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An Evidence-Based Bundle to Decrease Pressure Injuries (PIs) in Homecare

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An Evidence-based Bundle to Decrease Pressure Injuries (PIs) in Homecare

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Abstract

Practice Problem: Pressure injuries are a significant problem in healthcare settings. The older adult patients in this home health agency have experienced an increase in incidences of pressure injuries which necessitates intervention.

PICOT: The PICOT question that guided this project was “In older adults 65 years and above with pressure injuries in the home healthcare setting (P), does a pressure injury care bundle (I), compared to current practices of standard care of repositioning alone (C), reduce the incidence of pressure injuries (O) in 10 weeks (T)?”

Evidence: The evidence used to guide this evidence-based change project was from relevant healthcare literature from databases including CINAHL, ProQuest, PubMed, and Google Scholar on pressure injury care bundle implementation to reduce pressure injury on older adult patients in home care settings.

Intervention: The intervention used was the pressure injury care bundle consisting of the Braden scale tool for risk assessment, the Bates-Jasen Wound Assessment (BWAT) tool for skin assessment, nutrition, repositioning, hydration, proper support surfaces, and patient and caregiver involvement were used to reduce the incidence of pressure injury on older adults of the home health care agency. The involvement of multidisciplinary clinicians of the home health care agency in implementing the pressure injury care bundle, as well as their feedback, monitoring, and documentation, was effective in improving pressure injuries and reducing pressure incidence.

Outcome: The Intellectus statistics tool was used to analyze the difference between standard care and the use of the PI care bundle. The findings revealed a 98% improvement in older adults’ pressure injuries within 10 weeks of using PI care bundles.

Conclusion: The PI care bundle achieved an improvement in the patients' pressure injuries and a reduction in patients' pressure incidence. The proportion of Standard care was significantly lower than the proportion of PI care bundle.

An Evidence-based Bundle to Decrease Pressure Injuries (PIs) in Homecare

Pressure injuries (PIs) among older adult patients in home care settings continue to be a significant problem. According to Alkeridyet et al. (2020), pressure injury is the strongest predictor of mortality for individuals receiving home health care. Preventing and treating pressure injuries in home health care for older adult patients requires a thorough and evidence-based intervention. Pressure injuries are localized tissue damage caused by unrelieved pressure, friction, or shearing on any body part (Gillespie et al., 2020). Pressure sores and pressure ulcers are used interchangeably to refer to pressure injuries. The National Pressure Ulcer Advisory Panel (NPUAP)announced a terminology from pressure ulcers to pressure injuries in 2016 (Yap & Holloway, 2021). Pressure injuries are localized damage to the skin and underlying tissues over the bony prominence because of unrelieved pressure. Pressure injuries develop due to pressure on the soft tissue, preventing blood flow and threatening the well-being of individuals with limited mobility, especially the older adult population.

According to Ellis (2017), pressure injuries in the home care setting can be challenging and compromised by a lack of access to education and resources. Patients' comorbidities, nutritional values, and immobility have played significant roles in acquiring PIs in the aging population among home care patients (Gillespie et al., 2020). The development of pressure injuries can cause several complications if appropriate treatments are not used and could result in mortality. The incidence of pressure ulcers in home care settings negatively affects patients and caregivers (Iamandi et al., 2022). Pressure injuries are staged according to the severity of the damage to the skin involved from Stage 1 to Stage 4 and are sometimes unstageable due to slough or non-viable skin. This DNP project aimed to develop an evidence-based practice change using the Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) model, primarily focusing on reducing pressure injury incidence in older adults in a home health care setting.

Significance of the Practice Problem

At the home health agency, there have been increased incidences of pressure injuries among older adult patients, which necessitates intervention. Due to limited physical activity and comorbidities, older adults are particularly vulnerable (Prasad et al., 2020; Santamaria et al., 2018). This DNP project adopts the Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) model to rectify current protocol gaps, enhance home care, and mitigate pressure injury prevalence for elderly populations at this home health agency.

More than 2.5 million people annually develop pressure injuries (Agency for Healthcare Research and Quality, n.d.). The National Pressure Ulcer Advisory Panel (NPUAP) plays a significant role in preventing and treating pressure injuries across various clinical settings (Kottner et al., 2019). The NPUAP formulates guidelines encompassing acute care, rehabilitation, long-term care, assisted living, home health care, monitoring and developing evidence-based recommendations for pressure injury practices (McEvoy et al., 2021). The MH (2023) reported a worrying 14.8% annual increase in pressure ulcer injuries among older adult patients receiving home care services since 2020. The Agency's standard protocol of turning and repositioning every two hours has proven ineffective in reducing pressure injury incidence or healing acquired wounds. Visiting home care clinicians either inadequately perform required pressure injury care protocols, or patients and caregivers lack instruction on executing them without scheduled nurse visits.

Families and caregivers require extensive knowledge to prevent and treat pressure injuries at home for optimal continuity of care. The underexplored issue of pressure injuries in older adults has led this home health agency to face litigation and a decline in patient satisfaction rates, significantly reducing referrals. Evidence-based pressure injury care bundles, advocated by Gillespie et al. (2020), enhance wound outcomes and prevent further injuries. Left untreated, pressure injuries can result in frequent hospital visits, poor prognosis, amputation, and increased morbidity (Gefen, 2018). Pressure injuries, a preventable complication of

immobility, have profound psychological, economic, and social impacts (Alharbi et al., 2020; Ebi et al., 2019; Meddings et al., 2015). Individuals with pressure injuries often experience pain, discomfort, irritability, and reduced quality of life (Rutherford et al., 2018). The substantial costs associated with pressure injury treatments create a financial burden on patients and home healthcare settings. Jaul et al. (2018) highlighted that treatment costs surpass prevention costs, emphasizing the economic need to prioritize prevention. These costs strain healthcare systems due to constant monitoring, assessment, and treatment (Casal-Guisande et al., 2020). Pressure injuries are a pervasive global issue, internationally recognized as a healthcare quality indicator affecting home healthcare and communities (McEvoy et al., 2021). The home health agency's overarching mission is to minimize hospitalizations and to ensure patients receive care in the comfort of their homes (MH,2023).

PICOT Question

This DNP evidence-based practice project was used to answer the PICOT scholarly question: In older adults 65 years and above with pressure injuries in the home healthcare setting (P), does a pressure injury care bundle (I), compared to current practices of standard care of repositioning alone (C), reduce the incidence of pressure injuries (O) in 10 weeks (T)?

The population for this project was older adult patients aged 65 years and above seen by the MHHC agency in their respective home environments with pressure injuries. The DNP project utilized the data of the home health agency's older adult patients in the suburban Maryland office via the agency's EHR of patients admitted from January 2023 within this age range with pressure injuries or at risk for pressure injury.

The intervention utilized the pressure injury prevention care bundle of repositioning, comprehensive skin assessment, nutrition, pressure risk assessment, support surfaces, training, education, and caregivers' roles. According to Mao and Zhu (2021), a pressure injury care bundle is a set of 3-5 evidence-informed practices performed collectively to improve patients' PIs and health outcomes. This pressure injury care bundle evidence-based change project

utilized the clinical practice guidelines. The intervention of PI care bundle was used to compare with the current practice of standard care of repositioning every two hours, which had not been effective and had created a practice gap in the agency.

The outcome reduced the incidence of pressure injuries in older adult patients and enhanced positive health outcomes within an expected period. The outcome aimed to prevent further pressure injury and to reduce the stages of pressure injuries to a lesser stage. The Timing represented the time it took to implement this evidence-based DNP scholarly project in the home health agency within 10 weeks.

Evidence-Based Practice Framework and Change Theory

The Johns Hopkins Evidence-Based Practice (JHEBP) Framework is a commonly used model that guides nurses in translating new knowledge of evidence into nursing practice for clinical learning and operational practice (Melnyk & Fineout-Overholt, 2019, p. 412; Dang et al., 2021). The JHEBP begins with an inquiry about a particular clinical problem that starts the PET Process, meaning the Practice Question, Evidence, and Translation (Melnyk & Fineout-Overholt, 2019, p.413). This practice question was used to determine the need for this EPB project: In older adults 65 years and above with pressure injuries in the home healthcare setting (P), does a wound care bundle (I), compared to the current practice of standard care of repositioning (C) reduce the incidence of pressure injuries and enhance positive health outcome (O) in 10 weeks (T)? The evidence used to conduct the DNP project included internal and external searches, including peer-reviewed articles on pressure injuries, clinical practice guidelines, and professional organizations' recommendations on older adults' pressure injuries, home healthcare pressure injuries, and wound care bundles.

The translation step of the JHEBP model requires creating an action plan before the change is implemented and evaluated. This DNP project strategically incorporated Kurt Lewin's change theory within the JHEBP model’s translation phase to help identify and examine the factors and forces influencing a problem (Lewin, 1942; Wagler & Udod, 2022). The main

objective of incorporating Kurt Lewin's Change Theory within the JHEBP translation phase was to fortify the evidence-based clinical practice change to minimize pressure injuries among older adult patients in this home health care setting.

Kurt Lewin's (1942) change theory was identified as a three-stage model of change of Unfreezing-Change-Refreezing. The Unfreezing stage of Kurt Lewin's Change theory involves creating awareness, examining existing gaps, and communicating the need for change. The Change stage fosters stakeholder engagement and detailed action plans. The DNP project manager assumed a leadership role, collaborating with the home health agency's leadership and providing training to clinicians. Refreezing ensures the sustained incorporation of new processes into routine clinical practices (Lewin, 1942; Wagler & Udod, 2022). The pressure injury care bundle is now embedded in the home health agency's system, policies, and culture, impacting patient outcomes.

Evidence Search Strategy

The literature search aimed to find evidence-based articles that support the implementation of an Evidence-Based Practice DNP Project. Due to the changing terminology, the terms ulcer, sore, and injury were used interchangeably to achieve the most significant number of search results. The search was conducted through the school library search USA database EBSCO academic search using the terminology related to the PICOT question on "Pressure ulcer in the older adults," "pressure ulcer treatment," bundle pressure wound care," "standard pressure injuries care," "pressure ulcers and nutrition," "home health pressure care,'' and ''caregiver role in pressure care." The databases searched were CINAHL, ProQuest, and PubMed. Google Scholar search engine was also used for many of the searched articles. The CINAHL database was employed to search for ''pressure ulcers in the older adult," and 205,139 results were displayed. The filter was used to change the date range of the research articles published between 2015-2023, and the demonstrated results were reduced to 22 articles. Utilizing the search strategy for literature review articles helped to choose the right article for the

PICOT question for the evidence-based project. Inclusion criteria were home healthcare, clinician teamwork, wound improvement, caregivers' roles, prevention guidelines, and nutrition. The exclusion used were the articles published in foreign languages and those that did not have full text available. Twenty-two articles that related to the PICOT question were chosen.

Evidence Search Results

The reviewed literature supported the evidence of pressure injury care bundles and checklists in home health care settings. The JHEBP model was used to grade the research articles chosen for this project. The Preferred Reporting Items for Systemic Reviews and Meta-Analyses (PRISMA) flowchart (Appendix D). Ninety-five articles were found, and twenty-two peer-reviewed articles were picked, reviewed, and assessed for inclusion. The quality and level of each article were evaluated and listed using a quality grade by JHEBP. See Appendices A and B for details. The research article results were 10 quantitative research studies at level III, three articles at level I, 5 qualitative articles at level III, 1 mixed study article, and 3 systematic review studies.

Themes with Practice Recommendations

The reviewed articles showed evidence that applied to answer the PICOT question. The literature search used evidence-based practice to support the practice recommendations. The summaries of primary research evidence are displayed in Appendix A, Appendix B contains the summary of systematic reviews (SR), and Appendix C shows the synthesis matrix for the practice recommendations.

Importance of Using Care Bundles

According to Lavallee et al. (2019), pressure injury care bundles are evidence-informed practices performed collectively to improve patients' quality of care. Many of the literature articles reviewed recommended the use of bundle care to be implemented into clinical evidence-based practice for the improvement of patients' health outcomes (Bottega et al.,2023; Deakin et al.,2020; Karadag &Cakar,2022; Lavallee et al.,2019; Prasad et al.,2020; Roberts et

al.,2017; Trisnaningtyas et al.,2021; Yilmazer & Tuzer,2020;2022). The bundle care training was provided to the clinicians before the implementation. The pre-intervention and post-intervention care bundles were assessed and compared with a decrease in the incidence of pressure injuries. All three studies reported using preventive measures of two hours of repositioning (Gillespie et al., 2018; Yilmazer & Tuzer, 2020, 2022; Yurp et al., 2022).

Adequate and balanced nutrition is part of the pressure injury care bundles. Yurt and Cubukcu (2022) and Selma et al., (2021) discussed the importance of nutrition in pressure injury healing. Bates-Jensen et al. (2019) evaluated the reliability of wound assessment tools for staging pressure injury wounds. Roberts et al., (2017), Yilmazer and Tuzer (2020;2022), and Trisnaningtyas et al. (2021) are all in support of pressure injury care bundles in homecare settings and agree that the care bundle improves healing and decreases the incidents of PIs. Trisnaningtyas et al. (2021) concluded that home healthcare clinicians can use the care bundle on patients with pressure injuries to improve them and prevent them from reoccurring. Stephen and Callaghan (2017) discussed the effect of air mattresses on pressure injury improvement. Roberts et al. (2017) reported that the involvement and readiness of patients and caregivers in implementing the care bundle reduced pressure injury. A lack of knowledge of patients' caregivers in performing appropriate care resulted in patients' pressure injury deterioration and made pressure injury care complicated (Bottega et al., 2013; Garcia et al., 2019; and Jafari et al., 2021). Pressure ulcers significantly burden patients and home health care (Roberts et al., 2017). The deterioration of pressure ulcers in home care patients has caused patients to leave their homes and increased hospital readmissions (Cox et al.,2020). Cox et al., (2020) and Lavallee et al., (2019) found the risk factors for acquiring pressure injuries, the importance of bundle care on older adults, effectiveness, and reduction in the incidence of pressure injuries.

Care Bundle Details

The pressure injury prevention care bundle includes the Braden scale, the Bates-Jasen Wound Assessment (BWAT), repositioning, nutrition, support surfaces, appropriate wound care products, training, education, and caregivers' roles.

The Braden Scale

The Braden scale is a validated tool to assess patients' risk of acquiring pressure injuries (Braden & Marklrbust, 2005). This tool is accepted and used worldwide. Using appropriate wound assessment tools for pressure injuries would prevent sepsis and mortality. Bottega et al. (2023). Cox et al. (2020), Kim et al. (2023) and Yilmazer and Uzer (2020) emphasized the importance of Braden scale assessment scores to be used during home healthcare admissions for the prediction of pressure injury risks. Many studies showed bundle care and its effectiveness. The bundles consisted of four prevention practices: skin inspection, support surface, repositioning, and patient behavior change technique (Lavallee et al., 2019; Roberts et al., 2017).

The Bates-Jasen Wound Assessment (BWAT)

In addition to these practices, the Bates-Jasen Wound Assessment (BWAT) is a critical tool deployed to assess and document the wound status among patients with pressure injuries (Bates-Jensen et al., 2019). The printable wound assessment form provided in this tool has a fundamental role in wound documentation and helps standardize wound assessment, making it more accurate and informative.

As such, the Bates-Jasen Wound Assessment (BWAT) tool provides a structured methodology for wound edge assessment, which helps in systematically categorizing wounds and tailoring an effective treatment plan (Bates-Jensen et al., 2019). Besides, this tool's wound staging tool fosters clinicians' capabilities to track the wound's progress over time, thus ensuring that treatment interventions yield the desired outcomes. Consequently, the BWAT tool was deployed on older adult patients with less than 16 Braden scale scores admitted into the home

health agency to assess their PI status and measure the improvement. Besides, the BWAT tool was used to track patients' wound progress over time after admission to the home health agency to compare and assess the effectiveness of treatment interventions deployed which yielded the desired outcomes.

Education and Implementation of Bundle Care

The guideline recommendation from Amr et al. (2017) for preventing pressure injuries in older adults includes methods for identifying, risk assessment, and preventive measures, including skin assessment, nutrition, repositioning, and choosing proper support surfaces. The care bundle incorporated both the Braden Scale and BWAT. These tools are used across all healthcare settings to prevent patients' pressure injuries and improve patients' quality of life. Another aspect is educating clinicians before using the pressure injury care bundle and its effectiveness in improving patient health outcomes. The use of the PI care bundle proved effective when clinicians were educated on pressure injury prevention bundle care before the intervention (Deakin et al., 2020).

