Pressure Injury Current Awareness Service

July 2019

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Beeckman, D, B Serraes, et al (2019) "A multicentre prospective randomised controlled clinical trial comparing the effectiveness and cost of a static air mattress and alternating air pressure mattress to prevent pressure ulcers in nursing home residents" International Journal Of Nursing Studies 97: 105-113
Background: Pressure ulcers are a global issue and substantial concern for healthcare systems Various types of support surfaces that prevent pressure ulcer are available Data about the effectiveness and cost of static air support surfaces and alternating air pressure mattresses is lacking; Objectives: To compare the effectiveness and cost of static air support surfaces versus alternating air pressure support surfaces in a nursing home population at high risk for pressure ulcers; Design: Prospective, multicentre, randomised controlled clinical, non-inferiority trial; Setting: Twenty-six nursing homes in Flanders, Belgium; Participants: A consecutive sample of 308 participants was selected based on the following eligibility criteria: high risk for pressure ulcer and/or with category 1 pressure ulcer, being bedbound and/or chair bound, aged > 65 years, and use of an alternating air pressure mattress; Methods: The participants were allocated to the intervention group (n = 154) using static air support surfaces and the control group (n = 154) using alternating air pressure support surfaces The main outcome measures were cumulative incidence and incidence density of the participants developing a new category II-IV pressure ulcer within a 14-day observation period, time to develop a new pressure ulcer, and purchase costs of the support surfaces; Results: The intention-to-treat analysis revealed a significantly lower incidence of category II-IV pressure ulcer in the intervention group (n = 8/154, 52%) than in the control group (n = 18/154, 117%) (p = 004) The median time to develop a pressure ulcer was significantly longer in the intervention group (105 days, interquartile range [IQR]: 1-14) than in the control group (54 days, [IQR]: 1-12; p = 005) The probability to remain pressure ulcer free differed significantly between the two study groups (log-rank X² 4051, df 1, p = 004) The overall cost of the mattress was lower in the intervention group than in the control group; Conclusions: A static air mattress was significantly more effective than an alternating air pressure mattress in preventing pressure ulcer in a high-risk nursing home population Considering multiple lifespans and purchase costs, static air mattresses were more cost-effective than alternating air pressure mattresses;
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Black, J M (2019) "Prophylactic Dressings for Pressure Injury Prevention: How Do They Work?" Advances In Skin & Wound Care 32(7S Suppl 1): S2-S3
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Ischemia reperfusion injury (IRI) involvement in pressure ulcers (PU) progression via a surge of oxidative stress and inflammatory responses is well documented IRI strongly depends on the mechanical loading history We present a generalized IRI model considering external loading, dynamic tissue healing capacity, accumulating mechanical and reperfusion-mediated damages and competing repair processes of saturating nature Reperfusion depends on strain and strain rate to enhance loading history sensitivity
Tissue-specific ulceration susceptibility is assumed dependent on variable accumulated damage. We study damage evolution under cyclic loading having several strain expulsion profiles and demonstrate load relief history has critical impact on PU progression. Abrupt load removal generally follows existing models representing extreme repair/damage. We show (first time in silico) that under certain conditions (previously experimentally identified), IRI becomes repairing rather than damaging. In particular, we recapitulate the preconditioning and postconditioning IRI hallmarks. Finally, it is customary among physicians and nurses to promptly alleviate mechanical load applied to patients lying in bed for extended periods and in risk of developing PUs. We demonstrate this practice can be harmful. If load removal is performed early while reperfusion is still beneficial, then this conduct is suitable. However, if critical tissue damage has been crossed, then abrupt expulsion can constitute the worst-case scenario for patient outcome. If no preliminary patient documentation is available, we recommend gradual load removal since risks of accelerated damage eventually leading to ulceration supersede the improved repair potential benefit.

