and improvements. Government and private sector insurance companies may flex stricter hospital guidelines by setting the stage with positive outcomes involving pressure injury reduction programs within hospital units. If reimbursement is determined by the rigor of the core measures practiced, hospitals may place more significance on investing in resources to develop comprehensive pressure injury reduction protocols (Porter-Armstong et al., 2018).

Implications for Quality and Safety

When leaders in healthcare set goals for their hospitals, such as preventing pressure-related injuries, they use a process called quality improvement. Quality improvement is an organized point of view guided by data to improve the quality and safety of healthcare delivery, focusing on efficient, safe, effective, timely, and patient-centered care. Enhancing quality and safety is a fast-growing focus in nursing and healthcare systems, as medical institutions desire to achieve efficiency, lower healthcare costs, and ensure quality patient outcomes (Gagnon, 2021). This project demonstrated an overall improvement of quality and safety in proper delivery of an evidence-based practice change in implementing a pressure injury prevention bundle on a medical-surgical hospital unit which may increase the acquisition of similar prevention bundles in other units in the hospital.

Implications for Education

Many research articles emphasize the value education provides in reducing the incidence of hospital-acquired pressure ulcers. Throughout this project, the process outcomes gleam the need for instruction to execute practice changes. All hospitals require constant change and innovation for improvement. Educational adjustments are pivotal and involve the knowledge, skills, and positive attitudes of those involved (Melnyk & Fineout-Overholt, 2018). Hospitals with nurse educators and continuing education classes should consider adding intermittent pressure injury prevention offerings during employee orientation and unit-specific sessions.

Limitations

One of the limitations of the project was the short time frame. The project was implemented over eight weeks, only allowing for assessing short-term goals. Another limitation was the lack of implementation of other pressure prevention measures such as

nutrition, hydration, heel protectors, and protection from medical equipment devices. Lastly, the pandemic situation brought by COVID-19 during the implementation of the project reflected limitations. As a result of the pandemic, the nursing staff was strained with minimal staffing, causing an increase in patient load for the staff nurses, which interfered with access to two nurses to assess a patient's skin on admission and lack of nursing staff available to turn patients frequently. Lack of time management was evident because of the nurse-to-patient ratios. The nurse participants verbalized frustration over the workload and forgetting to implement all aspects of the pressure injury bundle throughout the project. This principal investigator was diligent about being hands-on and encouraging during the project to keep the morale up.

Dissemination

The administration recognized a pressure ulcer issue in the medical-surgical hospital unit and requested assistance with reducing the problem. This student presented the project's outcomes to the key stakeholders, including the nurse manager, the quality improvement director, and the nursing staff in the medical-surgical unit at the hospital. Additionally, the findings of the project were disseminated through the three P's: poster, presentation, and paper. The Doctor of Nursing Practice project was presented in a poster presentation at Jacksonville State University’s dissemination day. The project manuscript has been placed in the JSU repository system for public access.

Sustainability

Given the continued need for pressure ulcer prevention, this project is anticipated to be sustainable with the commitment of leadership in the unit. Pressure ulcers are prevalent in other units of the community hospital, and this low-cost quality improvement project may be implemented in different adult inpatient settings with similar preventative measures used in

the pressure ulcer prevention bundle tailored to specific environments and needs. This nurse plans to monitor and assist the hospital in reaching pressure injury reduction goals.

Plans for Future Scholarship

While this quality improvement project added to the existing evidence supporting the use of bundles to reduce hospital-acquired pressure injuries, further investigation is warranted to continue the growth of best practices for patient outcomes. Other implications from this project highlight the need for alternative measures to increase the engagement of all healthcare disciplines to excel in reducing pressure injuries. One idea for future scholarship implementation could involve prevention teams made up of wound care nurses, dietitians, physical therapists, and nursing assistants to prevent pressure injuries. Knowledge gained from this project can be exercised by healthcare facilities seeking to educate new nursing staff on pressure injury prevention bundles and best practices for improved patient outcomes during hospitalization.

Conclusion

Inadequate pressure injury prevention strategies can cause physical and emotional pain, prolong hospitalizations, increase healthcare costs, and death. The implementation of this quality improvement project met the need to decrease pressure-related injuries affecting a population admitted to an adult medical-surgical hospital unit in Alabama. The participating nurses in the unit gained knowledge about reducing HAPI's through evidence-based intervention tools.

Compliance rates with the admission bundle varied among the different aspects. There was a moderate level of compliance with the two-nurse skin assessments, including the bundled interventions of turning patients using the wall clock method and Braden Scale scoring. Pressure injury prevention knowledge also improved significantly post-

implementation related to the educational sessions. There was a decrease in HAPI's during the implementation period of the bundle. The decrease correlates with the research evidence proving pressure injury prevention bundles are effective. The insight gained from this project can be practical in future projects aiming to eliminate HAPI's through prevention bundles. The outcomes are in alignment with the mission and vision of the hospital of providing high-quality healthcare for the community.