According to Bottega et al. (2023), Garcia et al. (2019), Prasad et al. (2020), and Kadaradag et al. (2021), the authors reported the involvement of home healthcare clinicians in utilizing pressure injury prevention bundle care that consists of participation in education, risk assessment, skin assessment, skin care, nutrition management, and support surface management. Prasad et al. (2020) emphasized the importance of the Braden scale pressure tool and multidisciplinary care plan implementation in reducing pressure injuries in patients' home environments.

Stephen-Hayes et al., (2017) reported that the regimen of regular repositioning of patients, good diets, and alternating pressure air mattresses should be implemented in home care patients to prevent pressure injury. Karadag et al. (2021) suggested that a comprehensive pressure risk assessment should be performed during the first home health clinician visits and ongoing evaluation during the subsequent home visits. Their studies showed that education

increased nurses' knowledge of preventing pressure injuries, and their involvement was influenced by the educational materials (Deakin et al., 2020; Kim et al., 2013). These studies discussed the importance of clinicians training before implementing bundle care and their compliance (Kim et al., 2023; Yap et al., 2022; Yilmazer & Tuzer, 2020;2022).

Interdisciplinary Team

Interdisciplinary teams promoted collaboration among clinicians for guidance, effective cooperation, and continuity of care. Multidisciplinary teams are necessary to provide care for older adults and communicate care progress. An interdisciplinary team of home care settings can ensure the protocol's sustenance (Prasad et al., 2020). Home health care agencies utilize the service of the wound, ostomy, and continence nurses (WOCN) to oversee patients with all kinds of wounds, including pressure injuries, and they are notified when home health patients' wounds are not responding to their required treatments. According to Lavallee et al. (2019), clinicians believed their care became comprehensive when using care bundles, and they felt accountable for the care provided due to their signatures on the bundle sheets.

According to Prasad et al. (2020), Karadaq and Cakar (2022), and Garcia et al. (2019), interdisciplinary teams, including patient care providers (PCP), wound care teams (WOCN), and nurses, are an excellent resource for increasing compliance with evidence-based intervention on Pressure injury prevention and healing. Moreover, they are recommended in-home care settings. These disciplines used pressure care bundles (Kim et al., 2023; Yap et al., 2022; Yilmazer & Tuzer, 2020; Yilmazer & Tuzer, 2022).

Effects of Care Bundles

Several activities are recommended for the improvement of pressure injuries. The pressure ulcer care bundle was set up to maximize the delivery of evidence-based practices, and the prevention bundles implemented in the homecare settings could reduce the incidence of pressure ulcers (Lavallee et al., 2019). These authors reported an improvement in pressure injuries when the pressure injury care bundles were implemented (Deakin et al., 2020; Lavallee

et al., 2019; Trisnaningtyas et al., 2021; Yilmazer & Tuzer, 2020; Yilmazer & Tuzer, 2022). Yap et al. (2022) compared the effectiveness of three intervals of repositioning in 2, 3, and 4-hour schedules to prevent pressure injury. The reviewed literature provided answers to the PICOT question of using a care bundle to reduce pressure injury incidence.

Practice Recommendations

According to the Agency for Healthcare Research and Quality (n.d.), the practice recommendations start with a comprehensive skin assessment of all the patients to identify any visible changes that could increase the risk of developing pressure injury. The standardized injury risk assessment tool detects the patient at risk for pressure injury. The Braden Scale tool is reliable and will be used for early detection and prevention of pressure injuries in home health care settings. The pressure injury care bundle was implemented to reduce pressure injury incidence and improve patients' health outcomes. All the care bundle elements were utilized to decrease the incidence of pressure injuries and achieve better health outcomes. The pressure injury care bundle includes the use of the Braden Scale for risk assessment, balanced nutrition, skin inspection, repositioning, support surfaces, pressure injury assessment tools, nurses, and caregiver educational training. The project team's involvement in using the pressure care bundle and patients' participation were documented daily and monitored weekly for improvement in compliance with the pressure injury clinical guideline.

The European Pressure Ulcer Advisory Panel (EPUAP), National Pressure Injury Advisory Panel (NPUAP), and Pan Pacific Pressure Injury Alliance (PPPIA) updated the international clinical practice guidelines for the prevention and treatment of pressure injuries. According to Kottner et al. (2019), they aimed to develop high-quality and trustworthy pressure injury guidelines to improve pressure injury care worldwide. The Agency for Healthcare Research and Quality supports the international clinical guidelines for preventing and treating PIs by using evidence-based practices with validated pressure injury screening tools for preventing and treating pressure injuries by all health professionals (AHRQ, 2023).

Setting, Stakeholders, and Systems Change

Project Setting

The project setting was the home health agency's office and their patients' home environments. This home health agency provides individualized, physician-prescribed medical treatments and services at home. The agency serves patients with different health conditions, including patients recovering from an illness, injury, or surgery and those living with a disability or complex medical conditions (MH, 2023). The agency supports a culture that promotes a robust environment through learning, discovery, and innovation. The organization's mission is to provide physical and spiritual comfort to patients and families in the Jesuit tradition of cura personalis: caring for the whole person (MH, 2023). The organization's mission statement will be incorporated into this project's mission of providing holistic care to home healthcare patients with pressure injuries. The organization aims to be a trusted leader in caring for people and advancing health.

The home health agency's vision is to care for older adult home health patients by reducing pressure injuries, improving their quality of life, and achieving positive health outcomes. The agency aims to keep patients at home and minimize hospitalization (MH, 2023). The home healthcare team members are dedicated to patients' needs and comprise interprofessional clinicians, including physicians, nurses, physical therapists, occupational therapists, speech and pathology therapists, medical social workers, and home health aides. The home health agency provides a high nurse-to-patient ratio and offers many life support therapies. The nurse-to-patient ratio represents the ideal number of patients a registered nurse cares for daily; however, nurses' workloads have been overwhelming due to staffing shortages.

The nurse-patient ratio increased from 1:6 to 1:10, affecting patients' quality of care. This home health agency recorded increased pressure injuries among home healthcare patients, affecting the patient's health outcomes and causing a decline in patient satisfaction rates. Older

adult patients are at risk for the development of pressure injuries due to their debility, limited mobility, comorbidity, and declining health conditions (Zhang et al., 2020). The leadership of this home healthcare agency, including the president, chief financial officer, chief operating officer (COO), director of quality, director of patient experience and communication, and operation directors, was approached on this DNP change project, and they supported of the project to eradicate the incidence of pressure injuries among their patients. Ethical principles of respect for humans and beneficence guided this DNP change project.

Project Stakeholders

The home health agency's stakeholders, including the President, COO, chief financial officer, and administrative staff, were involved in this evidence-based change project. All the leaders represented the organization in decision-making, compliance, and disbursement of project costs. The leadership and management of the agency were in support of potential opportunities and protection of project risks. The ethical considerations and potential conflict of interest were addressed to ensure anonymity. Leadership involvement is essential in achieving this DNP project's goal, and they were committed to providing all the necessary medical supplies needed for the project.

The project team consists of registered nurses, licensed practical nurses, home health aides, dietitians, physical therapists, occupational therapists, speech therapists, and wound, ostomy, and continence nurses (WOCN). The DNP project manager worked closely with the team to ensure the seamless implementation of the pressure injury care bundle. The project team members underwent special training by the DNP project manager on implementing the pressure injury care bundle. After the training, the pressure injury care bundle was utilized accordingly to potentially reduce the incidence of pressure injuries among older adults with pressure injuries.

This change project aimed to maintain the home health agency care and code of practice standard. The DNP project manager monitored the PI care bundle implementation via

the agency's EHR and point-of-care device for improvement and effectiveness. The operation directors, WOCN, and the nurse case managers oversaw project team compliance and adherence in implementing the pressure injury care bundle, recording patient data progress, and reporting to the clinical directors and key stakeholders. Risk management is an integral part of this DNP project and was conducted to identify, analyze, and mitigate potential risks that would have occurred during this project. Risk management aimed to minimize any negative impact of the project. In collaboration with the risk management department, the DNP project manager proactively identified, assessed and mitigated potential risks linked to the implementation of the pressure injury care bundle. There was continuous communication to ensure regular progress updates, addressing emerging risks, and jointly developing strategies for impact mitigation. The strategic planning of SWOT analysis was used to identify opportunities and threats.

A SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis was conducted to identify strengths, weaknesses, opportunities, and threats facing this home health agency. This analysis explored the possibilities for a strategic decision with stakeholders to resolve pressure injury incidence and improve patient health outcomes. The SWOT analysis articulates lists of strengths, such as support from the organization's board of directors and the stakeholders; weaknesses, such as nonadherence to care bundle use and lack of training; opportunities, such as appropriate use of care bundle, improvement, and prevention of pressure injury incidence; and threats such as the increased hospital readmission rates when the patients' pressure injuries deteriorate or infected, treatment costs, and litigation. The SWOT analysis table is displayed in Appendix E.

Home Healthcare Systems Change

According to Shahid et al. (2019), healthcare organizations utilize decision-making based on the micro, meso, and macro levels. Shahid et al. (2019) elaborated on the three levels of decisions made on the micro level to involve individual patients; the meso level relates to

group, departmental, or organization; and the macro level involves large groups or public organizations. This project used an evidence-based change project on a micro level of home healthcare decisions. This evidence-based change project represents a micro-level system change with implications for the overall organization. The home health agency must transform toward a value-based, patient-centered care delivery model relating to healthcare structure, culture, and pressure management in home care settings and home care settings.

Implementation Plan with Timeline and Budget Project Objectives

The project aimed to reduce pressure injuries among older adult patients in this home health care setting. In the short term, this evidence-based project aimed to decrease new pressure injuries to below 10%, enhancing staff compliance with the pressure injury care bundle by the end of 10 weeks. The long-term goal was to substantially reduce pressure injuries for all at-risk patients and incorporate the pressure injury care bundle evidence-based practice into the home health agency.

Project Objectives

This project's overarching objective is to reduce the incidence of pressure injuries among older adults admitted into this home health agency within 10 weeks. Consequently, the DNP project manager collected data on all the older adult patients 65 years and above with pressure injuries admitted since January 2023. This home health agency admits over 100 patients monthly, and 68 older adults were identified with pressure injuries, both males and females, from the EHR. The Registered nurses on the project team were the project champions in identifying new pressure injuries in older adults during the agency start of care (SOC) by performing a thorough skin assessment with the Braden Scale risk assessment to identify patients at risk for pressure injury.

The Bates-Jensen wound assessment tool (BWAT) was also used on patients with pressure injuries before admission into the agency to assess the PI status to measure improvement and comparison. The BWAT assessed home care patients with pressure injury

wounds about the stage, anatomical location, and natural history (Bates-Jensen et al.,2019). Another objective was to decrease pressure injury in older adult patients seen by this home health agency within their 9-week Medicare certification period.

Rationale and Strategy

Many older adults admitted into this home health agency tend to have acquired pressure injuries during their previous hospitalization, rehabilitation, immobility, comorbidities, and poor nutrition, necessitating the implementation of strategies aimed at reducing the incidence of pressure injuries and improving patients' health outcomes. This agency's clinicians utilized the Braden Scale pressure injury risk assessment tool on all patients during their admission into the agency before incorporating pressure injury care bundles. The long-term goal was to adapt the pressure injury care bundle and integrate it into the organization's policy and practice.

Another specific objective for the project was to recommend using the pressure injury care bundle in all the branches of this home health agency and to increase staff compliance in implementing this change project on all pressure injury patients for positive health outcomes. During this DNP project, nursing compliance was measured and evaluated daily performance by calculating their compliance and adherence rate. A checklist was posted and documented on the operation director's wall for compliance and adherence. Project team members' names were withheld and replaced by numbers and labels. Only the DNP project manager and the operation director were able to identify who the numbers represented. The participation in pressure injury was monitored, documented, and transcribed into the agency's EHR at the end of each day. The project team members and the patients' names were withheld and protected in compliance with the Health Insurance Portability Accountability Act (HIPAA) to reduce the potential for misuse of personal information for privacy and confidentiality. The DNP project manager collected the de-identified data from the MHHC EHR, and there was no need for a consent form to be signed since there was no direct contact between the patients and the DNP project manager.

Participant Recruitment

Older adult patients admitted to the MHHC who have pressure injuries and those who have Braden Scale scores below 16 who are at risk for developing pressure injuries benefited from the pressure injury care bundle. The older adult patients with pressure injuries and their caregivers were taught how to use the PI care bundle when the home health project team was not scheduled to see the patients for continuity of care and not to disrupt the healing process. Twenty clinicians were in the project team, including five registered nurses, five licensed practical nurses, five home health aides, two physical therapists, one occupational therapist, one speech therapist, and one dietitian. All these clinicians were involved and participated in the care of older adult patients' pressure injuries care and were committed to implementing the PI care bundle for the reduction in the incidence of PI and improved health outcomes. Their roles and responsibilities were assigned, and the leadership management was notified of their participation and commitments.

During the weekly huddles of the home health agency, the DNP project manager discussed the use of the new pressure injuries care bundle and its effectiveness on all older adults' PIs with the consent and approval of the leadership director, operational directors, and clinicians. The DNP project manager interacted with the clinicians and respected their opinions and feedback on using the PI care bundle. The DNP project manager and project team collaboratively set goals to help the project team clarify their values and involvement. Their participation was monitored and recorded for progress. SMART goal setting helps individuals identify specific changes and implement goals (Bailey, 2019).

The Smart Goal for This Change Project

Specific

This DNP project focused on reducing the incidence of pressure injuries in older adults in the home health agency within 10 weeks.

Measurable

Getting approval and support from this home health agency leadership and management to implement the change project on early detection of the PI and prevent skin deterioration was the first step to developing a strategy to reduce PI incidence. The DNP project manager formed the project team and provided the adequate training needed for intervention and implementation.

Achievable

The involvement of all the agency's multidisciplinary clinicians, including the project team manager, project team, and nursing leaders, was significant in reducing the incidence of pressure injury while using the PI care bundle of skin assessment, risk assessment, wound care, support surface, nutrition, hydration, and patient's family's involvement for the continuum of care in achieving the desired outcomes.

Relevant

This change project improved the older adult patients' health outcomes and quality of life by reducing the incidence of pressure injuries and enhancing the agency's service reputation.

Time

Organizational change takes time and depends on consistently implementing the PI care bundle to achieve the expected results. This change project took 10 weeks to execute its outcome.

Team Collaboration

Each project team member was encouraged to participate, responded to the SMART goal questions, and voiced their opinions on this change project. If a team member failed to comply, immediate corrective actions were taken, including additional training and team discussions to address the issue promptly and ensure the project's progress and effectiveness. Besides, clear communication and accountability mechanisms were employed to resolve non-compliance within the team, aligning with project objectives. The agency relies on the commitment of all clinicians to offer older adult patients the optimal possible care. Additionally, implementing the project aimed to cushion the home health agency against the deleterious effects of litigations filed previously by patients and families following the increased development of pressure injuries during home healthcare services. The evidenced-based process was created to ensure that all the multidisciplinary clinicians in this agency adhere to the daily use of the pressure injuries care bundle and checklist, as discussed earlier in reducing the incidence and severity of pressure injuries significantly.

Use of Change Theory

As discussed earlier, Kurt Lewin’s (1942) change theory was used as the change theory anchored within the translation step of the JHEBP model. He identified a three-stage model of change: unfreezing-change-refreezing. Each stage was elaborated on how the pressure care bundle reduces pressure injuries in older adult patients receiving home care services. Additionally, the project aimed to enhance the compliance of the home health agency staff in facilitating evidence-based patient care using a standardized wound care bundle. The staff were notified of the new pressure injury care bundle.

After the executive leadership, operation directors, and quality improvement directors’ approval, the home health clinicians were informed of the new pressure care bundle and when it would commence. The DNP project manager met with the clinicians, and operation directors and was introduced to the staff participating in the project.

Training Implementation

The training on the PI care bundle of risk assessment, skin assessment, nutritional management, turning and repositioning every 2 hours, and pressure injury support surfaces. All the pressure care bundle components were applied daily to older adult patients' pressure injuries. The pressure injury on the bony prominence sites, including the sacrum, posterior heel, elbows, legs, backs, and faces, will be cared for using the pressure care bundle. Patients' pressure injuries were assessed before implementing the pressure injury bundle for comparison. Proper documentation and weekly wound measurements were emphasized. All these were monitored by the DNP project manager and the assigned WOCN daily for comparison and recorded at each visit to note any significant changes because of the intervention.

