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Hospital-Acquired Pressure Ulcer Prevention

Druscilla Willis Jones
Walden University

Walden University

College of Health Sciences

This is to certify that the doctoral study by

Druscilla Jones

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Janice Long, Committee Chairperson, Nursing Faculty
Dr. Margaret Harvey, Committee Member, Nursing Faculty
Dr. Tracy Wright, University Reviewer, Nursing Faculty

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Abstract

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MSN, Walden University, 2014

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

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Abstract

Hospital-acquired pressure ulcers (HAPUs) represent a significant challenge in the care provided for hospitalized patients. HAPUs impact morbidity, mortality, and quality of life. At the local practice site, the incidence of HAPUs increased in the perioperative setting. The practice-focused question for this project asked if an education program for staff nurses working in a perioperative care setting with high HAPU incidence can advance nurse knowledge regarding prevention, early assessment, symptoms, and treatment of HAPUs. The purpose of this educational project was to develop a pretest and posttest designed education program on HAPU prevention and care for perioperative nurses. The Iowa model was used to guide content development with application of the content to nursing practice, and Watson's theory of caring was used to align with the organizational core values. Information on the prevention and treatment of HAPUs was obtained from national and international guidelines. A presentation was developed to address the practice guidelines for assessment, prevention, and treatment of HAPUs. A standardized pretest from NetCE was given to 15 nurses and 5 medical assistants prior to the education program and again after the education program. NetCE score results indicated improvement in nursing staff members' knowledge from 65 on the pretest to 100 on the posttest; medical assistants' scores increased from 35 to 65. For patients who undergo surgical procedures, the results of this project may improve assessment, prevention, and treatment of HAPUs and thereby promote positive social change because patients have a reduced risk of HAPUs and HAPU-associated complications.

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Dedication

I dedicate this Doctor of Nursing Practice (DNP) project to God Almighty who has given me the strength to press forward doing my difficult time. In loving memory of my parents Ben and Mary Willis; my siblings Maxine, Clarence, Jacqueline, Mary, Jerry, and Arnita.

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Section 1: Hospital-Acquired Pressure Ulcers

Introduction

Hospital-acquired pressure ulcers (HAPUs) are an ongoing problem for patients and healthcare settings that affects over two million patients yearly (Diamond et al., 2016). HAPUs occur over 50% of the bony prominences of the sacrum, femoral trochanters, ischial tuberosities, and trunk (Diamond et al., 2016). Tissue necrosis results in the breakdown of the skin and subcutaneous tissue that leads to pressure ulcers (PUs). HAPUs are miserable, expensive, and fail to heal with conventional wound care (Diamond et al., 2016). The wound care approach includes debridement of necrotic tissue, infection control, and nutritional support (Diamond et al., 2016). According to the National Pressure Ulcer Advisory Panel (NPUAP, 2016) PUs originating in the perioperative setting account for up to 45% of all HAPUs (Engels et al., 2016). The first step toward the prevention of intraoperative pressure ulcers is identifying patients at high risk for development. Surgical patients are at risk for the development of HAPUs as a result of numerous risk factors occurring in the perioperative setting (Engels et al., 2016). Healthcare organizations emphasize the delivery of safe patient care and challenge healthcare providers to develop practical, evidence-based prevention strategies to eliminate the occurrence of HAPUs (Engels et al., 2016). My goal was to develop an education program to increase knowledge of the factors that contribute to HAPUs and evidence related to strategies for HAPUs prevention for nurses working in an inpatient setting with the intent to reduce HAPUs formation and promote improved outcomes.

Preventing HAPUs will promote positive social change as the risk and costs for patients, healthcare providers, and healthcare systems are reduced, and patients' life quality is improved. Section 1 covers the problem statement, the purpose and nature of the doctoral project, the significance of the project, and a summary.

Problem Statement

HAPUs represents a significant challenge in the care provided for hospitalized patients and significantly impacts morbidity, mortality, and quality of life. The treatment for HAPUs is often prolonged, costly, and critical to the quality of care (Whitty et al., 2017). Patients in the U.S. healthcare facilities develop approximately 2.5 million HAPUs yearly (Engels et al., 2016). The National Database of Nursing Quality Indicators identified the prevalence of HAPUs through quarterly surveys and has reported that HAPU incidence decreased from 7% in 2004 to 3% in 2012 of surgical patients (Hayes et al., 2015). At the local site, the HAPU rate was 3.5% exceeding the current 3% level reported by the National Database of Nursing Quality Indicators indicating a need to address the problem of HAPUs at the site.

The Centers for Medicare & Medicaid Services (CMS) requires ambulatory surgery centers to create, carry out, and sustain a continuing, data-driven quality-assessment performance-improvement program (Allison, 2016). The quality-assessment performance-improvement program corrects quality deficiencies and implements processes to monitor all factors of patient care in a facility to ensure consistent performance improvement. To have such a plan, one aspect of the program would

require that nurses remain educated on the strategies recommended for the prevention and treatment of HAPUs.

According to the Association of Perioperative Registered Nurses (AORN, 2016) guideline for positioning patients, over 66% of the HAPUs that occur result from operative procedures that involve extensive hospital time (Engels et al., 2016). The AORN positioning guideline suggests that patients are repositioned every 2 hours to prevent continuous pressure on pressure points. Practical prevention efforts for HAPUs include using a team approach for turning and staff education. Nurses should be knowledgeable of the signs/symptoms and preventive strategies for reducing the incidence of HAPUs.

Dahlstrom and colleagues discovered documentation of HAPUs often lacked essential terms such as the stage, location, size, and therefore not meeting quality guidelines (as cited in Schmitt et al., 2017). The first step in improving PU care is to improve the identification, documentation of the PU for treatment, communication in the healthcare team, and reimbursement (as cited in Schmitt et al., 2017). Peterson and colleagues reevaluated and revised their performance improvement plan, identifying gaps that require changing (as cited in Schmitt et al., 2017). Through extensive collaboration, interprofessional efforts, and organizational changes, there was a significant and sustained reduction in the incidence of PUs (as cited in Schmitt et al., 2017). According to Schmitt et al. (2017), gaps in the healthcare providers' knowledge on prevention and management of PUs included identifying educational barriers such as lacking knowledge

of risk factors, assessment, PUs from injuries, staging, Braden Scale, and evidence-based prevention/treatment strategies (Schmitt et al., 2017).

In 2008, the approximate cost of PU treatment was $750 million to $1.5 billion yearly, and the occurrence of HAPUs adds an expected $43,180 to the cost of a hospital stay (Engels et al., 2016U). In 2012, the financial burden of HAPUs on the U. S. healthcare system was estimated between $6 and $15 billion per year (Ocampo et al., 2017). The CMS ceased reimbursing healthcare facilities for the treatment of HAPUs (Engels et al., 2016). At the local site where this project takes place, the HAPUs rate is 3.51% of the current 3% level reported by the National Database of Nursing Quality Indicators (personal communication, April 15, 2019) which represents not only a loss of quality of life and risk for morbidity for the patients who acquire HAPUs but also an added expense and risk of revenue loss for the organization (Unver, Findik, Ozkan, & Surucu, 2017). To address the problem, nurses are in a unique position to reduce the HAPUs rate by early recognition of risk factors for HAPUs and strategies for treatment. While nurses receive education in their nursing programs, no structured education program is available at the local setting, which represents a gap in knowledge that this project addresses. Achieving the CMS classified Stage III and IV as *never events* is a major reason for addressing the gap in practice in the local health setting by teaching nurses how to prevent HAPUs.

Purpose Statement

Practical implementation can be accomplished through a high level of agreement about guidelines (Ebben et al., 2013; as cited in Tayyib, Coyer, & Lewis, 2016). The essential components of a pressure injury prevention program include assessment, documentation of the patient skin condition, pressure reduction, and prevention of shearing forces (Engels et al., 2016). Therefore, the purpose of this project was to review the literature for best practices and then develop an education program for nurses on how to prevent and treat HAPUs. The nurse's ability to recognize HAPUs and their knowledge of prevention, staging, and treatment may impact the rate of pressure injury development and progression. An education program provides the evidence-based practice (EBP) knowledge needed for nurses at the clinical setting to improve practice and reduce HAPUs.

HAPUs continued to be a challenge for the nurses at the organization despite efforts to reduce the rates of HAPUs. An active education program on prevention was essential for the staff to receive sufficient education to practice EBP and prevent HAPUs. The purpose of this project was to educate nurses on the EBP guidelines for HAPU prevention to decrease the rate of avoidable HAPUs.

Practice-Focused Question

The practice focused question was:

PFQ: Can an education program for staff nurses working in a perioperative department with high HAPU incidence in an acute care setting increase the

nurses' knowledge of prevention, early assessment, symptoms, and treatment of HAPUs?

A HAPUs prevention education program developed for nurses in the perioperative setting will improve nurses' knowledge and recognition of HAPUs (Battie & Steelman, 2014).

Measure to Determine Pressure Ulcer Risk or Severity

After the implementation of the CMS policy of no reimbursement for *never events* in 2008, many organizations have designed evidence-based guidelines for the prevention of HAPUs. One way to determine the level of risk for HAPUs is to use the Braden Scale designed to direct care using the risk scales. The Braden Score of 15-18 is considered a *mild risk*, 13-14 is a *moderate risk*, 10-12 is *high risk*, and 9 or below is a *very high risk* (Engels et al., 2016).

According to Webster et al., (2015), for all surgical procedures lasting longer than 30 minutes, the patient's skin should be inspected before and after surgery providing an opportunity for early treatment and prevention of progression of existing lesions to higher stages. All surgical patients are at risk for HAPUs; therefore, understanding how deep tissue injuries occur is critical for complete staff healthcare knowledge. Perioperative nurses perform an essential role in identifying existing and new HAPUs. Many nurses may be unfamiliar with HAPU classifications, making further education necessary (Webster et al., 2015).

Nature of the Doctoral Project

The evidence for this project was obtained from a literature search for EBP guidelines for prevention, assessment, and treatment of HAPUs. The guidelines used to inform this education project were as follows: (a) the AORN guidelines, (b) the European Pressure Ulcer Advisory Panel (EPUAP) and the NPUAP guidelines, (c) the Hartford Institute Guidelines, and (d) the American College of Physicians (ACP) guidelines. The sources of evidence for the development of this project included data from the AORN guidelines (as cited in AORN, 2016), the EPUAP and the NPUAP guidelines (as cited in Haesler, 2014a), NPUAP (Engels et al., 2016), and the ACP (Qaseem, Mir, Starkey, & Denberg, 2015).

The high incidence of HAPUs in the perioperative setting indicates opportunities for improving patient risk assessment and implementing preventive measures. Nurses had the opportunity to refine the risk assessment of individuals undergoing surgery by identifying factors contributing to the development of ulcers (AORN, 2016). Continued education for nurses at the site was essential; therefore, the education program left on site after completion of the project will continue to provide education to nurses. The approach included assessment of the knowledge of nurses at the organization, review of the literature for best practices, development of the education program for nurses on how to prevent/treat HAPUs, and evaluation of their level of learning.