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Appendix A

SWOT Analysis

Strengths

- Highly trained healthcare workforce
- Wound care Nurse team
- Skin assessments charted on an electronic health record called CPSI
- Braden Scale to determine patient risk and prevention of skin breakdown form to document the interventions
- New nurses orient on pressure ulcer prevention through computer-based training
- Strong leadership and administrative support

Weaknesses

- Nurses fail to assess patient's skin anteriorly and posteriorly within two hours of admission
- Nurses fail to assess patient's skin over bony prominences or underneath medical devices every shift
- Nurses do not always complete Braden Scale every shift
- Nurses do not initiate and chart pressure ulcer prevention interventions in at-risk patients
- No training program exists for pressure ulcer prevention documentation after new hire training
- Nurses fail to consistently turn patients every two hours during a shift
- Stagnant organizational culture

Opportunities

- Company representatives in-service employees on units about skin protectant products, dressings, and support surfaces
- Annual national wound conference meetings
- Pressure reduction surveys conducted quarterly on all nursing units
- Quarterly training on EBP pressure ulcers prevention and wound care practices

Threats

- Legal and ethical implications for pressure ulcers to the nurses and facility
- Lack of insurance reimbursement for hospital-acquired pressure ulcers
- Total cost to the hospital for hospital-acquired pressure ulcers
- Nurses are held accountable for hospital-acquired pressure ulcers that develop and worsen during admission
- The reputation of the hospital is at stake

Appendix B

Letter of Support

Alabama Rural Hospital

October 27, 2021

To Whom It May Concern:

This letter is to document C **Alabama Rural Hospital** support for Laura Deanna Brock's Doctor of Nursing Practice (DNP) project entitled "Implementing a Pressure Injury Prevention Bundle to Decrease Hospital-Acquired Pressure Injuries in an Adult Medical-Surgical Unit."

Please let me know if you need any additional information or have any questions or concerns.

Sincerely,

Redacted

Appendix C

Table of Evidence

Article #	Author & Date	Evidence Type	Sample, Sample Size, Setting	Study Findings	Limitations	Evidence Level & Quality
			Databases accessed: Cochrane Database**,** ProQuest, Medscape, MedlinePlus, PubMed, and CINAHL **Timeframe:** 2001– 2021 **Keywords:** *nursing role, pressure ulcer prevention, acute care hospital unit, Implementation, current practice, medical-surgical unit, pressure ulcer risk, decubitus ulcer concerns*			
1	Amon, B. V. (2019)	Single, qualitative study	All patients admitted to the 32-bed adult medical-surgical telemetry unit. Excluded: Patients and families who refused recommended care bundle due to	There was a decline in hospital-acquired pressure ulcers rates on the study unit from June 2014 to June 2017. The unit reached 1,000 days	During the study, the unit had some challenges in sustaining best practices. Although hospital-acquired pressure injury prevention was a hospital initiative, staff	Level VI Quality C

			personal preferences.	without a pressure injury as well as no hospital-acquired incidence and prevalence for more than 3 years.	noticed various nursing staff who floated to the unit were unfamiliar with the unit-specific implementation of new pressure injury prevention practices. This required regular staff to orient visiting staff to the new method. At times, nursing staff encountered resistance from patients or families who declined the recommended care due to personal preferences. A few clinical limitations were difficult to overcome, such as poor nutrition and vulnerable skin structures.	
2	Gillespie et al., (2020)	Meta-Analysis	Published randomized controlled trials, including cluster-randomized controlled trials assessing the effects of various types of repositioning modalities with measuring pressure injuries in any adult care setting.	The analysis revealed every 2 to 3 hours, patient repositionin g of the body and height of the bed set at a 30-degree tilt reduced the incidence of pressure injuries compared to	Lack of robust evaluations of repositioning frequency and positions for pressure ulcer prevention and ambiguity about the effectiveness. All studies were at high risk of bias.	Level I Quality B

				every 4 to 6 hours and height of the bed at a 90-degree tilt. The planned intervention were reported to be cost-saving compared with previously reported standard care.		
3	Gupta et al., (2020)	Quality Improvement Report	12-bed cardiac intensive care unit in Qatar serving post-cardiac surgery patients, one ICU, and four high dependency units.	Risk assessment teams were formed to implement the skin inspection, keep moving, incontinence, and nutrition pressure injury prevention bundle. The incidence of pressure injuries dropped from 6.1/1000 patient days to 1.1/1000 patient days, an 83.5% reduction. The interventions were successful, reducing pressure injuries by	Lack of understanding of the risk management tool. The staff was not aware of their data, so there was no motivation for improvement. The availability of barrier cream was limited.	Level V Quality A

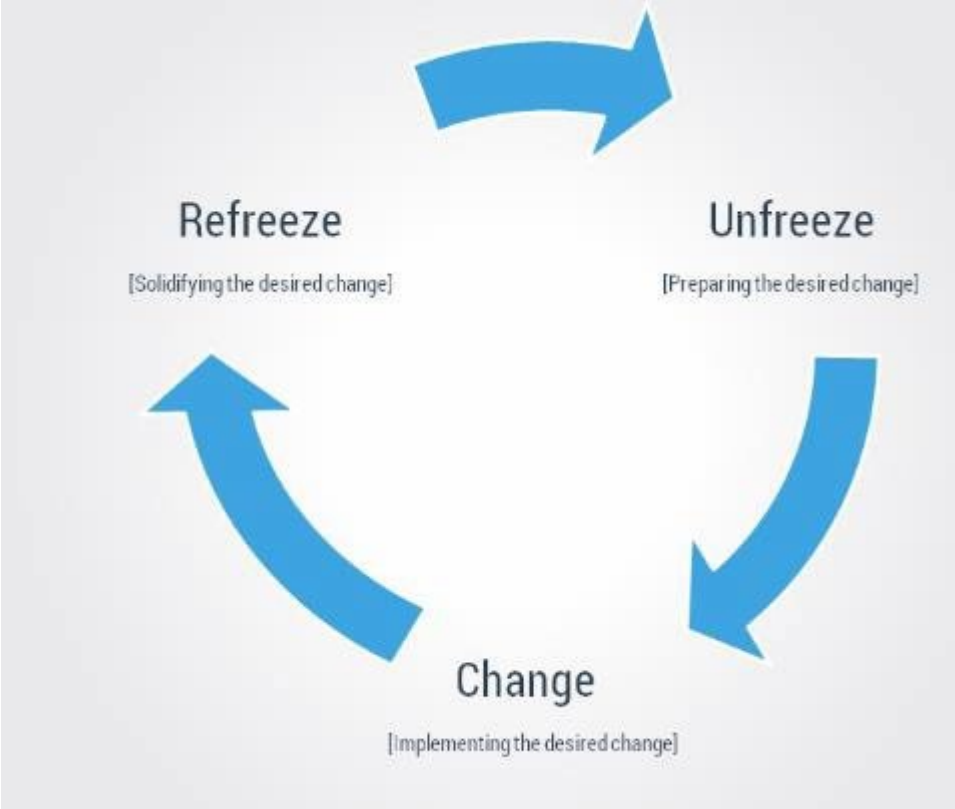
				80%. The outcomes were sustained for four years.		
4	Miller, M., Emeny, T., & Freed, G. (2019)	Descriptive study	Multiple units throughout a tertiary acute care center with 400 beds within a level 1 academic medical center serving rural New Hampshire.	The teams noted the occurrence of hospital-acquired pressure injuries in hospital units, reduction of preventable full-thickness pressure injuries to zero, and encouraged institutional changes. Since the team's inception in July 2015, an 89% reduction of full-thickness hospital-acquired pressure injuries has been seen. The effort has involved all inpatient units and surgical areas. The data demonstrate a multi-disciplinary pressure injury prevention team of	This work has several limitations including the use of the event reporting system as a measure of incidence resulted in missed injuries. The system captures pressure injuries at the stage of initial identification and does not reflect the progression of the injury in the data. Infrastructure support was lacking due to staffing constraints impeding the full potential of the nurse leaders to focus on pressure injury prevention work.	Level VI Quality A

