Pressure-sore bulletin – September 2017
Compiled by John Gale – JET Library
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Estimated reduction in expenditure on hospital-acquired pressure injuries after an intervention for early identification and treatment

**Author(s):** Lewis, Heather; Hughes, David; Madell, Dominic; Coomarasamy, Christin; Villa, Luis; Hayward, Brooke

**Source:** The New Zealand medical journal; Sep 2017; vol. 130 (no. 1461); p. 42-46

**Publication Date:** Sep 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28859065

Available at The New Zealand medical journal - from EBSCO (MEDLINE Complete)

**Abstract:** AIM An intervention designed to reduce numbers of hospital-acquired pressure injuries was delivered in Counties Manukau Health hospitals. An audit of a sample of patients was carried out to estimate the cost savings that would have been acquired across the district health board (DHB) due to a reduction in pressure injuries. METHOD The pressure injury intervention was delivered from 2011 to 2015. A monthly prospective audit of patients with stages 1, 2, 3 and 4 pressure injuries was carried out. This involved a random sample of five patients per ward in all hospitals in Counties Manukau DHB. RESULTS It was found that the annual estimated cost of treating pressure injuries in hospital patients was NZ$12,290,484 less in 2015 than in 2011. CONCLUSION Implementation of strategies for managing hospital-acquired pressure injuries can lead to potentially large financial savings for hospitals, as well as reducing the burden of managing this difficult condition for patients and staff.

**Database:** Medline

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The Efficacy of Pressure Ulcer Treatment With Cathodal and Cathodal-Anodal High-Voltage Monophasic Pulsed Current: A Prospective, Randomized, Controlled Clinical Trial

**Author(s):** Polak, Anna; Kloth, Luther C; Blaszczyk, Edward; Taradaj, Jakub; Nawrat-Szoltysek, Agnieszka; Ickowicz, Tomasz; Hordynska, Ewa; Franek, Andrzej; Kucio, Cezary

**Source:** Physical therapy; Aug 2017; vol. 97 (no. 8); p. 777-789

**Publication Date:** Aug 2017

**Publication Type(s):** Randomized Controlled Trial Journal Article

**PubMedID:** 28789467

Available at Physical therapy - from ProQuest (Hospital Premium Collection) - NHS Version

Available at Physical therapy - from ProQuest (Medical Database) - New Platform

**Abstract:** Background Studies show that anode and cathode electrical stimulation (ES) promotes the healing of wounds, but specific protocols for both electrodes are not available. Objective To compare the effectiveness of cathodal versus cathodal+anodal ES in
the treatment of Category II-IV pressure ulcers (PrUs).

Design: Prospective, randomized, controlled, clinical study.

Setting: Three nursing and care centers.

Patients: Sixty-three participants with PrUs were randomly formed into a cathodal ES group (CG: N = 23; mean age of 79.35; SD 8.48), a cathodal+anodal ES group (CAG: N = 20; mean age of 79.65; SD 11.44) and a placebo ES group (PG: N = 20; mean age of 76.75; SD 12.24).

Intervention: All patients were treated with standard wound care and high-voltage monophasic pulsed current (HVMPC; twin-peak impulses; 154 μs; 100 pps; 0.25 A; 250 μC/s) for 50 minutes per day, 5 times a week, for 6 weeks. The CG, CAG, and PG received, respectively, cathodal, cathodal+anodal, and sham ES through electrodes placed on a moist gauze pad. The treatment electrode was placed on the wound, and the return electrode was positioned on healthy skin at least 20 cm from the PrU.

Measurements: Measurements were made at baseline, and after each of the 6 weeks of treatment. Primary outcome was percentage wound surface area reduction at week 6.

Results: Wound surface area decreased in the CG by 82.34% (95% confidence interval [CI] 70.06-94.63) and in the CAG by 70.77% (95% CI 53.51-88.04). These reductions were significantly greater than in the PG (40.53%; 95% CI 23.60-57.46). The CG and CAG were not statistically significantly different regarding treatment results.

Limitations: The time of treatment proved insufficient for PrUs to close.

Conclusions: Cathodal and cathodal+anodal HVMPC similarly reduced the area of Category II-IV PrUs.