Significance

Sullivan and Schoelles (2013), reported that preventing HAPUs is vital in preserving patients from harm and reducing the costs of care. To prevent the morbidity, prolonged hospital stays, and high healthcare costs produced by HAPUs, education, attention, and resources are needed. Several organizations promote the idea of bundling care practices such as risk assessment, care, and proper repositioning for improving patient outcomes. Organizational components include involving team leaders, practicing policies, and educating staff. Care coordination components involve creating a culture of change, facilitating communication and learning (Sullivan & Schoelles, 2013). Positive motivators include understanding stakeholders' responsibility to enhance patient results and setting goals for the quality provision of patient services (Sullivan & Schoelles, 2013).

According to Fencl and Matthews (2017), the Institute of Medicine determined healthcare value as the standard to which health services for the public improve health outcomes through new professional knowledge. Healthcare providers must understand up-to-date information on the value of interventions and treatment option to provide quality care (Fencl & Matthews, 2017). To reach such a level of understanding immediate and ongoing education is needed at the local site.

Promoting patient safety includes documentation and assessment of patient outcomes. EBP clinical practice guidelines (CPGs) have changed patient's results and how care is delivered at the bedside. Guidelines are used to implement changes in

practice such as HAPU prevention. Healthcare organizations that place importance on the performance of safe patient care may also challenge healthcare providers to promote effective EBP prevention strategies to reduce the occurrence of HAPUs. The Institute for Healthcare Improvement recognized prevention of PUs in its evidence-based guidelines for the "5 Million Lives Campaign" (Engels et al., 2016, p. 274) supporting the need for EBP. The efforts described above and included in this project promote positive social change by helping reduce the medical complications of HAPUs that affect patient quality of life and create additional costs for patients and healthcare providers.

Summary

Preventing HAPUs promotes positive social change by reducing patient health risks and costs to patients and healthcare providers. One way to determine the level of risk for HAPUs is to use the Braden Scale designed to direct care using the risk scales. Patient safety is now a national priority emerging in advancing patient care encouraging nurses to acknowledge EBP when planning care. Several organizations promote the idea of bundling care practices for HAPUs such as risk assessment and repositioning to improve patient outcomes. Section 2 provides knowledge on nurse awareness, responsibilities, and feedback of HAPU treatment and prevention.

Section 2: Background and Context

Introduction

HAPUs are a significant challenge in the care rendered to hospitalized patients. HAPUs significantly impact morbidity, mortality, and quality of life. HAPUs are severe, preventable, expensive, and have well-known adverse results of healthcare (Whitty et al., 2017). HAPUs have an unfavorable impact on patients resulting in additional costs and workload for healthcare providers. Interventions to prevent HAPUs are focused on identifying patients at risk and repositioning to relieve pressure. Prevention and treatments of HAPUs have associated costs for healthcare providers. Preventing HAPUs promote positive social change by reducing the risk and costs for patients, healthcare providers, and healthcare systems and improving the patient's life quality.

The practice focused question was: Can an education program for staff nurses working in a department with high HAPUs incidence in a large acute care setting increase the nurses' knowledge of prevention, early assessment, symptoms, and treatment of HAPUs?

The purpose of this project was to assess the knowledge and practices of nurses at the organization, review the literature for best practices, and develop an education program for nurses on how to prevent/treat HAPUs.

Gunningberg, Sedin, Andersson, & Pingel (2017), noted that the prevalence of HAPUs are a global healthcare quality indicator and that studies from hospital settings report incidence from 0% to 46% (NPUAP, EPUAP, and Pan Pacific Pressure Injury

Alliance [PPPIA], 2014; as cited in Gunningberg et al., 2017). The NPUAP leads in promoting an enhanced performance of healthcare organizations regarding HAPUs for improving patient health outcomes. The NPUAP program was based on knowledge, analysis, and policy to strengthen clinical practice for HAPU improvement. The prevention of HAPUs has received enhanced recognition from clinicians, researchers, and policymakers.

Concepts, Models, and Theory

Yap et al., (2016), reported that the prevention of HAPUs had presented a challenge in healthcare nationwide. HAPUs are uncomfortable and lessen the quality of life causing infections and untimely death (Yap et al., 2016). International guidelines recommend repositioning as a principal factor for reducing patient risk of HAPUs. Effective strategies also include monitoring nutritional status and conducting skin inspection, which requires the support of multidisciplinary teams. Prevention protocol plans involve leaders ensuring consistent team implementation and documentation of repositioning and care practices (Yap et al., 2016).

According to Yap et al. (2016), business leadership work backward from their desired goal of identifying ways for achieving positive healthcare outcomes such as engaging the organization in EBP care delivery by instituting essential administrative rules. This commitment from leadership establishes EBP enhancements leading to advancements in cost containment, productivity, and quality of care associated with

HAPUs prevention. Knowledge, practice, and effective communication are vital in the successful implementation of innovative interventions.

Logic Model

According to Buckwalter et al., (2017), the Iowa model for the prevention of HAPUs is a broadly used framework for the implementation of EBP. The Iowa model links practice changes within the organization as follows: (a) leading, (b) performance, (c) engagement, and (d) supporting change. The approach is essential to determine the impact of EBP on patient and health system outcomes. The Iowa model is a step-by-step guide for the EBP process intended for care clinicians asking questions to improve quality through evidence. A vital practice implication of the model is the explicit inclusion of patient, family values, and preferences (Buckwalter et al., 2017).

Nursing as Caring Theory

The perspective of the nursing caring theory was used in the education program to describe the characteristics made about the patients and nurses (Norman, Rossillo, Skelton, 2016). For the education program developed for this project I drew upon current research to present new knowledge to guide the nursing practice. The nursing as caring theory was the most appropriate because it is built upon research-based nursing.

According to Norman et al. (2016), Watson's theory aligns with organizational core values of excellence, dignity, service, and justice. Watson defined *caritas* as appreciating and giving special loving attention to patients. The theory also represents

kindness, compassion, and generosity of spirit. The theory of human caring has formed around 10 caritas processes (Norman et al., 2016, p. 402).

1. Practicing loving-kindness in the context of caring consciousness.
2. Being present and sustaining a deep belief system.
3. Cultivating personal spiritual practices.
4. Developing a helping, trusting, and caring relationship.
5. Being present to and supportive of the expression of positive/negative feelings.
6. Creatively using self and all ways of knowing as part of the caring process.
7. Engaging in a genuine teaching-learning experience that attends to wholeness and meaning.
8. Creating a healing environment at all levels.
9. Assisting with basic needs with an intentional caring consciousness.
10. Remaining open to and focus on the mysterious dimensions of a person's life and death.

The nursing as caring theories presented in the education program include the call for nursing as caring in nursing education, knowing self and other as a caring person, and advancing these ideas in the real world of nursing. The emotional and physical care is a response to the expression of nursing caring.

Relevance to Nursing Practice

According to Soban, Kim, Yuan, and Miltner (2017), organizations are implementing approaches to support preventive care for HAPUs. Nurse managers have an essential position in the safety of patients that include prevention of HAPUs (Ryan et al., 2015; as cited in Soban et al., 2017). Nurse leaders can plan and implement processes that improve provision for frontline nurses to meet the needs of their patients.

Current State of Nursing Practice Related to Hospital-Acquired Ulcers Prevention

A search of the literature resulted in several categories of HAPU related studies. This section will cover the content related to nursing practice. It includes HAPU prevention implementation strategies.

Hospital-Acquired Pressure Ulcers Prevention

According to Tayyib et al. (2016), the occurrence of HAPUs is high for hospital patients, and various strategies have been implemented to deal with HAPU prevention. The incidence rates have been documented as high as all high-risk hospitalized patients (Berlowitz, 2014; Tayyib et al., 2015 as cited in Tayyib et al. 2016). A gap in the recommended care and practice exists (Tayyib et al. 2016). The critical components for HAPU prevention are risk assessment, skin assessment, skin care, nutrition, repositioning, support surfaces, education, training, and supervision of medical equipment (Tayyib et al., 2016). Monitoring the compliance rate and evaluating the effectiveness of prevention strategies will promote practice change.

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Implementation Strategies

Education strategy. Borgert. Goossens, and Dongelmans (2015) stated bundles are efficient in enhancing clinical outcomes although strategies practical to implement care bundles were not identified. The three most commonly used strategies are as follows: (a)education activities 86%, (b) reminders 71%, and (c) audit/feedback 63% (Borgert et al., 2015).

The clinician is faced with understanding the epidemiology of HAPUs and carrying out effective HAPU prevention. According to Garber (2016), new education must be consistent with current professional knowledge and clinical experiences. Professional training fulfills part of the need nurses face. The difficult challenges are as follows: (a) an adaptation to cultural, (b) financial, (c) professional, and (d) emotional changes. Competent nurses require knowledge of their skills and limitations (Garber, 2016).

Nurse educators are required to continually implement improved programs; it is vital to providing competent care that clinicians adapt to an evolving environment. Education can provide nurses with skills that translate research results to improved policies for the care of patients (Garber, 2016). Current information is the foremost important feature of a professional development (Garber, 2016). Nurse educators and clinicians must include research in their daily clinical practice and use that research to improve practice in all aspects of care (Garber, 2016); this is also needed in the area of

HAPU prevention and treatment. It is crucial that nurses have adequate knowledge and skills to practice safely and effectively in their clinical fields.

Feedback. Nurses are accountable for making the work environment safe by acting as role models to demonstrate appropriate behaviors. The nurse communicating effectively shows other how to express themselves clearly. Nurses receive and provide useful feedback in a way that encourages improvement in practice performance. Feedback is not helpful, however, when delivered in discomfort and stress (Battie & Steelman, 2014). The nurse input is respectful, productive feedback provided consistently in their practice environment is an expected standard for nurses.

Awareness. The medical and nursing staff need knowledge of the costs and health outcome significance of preventing HAPUs as well as the significance of HAPU prevention as an interdisciplinary responsibility. Implementing up-to-date knowledge and changing attitudes requires addressing existing knowledge that may undermine change if left unaddressed (Berlowitz et al., 2014).

Accountability. According to Battie & Steelman (2014), accountability is the acknowledgment to build trust, overcome fear, improve performance, and not blame others for mistakes. Perioperative nurses are accountable to their patients, family members, co-workers, workplace, and profession. Responsibility is a primary element of professional nursing practice and patient safety. Nurses must hold themselves responsible for patient advocacy, continuity of care, lifelong learning, to co-workers, and

the organization. Patients have specified nurses as the most-trusted profession, maintaining a very high standard (Battie & Steelman, 2014).

