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Library of Evidence

Supporting evidence-based practice improving patient outcomes

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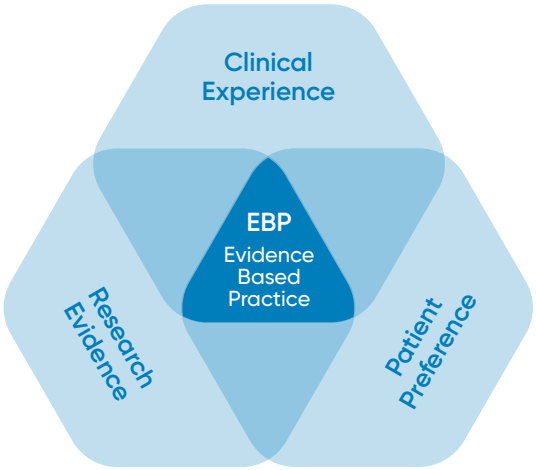
Evidence-based practice helping to support improved patient outcomes.

Evidenced-based practice (EBP) is applying or translating research findings in clinical daily patient care practices and clinical decision-making.



EBP also involves integrating the best available evidence with clinical knowledge and expertise, while considering patients' unique needs and personal preferences.

The latest International guidelines are built upon evidence-based recommendations

In 2019, the new International guideline on pressure ulcers was issued by the European Pressure Ulcer Advisory Panel (EPUAP), the National Pressure Injury Advisory Panel (NPIAP) and the Pan Pacific Pressure Injury Alliance (PPPIA).

This international cooperation aims to develop evidence-based recommendations for the prevention and treatment of pressure ulcers, that can be used by health professionals, patient consumers and informal care givers throughout the world.[1]

Over the last 25 years, the Repose system has been used to prevent pressure ulcers on more than 3 million patients globally. During that time, several significant scientific studies have been performed in many different care settings, confirming Repose's effectiveness, cost-effectiveness and ease of use time and time again.

Repose Mattress Overlay and Cushion are clinically and cost-effective methods of pressure ulcer prevention. They can offer patients not only comfort but also an earlier discharge (Hampton, 2000)

To learn more please see page 3

The literature consistently states that pressure ulcer incidence for high-risk patients is between 6.4% - 31.4% and yet across repeated RCT's, Repose has been found to have an incidence rate of around 5% in high-risk patients in multiple care settings.

Repose is a key component in pressure ulcer prevention (Serraes & Beeckman, 2016)

To learn more please see page 19

There is little evidence about the comparisons between different surface types, but there have been some recent developments in this area.

Repose Mattress Overlay provides better pressure ulcer prevention than visco-elastic foam mattresses alone (Van Leen, et al., 2011) and (Van Leen, et al., 2013)

To learn more please see page 15

Professor Dimitri Beeckman published the START study RCT in July 2019, it compared the incidence and density of pressure ulcers using Repose and alternating mattresses, across 308 high-risk patients in Belgian nursing homes. The results confirmed what we already knew, Repose is twice as effective at preventing pressure ulcers ($p = 0.04$) and patients remained pressure ulcer free for twice as long ($p = 0.05$). Repose Works!

Repose is Twice as Effective as Alternating Pressure Mattresses (Beeckman, et al., 2019)

To learn more please see page 28

reposE®

Challenging the Pressure Sore Paradigm

Journal of Wound Care
April, Vol 8, No. 4, 1999

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R. Newcombe , PhD, CStat, HonMFPHM,
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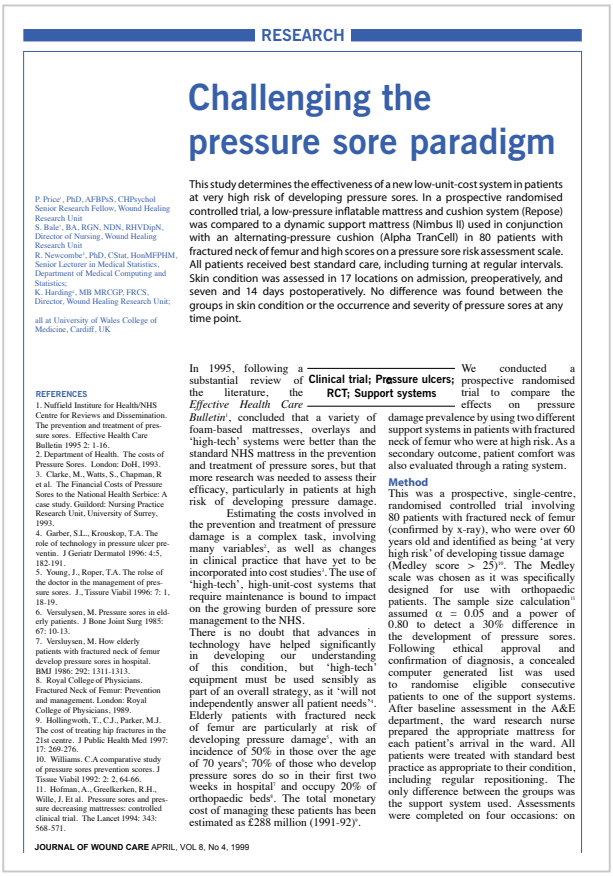
Director, Wound Healing Research Unit;
all at University of Wales College of Medicine, Cardiff, UK