The patients' daily pressure injury care bundle records were written on paper while their names were withheld and replaced by their medical record numbers and labels. It was posted on the mounted poster in the operation director's office for access by the project team members. The performance and improvement on pressure injuries were transcribed into the EHR of this home health agency by their WOCN and operation director. The DNP project manager was able to access the data after it was transcribed. The project team ensured that patients at risk of developing pressure injuries were identified and cared for as soon as possible to maintain their skin integrity.

The DNP project manager coordinated weekly interactive Zoom meetings with the assigned project team for 30 minutes three times per week for two weeks for continuous education and training on the pressure injury bundle implementation, and any feedback from the project team was welcomed. A recorded Zoom meeting was available for any home healthcare team members unable to attend at the designated time.

The nurses on the project team were introduced to the pressure injuries care bundle, incorporating skin assessment, risk evaluation, and the use of pressure-relieving surfaces such

as mattresses, doughnuts, and wedge pillows. Besides, they implemented a repositioning schedule every two hours. In monitoring the nutrition, the team focused on promoting healing through balanced diets rich in high protein and vitamin C, while ensuring adequate hydration. Regular documentation by team members provided insights into the patient's nutritional status. They continued with the implementation of the PI care bundle during their subsequent home visits. The therapists emphasized the importance of using the PI care bundle during their visits with the patients and their families. They instructed on the appropriate pressure support surface for use in bed and wheelchairs. The dietitian was consulted to speak to the patients and their families on the importance of nutrition and diets to promote health and prevent diseases. The home health aides also performed wound care in the agency and were able to apply the PI care bundle whenever the dressings were off during their home visits (Appendix J).

Compliance Monitoring

The DNP manager reviewed the project team compliance daily using a compliance assessment checklist to ensure adherence to the new process by calculating the number of PI occurrences and the adherence rate. The threshold, target, and exceeds were measured for ten weeks:

Threshold=70%-79% adherence Target=80%-89% adherence Exceeds=90% adherence or greater.

Anything less than 70% adherence was a failed implementation.

Data Collection

The DNP project manager reviewed all older adult patients' PIs-related documentation and recorded the new findings in the data collection sheet daily. The WOCN and nurse case managers collected the information gathered from the DNP project manager and transmitted it to the agency’s EHR. The DNP project manager, WOCN, and the nurse case managers monitored the improvement of the data collection and established an effective mechanism for auditing purposes.

Rewards and Recognition

According to Abdullah et al. (2021), rewards are given to nurses to achieve organizational effectiveness and provide outstanding patient care. The president of the agency was very pleased with this clinical change project and rewarded the team members with a special lunch every Friday throughout this DNP project ‘s training. Each team member signed the treatment and compliance forms after each patient encounter. Their participation was monitored and recorded for comparison and improvement. Any new observed pressure injuries were monitored and cared for quickly to prevent skin deterioration. The outcome of using the pressure care bundle was discussed weekly at the team meeting with the MHHC directors and the stakeholders.

Documentation, Reporting, and Budget

The DNP Project manager documented pre- and post-intervention changes through the assessment of aggregate data with a data collection form housed in Appendix G. The data on older adult patients' pressure injuries were collected on the wound status, measurements, stages of the pressure injuries via the agency electronic health record (EHR) before implementing the pressure injury care bundle. Older adults' pressure injury data was assessed weekly for any improvement, and at the end of the allocated time frame, data analysis was performed to compare the pre- and post-interventions. This change project aimed to reduce new pressure injury incidence to less than 10%. The clinical significance of the project was determined by its ability to bridge the gap between the findings of the DNP project manager and patient care as a way of promoting sustainability and the introduction of the pressure injury care bundle and checklist in this home health agency’s services.

The proposed budget included education and training materials, administrative expenses, contingency, and medical supplies needed for the pressure care bundle. The overall cost of implementing this DNP scholar project was approximately $2450. The MHHC staff

expenses were not included in this project budget because they are paid employees of this agency.

Results

Evaluating the outcomes of this DNP project entailed assessing, monitoring, recording, and comparing patient pressure injuries before and after implementing the pressure care bundle to determine the overall effectiveness of the PI care bundle. Evaluating the results of executing the care bundle is essential to ensure that the expected improvement is achieved. The inclusion criteria for this DNP project data analysis reflects the comparison of the care bundle incorporated on the older adults' pressure injuries compared to patients that received the standard care, showing improvement in patient outcomes within 10 weeks. The exclusion criteria included patients below the age of 65 years and children. The DNP project manager utilized Intellectus Statistics to input all the identified older adult patients with pressure injury incidence data collected from the MHHC's EHR. Fifty-nine patients' data was uploaded into the Microsoft Excel spreadsheet and transferred to the Intellectus Statistics data input analysis for the analysis's conduct and interpretation.

The DNP Project Manager employed Intellectus Statistics using the two proportions *z*-test to compare the effective use of pressure injury care bundle in older adults and the use of standard care of just repositioning on older adult patients with pressure injuries. The DNP project manager analyzed the results to establish patients' pressure injury improvement in determining the statistical significance.

A two proportions *z*-test was conducted to examine whether there was a significant difference between Standard care and PI care bundle proportions. The assumption of normality

was assessed using the Central Limit Theorem (CLT). According to the CLT, the mean of any random variable will be approximately normally distributed as the sample size increases. Therefore, with a sufficiently large sample size ($n > 50$), deviations from normality will have little effect on the results (Pituch & Stevens, 2015). The sample size ($n_{s1} = 59$, $n_{s2} = 59$) indicates that the CLT applies, and normality can be assumed for the *z*-test.

The result of the two proportions *z*-test was significant based on an alpha value of .05, $z = -15.77$, $p < .001$, 95.00% CI = [-.92, -.71], indicating the null hypothesis can be rejected. This suggests the proportion of Standard care was significantly different than the proportion of bundles. The proportion of Standard care was significantly lower than the proportion of PI care bundle. The 95.00% confidence interval for the difference between the proportions of Standard care and PI care bundle is -.92 to -.71. Table 5 presents the results of the two sample proportions *z*-test.

Table 5

Two Proportions z-Test for the Difference between Standard care and PI care Bundles

Samples	Responses	*n*	Proportion	*SD*	*SE*
Standard care	10	59	.17	0.37	0.05
PI care bundles	58	59	.98	0.13	0.02

Note. $z = -15.77$, $p < .001$, 95.00% CI: [-.92, -.71]

The data set comprised 59 patients with pressure injuries. The pre-implementation of the standard care of repositioning alone improved 10 patients' pressure injuries and the post-implementation of the PI care bundle improved 58 patients' pressure injuries. The table above provided a breakdown of the data analysis indicating that the post-implementation improved 98% of patients' injuries compared to the pre-implementation of 17%. It showed that using the PI care bundle suggests potential benefits for patients' pressure injuries.

The DNP project manager collaboratively worked with the WOCN and project team to ensure the effective implementation of the pressure injury care bundle and daily recording of

patients' PI progress summaries were monitored and evaluated for improvement over the project time frame. The DNP project manager had access to patients' data and monitored the improvement of patients' pressure injuries. The recording and updating of patients' data in a checklist for continuity of care were performed by the home health agency's WOCN and operation director. In addition, the DNP project manager and the WOCN monitored the care bundle's implementation, patients' pressure injuries progress, documentation of any improvements, and the project team's compliance via EHR. For HIPAA and confidentiality, patient identifiers were removed, and patients were anonymized. The incomplete patients' data were removed to prevent data errors.

The home health agency assigned the Information Technology (IT) department's representative used encryption to protect and keep patients' data collected for analysis in this project for patients' privacy, minimizing cyber-attacks and data breaches. Patients' information was kept secure on a safe laptop assigned to the DNP project manager in a locked office and accessed by the DNP project manager alone for safety.

The de-identified patients' data collected from the home health agency's electronic health record (EHR) of the older adults with pressure injuries using the old standard of care was assessed and compared to older adult patients using the new pressure injury care bundle as the intervention. The comparisons were made to determine the effectiveness of the new pressure injury care bundle. The evaluation design included examining the process, outcome, and sustainability (Hristov & Chirico 2019).

Benchmarks of the process in this DNP project include efficiency metrics and key performance indicators of reduced rate of pressure injuries among older adults receiving home health services in this agency and improved patients' health status in 10 weeks. The benchmarks ensure patients' safety and quality of care. It is used to monitor health care performance and procedures treating patients' PI in the home health agency. Sustainability benchmarks include the project's overall impact and long-term viability (Hristov & Chirico 2019).

Appendix H will discuss the outcome, process, financial, balancing, and sustainability metrics table for this project's evaluation in detail. The USAHS conducted the review of this DNP project to ensure that all the regulatory guidelines were followed and abide by the protocols of the institution. The facility approval was granted by the home health agency's leadership management and the project proposal was reviewed for standard regulatory guidelines by the EPRC before approval.

Impact

The Impact of the pressure injury care bundle evidence-based change project was measured using the pre-and post-intervention on all the selected older adult patients' PI status. The results showed significant improvement in healing the patients' pressure injuries and decreased the incidence of pressure injuries in this home health agency. The implementation of the PI care bundle addressed clinical gaps this home health agency experienced by improving patients' pressure injuries and increasing the clinicians' knowledge in providing an appropriate method for implementing the PI care bundle to patients.

The training given by the DNP manager focused on the correct use of PI care bundle which was imperative in reducing the incidence of PI among the older adults in this home health agency. Information given during the training has made a substantial impact on the clinicians' knowledge, ability, and willingness to effectively implement the PI care bundle. Knowledge acquired during the training has motivated and empowered the clinicians positively. The clinical significance of this DNP change project has improved the patients' PI status, achieved the desired outcome, and increased patients' quality of life. In addition to the project team, the PI care bundle training has been extended to other clinicians, patients, and their caregivers. Patient-centered care quality notably increased while using the PI care bundle.

At the beginning of the weekly DNP educational training, there were challenges with staff adherence and attendance. These challenges were rectified quickly within 2 weeks, and

checklist documentation was made compulsory by the leadership management. Rewards for adherence and participation were given by the management to the project team. According to this home health agency management, this evidence-based change project has provided an opportunity for the staff and transformed this home health agency to perform better health care to all the patients with PIs. They promised to incorporate the PI care bundle into the agency's policies. The WOCN and the operation director promised to continue with the implementation of the PI care bundle as a guide for all the patients with Braden scale scores below 16 and would incorporate the training during the quarterly in-service.

Dissemination

As a mechanism for disseminating knowledge, promoting the best standards in healthcare, and incrementing overall advancements in the healthcare community, the DNP project manager shared the PI care bundle project manuscript information using the PowerPoint presentation with various stakeholders, including this home health agency leaders and broader segments of the healthcare population. The first element of the dissemination was prepared using well-structured, peer-review feedback from the project faculty, preceptors, and writing center representatives. Their corrective feedback was accepted and included in the project outcomes. The dissemination consisted of an abstract, an introduction, the methodology used in conducting the project, findings of evidence presented, discussion of findings, and conclusions.

The findings of this DNP project were shared via a PowerPoint oral presentation for which the target audience comprised of home healthcare staff, nurses, doctors, and other healthcare professionals. The DNP project manager used charts and visual aids, to summarize the goals, procedures, and key findings. The presentation emphasized how the PI care bundle reduced pressure injury incidence and improved patients' health outcomes. The DNP manager met with the project team for 20 minutes to allow brainstorming and four interactive sessions to

enable the target audience to effectively demonstrate the knowledge learned during the training sections and apply it to diverse clinical scenarios.

The results of the PI care bundle were disseminated at the home health agency in the presence of the agency's leadership directors, operation directors, WOCN, nurse case managers, nurses, physical therapists, occupational therapists, speech therapists, patients' physicians or their representatives, project preceptor, and project mentor in a PowerPoint presentation. This DNP scholar project manuscript was submitted to the SOAR repository at USAHS to fulfill the DNP program requirements of the DNP program for publication and to share with the students. This makes it accessible to students anytime as one of the samples of the DNP evidence-based practice projects. The project results were shared and presented to the Sigma Theta Tau Alpha Chapter of the University of St. Augustine virtually via PowerPoint oral presentation. The DNP manager also sent a copy of this DNP scholar project manuscript to local, regional, and national platforms including the American Journal of Nursing (AJN) for pressure injury preventive intervention in home healthcare settings.

Conclusion

This DNP project aimed to know the effectiveness of utilizing pressure injury care bundles and checklists using the Johns Hopkins Nursing Evidence-Based Practice Model (JHNEBP), to reduce pressure injuries among older adult patients seen by the home health agency. The increase in the incidence of pressure injuries in older adult patients in this home care agency has been a concern to the stakeholders, staff, patients, and caregivers. The PICOT scholarly question that prompts this EBP project is: In older adults 65-80 years with pressure injuries in the home healthcare setting (P), do a wound care bundle (I), compared to the current practice of standard care of repositioning (C) reduce the incidence of pressure injuries and enhance positive health outcome by improving skin integrity (O) in 10 weeks (T)? The evidence-based intervention of the PI care bundle may enhance skin integrity and reduce the incidence of pressure injuries in older adults' in-home care agencies. The collaboration of the stakeholders,

the project teams, and the home health agency's staff has helped implement the EBP project change. The home health agency's leadership management showed a positive commitment to sustainability and promised to incorporate the knowledge from this project into all their patients' care and the agency's policy.

References

Abdullah, M. I., Huang, D., Sarfraz, M., & Sadiq, M. W. (2021). Service innovation in human resource management during COVID-19: A study to enhance employee loyalty using intrinsic rewards. *Frontiers in Psychology, 12*, 627659. https://doi.org/10.3389/fpsyg.2021.62765

Agency for Healthcare Research and Quality. (n.d.). *Pressure ulcers*. https://www.ahrq.gov/topics/pressure-ulcers.html

Agency for Health Research Quality (2023). *Plan-do-study-act (PDSA) directions and examples*. https://www.ahrq.gov/health-literacy/improve/precautions/tool2b.html

Alharbi, J., Jackson, D., & Usher, K. (2020). Compassion fatigue in critical care nurses and its impact on nurse-sensitive indicators in Saudi Arabian hospitals. *Australian Critical Care, 33*(6), 553–559. https://doi.org/10.1016/j.aucc.2020.02.002

Alkeridy, W. A., Aljasser, A., Alayed, K. M., Alsaad, S. M., Alqahtani, A. S., Lim, C. A., & Al-Sofiani, M. (2022). Predictors of mortality in home health care service: Data from Saudi Arabia. *Journal of Multidisciplinary Healthcare,* 1997-2005. https://doi.org/10.2147/JMDH.S379782

Amr, A. A., Yousef, A. M., Amirah, M. F., & Alkurdi, M. H. (2017). A pre-post study evaluating the effectiveness of a new initiative, the “pressure bundle,” compared with standard care in reducing the incidence and prevalence of sacral pressure ulcers in critically Ill patients in an intensive care unit in Riyadh, Saudi Arabia. *Saudi Critical Care Journal, 1*(3), 75. https:/doi/org/10.4103/scj.sccj_29_17

Bailey, R. R. (2019). Goal setting and action planning for health behavior change. *American Journal of Lifestyle Medicine, 13*(6), 615-618 https://doi.org/10.1177/1559827617729634

Bates-Jensen, B. M., McCreath, H. E., Harputlu, D., & Patlan, A. (2019). Reliability of the Bates-Jensen wound assessment tool for pressure injury assessment: The pressure ulcer

detection study. *Wound Repair and Regeneration, 27*(4),395. https://doi.org/10.1111/wrr.12714

Bedard, A. (2023). *The 8-step process for leading change: Dr. John Kotter*. Kotter International Inc. https://www.kotterinc.com/methodology/8-steps/

Bottega, M., Tempesta, M., Piovesan, C., Rigo, F., Bordignon, J., Vedelago, D., & Coppe, A. (2023). The risk and prevalence of pressure injuries in older people in home care service: A cross-sectional study. *Journal of Wound Care, 32*(Sup10), ccxi-ccxviii. https://doi.org/10.12968/jowc.2023.32.Sup10.ccxi

Braden, B. J., & Maklebust, J. (2005). Preventing pressure ulcers with the Braden scale: An update on this easy-to-use tool that assesses a patient's risk. *The American Journal of Nursing, 105*(6), 70-2. https://doi.org/10.1097/00000446-200506000-00031

Buh, A. W., Mahmoud, H., Chen, W., McInnes, M. D., & Fergusson, D. A. (2021). Effects of implementing pressure ulcer prevention practice guidelines (PUPPG) in the prevention of pressure ulcers among hospitalized elderly patients: *A systematic review protocol. BMJ Open, 11*(3), e043042. http://doi.org/10.1136/bmjopen-2020-043042

Casal-Guisande, M., Comesaña-Campos, A., Cerqueiro-Pequeño, J., & Bouza-Rodríguez, J. B. (2020). Design and development of a methodology based on expert systems applied to the treatment of pressure ulcers. *Diagnostics, 10*(9), 614. http://doi.org/10.3390/diagnostics10090614

Cetiner, M., Akkaya Ari, S.A., Eskut, N., Ocak, O., Kabay, C., & Karaman, H. I. (2021). Evaluation of clinical features and the factors related to nutrition in home care patients with pressure ulcers. *Family Practice and Palliative Care, 6*(1), 7–12. https://doi.org/10.22391/fppc.776139

Chen, Y., VanderLaan, P. A., & Heher, Y. K. (2021). Using the model for improvement and Plan-Do-Study-Act to effect smart change and advance quality. *Cancer Cytopathology, 129*(1), 9–14. https://doi.org/10.1002/cncy.22319

Cox, J., Schallom, M., & Jung, C. (2020). Identifying risk factors for pressure injury in adult critical care patients. *American Journal of Critical Care*, *29*(3), 204–213. https://doi.org/10.4037/ajcc2020243

Dang, D., Dearholt, S. L., Bissett, K., Ascenzi, J., & Whalen, M. (2021). *Johns Hopkins evidence-based practice for nurses and healthcare professionals: Model and guidelines* (4th ed.). Sigma Theta Tau.