Database: Medline

A Pilot Randomized Controlled Trial Using Prophylactic Dressings to Minimize Sacral Pressure Injuries in High-Risk Hospitalized Patients

Author(s): Walker, Rachel; Huxley, Leisa; Juttner, Melanie; Burmeister, Elizabeth; Scott, Justin; Aitken, Leanne M

Source: Clinical nursing research; Aug 2017; vol. 26 (no. 4); p. 484-503

Publication Date: Aug 2017

Publication Type(s): Randomized Controlled Trial Journal Article

PubMedID: 26873658

Available at Clinical nursing research - from SAGE Premier Health Sciences

Abstract: This pilot randomized controlled trial examined the effect of prophylactic dressings to minimize sacral pressure injuries (PIs) in high-risk hospitalized patients and assessed feasibility criteria to inform a larger study. Eighty patients were recruited at admission points (the emergency department and surgical care unit) or directly from participating wards in the general medical-surgical setting following the assessment of high risk of sacral PI. Participants were randomized into either the routine care or routine care and silicone foam border dressing group. Outcome assessment comprised digital photographs of each participant's sacrum every 72 hr for evaluation by a blind-to-intervention assessor. Sixty-seven participants had at least one sacral photograph taken and assessed by a blind-to-intervention assessor. Three participants were assessed as having a Stage I PI. Although the
Moist exposed burn ointment for treating pressure ulcers: A multicenter randomized controlled trial

Author(s): Li, Wei; Ma, Yubo; Yang, Qi; Pan, Yu; Meng, Qinggang

Source: Medicine; Jul 2017; vol. 96 (no. 29); p. e7582

Publication Date: Jul 2017

Publication Type(s): Randomized Controlled Trial Multicenter Study Journal Article

PubMedID: 28723796

Abstract: BACKGROUND Pressure ulcers often seriously affect the quality of life of patients. Moist Exposed Burn Ointment (MEBO) has been developed to treat patients with pressure ulcers. The present study aimed to evaluate the efficacy and safety of MEBO in the treatment of pressure ulcers in Chinese patients.

METHODS Seventy-two patients with pressure ulcers were randomly assigned to 2 groups who received a placebo or MEBO for 2 months. The primary outcomes included the wound surface area (WSA) and pressure ulcer scale for healing (PUSH) tool. The secondary outcomes included a visual analog scale (VAS), questionnaire of ulcer status, and adverse effects.

RESULTS Sixty-seven patients completed the study. After 2 months of treatment, the difference of mean change from the baseline was greater for MEBO (vs placebo) for WSA mean (SD) -6.0 (-8.8, -3.3), PUSH Tool -2.6 (-4.7, -1.5), and VAS score -2.9 (-4.4, -1.7). On the basis of the questionnaire, the pressure ulcers were "completely healed" (50.0% vs 16.7%) (P<.05) in patients after 2 months of treatment with MEBO versus placebo. No major adverse effects were found in the 2 groups.

CONCLUSION We showed that MEBO is effective and well tolerated for improving wound healing in Chinese patients with pressure ulcers.

Database: Medline

The introduction and evaluation of a pressure ulcer risk assessment tool for photopheresis outpatients

Author(s): Rushton, Cherie; Goodgrove, Rachel; Robertson, Leeah; Taylor, Tracie; Taylor, Peter; Alfred, Arun

Source: British journal of nursing (Mark Allen Publishing); Jun 2017; vol. 26 (no. 12)

Publication Date: Jun 2017

Publication Type(s): Journal Article

PubMedID: 28640721

Abstract: BACKGROUND Pressure ulcers often seriously affect the quality of life of patients. Moist Exposed Burn Ointment (MEBO) has been developed to treat patients with pressure ulcers. The present study aimed to evaluate the efficacy and safety of MEBO in the treatment of pressure ulcers in Chinese patients.

METHODS Seventy-two patients with pressure ulcers were randomly assigned to 2 groups who received a placebo or MEBO for 2 months. The primary outcomes included the wound surface area (WSA) and pressure ulcer scale for healing (PUSH) tool. The secondary outcomes included a visual analog scale (VAS), questionnaire of ulcer status, and adverse effects.

RESULTS Sixty-seven patients completed the study. After 2 months of treatment, the difference of mean change from the baseline was greater for MEBO (vs placebo) for WSA mean (SD) -6.0 (-8.8, -3.3), PUSH Tool -2.6 (-4.7, -1.5), and VAS score -2.9 (-4.4, -1.7). On the basis of the questionnaire, the pressure ulcers were "completely healed" (50.0% vs 16.7%) (P<.05) in patients after 2 months of treatment with MEBO versus placebo. No major adverse effects were found in the 2 groups.

CONCLUSION We showed that MEBO is effective and well tolerated for improving wound healing in Chinese patients with pressure ulcers.