This study determines the effectiveness of a new low-unit-cost system in patients at very high risk of developing pressure sores. In a prospective randomised controlled trial, a low pressure inflatable mattress and cushion system (Repose) was compared to a dynamic support mattress (Alpha TranCell) in 80 patients with fractured neck of femur and high scores on a pressure sore risk assessment scale.

All patients received best standard of care, including turning at regular intervals. Skin condition was assessed in 17 locations on admission, preoperatively, and seven and 14 days postoperatively. No difference was found between the groups in skin condition or the occurrence and severity of pressure sores at any time point.

In this study there was no statistical difference between the 'low-tech' system and a dynamic floatation system.



RESEARCH

Challenging the pressure sore paradigm

This study determines the effectiveness of a new low-unit-cost system in patients at very high risk of developing pressure sores. In a prospective randomised controlled trial, a low-pressure inflatable mattress and cushion system (Repose) was compared to a dynamic support mattress (Nimbus II) used in conjunction with an alternating-pressure cushion (Alpha TranCell) in 80 patients with fractured neck of femur and high scores on a pressure sore risk assessment scale. All patients received best standard care, including turning at regular intervals. Skin condition was assessed in 17 locations on admission, preoperatively, and seven and 14 days postoperatively. No difference was found between the groups in skin condition or the occurrence and severity of pressure sores at any time point.

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all at University of Wales College of Medicine, Cardiff, UK

Clinical trial; Pressure ulcers; RCT; Support systems

In 1995, following a substantial review of the literature, the *Effective Health Care Bulletin*[1], concluded that a variety of foam-based mattresses, overlays and 'high-tech' systems were better than the standard NHS mattress in the prevention and treatment of pressure sores, but that more research was needed to assess their efficacy, particularly in patients at high risk of developing pressure damage.

Estimating the costs involved in the prevention and treatment of pressure damage is a complex task, involving many variables[2], as well as changes in clinical practice that have yet to be incorporated into cost studies[3]. The use of 'high-tech', high-unit-cost systems that require maintenance is bound to impact on the growing burden of pressure sore management to the NHS.

There is no doubt that advances in technology have helped significantly in developing our understanding of this condition, but 'high-tech' equipment must be used sensibly as part of an overall strategy, as it 'will not independently answer all patient needs'[4]. Elderly patients with fractured neck of femur are particularly at risk of developing pressure damage[5], with an incidence of 50% in those over the age of 70 years[6]; 70% of those who develop pressure sores do so in their first two weeks in hospital[7] and occupy 20% of orthopaedic beds[8]. The total monetary cost of managing these patients has been estimated as £288 million (1991-92)[9].

We conducted a prospective randomised trial to compare the effects on pressure damage prevalence by using two different support systems in patients with fractured neck of femur who were at high risk. As a secondary outcome, patient comfort was also evaluated through a rating system.

Method

This was a prospective, single-centre, randomised controlled trial involving 80 patients with fractured neck of femur (confirmed by x-ray), who were over 60 years old and identified as being 'at very high risk' of developing tissue damage (Medley score > 25)[10]. The Medley scale was chosen as it was specifically designed for use with orthopaedic patients. The sample size calculation[11] assumed $\alpha = 0.05$ and a power of 0.80 to detect a 30% difference in the development of pressure sores. Following ethical approval and confirmation of diagnosis, a concealed computer generated list was used to randomise eligible consecutive patients to one of the support systems. After baseline assessment in the A&E department, the ward research nurse prepared the appropriate mattress for each patient's arrival in the ward. All patients were treated with standard best practice as appropriate to their condition, including regular repositioning. The only difference between the groups was the support system used. Assessments were completed on four occasions: on