				engaged clinicians can reduce the number of preventable hospital-acquired pressure injuries.		
5	Padula, W. (2017)	Observational Cohort Study	Records were reviewed of adult patients eighteen years of age and older who were hospitalized at least five days within thirty-eight acute care hospitals of the University Health System Consortium in the United States. Subjects had an identified hospital-acquired pressure injury.	The study examined effective methods and value of prophylactic 5-layer foam sacral dressings to prevent hospital-acquired pressure injury rates in acute care settings. Profound pressure injury reductions were noted in association with adoption of prophylactic 5-layer foam sacral dressings within a preventative protocol.	Lack of hospital data limited the discernment of causality between prophylactic foam dressing use and pressure injury prevention in general. Surveillance data were skewed resulting in challenges in distinguishing between various stages of pressure ulcers.	Level III Quality A
6	Zubkoff et al., (2020)	Quality Improvement Collaborative Report	The Veteran Health Administration National Center for Patient Safety used a twelve-month virtual breakthrough	The combined pressure injury rate for all teams was reduced from 1.0 to 0.8 per 1000 beds days	Since the work was done in the Veteran Health Administration, the results were self-reported, limiting generalizability. Participation	Level V Quality B

			series for a quality improvement project addressing the need of reducing pressure injuries. Conducted in Veteran Health Administration acute and long-term care facilities in the United States with a collaboration of teams with nurses, physicians, and researchers.	(P=.01). The combined pressure injury rates for long-term care units was reduced from 0.8 to 0.4 per 1000 bed days of care (p=0.21).	was voluntary, causing bias in low versus high performing facilities.	

Appendix D

Lewin's Change Theory



(Meleis, 2018)

Appendix E

IRB Approval Letter

JSU | INSTITUTIONAL REVIEW BOARD
JACKSONVILLE STATE UNIVERSITY

Institutional Review Board for the Protection of Human Subjects in Research
203 Angle Hall
700 Pelham Road North
Jacksonville, AL 36265-1602

November 29, 2021

Laura Brock
Jacksonville State University
Jacksonville, AL 36265

Dear Laura:

Your protocol for the project titled "Implementing a Pressure Injury Prevention Bundle to Decrease Hospital-Acquired Pressure Injuries in an Adult Medical-Surgical Unit" **11292021** has been granted exemption by the JSU Institutional Review Board for the Protection of Human Subjects in Research (IRB).

If your research deviates from that listed in the protocol, please notify me immediately. One year from the date of this approval letter, please send me a progress report of your research project.

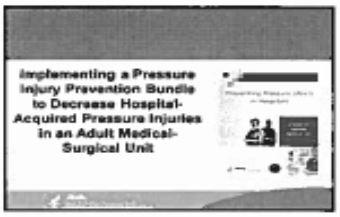
Best wishes for a successful research project.

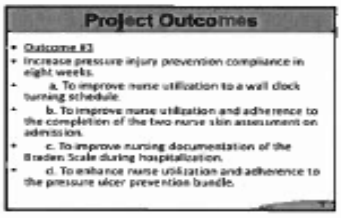
Sincerely,

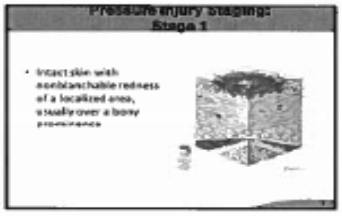
Lynn Garner
Associate Human Protections Administrator, Institutional Review Board

