Spring 5-2-2024

Reduction of Hospital-Acquired Pressure Injuries in the Acute Care Setting

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DOCTOR OF NURSING PRACTICE (DNP)

FINAL SCHOLARLY PROJECT

Reduction of Hospital-Acquired Pressure Injuries in the Acute Care Setting

By

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The final DNP project presented to the

Faculty of the University of Nebraska Medical Center College of Nursing

In Partial Fulfillment of the Requirements for the Degree

DOCTOR OF NURSING PRACTICE

May 2024

DNP Project Faculty Advisor

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Abstract

Background: Hospital-acquired pressure injuries (HAPIs) have been a longstanding problem in hospitals nationwide. HAPIs cause significant financial strain to a healthcare system and complications can be devastating to the patient.

Purpose: The purpose of this project was to implement the Standard Pressure Injury Prevention Protocol (SPIPP) 2.0 Checklist for patients in the Intensive Care Unit (ICU). The primary aim of this study was to determine if implementing the checklist would reduce the number of HAPIs.

Methods: This project took place over a four-week period at a Midwest hospital in the ICU. Data were collected via patient chart audits and the hospital's notation on the event system. Data were collected four weeks prior, and four weeks post implementation. The checklist was completed via a two nurse validation system at shift report. An online nurse perception survey was provided at the end of the four-week period.

Results: The compliance rate of completing the SPIPP 2.0 checklist was 13% (72 of 560). Pre-study there were three HAPIs reported and during the study period two HAPIs were reported. The nurse survey results included eight responses collected; four reported negative and four reported positive impacts on their workflow.

Conclusion: Results are inconclusive due to the small sample size. We recommend integrating the checklist in the electronic medical record charting system to help enact the checklist. Collecting data over a longer time-period may provide additional data and a larger patient profile. A shorter checklist may elicit better compliance.

Introduction

Hospital-acquired pressure injuries (HAPIs) have been a significant problem plaguing healthcare systems for years, and despite current efforts to prevent pressure injuries, numbers continue to rise year after year. HAPIs create a significant financial burden on the healthcare system, with an average cost of $43,180 per pressure injury, with costs ranging from $20,900 to $151,700 (Agency for Healthcare Research and Quality [AHRQ], 2014). In the United States alone, there is an average of 2.5 million reported HAPIs annually, costing the healthcare system around 26.8 billion dollars annually (Padula & Delarmente, 2019). These exorbitant costs are further compounded by the Center for Medicare and Medicaid Services no longer reimbursing hospitals for incremental costs associated with all stage III and stage IV HAPIs, as these are considered adverse health events (Meddings et al., 2015).

While the financial burden of HAPIs can be staggering, the effect that HAPIs can have on patient outcomes is even more devastating. HAPIs can lead to increased length of stay, pain and suffering, readmission rates, and sometimes even death. A study done by Wessel et al. (2020) found that patients with a HAPI were at 1.5 to 2 times higher risk of being readmitted to the hospital, which had a strong association with other hospital-acquired conditions such as pneumonia, urinary tract infection (UTI), venous thromboembolism. Wessel et al. (2020) also found an increase in morbidity and mortality with HAPI. Pressure injuries are a direct contributing cause of more than 60,000 deaths per year (AHRQ, 2014).

HAPIs are considered adverse medical events which can put the hospital at risk of facing a lawsuit. There are more than 17,000 lawsuits filed each year in relation to pressure injuries. Lawsuits related to HAPIs are the second most common claims following wrongful death

(AHRQ, 2014). HAPIs continue to burden healthcare systems regardless of the existing prevention methods.

Problem Statement

Since the COVID-19 pandemic, hospitals have seen an increase in HAPIs, in addition to several other challenges, such as staff shortages and increased patient volume and acuity. These challenges are seen nationwide. There are several tools available to help reduce HAPIs. The original SPIPP tool was introduced into the literature in 2018 (Padula & Black, 2018). The checklist includes education and onboarding, a risk assessment, a structured skin assessment, repositioning and mobility, pressure and friction reduction, and a nutrition consult. This checklist includes evidence-based practices (Padula & Black, 2018). According to Black (2023), the original SPIPP was never psychometrically tested. Therefore, the SPIPP Checklist 2.0 underwent content validity testing of 49 individual items. The final revision of the SPIPP Checklist 2.0 includes all the interventions recommended by the 2019 international clinical practice guidelines (Black, 2023). The Standard Pressure Injury Prevention Protocol 2.0 (SPIPP) is a checklist for nurses to use to ensure that all best practices are implemented to prevent HAPIs. The five main categories for the SPIPP Checklist 2.0 are specific interventions, including risk assessment; skin assessment; repositioning; pressure, friction, shear reduction; nutrition (Black, 2023). For the full SPIPP Checklist 2.0, see appendix A.