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Publication

Download this publication from the FMG website visit: https://bit.ly/3tTtd4Q

Repose | Cushion | Mattress Overlay | RCT | Prevention

Repose: the cost-effective solution for prompt discharge of patients

The British Journal of Nursing, 2000, Vol 9, No. 21

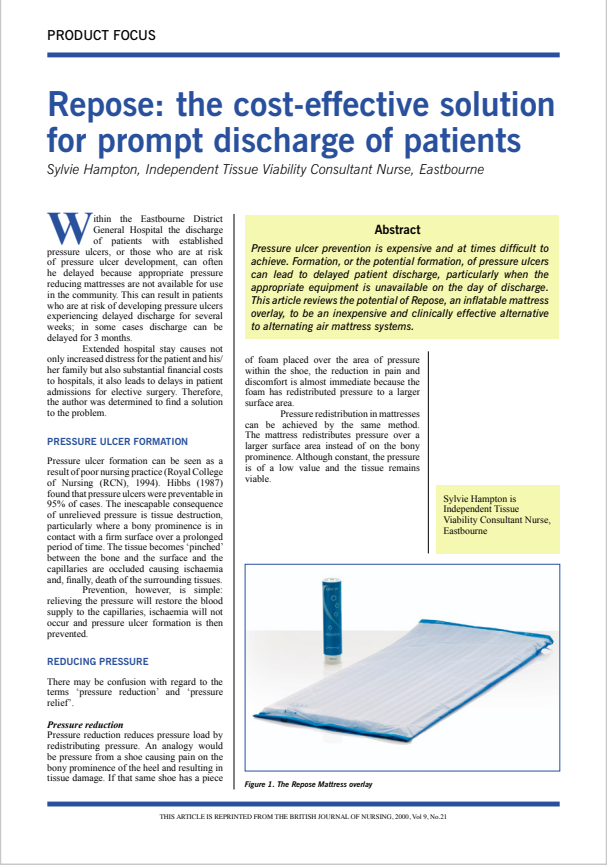
Sylvie Hampton, Independent Tissue Viability Consultant Nurse, Eastbourne

Pressure ulcer prevention is expensive and at times difficult to achieve. Formation, or the potential formation, of pressure ulcers can lead to delayed patient discharge, particularly when the appropriate equipment is unavailable on the day of discharge.

This article reviews the potential of Repose, an inflatable mattress overlay, to be an inexpensive and clinically effective alternative to alternating air mattress systems.

The Repose overlay and cushion are clinically effective and cost-effective methods of pressure ulcer prevention

They can offer patients not only comfort but also an earlier discharge



PRODUCT FOCUS

Repose: the cost-effective solution for prompt discharge of patients

Sylvie Hampton, Independent Tissue Viability Consultant Nurse, Eastbourne

Abstract

Pressure ulcer prevention is expensive and at times difficult to achieve. Formation, or the potential formation, of pressure ulcers can lead to delayed patient discharge, particularly when the appropriate equipment is unavailable on the day of discharge. This article reviews the potential of Repose, an inflatable mattress overlay, to be an inexpensive and clinically effective alternative to alternating air mattress systems.

Within the Eastbourne District General Hospital the discharge of patients with established pressure ulcers, or those who are at risk of pressure ulcer development, can often be delayed because appropriate pressure reducing mattresses are not available for use in the community. This can result in patients who are at risk of developing pressure ulcers experiencing delayed discharge for several weeks; in some cases discharge can be delayed for 3 months.

Extended hospital stay causes not only increased distress for the patient and his/her family but also substantial financial costs to hospitals, it also leads to delays in patient admissions for elective surgery. Therefore, the author was determined to find a solution to the problem.

PRESSURE ULCER FORMATION

Pressure ulcer formation can be seen as a result of poor nursing practice (Royal College of Nursing (RCN), 1994). Hibbs (1987) found that pressure ulcers were preventable in 95% of cases. The inescapable consequence of unrelieved pressure is tissue destruction, particularly where a bony prominence is in contact with a firm surface over a prolonged period of time. The tissue becomes 'pinched' between the bone and the surface and the capillaries are occluded causing ischaemia and, finally, death of the surrounding tissues.

Prevention, however, is simple: relieving the pressure will restore the blood supply to the capillaries, ischaemia will not occur and pressure ulcer formation is then prevented.

REDUCING PRESSURE

There may be confusion with regard to the terms 'pressure reduction' and 'pressure relief'.

Pressure reduction

Pressure reduction reduces pressure load by redistributing pressure. An analogy would be pressure from a shoe causing pain on the bony prominence of the heel and resulting in tissue damage. If that same shoe has a piece of foam placed over the area of pressure within the shoe, the reduction in pain and discomfort is almost immediate because the foam has redistributed pressure to a larger surface area.

Pressure redistribution in mattresses can be achieved by the same method. The mattress redistributes pressure over a larger surface area instead of on the bony prominence. Although constant, the pressure is of a low value and the tissue remains viable.

Sylvie Hampton is Independent Tissue Viability Consultant Nurse, Eastbourne

Figure 1. The Repose Mattress overlay

THIS ARTICLE IS REPRINTED FROM THE BRITISH JOURNAL OF NURSING, 2000, Vol 9, No.21

Publication

Download this publication from the FMG website visit: https://bit.ly/3LreGmY

Repose | Cushion | Mattress Overlay | RCT | Prevention

Recognising the feet as being at risk from pressure damage

The British Journal of Nursing, 2001, Vol 10, No.20

Sue Bale, Director of Nursing Research, Wound Healing Research Unit University of Wales College of Medicine

Patricia Price, Director, Wound Healing Research Unit University of Wales College of Medicine