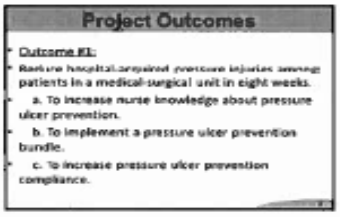
Appendix F

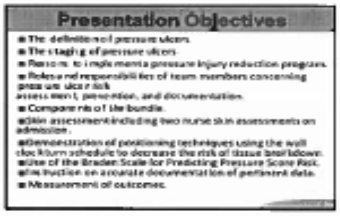
Educational Session Slides

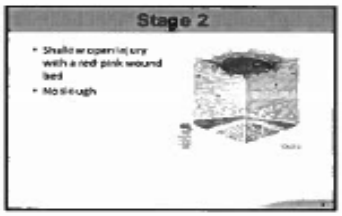


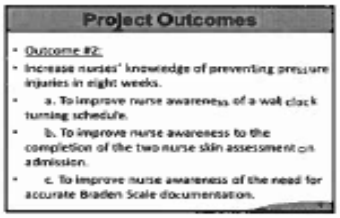


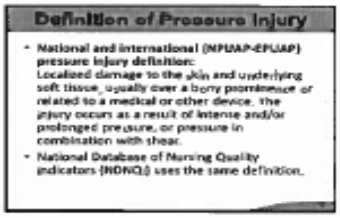


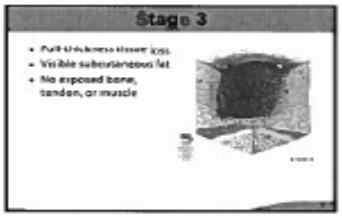


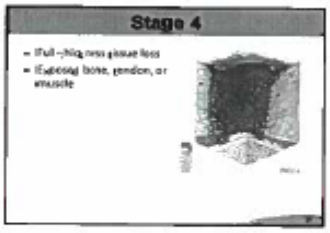


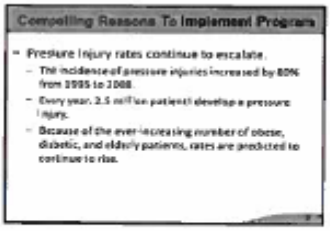


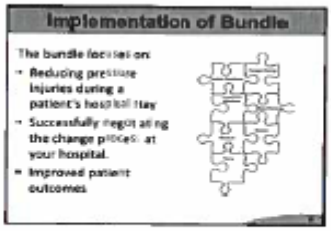












Risk Assessment Scale

- Only one part of risk assessment
- Meant to be used in conjunction with a review of other risk factors and clinical judgment
  - More factors to consider
- Especially helpful in identifying patients at mild to moderate risk
- Scale currently used:
  - Braden Scale

How To Interpret Braden Score

- **Total score** ranges from **6 to 23**.
- **Lower Braden score** indicates **higher level of** risk for pressure ulcer development.
- In most cases, a score of **18 or less** indicates at-risk status. Tailor this number to fit your hospital or unit.
- **Low subscale score** indicates risk from that factor. Address all deficits in care planning.

Do not rely on the total score alone.

Measurement of Outcomes

- Increase in the nurse's knowledge regarding the reduction of hospital-acquired pressure injuries
- Compliance with the bundle implementation
- Reduction in the incidence of pressure injuries

Braden Scale

- Six subscales, scored from 1-4 or 1-3:
  - Sensory perception
  - Moisture
  - Activity
  - Mobility
  - Nutrition
  - Friction/Shear

*With part of the Braden Scale are you evaluating the patient's ability to respond to verbal command? (Sensory Perception)

Currently used in CPSI

Purpose of Measurement

- Measuring pressure injury prevalence and incidence rates and looking at prevention practices tells you:
  - If any area of care can be improved.
  - If you are meeting your aim.
  - If practice changes improve incidence.
  - If you are sustaining improvements.

If you don't know where you are, how do you know if you are improving?

How To Score Risk Factors

- Score risk factors from 1 to 4 except—
  - Score friction/shear from 1 to 3
- Risk factor score of 1 is the lowest level of functioning.
- If a category falls between two numbers, choose the lower score.

Keep up the Good Work!

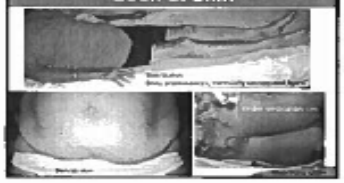
Current Practice- Accurate Documentation is key!

**Utilize the Braden scale tool to identify patients with a Braden score of less than 15 then apply a sacral foam dressing and a pressure reduction mattress during hospitalization.

Measures

- Measures used in monitoring pressure injury rates for this project:
  - Incidence of hospital acquired pressure injuries

Look at Skin



Skin Assessment Frequency

- For the bundle, the two nurse assessment is only within two hours of admission.
- Then the nurse should assess and document the skin condition every 8 hours, as the condition warrants, and on discharge.

Turn Patients Every 2 Hours

Wall Clock Method

Touch Skin

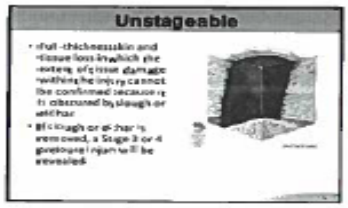
Skin temperature may predict pressure ulcer risk.

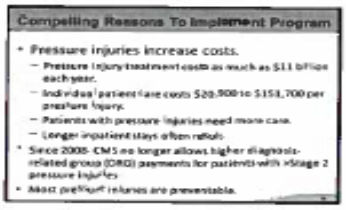
Skin Assessment Tool

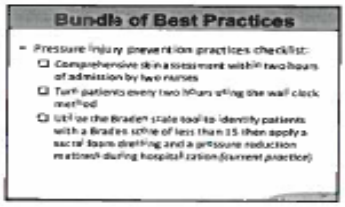
Relieve the Pressure!

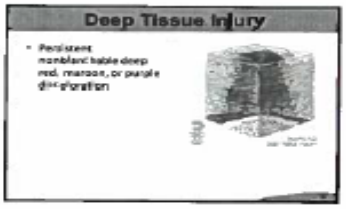
The wall clock turning signs will on the wall above the patient's bed for nurse viewing, and on the wall at the foot of the bed for patient viewing.

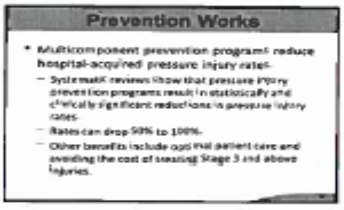
Patient turning by the wall clock method can be delegated to the PCA but nurse must verify and document the patient's position in CPSI.