A sensorized air-cell-based seat cushion system was developed to address the issues of loading magnitude and duration at a sitting interface to aid in reducing risk of sitting acquired pressure ulcers. This system is capable of pressure mapping, redistribution, and offloading which were verified using an anthropomorphic model and a human subject. The system is comprised of an air cell array cushion, a pneumatic control unit, and a graphical user interface. ISO load deflection testing confirmed that the cushion's loading response is comparable to commercial air-cell-based seat cushions. Testing demonstrated that the internal pressure of the air cells are indicative of interface pressure and can be used as input to pressure modulating algorithms. Uniform pressure distribution was achieved through automated pressure redistribution algorithms. Implementation where the immersion of a subject into the seat cushion increased and interface pressure decreased. High pressure point identification and automatic offloading were performed in which newly created high pressure points were addressed using subsequent redistribution. Pressure mapping enabled offloading and redistribution can objectively manage the effects of loading magnitude and duration at the sitting interface; Copyright © 2019 IPEM Published by Elsevier Ltd All rights reserved

Background: Risk assessment is recommended as the foremost step in the prevention of pressure ulcers. This study aimed to evaluate the predictive efficacy of the Braden Q Scale for the assessment of pediatric pressure ulcer risk in the pediatric intensive care unit (PICU). Methods: Six databases were searched. A meta-analysis was performed using Meta DiSc 14. Results: Seven studies were included, with a total of 1273 cases and 72 pressure ulcers. The meta-analysis showed that the pooled sensitivity and specificity of the Braden Q Scale for PICU patients were 0.72 and 0.60 (95% confidence interval (CI): 0.60-0.82; 0.57-0.63), respectively. The pooled positive likelihood ratio, negative likelihood ratio, and diagnostic odds ratio were 16.8, 0.62, and 334 (95% CI: 118-242; 0.40-0.94; 147-761), respectively. The area under the curve of summary receiver operating characteristics was 0.63, and the Q index was 0.6464. Conclusion: The Braden Q Scale predicted pressure ulcer risk in the PICU with moderate accuracy. More testing for the Braden QD Scale's performance is needed, taking into account the impact of the interventions. In the future, it will be necessary to look for and improve pediatric pressure ulcer risk assessment tools.

Background: Pressure ulcers (PUs) are a major burden to individuals, impacting their physical, mental and social wellbeing. While PU prevention is traditionally regarded as a nursing issue, an interprofessional approach has been promoted as best practice. However, little is known about current practice or the knowledge and attitudes of the wider interprofessional team (IPT). Purpose: Pre-designed questionnaires were used to explore knowledge and attitudes with healthcare staff in the community. Methods: Questionnaires were disseminated to all healthcare staff within a community healthcare Trust predominantly via an online tool. Data were analyzed using descriptive and inferential statistics. Results: The median values of all
professional groups demonstrated satisfactory attitudes (>75%) and levels of knowledge (>60%) to PU prevention. However, there were differences within and between groups. Management staff demonstrated the most positive attitude to PU prevention (89%), followed by occupational therapists (OTs) and healthcare assistants (HCAs) (87%). OTs demonstrated the highest scores for knowledge (69%, IQR: 62%–73%), while healthcare and rehabilitation assistants scored the lowest (58%, IQR: 58%–64%).

Conclusion: This study has demonstrated that the majority of healthcare staff in a UK community setting have satisfactory levels of knowledge and attitudes in relation to PU prevention overall. Nevertheless, there were some differences between groups, albeit non-significant. There were also differences between sub-themes of the questionnaires, indicating a greater focus of pressure ulcer treatment over prevention. While PU prevention is widely regarded to be a nursing issue, these findings provide some indication of the potential for an interprofessional approach.