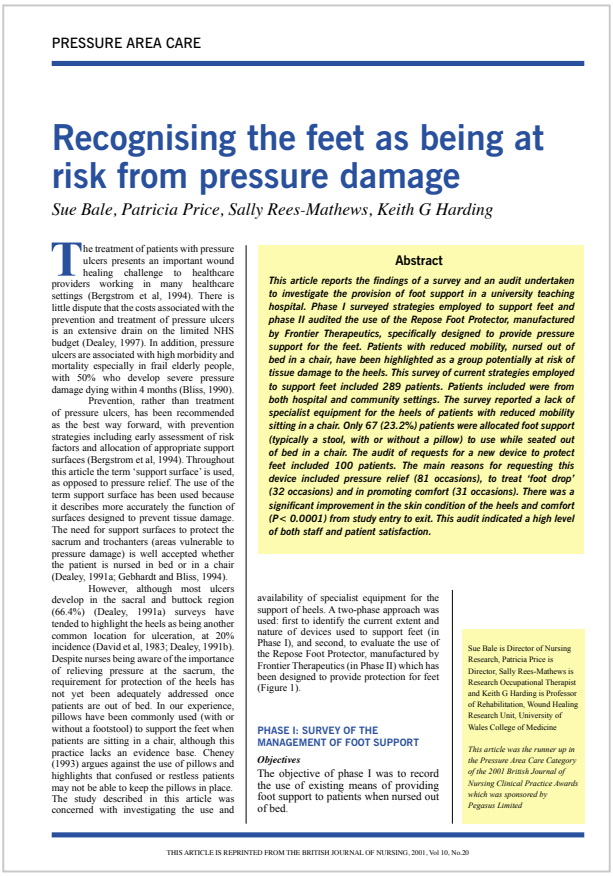
Sally Rees-Mathews, Research Occupational Therapist, Wound Healing Research Unit University of Wales College of Medicine

Keith G Harding, Professor of Rehabilitation, Wound Healing Research Unit University of Wales College of Medicine

This article reports the findings of a survey and an audit undertaken to investigate the provision of foot support in a university teaching hospital. Phase I surveyed strategies employed to support feet and phase II audited the use of the Repose Foot Protector, manufactured by Frontier Therapeutics, specifically designed to provide pressure support for the feet. Patients with reduced mobility, nursed out of bed in a chair, have been highlighted as a group potentially at risk of tissue damage to the heels.

This survey of current strategies employed to support feet included 289 patients. Patients included were from both hospital and community settings. The survey reported a lack of specialist equipment for the heels of patients with reduced mobility sitting in a chair. Only 67 (23.2%) patients were allocated foot support (typically a stool, with or without a pillow) to use while seated out of bed in a chair.

The audit of requests for a new device to protect feet included 100 patients. The main reasons for requesting this device included pressure relief (81 occasions), to treat 'foot drop' (32 occasions) and in promoting comfort (31 occasions). There was a significant improvement in the skin condition of the heels and comfort (P< 0.0001) from study entry to exit. This audit indicated a high level of both staff and patient satisfaction.



PRESSURE AREA CARE

Recognising the feet as being at risk from pressure damage

Sue Bale, Patricia Price, Sally Rees-Mathews, Keith G Harding

Abstract

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Publication

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Repose | Foot Protector | Cushion | Mattress Overlay

Article | Prevention

Shared experiences of two Scottish Hospitals in the evaluation and resultant implementation of Repose mattresses and heel protectors as part of their hospital protocol in the prevention and treatment of pressure ulcers.

7th European Pressure Ulcer Advisory Panel Open Meeting, Tampere, Finland, 3- 6 Sept 2003

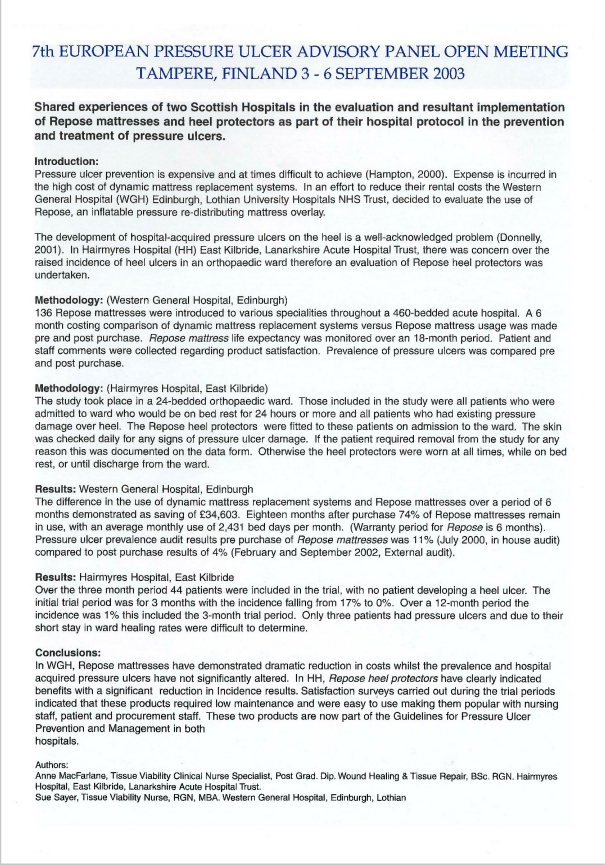
Anne MacFarlane, Tissue Viability Clinical Nurse Specialist, Post Gard. Dip. Wound Healing & Tissue Repair, BSc. RGN. Hairmyres Hospital, East Kilbride, Lanarkshire Acute Hospital Trust.