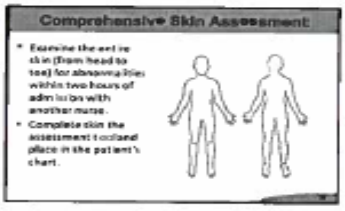


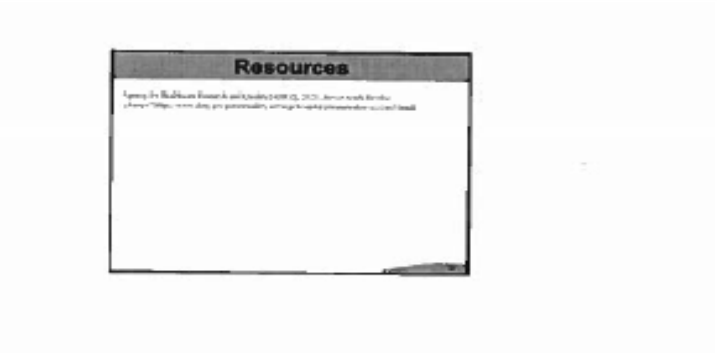












(National Pressure Ulcer Advisory Panel, 2017).

Appendix G

NPIAP Permission

NPIAP - Permission Use Request

Juliette Avery <juliette@mckennamanagement.com>
Wed 11/24/2021 10:13 AM
To: Juliette Avery <juliette@mckennamanagement.com>

You don't often get email from juliette@mckennamanagement.com. Learn why this is important

EXTERNAL: This email originated from outside of Wallace State Community College. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello,

Thank you for your request.

Please complete the attached permission request form and return to ana@npiap.com.

- All staging illustrations must be accompanied with corresponding staging definitions as provided by NPIAP. Find definitions HERE.
- No modifications/alterations allowed to illustrations, photos or definitions
- Printed materials must clearly display the Copyright and logos
- Printed materials must be properly cited: Used with permission from the National Pressure Injury Advisory Panel (NPIAP). Copyright 2021 NPIAP
- This approval is not transferrable to others or used for other purposes
- If required, payment must be received before approval granted

Let me know if you have any questions.

Juliette Avery
Program Coordinator
McKenna Management, Inc.
4 Lan Drive, Suite 310, Westford, MA
Email: Juliette@McKennaManagement.com

Appendix H

Pre-Intervention Questionnaire

Pressure Ulcer Baseline Assessment for Registered Nurse

For which factors in the Braden Scale are you evaluating the patient's ability to respond to verbal command?

A. Activity
B. Mobility
C. Sensory/Perception
D. Friction/Shear

Minimally, a patient in the acute care setting should be assessed for pressure ulcer risk at least every:

A. 48 hours
B. 24 hours
C. 8 hours
D. 4 hours

How often should you, the RN, assess and document skin condition?

A. Daily
B. Once a shift
C. Upon admission and discharge, every shift, and as patient condition warrants
D. Upon admission and discharge

What can you, the RN, do when one of your patients has discoloration of the skin (red, purple, blue) indicating pressure?

A. See what happens over the next 24 hours.
B. Let the next nurses know about it. Start a skincare plan.
C. Place the patient on a pressure-reducing surface and explain to the patient and family that the patient needs to limit pressure to the area.
D. B&C from above

Who is the *primary* person accountable for patient skin assessment, pressure ulcer prevention, and documentation?

A. WOC Nurse (ET nurse)
B. RN
C. Nursing assistant
D. All of the above

(Institute for Healthcare Improvement, 2021)

Appendix I

Post-Intervention Questionnaire

Pressure Ulcer Baseline Assessment for Registered Nurse

For which factors in the Braden Scale are you evaluating the patient's ability to respond to verbal command?

A. Activity
B. Mobility
C. Sensory/Perception
D. Friction/Shear

Minimally, a patient in the acute care setting should be assessed for pressure ulcer risk at least every:

A. 48 hours
B. 24 hours
C. 8 hours
D. 4 hours

How often should you, the RN, assess and document skin condition?

A. Daily
B. Once a shift
C. Upon admission and discharge, every shift, and as patient condition warrants
D. Upon admission and discharge

What can you, the RN, do when one of your patients has discoloration of the skin (red, purple, blue) indicating pressure?

A. See what happens over the next 24 hours.
B. Let the next nurses know about it. Start a skincare plan.
C. Place the patient on a pressure-reducing surface and explain to the patient and family that the patient needs to limit pressure to the area.
D. B&C from above