According to Wang and Gong, (2017), delivering knowledge at appropriate points in time makes a difference in improving the outcomes of care practices. Enhancing care plans, education on best practices, supporting successful team communication, and adapting outcome report feedback are productive for addressing information issues. To address these issues, prioritizing HAPU prevention in the delivery of care must be emphasized. All participants involved in PU prevention communication should deliver information in an efficient and accurate manner. The Patient Safety Organizations use the Common Formats released by the Agency for Healthcare Research and Quality to report patient safety events (Wang & Gong, 2017). Information about HAPU development and treatment is collected at the point of the event for reporting. It is not expected that every HAPU will be prevented.

Local Background and Context

In the perioperative environment, bilateral trochanteric ulcer awareness and preventive measures remain a concern regarding the immobile patient population. Trochanteric ulcers are challenging to treat and requires several debridements that include musculocutaneous flap. HAPUs are deemed to be a preventable problem, and despite comprehensive training and investment in a substantial number of resources, healthcare professionals still struggle to overcome their occurrence (Dealey et al., 2015).

According to Haesler (2014b), NPUAP has a significant role in education on the best practices in the prevention and treatment of HAPUs. The NPUAP sponsors numerous conferences on whether all HAPUs is avoidable. Encouraging the use of a common terminology the NPUAP has an essential role in refining definitions on the staging and reverse staging of ulcers. The NPUAP guide is challenging issues including identification of early pressure-induced damage in darkly pigmented skin and methods of calculating incidence, prevalence rates for healthcare facilities, and organizations (Haesler, 2014b).

HAPUs are a crucial indicator of the quality of patient care that organizations provide and each avoidable incident represents a breakdown of care (Hope, 2014) (as cited in Macdonald, 2017). Delivering of high-quality education to the healthcare professional is significant and advancing knowledge of the policies of HAPUs prevention is a challenge. An education program that staff can associate with is required to close the gap between how nursing practice approaches HAPU prevention and care and what is needed to prevent HAPUs. Education is one variable that may impact whether an organization has a low or high incidence of HAPUs. Integration of EBP and practical skills can be achieved at the bedside (Macdonald, 2017).

According to Englebright et al., (2018), HAPUs were estimated to affect 2.5 million people each year, resulting in approximately 60,000 deaths (Englebright et al., 2018). The CMS revealed that HAPUs add an approximate $43,000 in costs for a hospital stays leading to an annual expense of approximately $9.1 to $11.6 billion

(Englebright et al., 2018). The importance of preventing patient harm has developed from organizations such as the National Quality Forum and The Joint Commission, which include HAPUs as indicators for patient safety and the quality of care (Englebright et al., 2018). Shared knowledge of the need to decrease HAPUs provides healthcare system in organizing and advancing the best evidence-based tools in the progression toward zero HAPUs.

Definition of Terms

Accountability: The American Nurses Association Code of Ethics states that accountability is "to be answerable to oneself and others for one's actions" (Battie & Steelman, 2014, p. 537).

Adults: The adult age is 18 years or older (National Institute for Health and Care Excellence, 2018, p. 12).

At risk/high risk: To identify people who may develop a pressure ulcer (National Institute for Health and Care Excellence, 2018, p. 12).

Deep tissue pressure injury: Persistent non-blanchable deep red, maroon or purple discoloration (NPUAP, 2016).

Offer/consider: Denotes the certainty with which the recommendation is made. The strength of the recommendation (National Institute for Health and Care Excellence, 2018, p. 12).

Pressure ulcer: Localized injury to the skin and underlying tissue usually over a bony prominence, as a result of pressure, or pressure in combination with shear (NPUAP, 2016).

Stage/category: Stage 1 Pressure injury non-blanchable erythema of intact skin. Stage 2 Pressure injury partial-thickness skin loss with exposed dermis. Stage 3 Pressure injury full-thickness skin loss. Stage 4 Pressure injury full-thickness skin and tissue loss (NPUAP, 2016).

Suspected deep tissue injury: Depth unknown (NPUAP, 2016).

Unstageable pressure injury: The obscured full-thickness skin and tissue loss (NPUAP, 2016).

Unstageable/unclassified: Full thickness skin or tissue loss and depth unknown (NPUAP, 2016).

National and Local Context to Pressure Ulcers Prevention

EPUAP/NPUAP Classification System. The NPUAP serves as the official ruling for improved patient outcomes in pressure injury prevention and treatment through public policy, education, and research (NPUAP, 2016). The NPUAP and EPUAP have formed a collaborative international definition and classification system for HAPUs about the comparisons of HAPUs grading/staging systems (NPUAP, 2016). The NPUAP and EPUAP discovered category for the appropriate word to change stage/grade. The word category has the benefit of being a non-hierarchical classification, providing the education free from incorrect of “progressing from I to IV” and “healing from IV to I”

(NPUAP, 2016). The NPUAP and EPUAP classification system will be used in the DNP education program.

The Hartford Institute. The Hartford Institute guideline focuses on adults distinguishing intrinsic and extrinsic risk factors for HAPUs. The guideline encourages a head-to-toe skin assessment on admission with a risk assessment tool and patients at risk to have a routine 24-hour skin inspection including documented outcomes (Choi, Ragnoni, Bickmann, Saarinen, & Gosselin, 2016). The recommendation reveals the use of moisturizers on dry skin as part of a specific protocol and no data specific to stage III and IV HAPUs (Choi et al., 2016). The Hartford Institute guideline will be used in the DNP education program.

The demographics of the organization target HAPUs in the Acute Care settings including medical/surgery settings, community setting, spinal cord injury, and other healthcare settings within the facility. Community-acquired pressure ulcers are a PUs which is present upon admission or noted within 24 hours after admission. HAPUs are PUs which is assessed 24 hours after admitted to the facility.

The nurse managers and staff nurses share an ongoing responsibility to assist in the treatment and prevention of HAPUs. The Skin Care and Facility Interprofessional Pressure Ulcer Committee (IPUC) represents multiple clinical and non-clinical disciplines across the continuum of care is responsible for evaluating quality improvement projects for PUs prevention. The IPUC collaborate with the nurse managers to analyze and respond to PUs data prevalence studies. The primary goals of

the organization is screening/assessment for current issues, concerns, and healthcare prevention. Also, the goals include patient safety, comfort, and education. The nurse managers are responsible for collaborating with the Wound Care Team (WCT) and nurse educators on nursing staff education for assessment on implementation in the prevention strategies of HAPUs. The nursing staff is responsible for knowledge, assessment, outcome identified, plan, performance, and evaluation in an ongoing manner throughout the patient care. The WCT has the responsibility for providing consultation, continuous assessment, evaluation of care and treatment recommendation including causes, location of the injury, the stage for all skin issues, with a comprehensive note and treatment plan. The nursing education staff are responsible for collaborating with the WCT and individual departments to develop training plans delivering discipline.

Role of the Doctor of Nursing Practice Student

The DNP role included identification of a practice problem and the development of an education program while gaining experience to approach practice change for the staff, organization, and policy. The practicum site location takes place on various units such as Urology Clinic, Neurological Unit, and Infection Prevention and Control Department. The DNP staff education program follows the DNP program guiding EBP education. Working in the operating room department, bilateral trochanter HAPUs inspired a desire to develop a plan to create an education program to coincide with the organization purpose and goals for preventing HAPUs. The education program educated

the staff making them aware of the importance of treating and preventing HAPUs, accountability for nursing practice, and patient safety.

The literature indicates that there is a need to improve nursing staff and organizations to recognize patients at risk for the development of HAPUs (Engels et al., 2016). As the DNP student in this project, I identified the need for education based on the recommendations of the local practice site, and then developed the education program to teach the principles of HAPU prevention based on the published guidelines for HAPU prevention and treatment.

Summary

The DNP program equipped me as an experienced nursing student with the skills to generate evidence through research and to provide information that could translate into practice. This DNP project was a bridge from research to filling a gap in practice. Cost-effectiveness has impacted the system's current policy demands, such as leading providers, administrators, and stakeholders to practice cost savings, time requirements, and policy recommendations identifying gaps in healthcare on the organizational level. Section 2 provides concepts, models, relevance to nursing practice, local background and context, and the role of the DNP student. Section 3 continues with the topics on collection and analysis of evidence and clarification of the purpose and approach.

Section 3: Collection and Analysis of Evidence

Introduction

HAPU treatment and prevention depends on knowledge that can be delivered through an education program. The education program created for this project enhanced understanding of the current knowledge for HAPU prevention and treatment. The program assisted nurses in acquiring the professional knowledge and skills to improve the quality of nursing care regarding HAPU prevention. The education project consisted of factors such as skin/risk assessment, process training, current subject education, and use of preventative measures. PU prevention programs have demonstrated the necessary changes for the decline of HAPU incidence, the time it takes for treatment, and cost savings (Saleh, Al-Hussami, & Anthony, 2013).

The project focused on addressing the gaps in practice at the clinical practice site. The nursing staff needed education on current practices and skills to prevent HAPUs from occurring and causing interruption in the healthcare plan (Gill, 2015). The target populations for this project included older patients in the perioperative setting who were at high risk for developing HAPUs. The mission of the education program was to decrease HAPUs to the national average benchmark of 3% yearly of all patients acquire HAPUs. HAPUs for the year 2018 at the organization was 3.51%, above the national average benchmark. The previous year the rate was higher with no new interventions added. The root causes for the increased rate were lack of pressure change on patient lower extremities and friction/shearing of the patients' skin when transferring and

positioning the patient. Also, the nursing staff lacked knowledge of the current best practices established through existing professional guidelines for the treatment and prevention of HAPUs.

The purpose of this project was to assess the level of knowledge of the perioperative nurses related to HAPUs and HAPU prevention. Additionally, the project evaluated nurses' knowledge of patient risks with a pretest followed by an education program and a posttest to evaluate learning. The education program was presented to nurses in the perioperative environment.

Summary of the Background and Context

HAPUs increase patient risk of morbidity and mortality, are expensive to treat, and reduce an organization's reimbursement from Medicare. Preventive care ensures optimal patient care and quality of life. Interventions to prevent HAPUs include identifying patients at risk and repositioning them to relieve pressure. In the improvement of patient issues, the NPUAP leads in achieving leadership to strengthen clinical practice in promoting knowledge, analysis, and policy. Prevention of HAPUs has received increased recognition from clinicians, researchers, and policymakers. International guidelines recommend repositioning as a principal factor in reducing patient risk for HAPUs (Yap et al., 2016). Strategies include monitoring a patient's nutritional status and performing skin inspection, requiring team support. The patient's needs, preferences, and costs are taken into account according to the guidelines. The leader works backward from their goal of identifying ways for achieving positive healthcare

outcomes such as engaging the organization in EBP care delivery practice. The commitment from leadership establishes the quality of care associated with HAPU prevention. Knowledge, practice, and effective communication are vital in the successful implementation of innovative interventions.

Practice-Focused Question

The practice focused question was:

PFQ: Can an education program for staff nurses working in a department with high HAPU incidence in an acute care setting provide the nurse knowledge of prevention, early assessment, symptoms, and treatment of HAPUs?