Database: Medline
Abstract: Chronic graft-versus-host disease (cGVHD) patients are at high risk of compromised skin integrity, and of developing pressure ulcers, which may bleed and/or become infected. The Rotherham Outpatient Screening Tool (ROST) was adapted from the Waterlow score and the Malnutrition Universal Screening Tool (MUST) to suit patients attending an outpatient unit for photopheresis. A review of the screening tool highlighted patients at a higher risk of developing pressure damage during treatment and therefore the unit was able to reduce this risk by the provision of a pressure-relieving cushion (Repose).

Database: Medline

Prevention of Tracheostomy-Related Hospital-Acquired Pressure Ulcers

Author(s): O'Toole, Thomas R; Jacobs, Natalie; Hondorp, Brian; Crawford, Laura; Boudreau, Lisa R; Jeffe, Jill; Stein, Brian; LoSavio, Phillip

Source: Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery; Apr 2017; vol. 156 (no. 4); p. 642-651

Publication Date: Apr 2017

Publication Type(s): Journal Article

PubMedID: 28195000

Available at Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery - from SAGE Premier Health Sciences

Abstract: Objective To determine if standardization of perioperative tracheostomy care procedures decreased the incidence of hospital-acquired tracheostomy-related pressure ulcers. Methods All patients at least 18 years old who underwent placement of a tracheostomy tube in the operating room from July 1, 2014, through June 30, 2015, were cared for postoperatively through an institutionally adopted quality improvement protocol. This included 4 elements: (1) placement of a hydrocolloid dressing underneath the tracheostomy flange in the postoperative period, (2) removal of plate sutures within 7 days of the tracheostomy procedure, (3) placement of a polyurethane foam dressing after suture removal, and (4) neutral positioning of the head. One year after the bundle was initiated, a retrospective analysis was performed to compare the percentage of tracheostomy patients who developed pressure ulcers versus the preintervention period. Results The incidence of tracheostomy-related pressure ulcers decreased from 20 of 183 tracheostomies (10.93%) prior to use of the standardized protocol to 2 of 155 tracheostomies (1.29%). Chi-square analysis showed a significant difference between the groups, with a P value of .0003. Discussion Adoption of this care bundle at our institution resulted in a significant reduction in the incidence of hospital-acquired tracheostomy-related pressure ulcers. The impact of any single intervention within our protocol was not assessed and could be an area of further investigation. Implications for Practice Adoption of a standardized posttracheostomy care bundle at the institution level may result in the improved care of patients with tracheostomies and specifically may reduce the incidence of pressure ulcers.
Pressure ulcer prevention in care home settings

Author(s): Ellis, Michael
Source: Nursing older people; Mar 2017; vol. 29 (no. 3); p. 29-37
Publication Date: Mar 2017
Publication Type(s): Journal Article
PubMedID: 28361634
Available at Nursing older people - from ProQuest (Medical Database) - New Platform

Abstract: Pressure ulcer prevention in the care home setting can be challenging and is often compromised by a lack of access to education and resources. There are measures that have been shown to consistently improve outcomes in pressure ulcer prevention including assessment of the patient and their individual risks, delivery of a consistent plan of care that meets patients’ needs, and regular evaluation to identify shortfalls. In addition, there should be a robust approach to investigating events that lead to a person developing a pressure ulcer and that information should be used to improve future practice. Pressure ulcer prevention in care homes is achievable and nurses should all be aware of the necessary measures detailed in this article.

Database: Medline

The provision of therapy mattresses for pressure ulcer prevention

Author(s): Pagnamenta, Fania
Source: British journal of nursing (Mark Allen Publishing); Mar 2017; vol. 26 (no. 6); p. S28
Publication Date: Mar 2017
Publication Type(s): Journal Article
PubMedID: 28345974
Available at British journal of nursing (Mark Allen Publishing) - from EBSCO (CINAHL with Full Text)
Available at British journal of nursing (Mark Allen Publishing) - from MAG Online Library

Abstract: Preventing pressure ulcers is complex and involves skin care, the provision of therapy mattresses, repositioning, the management of incontinence and adequate nutritional support. This article describes a model of therapy mattress provision that is based on non-powered products. Evaluating the efficiency of this model is challenging, due to the complexities of care, but Safety Thermometer data and incidents reports offer reassurance that non-powered therapy mattresses can provide adequate pressure ulcer prevention. Therapy mattress provision is only one of the five interventions and these are described in details to give readers a fuller picture of the model used at the author's trust.