Purpose Statement Aim and Clinical Question

The purpose of this study was to determine if in an adult critical care unit in the acute setting does implementation of the Standardized Pressure Injury Prevention Protocol 2.0 compared to the current standard of care of turning patients every two hours, and skin care as needed decrease hospital acquired pressure injuries over a four week period? The primary aim of

this study was to determine if implementing the SPIPP Checklist 2.0 each shift would reduce the number of hospital-acquired pressure injuries over four weeks. The secondary aim of this project was to have 80% compliance with the SPIPP Checklist 2.0. The final aim of this project was to gather staff perceptions about the SPIPP Checklist 2.0 via a survey found in Appendix B.

The research question for this study was: (P) In an adult critical care unit in the acute setting (I) does implementation of the Standardized Pressure Injury Prevention Protocol 2.0 (SPIPP) (C) compared to the current standard of care of turning patients every two hours, and skin care as needed decrease (O) hospital-acquired pressure injuries (HAPI) over a (T) four-week period?

Review of Literature

Three reviewers screened titles, articles, and abstracts for eligibility for this review.

A literature search was completed using CINAHL, Embase, and PubMed databases. **CINAHL**: "turn team" OR ("patient turns" AND team) Limiters- English Language; Publication Type: Peer Reviewed; Team* N5 [(Patient AND turn*) OR turn* OR "patient positioning")] Limiters- English Language, Publication type: Peer Reviewed; (MH "Pressure Ulcer") OR (MH "Heel Ulcer") OR (MH "Deep Tissue Injury") OR "Pressure injuries" OR "pressure injury" OR "pressure ulcer" OR "pressure ulcers" Limiters- English Language, Publication type: Peer Reviewed. “Nutrition” OR (“intensive care unit” AND “pressure injuries") Limiters- English Language, Publication type: Observational Cohort. **EMBASE**: “turn team” OR (“patient turns' ' AND team) **PubMed**: “turn team” [All Fields]. Filters: English Language, Publication type: Peer Reviewed; “Standard pressure Injury Prevention Protocol " [All Fields]. Filters: English Language.

The literature search was conducted from August 2022 to March 2023. After completing this literature search, 50 articles were found that required additional review. Due to the limited data gathered from the articles, the inclusion criteria were expanded for peer-reviewed articles. Based on this inclusion criteria, 14 articles were selected based on the criteria of interventions available to decrease pressure ulcer incidence. There was no time limitation due to the limited number of available data. The articles ranged from low to moderate level quality of evidence. The studies included systematic reviews, randomized controlled trials, cohort/case studies, quasi-experimental, and quality improvement.

Summary of Literature

The original SPIPP tool was introduced into the literature in 2018 (Padula & Black, 2018). The checklist includes education and onboarding, a risk assessment, a structured skin assessment, repositioning and mobility, pressure and friction reduction, and a nutrition consult. This checklist includes evidence-based practices, and the areas listed above can have an influence on hospital-acquired pressure injuries (Padula & Black, 2018). Prevention is the main goal in all hospital-acquired pressure injuries.

The revised Standard Pressure Injury Prevention Protocol Checklist 2.0 (SPIPP Checklist 2.0) goal is to reduce omissions in care and help to streamline interventions in the reduction of HAPIs (Black, 2023). This checklist can help reduce errors, especially in high-stress environments like the ICU. The SPIPP Checklist 2.0 consists of evidence-based practice items known to reduce pressure injuries. The items listed in the SPIPP Checklist 2.0 include assessing risk factors for pressure injuries to guide risk-based prevention, assessing skin/tissue for signs of skin damage and pressure injury, preventative skin care (managing moisture and incontinence), redistributing pressure, and nutrition. The original SPIPP underwent several revisions to follow