Sue Sayer, Tissue Viability Nurse, RGN, MBA. Western General Hospital, Edinburgh, Lothian.

Pressure ulcer prevention is expensive and at times difficult to achieve (Hampton, 2000). Expense is incurred in the high cost of dynamic mattress replacement systems. In an effort to reduce their rental costs the Western General Hospital (WGH) Edinburgh, Lothian University Hospital NHS Trust, decided to evaluate the use of Repose, an inflatable pressure re-distributing mattress overlay.

The development of hospital-acquired pressure ulcers on the heel is a well-acknowledged problem (Donnelly, 2001). In Hairmyres Hospital (HH) East Kilbride, Lanarkshire Acute Hospital Trust, there was concern over the raised incidence of heel ulcers in an orthopaedic ward therefore an evaluation of Repose heel protectors was undertaken.

Repose mattresses have demonstrated dramatic reduction in costs whilst the prevalence and hospital acquired pressure ulcers have not significantly altered.



7th EUROPEAN PRESSURE ULCER ADVISORY PANEL OPEN MEETING
TAMPERE, FINLAND 3 - 6 SEPTEMBER 2003

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Methodology: (Western General Hospital, Edinburgh)
136 Repose mattresses were introduced to various specialities throughout a 460-bedded acute hospital. A 6 month costing comparison of dynamic mattress replacement systems versus Repose mattress usage was made pre and post purchase. *Repose mattress* life expectancy was monitored over an 18-month period. Patient and staff comments were collected regarding product satisfaction. Prevalence of pressure ulcers was compared pre and post purchase.

Methodology: (Hairmyres Hospital, East Kilbride)
The study took place in a 24-bedded orthopaedic ward. Those included in the study were all patients who were admitted to ward who would be on bed rest for 24 hours or more and all patients who had existing pressure damage over heel. The Repose heel protectors were fitted to these patients on admission to the ward. The skin was checked daily for any signs of pressure ulcer damage. If the patient required removal from the study for any reason this was documented on the data form. Otherwise the heel protectors were worn at all times, while on bed rest, or until discharge from the ward.

Results: Western General Hospital, Edinburgh
The difference in the use of dynamic mattress replacement systems and Repose mattresses over a period of 6 months demonstrated as saving of £34,603. Eighteen months after purchase 74% of Repose mattresses remain in use, with an average monthly use of 2,431 bed days per month. (Warranty period for *Repose* is 6 months). Pressure ulcer prevalence audit results pre purchase of *Repose mattresses* was 11% (July 2000, in house audit) compared to post purchase results of 4% (February and September 2002, External audit).

Results: Hairmyres Hospital, East Kilbride
Over the three month period 44 patients were included in the trial, with no patient developing a heel ulcer. The initial trial period was for 3 months with the incidence falling from 17% to 0%. Over a 12-month period the incidence was 1% this included the 3-month trial period. Only three patients had pressure ulcers and due to their short stay in ward healing rates were difficult to determine.

Conclusions:
In WGH, Repose mattresses have demonstrated dramatic reduction in costs whilst the prevalence and hospital acquired pressure ulcers have not significantly altered. In HH, *Repose heel protectors* have clearly indicated benefits with a significant reduction in incidence results. Satisfaction surveys carried out during the trial periods indicated that these products required low maintenance and were easy to use making them popular with nursing staff, patient and procurement staff. These two products are now part of the Guidelines for Pressure Ulcer Prevention and Management in both hospitals.

Authors:
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Publication

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Repose | Mattress Overlay | Foot Protector | Evaluation | Prevention | Cost Efficiencies | Heel Ulcers

The Use Of A New Overlay Mattress In Patients With Chronic Pain: Impact On Sleep And Self-Reported Pain

Clinical Rehabilitation 2003; 17: 488–492

P Price, S Rees-Mathews, N Tebble Wound Healing Research Unit, University of Wales College of Medicine
J Camilleri, University Hospital of Wales, Cardiff, Wales

Objective: To evaluate the use of an air flotation mattress overlay in patients with chronic pain.

Design: Four-week prospective AB design.