Deakin, J., Gillespie, B. M., Chaboyer, W., Nieuwenhoven, P., & Latimer, S. (2020). An education intervention care bundle to improve hospitalized patients' pressure injury prevention knowledge: A before and after study. *Wound Practice & Research, 28*(4), 154–162. https://doi.org/10.33235/wpr.28.4.154-162

Ebi, W. E., Hirko, G. F., & Mijena, D. A. (2019). Nurses' knowledge of pressure ulcer prevention in public hospitals in Wollega: A cross-sectional study design. *BMC Nursing, 18*(1), 1-12. https://doi.org/10.1186/s12912-019-0346-y

Edsberg, L.E., Black, J.M., Goldberg, M., McNichol, L., Moore, L., & Sieggree, M. (2016). Revised national pressure ulcer advisory panel pressure injury staging system: Revised pressure injury staging system. *Wound Ostomy Continence Nurse 43*(6),585-597. https://doi.org/10.1097/WON.0000000000000281

Ellis, M. (2017). Pressure ulcer prevention in care home settings. *Nursing Older People, 29*(3), 29–37. https://doi.org/10.7748/nop.2017.e906

García, S. F. J., Martínez, V. V., & Rodríguez, M. B. (2019). Conceptualizations on home care for pressure ulcers in Spain: Perspectives of patients and their caregivers. *Scandinavian Journal of Caring Sciences, 33*(3), 592–599. https://doi.org/10.1111/scs.12652

Gefen, A. (2018). The future of pressure ulcer prevention is here: Detecting and targeting inflammation early. *European Wound Management Association Journal,19*(2), 7-13.

Gillespie, B. M., Walker, R. M., Latimer, S. L., Thalib, L., Whitty, J. A., McInnes, E., & Chaboyer, W. P. (2020). Repositioning for pressure injury prevention in adults. *Cochrane Database of Systematic Reviews,* 6. https://doi.org/10.1002/14651858.CD009958.pub3

Haas, M. R. C., Munzer, B. W., Santen, S. A., Hopson, L. R., Haas, N. L., Overbeek, D., Peterson, W. J., Cranford, J. A., & Huang, R. D. (2019). #DidacticsRevolution: Applying Kotter's 8-Step Change Management Model to residency didactics. *The Western Journal of Emergency Medicine, 21*(1), 65–70. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6948686/

Halloran, K. M. (2020). Implementation of a pressure ulcer care bundle among Guam homebound veterans [ProQuest Information & Learning]. In *Dissertation Abstracts International Section A: Humanities and Social Sciences, 81*, 3–A.

Harrison, R., Fischer, S., Walpola, R. L., Chauhan, A., Babalola, T., Mears, S., & Le-Dao, H. (2021). Where do models for change management, improvement, and implementation meet? A systematic review of the applications of change management models in healthcare. *Journal of Healthcare Leadership, 13*, 85–108. https://doi.org/10.2147/JHL.S289176

Hristov, I., & Chirico, A. (2019). The role of sustainability key performance indicators (KPIs) in implementing sustainable strategies. *Sustainability*, *11*(20), 5742. https://doi.org/10.3390/su11205742

Iamandii, I., Kouassi, A. B., Simonazzi, D., Marchesi, C., Vinceti, M., & Filippini, T. (2022). Healing time of skin ulcers in homecare residents in the Reggio Emilia, Northern Italy province. *Life*, *12*(12),1989. https://doi.org/10.3390/life12121989

Intellectus Statistics [Online computer software]. (2023). Intellectus Statistics. https://statistics.intellectus360.com

de Carvalho Cigre, A., & de Sousa Carvalho, A. (2022). Factors related to the prevalence of pressure injuries in a community context. *Revista Baiana de Enfermagem, 36*, 1–11. https://doi.org/10.18471/rbe.v36.43443

Jafari, M., Nassehi, A., Rafiei, H., Tagayi, S., Karimi, Y., Bardsiri, T.I., & Bellon, J. A. (2021). Pressure injury prevention knowledge among family caregivers of patients needing home care. *Home Healthcare Now, 39*(4), 203-210. https://doi.org/10.1097/nhh.0000000000000975

James, J., & Abraham, R. P. (2020). Effect of education intervention on knowledge and practice on skin care bundle pressure ulcer prevention. *International Journal of Nursing Care, 8*(2), 4–9. https://doi.org/10.37506/ijonc.v8i2.11276

Jaul, E., Barron, J., Rosenzweig, J. P., & Menczel, J. (2018). An overview of co-morbidities and the development of pressure ulcers among older adults. *BMC Geriatrics, 18*(1), 1-11.

Karadağ, A., & Çakar, V. (2022). Evidence-based prevention and management of pressure injuries in home care: A scoping review. *Advances in Skin & Wound Care, 35*(3), 172–179. https://doi.org/10.1097/01.ASW.0000815484.50141.5d

Kim, M. J., Jeong, Y. S., Kim, H. J., Hahn, H. M., Thai, D. Q., & Lee, I. J. (2023). Effect of a team approach to pressure injury management over 5 years in a tertiary hospital. *Advances in Skin & Wound Care, 36*(1), 1–7. https://doi.org/10.1097/01.ASW.0000902488.10296.9b

Kotter, J. P. (2002). *The heart of change: Real-life stories of how people change.* Harvard Business Review Press.

Kottner, J., Cuddigan, J., Carville, K., Balzer, K., Berlowitz, D., Law, S., & Haesler, E. (2019). Prevention and treatment of pressure ulcers/injuries: The protocol for the second update of the International Clinical Practice Guideline 2019. *Journal of Tissue Viability, 28*(2), 51-58. https://doi.org/ 10.1016/j.jtv.2019.01.001

Lavallée, J. F., Gray, T. A., Dumville, J., & Cullum, N. (2019). Preventing pressure ulcers in nursing homes using a care bundle: A feasibility study. *Health & Social Care in the Community, 27*(4), e417–e427. https://doi.org/10.1111/hsc.12742

Lee, H. J., Yeong, J. J., Park, E.C., Kim, J., & Lee, S.G(2017). (2017). Effects of home-visit nursing services on hospitalization in the elderly with pressure ulcers: A longitudinal study, *European Journal of Public Health, 27*(5), 822–826. https://doi.org/10.1093/eurpub/ckx110

Lewin, K. (1942). Field theory and learning. In N. B. Henry (Ed.), *The forty-first yearbook of the National Society for the Study of Education: Part 2, The psychology of learning* (pp. 215–242). The University of Chicago Press. https://doi.org/10.1037/11335-006

Lock, D. (2020). *Project management the* (10th ed.). Routledge London. https://doi.org/10.4324/9781315245911

Lovegrove, J., Fulbrook, P., & Miles, S. J. (2022). Use of a sacral foam dressing to prevent pressure injury in at-risk subacute hospitalized older adults: A pilot randomized controlled trial. *Journal of Wounds Ostomy and Continence Nursing, 49*(4), 322–330. https://doi.org/10.1097/WON.0000000000000894

Mao, X., & Zhu, L. (2021). Effects of care bundles for patients with pressure ulcers and the impact on self-care efficacy. *American Journal of Translational Research, 13*(3), 1799. PMCID: PMC8014366

McEvoy, N., Avsar, P., Patton, D., Curley, G., Kearney, C. J., & Moore, Z. (2021). The economic impact of pressure ulcers among patients in intensive care units: A systematic review. *Journal of Tissue Viability, 30*(2), 168–177. http://doi.org/ 10.1016/j.jtv.2020.12.004

McHugh, M. L. (2013). The chi-square test of independence. *Biochemia Medica, 23*(2), 143-149. https://doi.org/10.11613/BM.2013.018

Meddings, J., Reichert, H., Rogers, M. A., Hofer, T. P., McMahon, L. F., & Grazier, K. L. (2015). Under pressure: Financial effect of the hospital-acquired conditions initiative-a statewide

analysis of pressure ulcer development and payment. *Journal of the American Geriatrics Society, 63*(7), 1407–1412. https://doi.org/10.1111/jgs.13475

MedStar Georgetown University Hospital. (2023). *Creating an environment of personalized care.* MedStar Health. https://www.medstarhealth.org/locations/medstar-georgetown-university-hospital

Melnyk, B. M., & Fineout-Overholt, E. (2019). *Evidence-based practice in nursing & healthcare: A guide to best practice* (4th ed.). Wolters Kluwer.

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. The PRISMA Group (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *PLOS Medicine,6*(7). https://doi.org/10.1371/journal.pmed.100009

Perez, J. (2021). Leadership in healthcare. *Journal of Healthcare Management*, Published ahead of print. https://doi.org/10.1097/jhm-d-20-00057

Pollack, J., & Pollack, R. (2014). Using Kotter's eight-stage process to manage an organizational change program: Presentation and practice. *Systemic Practice and Action Research, 28*(1), 51–66. https://doi.org/10.1007/s11213-014-9317-0

Prasad, S., Hussain, N., Sharma, S., Chandy, S., & Kurien, J. (2020). Impact of pressure injury prevention protocol in-home care services on the prevalence of pressure injuries in the Dubai community. *Dubai Medical Journal, 3*(3), 99–104. https://doi.org/10.1159/000511226

Roberts, S., Wallis, M., McInnes, E., Bucknall, T., Banks, M., Ball, L., & Chaboyer, W. (2017). Patients' perceptions of a pressure ulcer prevention care bundle in hospital: A qualitative descriptive study to guide evidence-based practice. *Worldviews on Evidence-Based Nursing, 14*(5), 385–393. https://doi.org/10.1111/wvn.12226

Rutherford, C., Brown, J. M., Smith, I., McGinnis, E., Wilson, L., Gilberts, R., & Nixon, J. (2018). A patient-reported pressure ulcer health-related quality of life instrument for use in

prevention trials (PU-QOL-P): Psychometric evaluation. *Health and Quality of Life Outcomes, 16*(1), 1–11.

Santamaria, N., Gerdtz, M., Kapp, S., Wilson, L., & Gefen, A. (2018). A randomized controlled of the clinical effectiveness of multi-layer silicone foam dressings for the prevention of pressure injuries in high-risk aged care residents: The Border III trial. *International Wound Journal,15*(3), 482–490. https://doi.org/10.1111/iwj.12891

Schaffer, M. A., Sandau, K. E., & Diedrick, L. (2013). Evidence-based practice models for organizational change: Overview and practical applications*. Journal of Advanced Nursing, 69*(5), 1197-1209. https://doi.org/10.1111/j.1365-2648.2012.06122.x

Shahid, N., Rappon, T., & Berta W. (2019). Applications of artificial neural networks in health care organizational decision-making: A scoping review. *Plos One, 14*(2). https://doi.org/10.1371/journal.pone.0212356.

Shirley, D. (2020). Project management for healthcare (2nd ed.). CRC Press. Stephen-Haynes, J., & Callaghan, R. (2017). A 100-patient clinical evaluation of an alternating pressure replacement mattress in a home-based setting. *British Journal of Nursing, 26*(Sup20), S54–S60. https://doi.org/10.12968/bjon.2017.26.Sup20.S54

Trisnaningtyas, W., Retnaningsih, R., & Rochana, N. (2021). Effects and interventions of pressure injury prevention bundles of care in critically ill patients: A systematic review. *Nurse Media Journal of Nursing, 11*(2), 154–176. https://doi.org/10.14710/nmjn.v11i2.2888

Verhaelen, B., Mayer, F., Peukert, S., & Lanza, G. (2021). A comprehensive KPI network for the performance measurement and management in global production networks. *Production Engineering*, *15*, 635-650. https://doi.org/10.1007/s11740-021-01041-7

Wagner, J., & Udod, S. A. (2022). *9 common change theories and application to different nursing situations*. Pressbooks.

https://pressbooks.pub/leadershipandinfluencingchangeinnursing/chapter/chapter-9-common-change-theories-and-application-to-different-nursing-situations/

Welsh, L. (2014). Ethical issues and accountability in pressure ulcer prevention. *Nursing Standard, 29*(8), 56–63. https://doi.org/10.7748/ns.29.8.56.e9262

Yap, J., & Holloway, S. (2021). Evidence-based review of the effects of nutritional supplementation for pressure ulcer prevention. *International Wound Journal, 18*(6), 805–821. https://doi.org/10.1111/iwj.13584

Yap, T. L., Horn, S. D., Sharkey, P. D., Zheng, T., Bergstrom, N., Colon-Emeric, C., Sabol, V. K., Alderden, J., Yap, W., & Kennerly, S. M. (2022). Effect of varying repositioning frequency on pressure injury prevention in nursing home residents: Team-up trial results. *Advances in Skin & Wound Care, 35*(6), 315–325. https://doi.org/10.1097/01.ASW.0000817840.68588.04

Yilmazer, T., & Tuzer, H. (2022). Effectiveness of a pressure injury prevention care bundle: Prospective interventional study in intensive care units. *Journal of Wound, Ostomy & Continence Nursing, 49*(3), 226–232. https://doi.org/10.1097/WON.0000000000000875

Yilmazer, T., & Tuzer, H. (2022). The effect of a pressure ulcer prevention care bundle on nursing workload costs. *Journal of Tissue Viability, 31*(3), 459–464. https://doi.org/10.1016/j.jtv.2022.05.004

Yurt, N. S., & Cubukcu, M. (2022). Mini Nutritional Assessment score and visceral proteins as potential predictors of pressure injuries in home care patients with stroke. *Topics in Clinical Nutrition, 37*(4), 305–313. https://doi.org/10.1097/TIN.0000000000000298

Zhang, X., Wu, Z., Zhao, B., Zhang, Q., & Li, Z. (2021). Implementing a pressure injury care bundle in Chinese intensive care units. *Risk Management and Healthcare Policy, 14*, 2435–2442. https://doi.org/10.2147/RMHP.S292579

Tables

Table 1

Implementation of EBP Project Budget

Items	Direct Cost	Overhead Cost	Total Cost
Personal Remuneration (nurse educators, data analysts, other specialists)	$300	$50	$350
Education and Training (seminars and workshops)	$150	$50	$200
Medical Supplies (pressure injury care bundle)	$850	$150	$1000
Data Collection Software	$45	$5	$50
Communication	$45	$5	$50
Evaluation	$150	$50	$200

Contingency (unexpected expenses)	$150	$50	$200
Project	$300	$100	$400

Management (administrative expenses)			
Cumulative			$2450

Table 2

Project Timeline

Steps	Time Frame	Who is Responsible
Meeting the EPRC at the USA for approval	Week 1	DNP student
Meeting with the Stakeholders at MHHC	Week 1	DNP student, COO and Operation Directors
Meeting the Education Director and conduct staff bundle training	Week 1-4	DNP student and Education Director
Implementation of pressure care bundle	Week 4-10	DNP student and MHHC project team
EHR accessible for data analysis	Week 4-10	DNP student and IT team
Disseminating the project outcomes	Week 10	DNP student