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Objective: A point prevalence survey was conducted across Western Australia to monitor adherence to national safety and quality health service standards, and to create baseline data on which to improve. The study...
identified significant areas for targeted interventions Design A state-wide point prevalence survey of patients and their medical records Setting Public hospitals in Western Australia (WA) Subjects Data was collected from 2,281 inpatients Main outcome measure(s) The aim of the study was to determine pressure injury prevalence and characteristics, adherence to guidelines, significant related factors and their attributable burdens Results 87% of patients had pressure injuries 63% were hospital-acquired (HAPIs) Over 1,000 HAPIs per year were attributed to being older, a long-term patient, having acute renal failure or volume depletion 65% of patients had a skin inspection; less likely in birthing mothers and long-term patients 70% of patients were screened with a risk assessment tool 36% of patients were identified as at risk of a pressure injury; and of these, 71% had prevention plans in place One third of all adults with HAPIs were not identified as at risk using current practices Conclusion The prevalence and characteristics of pressure injuries and HAPIs was comparable with prior state-wide results The survey identified variations in rates of: skin inspections, using risk assessment tools; and applying plans for those at risk of pressure injuries Multivariable logistic regression identified areas for improvement: the main groups at risk of pressure injuries; and patient groups with lower rates of skin inspections and screening

Fletcher, J (2019) "Some notable changes, the importance of touch and the PU data capture" Wounds UK 15(2): 6-8
A personal narrative is presented which explores the author's experience of measuring pressure ulcer rates

Gefen, A (2019) "A new consensus on medical device-related pressure ulcers" Journal of Wound Care 28(6): 315-315 The author reflects on the international consensus document on medical device-related pressure ulcers (MDRPU) that was developed by a committee of global experts covering the aetiology, assessment, management, and prevention of MDRPUs

Gofen, A and M Clark (2019) "Saving lives through pressure ulcer research: revisiting our decade-old perspective of aetiology" Wounds International 10(2): 8-9


A deep-tissue pressure injury (DTPI) is a serious type of pressure injury that begins in tissue over bony prominences and can lead to the development of hospital-acquired pressure injuries (HAPIs) Using a commercially available thermal imaging system, study authors documented a total of 12 thermal anomalies in 9 of 114 patients at the time of admission to one of the study institution’s ICUs over a 2-month period An intensive, proven wound prevention protocol was immediately implemented for each of these patients Of these 12 anomalies, 2 ultimately manifested as visually identifiable DTPIs This represented a 60% reduction in the authors’ institution's historical DTPIs/HAPI rate Because these DTPIs were documented as present on admission using the thermal imaging tool, researchers avoided a revenue loss associated with nonreimbursed costs of care and also estimated financial benefits associated with litigation expenses known to be generated with HAPIs Using thermal imaging to document DTPIs when patients present has the potential to significantly reduce expenses associated with pressure injury litigation The clinical and financial benefits of early documentation of skin surface thermal anomalies in anatomical areas of interest are significant;
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Aims and Objective: To describe the prevalence and predictors of pressure injuries among older adults with limited mobility, within the first 36-hours of their hospital admission in Australia; Background: Pressure injuries are significant health, safety and quality of care issues for patients and healthcare organisations The early implementation of the recommended pressure injury prevention international clinical practice guidelines is a way to reduce hospital-acquired pressure injuries There is a paucity of evidence on the number of older persons who are admitted hospital with a pre-existing pressure injury; Design: Prospective correlational study conducted in eight tertiary referral hospitals across Australia Our sample comprised of 1047 participants aged ≥65 years with limited mobility, drawn from a larger Australian pragmatic cluster randomised trial; Methods: Using the STROBE statement, observational data were collected on participants’ age, gender, presence of a pressure injury, Body Mass Index score, number of comorbidities and place of residence These variables were analysed as potential predictors for pressure injuries within the first 36-hours of hospitalisation; Results: From our sample, 113/1047 (108%) participants were observed to have a pressure injury within the first 36-hours of hospital admission Age, multiple comorbidities, and living in an aged care facility predicted the prevalence of pressure injury among older people within the first 36-hours of hospitalisation; Conclusions: Our findings confirm that older adults, those with multiple comorbidities, and individuals living in aged care facilities are more likely to come to hospital with a pre-existing pressure injury or develop one soon after admission This article is protected by copyright All rights reserved; This article is protected by copyright All rights reserved
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Objective: To develop, with nurse specialists and nursing home care staff, a theory and evidence-informed pressure injury prevention care bundle for use in nursing home settings; Design: The development of a care bundle; Methods: We undertook a detailed, multistaged and theoretically driven development process First, we identified evidence-informed pressure injury prevention practices: these formed an initial set of possible target behaviours to be considered for inclusion in the bundle During a 4-hour workshop and supplemental email consultation with a total of 13 healthcare workers, we agreed the key target behaviours for the care bundle We explored with staff the barriers and facilitators to prevention activity and defined intervention functions and behaviour change practices using the Behaviour Change Wheel; Setting: North West England; Results: The target behaviours consisted of three elements: support surfaces, skin inspection and repositioning We identified capability, opportunity and reflective motivation as influencing the pressure injury prevention behaviours of nursing home care staff The intervention functions (education, training, modelling) and behaviour change techniques (information about social and environmental consequences, information on health consequences, feedback on behaviour, feedback on the outcome of behaviour, prompts/cues, instruction on how to perform the behaviour, demonstration of behaviour) were incorporated into the care bundle; Conclusion: This is the first description of a pressure injury prevention care bundle for nursing homes developed using the Behaviour Change Wheel Key stakeholders identified and prioritised the appropriate target behaviours to aid pressure injury prevention in a nursing home setting; © Author(s) (or their employer(s)) 2019 Re-use permitted under CC BY Published by BMJ
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The aim of this study was to compare the pressure injury risk predictability between the individual Braden subscales and the total Braden scale in adult inpatients in Singapore. A retrospective 1:1 case-control design was used from a sample of 199 patient medical records. Clinical data were collected from a local university hospital's medical records database. The results showed that, among the six subscales, the activity subscale was the most sensitive and specific in predicting pressure injury (PI). However, the overall results showed that the Braden scale remained the most predictive of PI development in comparison with the individual subscales. The study also found that, among the Singaporean patients, the Braden cut-off score for PI risk was 17 compared with the current cut-off score of 18. Therefore, it may be relevant for local tertiary hospitals to review their respective Braden cut-off scores as the study results indicate an over-prediction of PI risk, which leads to unnecessary utilisation of resources. The hospital may also consider developing a PI prevention bundle comprising commonly used preventive interventions when at least one Braden subscale reflects a suboptimal score.