the 2019 pressure injury guidelines. The first change for the SPIPP Checklist 2.0 is that it is now formatted as a checklist for the bedside staff (Black, 2023). Since it was changed for staff use in the adult acute care setting, structural items such as outcome measurement, leadership engagement, and system-wide education were removed. In the SPIPP Checklist 2.0, changes were made in the nutritional section, where additional interventions were added based on the recommendation of nutrition experts. According to Black (2023), the original SPIPP was never psychometrically tested. Therefore, the SPIPP Checklist 2.0 underwent content validity testing of 49 individual items on the checklist. One item was removed due to its low individual validity score. The content validity testing showed that the individual and comprehensive scores met the acceptable content validity. The total scale content validity index score was 0.93 when the one item was removed, otherwise it was 0.920 (Black, 2023). The final revision of the SPIPP Checklist 2.0 includes all the interventions recommended by the 2019 international clinical practice guidelines (Black, 2023).

Interventions to Reduce HAPIs

Turn Teams

Currently, there has been research that demonstrates interventions to reduce the number of HAPI. Cyriacks & Spencer (2019) conducted a retrospective chart review on using turn teams to reduce HAPIs in a 36-bed medical-surgical unit experiencing increasing HAPIs. The turn team consisted of pairs of nurses, nursing aids, and other unit staff to turn patients that were deemed high risk for pressure injuries based on the Braden scale. Patients at high risk were turned on schedule every two hours by the turn team members. Results showed a reduction of 75 percent in HAPIs after a 10-month intervention. Additionally, staff reported improved workflow and time management (Cyriacks & Spencer, 2019). Kahn & Jonusas (2019) designed a quality improvement study that implemented turn teams, which saw a 54% reduction in HAPIs

throughout the study. These studies show the importance of turning patients on a regular two-hour interval.

Sacral Dressing

A study design using a retrospective observational cohort examined if there is effectiveness/value of prophylactic five-layer foam sacral dressing to prevent HAPIs (Padula et al., 2017).. The collection method used longitudinal data pertaining to the prophylactic five-layer foam sacral dressings purchased by hospital-quarter for 38 academic medical centers between 2010 and 2015. Each patient was given a prophylactic five-layer foam sacral dressing while in the hospital to prevent the development of HAPIs. The findings included that the prophylactic five-layer foam sacral dressings are an effective component of a pressure injury prevention protocol. It showed that hospitals using these dressings could decrease the amount of HAPIs (Padula et al., 2017). Sacral dressings are a great additional aid in the prevention of pressure injuries but cannot be the only prevention used.

Repositioning Systems

In another study by Powers (2016), repositioning systems were compared to the current standard of practice (consisting of pillows) in turning patients. Powers performed a non-randomized comparison cohort to see if there were differences between different turning devices in an ICU and found that the use of patient positioning systems were more effective at maintaining a turn angle of thirty degrees. This demonstrates that patient positioning systems are effective in reducing HAPI. The use of patient positioning systems is used in the SPIPP Checklist 2.0.

Nutrition

Wenzel & Whitaker (2021) produced a prospective observational cohort study showing the relation between enteral nutrition and hospital-acquired pressure injuries. The study implemented enteral nutrition within twenty-four to forty-eight hours of admission to the intensive care unit. The study set specific caloric and protein goals for each patient. The sample of this study included 181 patients with an average age of 55 years; 56.4% of this population were males. Regarding reaching the nutrition values, 105 reached the caloric value goal, 130 achieved the protein goal, and only 98 patients reached both the caloric and protein goals. Patients who developed a hospital-acquired pressure injury if the nutritional values were not met developed the HAPI sooner than those who met the nutritional values.

Other Factors

Additional factors also help predict the likelihood of a patient developing pressure injuries. Strazzieri-Pulido et al., (2018) conducted a retrospective cohort study that estimated the incidence of pressure injuries and their predictors, including nursing workload in critical patients. The method had the nursing workload measured during the Nursing Activities Score, and these predictors were identified by logistic regression. The sample of this study was (n = 1,196), except 430 patients were excluded for various reasons leaving the study with a sample of (n = 766). The results of this study included that the pressure injury incidence was 18.7%. The odds ratio of the development of pressure injuries increased 3.5 times in mechanically ventilated patients ($p < 0.001$), 7.8 times in palliative care patients ($p = 0.004$), and 2.3 times in the 60-84 years of age groups ($p = 0.005$). It also showed an increased 10% for each day of hospitalization per patient ($p < 0.001$) and 1.5% for each registered point of the Nursing Activities Score ($p = 0.016$) (Strazzieri-Pulido et al., 2018).