Appendix A

Levels of Evidence Table

Citation	Design, Level, Quality Grade	Sample Size	Intervention Comparison (definitions should include any specific Research tools used along with reliability and validity)	Theoretical Foundation	Outcome Definition	Usefulness
Bates-Jensen, B. M., McCreath, H. E., Harputlu, D., & Patlan, A. (2019). Reliability of the Bates-Jensen wound assessment tool for pressure injury assessment: The Pressure ulcer detection study. Wound Repair and Regeneration, 27(4),395. https://doi.org/10.1111/wrr.12714	Level I Quality A	142	Wound Assessment Tool (BWAT)	No theoretical framework used	BWAT was used to describe the staging of the PIs anatomical location of PIs and healing progress	BWAT scores were significant by staging PIs BWAT provided reliable objective data for assessing PIs healing progress
Bottega, M., Tempesta, M., Piovesan, C., Rigo, F., Bordignon, J., Vedelago, D., & Coppe, A. (2023). The risk and prevalence of pressure injuries in older people in home care service: A cross-sectional study. Journal of	Level I Quality: A	2223	Cross-sectional Studies	No theoretical framework used	Bottega et al. collected data according to STROBE	The studies concluded that PI can be developed not
Wound Care, 32(Sup10), ccxi-ccxviii. https:/doi: 10.12968/jowc.2023.32.Sup10.ccxi					guideline on: Demographic	only in the hospital but at home but with
					with variables,	the

					PI risk Assessment using Braden-scale score, types of	commitment of patients and caregivers, PI could be prevented or reduced
					mobility devices, wound description, ongoing treatment, and body location	
Cetiner, M., Akkaya Ari, S.A., Eskut, N., Ocak, O., Kabay, C., & Karaman, H. I. (2021). Evaluation of clinical features and the factors related to nutrition in home care patients with pressure ulcer. Family Practice and Palliative Care, 6(1), 7–12. https://doi.org/10.22391/fppc.776139	Level III Quality: B	500	Retrospective and cross- sectional observation of patients' data in home health service units	No theory was used	The investigators reviewed files of the homecare patients to know the relationship between nutrition-related parameter and pressure ulcer stage	The concluded that lower hemoglobin increases the severity of the pressure ulcer
Cox, J., Schallom, M., & Jung, C. (2020). Identifying risk factors for pressure injury in adult critical care patients. American Journal of Critical Care, 29(3), 204–213. https://doi.org/10.4037/ajcc2020243	Level III Quality: B	1460	Clinical database reviews in intensive care	No theoretical framework used	Cox et al. reviewed the clinical database to determine challenges and risks of pressure injury in critically ill patients	The study identified the risk factors to prevent pressure injury in older adults critically ill patients

Deakin, J., Gillespie, B. M., Chaboyer, W., Nieuwenhoven, P., & Latimer, S. (2020). An education intervention care bundle to improve hospitalized patients' pressure injury prevention knowledge: A before and after	Level III Quality	80	Survey in three Medical inpatient units	No theorical framework	Engaging the patients and after	The study found that patients'

study. Wound Practice & Research, 28(4), 154–162. https://doi.org/10.33235/wpr.28.4.154-162			using A paired sample t-test	was showed but it seems the care theory was used	intervention study was used to measure the participation and readiness of the patients in the pressure injury patients before	education and knowledge in implementing pressure injury prevention
García, S. F. J., Martínez, V. V., & Rodríguez, M. B. (2019). Conceptualizations on home care for pressure ulcers in Spain: Perspectives of patients and their caregivers. Scandinavian Journal of Caring Sciences, 33(3), 592–599. https://doi.org/10.1111/scs.12652	Level I Quality C Level III Quality B	10 A	Qualitative study	Grounded Theory	Three barriers were identified that cause pressure ulcer in home as: Feminization care, is necessary Life adaptation and caregiver non-awareness	They found out that the certainty of the evidence was very low due to the high risk of bias. The study identified the facilitators to prevent pressure injuries as willingness and involvement of the caregivers to provide care
Gillespie, B. M., Walker, R. M., Latimer, S. L., Thalib, L., Whitty, J. A., McInnes, E., &Chaboyer, W. P. (2020). Repositioning for pressure injury prevention in adults. Cochrane Database of Systematic Reviews, (6). https://doi.org/10.1002/14651858.CD009958.pub3	Level I Quality C Level III Quality B	3941	RCTs Searched the Cochrane wounds specialized register, Cochrane	No theorical framework was used	Assessment of the effects of 2,3,4 hours repositioning schedule and different	The review authors found out that the certainty of the evidence was very low due to the high risk of

			central register of controlled trials, OVID, MEDLINE, EBS CO, CINAHL plus, Clinical trials registries		position in the health care settings measure patients PIs incidence in adults	bias
Hyo Jung Lee, Yeong Jun Ju, Eun-Cheol Park, Juyeong Kim, Sang Gyu Lee, Effects of home-visit nursing services on hospitalization in the elderly with pressure ulcers: a longitudinal study, European Journal of Public Health, Volume 27, Issue 5, October 2017, Pages 822–826, https://doi.org/10.1093/eurpub/ckx110	Level III Quality C	4807	Analysis of National Aging Cohort Data Logistic regression analysis	None	The study was performed to define the older population that required home care for PI under long-term insurance pressure ulcer.	They concluded that in the process of pressure healing at home health care team approach is important
Iamandii, I., Kouassi, A. B., Simonazzi, D., Marchesi, C., Vinceti, M., & Filippini, T. (2022). Healing time of skin ulcers in homecare residents in the Reggio Emilia, Northern Italy province. Life, 12(12), 1989. https://doi.org/10.3390/life12121989	Level I Quality C	136	Pilot study	None	Pilot study to evaluate the ulcer healing time among adults followed by home nursing service	Ucer management required once weekly with recovery frequency of 53,6% at the end of the observation period
Isabel de Carvalho Cigre, A., & António de Sousa Carvalho, A. (2022). Factors related to the prevalence of pressure injuries in community context. Revista Baiana de Enfermagem, 36, 1–11. https://doi.org/10.18471/rbe.v36.43443	Level III Quality A	771	Clinical Information system in the community were collected and used as statistical	Care Theory	There was significant difference between the categories of the	The study found the prevalence of pressure injury while

			package.		degree of risk and mobility dimension	identifying the degree of risk and mobility dimension
Jafari, M., Nassehi, A., Rafiei, H., Tagayi, S., Karimi, Y., Bardsiri, T.I., & Bellon, J. A (2021). Pressure Injury Prevention Knowledge Among Family Caregivers of Patients Needing Home Care. Home Healthcare Now, 39(4), 203-210. https://doi.org/10.1097/nhh.0000000000000975	Level I Quality B	323	A special questionnaire designed by Arboledas and Pancorbo-Hildalgo was used to assess patients' caregivers' educational knowledge on PIs	No care theory was used	The mean total score of caregivers' knowledge about the PIs were 34.5(ranging 23-42). Most of the caregivers stated they did not receive adequate education related to PIs	Most of the cgrs did not receive necessary education on PIs. They recommended that the issue should be considered by the healthcare providers for interventions to improve the situation
Karadağ, A., & Çakar, V. (2022). Evidence-based prevention and management of pressure injuries in home care: A Scoping review. Advances in Skin & Wound Care, 35(3), 172–179. https://doi.org/10.1097/01.ASW.0000815484.50141.5d	Level II Quality B	2,929	Journal Articles System reviews from comprehensive and structure literature searches like PubMed, Cochrane library, CINAHL, Ovid Scopus and web of science		Reviewed articles provided DATA on the quality practices for the prevention and management of PIs in home care	The investigators concluded that the use for the protocol on prevention and management of PIs including evidence- based intervention in home care
Kim, M. J., Jeong, Y. S., Kim, H. J., Hahn, H. M., Thai, D. Q., & Lee, I. J. (2023). Effect of a team Approach to pressure injury management over 5 years in a tertiary	Level III Quality B	Level III Quality B	Chart reviews in tertiary hospital	Change Theory	The proportion of completed	The study found the implementation of integrated

hospital. Advances in Skin & Wound Care, 36(1), 1–7. https://doi.org/10.1097/01.ASW.0000902488.10296.9b					healed PIs increased with wound care team approach after the implementation of appropriate treatments	wound care team led to significant increase in early-stage pressure injury (PI) detention and decrease in severe PIs
Lavallée, J. F., Gray, T. A., Dumville, J., & Cullum, N. (2019). Preventing pressure ulcers in nursing homes using a care bundle: A feasibility study. Health & Social Care in the Community, 27(4), e417–e427. https://doi.org/10.1111/hsc.12742	Qualitative level III Quantitative level III	462	Mixed feasibility study using quantitative data in nursing homes	Theoretical Domains Framework	No new pressure ulcers were developed during the feasibility study of using care bundles including skin inspection, support surfaces and repositioning	The study found that using the care bundle was effective in preventing pressure ulcers
Prasad, S., Hussain, N., Sharma, S., Chandy, S., & Kurien, J. (2020). Impact of pressure injury prevention protocol in home care services on the prevalence of pressure injuries in the Dubai community. Dubai Medical Journal, 3(3), 99-104. https://doi.org/10.1159/000511226	Level III Quality B	249	Retrospective observation on patients' data in homecare setting	No theory was used	The investigator s evaluated effective implementation of the proposed protocols and assessed the impact of the newly	The concluded that the significance improvement was @ p value

					developed PIs protocol for homecare patients	
Roberts, S., Wallis, M., McInnes, E., Bucknall, T., Banks, M., Ball, L., & Chaboyer, W. (2017). Patients' perceptions of a pressure ulcer prevention care bundle in hospital: A qualitative descriptive study to guide evidence-based practice. Worldviews on Evidence-Based Nursing, 14(5), 385–393. https://doi.org/10.1111/wvn.12226	Level III Quality C	19	Qualitative descriptive study in the hospital	No framework was indicated	Patients understanding of pressure ulcer prevention care bundle enhanced their participation and positive interaction	The study showed that patients' involvement and understanding in using pressure care bundle prevent pressure ulcer incidents
Stephen-Haynes, J., & Callaghan, R. (2017). A 100-patient clinical evaluation of an alternating pressure replacement mattress in a home-based setting. British Journal of Nursing, 26(Sup20), S54–S60. https://doi.org/10.12968/bjon.2017.26.Sup20.S54	Level III Quality C	100	Prospective observational study	None	The study examined the effect of using the Dual professional alternating pressure air mattresses support the prevention and management of PIs	They concluded that with a regimen of regular repositioning of patients and a good diet, the APAM was effective in preventing pressure ulceration
Trisnaningtyas, W., Retnaningsih, R., & Rochana, N. (2021). Effects and interventions of pressure injury prevention bundles of care in critically ill patients: A systematic review. Nurse Media Journal of Nursing, 11(2), 154–176. https://doi.org/10.14710/nmjn.v11i2.2888	Level III Quality B	Not stated	Systemic reviews used different databases	No Theory was indicated	Pressure injury prevention bundle of care reduced the	The study found the significant reduction in incidents of pressure

					incidents pressure injury	ulcers after the use of pressure care bundles
Yap, T. L., Horn, S. D., Sharkey, P. D., Zheng, T., Bergstrom, N., Colon-Emeric, C., Sabol, V. K., Alderden, J., Yap, W., & Kennerly, S. M. (2022). Effect of varying repositioning frequency on pressure injury prevention in nursing home residents: Team-up trial results. Advances in Skin & Wound Care, 35(6), 315–325. https://doi.org/10.1097/01.ASW.0000817840.68588.04	Level I Quality B	992	Randomized control trial in nursing homes using the three-repositioning interval	No Theoretical framework was showed	The 4 hours protocol used for repositioning proven to be better than 2 and 3 hours	The study found the clinical effectiveness of 2,3-, and 4-hours protocol without compromising pressure injury incidence.
Yilmazer, T., & Tuzer, H. (2022). Effectiveness of a pressure injury prevention care bundle: Prospective interventional study in intensive care units. Journal of Wound, Ostomy	Level III Quality B	104	Experimental study in intensive care units	Care Theory	Pressure injury prevention bundle resulted in declined stage 1 pressure injuries	The study found the clinical effectiveness of 2,3-, and 4-hours protocol without compromising pressure injury incidence
Yurt, N. S., & Cubukcu, M. (2022). Mini Nutritional Assessment score and visceral proteins as potential predictors of pressure injuries in home care patients with stroke. Topics in Clinical Nutrition, 37(4), 305–313. https://doi.org/10.1097/TIN.0000000000000298	Level I Quality B	n=54	Case controlled study	Not indicated	The Mini Nutritional assessment as part of pressure care bundle was assessed to determine the effect of nutrition and protein level on patients	The study determined the presence and severity of pressure injuries base on the Mini Assessment Scores

					with pressure injuries	

Appendix B

Summary of Systematic Reviews (SR)

Citation	Quality Grade	Question	Search Strategy	Inclusion/ Exclusion Criteria	Data Extraction and Analysis	Key Findings	Usefulness/Recommendation/ Implications
Gillespie, B. M., Walker, R. M., Latimer, S. L., Thalib, L., Whitty, J. A., McInnes, E., &Chaboyer, W. P. (2020). Repositioning for pressure injury prevention in adults. Cochrane Database of Systematic Reviews, (6). https://doi.org/10.1002/14651858.CD009958.pub3	Level I Quality B	To assess the clinical and cost effectiveness of repositioning regimens	RCTs Searched the Cochrane Wounds Specialized register, Cochrane Central register of controlled trials, OVID, MEDLINE, EBSCO, CINAHL plus, Clinical Trials registries	Randomized controlled trials (RCTs), including cluster-randomized trials (c-RCTs), published or unpublished that assessed the effects of any repositioning schedule or different patient positions and measured PI	Three review authors independently performed study selection, 'Risk of bias' assessment, and data extraction. The author assessed the certainty of the evidence using GRADE.	The of Results this update is consistent with our earlier review, with the evidence judged to be of low or very low certainty	The authors reported a high level of uncertainty in the evidence-based

				incidence in adults in any setting			
Karadağ, A., & Çakar, V. (2022). Evidence-based prevention and management of pressure injuries in home care: A Scoping review. Advances in Skin & Wound Care, 35(3), 172–179. https://doi.org/10.1097/01.ASW.0000815484.50141.5d	Level II Quality B	To investing ate the quality of practices on the manage nts and prevention of PIs (Pressure Injuries) in homecare	Articles system reviews from comprehensive and structure literature searches like PubMed, Cochrane library, CINAHL, Ovid Scopus and web of science	Literature Search retrieved 2929 articles. The investigators evaluated titles, abstracts and full texts of the articles retrieved in accordance with review question and eligibility criteria	Data extraction of the researchers extracted details of the full-text articles including authors and years of publication study design and intervention types	The articles provided significant data on the quality of practice for the prevention and management of PIs in home care	The use of protocols for the prevention and management of pressure injuries including evidence-based intervention in home care
Trisnaningtyas, W., Retnaningsih, R., & Rochana, N. (2021). Effects and interventions of pressure injury prevention bundles of care in critically ill patients: A systematic review. Nurse Media Journal of Nursing, 11(2), 154–176. https://doi.org/10.14710/nmjn.v11i2.2888	Level II Quality B	To review the effect of pressure prevention bundle of care on the incidents of pressure injury	Databased utilized are EBSCO, Science Dir ect, PubMed, ProQuest, Google Scholar, and Scopus	PRISMA flowchart was used to select relevant articles using several inclusions and exclusion	Data were analyzed and reported using a narrative synthesis is. The included studies	The findings showed that the pressure injury prevention bundles of care decreased	The reviewers concluded that prevention bundle of care in the critically ill patients reduce pressure injury incidents. They

		in critically ill patients and the intervention measures of the care bundles.	(2009-2020).	criteria, resulting in 17 articles from 50 eligible full text articles.	were assessed for their quality using Joanna Briggs Institute (JBI (Joanna Briggs Institute) critical appraisal tools.	pressure injury incidents and 7 intervention measures of risk assessment using Cubbin Jackson scale, skin assessment t and care, repositioning g, Nutrition education, support surface and medical device care	recommended that more studies with stronger evidence levels to conduct and use intervention measures as a preventive standard of care in critically ill patients