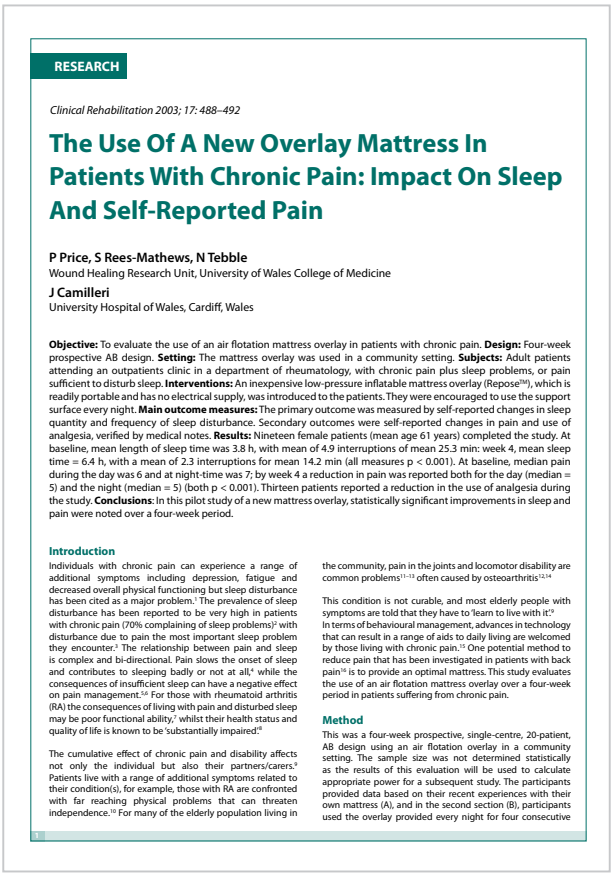
Setting: The mattress overlay was used in a community setting.

Subjects: Adult patients attending an outpatients clinic in a department of rheumatology, with chronic pain plus sleep problems, or pain sufficient to disturb sleep.

Interventions: An inexpensive low-pressure inflatable mattress overlay (Repose™), which is readily portable and has no electrical supply, was introduced to the patients. They were encouraged to use the support surface every night.

Main outcome measures: The primary outcome was measured by self-reported changes in sleep quantity and frequency of sleep disturbance. Secondary outcomes were self-reported changes in pain and use of analgesia, verified by medical notes.

Conclusions: In this pilot study of a new mattress overlay, statistically significant improvements in sleep and pain were noted over a four-week period.



RESEARCH

Clinical Rehabilitation 2003; 17: 488–492

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Objective: To evaluate the use of an air flotation mattress overlay in patients with chronic pain. **Design:** Four-week prospective AB design. **Setting:** The mattress overlay was used in a community setting. **Subjects:** Adult patients attending an outpatients clinic in a department of rheumatology, with chronic pain plus sleep problems, or pain sufficient to disturb sleep. **Interventions:** An inexpensive low-pressure inflatable mattress overlay (Repose™), which is readily portable and has no electrical supply, was introduced to the patients. They were encouraged to use the support surface every night. **Main outcome measures:** The primary outcome was measured by self-reported changes in sleep quantity and frequency of sleep disturbance. Secondary outcomes were self-reported changes in pain and use of analgesia, verified by medical notes. **Results:** Nineteen female patients (mean age 61 years) completed the study. At baseline, mean length of sleep time was 3.8 h, with mean of 4.9 interruptions of mean 25.3 min: week 4, mean sleep time = 6.4 h, with a mean of 2.3 interruptions for mean 14.2 min (all measures $p < 0.001$). At baseline, median pain during the day was 6 and at night-time was 7; by week 4 a reduction in pain was reported both for the day (median = 5) and the night (median = 5) (both $p < 0.001$). Thirteen patients reported a reduction in the use of analgesia during the study. **Conclusions**: In this pilot study of a new mattress overlay, statistically significant improvements in sleep and pain were noted over a four-week period.

Introduction

Individuals with chronic pain can experience a range of additional symptoms including depression, fatigue and decreased overall physical functioning but sleep disturbance has been cited as a major problem.[1] The prevalence of sleep disturbance has been reported to be very high in patients with chronic pain (70% complaining of sleep problems)[2] with disturbance due to pain the most important sleep problem they encounter.[3] The relationship between pain and sleep is complex and bi-directional. Pain slows the onset of sleep and contributes to sleeping badly or not at all,[4] while the consequences of insufficient sleep can have a negative effect on pain management.[5,6] For those with rheumatoid arthritis (RA) the consequences of living with pain and disturbed sleep may be poor functional ability,[7] whilst their health status and quality of life is known to be 'substantially impaired'.[8]

The cumulative effect of chronic pain and disability affects not only the individual but also their partners/carers.[9] Patients live with a range of additional symptoms related to their condition(s), for example, those with RA are confronted with far reaching physical problems that can threaten independence.[10] For many of the elderly population living in the community, pain in the joints and locomotor disability are common problems[11–13] often caused by osteoarthritis[12,14]

This condition is not curable, and most elderly people with symptoms are told that they have to 'learn to live with it'.[9] In terms of behavioural management, advances in technology that can result in a range of aids to daily living are welcomed by those living with chronic pain.[15] One potential method to reduce pain that has been investigated in patients with back pain[16] is to provide an optimal mattress. This study evaluates the use of an air flotation mattress overlay over a four-week period in patients suffering from chronic pain.