Another key component to the successful implementation of any new research is assessing and educating staff who will be utilizing the new intervention, in this case, the SPIPP

Checklist 2.0. A systematic review done by Dalvand et al. (2018) assessed the education level of nurses, student nurses, and assistant nurses of different HAPI prevention measures. All groups scored below the recommended benchmark of 60%, indicating a need for further education in this area.

Having a comprehensive and streamlined checklist such as the SPIPP Checklist 2.0 that contains many of these effective strategies should be effective in reducing the number of HAPI in the critically ill population.

Methodology

Design/Framework

This was a quality improvement study and followed the model of Plan-Do-Study-Act (PDSA). The "Plan" involved developing a PICOT question, planning a project based on current hospital data using a one-month pre-study, and compliance rates. The “Plan” model allowed students to work with stakeholders to develop a problem statement through meetings and buy-ins. The "Do" portion entailed implementing the SPIPP Checklist 2.0 for all patients in the critical care unit. The SPIPP Checklist 2.0 was utilized for four weeks, with two registered nurses validating the completion of the list at the beginning of each calendar day. "Study" involved examining the data collected for one month after the study's end date. The distribution of surveys and collection of results occurred. The "Act" portion of this PDSA model will be to present the findings to the stakeholders. Based on the results from the study, the stakeholders can decide to implement a policy or process change.

Subject and Setting

All subjects were aged 19 and older, admitted to the urban hospital Intensive Care Unit (ICU). Exclusions were the cardiovascular intensive care unit located on another floor. The

hospital has 423 beds with 20 beds being in the ICU. On average, this unit serves 19 patients on the unit at one time, leaving one bed for emergent situations. The estimated number of patients in the project that the checklist should have been completed on was 100 patients. Any patient with comfort care status, or hospital-acquired pressure injuries on admission to the intensive care unit did not qualify. Patients with pre-existing or chronic pressure ulcers were included, but previous or chronic pressure ulcers were excluded from the HAPI count for this study.

Tools and Measures

The stakeholders currently measure age, HAPI stage and location. For this study, the DNP students measured age, Braden scale score, checklist completion with interventions in place, and if a HAPI was present or occurred. Patients admitted to critical care fit the inclusion criteria for this study.

The DNP students completed three in-service education sessions, one on each shift for three calendar days to describe the SPIPP Checklist 2.0 and demonstrated how to implement the checklist on qualified patients. These educational sessions occurred on each shift during staff working hours at shift change to ensure every staff member qualified to take care of the patients fit for this study was educated on the SPIPP Checklist 2.0. Staff was encouraged to attend one in-service provided by the DNP students. If a staff member missed the educational session, the DNP students contacted the staff member and inquired if they would like to participate in education independently and sign off the SPIPP Checklist 2.0. The DNP students offered time at the end of the education in-service to answer questions for the staff to voice any initial concerns. This SPIPP Checklist 2.0 was distributed to staff in a paper handout form. The DNP students educated 54 staff members.

During the four weeks, the staff nurses implemented the SPIPP Checklist 2.0 on all patients in the ICU. The night shift registered nurse (RN) completed the SPIPP Checklist 2.0 once every 24 hours with the oncoming dayshift RN during the bedside report at 0700. This was done as a dual check-off to ensure that all checklist components were met for each patient. Both shifts were responsible for ensuring that all checklist components were completed, and supplies were ordered for each patient if they qualified since not all supplies are kept on the unit.

After the RN completed the checklist for the day, it was placed in a folder near the charge nurse's desk to be picked up by the DNP students. Once the four weeks were complete, the DNP students went through the checklists to ensure that each patient had one completed for each day. They continued to collect data on HAPI rates with assistance from the clinical partner and completion rates of the checklists. The DNP students offered a post-study survey for the staff to offer opinions on how they believe the study went, what worked, and what did not. The results of the survey were anonymous so staff members would be encouraged and felt comfortable to give honest feedback. The survey was administered through a link to Microsoft forms survey. The survey was available for ten days and can be found in Appendix B. These results will be shared with the stakeholders.