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Background. Pressure injuries, also known as pressure ulcers, are a serious complication of immobility. Patients should be thoroughly examined for pressure injuries when admitted to the intensive care unit to optimize treatment. Whether community-acquired pressure injuries correlate with poor hospital outcomes among critically ill patients is understudied. Objectives. To determine whether pressure injuries present upon admission to the intensive care unit can serve as a predictive marker for longer hospitalization and increased mortality. Methods. This study retrospectively analyzed admissions of adult patients to a 24-bed medical-surgical intensive care unit in a large level I trauma center in the northeast United States from 2010 to 2012. The association of pressure injuries with mortality and length of stay was assessed, using multivariable logistic regression and generalized linear models, adjusted for age, comorbidities, Acute Physiology and Chronic Health Evaluation III score, and other patient characteristics. Results. Among 2723 patients, 180 (66%) had a pressure injury at admission. Patients with a pressure injury had longer mean unadjusted stay (156 vs 105 days; P <0.001) and higher in-hospital mortality rate (322% vs 183%; P <0.001) than did patients without a pressure injury at admission. After multivariable adjustment, pressure injuries were associated with a mean increase in length of stay of 31 days (95% CI 15-47; P <0.001). Pressure injuries were not associated with mortality after adjusting for the Acute Physiology and Chronic Health Evaluation III score, but they may serve as a marker for increased risk of mortality if an Acute Physiology and Chronic Health Evaluation III score is unavailable. Conclusion. Pressure injuries present at admission to the intensive care unit are an objective, easy-to-identify finding associated with longer stays. Pressure injuries might have a modest association with higher risk of mortality.