Method

This was a four-week prospective, single-centre, 20-patient, AB design using an air flotation overlay in a community setting. The sample size was not determined statistically as the results of this evaluation will be used to calculate appropriate power for a subsequent study. The participants provided data based on their recent experiences with their own mattress (A), and in the second section (B), participants used the overlay provided every night for four consecutive

Publication

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Repose | Mattress Overlay | Evaluation | Prevention | Cost Efficiencies | Self-Reported Pain | Sleep | Chronic Pain

Clinical Evaluation Of The Effectiveness Of A Multimodal Static Pressure Relieving Device

8th European Pressure Ulcer Advisory Panel Open Meeting
Aberdeen, Scotland, 5 - 7 May 2005

J. Osterbrink, H. Mayer, Gerhard Schröder

Objective: To evaluate the use of an air flotation mattress overlay in patients with chronic pain.

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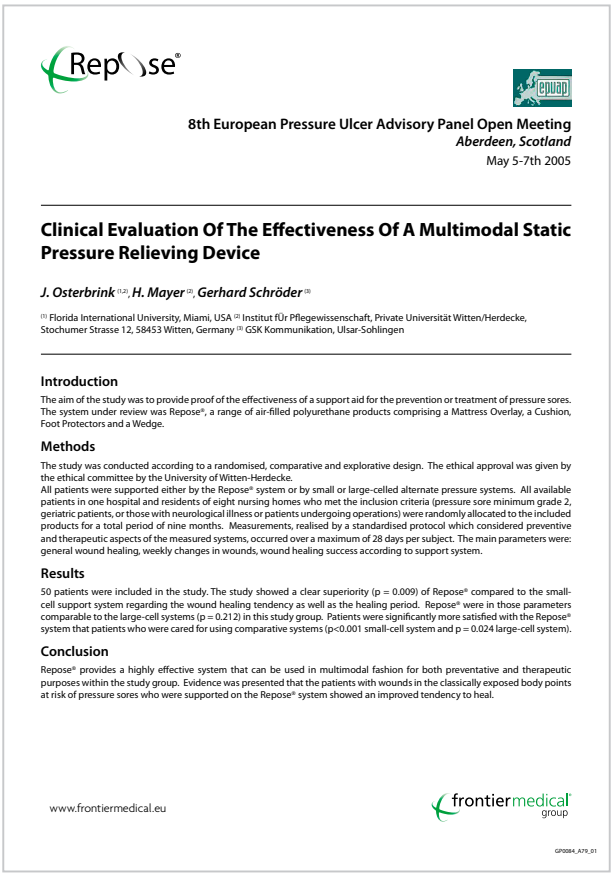

Repose®

epuap

8th European Pressure Ulcer Advisory Panel Open Meeting
Aberdeen, Scotland
May 5-7th 2005

Clinical Evaluation Of The Effectiveness Of A Multimodal Static Pressure Relieving Device

J. Osterbrink [1,2], *H. Mayer* [2], *Gerhard Schröder* [3]

[1] Florida International University, Miami, USA [2] Institut fÜr Pflegewissenschaft, Private Universität Witten/Herdecke, Stochumer Strasse 12, 58453 Witten, Germany [3] GSK Kommunikation, Ulsar-Sohlingen

Introduction

The aim of the study was to provide proof of the effectiveness of a support aid for the prevention or treatment of pressure sores. The system under review was Repose®, a range of air-filled polyurethane products comprising a Mattress Overlay, a Cushion, Foot Protectors and a Wedge.

Methods

The study was conducted according to a randomised, comparative and explorative design. The ethical approval was given by the ethical committee by the University of Witten-Herdecke.
All patients were supported either by the Repose® system or by small or large-celled alternate pressure systems. All available patients in one hospital and residents of eight nursing homes who met the inclusion criteria (pressure sore minimum grade 2, geriatric patients, or those with neurological illness or patients undergoing operations) were randomly allocated to the included products for a total period of nine months. Measurements, realised by a standardised protocol which considered preventive and therapeutic aspects of the measured systems, occurred over a maximum of 28 days per subject. The main parameters were: general wound healing, weekly changes in wounds, wound healing success according to support system.

Results

50 patients were included in the study. The study showed a clear superiority (p = 0.009) of Repose® compared to the small-cell support system regarding the wound healing tendency as well as the healing period. Repose® were in those parameters comparable to the large-cell systems (p = 0.212) in this study group. Patients were significantly more satisfied with the Repose® system that patients who were cared for using comparative systems (p<0.001 small-cell system and p = 0.024 large-cell system).