The Local Problem

HAPUs remain one of the most challenging patient safety problems that affect healthcare facilities (Berlowitz et al., 2014). The local organization had an increase in HAPUs yearly with a rate of 3.51%, which was above the national benchmark rate of 3% (personal communication, April 15, 2019). The project focused on the use of the Braden Scale to identify PUs in new patients and reduce PUs in patients with an extended length of stay. The identification of the risk of HAPUs will help nurse managers and the nursing staff make effective decisions in planning patient care. In the organization, the nurses use the results of the Braden Scale to prepare the patients care for preventing PUs every shift. Use of EBP strategies has been shown to increase patient safety, improve clinical outcomes, reduce healthcare costs, and result in positive patient outcomes (Berlowitz et al., 2014).

The Gap in Nursing Practice

The project addressed the gap in practice of having no current EBP education on treatment and prevention of HAPUs at the clinical site. The NPUAP offers guidance on identification of early pressure-induced injury in skin and methods of measuring incidence prevalence rates for healthcare organizations (Haesler, 2014b).

According to Wang and Gong (2017), even with guidelines a gap exists in translating knowledge into effective clinical practices, which prevents care practices from being carried out accurately. The staff at the local organization struggle with identifying and the staging of PUs. The staff was held responsible for identifying gaps in their care that could hurt the patient outcomes when care was not delivered promptly.

Continuing education is necessary for the healthcare provider to maintain up-to-date knowledge about PU risk, prevention, staging, and treatment (Schmitt et al., 2017). Assuring the practice of evidence based HAPU prevention requires the organization to have sufficient education and training. Given the increase in the occurrence of HAPUs at the local site, the staff lacks experience in identifying and staging of clinical care. The staff opportunity is to bridge the gap with education and training of organizational and environmental factors that can impact the care delivered.

Clarification of the Purpose and Approach

I developed the education project with a pretest and posttest before and after education on HAPU prevention. Nurses had an opportunity to improve on prevention of HAPUs in their environment. The goal of offering preventive strategies included

recognition of the intrinsic and extrinsic variables associated with the development of HAPUs.

The project guidelines helped nurses identify, describe, and document factors that influence the increase of preventable and nonpreventable HAPUs. Nurses were able to distinguish between intrinsic and extrinsic factors associated with the development of preventable and nonpreventable HAPUs. The evidence-based information guided the implementation of prevention strategies for high-risk patients.

Sources of Evidence

Project Sources of Evidence

Sources of evidence for this project came from a search of the literature to identify the most recent EBP guidelines for prevention, assessment, and treatment of HAPUs. According to Mackey and Bassendowski (2017), nurses describe EBP as a problem-solving approach to clinical decision making that includes a search for the best and latest evidence, clinical expertise, assessment, and patient preference values within a context of caring. Additional evidence was obtained from a review of system data to determine departments where HAPUs occur. A pretest included questions on HAPUs incidence and prevention. The unit nurse leaders was asked to volunteer for the program.

Clarification of the Purpose Relationship to the Evidence

For the DNP project, I proposed an education program with the potential to bring staff awareness and knowledge up-to-date and to help them develop the skills necessary for the treatment and prevention of HAPUs in the organization. The practice problem

identified for the DNP education program was: Can an education program for the staff nurses increase the nurse knowledge of prevention, early assessment, symptoms, and treatment of HAPUs?

The organization was committed to delivering the highest quality care for patients in an atmosphere where medicine is constantly changing to produce desirable outcomes through EBPs that advance the safest care possible. By educating the nurses who care for patients, HAPUs may be prevented and existing HAPU outcomes improved.

Protections

No direct patient involvement was included in this education project. As a result, no risk for harm of patients existed. There was also no risk to the nursing staff attending the educational intervention. The nurse managers and nursing staff completed the pretest before and the posttest at the end of the education intervention.

The project involved implied consent from the staff participants using the anonymous participant consent form provided in the DNP Staff Education Manual. No identifiable staff information was collected from the pretest or posttest submissions. Paper copies of the pretest and posttest for the project were locked in a file cabinet in the nurse educator office.

This project followed the Walden DNP program Staff Education Manual. The staff education doctoral project was approved by the Walden Institutional Review Board (IRB) before implementation. The doctoral project for approval includes no patient data

or personally identifiable information for staff participating in the education classes. The data reported in aggregate.

Analysis and Synthesis

The DNP Education Manual presented by Walden University was used to guide the evidence-based education program. To determine the education program was effective, a pretest and posttest were administered using content obtained from the literature review. The results of that pretest and posttest was the basis for the analysis of this project's evaluation. The data was collected from the participants who attended the education sessions.

The staff education consisted of the risk assessment guidelines using clinical judgment and a risk assessment tool documenting patients at risk of developing an HAPU. The education program included information on identifying adults at high risk of developing HAPUs and assessing risk factors such as mobility, nutritional deficiency, inability to reposition themselves, and significant cognitive impairment.

The education program developed included strategies for documenting the initial evaluation of the patient's HAPU risk. The staff were trained on the importance of the Braden scale as a support for their clinical judgment when assessing HAPUs risk.

The Iowa model and Watson's theory were used to educate the perioperative staff on treating and preventing HAPUs. The staff learned strategies for accomplishing assessment and treatment of HAPUs, patient education, and feedback.

Summary

The DNP education program will result in the prevention of HAPUs through EBP guidelines for care in the perioperative setting. The NPUAP supports EBP guidance in facing challenging problems including identification of early pressure-induced injury in skin and techniques of calculating incidence and prevalence rates for healthcare organizations. Education that translated to nursing practice was necessary for the desired outcome for the organization. The primary goal for the project was to educate perioperative nurses concerning strategies for HAPUs prevention and treatment.

Section 4: Findings and Recommendations

Introduction

HAPUs remain one of the most challenging patient safety problems for healthcare facilities (Berlowitz et al., 2014). According to Diamond et al. (2016), in 2014, 10% of inpatients developed a new PU while hospitalized. The CMS indicated HAPUs are considered "never events" joining hospital safety and quality to PU incidence (Diamond et al., 2016). HAPUs are referred to as pressure sores, bed sores, pressure damage, and pressure injuries (National Institute for Health and Care Excellence, 2018). My project focused on the use of the Braden Scale to identify HAPUs in new patients and to reduce HAPUs in patients with an extended hospital stay. The organization had an increase in HAPUs yearly with a rate of 3.51% above the national benchmark rate of 3% (personal communication, April 15, 2019). Identifying HAPU risk will help nurse managers and the nursing staff to make effective decisions in planning patient care. In hospitals, nurses will use the results of the Braden Scale to plan the care of patients to prevent unnecessary PUs. Institution of EBP has been shown to increase patient safety, improve clinical outcomes, reduce healthcare costs, and decrease negative change in patient outcomes (Berlowitz et al., 2014).

The project addressed the gap in practice of having no current EBP education on treatment and prevention of HAPUs at the clinical site. The NPUAP offers guidance on challenging problems such as identification of early pressure-induced injury in skin and methods of measuring incidence and prevalence rates for healthcare organizations

(Haesler, 2014b). This project provided a means to address the gap by translating existing EBP guidelines to practice through an education program that provided knowledge on effective clinical practices for recognition and treatment of HAPUs. The opportunity for the staff was to bridge the gap with education and training of organizational and environmental factors. EBP for HAPU prevention involves the organization to have adequate education and training (Yap et al., 2016).

The practice-focused question was: Can an education program for staff nurses working in a perioperative department with high HAPUs incidence in an acute care setting increase the nurses' knowledge of prevention, early assessment, symptoms, and treatment of HAPUs?

The purpose of this project was to review the literature for best practices and then develop or identify an education program for nurses on how to prevent and treat HAPUs. The education program was intended to increase the nurse's knowledge of evidence related, in part, to nurses documenting existing HAPUs on admission and leaving the perioperative setting. Additional information included a review on nurses' identification and documentation of high-risk patients. The PowerPoint (Appendix B) presented to the nurses provided the team with knowledge for identifying, treating, and managing skin breakdown, improving patient results, and enhancing patient quality of life. The education provided a process for teamwork and collaboration between nurses and medical assistance for the early detection and treatment of HAPUs. Nurses' abilities to recognize HAPUs and their knowledge of prevention, staging, and treatment impact the

rate of pressure injury development and progression (Unver et al. 2017). The education program was provided to nurses at the perioperative setting to improve practice and reduce HAPUs.

The sources of evidence for this project came from literature identifying the most recent EBP guidelines for prevention, assessment, and treatment of HAPUs. Also, I retrieved data from the NPUAP (Engels et al., 2016) and the ACP (Qaseem et al., 2015). The evidence in the NetCE as cited in Mamou, 2016), course challenged the staff to raise their levels of expertise for improving the quality of healthcare. The NetCE developed the pretest and posttest. The education program changed the participant's needs to increase their knowledge from the literature (Appendix C). The posttest determined the participants' level of knowledge after they attended the education program. Guidelines are used to recognize changes in practice, such as HAPU prevention. Effective prevention efforts for HAPUs involve a team approach for positioning the patient. Nurses should be well-informed of the signs/symptoms and preventive strategies for lowering the rate of HAPUs.

Findings and Implications

Using the pretest and posttest obtained from the NetCE in this project, I evaluated the participants' knowledge of the Braden Scale, documentation of the patient skin condition, pressure reduction, and prevention of shearing forces (see Mamou, 2016). The project was informed by EBP practice guidelines. To determine if the education program was effective, a study guide, pretest (Appendices C, D), posttest, and evaluation form

(Appendices E, F) were provided to the participants. The results of that pretest and posttest was the basis of the analysis for this project's evaluation of data collected from the participants. From the information collected in the pretest and posttest education evaluation scores, I calculated learning gains from the training.

Results

The analysis of the pretest and posttest data for the project participants is shown in Table 1. Twenty questions were included on the pretest and posttest (Appendices D, E). Each question was worth five points giving a total possible score of 100. Fifteen registered nurses and five medical assistants participated in the education program and took the pretest and the posttest. The mean scores were then calculated for each of the two groups participating. The mean pretest score for registered nurses was 40 while the mean pretest score for medical assistants was 35. These pretest scores supported the assessment that the nurses in the perioperative area of the hospital did not have a current knowledge of the HAPU guidelines. After completing the education program, the posttest was administered. Posttest mean scores for the 15 registered nurses was 100 while the posttest mean score for the medical assistants was 65.

Table 1

Comparison of Pretest and Posttest Mean Scores

Level	Pretest Scores	Posttest Scores
Registered nurses	40	100
Medical assistant	35	65

I found approximately 50 research articles identifying the most recent EBP guidelines for prevention, assessment, and treatment of HAPUs. Consideration of EBP information and instructions recommended by authorities' external organizations provided information for the education program. A worksheet provided the number of participants grouped under the passed and not passed for each test. The cut-off for passing on the pre-test and posttest was a score of 75%. The staff results improved following the PowerPoint, study guide, and pretest.