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An obese patient underwent an elective prolonged endoscopic intervention under general anaesthesia, in the lateral position and developed a pressure injury. The patient fully recovered from her pressure injury on the fifth day postprocedure. Although the gastroscopy procedure was done in the usual lateral position applying protective measures, this may be no longer sufficient in situations of prolonged interventions and patients with a higher risk of developing pressure injuries. The adoption of theatre patient positioning practice guidelines for patients undergoing endoscopic interventions and appropriate training of staff in patient positioning are highly recommended.

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Our objective was to estimate the US national cost burden of hospital-acquired pressure injury (HAPI) using economic simulation methods. We created a Markov simulation to estimate costs for staged pressure injuries acquired during hospitalisation from the hospital perspective. The model analysed outcomes of hospitalised adults with acute illness in 1-day cycles until all patients were terminated at the point of discharge or death. Simulations that developed a staged pressure injury after 4 days could advance from Stages 1 to 4 and accrue additional costs for Stages 3 and 4. We measured costs in 2016 US dollars representing the total cost of acute care attributable to HAPI incidence at the patient level and for the entire United States based on the previously reported epidemiology of pressure injury. US HAPI costs could exceed $268 billion. About 59% of these costs are disproportionately attributable to a small rate of Stages 3 and 4 full-thickness wounds, which occupy clinician time and hospital resources. HAPIs remain a concern with regard to hospital quality in addition to being a major source of economic burden on the US health care system. Hospitals should invest more in quality improvement of early detection and care for pressure injury to avoid higher costs.

Patients who are immobile endure prolonged bodyweight-related compressive, tensional and shear loads at their body-support contact areas that over time may lead to the onset of pressure ulcers (PUs) Approximately, one-third of the common sacral PUs are severe and classified as category 3 or 4 If a PU has occurred, off-loading is the basic, commonly accepted clinical intervention; however, in many situations, complete off-loading of sacral PUs is not possible Minimising the exposure of wounds and their surroundings to elevated mechanical loads is crucial for healing Accordingly, in the present study, we aimed to investigate the biomechanical effects of the structural and mechanical properties of different treatment dressings on stresses in soft tissues surrounding a non-offloaded sacral PU in a supine patient Using a novel three-dimensional anatomically realistic finite element modelling framework, we have compared performances of three dressing designs: (a) The Mepilex Border Sacrum (MBS) multilayer anisotropic silicone foam dressing (Mölnlycke Health Care), (b) an isotropic stiff dressing, and (c) an isotropic flexible dressing Using our newly developed protective efficacy index (PEI) and aggravation index (AI) for assessing prophylactic and treatment dressings, we identified the anisotropic stiffness feature of the MBS dressing as a key design element

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BACKGROUND: Recent revisions to the pressure injury staging system include guidance on differential diagnoses for deep tissue pressure injury (DTPI) Accurately identifying DTPI is critical; however, purpura in the setting of vascular disorders and systemic infectious processes can share similar features confounding diagnosis CASES: In this three-case series, we describe suspected DTPI with an uncharacteristic shape or occurring in the presence of additional lesions distributed outside of typical pressure areas prompted further evaluation CONCLUSIONS: The interdisciplinary approach we adapted was useful in determining the cause of purpura when the DTPI was ruled out by the certified wound care nurse