Database: Medline
Pressure ulcer prevention is everyone's business: the PUPS project

Author(s): Blenman, Juliet; Marks-Maran, Di

Source: British journal of nursing (Mark Allen Publishing); Mar 2017; vol. 26 (no. 6); p. S16

Publication Date: Mar 2017

Publication Type(s): Journal Article

PubMedID: 28345975

Available at British journal of nursing (Mark Allen Publishing) - from EBSCO (CINAHL with Full Text)

Available at British journal of nursing (Mark Allen Publishing) - from MAG Online Library

Abstract: Prevention of pressure ulcers is one of the greatest healthcare challenges in terms of reducing patient harm. The literature shows that although numerous reports and policy documents have been published, pressure ulcer prevention remains an ongoing challenge. A number of innovations have been published offering practising nurses and managers ideas for raising awareness of skin care and preventing pressure ulcers. The majority of these have focused on patients in hospital settings with very little in the literature related to care-home and community initiatives. This article reports on an innovative approach to education for pressure ulcer prevention through collaboration between patients, carers and health and social care professionals.

Database: Medline

Preventing facial pressure ulcers in patients under non-invasive mechanical ventilation: a randomised control trial

Author(s): Otero, D Peña; Domínguez, D Vazquez; Fernández, L Hernanz; Magariño, A Santano; González, V Jimenez; Klepzing, J V García; Montesinos, J V Beneit

Source: Journal of wound care; Mar 2017; vol. 26 (no. 3); p. 128-136

Publication Date: Mar 2017

Publication Type(s): Randomized Controlled Trial Journal Article

PubMedID: 28277990

Available at Journal of wound care - from MAG Online Library

Abstract: OBJECTIVE To comparatively assess the efficacy of four different therapeutic strategies to prevent the development of facial pressure ulcers (FPUs) related to the use of non-invasive mechanical ventilation (NIV) with oro-nasal masks in critically ill hospitalised patients. METHOD This randomised control trial was performed at the high dependency unit in the University General Hospital Gregorio Marañón in Madrid, Spain. Overall, 152 patients with acute respiratory failure were recruited. All patients were hospitalised and received NIV through oro-nasal masks. The Norton tool was used to evaluate the general risk of developing pressure ulcers (PUs). Subjects were divided into four groups, each of them receiving a different treatment. Tissue assessment and preventive care were performed by a member of the research team. RESULTS The incidence of FPUs was significantly lower in the group receiving a solution of hyperoxygenated fatty acids (HOFA) when compared with each of the other therapeutic strategies: direct mask (p=0.055), adhesive thin dressing (p=0.03) and adhesive foam dressing (p<0.001). CONCLUSION The application of HOFA on the facial
skin in contact with the oro-nasal masks showed the highest efficacy in the prevention of NIV-related FPUs.

**Database:** Medline

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**Pressure ulcer as a reservoir of multiresistant Gram-negative bacilli: risk factors for colonization and development of bacteremia**

**Author(s):** Braga, Iolanda A; Brito, Cristiane S; Filho, Augusto Diogo; Filho, Paulo P Gontijo; Ribas, Rosineide M

**Source:** The Brazilian journal of infectious diseases: an official publication of the Brazilian Society of Infectious Diseases; 2017; vol. 21 (no. 2); p. 171-175

**Publication Date:** 2017

**Publication Type(s):** Journal Article

**PubMedID:** 27932288

กว่าการใช้งานที่มีผลลัพธ์สูงกว่า การป้องกันการเกิด FPUs ของ NIV ชุดผู้ป่วยที่สัมผัสกับหน้ากาก oro-nasal.

**Abstract:** The purpose of this study was to identify the risk factors that predispose patients who are hospitalized with pressure ulcers (PUs) colonized by Gram-negative bacilli (GNB) to develop bacteremia. In addition, we also detected main phenotypes of resistance in infected and uninfected PUs. A prospective cohort study was conducted at the Clinical Hospital of the Federal University of Uberlândia including patients with Stage II or greater PUs, colonized or not with GNB, from August 2009 to July 2010. Infected ulcers were defined based on clinical signs and on positive evaluation of smears of wound material translated by a ratio of polymorphonuclear cells to epithelial cells ≥2:1, after Giemsa staining. A total of 60 patients with Stage II PUs were included. Of these 83.3% had PUs colonized and/or infected. The frequency of polymicrobial colonization was 74%. Enterobacteriaceae and GNB non-fermenting bacteria were the most frequent isolates of PUs with 44.0% of multiresistant isolates. Among patients who had infected PUs, six developed bacteremia by the same microorganism with a 100% mortality rate. In addition, PUs in hospitalized patients were major reservoir of multiresistant GNB, also a high-risk population for the development of bacteremia with high mortality rates.