The guideline governance group (GGG) on behalf of EPUAP, NPUAP, and PPPIA developed a high-quality and trustworthy HAPU guideline to improve HAPU care worldwide (Kottner, Carville, Haesler, & Cuddigan, 2019). According to Kottner et al. (2019), fifteen international associate organizations shared the mission of the GGG, supporting the work and sharing expertise. The guideline summarized the state-of-the-science of pressure injury (PI) etiology, prevention, and treatment providing evidence-based recommendations and good clinical practice statements covering all age groups in all healthcare settings irrespective of the medical diagnoses, comorbidities, and other health characteristics. The assessment of the international associate complemented the EPUAP, NPUAP, and PPPIA. The CPGs provided clinical assessments in improving patient care and outcomes. CPGs are used by healthcare professionals to provide support to the caregivers, patients at PU risk, and patients with current PUs. The GGG has improved the CPGs based on the latest methodological developments. The enhanced

quality CPGs shall improve the quality of PU prevention and treatment worldwide (Kottner et al. 2019).

According to Kottner et al. (2019), the EPUAP, NPUAP, and PPPIA shall manage the CPGs revision process with the assistance of methodologist E. Haesler. The guideline summarize the state-of-the-science on PI prevention and treatment. The CPG is intended to be used by healthcare professionals guiding individuals at PI risk and those with existing PIs. The CPGs address individual needs of specific populations, such as infants, children, individuals with spinal cord injuries, and individuals with obesity. The special populations and healthcare settings include the operating room, palliative care, critical care, and community care settings (Kottner et al., 2019).

Social Change

According to Haesler (2014a), the guidelines intend to provide evidence-based proposals for the prevention and treatment of PUs taught by health specialists. The preventive approach leads evidence-based care for preventing the increase of PUs, and the understanding of the practice center on education provides evidence-based guidance on effective strategies to improve PU healing. Nonadherence to pressure ulcer guidelines is a frequently reported concern, and many barriers may influence adherence to a direction. The nurse negative attitude and lack of knowledge are barriers that affect the performance of the guidelines. Negative opinions and lack of expertise are common barriers to using guidelines in clinical practice (Haesler, 2014a).

According to Unver et al. (2017), nurses play a vital role in the prevention of PUs, and negative attitudes affect preventive care strategies. Nurses who had previous education about PUs care attitude are positive. The in-service education programs developed at hospitals and the nurses who attend the course help them to improve their care. Principal barriers to EBP are lack of knowledge, negative attitudes, and underdeveloped skills (Unver et al., 2017).

Etafa et al. (2018), identified the significant barriers to carry out PUs prevention (PUP) practice as follows: (a) Heavy workload and inadequate staff, (b) Shortage of resources such as equipment and resource, (c) Inadequate training coverage of pressure, and (d) Lack of universal guideline on PUP the most commonly cited barriers. The presence of obstacles such as lack of time and staff, training, resources, and guidance could prevent positive attitudes of nurses' from being reflected in practice (Etafa, Argaw, Gemechu, Melese, 2018).

Recommendations

The assessment of health professionals' knowledge and attitudes associated with HAPUs prevention and management highlights possible barriers. Evaluation of the staff members' experience and perspectives provide information that can assist in the development of the organization-specific interventions that improve the quality of HAPUs preventive care (Haesler, 2014a). The HAPUs knowledge assessment tool is designed to assess attitudes toward HAPUs prevention. The knowledge assessment tool identifies knowledge gaps and informs the development of interactive education

interventions and strategies supporting decision making in preventive care (Haesler, 2014a).

According to Haesler (2014a), the quality indicators were designed to support healthcare organizations in implementing and monitoring the strategies recommended in the clinical guideline for the prevention and treatment of HAPUs. Quality indicators measure care to observe quality and initiate future improvements. Quality indicators identified as internal or external indicators. Internal quality indicators are practiced by healthcare providers to monitor and enhance the outcomes of their care processes. Health professionals use the information to review and approach potential problems. Progress toward meeting internal quality indicators are maintained confidentially, or used to benchmark against organizations. Stakeholders, use external signs to assess the quality of care and cost-effectiveness. Structure, process, and the outcome are quality indicators that relate to the type of care delivered. Structure indicators relate to characteristics of the care setting, that includes organizational structure, environment, technology, tools, and human resources. The process indicators involve activities and tasks needed to implement patient care at the care level. The procedures and outcome indicators describe healthcare effects at the individual patient level (Haesler, 2014a).

Project Strength and Limitations

The recommendation strengthens the project by identifying the importance of the purpose statement based on the potential to enhance patients results. The recommendation present evidence to the health professional on their confidence in prioritizing HAPUs

related interventions. The proposal encourages the primary scientific evidence from adequately created implemented controlled trials and clinical series on HAPUs in humans or humans at risk for HAPUs rendering analytical outcomes supporting the recommendation (Haesler, 2014a).

The involvement of key stakeholders and a multi-disciplinary team to identify and improve patient care were challenging to coordinate. The participation of stakeholders and the multi-disciplinary team could have made a successful outcome. Healthcare professionals have a more positive attitude towards a team approach and are more accommodating (Gill, 2015). The guideline does not attempt to implement full safety and usage information for products and devices. The staff shall manage products according to the manufacturer's directions. The instructions are intended first for education/information and not as advice regarding coding standards/reimbursement regulations (Haesler, 2014a). To improve the patient outcome and standards of care involving the respiratory therapy department in assisting the changing practice regarding medical device-related HAPUs (Gill, 2015).

Section 5 presents an analysis of the project and discuss the translation of new knowledge to produce a change in practice. The guidelines disseminate approaches about PUP throughout the organizations.

Section 5: Dissemination Plan

The development of the guidelines brought me the opportunity to educate perioperative nurses on the vital evidence on PU prevention and treatment. The guidelines were intended for education purposes, providing information that was accurate at the time of publication (Haesler, 2014a). The guidelines suggest that health professionals, regardless of clinical discipline, bear responsibility for patients who are a risk of developing HAPUs and patients with existing PUs. This research and project development provided me with information on innovative strategies to enhance nursing practice, quality of care, and safety culture. The translation of new data to practice can produce a change that benefits organizations and clinicians. This is the goal for implementing the findings of my project. Nurses and medical assistants were the primary audiences to share the project findings promoting improved strategies for identifying and treating HAPUs.

Analysis of Self

The journey of my DNP project increased my leadership skills to advance my role in my specialty. The guidelines on the prevention and treatments of HAPUs helped me to reflect on a new clinical practice standard based on evidence. The incorporation of my clinical experiences and the groundwork initiated a process of change in nursing practice. The use of EBP in preventing and treating HAPUs supports the desire to improve patients' clinical outcomes and treatment cost-effectiveness; this was the foundation for developing the education program. Through this process, I had the chance to enhance my

nursing skills. And understand how practice changes from an EBP model could enhance nurse understanding on prevention of HAPUs.

The change of the guidelines that will assess the competence of nursing interventions will further clinical practice and patient consequences. I had an opportunity to share evidence-based findings on HAPUs prevention and treatment of a vulnerable population. The knowledge provided a chance to improve patients outcomes. Leadership supported the guidelines responding to the gaps in staff training. The instructions will close the gap between what is recognized and what is performed to prevent PUs. The nurse's documentation monitors the progress of the individual's prevention efforts to minimize the risk of PUs development (Haesler, 2014a).

Summary and Conclusions

The doctoral project can assist health professionals choose appropriate strategies for prevention and treatment of HAPUs. The education program identifies the population at risk for development of HAPUs, and explains the Braden Scale for assessment and documentation of patient skin condition.

The goal of this DNP project was to minimize the rate of HAPUs in the project agency from 3.51% to the national benchmark rate of 3% through an education project. The education program provided a study guide, pretest, and posttest designed with information on HAPUs (Appendices C, D, E). The objective was assessed by the results of the pretest and posttest scores.

I used the Braden Scale and the Iowa model as a theoretical framework in addition to the use of national and international guidelines on HAPUs. The recommendation (see Haesler 2014a) strengthens the project by identifying the importance of the purpose statement based on the potential to enhance patients' results. The project also presented EBP information to the health professional on prioritizing HAPU related interventions. The project was limited by the challenge of coordinating the involvement of key stakeholders and a multidisciplinary team.

The findings of the project have significant implications in terms of practice and social change. Knowledge and attitudes were possible barriers in the management and prevention of PUs. The process calculated learning gains from the pretest and posttest education evaluation scores. The results of the pretest and posttest scores was based on the data collected from the participants.

The DNP project has strengthened my skills as a practitioner and project developer. Managing the project team has improved my leadership, communication, and team-building abilities. The project has also improved my self-confidence as a charge nurse, educator, and leader.

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Appendix A: NetCE Approval Letter

NetCE
Continuing Education

June 28, 2019

Druscilla Jones
[redacted]

Dear Ms. Jones,

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Sincerely,

[redacted]
Director of Development

POST OFFICE BOX 997571 • SACRAMENTO, CALIFORNIA 95899-7571
1482 STONE POINT DRIVE • SUITE 120 • ROSEVILLE, CALIFORNIA 95661
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Appendix B: PowerPoint

Hospital-Acquired Pressure Ulcers

Drucilla Jones, MSN, RN, DNP Student

Walden University

INTRODUCTION

- Hospital-acquired pressure ulcers (HAPUs) are an ongoing problem for patients and healthcare settings.
- Tissue necrosis results in the breakdown of the skin and subcutaneous tissue that results in pressure ulcers (PUs).
- The nurse's role in providing care for patients with pressure ulcers.
  1. Complete skin assessment
  2. Accurate documentation

Purpose

Focus of Project

- Develop an education program for nurses on how to prevent and treat HAPUs.
- The nurse's ability to recognize HAPUs and their knowledge of prevention, staging, and treatment may impact the rate of pressure injury development and progression

Outcome(s)

- An education program would provide the evidence-based practice (EBP) knowledge needed for nurses at the perioperative setting to improve practice and reduce HAPUs.

Skin Structures

- Human skin has two primary layers:
  1. The epidermis (outer layer)
  2. The dermis (inner layer)
- The epidermis is a thin layer that regenerates itself every four to six weeks.
- The dermis is the most important part of the skin and is often referred to as the "true skin"

Mamou M. (2016).

Adult Skin

- Adult skin shows a gradual increase in epidermal turnover time and decreasing dermal thickness.
- The epidermal turnover takes around in young adults in

  21 days
- By 35 years of age, this time doubles

Elderly Skin

- Elderly skin has a decrease in

  Dermal thickness, absorption via the skin, and number of Langerhans cells.
- 50% reduction in the cell turnover rate in the stratum corneum (outer most layer).
- 20% reduction in dermal thickness.

The Braden Scale

- The Braden Scale scores factors that contribute to prolonged pressure and factors that result in diminished tissue tolerance for pressure.
- Six items scored in the assessment include

Sensory perception	Moisture
Activity	Mobility
Nutrition	Friction and shear

Mamou M. (2016).

Skin Assessment

- Admission assessment is the foundation for effective prevention
- Completing a skin assessment.