Appendix C

Summary of Primary Research Evidence

Main Idea	**Reference 1**	**Reference 2**	**Reference 3**	**Reference 4**	**Reference 5**	**Reference 6**
	Bates- Jensen, B. M., McCreath, H. E., Harputlu, D., & Patlan, A. (2019).Reliability of the Bates- Jensen wound assessment tool for pressure injury assessment: The pressure ulcer detection study. Wound Repair and Regeneration, 27(4), 386-395. https://doi.org /10.1111/wrr. 12714	Bottega, M., Tempesta, M., Piovesan, C., Rigo, F., Bordignon, J., Vedelago, D., Calo, L., Marchet, P., Dorigo, M., Scarpa, G., Barba, L. D., & Coppe, A. (2023). The risk and prevalence of pressure injuries in older people in the home care service: a cross- sectional study. Journal al of Wound care, 32(10),ccxi-ccxviii. https://doi.org/10.12968/jowc.2023.32.Sup10.ccxi	Cetiner, M. , Akkaya Ari, S.A., Eskut, N., Ocak, O., Kabay, C., & Karaman, H. I. (2021). Evaluation of clinical features and the factors related to nutrition in home care patients with pressure ulcer. *Family Practice and Palliative Care, 6* (1)7-12. https://doi.org/10.22391/fppc 776139	Cox, J., Schallom, M., & Jung, C. (2020). Identifying risk factors for pressure injury in adult critical care patients. An American Journal of Critical Care, 29 (3), 204–213. https://doi. org/10.403 7/ajcc2020 243	Deakin, J., Gillespie, B. M., Chaboyer, W., Nieuwenhove n, P., & Latimer, S. (2020). An education intervention care bundle to improve hospitalized patients' pressure injury prevention knowledge: A before and after study. Wound Practice & Research, 28(4), 154–162. https://doi.org /10.33235/wp r.28.4.154-162	García, S. F. J., Martínez, V. V., & Rodríguez, M. B. (2019). Conceptualization son home care for pressure ulcers in Spain: Perspectives of patients and their caregivers. Scandinavian Journal of Caring Sciences, 33(3), 592–599. https://doi.org/10. 1111/scs.12652

Setting	USA	Italy	Kutahya City	USA	Australia	Spain
Time	2018	2019	2016-2017			
Bundle components	Skin assessment tool	Braden Scale Caregivers commitments	Nutrition, Skin Assessment and Risk Assessment	Braden Scale and Skin assessment	Support surface, skin assessment, Repositioning, Adequate nutrition, Skin care and Patient education	Caregivers and patient involvement Educational training Skin assessment

Intervention on PIs	BWAT pressure assessment tool was used on patients with PIs to determine the improvement in pressure injury staging	PI assessment using Braden Scale score, mobility devices, wound description, body locations and ongoing treatments	Homecare patients were investigated ed on the relationship p between nutrition- related parameter and pressure ulcer stage	Braden Scale and skin assessment t were used to determine risks of pressure	The study measured patients' relationship in pressure injury prevention when care bundles were used	The study identified 3 barriers of care and life adaptions of home caregivers on PIs
Effects of Care Bundles	BWAT scores were significant by staging PIs BWAT provided reliable objective data for assessing PIs	Braden Scale is a reliable tool used to detect patients at risk for pressure injuries	Good nutrition prevents pressure ulcer	The study identified the risk factors to prevent pressure injury in older adults	Improvement s on prevention of pressure injuries of the patients	Education on adequate care on PI care bundle to improve pressure injury incidence

Main Idea	Reference 7	Reference 8	Reference 9	Reference 10	Reference 11	Reference 12
	Gillespie, B. M., Walker,	Hyo Jung Lee, Yeong	Iamandii, I.,	Isabel de Carvalho	Jafari, M., Nassehi, A.,	Karadağ, A., & Çakar, V. (2022).
Setting		Southern Korea	Northern Italy	Portugal	Iran	USA
Time	2019	2008-2013	2020			2005-2010
Care Bundle components	Hourly Repositioning Skin assessment	Risk assessment, Skin assessment, PI Training Home care nursing service	Caregivers and Home care nurses Ulcer management/ Training	Braden scale for accurate pressure assessment t tool	Caregivers Education on PI prevalent	Evidence-based intervention of PI
Intervention on PIs	Assessment of the effects of 2,3,4 hours repositioning schedule and different position to minimize PIs in the health care settings	Analysis to examine the association between home visit nursing and hospital in relation to PI assessment and prevention	Evaluation of pressure ulcer healing time and duration of home nursing care on older adults and caregivers	Braden Scale was used to find factors related to prevalence of pressure ulcers	A special questionnaire was used to assess patients 'caregivers' educational knowledge on PIs	Intervention on the quality of wound care practices on the prevention and management of PIs in home care

Effects of Care Bundles	High level of uncertainty in the evidence reviewed on reposition only for PIs prevention	Proper management t of PI is needed to promote healing, shorten healing time and increase the complete healing	Patients' comorbidity is affected healing time of them pressure ulcers	The prevalence reduced of pressure injuries, and identified the risks of PIs	Adequate knowledge on PIs care from education and training increase the incidence of PIs in home care patients	The prevention and management of PIs including evidence-based intervention regarding PI care in home care and clinical practice guideline

Main Idea	Reference 13	Reference14	Reference 15	Reference 16	Reference 17	Reference 18
	Kim, M. J., Jeong, Y. S., Kim, H. J., Hahn, H. M., Thai, D. Q., & Lee, I. J. (2023). Effect of a team approach to pressure injury care,36(1),1-7.https://doi.org/01.ASW.0000902488.10296.9b	Lavallée, J. F., Gray, T.3 A., Dumville, J., & Cullum, N. (2019). Preventing pressure ulcers in nursing homes using a care bundle: A feasibility study. Health &social care in the community, 27(4),e417-e427.https://doi.org/10.1111/hsc.12742	Prasad, S., Hussain, N., Sharma, S., Chandy, S., & Kurien,J.(2020). Impact of pressure injury prevention protocol in home care services on the prevalence of pressure injury in the Dubai community. Dubai Medical Journal, 3(3),99-104. https://doi.org/10.1159/000511226	Roberts et al., (2017). Patients' perception s of a pressure evidence-based practice.Worldviews on Evidence-Based Nursing,14(5),385-393.https://doi.org/10.1111/wvn.12226	Stephen-Haynes, J., & Callaghan, R. (2017). A 100 patient clinical evaluation of an alternating pressure replacement mattress in a home-based setting. British Journal of Nursing.26(sup 20),S54-S60.https://doi.org/10.12968/bjon.2017.26.Sup20.S54	Trisnaningtyas, W., Retnaningsih, R., & Rochana, N. (2021). Effects and interventions of pressure injury Prevention bundles of care in critically ill patients: Systematic review. Nurse Media Journal of Nursing,11(2),154-176.https://doi.org/10.14710/nminv1112.2888

Setting	Tertiary hospital		Dubai		Birmingham	Several ICU (Intensive Care Unit) databases
Time	5 years	9 weeks	6 months		2014	
Bundle components	Braden scale Wound care team	Repositioning g, support surface and	Risk assessment tool	All the components of Pressure	Pressure air mattresses (support surface)	Risk assessment, skin assessment, repositioning, nutrition
	Training and education	skin assessment	Skin. Assessment	care bundles	Skin assessment Training	education, support surface and medical advice
Intervention	The demographic information of patients' PI stages, PI sites and Braden scale scores were analyzed	The use of care bundle of repositioning, support surface and skin assessment were implemented on nursing home patients with pressure injuries	Risk assessment tools and proposed protocols were used on patients with PIs in home care setting	The evaluation of patients' perception and experience of pressure ulcer prevention care bundle were assessed in the hospital	The Dual professional alternating pressure air mattresses support was used on home care patient for prevention and management of PIs	The study reviewed pressure injury prevention in ICU and the effects of using prevention care bundles versus a single intervention
	detecting early-stage PIs decreasing in severe PIs	including re-positioning, skin		in pressure ulcer prevention		skin assessment, repositioning, nutrition, education,

		inspection and support surfaces				support surface and medical advice reduced the incidents of PIs.

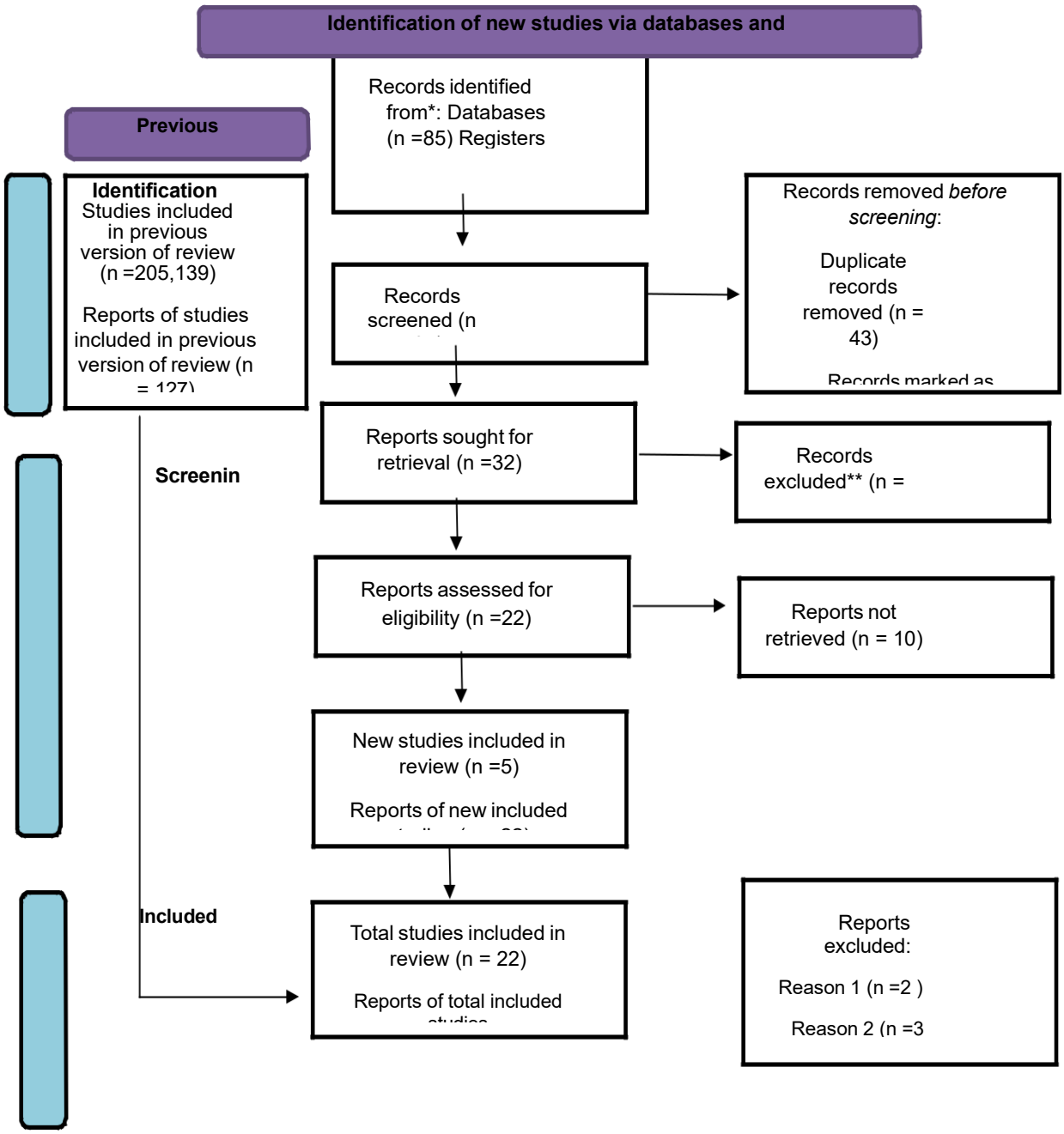
Main Idea	Reference 19	Reference 20	Reference 21	Reference 22		
	Yap, T. L., Horn, S. D., Sharkey, P. D., Zheng, T., Bergstrom, N., Colon- Emeric, C., Sabol, V. K., Alderden, J., Yap, W., & Kennerly, S. M. (2022). Effect of varying repositioning frequency on pressure injury prevention in nursing home residents: Team-up trial results. Advances in Skin& Wound, 35(6), 315–325. https://doi.org/10.1097/01.ASW.0000817840.68588.04	Yilmazer & Tuzer(2022) Effectivenes s of a pressure injury prevention care bundle; prospective intervention al study in intensive care units. Journal of Wound, Ostomy & Continence Nursing, 49(3), 226–232. https://doi.org/10.1097/WON.0000000000000875	Yilmazer & Tuzer(202 2). The effect of a pressure ulcer prevention care bundle on nursing workload costs. Journal of Tissue Viability, 31(3), 459–464. https://doi.org/10.1016/j.jtv.2022.05.004	Yurt, N. S., & Cubukcu, M. (2022).Mini nutritional assessment score and visceral proteins as potential predictors of pressure injuries in home care patients with stroke. Topics in Clinical Nutrition, 37(4), 305–313. https://doi.org/10.1097/TIN.0000000000000298		

Setting	Nursing Home	Turkey	ICU	Turkey
Time	12 months	3 months		2022
Bundle components	Repositioning Skin Assessment Training	Pressure care bundle	The care bundles components were risk assessment, skincare, activity, in-service training nutrition wetness/inc ontinence and support surface management	Nutritional Assessment Skin Assessment
Intervention	Residents are assigned to 3 repositioning intervals to investigate its effectiveness in preventing pressure ulcers.	The study was conducted in two stages pre and post prevention care bundles. The pressure injures of patients were followed by nurses and bundle care was implemented	Pressure incidents rates were evaluated before and after implementing the pressure ulcer care bundle. Compliance was assessed and the injury rates were compared	Case- control study was conducted in a case group with pressure injuries older adults to know if nutrition affects developing PIs

Effects of Care Bundles	The significance improvement on the pressure injuries @ p value	The incident of stage 1 pressure injury in the post care bundles showed the reduction in pressure injury incidence	The pressure ulcer incidents rates were after the care bundle implementation and there was reduction in nurses' workload costs	There was significance different in pressure injury stages in home care patients when nutritional and protein levels were improved		

Appendix D

PRISMA



Note. Adapted from Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *PLOS Medicine*, *6*(7), e1000097.

Appendix E

SWOT Analysis

Strengths	**Weaknesses**
1. Approval of the board of directors and the stakeholders 2. Readiness of the MHHC project team	1. Non-adherence to care bundles usage. 2. Lack of training
Opportunities	**Threats**
1. Use of care bundles 2. Reduction in pressure injury incidences 3. Improved skin integrity	1. Decreased referrals rates 2. Increased treatment costs and litigation

Appendix F

Objectives of PowerPoint Presentation for Staff Training

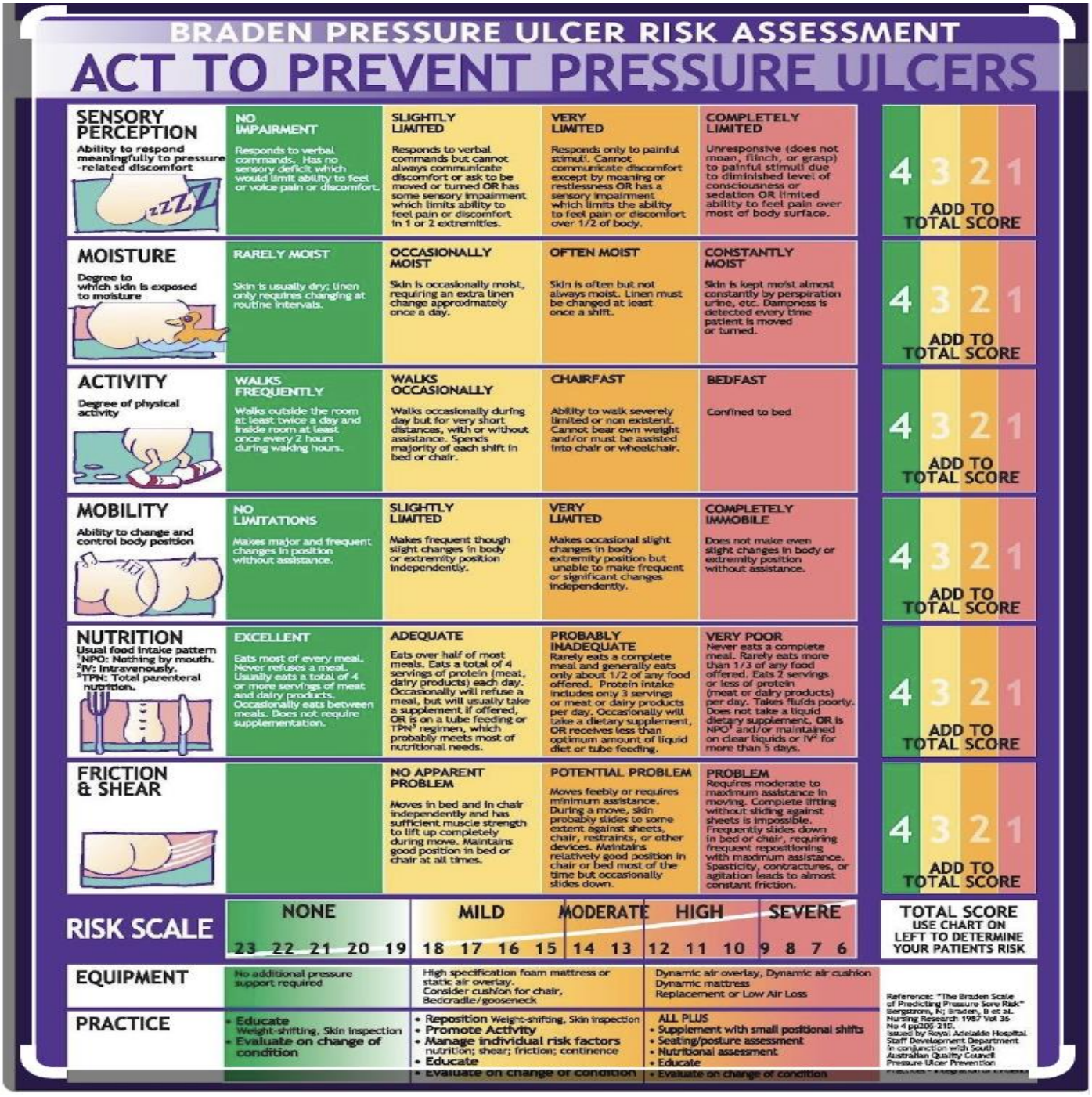
Objectives
1. Define pressure injuries
2. Describe stages of pressure injuries
3. The significance of PI in the home care system, patients, and worldwide.
4. How PI affects quality improvement
5. Describe the pressure care bundle and its components
6. Discuss multidisciplinary MHHC project team roles, monitoring, documentation and getting feedback from the participant

Appendix G

Braden Scale Permission for Risk Assessment Tool

https://www.bradenscale.com/_files/ugd/ee69e2_46bf60e8951c4b8aa63398cc249fce16.pdf

https://www.bradenscale.com/home-health-hospice



The Braden Scale material does not need endorsement by the author. The material is freely available on the website, ensuring accessibility for users without any charge.