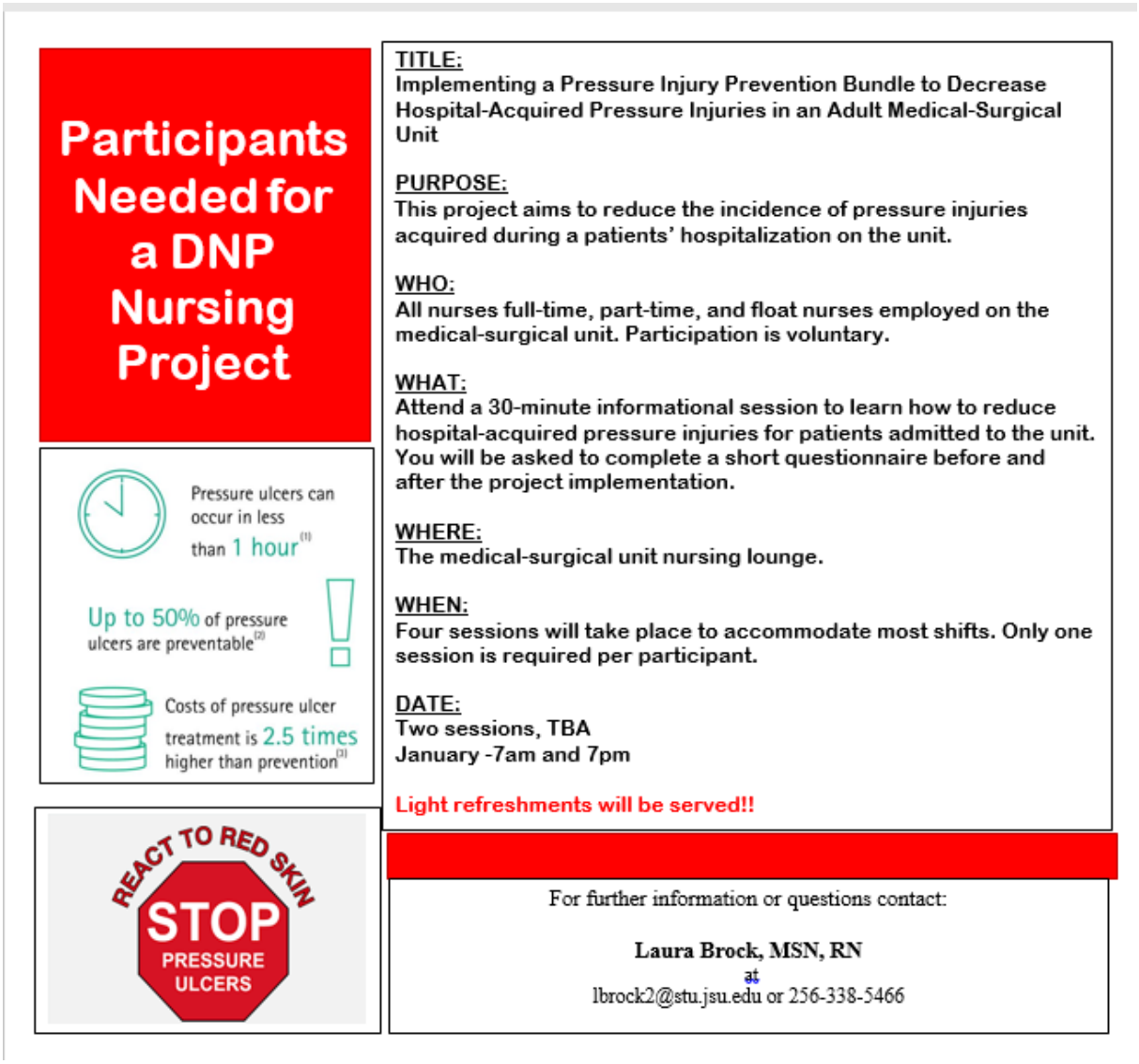
Who is the *primary* person accountable for patient skin assessment, pressure ulcer prevention, and documentation?

A. WOC Nurse (ET nurse)
B. RN
C. Nursing assistant
D. All of the above

(Institute for Healthcare Improvement, 2021)

Appendix J

Participant Recruitment Flyer



Appendix K

Participant Consent Form

Title of the Project: Implementing a Pressure Injury Prevention Bundle to Decrease Hospital-Acquired Pressure Injuries in an Adult Medical-Surgical Unit

Principal Investigator: Laura Deanna Brock, MSN, RN

This consent form is part of an informed consent process for a DNP student project. This form will provide helpful information to help guide you about your decision to volunteer for this project. It will help you to understand what the project is about and what will occur during the project. If you have questions at any time during the project, please contact the principal investigator for information and clarification.

If all of your questions have been answered and you want to participate in the project, please complete the attached survey and attend the educational session. You are not giving up any of your legal rights by volunteering for this quality improvement project.

Why is this project being done?
This project aims to reduce the incidence of pressure injuries acquired during a patients' hospitalization on the unit. The standard of care preventative strategies currently being used includes Braden scale scoring, turning measures, and specialty mattresses for patients with known pressure injuries upon admission. Despite efforts, the rate of pressure ulcers continues to increase. The rise has motivated quality improvement and nurse managers to prioritize efforts to decrease the growth rate in the medical-surgical unit.

What are the potential benefits of the project?
The participants in the population will benefit by gaining knowledge about decreasing pressure injuries and the reasons to reduce pressure injuries along with specific interventions. The patients receiving the interventions from the project will benefit from a reduction or elimination of hospital-acquired pressure injuries.

What will you be asked to do if you take part in this research project?
The principal investigator will ask you to complete a short questionnaire before attending an educational session on a pressure injury prevention bundle protocol to begin on the medical-surgical unit. The educational session will be provided in the nurse break room and last approximately 30 minutes before or after one of your shifts. A second follow-up short questionnaire will be provided one week after the completion of the eight-week project.

What are the risks or discomforts you might experience if you take part in this project?
There is no need to be concerned about any harm from participating in the project. The project will have no influence or involvement from management and participation is voluntary. All management will be excluded from participation, and no information regarding your participation will be shared with management. Participation in this eight-week project is of no cost to you.

How will information about you be kept private or confidential?
All efforts will be made to keep your personal information in your research record confidential, but total confidentiality cannot be guaranteed. There will be no names or personal information collected before, during, or after the project. Only a randomized ID code will be placed on your questionnaire without the addition of any other personal identifiers. Questionnaires will remain within the medical-surgical unit, and information will not be removed from the premises. After the project, all identifiable information will be destroyed.

What will happen if you do not wish to participate in the project or if you later decide not to stay in the project?
Participation in this project is voluntary. You may choose not to participate, or you may change your mind at any time. In that case, your relationship with the project team will not change, and you may do so without penalty and without loss of benefits to which you are otherwise entitled. You may also withdraw your consent for the use of data already collected involving you, but you must do this in writing to Laura Brock at the email provided during the educational sessions.

Who can you call if you have any questions?
If you have any questions about taking part in this project you can call the principal investigator:

Laura Deanna Brock, MSN, RN

AGREEMENT TO PARTICIPATE

1. Subject consent:

I have read this entire form, or it has been read to me, and I believe I understand what has been discussed. All of my questions about this form and the project have been answered. I agree to take part in this DNP project.