1. Identify and assess areas of impending or actual skin breakdown.
2. Patients at risk for future skin ulcers.
3. Immediately begin appropriate management interventions.
4. For patients at high risk for pressure ulcer development.
5. A systemic skin assessment should be conducted at least daily and findings documented.

Wound Assessment

- The amount should be noted (scant, moderate, or copious).
- The color and consistency of the drainage
  1. Serous (clear or light yellow in color, thin, watery)
  2. Sanguineous (red, thin)
  3. Serosanguineous (pink to light red, thin, watery)
  4. Purulent (creamy yellow, green, white, or tan, thick, opaque).

Mamou M. (2016).

Documentation

- Documentation of a pressure ulcer should include
  1. Location, stage (per NPUAP definitions)
  2. Wound description (size, color, drainage)
  3. Pain level.
- Wound size should always be recorded in centimeters

Pressure Ulcers

- Pressure ulcers usually occur over

  Bony prominences

- Such as the sacrum, the ischial tuberosity, the trochanter, and the heels.
- Ninety-five percent of pressure ulcers occur

  On the lower body

- Pressure that results in the development of ulcers is defined as compression of soft tissues between two rigid surfaces.

Pressure Ulcers

- Shear is a combination of Friction and gravity
- The areas of the body most vulnerable to shearing forces include

  Shoulder blades Elbows

  Sacrum Ischial tuberosities

  Heels

- A major source of moisture on the skin is

  Sweating Incontinence

  Wound drainage

Pressure Ulcers

- Staging is an assessment system that classifies pressure ulcers based on anatomic depth of tissue damage.
- The 2016 revision of the National Pressure Advisory Panel (NPUAP) staging system, "pressure injury" replaced "pressure ulcer."
- Alleviate confusion between injury to
  1. Intact skin (stages 1 and deep tissue injury)
  2. Open ulcers (stages 2–4 and unstageable pressure injury).

Mamou M. (2016).

Pressure Ulcers

- In which case should a pressure ulcer be down staged?

  A pressure ulcer should never be down staged
- Deep tissue pressure injury is

  Bruising under intact or non-intact skin
- The area may be preceded by tissue that is painful, firm, mushy, boggy, warmer, or cooler as compared to adjacent tissue.

Pressure Ulcers

- Possibly the greatest risk for pressure ulcer development is immobility
- Patients who have lost the ability to ambulate, either for physical or cognitive reasons, will commonly develop pressure ulcers while chair- or bedridden.
- Patient's body weight is focus over the ischial tuberosities while sitting in a chair.
- The prevention of ulcers in these patients is a vital aspect of ensuring an optimal quality of life.

Mamou M. (2016).

Pressure Ulcers

- Aging skin becomes more fragile due to

  Decreased vascularization
- Obese patients are at highest risk for the development of unusual pressure ulcers within skin folds?
- Factors that contribute to pressure ulcer development in obese individuals include
  1. Decreased blood supply in adipose tissue
  2. Difficulty in turning and repositioning

Pressure Ulcers

3. Moisture within skin folds
4. Incontinence
5. Skin-to-skin friction
6. Immobility, and poor nutrition

- Obese patients are particularly at risk for pressure ulcers resulting from pressure within skin folds.
- Maintaining skin cleanliness and moisturizing frequently protect skin integrity.
- The skin should be cleaned with water and a gentle soap

  Preferably a pH-balanced cleanser.

Risk Factor

- Low body weight and impaired nutrition are concerns.
- Weight less than 119 pounds or a BMI less than 20 are indicators of increased risk for pressure ulcer development.
- Risk factors for pressure ulcer development include

1. Recent weight loss,
2. Decreased nutritional intake,
3. Inadequate dietary protein, and impaired ability to feed oneself

Risk Factors

- Patients with diabetes are more prone to infection, and wound healing.
- Patients with diabetes diminished wound strength.
- Patients with diabetes are more prone to slower wound healing.
- Research shows that without formal risk assessment, clinicians tend to intervene consistently only at the highest levels of risk.
- The Braden Scale is a reliable tool for identifying patients at risk for pressure ulcer breakdown.

Mamou M. (2016).

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Mamou M. (2016). Pressure Ulcers and Skin Care. Sacramento, CA: NetCe

Appendix C: Pressure Ulcers and Skin Care Study Guide

1. The two primary layers of the skin are the
   A) epidermis and the dermis. (General Characteristics of Skin; Skin Structures)

2. The dermis is the most important part of the skin and is often referred to as the
   A) "true skin." (General Characteristics of Skin; Skin Structures; Dermis)

3. In younger adults, epidermal turnover takes around
   C) 21 days. (General Characteristics of Skin; Skin Throughout the Life Span; Adult Skin)

4. Elderly skin has a decrease in
   D) All of the above (General Characteristics of Skin; Skin Throughout the Life Span; Elderly Skin)

5. Pressure ulcers usually occur over
   C) bony prominences. (Pressure Ulcers)

6. Ninety-five percent of pressure ulcers occur
   B) on the lower body. (Pressure Ulcers)

7. Shear is a combination of
   A) friction and gravity. (Pressure Ulcers; Pressure and Shear)

8. A major source of moisture on the skin is
   D) All of the above (Pressure Ulcers; Moisture)

9. In which case should a pressure ulcer be down staged?
   D) A pressure ulcer should never be down staged. (Pressure Ulcers; Stages of Breakdown)

10. Deep tissue pressure injury is
    B) bruising under intact or non-intact skin. (Pressure Ulcers; Stages of Breakdown; Deep Tissue Pressure Injury)

11. Possibly the greatest risk for pressure ulcer development is
    A) immobility. (Pressure Ulcer Risk Assessment; Major Risk Factors in Pressure Ulcer Development; Decreased Mobility)

12. Aging skin becomes more fragile due to
B) decreased vascularization. (Pressure Ulcer Risk Assessment; Major Risk Factors in Pressure Ulcer Development; Age)

13. Which of the following patients are at highest risk for the development of "unusual" pressure ulcers within skin folds?
A) Obese patients (Pressure Ulcer Risk Assessment; Major Risk Factors in Pressure Ulcer Development; Obesity)

14. Which of the following is an indicator of increased risk for pressure ulcer development?
D) Weight less than 119 pounds (Pressure Ulcer Risk Assessment; Major Risk Factors in Pressure Ulcer Development;
Nutrition)

15. Patients with diabetes are more prone to
A) slower wound healing. (Pressure Ulcer Risk Assessment; Major Risk Factors in Pressure Ulcer Development; Diabetes)

16. The most reliable tool for identifying patients at risk for pressure ulcer breakdown is the
C) Braden Scale. (Pressure Ulcer Risk Assessment; Risk Assessment; The Braden Scale)

17. Assessment of a pressure ulcer should include
D) All of the above (Skin and Pain Assessments; Assessing and Documenting a Pressure Ulcer)

18. While sitting in a chair, much of a patient's body weight is focused over the
D) ischial tuberosities. (Individualized Program of Skin Care; Positioning While in Chair)

19. The most appropriate cleansing agent for skin is one that
C) is pH balanced. (Individualized Program of Skin Care; Cleansing and Bathing)

20. To empower the patient and family to become active participants in the patient's care, the nurse should

Appendix D: Pressure Ulcers and Skin Care Pretest

1. The two primary layers of the skin are the
A) epidermis and the dermis.
B) epidermis and the basement membrane.
C) stratum corneum and stratum lucidum.
D) stratum granulosum and the stratum spinosum.

2. The dermis is the most important part of the skin and is often referred to as the
A) "true skin."
B) subcutaneous tissue.
C) thinnest layer of the skin.
D) All of the above

3. In younger adults, epidermal turnover takes around
A) 10 days.
B) 2 weeks.
C) 21 days.
D) 3 months.

4. Elderly skin has a decrease in
A) dermal thickness.
B) absorption via the skin.
C) number of Langerhans cells.
D) All of the above

5. Pressure ulcers usually occur over
A) adipose tissue.
B) casts and splints.
C) bony prominences.
D) exposed skin surface.

6. Ninety-five percent of pressure ulcers occur
A) over elbows.
B) on the lower body.
C) under breast tissue.
D) over the occipital area.

7. Shear is a combination of
A) friction and gravity.
B) gravity and pressure.
C) friction and pressure.
D) moisture and pressure.

8. A major source of moisture on the skin is
A) sweating.
B) incontinence.
C) wound drainage.
D) All of the above

9. In which case should a pressure ulcer be down staged?
A) There is increased granulation tissue.
B) There is less bleeding from the wound bed.
C) The ulcer goes from a stage 4 to a stage 3.
D) A pressure ulcer should never be down staged.

10. Deep tissue pressure injury is
A) a chronic wound.
B) bruising under intact or non-intact skin.
C) a difficult-to-heal stage 1 pressure injury.
D) hypergranulation tissue in the wound bed.

11. Possibly the greatest risk for pressure ulcer development is
A) immobility.
B) hypotension.
C) contractures.
D) decreased sensation.

12. Aging skin becomes more fragile due to
A) increased moisture.
B) decreased vascularization.
C) decreased vascular fragility.
D) increased sensory perception.

13. Which of the following patients are at highest risk for the development of "unusual" pressure ulcers within skin folds?
A) Obese patients
B) Female patients
C) Pediatric patients
D) Geriatric patients

14. Which of the following is an indicator of increased risk for pressure ulcer development?
A) A BMI of 25
B) Increased caffeine intake
C) Vitamin D and K deficiency
D) Weight less than 119 pounds

15. Patients with diabetes are more prone to
A) slower wound healing.
B) increased phagocytic activity.
C) increased response to pressure.
D) increased blood flow to the skin.

16. The most reliable tool for identifying patients at risk for pressure ulcer breakdown is the
A) Foley Scale.
B) Homer Scale.
C) Braden Scale.
D) Bergström Scale.

17. Assessment of a pressure ulcer should include
A) wound size.
B) location of wound.
C) amount of wound drainage.
D) All of the above

18. While sitting in a chair, much of a patient's body weight is focused over the
A) coccyx.
B) sacrum.
C) right trochanter.
D) ischial tuberosities.

19. The most appropriate cleansing agent for skin is one that
A) dissolves lipids.
B) is mild scented.
C) is pH balanced.
D) contains alkaline products.

20. To empower the patient and family to become active participants in the patient's care, the nurse should
A) explain the plan of care to cognitively aware patients.
B) teach the patient/family what they can do to facilitate pressure relief.
C) ensure that the patient and/or family understand what a pressure ulcer is.
D) All of the above

Appendix E: Pressure Ulcers and Skin Care Posttest

1. To empower the patient and family to become active participants in the patient's care, the nurse should
A) explain the plan of care to cognitively aware patients.
B) teach the patient/family what they can do to facilitate pressure relief.
C) ensure that the patient and/or family understand what a pressure ulcer is.
D) All of the above

2. The most appropriate cleansing agent for skin is one that
A) dissolves lipids.
B) is mild scented.
C) is pH balanced.
D) contains alkaline products.