**Database:** Medline

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**The reliability of measuring wound undermining in people with spinal cord injury**

**Author(s):** Arora, M; Harvey, L A; Chhabra, H S; Sharawat, R; Glinsky, J V; Cameron, I D

**Source:** Spinal cord; Mar 2017; vol. 55 (no. 3); p. 304-306

**Publication Date:** Mar 2017

**Publication Type(s):** Journal Article

**PubMedID:** 27401125

กว่าการใช้งานที่มีผลลัพธ์สูงกว่า การป้องกันการเกิด FPUs ของ NIV ชุดผู้ป่วยที่สัมผัสกับหน้ากาก oro-nasal.

**Available at** Spinal cord - from ProQuest (Medical Database) - New Platform

Available at Spinal cord - from ProQuest (Hospital Premium Collection) - NHS Version
Abstract: OBJECTIVE: The objective of this study was to determine the reliability of measuring wound undermining in people with spinal cord injury (SCI).

STUDY DESIGN: A psychometric study.

SETTING: The study was conducted at the Indian Spinal Injuries Centre, New Delhi, India.

PARTICIPANTS: Thirty people with a complete or incomplete SCI and a pressure ulcer with wound undermining were recruited.

METHODS: Wound undermining was measured using the four cardinal points from a clock face (with 12 O'clock defined as towards the head). Inter-rater reliability was tested by comparing the wound undermining scores from two different assessors. Intra-rater reliability was tested by comparing the wound undermining scores from the same assessor on two different days.

RESULTS: The intraclass correlation coefficients (95% confidence interval) for inter-rater and intra-rater reliability were 0.996 (0.992-0.999) and 0.998 (0.996-0.999), respectively. Repeat measurements by the same and different assessor were within 0.3 cm of each other, 80% and 83% of the time, respectively.

CONCLUSION: Measurements of wound undermining have excellent reliability.

Database: Medline

Accelerated wound healing with combined NPWT and IPC: a case series

Author(s): Arvesen, Kristian; Nielsen, Camilla Bak; Fogh, Karsten

Source: British journal of community nursing; Mar 2017; vol. 22

Publication Date: Mar 2017

Publication Type(s): Journal Article

PubMedID: 28252337

Available at British journal of community nursing - from EBSCO (CINAHL with Full Text)

Available at British journal of community nursing - from MAG Online Library

Abstract: Negative pressure wound therapy (NPWT) and intermittent pneumatic compression (IPC) have traditionally been used in patients with chronic complicated non-healing wounds. The aim of this study (retrospective case series) was to describe the use of NPWT in combination with IPC in patients with a relatively short history (2-6 months) of ulcers. All wounds showed improved healing during the treatment period with marked or moderate reduction in ulcer size, and granulation tissue formation was markedly stimulated. Oedema was markedly reduced due to IPC. Treatment was generally well tolerated. The results of this study indicate that combined NPWT and IPC can accelerate wound healing and reduce oedema, thus shortening the treatment period. Therefore, patients may have a shorter healing period and may avoid entering a chronic wound phase. However, controlled studies of longer duration are needed in order to show the long-term effect of a more accelerated treatment course.

Database: Medline

Preventing and treating pressure ulcers: evidence review

Author(s): Chapman, Sarah

Source: British journal of community nursing; Mar 2017; vol. 22

Publication Date: Mar 2017

Publication Type(s): Journal Article Review
**Could lateral tilt mattresses be the answer to pressure ulcer prevention and management?**

**Author(s):** Hampton, Sylvie  
**Source:** British journal of community nursing; Mar 2017; vol. 22  
**Publication Date:** Mar 2017  
**Publication Type(s):** Journal Article  
**PubMedID:** 28252339  

Abstract: Pressure ulcers have been part of illness for thousands of years and are not reducing in number. Traditionally, since the Crimean War, patients have been ritually repositioned every 2 hours, regardless of the individual need. Pressure ulcers occur mainly on bony prominences, and so it makes sense to reposition into the 30 degree tilt, off of bony prominences. Nevertheless, this still takes time in order to reposition on a regular basis. It is time to look at automatic repositioning, reducing nursing time, increasing patient comfort and releasing carers to provide more social support to the patients.