Subject Name:_____

Subject Signature:_____ Date:_____

2. Signature of Investigator/Individual Obtaining Consent:

To the best of my ability, I have explained and discussed the project's complete contents, including all of the information contained in this consent form. All questions of the subject and those of their parent or legally authorized representative have been accurately answered.

Investigator/Person Obtaining Consent (printed name):_____

Signature:_____ Date: _____

Appendix L

CITI Training

CITI PROGRAM

Completion Date 30-Aug-2021
Expiration Date 29-Aug-2024
Record ID 44538955

This is to certify that:

Laura Brock

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

Social and Behavioral Responsible Conduct of Research
(Curriculum Group)
Social and Behavioral Responsible Conduct of Research
(Course Learner Group)
1 - RCR
(Stage)

Under requirements set by:

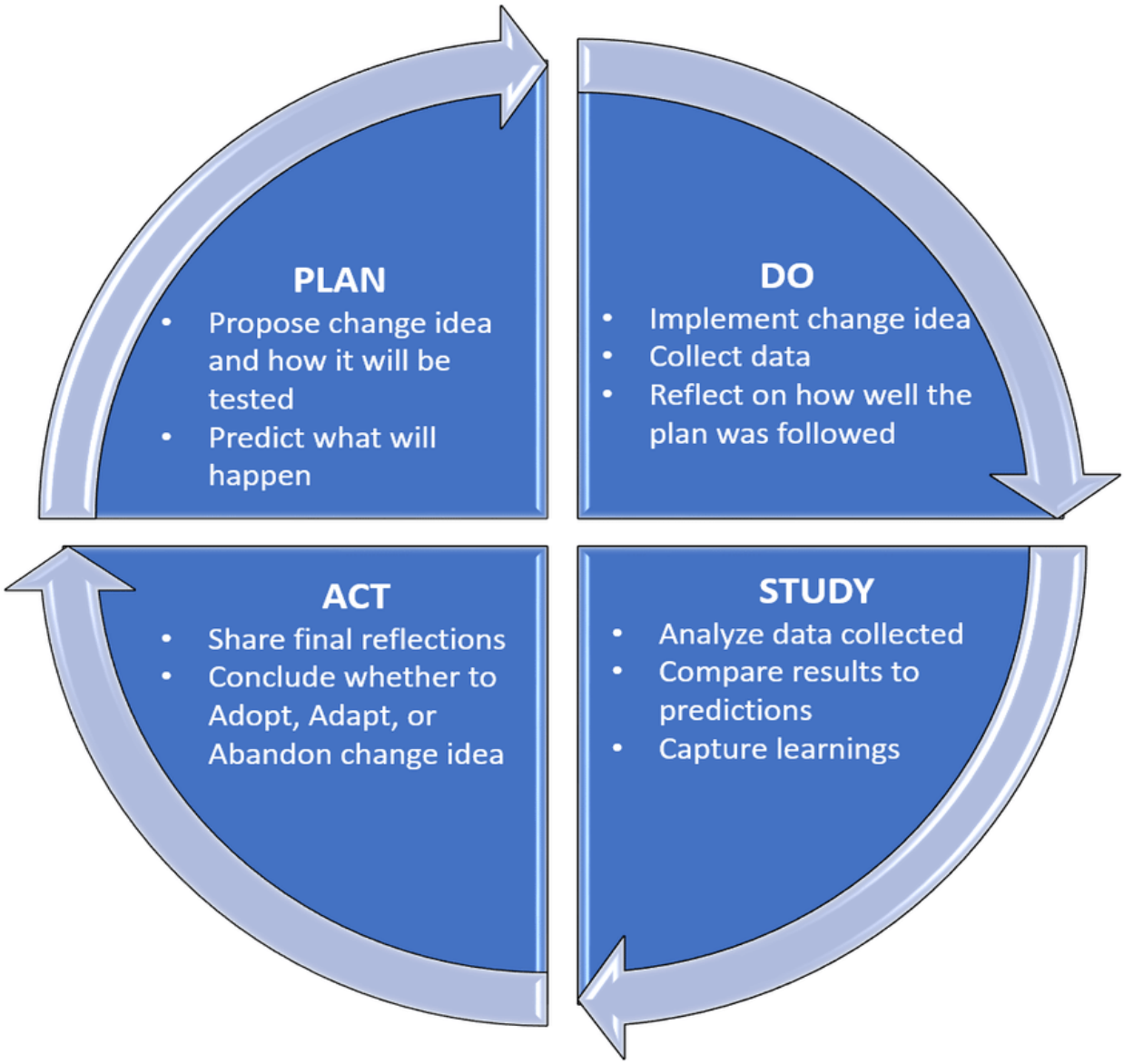
Jacksonville State University

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w59c2d037-8022-4ddd-bd63-48c583bcfe13-44538955

Appendix M

Plan, Do, Study, Act (PDSA)