Bates-Jensen Wound Assessment Tool (BWAT)

The BWAT material does not need endorsement by the author. The material is freely available on the website, ensuring accessibility for users without any charge.

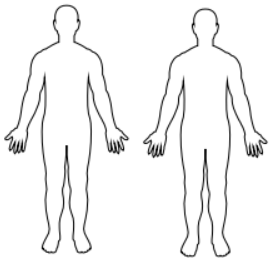
https://aci.health.nsw.gov.au/__data/assets/pdf_file/0010/388243/22.-Bates-Jensen-wound-assessment-tool-BWAT.pdf

BATES-JENSEN WOUND ASSESSMENT TOOL NAME

Complete the rating sheet to assess wound status. Evaluate each item by picking the response that best describes the wound and entering the score in the item score column for the appropriate date.

Location: Anatomic site. Circle, identify right **(R)** or left **(L)** and use **"X"** to mark site on body diagrams:

____ Sacrum & coccyx ____ Lateral ankle
____ Trochanter ____ Medial ankle
____ Ischial tuberosity ____ Heel Other Site



Shape: Overall wound pattern; assess by observing perimeter and depth.

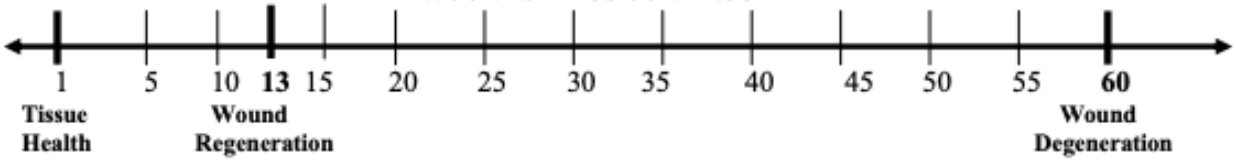
Circle and date appropriate description:

____ Irregular ____ Linear or elongated
____ Round/oval ____ Bowl/boat
____ Square/rectangle ____ Butterfly Other Shape

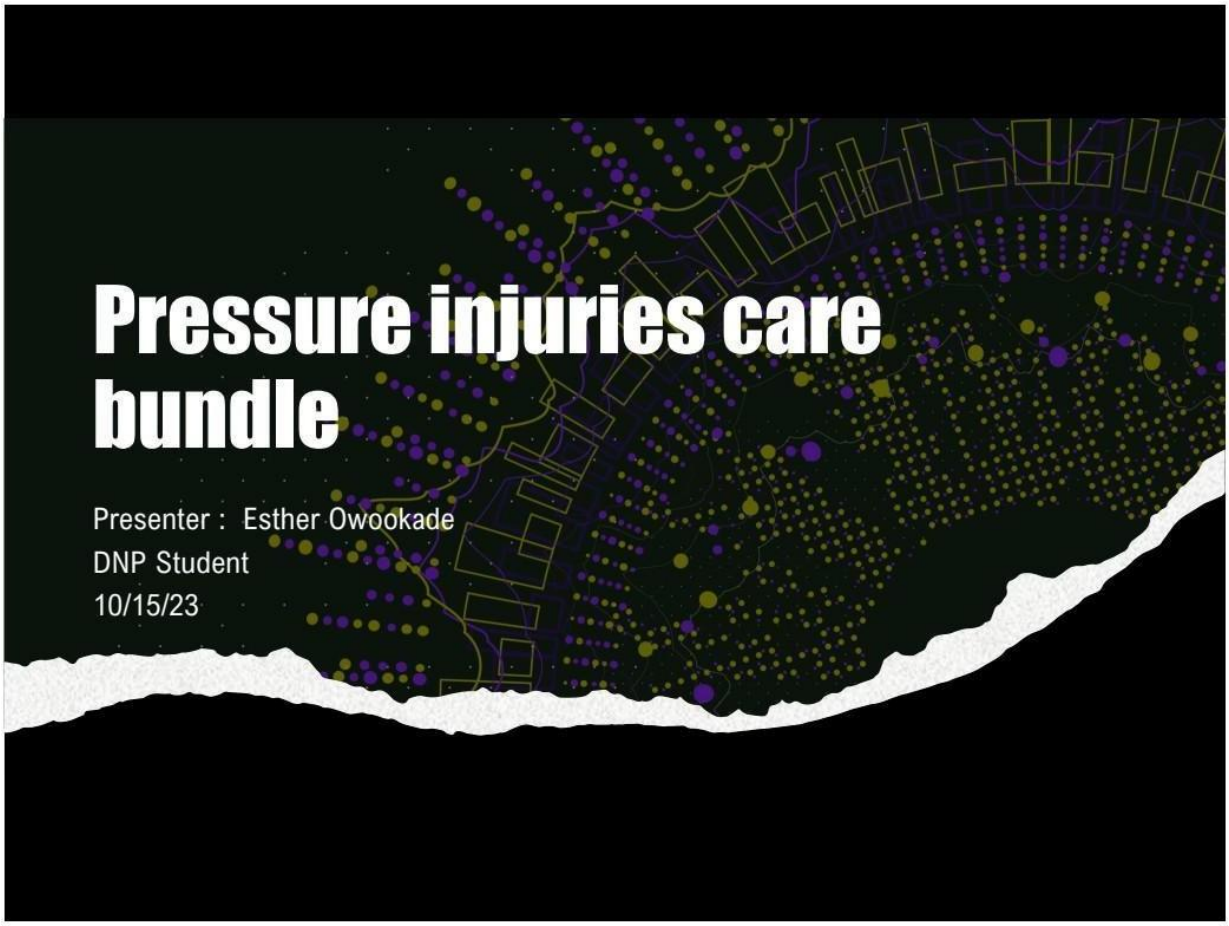
Item	Assessment	Date Score	Date Score	Date Score
1. Size	1 = Length x width <4 sq cm 2 = Length x width 4--<16 sq cm 3 = Length x width 16.1--<36 sq cm 4 = Length x width 36.1--<80 sq cm 5 = Length x width >80 sq cm			
2. Depth	1 = Non-blanchable erythema on intact skin 2 = Partial thickness skin loss involving epidermis &/or dermis 3 = Full thickness skin loss involving damage or necrosis of subcutaneous tissue; may extend down to but not through underlying fascia; &/or mixed partial & full thickness &/or tissue layers obscured by granulation tissue 4 = Obscured by necrosis 5 = Full thickness skin loss with extensive destruction, tissue necrosis or damage to muscle, bone or supporting structures			
3. Edges	1 = Indistinct, diffuse, none clearly visible 2 = Distinct, outline clearly visible, attached, even with wound base 3 = Well-defined, not attached to wound base 4 = Well-defined, not attached to base, rolled under, thickened 5 = Well-defined, fibrotic, scarred or hyperkeratotic			
4. Under-mining	1 = None present 2 =Undermining < 2 cm in any area 3 = Undermining 2-4 cm involving < 50% wound margins 4 = Undermining 2-4 cm involving > 50% wound margins 5 = Undermining > 4 cm or Tunneling in any area			
5. Necrotic Tissue Type	1 = None visible 2 = White/grey non-viable tissue &/or non-adherent yellow slough 3 = Loosely adherent yellow slough 4 = Adherent, soft, black eschar 5 = Firmly adherent, hard, black eschar			
6. Necrotic Tissue Amount	1 = None visible 2 = < 25% of wound bed covered 3 = 25% to 50% of wound covered 4 = > 50% and < 75% of wound covered 5 = 75% to 100% of wound covered			
7. Exudate Type	1 = None			

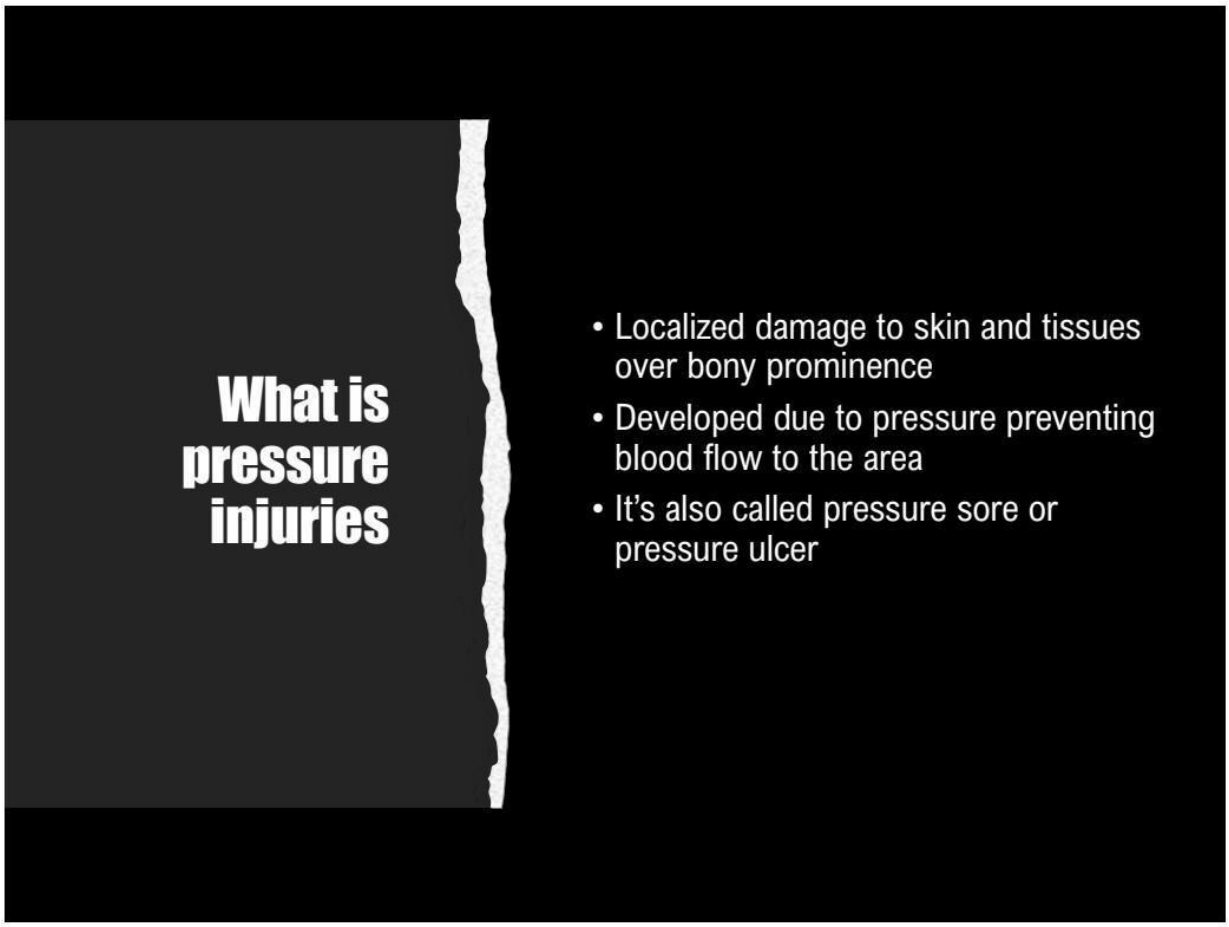
Item	Assessment	Date Score	Date Score	Date Score
	2 = Bloody 3 = Serosanguineous: thin, watery, pale red/pink 4 = Serous: thin, watery, clear 5 = Purulent: thin or thick, opaque, tan/yellow, with or without odor			
8. Exudate Amount	1 = None, dry wound 2 = Scant, wound moist but no observable exudate 3 = Small 4 = Moderate 5 = Large			
9. Skin Color Surrounding Wound	1 = Pink or normal for ethnic group 2 = Bright red &/or blanches to touch 3 = White or grey pallor or hypopigmented 4 = Dark red or purple &/or non-blanchable 5 = Black or hyperpigmented			
10. Peripheral Tissue Edema	1 = No swelling or edema 2 = Non-pitting edema extends <4 cm around wound 3 = Non-pitting edema extends ≥4 cm around wound 4 = Pitting edema extends < 4 cm around wound 5 = Crepitus and/or pitting edema extends ≥4 cm around wound			
11. Peripheral Tissue Induration	1 = None present 2 = Induration, < 2 cm around wound 3 = Induration 2-4 cm extending < 50% around wound 4 = Induration 2-4 cm extending ≥ 50% around wound 5 = Induration > 4 cm in any area around wound			
12. Granulation Tissue	1 = Skin intact or partial thickness wound 2 = Bright, beefy red; 75% to 100% of wound filled &/or tissue overgrowth 3 = Bright, beefy red; < 75% & > 25% of wound filled 4 = Pink, &/or dull, dusky red &/or fills ≤ 25% of wound 5 = No granulation tissue present			
13. Epithelialization	1 = 100% wound covered, surface intact 2 = 75% to <100% wound covered &/or epithelial tissue extends >0.5cm into wound bed 3 = 50% to <75% wound covered &/or epithelial tissue extends to <0.5cm into wound bed 4 = 25% to < 50% wound covered 5 = < 25% wound covered			
	TOTAL SCORE			
	SIGNATURE			