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Pressure ulcers are devastating injuries that disproportionately affect the older adult population. The initiating factor of pressure ulcers is local ischemia, or lack of perfusion at the microvascular level, following tissue compression against bony prominences In turn, lack of blood flow leads to a drop in oxygen concentration, ie, hypoxia, that ultimately leads to cell death, tissue necrosis, and disruption of tissue continuity. Despite our qualitative understanding of the initiating mechanisms of pressure ulcers, we are lacking quantitative knowledge of the relationship between applied pressure, skin mechanical properties as well as structure, and tissue hypoxia. This gap in our understanding is, at least in part, due to the limitations of current imaging technologies that cannot simultaneously image the microvascular architecture, while quantifying tissue deformation. We overcome this limitation in our work by combining realistic microvascular geometries with appropriate mechanical constitutive models into a microscale finite element model of the skin. By solving boundary value problems on a representative volume element via the finite element method, we can predict blood volume fractions in response to physiological skin loading conditions (ie, shear and compression). We then use blood volume fraction as a homogenized variable to couple tissue-level skin mechanics to an oxygen diffusion model. With our model, we find that moderate levels of pressure applied to the outer skin surface lead to oxygen concentration contours indicative of tissue hypoxia. For instance, we show that applying a pressure of 60 kPa at the skin surface leads to a decrease in oxygen partial pressure from a physiological value of 65 mmHg to a hypoxic level of 31 mmHg. Additionally, we explore the sensitivity of local oxygen concentration to skin thickness and tissue stiffness, two age-related skin parameters. We find that, for a given pressure, oxygen concentration decreases with decreasing skin thickness and skin stiffness. Future work will include rigorous calibration and validation of this model, which may render our work an important tool toward developing better prevention and treatment tools for pressure ulcers specifically targeted toward the older adult patient population;

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Objective: To analyse the treatment of pressure ulcers (PU) in long-term care Method: In this correlational cross-sectional study, data was collected between November 2015 and January 2016 from older people with PUs in private and public long-term care facilities in Finland Data collection was conducted by trained nurses using the Pressure Ulcer Patient Instrument (PUP-Ins) Outcomes measured were: prevalence and localisation of PU, local PU treatment, frequency (how often/week/day) and duration (minutes/week or day) of PU treatment Results: In total, 112 patients with 158 PUs were identified (a prevalence rate of 5%) PUs were located most often on the heel (38%), hip (13%), buttocks (10%) and lateral malleolus (95%) The most frequently used PU treatment was skin protecting agents and local wound care products The most typical treatment in category I, II and III PUs were foam dressings In category III PUs, ribbon gauze dressings were also used The most typical products for category IV PUs were complex dressings Category I PUs received more treatment per day or week than other categories of PUs Conclusion: PU treatment is inconsistent and often conducted with varying methods and products Holistic patient care must be the focus Nurses in long-term care settings might benefit from in-depth in-service education focusing on the treatment of PUs More research is needed about nurses' competence in PU treatment

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Aims and objectives: To explore the effectiveness of interventions aimed at pressure ulcer (PU) prevention in long-term older people care facilities (LOPC) Background: Pressure ulcers cause suffering for patients and constitute a major financial burden Although most PUs could be prevented, their number has remained high To avoid unnecessary suffering and costs, PU prevention must be effective Design: A systematic review Methods: A systematic search was conducted in six electronic databases PubMed (MEDLINE), CINAHL, Web of Science Core Collection, Scopus, Cochrane Wounds Group Specialized Register and Cochrane Central Register of Controlled Trials The inclusion criteria were: (a) study published in 2005–2017, (b) intervention with pre- and post-tests, focusing on PU prevention, (c) implemented in LOPC facilities, (d) persons >65 years as study population, and (e) outcomes reported as PU incidence or prevalence or healing time The PRISMA guidelines were followed The methodological quality of the studies was evaluated using the Joanna Briggs Institute's MASTARI critical appraisal checklist The data were analysed with narrative synthesis Results: The review included eighteen studies The study designs were RCTs (n 10), comparable cohort or case-control studies (n 3), and descriptive or case series (n 5) PU incidence in LOPC facilities decreased by using computerised decision-making support systems, PU prevention programmes, repositioning or advanced cushions PU prevalence decreased with PU prevention programmes, by using advanced mattresses and overlays, or by adding protein and energy supplements to diet Conclusions: There are many ways to prevent PUs in LOPC facilities; no single effective way can be identified One-third of the preventive interventions in LOPC facilities were effective However, systematic evidence from randomised trials on preventive interventions of PUs in LOPC settings is still lacking Relevance to clinical practice: The findings can be used in practice for selecting and in research for developing effective preventive interventions of PUs in LOPC facilities