**Database:** Medline

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**Multi-disciplinary management of complex pressure sore reconstruction: 5-year review of experience in a spinal injuries centre**

**Author(s):** Thomson, C H; Choudry, M; White, C; Mecci, M; Siddiqui, H  
**Source:** Annals of the Royal College of Surgeons of England; Feb 2017; vol. 99 (no. 2); p. 169-174  
**Publication Date:** Feb 2017  
**Publication Type(s):** Journal Article Review  
**PubMedID:** 27490980  

Abstract: INTRODUCTION In our regional spinal injuries unit, complex pressure ulcer reconstruction is facilitated by a monthly multidisciplinary team clinic. This study reviews a series of the more complex of these patients who underwent surgery as a joint case between
plastics and other surgical specialties, aiming to provide descriptive data as well as share the experience of treating these complex wounds. MATERIALS AND METHODS Patients operated on as a joint case from 2010 to 2014 were identified through a locally held database and hospital records were then retrospectively reviewed for perioperative variables. Descriptive statistics were collected. RESULTS 12 patients underwent 15 procedures as a joint collaboration between plastic surgery and other surgical specialties: one with spinal surgery, 12 with orthopaedic and two with both orthopaedic and urology involvement. Ischial and trochanteric wounds accounted for 88% of cases with five Girdlestone procedures being performed and 12 requiring soft-tissue flap reconstruction. Mean operative time was 3.8 hours. Four patients required high-dependency care and 13 patients received long-term antibiotics. Only three minor complications (20%) were seen with postoperative wound dehiscence. DISCUSSION The multidisciplinary team clinic allows careful assessment and selection of patients appropriate for surgical reconstruction and to help match expectations and limitations imposed by surgery, which are likely to influence their current lifestyle in this largely independent patient group. Collaboration with other specialties gives the best surgical outcome both for the present episode as well as leaving avenues open for potential future reconstruction.

Database: Medline

Predictive Factors for Pressure Ulcers in an Older Adult Population Hospitalized for Hip Fractures: A Prognostic Cohort Study

Author(s): Chiari, Paolo; Forni, Cristiana; Guberti, Monica; Gazino, Domenica; Ronzoni, Sabrina; D’Alessandro, Fabio

Source: PloS one; 2017; vol. 12 (no. 1); p. e0169909

Publication Date: 2017

Publication Type(s): Multicenter Study Journal Article

PubMedID: 28068425

Available at PloS one - from Public Library of Science (PLoS)
Available at PloS one - from Europe PubMed Central - Open Access
Available at PloS one - from EBSCO (MEDLINE Complete)

Abstract: BACKGROUND Older adult patients with fragility hip fractures constitute a population at high risk for complications, in particular pressure ulcers. The aim was to evaluate the incidence of pressure ulcers and potential predictive factors. METHODS AND FINDINGS A prospective multicentric prognostic cohort study in orthopedic wards in three Italian public hospitals. Participants were all consecutive patients 65 years of age or older diagnosed with a fragility hip fracture. Outcomes were incidence of pressure ulcers. The exposure variables were grouped into three macro areas in order to facilitate reading: "intrinsic" variables, "extrinsic" variables and variables linked to the organization of patient care. One thousand eighty-three older adult patients with fragility hip fractures were enrolled from October 1st, 2013 to January 31st, 2015, and pressure ulcers developed in 22.7%. At multivariate analysis, the following were found to be risk factors: age > 80 years (odds ratio (OR) 1.03; p = 0.015), the length of time a urinary catheter was used (OR 1.013; p<0.001), the length of time pain was present (OR 1.008; p = 0.008), the absence of side rails on the bed (OR 1.668; p = 0.026) and the use of a foam position valve (OR 1.025; p<0.001). Instead, the protective factors were the presence of a caregiver for at least half a day daily (OR 0.994;
p = 0.012) and the number of positionings during the postoperative period (OR 0.897; p = 0.008). CONCLUSION The study allowed the identification of the patients most at risk for developing pressure ulcers, and the construction of a pragmatic predictive model using significant risk or protective factors in order to reduce the number of pressure ulcers.