3. While sitting in a chair, much of a patient's body weight is focused over the
A) coccyx.
B) sacrum.
C) right trochanter.
D) ischial tuberosities.

4. Assessment of a pressure ulcer should include
A) wound size.
B) location of wound.
C) amount of wound drainage.
D) All of the above

5. Which of the following patients are at highest risk for the development of "unusual" pressure ulcers within skin folds?
A) Obese patients
B) Female patients
C) Pediatric patients
D) Geriatric patients

6. Which of the following is an indicator of increased risk for pressure ulcer development?
A) A BMI of 25
B) Increased caffeine intake
C) Vitamin D and K deficiency
D) Weight less than 119 pounds

7. Patients with diabetes are more prone to
A) slower wound healing.
B) increased phagocytic activity.
C) increased response to pressure.
D) increased blood flow to the skin.

8. The most reliable tool for identifying patients at risk for pressure ulcer breakdown is the
A) Foley Scale.
B) Homer Scale.
C) Braden Scale.
D) Bergström Scale.

9. The two primary layers of the skin are the
A) epidermis and the dermis.
B) epidermis and the basement membrane.
C) stratum corneum and stratum lucidum.
D) stratum granulosum and the stratum spinosum.

10. The dermis is the most important part of the skin and is often referred to as the
A) "true skin."
B) subcutaneous tissue.
C) thinnest layer of the skin.
D) All of the above

11. In younger adults, epidermal turnover takes around
A) 10 days.
B) 2 weeks.
C) 21 days.
D) 3 months.

12. Elderly skin has a decrease in
A) dermal thickness.
B) absorption via the skin.
C) number of Langerhans cells.
D) All of the above

13. Pressure ulcers usually occur over
A) adipose tissue.
B) casts and splints.
C) bony prominences.
D) exposed skin surface.

14. Ninety-five percent of pressure ulcers occur
A) over elbows.
B) on the lower body.
C) under breast tissue.
D) over the occipital area.

15. Shear is a combination of
A) friction and gravity.
B) gravity and pressure.
C) friction and pressure.
D) moisture and pressure.

16. A major source of moisture on the skin is
A) sweating.
B) incontinence.
C) wound drainage.
D) All of the above

17. In which case should a pressure ulcer be down staged?
A) There is increased granulation tissue.
B) There is less bleeding from the wound bed.
C) The ulcer goes from a stage 4 to a stage 3.
D) A pressure ulcer should never be down staged.

18. Deep tissue pressure injury is
A) a chronic wound.
B) bruising under intact or non-intact skin.
C) a difficult-to-heal stage 1 pressure injury.
D) hypergranulation tissue in the wound bed.

19. Possibly the greatest risk for pressure ulcer development is
A) immobility.
B) hypotension.
C) contractures.
D) decreased sensation.

20. Aging skin becomes more fragile due to
A) increased moisture.
B) decreased vascularization.
C) decreased vascular fragility.
D) increased sensory perception.

Appendix F: Evaluation

Last Name_____
First Name_____ _____
Title/Position_____

1. Was the course content ❑ new / ❑ review?
2. How many self-assessment questions did you answer correctly? _____
3. How much time did you spend on this activity, including the questions? _____
4. Would you recommend this course to your peers?.....❑ Yes ❑ No
5. Did the course content support the stated course objective?..... ❑ Yes ❑ No
6. Did the course content demonstrate the author's knowledge of the subject?
.....❑ Yes ❑ No
7. Was the course content free of bias?.....❑ Yes ❑ No
8. Before completing the course, did you identify the necessity for education on the topic to improve your professional practice?.....❑ Yes ❑ No
9. Have you achieved all of the stated learning objectives of this course?.....❑ Yes ❑ No
10. Has what you think or feel about this topic change ..... ❑ Yes ❑ No
11. Were self-assessment questions with evaluation an effective teaching strategy?
.....❑ Yes ❑ No
12. Did evidence-based practice recommendations assist in determining the validity or relevance of the information?
.....❑ Yes ❑ No ❑ N/A
13. Are you more confident in your ability to provide patient care after completing this course?.....❑ Yes ❑ No
14. Did the activity strengthen your interest in and commitment to interprofessional team learning and collaborative practice?.....❑ Yes ❑ No
15. Do you plan to make changes in your practice as a result of this course content?.....❑ Yes ❑ No

Excel Spreadsheet

Registered Nurses (RN) and Medical Assistants (MA) Pretest and Posttest Scores				
Registered Nurses		Pretest Scores		Posttest Scores
RN 1		90		100
RN 2		50		100
RN 3		50		100
RN 4		25		100
RN 5		50		100
RN 6		25		100
RN 7		50		100
RN 8		50		100
RN 9		25		100
RN 10		25		100
RN 11		50		100
RN 12		50		100
RN 13		25		100
RN 14		25		100
RN 15		25		100
	Total Scores	615		1500
Medical Assistants				
MA 1		25		75
MA 2		50		50
MA 3		25		75
MA 4		25		75
MA 5		50		50
	Total Scores	175		325
Learning Gain		60%		

Appendix G: Prevention and Treatment of Pressure Ulcers: Clinical Practice Guideline

Quality Indicators for Pressure Ulcers

Structure indicators	Process indicators	Outcome indicators
1.1. The organization has a pressure ulcer prevention and treatment policy/protocol that reflects the current best practice outlined in this guideline. 1.2. Health professionals receive regular training in pressure ulcer prevention and treatment. 1.3. Current information on pressure ulcer prevention and treatment is available for patient consumers and their caregivers in their own language. 1.4. The organization's pressure ulcer prevention and treatment protocol addresses the provision, allocation and use of pressure redistribution support surfaces.	2.1 Every individual is assessed for pressure ulcer risk within eight hours after admission (i.e., first contact with a health professional or at first community visit), and the assessment is documented in the medical record. 2.2 Every individual received a comprehensive skin assessment within eight hours after admission (i.e., first contact with a health professional or at first community visit), and the assessment is documented in the medical record. 2.3 An individualized pressure ulcer prevention plan is documented and implemented for every individual at risk of, or with, pressure ulcers. 2.4 An assessment of the individual is documented for individuals with a pressure ulcer.	3.1 Percentage of individuals within the facility at a specific point in time with a pressure ulcer (point prevalence). 3.2 Percentage of individuals who did not have a pressure ulcer on admission who acquire a pressure ulcer during their stay in the facility (facility-acquired rate).

Haesler, E. (2014a). Prevention and Treatment of Pressure Ulcers: Clinical Practice Guideline. 1-345. Retrieved from internationalguideline.com/static/pdfs/NPUAP-EPUAP-PPPIA

Structure indicators	Process indicators	Outcome indicators
	2.5 Pressure ulcers are assessed and the findings are documented at least once a week. 2.6 An individualized treatment plan and its goal, is available for each individual with a pressure ulcer. 2.7 Every individual with a pressure ulcer has a documented pain assessment and where applicable, a pain management plan. 2.8 Every individual with an increased risk of pressure ulcers (and/or his or her caregiver) receives information about the prevention and treatment of pressure ulcers.	

Haesler, E. (2014a). Prevention and Treatment of Pressure Ulcers: Clinical Practice Guideline. 1-345. Retrieved from internationalguideline.com/static/pdfs/NPUAP-EPUAP-PPPIA

Structure Indicators

1.1. The organization has a pressure ulcer prevention and treatment policy/protocol that reflects the current best practice outlined in this guideline.

Description	The organization has a policy/protocol governing the prevention and treatment of pressure ulcers that reflects current best practice.
Question	Does the organization have a policy/protocol governing the prevention and treatment of pressure ulcers that reflects current best practice?
Definition(s)	The organization's pressure ulcer policy/protocol should reflect the current best practice outlined in this international guideline and relevant local requirements.
Source	Organization.
Measurement level	Organizational.
Rationale	A policy/protocol that reflects current best practice in the prevention and treatment of pressure ulcers determines interventions for preventing and treating pressure ulcers and promotes care delivery that is in accordance with best available evidence.
Evidence rationale	See the *Facilitators, Barriers and Implementation Strategy* section of the guideline.

Haesler, E. (2014a). Prevention and Treatment of Pressure Ulcers: Clinical Practice Guideline. 1-345. Retrieved from internationalguideline.com/static/pdfs/NPUAP-EPUAP-PPPIA

1.2. Health professionals receive regular training in pressure ulcer prevention and treatment.

Description	Knowledge and skills of health professionals regarding pressure ulcer prevention and treatment must be current. This can be accomplished by providing regular access to mandatory evidence based training.
Question	Have all health professionals attended recent evidence based training in pressure ulcer prevention and treatment?
Definition(s)	Training refers to evidence-based education provided in any format (meetings, e-learning, etc.).
Source	Training calendar/health professional records.
Measurement level	Organizational and/or departmental.
Rationale	Receiving mandatory training on a regular basis promotes evidence-based knowledge and care delivery.
Evidence rationale	See the *Health Professional Education* section of the guideline.

Haesler, E. (2014a). Prevention and Treatment of Pressure Ulcers: Clinical Practice Guideline. 1-345. Retrieved from internationalguideline.com/static/pdfs/NPUAP-EPUAP-PPPIA

1.3. Current information on pressure ulcer prevention and treatment is available for patient consumers and their caregivers in their own language.

Description	Current information about pressure ulcer prevention and treatment is made available to all patient consumers who are at risk of, or with, an existing pressure ulcer and their caregivers.
Question	Is current information about pressure ulcer prevention and treatment available for patient consumers and their caregivers in their own language?
Definition(s)	The information available has been updated within one year of an update of a national or international evidence-based guideline.
Source	Organization or department.
Measurement level	Organizational and/or departmental.
Rationale	Providing individuals at risk of, or with, an existing pressure ulcer with access to current, evidence-based education increases knowledge and skills; motivation to engage in selfcare; and promotes the likelihood that appropriate care will be provided. Information may be verbal, printed or in digital formats; however, providing printed information allows patient consumers and their caregivers the opportunity to review the information at their own convenience. Where possible, written material should be provided in the preferred language of the patient consumer and caregivers.
Evidence rationale	See *Patient Consumers and Their Caregivers* section of the guideline.

Haesler, E. (2014a). Prevention and Treatment of Pressure Ulcers: Clinical Practice Guideline. 1-345. Retrieved from internationalguideline.com/static/pdfs/NPUAP-EPUAP-PPPIA

1.4. The organization's pressure ulcer prevention and treatment protocol addresses the provision, allocation and use of pressure redistribution support surfaces.

Description	A pressure redistribution support surface protocol based on a national or international pressure ulcer guideline, must be available.
Question	Is a pressure redistribution support surface protocol based on a national or international pressure ulcer guideline, available?
Definition(s)	A support surface refers to a specialized device for pressure redistribution designed for management of tissue loads, microclimate, and/or other therapeutic functions.
Source	Document management system.
Measurement level	Department.
Rationale	Implementation of a pressure redistribution support surface protocol will guide decision making related to pressure redistribution support surfaces, and will aid in timely placement of patients on these surfaces.
Evidence rationale	See *Support Surfaces* section of the guideline.