Data Collection

The acute care hospital uses two data reports to track HAPIs, which the acute care hospital clinical partners have access to and provided data to the DNP students. Using chart audits, stage I HAPIs were audited on patients during the study period. To track deep tissue, mucosal, stage II, or greater pressure injuries, the hospital uses their hospital specific Notation on the Event System (NOTE) and electronic documentation of the pressure injury. The wound care nurses were notified if these injuries were documented and are responsible for following up to

confirm the HAPI. These systems were used to track retrospective data for four weeks prior to implementation. After the implementation of the SPIPP Checklist 2.0, this system was used along with chart audits by the DNP students to see if any HAPIs developed. Nurses used the reporting system to report suspected HAPIs. The DNP students checked for nurse compliance with the SPIPP Checklist 2.0 utilizing an Excel spreadsheet which can be found in Appendix C.

To gather data related to nurses' perceptions about the SPIPP Checklist 2.0, a survey was sent out using Microsoft Forms. The survey comprised five questions regarding staff perceptions of the SPIPP Checklist 2.0 (Appendix B).

Timeline

This project included adults aged 19 and older in the ICU at the acute care facility during a four-week period between September 18, 2023, to October 15th, 2023. This represented the timeframe that the SPIPP 2.0 checklist was implemented and utilized on the unit.

Analysis

At the conclusion of the four weeks of implementing the SPIPP Checklist 2.0, data were imported from the SPIPP Checklist 2.0 to a Microsoft Excel spreadsheet. The data included pertinent data from the staff survey, which determined how the staff RNs felt about implementing the SPIPP Checklist 2.0. Based on the survey it was determined that the staff RNs felt that the checklist would not be beneficial to be implemented into daily practice.

The assessment of the primary aim of the study was “to determine if implementing the SPIPP Checklist 2.0 each shift will reduce the number of hospital-acquired pressure injuries over four weeks,” the HAPI rate was calculated. This was calculated by using the four-week implementation period as the denominator, and the total HAPI number was the numerator. This calculation was done with the previous four-week and implementation periods as well. The two

calculation values were then assessed with the Fisher's Exact Test that determined if the patient days' adjusted numbers of HAPIs differed.

In assessing the secondary aim of "to have 80% compliance with the SPIPP Checklist 2.0," descriptive statistics (counts, means, and frequencies) were used. The third aim of assessing "staff perceptions" was also conducted with descriptive statistics.

Results

The study took place in an acute care hospital ICU between September 18, 2023, to October 15, 2023. The average age for patients the checklist was completed on was 65 years old, ranging from 20-92 years of age. In the ICU, most patients had a Braden scale score of less than 16, which is considered a high risk of developing HAPIs. The average Braden scale score during these dates was 15. During this period, the range of Braden scale scores were 9-21.

Prior to the implementation of the SPIPP 2.0 Checklist, a one-month audit from August 17, 2023, to September 17, 2023, of HAPIs was performed, and there was a total of three HAPIs, with one Stage II HAPI on the coccyx, and two mucosal HAPIs from an endotracheal tube. After the four-week implementation of the SPIPP 2.0 Checklist, an audit from September 18, 2023, to October 15, 2024, was performed, revealing two HAPIs, one being a Deep Tissue Injury (DTI) to the buttock and one mucosal HAPI to the lip from an endotracheal tube. Due to the low number of checklists completed, we were unable to complete statistical analyses.

At the end of the four-week implementation period of the SPIPP 2.0 Checklist, the DNP students audited the patients' charts with completed checklists. 72 SPIPP 2.0 checklists were completed on ICU patients between September 18, 2023, and October 15, 2023, out of an estimated 560 checklists that could have been completed. We anticipated 100 completed checklists, but if done every 24 hours, there should have been 560. The compliance of SPIPP 2.0

checklist implementation was 13% in the ICU. 67% of patients who had the checklist completed did not have a Prevalon Turn and Position System (TAPs) system in use, while 33% did have the TAPs system in use. Of the 72 SPIPP 2.0 checklists completed, 14% of them did not have a second nurse validating the SPIPP 2.0 checklist.