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PURPOSE: We examined the usability, user perceptions, and nursing occupational subculture associated with introduction of a patient monitoring system to facilitate nursing staff implementation of standard care for pressure ulcer/injury prevention in the nursing home setting DESIGN: Mixed methods, pre-/posttest design SUBJECTS AND SETTING: Resident (n 44) and staff (n 38) participants were recruited from a 120-bed
nursing home in the Southeast United States METHODS: Digital data on frequency and position of residents were transmitted wirelessly from sensors worn on each resident's anterior chest to estimate nursing staff compliance with repositioning standard of care before and after visual monitors were activated to cue staff The validated Nursing Culture Assessment Tool was used to determine changes in nursing culture Benefits and challenges of implementation were assessed by 2 focus groups composed of 8 and 5 female members of the nursing staff (RN, LPN, CNA), respectively, and led by the three authors Descriptive statistics were used for all quantitative variables, and inferential statistics were applied to categorical variables (χ² test or Fisher exact test) and continuous variables (analyses of variance or equivalent nonparametric tests), respectively, where a 2-sided P value of <0.05 was considered statistically significant RESULTS: System use significantly (P = 0.003) improved compliance with every 2-hour repositioning standards The nursing culture normative ranking percentage increased from 309% to 582%; this difference was not statistically significant Focus groups expressed satisfaction with the monitoring system and recommended improvements to support adaptation and use of technology CONCLUSIONS: Study findings support the usability of the patient monitoring system to facilitate repositioning Implementation of multiple strategies for training, supplies, and communication may enhance uptake and effectiveness

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PURPOSE: The purpose of this study was to compare the effect of pressure injuries on mortality, hospital length of stay, healthcare costs, and readmission rates in hospitalized patients DESIGN: A case-control study SUBJECTS AND SETTING: The sample comprised 5000 patients admitted to a tertiary hospital located in Seoul Korea; 1000 patients with pressure injuries (cases) were compared to 4000 patients who acted as controls METHODS: We retrospectively extracted clinical data from electronic health records Study outcomes were mortality, hospital length of stay, healthcare costs, and readmission rates The impact of pressure injuries on death and readmission was analyzed via multiple logistic regression, hospital deaths within 30 days were analyzed using the survival analysis and Cox proportional hazards regression, and impact on the length of hospitalization and medical costs were analyzed through a multiple linear regression RESULTS: Developing a pressure injury was significantly associated with an increased risk of in-hospital mortality (odds ratio [OR], 394; 95% confidence interval [CI], 291-533), 30-days in-hospital mortality (OR, 218; 95% CI, 159-300), and healthcare cost (β = 11,937,333; P < 0.001) Pressure injuries were significantly associated with an extended length of hospitalization (β = 2084; P < 0.001) and length of intensive care unit (ICU) stay (β = 816; P < 0.001) Having a pressure injury was significantly associated with an increased risk of not being discharged home (OR, 555; 95% CI, 435-708), along with increased risks of readmission (OR, 130; 95% CI, 105-162) and emergency department visits after discharge (OR, 170; 95% CI, 129-223) CONCLUSIONS: Development of pressure injuries influenced mortality, healthcare costs, ICU and hospital length of stay, and healthcare utilization following discharge (ie, readmission or emergency department visits) Hospital-level efforts and interdisciplinary approaches should be prioritized to develop interventions and protocols for pressure injury prevention