**Database:** Medline

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**Reduction of pressure ulcer size with high-voltage pulsed current and high-frequency ultrasound: a randomised trial**

**Author(s):** Polak, A; Taradaj, J; Nawrat-Szoltysik, A; Stania, M; Dolibog, P; Blaszczak, E; Zarzeczny, R; Juras, G; Franek, A; Kucio, C

**Source:** Journal of wound care; Dec 2016; vol. 25 (no. 12); p. 742-754

**Publication Date:** Dec 2016

**Publication Type(s):** Randomized Controlled Trial Journal Article

**PubMedID:** 27974012

Available at [Journal of wound care](https://www.journalofwoundcare.com) - from MAG Online Library

**Abstract:** OBJECTIVE International guidelines recommend the use of ultrasound (US) and electrical stimulation (ES) for treating chronic and recurrent pressure ulcers (PUs). The methodology of these procedures, however, still needs elaboration and confirmation by clinical studies. This parallel-group, randomised, single-blind, prospective, controlled clinical trial was conducted to determine whether by using high-frequency ultrasound (HFUS) and high-voltage monophasic pulsed current (HVMPC), the rate of change in the area of older patients’ PUs can be accelerated.

**METHOD** Patients were randomly assigned to receive either: standard wound care (SWC) involving supportive care and topical treatments; SWC+US (1MHz; 0.5 W/cm²; 20%; 1-3 minutes/cm²); or SWC+ES (HVMPC, 154 µs, 100 pps, 100 V, 250 µC/sec, 50 minutes/day). US and ES were administered once a day, 5 days a week. The primary outcome was change in PU surface area measured against baseline after 6 weeks of treatment with SWC, SWC+US, and SWC+ES.

**RESULT** We recruited 77 patients, aged 60-95 years (80% aged over 70 years of age), with 88 Category II, III and IV PUs were enrolled in the study. The percentage reduction in the surface area of PUs at the end of treatment was significantly greater in the SWC+US group (mean ± standard deviation, 77.48±11.59 %; p=0.024) and the SWC+ES group (76.19±32.83%; p=0.030) versus the control group (48.97±53.42%). The SWC+ES group also had a significantly greater proportion of PUs that decreased in area by at least 50% or closed than the control group (p=0.05 and 0.031, respectively). The SWC+US and SWC+ES groups were not statistically significant different regarding treatment results. Clinical side effects were not recorded.

**CONCLUSION** The results show that HFUS and HVMPC are comparable regarding their effectiveness in reducing the size of PUs in older people.

**DECLARATION OF INTEREST** The authors have nothing to disclose. All research activities were funded by the Academy of Physical Education, Katowice, Poland.

**Database:** Medline
Improvement of pressure ulcer prevention care in private for-profit residential care homes: an action research study

Author(s): Kwong, Enid Wy; Hung, Maria Sy; Woo, Kevin

Source: BMC geriatrics; Nov 2016; vol. 16 (no. 1); p. 192

Publication Date: Nov 2016

Publication Type(s): Journal Article

PubMedID: 27884131

Abstract:

BACKGROUND: A need exists to develop a protocol for preventing pressure ulcers (PUs) in private for-profit nursing homes in Hong Kong, where the incidence of PUs is relatively high and which have high proportion of non-professional care staff. The implementation of such protocol would involve changes in the practice of care, likely evoking feelings of fear and uncertainty that may become a barrier to staff adherence. We thus adopted the Systems Model of Action Research in this study to manage the process of change for improving PU prevention care and to develop a pressure ulcer prevention protocol for private for-profit nursing homes.

METHODS: A total of 474 residents and care staff who were health workers, personal care workers, and/or nurses from four private, for-profit nursing homes in Hong Kong participated in this study. Three cyclic stages and steps, namely, unfreezing (planning), changing (action), and refreezing (results) were carried out. During each cycle, focus group interviews, field observations of the care staff’s practices and inspections of the skin of the residents for pressure ulcers were conducted to evaluate the implementation of the protocol. Qualitative content analysis was adopted to analyse the data. The data and methodological triangulation used in this study increased the credibility and validity of the results.

RESULTS: The following nine themes emerged from this study: prevention practices after the occurrence of PUs, the improper use of pressure ulcer prevention materials, non-compliance with several prevention practices, improper prevention practices, the perception that the preventive care was being performed correctly, inadequate readiness to use the risk assessment tool, an undesirable environment, the supplying of unfavorable resources, and various management styles in the homes with or without nurses. At the end of the third cycle, the changes that were identified included improved compliance with the revised risk assessment method, the timely and appropriate use of PU prevention materials, the empowering of staff to improve the quality of PU care, and improved home management.

CONCLUSION: Through the action research approach, the care staff were empowered and their PU prevention care practices had improved, which contributed to the decreased incidence of pressure ulcers. A PU prevention protocol that was accepted by the staff was finally developed as the standard of care for such homes.