Haesler, E. (2014a). Prevention and Treatment of Pressure Ulcers: Clinical Practice Guideline. 1-345. Retrieved from internationalguideline.com/static/pdfs/NPUAP-EPUAP-PPPIA

Process Indicators

2.1. Every individual is assessed for pressure ulcer risk within eight hours after admission (i.e., first contact with a health professional or at first community visit), and the assessment is documented in the medical record.

Description	The percentage of individuals whose risk for developing a pressure ulcer is assessed and documented within a maximum of eight hours of admission (i.e., first contact with a health professional, or at the first visit for those in community care).
Numerator	Number of individuals whose risk for developing a pressure ulcer is assessed and documented within a maximum of eight hours of admission (i.e., first contact with a health professional, or at the first visit for those in community care).
Denominator	All admissions of at least eight hours' duration.
Definition(s)	The risk for developing a pressure ulcer is determined using a structured approach that incorporates assessment of the multiple epidemiological factors that increase the risk of pressure ulcer development.
Inclusion criteria	All admissions of at least eight hours' duration.
Source	Medical records.
Measurement level	Patient.
Rationale	Assessing the risk of pressure ulcer on admission facilitates the (timely) application of individualized preventive measures to reduce the risk of pressure ulcer.
Evidence rationale	See *Risk Factors and Assessment* section of the guideline.

Haesler, E. (2014a). Prevention and Treatment of Pressure Ulcers: Clinical Practice Guideline. 1-345. Retrieved from internationalguideline.com/static/pdfs/NPUAP-EPUAP-PPPIA

2.2. Every individual received a comprehensive skin assessment within eight hours after admission (i.e., first contact with a health professional or at first community visit), and the assessment is documented in the medical record.

Description	The percentage of individuals whose skin is assessed and documented within a maximum of eight hours of admission (i.e., first contact with a health professional for inpatients, or at the first visit for those in community care).
Numerator	Number of individuals whose skin is assessed and documented within a maximum of eight hours of admission (i.e., first contact with a health professional for inpatients, or at the first visit for those in community care).
Denominator	All admissions of at least eight hours' duration
Definition(s)	Alterations to skin integrity provide an indication of pressure ulcer risk. A comprehensive head-to-toe skin assessment identifies any existing pressure ulcers and contributes to a risk assessment.
Inclusion criteria	All admissions of at least eight hours' duration.
Source	Medical records.
Measurement level	Patient.
Rationale	Assessing the skin on admission facilitates the (timely) application of wound care and contributes to the development of an individualized pressure ulcer prevention plan.
Evidence rationale See *Skin and Tissue Assessment* section of the guideline.	

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2.3. An individualized pressure ulcer prevention plan is documented and implemented for every individual at risk of, or with, pressure ulcers.

Description	The percentage of individuals at risk of, or with, pressure ulcers for whom an individualized pressure ulcer prevention plan has been documented and implemented.
Numerator	The number of individuals at risk of, or with, pressure ulcers for whom an individualized pressure ulcer prevention plan has been documented and implemented.
Denominator	The number of individuals at risk of, or with, pressure ulcers.
Definition(s)	An individualized pressure ulcer prevention plan should detail **at a minimum** the individual's specific requirements with respect to ongoing risk and skin assessment, nutrition, repositioning, pressure redistribution support surfaces, and topical skin care. The plan should be consistent with the individual's goals and wishes.
Exclusion criteria	Individuals who have documented refusal of preventive care are excluded.
Source	Medical records.
Measurement level	Patient.
Rationale	Developing and implementing individualized preventive measures reduces the risk of developing a new pressure ulcer.
Evidence rationale	See the *Preventive Skin Care*, *Nutrition in Pressure Ulcer Prevention and Treatment*; *Emerging Therapies for the Prevention of Pressure Ulcers* and *Support Surfaces* section of the guideline.

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2.4. An assessment of the individual is documented for individuals with a pressure ulcer.

Description	The percentage of individuals with a pressure ulcer for whom there is a documented comprehensive assessment.
Numerator	The number of individuals with a pressure ulcer for whom there is a documented comprehensive assessment.
Denominator	The number of individuals with a pressure ulcer.
Definition(s)	A comprehensive assessment must meet the criteria as described in the *Assessment of Pressure Ulcers and Monitoring of Healing* section of the guideline.
Inclusion criteria	Individuals with pressure ulcers.
Source	Medical records.
Measurement level	Patient.
Rationale	A comprehensive assessment provides information on the Individual characteristics (e.g., nutrition, medical/social history, values and goals) that impact on the health status of the individual and his or her ability to heal. This underpins development of an individualized treatment plan that meets the goals of the individual.
Evidence rationale	See the *Assessment of Pressure Ulcers and Monitoring of Healing* section of the guideline for full outline of a comprehensive individual assessment.

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2.5. Pressure ulcers are assessed and the findings are documented at least once a week.

Description	The percentage of individuals with a pressure ulcer who have a documented wound assessment in their record at least once week.
Numerator	The number of individuals with a pressure ulcer who have a documented wound assessment in their record at least once a week.
Denominator	The number of individuals with a pressure ulcer.
Definition(s)	A wound evaluation can consists of: o Assessment of wound characteristics as outlined in the *Assessment of Pressure Ulcers and Monitoring of Healing* and *Assessment and Treatment of Infection and Biofilms* sections of the guideline. o A uniform and consistent method of measuring wound length and width or wound area; and wound depth. o The use of a valid and reliable pressure ulcer assessment tool.
Inclusion criteria	Individuals with pressure ulcers.
Source	Medical records.
Measurement level	Patient.
Rationale	Evaluating the healing process helps to determine whether the treatment method is yielding the desired clinical outcome. If not, reassess the individual, the pressure ulcer and the plan of care.
Evidence rationale	See *Assessment of Pressure Ulcers and Monitoring of Healing* And *Assessment and Treatment of Infection and Biofilms* sections of the guideline.

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2.6. An individualized treatment plan and its goal, is available for each individual with a pressure ulcer.

Description	The percentage of individuals with a pressure ulcer for whom an individualized treatment plan and its goal has been documented.
Numerator	The number of individuals with a pressure ulcer for whom an individualized treatment plan has been documented.
Denominator	The number of individuals with a pressure ulcer.
Definition(s)	The treatment plan could include wound care, nutrition, Pain management, pressure relief and redistribution, and education. Example of treatment goals include a time frame in which clean a granulating wound bed is achieved, expected time frame for healing and patient comfort. Treatment goals should be consistent with patient goals.
Inclusion criteria	Individuals with a pressure ulcer.
Source	Medical records.
Measurement level	Patient.
Rationale	Developing an individualized treatment plan allows for evidence-based treatment of the individual and the wound, which supports ongoing evaluation of interventions.
Evidence rationale See the *Assessment of Pressure Ulcers and Monitoring of Healing* section of the guideline.	

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2.7. Every individual with a pressure ulcer has a documented pain assessment and where applicable, a pain management plan.

Description	The percentage of individuals with a pressure ulcer for whom pain assessment and management plan has been documented.
Numerator	The number of individuals with a pressure ulcer for whom pain assessment and management plan has been documented.
Denominator	The number of individuals with a pressure ulcer.
Definition(s)	A pain assessment is conducted using a valid and reliable scale appropriate to the individual that considers non-verbal expression of pain. A management plan incorporating evidence based interventions is developed and documented for individuals who experience pain. Inclusion criteria Individuals with a pressure ulcer.
Source	Medical records.
Measurement level	Patient.
Rationale	Developing an individualized pain management plan promotes comfort and quality of life.
Evidence rationale	See the *Pain Assessment and Treatment* section of the guideline.

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2.8. Every individual with an increased risk of pressure ulcers (and/or his or her caregiver) receives information about the prevention and treatment of pressure ulcers.

Description	The percentage of individuals at increased risk of pressure ulcers (and/or caregivers) who received information on preventing and treating pressure ulcer.
Numerator	The number of individuals at increased risk of a pressure ulcers (and/or caregivers) who received information on preventing and treating pressure ulcer.
Denominator	Number of individuals at increased risk of a pressure ulcer.
Inclusion criteria	Individuals at increased risk of pressure ulcer.
Source	Medical records and/or patient consultation.
Measurement level	Patient.
Rationale	Providing individuals at risk of, or with, an existing pressure ulcer with access to current, evidence-based education increases knowledge and skills; motivation to engage in self-care; and promotes the likelihood that appropriate care will be provided. Information may be verbal, printed or in digital formats.
Evidence rationale	See *Patient Consumers and Their Caregivers* section of the guideline.

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Outcome Indicators

3.1. Percentage of individuals within the facility at a specific point in time with a pressure ulcer (point prevalence).

Description	The percentage of individuals with a pressure ulcer.
Numerator	The number of individuals at a specific point in time with a pressure ulcer.[4]
Denominator	The number of individuals in the facility at the specific point in time.[4]
Definition(s)	See the *NPUAP/EPUAP Pressure Ulcer Classification System* section of the guideline for definitions of Categories/Stages of pressure ulcers.
Exclusion criteria	Exclusions should be clearly reported (e.g. specific departments, such as outpatients or short-stay surgery, individuals on leave from the facility at the time of audit).
Source	Assessment of individuals using the NPUAP/EPUAP Pressure Ulcer Classification System.
Measurement level	Patient.
Rationale	The prevalence of pressure ulcers gives a general indication of the effectiveness of preventive and treatment strategies for pressure ulcers and an estimate of resources needed to address pressure ulcer treatment.
Evidence rationale	See the *Prevalence and Incidence of Pressure Ulcers, Classification of Pressure Ulcers* and *NPUAP/EPUAP Pressure Ulcer Classification System* sections of the guideline.

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3.2. Percentage of individuals who did not have a pressure ulcer on admission who acquire a pressure ulcer during their stay in the facility (facility-acquired rate).

Description	Percentage of individuals who did not have a pressure ulcer on admission who acquire a pressure ulcer during their stay in the facility.[4]
Numerator	The number of individuals who did not have a pressure ulcer on admission who acquire a pressure ulcer during their stay in the facility.[4]
Denominator	The number of individuals who did not have a pressure ulcer on admission.[4]
Definition(s)	See the *NPUAP/EPUAP Pressure Ulcer Classification System* section of the guideline for definitions of Category/Stages of pressure ulcers.
Exclusion criteria	Exclusions should be clearly reported (e.g. specific departments).
Source	Assessment of individuals using the NPUAP/EPUAP Pressure Ulcer Classification System. Clinical audit provides a more reliable indication of facility-acquired pressure ulcer rates than a document review.
Measurement level	Patient.
Rationale	Facility-acquired rates provide a clearer indication of the effectiveness of the preventive measures used for pressure ulcers.
Evidence rationale	See the *Prevalence and Incidence of Pressure Ulcers, Classification of Pressure Ulcers* and *NPUAP/EPUAP Pressure Ulcer Classification System* sections of the guideline.

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