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Zolfagharnazhad, H, H Khalili, et al (2019) "Topical Nifedipine for the Treatment of Pressure Ulcer: A Randomized, Placebo-Controlled Clinical Trial" American Journal Of Therapeutics Background: Effect of nifedipine on pressure ulcer (PU) healing has not been evaluated in the human subjects yet; Study Question: In this study, the effect of topical application of nifedipine 3% ointment on PU healing in critically ill patients was investigated; Study Design: This was a randomized, double-blind, placebo-controlled clinical; Measures and Outcomes: In this study, 200 patients with stage I or II PU according to 2-digit Stirling Pressure Ulcer Severity Scale were randomized to receive topical nifedipine 3% ointment or placebo twice daily for 14 days Changes in the size and stage of the ulcers were considered as primary outcome of the study The stage of the ulcers at baseline and on day 7 and day 14 of study was determined by using 2-digit stirling scale In addition, the surface area of the wounds was estimated by multiplying width by length; Results: In total, 83 patients in each group completed the study The groups were matched for the baseline stage and size of PUs Mean decrease in the stage of PU in the nifedipine group was significantly higher than the placebo group on day 7 (-171 vs -016, respectively, P < 0.001) and day 14 (-078 vs -009, respectively, P < 0.001) Furthermore, the mean decrease in the surface area of PU was significantly higher in the nifedipine group compared with the placebo group on day 7 (-144 vs -032, respectively, P
and day 14 (-251 vs -024, respectively, P < 0001) of study; Conclusions: Topical application of nifedipine 3% ointment for 14 days significantly improved the healing process of stage I or II PUs in critically ill patients; Check for full text
Websites


“Risk Assessment and Prevention of Pressure Ulcers: a clinical practice guideline from the American College of Physicians” (2015)
http://annals.org/article.aspx?articleid=2173505


NICE Guideline: “Pressure ulcers: prevention and management of pressure ulcers” (April 2014)
http://www.nice.org.uk/guidance/CG179


The Trans Tasman Dietetic Wound Care Group, Evidence based practice guidelines for the nutritional management of adults with pressure injuries (2011)

Registered Nurses’ Association of Ontario - Risk assessment and prevention of pressure ulcers (2011 revised)

National Guideline Clearinghouse – predefined search
https://search.ahrq.gov/search?q=%22pressure+ulcer*%22+or+%22pressure+injur*%22


Cochrane Wounds Group
https://wounds.cochrane.org/news/reviews
The Cochrane Wounds Group was established in 1995 with the aim of using evidence from trials to conduct systematic reviews to establish the effectiveness of interventions for the prevention and treatment of wounds, and interventions for the prevention and treatment of wound complications.

National Pressure Ulcer Advisory Panel
http://www.npuap.org/
**e-Journals**

- Advances in Skin & Wound Care (Tables of Contents only)
- Eplasty (formerly Journal of Burns & Wounds) (full text)
- EWMA Journal (full text)
- International Wound Journal (Tables of Contents only)
- Journal of the American College of Clinical Wound Specialists (full text)
- Journal of Tissue Viability (full text)
- Journal of Wound Care (full text)
- World Council of Enterostomal Therapists Journal (full text 2010 onwards)
- World Wide Wounds: the premier online resource for dressing materials and practical wound management information (full text)
  
  The mission of *World Wide Wounds* is to be the premier online resource for peer-reviewed information on dressing materials providing practical guidance on all aspects of wound management to health professionals worldwide.

- Wound Care Advisor (full text 2014 onwards)
- Wound Management and Prevention (Table of Contents only)
- Wound Practice & Research (full text)
- Wound Repair & Regeneration (full text with 12-month delay)
- Wounds International (full text 2012 onwards)
- Wounds UK Journal (full text 2011 onwards)

**e-Books**

- Acute and chronic wounds 5th ed, 2016
- Fast facts for wound care nursing: practical wound management in a nutshell 2011
- Nutrition and wound healing 2007
# Queensland Health Libraries and Contact Numbers

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<td><a href="mailto:FSS_IRS@health.qld.gov.au">FSS_IRS@health.qld.gov.au</a></td>
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<td>Gold Coast Hospital Library</td>
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<td>Sunshine Coast Health Institute (SCHI) Library</td>
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<td><a href="mailto:SC-Library@health.qld.gov.au">SC-Library@health.qld.gov.au</a></td>
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<td><a href="mailto:parklibrary@health.qld.gov.au">parklibrary@health.qld.gov.au</a></td>
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<td>3163 1689</td>
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