Database: Medline

Heel pressure ulcer, prevention and predictors during the care delivery chain - when and where to take action? A descriptive and explorative study

Author(s): Muntlin Athlin, Åsa; Engström, Maria; Gunningberg, Lena; Bååth, Carina
Abstract: BACKGROUND: Hazardous healthcare settings, for example acute care, need to focus more on preventing adverse events and preventive actions across the care delivery chain (i.e. pre-hospital and emergency care, and further at the hospital ward) should be more studied. Pressure ulcer prevalence is still at unreasonably high levels, causing increased healthcare costs and suffering for patients. Recent biomedical research reveals that the first signs of cell damage could arise within minutes. However, few studies have investigated optimal pressure ulcer prevention in the initial stage of the care process, e.g. in the ambulance care or at the emergency department. The aim of the study was to describe heel pressure ulcer prevalence and nursing actions in relation to pressure ulcer prevention during the care delivery chain, for older patients with neurological symptoms or reduced general condition. Another aim was to investigate early predictors for the development of heel pressure ulcer during the care delivery chain.

METHODS: Existing data collected from a multi-centre randomized controlled trial investigating the effect of using a heel prevention boot to reduce the incidence of heel pressure ulcer across the care delivery chain was used. Totally 183 patients participated. The settings for the study were five ambulance stations, two emergency departments and 16 wards at two hospitals in Sweden.

RESULTS: A total of 39 individual patients (21%) developed heel pressure ulcer at different stages across the care delivery chain. Findings revealed that 47-64% of the patients were assessed as being at risk for developing heel pressure ulcer. Preventive action was taken. However, all patients who developed pressure ulcer during the care delivery chain did not receive adequate pressure ulcer prevention actions during their hospital stay.

DISCUSSION AND CONCLUSIONS: In the ambulance and at the emergency department, skin inspection seems to be appropriate for preventing pressure ulcer. However, carrying out risk assessment with a validated instrument is of significant importance at the ward level. This would also be an appropriate level of resource use. Context-specific actions for pressure ulcer prevention should be incorporated into the care of the patient from the very beginning of the care delivery chain.

TRIAL REGISTRATION: ISRCTN85296908 .

Database: Medline

Effectiveness of a pressure-relieving mattress in an acute stroke ward

Author(s): Gleeson, Deborah

Source: British journal of nursing (Mark Allen Publishing); Nov 2016; vol. 25 (no. 20)
Abstract: Between the 10 May and 18 July 2016, St Helens and Knowsley Teaching Hospitals NHS Trust conducted a small, non-controlled evaluation set out to assess the performance of the Apex Pro-care Auto pressure-relieving mattress in an acute stroke ward. Seven patients, assessed as being at medium-to-high risk of developing a pressure ulcer (PU), were recruited into the evaluation; the mean age was 73.1 years. Three patients were bed bound and four had restricted mobility. The average length of time spent on the mattress was 31 days. At the end of the evaluation, none of the patients had developed a PU while using the mattress. These results indicate that, when combined with a robust PU prevention plan inclusive of repositioning, this pressure-relieving mattress is effective in preventing pressure ulceration.

Protecting vulnerable skin from moisture-associated skin damage
Author(s): Collier, Mark; Simon, Debbie
Source: British journal of nursing (Mark Allen Publishing); Nov 2016; vol. 25 (no. 20)
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PubMedID: 27834525
Available at British journal of nursing (Mark Allen Publishing) - from EBSCO (CINAHL with Full Text)
Available at British journal of nursing (Mark Allen Publishing) - from MAG Online Library
Abstract: The skin, the body's largest organ, has several functions. Its barrier role can be undermined if it is in contact with urine, faeces and other sources of excess moisture; overhydration can also increase the likelihood of injury from friction through contact with clothing, incontinence pads or bed linen. If skin has been damaged by moisture or is at risk of this, its health can be supported through cleansing to maintain its acid mantle followed by protection with barrier products. Barrier preparations are available in different forms, and their effectiveness varies. A new product, Medline Remedy Moisturising Barrier Cream, has been trialled in adults, children and neonates in a variety of healthcare settings.

Protecting patients: pressure ulcer prevention
Author(s): Tingle, John
Source: British journal of nursing (Mark Allen Publishing); Nov 2016; vol. 25 (no. 20); p. 1146-1147
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PubMedID: 27834520
Available at British journal of nursing (Mark Allen Publishing) - from EBSCO (CINAHL with Full Text)
Available at British journal of nursing (Mark Allen Publishing) - from MAG Online Library
Abstract: John Tingle, Reader in Health Law, Nottingham Trent University, continues his discussion of Healthcare Improvement Scotland patient safety publications and its standards for management of pressure ulcers.
Database: Medline