A satisfaction survey was sent to staff via Survey Monkey (See Appendix B) after October 15, 2023. There were eight responses out of a possible 60 RNs. These eight nurses did use the SPIPP 2.0 checklist at some point during the four-week period. The average time the SPIPP 2.0 checklist took to complete was "3-5 minutes". When asked if the SPIPP 2.0 had an impact on the RN workflow, it was split with 50% saying "yes", and 50% saying "no." The most common answers to the question, "In which ways did the SPIPP 2.0 checklist positively impact your workflow" were the standardization of patient care and improved teamwork. The barriers to completing the checklist during the four-week period reported were length, remembering to complete the checklist, and one shift completing it prior to the next shift coming on, making it impossible to complete it together. The surveys were completed by five RNs from the night shift and three RNs from the day shift.

Discussion

During the collection of data there was difficulty obtaining consistent data on all patients in the ICU at this facility. After the first week of implementing the SPIPP 2.0, few checklists were completed. Additional education was given to staff to improve the utilization of the SPIPP 2.0 checklist. At the end of the study there were only 72 checklists completed. An estimated 560 expected checklists were to be completed if completed every 24 hours on each patient in the ICU. Additionally, HAPIs occur at lower rates.

Therefore, capturing data over a four-week period may not be enough time to reach statistically or clinically significant results. The researchers were unable to determine if the checklist was not implemented due to staff nurses not understanding how to implement the checklist, not remembering to use the checklist or verify with another RN, not having the appropriate amount of time to implement the checklist, or the RN being unwilling to participate in the checklist.

The TAPs system may have not been in use because the Braden scale score may not warrant it, or the RN did not follow proper protocol by implementing the TAPs system. With 14% of the checklists completed without validation from the second nurse, it could have led to errors that could falsify results.

The SPIPP 2.0 checklist is composed of 33 items which require a yes/no checkmark to determine if they were completed and why. The checklist has sections where the user must check the patient risk factors and due to the length is not user friendly. Staff had questions on what exactly certain items meant. such as the use of alkaline soaps and were unaware if that was already implemented into standard practice. Due to the length of this checklist, it made it difficult for staff willingly participate in this study.

Conclusion

Due to the lack of data produced confirming that implementing the SPIPP 2.0 Checklist on patients will help prevent HAPIs, the study was inconclusive. The timeline of four weeks did not allow for significant clinical or statistical findings.

Significance of Implications

The potential significance and implications of using a comprehensive checklist to address all potential risk factors that place a patient at risk for developing a HAPI. Reducing the number

of pressure injuries will prevent further complications that an ICU patient faces, improving morbidity and mortality. The implementation of the SPIPP Checklist 2.0 is beneficial for stakeholders on many levels. It should further decrease hospital length of stay for patients who develop HAPIs, decrease the cost that HAPIs produce, and increase positive outcomes for patients if all components are implemented. The stakeholders can utilize the results from this study to determine if the SPIPP checklist 2.0 should be utilized for a longer period to prevent HAPIs in the acute patient care setting. Based on the results, stakeholders can choose to go forth and create practice changes and policies to implement the SPIPP checklist 2.0 throughout the health system.

Recommendations

In the future, to make this study more successful, there needs to be more compliance with the completion of the SPIPP 2.0 checklist. Additionally, capturing data over a longer period of time versus four weeks will gather more data to make results more significant. A more user-friendly format for the SPIPP 2.0 may improve compliance with completion of the checklist. Integrating the SPIPP 2.0 Checklist into the electronic medical record for easier charting for the nurses and easier tracking purposes. To improve utilization of the SPIPP 2.0 checklist, there could be several items removed from this list because they are the current standard of care. Items such as the use of alkaline soaps, skin checks every four hours, utilization of the Braden scale every shift, and low friction textiles. These items are expected to be completed every shift per facility policy and some are integrated into the EMR. Feedback from the surveys indicated that there were too many line items and were overwhelming. Removing these items that are standard practice may improve utilization rates.