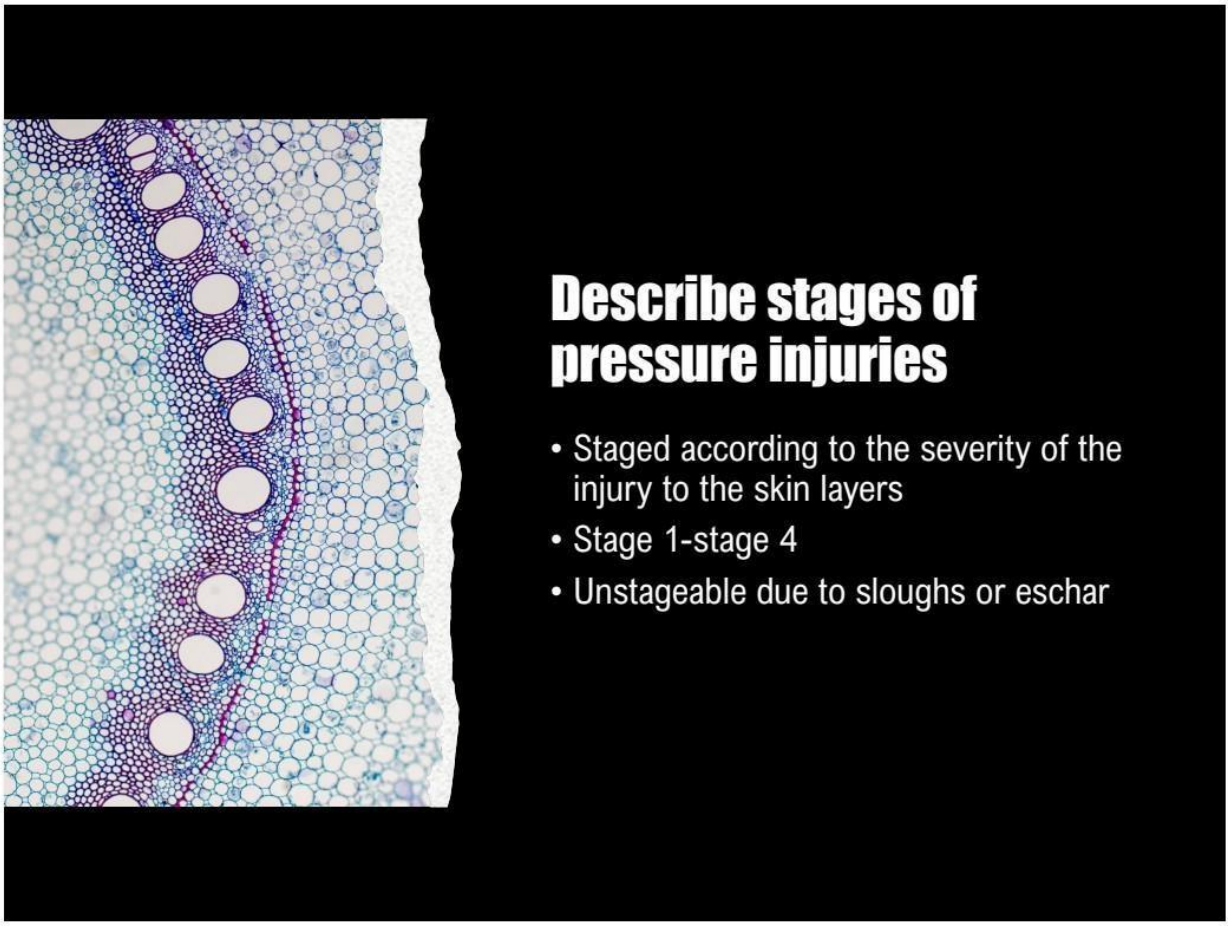
WOUND STATUS CONTINUUM

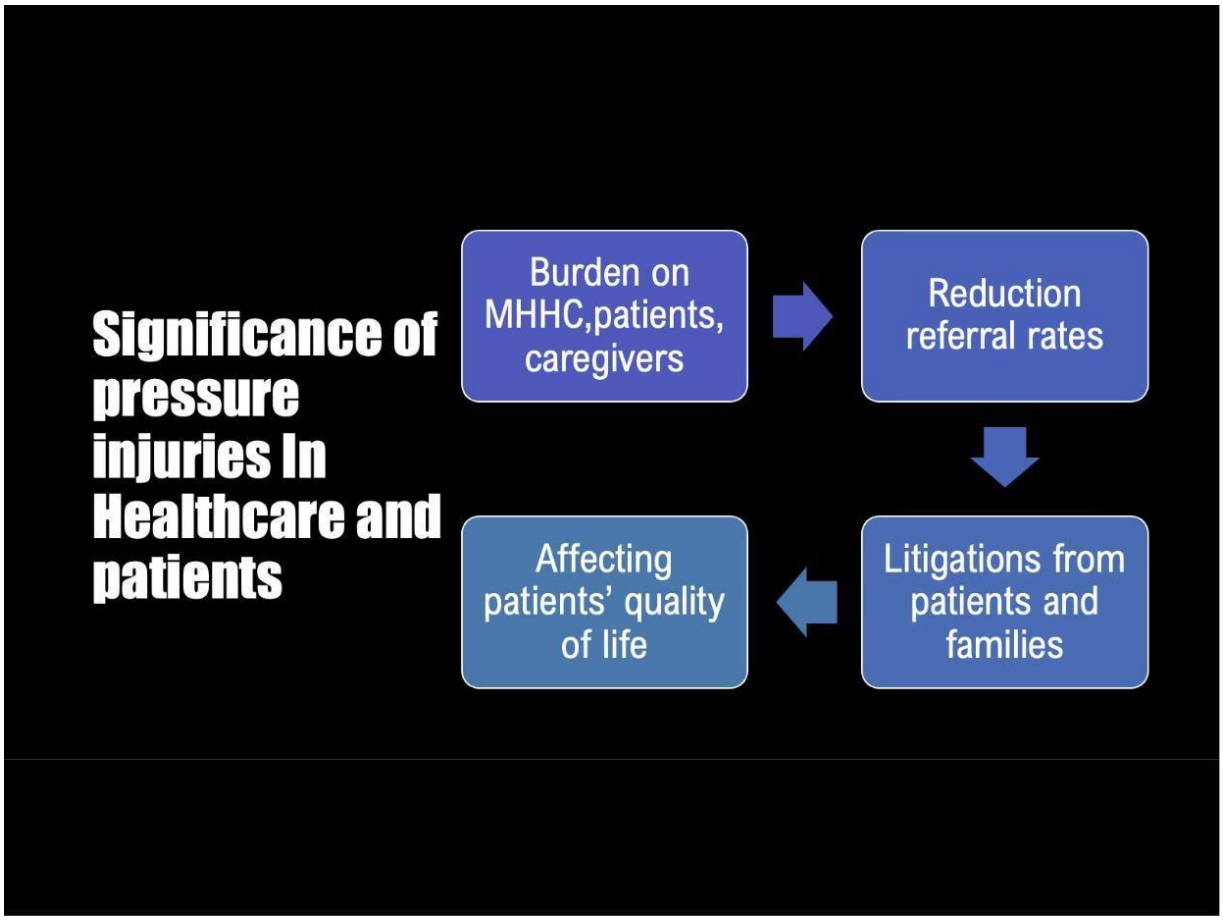


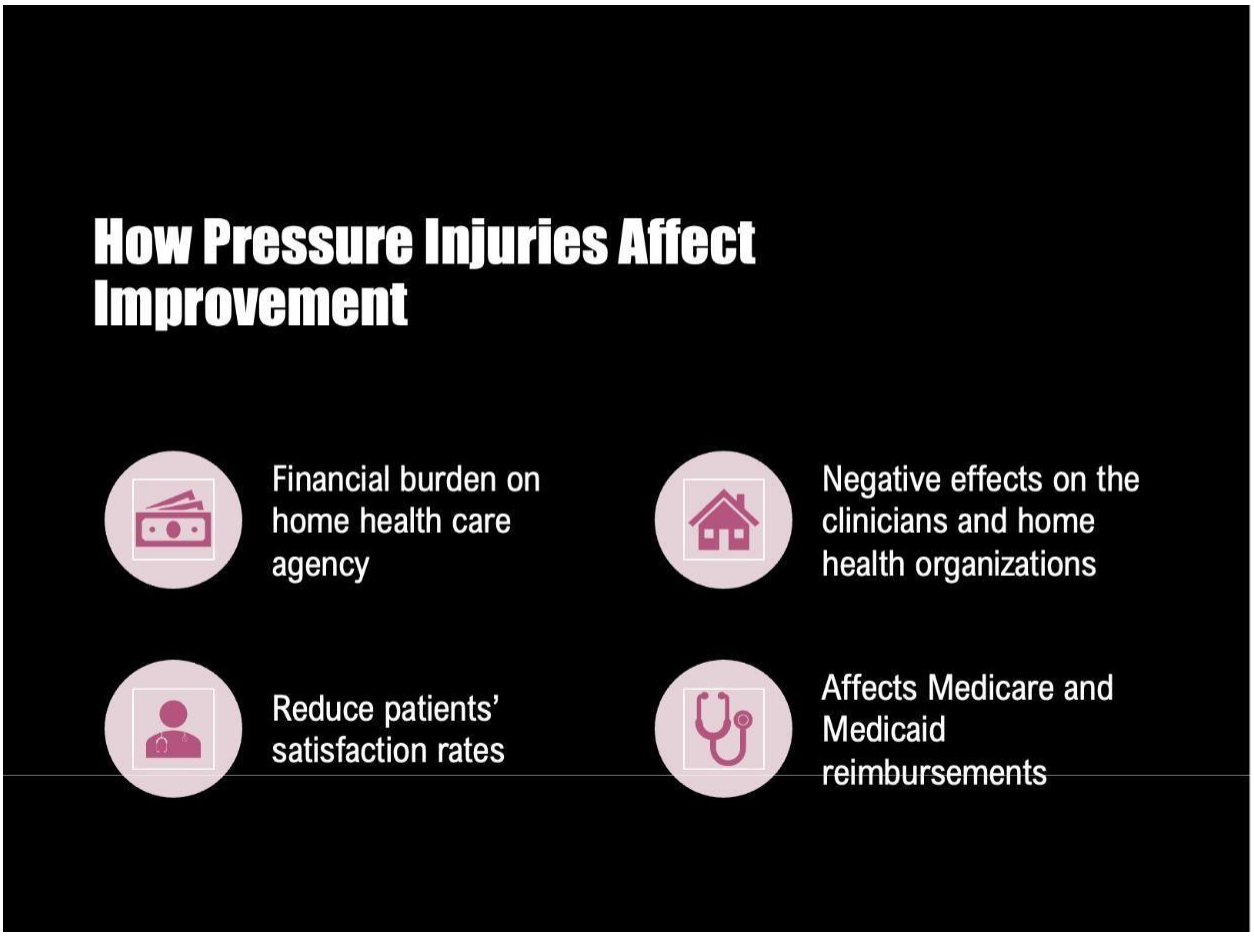
Plot the total score on the Wound Status Continuum by putting an **"X"** on the line and the date beneath the line. Plot multiple scores with their dates to see-at-a-glance regeneration or degeneration of the wound.


Pressure injuries care bundle
Presenter : Esther Owookade
DNP Student
10/15/23

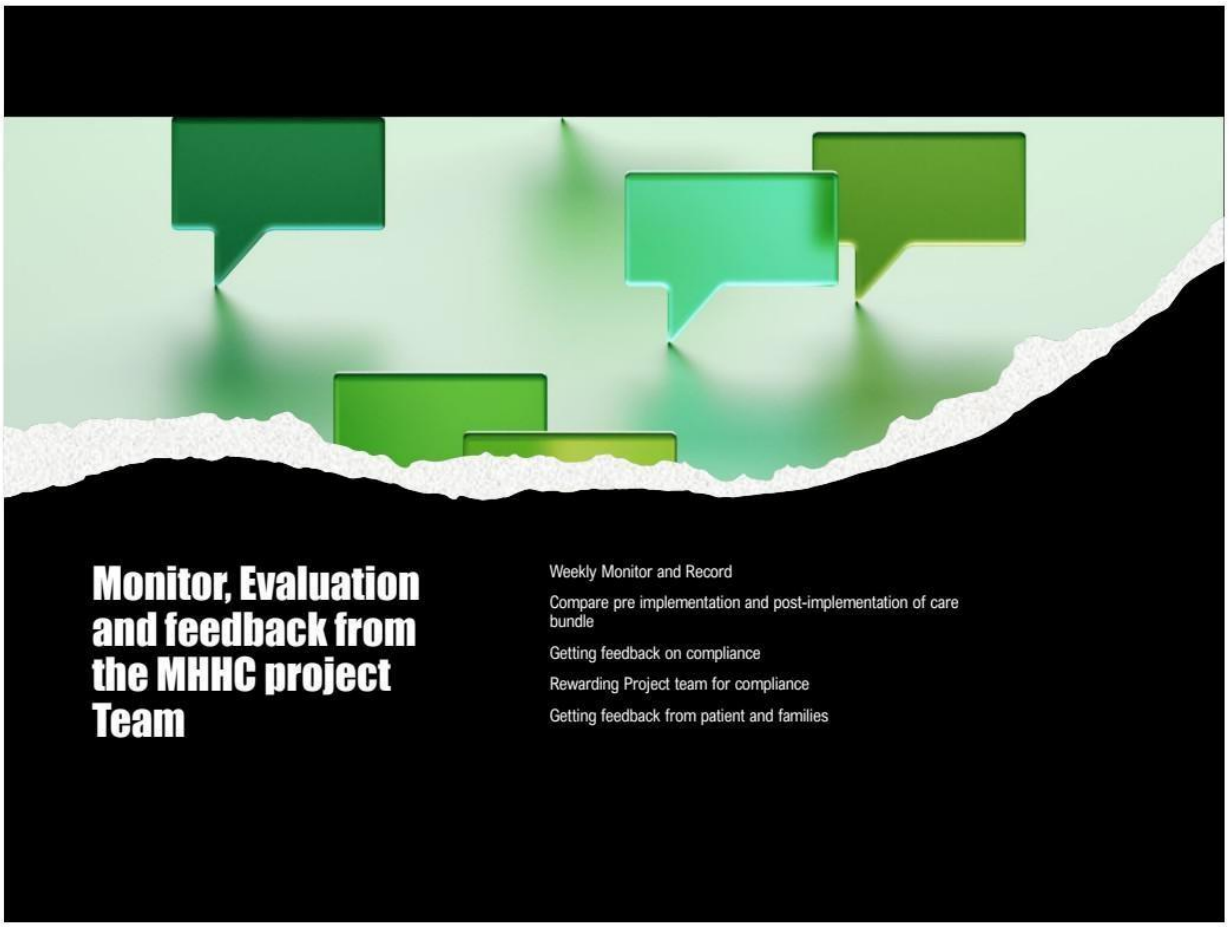

What is pressure injuries
• Localized damage to skin and tissues over bony prominence
• Developed due to pressure preventing blood flow to the area
• It's also called pressure sore or pressure ulcer


Describe stages of pressure injuries
• Staged according to the severity of the injury to the skin layers
• Stage 1-stage 4
• Unstageable due to sloughs or eschar


Significance of pressure injuries In Healthcare and patients
Burden on MHHC,patients, caregivers
Reduction referral rates
Litigations from patients and families
Affecting patients' quality of life


How Pressure Injuries Affect Improvement
Financial burden on home health care agency
Negative effects on the clinicians and home health organizations
Reduce patients' satisfaction rates
Affects Medicare and Medicaid reimbursements


Pressure care bundle
Participation in pressure injuries education
Risk Assessment
Skin Assessment
Skin care
Turning and repositioning
Nutrition management
Support surface management


Monitor, Evaluation and feedback from the MHHC project Team
Weekly Monitor and Record
Compare pre implementation and post-implementation of care bundle
Getting feedback on compliance
Rewarding Project team for compliance
Getting feedback from patient and families


Thank you

Appendix H

Data Collection Tool

Patient's demographic Data:	
Patient Medical Record Number/ Label: Age:	
Gender:	
Date of Admission:	
Pressure Injury: Yes(Y) or No(N) Stages of pressure Injuries:	

Compliance Checklist

Participants	**Skin Assessment Every visit**	**Risk Assessment Every visit**	**Nutritional Management Every visit**	**Skin care every visit**	**MHCC project team education training weekly**	**Turning and positioning every 2 hours**	**Support surface management**
1	Y N Nurse	Y N Nurse	Y N Nurse	Y N Nurse	Y N Nurse	Y N Nurse	Y N Nurse
2	Y N Nurse	Y N Nurse	Y N Nurse	Y N Nurse	Y N Nurse	Y N Nurse	Y N Nurse
3	Y N Nurse	Y N Nurse	Y N Nurse	Y N Nurse	Y N Nurse	Y N Nurse	Y N Nurse

Appendix I

Data Analysis Table

Variables	**Type of Data**		**Statistical Test**	**Level of significance**
Pressure injury incidence	Nominal		Z-test and percentage	*P*=value
Pressure care bundle	Continuous		Frequency and percentage	
Compliance of staff	Continuous		Frequency and percentage	
Budget	Nominal		Percentage	
Outcomes	Nominal		z-test	
Age	Continuous		Mean, medial and percentage	

Appendix J

Project Deliverables

Who	To the directors and Project team
What	Presentation of written summary of DNP project findings
When	By August 2024
Where	Medstar Home Healthcare Office
How	Oral presentation with copy of the project findings
Who	DNP project presentation to chair
What	Presentation of written summary of DNP project findings
Where	At USA

Appendix K

Project Team Roles and Responsibilities

Project Team	Skin Assessment	Risk Assessment	Repositioning	Nutrition	Hydration	Support Surface	Pressure wound care	Documentation	Training/Teaching
Project manager	X	X	X	X	X	X	X	X	X
RN	X	X	X	X	X	X	X	X	X
Dietitian				X	X				X
LPN	X	X	X	X	X	X	X	X	
PT	X		X			X		X	X
OT	X		X			X		X	
ST				X	X			X	
HHA	X		X			X	X	X	
WOCN	X	X	X	X	X	X	X	X	X
Ops Dir.								X	

Registered Nurse= RN
Licensed Practical Nurse=LPN
Physical Therapist=PT
Occupational Therapist= OT
Speech therapist=ST
Home Health Aide= HHA
Wound, Ostomy, Continence Nurse=WOCN
Operation Director=Ops Dir.