Appendix N

Skin Assessment Tool

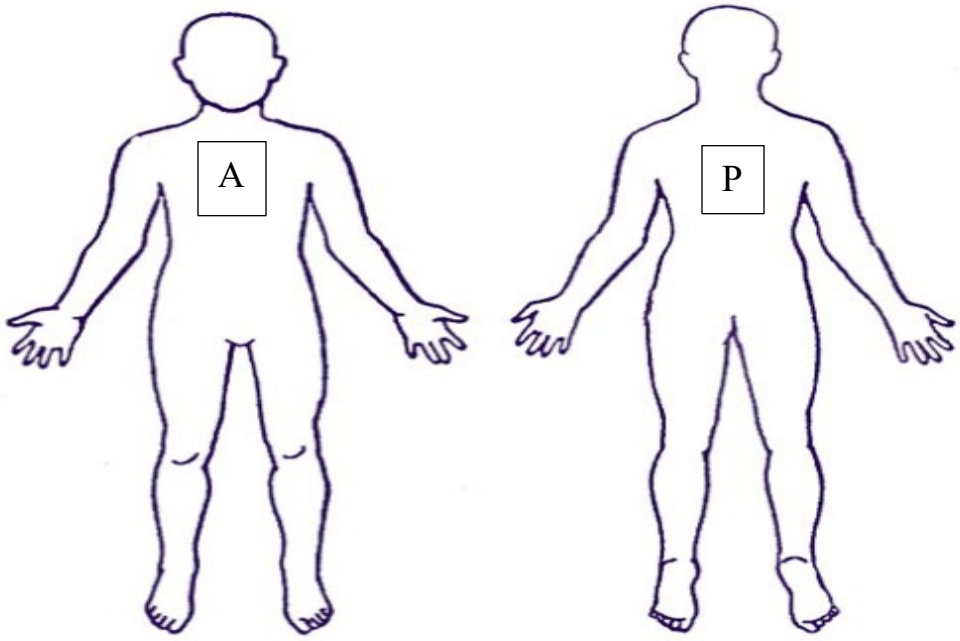
Not part of the medical record

Please perform a two-nurse skin assessment on every admission. Mark area on the body template where skin abnormality is located using the codes below and transfer information into the CPSI system with interventions.

Admission date: _____

Nurse #1: _____ **Nurse #2**: _____

Skin intact: Yes No **Braden Scale**: Yes No **Wall clock Turning**: Yes No



Key: **A** = Abrasion **E**= Ecchymosis **ER** = erythema **B** = blister **L**= laceration

P= pressure injury **S**= skin tear **SW** = surgical wound **R** = rash **O** = other

Place appropriate nursing orders for:

□ Nutrition □ Wound nurse □ Specialty bed for Braden <15

Supply needs:

□ Pillows □ Sacral preventive dressing □ Skin care creams □ Wall clock sign

Appendix O

Educational Handouts

Appendix P

DNP Project Timeline

Completion:	Pre-Design	Design	Implementation	Evaluation
Summer 2021	Brainstorm for project ideas Define the clinical problem Develop the initial PICOT. Complete an initial review of the literature Search for tool		Weekly meetings with faculty and peers	
Fall 2021	Finalize the PICOT question Communicate with university faculty about project ideas Meet with preceptor and stakeholders at the hospital Review of Literature: Complete table of evidence on pressure ulcers and the implementation of a pressure ulcer prevention bundle Write SMART goals	Create a title for the project Begin draft of project proposal Draft project team	Weekly meetings with faculty and peers	

	Create objectives Finalize use of a tool Select theoretical methodology Select a framework to drive the intervention Complete CITI training	Design participant consent form Begin ePortfolio Obtain PERC Approval Submit and obtain IRB Approval.		
Spring 2022		Form project team Add to ePortfolio	Weekly meetings with faculty and peers Implement DNP project	Data collection and statistical analysis Final project manuscript preparation
Summer 2022			Weekly meetings with faculty and peers	Final project manuscript submission, project dissemination, poster presentation and submit ePortfolio

Appendix Q

Project Budget

PROJECT EXPENSE	PROJECTED COST	ACTUAL COST
Printed Materials	$75.00	$ 66.78
Poster Printing	$200.00	$ 128.98
Refreshments for Educational Session	$100.00	$ 72.70
Statistician	$75.00	$ 100.00
Total Project Expenses	**$ 450.00**	**$ 368.46**

Appendix R

Weekly Chart Review Log

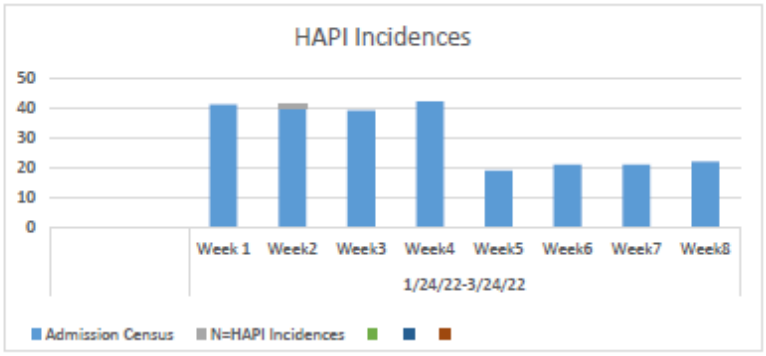
Last 4 #s of Medical Record number New (N)/ Review (R)	Skin assessment tool on chart: Yes/No	All areas of the skin assessment tool completed and signed off by two nurses: Yes/No	Wall clock in room and utilized: Yes/No	Braden Scale Completed and Documented in CPSI: Yes/No	Wound Consult: Yes/No/NA

Appendix S

Incidence Rates Results

HAPI Medical-surgical Unit	1/24/22-3/24/22								
	Week 1	Week2	Week3	Week4	Week5	Week6	Week7	Week8	Total
Admission Census	41	40	39	42	19	21	21	22	244
N=HAPI Incidences	0	1	0	0	0	0	0	0	1
HAPI% Rate	0	2.5	0	0	0	0	0	0	0.41

Formula:N (incidences)/admission censusx100=% HAPI rate



Appendix T

Chart Review Results

Chart Review Compliance Rates

All areas of the skin assessment tool completed and signed off by two nurses:			Wall clock in room and utilized:			Braden Scale completed and documented in CPSI:		
	N	***%***		***N***	***%***		***N***	***%***
Yes	244	63.94	*Yes*	244	63.94	*Yes*	244	63.94
No	88	35.06	*No*	88	35.06	*No*	88	35.06

Appendix U

Questionnaire Results