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Appendices

Appendix A SPIPP 2.0 Checklist

Unit ____ Standardized Pressure Injury Prevention Protocol Checklist (SPIPP- Adult) 2.0 Date_____		
ITEM	**Completed Yes/No**	**COMMENT**
Assess risk factors for pressure injury to guide risk-based prevention		
Significant current or anticipated mobility problems		
Use a structured risk assessment approach (e.g., Braden or other validated risk tool) on admission		
Reassess risk q shift and with significant change in condition		
Patient/family informed of PI risk and prevention plan		
Additional risk factors considered: Previous PI__, Localized pain__, Diabetes__, Poor perfusion__, Vasopressors__, Oxygenation deficits__, Increased Temp__, Advanced Age__, Spinal cord injury__, Neuropathy__, Surgery/procedure duration > 2 hrs.__, Critical illness__, Organ Failure__, Sepsis__, Mechanical vent__, Medical devices__, Sedation __		
Assess Skin/Tissue for signs of skin damage and pressure injury		
Assess skin (comprehensive, visual, palpation) upon admission and q shift for erythema, discoloration, edema, and temperature		Location(s):
Assess skin under medical devices q shift		Device(s):
Inspect heels q shift		
In people of color: Ensure adequate lighting and moisten/moisturize skin to augment visual		
Consider enhanced skin assessment methods- thermography, SEM, skin color chart		
Preventative Skin Care- Manage moisture/Incontinence		
Cleanse and apply appropriate moisture barriers promptly after each incontinent episode		
Avoid use of alkaline soaps/cleansers		
Consider urinary/fecal management systems for high-risk persons		
Single layer, breathable, high absorbency pads for incontinence		
Consider using low friction textiles		
Apply wicking material to skin folds when appropriate		
Redistribute Pressure		
Turn/reposition q 2-3 hours persons who do not have independent bed mobility and as required by individual needs and risk, unless contraindicated (Braden Activity/Mobility score 1 or 2)		
Use high specification reactive foam or reactive air mattress/overlay for immobile persons (Braden Activity/Mobility score 1 or 2)		
Use positioning aids that minimize friction/shear (pillows, wedges). Use turn/lift equipment if available		
Keep head of bed as flat as possible		
Place silicone multilayer foam dressings on areas of high-risk (i.e., sacrum, lower buttocks, or heels) (Braden Activity/Mobility scores 1-2)		
Elevate heels off bed with pillows, heel devices or boots (Braden Sensory Perception score 1-3)		
Provide adequate repositioning (30 degree) when side lying		
Use slow, gradual, frequent, small, body shifts when unstable		
Use pressure redistributing seat cushion for persons who cannot adequately reposition		
Reposition seated persons q 1 hour		
Consult Physical Therapy for mobilization program when appropriate (Braden Activity/Mobility		
Consider reminder systems, pressure mapping, motion sensors		
Implement early mobilization program		
Nutrition		
Screen for malnutrition using a validated tool on admission		
Consult dietitian for persons with or at risk of malnutrition, decreased nutrient intake, NPO > 48 hours or presence of stage 2 or greater PI (Braden Nutrition Score 1-2)		
Provide additional calories, protein, fluids, and additional nutrients (i.e. multi-vitamin, arginine, glutamine, HMB) per nutrition plan of care or as appropriate		
Continue to regularly assess goals and consult dietitian as needed		

Appendix B Post Implementation Survey

1. On average, how many minutes did it take to complete the SPIPP checklist 2.0?_____
2. Did the use of SPIPP Checklist 2.0 have an impact on your workflow?
3. In which ways did the SPIPP Checklist 2.0 checklist positively impact your workflow?
    a. Allowed for smoother communication between providers and staff
    b. Improved Teamwork
    c. Standardization of patient care
    d. Allowed better time management/prioritization for patient care
    e. Other:
4. In which ways did the SPIPP 2.0 checklist negatively impact your workflow?
    a. Time constraints
    b. Documentation burden
    c. Fatigue from over-use
    d. Other:
5. Were there any barriers to completing the checklist
    a. No incentive
    b. Not required
    c. Patient Condition
    d. Too time-consuming
    e. Other:
6. Which shift do you work?
    a. Days
    b. Nights

Appendix C SPIPP Checklist 2.0 Data Compliance Tracking

SPIPP Compliance Tracking Dates (x/x/23-x/x/23)						
Date	Age	Braden Score	TAPS System in place?	Checklist Complete?	HAPI?	HAPI Stage