Conclusion

Repose® provides a highly effective system that can be used in multimodal fashion for both preventative and therapeutic purposes within the study group. Evidence was presented that the patients with wounds in the classically exposed body points at risk of pressure sores who were supported on the Repose® system showed an improved tendency to heal.

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GP0084_A79_01

Publication

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Repose | Mattress Overlay | Cushion | Foot Protector | Wedge

Evaluation | Prevention | Treatment

Pressure Ulcer Prevalence Audit: What are the benefits of doing it?

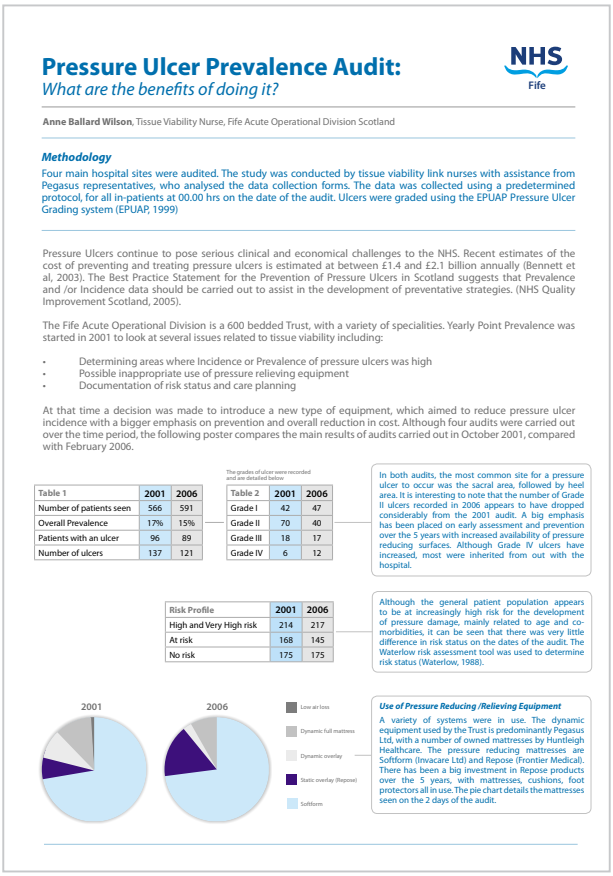
Anne Ballard Wilson, Tissue Viability Nurse, Fife Acute Operational Division Scotland

Four main hospital sites were audited. The study was conducted by tissue viability link nurses with assistance from Pegasus representatives, who analysed the data collection forms. The data was collected using a predetermined protocol, for all in-patients at 00.00 hrs on the date of the audit. Ulcers were graded using the EPUAP Pressure Ulcer Grading system (EPUAP, 1999)

A reduction in Pressure Ulcer Prevalence of 2% over the 5 years cannot be seen as significant, but it is encouraging that the prevalence is no higher. There has been a definite shift away from the use of dynamic systems within the Acute Hospital Division. Due to the increased availability of Repose mattresses, patients are being 'upgraded' more quickly.

In the past, nursing staff may have waited several days to obtain 'higher level equipment' with pressure areas already deteriorating.

Although cost impact has not been looked at within the scope of these audits, the Trust was spending in excess of 300,000 in 2001 on dynamic equipment. The budget for all pressure relieving equipment is now 62,000 per annum.



Pressure Ulcer Prevalence Audit:
What are the benefits of doing it?

NHS Fife

Anne Ballard Wilson, Tissue Viability Nurse, Fife Acute Operational Division Scotland

Methodology

Four main hospital sites were audited. The study was conducted by tissue viability link nurses with assistance from Pegasus representatives, who analysed the data collection forms. The data was collected using a predetermined protocol, for all in-patients at 00.00 hrs on the date of the audit. Ulcers were graded using the EPUAP Pressure Ulcer Grading system (EPUAP, 1999)

Pressure Ulcers continue to pose serious clinical and economical challenges to the NHS. Recent estimates of the cost of preventing and treating pressure ulcers is estimated at between £1.4 and £2.1 billion annually (Bennett et al, 2003). The Best Practice Statement for the Prevention of Pressure Ulcers in Scotland suggests that Prevalence and /or Incidence data should be carried out to assist in the development of preventative strategies. (NHS Quality Improvement Scotland, 2005).

The Fife Acute Operational Division is a 600 bedded Trust, with a variety of specialities. Yearly Point Prevalence was started in 2001 to look at several issues related to tissue viability including:

- Determining areas where Incidence or Prevalence of pressure ulcers was high
- Possible inappropriate use of pressure relieving equipment
- Documentation of risk status and care planning

At that time a decision was made to introduce a new type of equipment, which aimed to reduce pressure ulcer incidence with a bigger emphasis on prevention and overall reduction in cost. Although four audits were carried out over the time period, the following poster compares the main results of audits carried out in October 2001, compared with February 2006.

Table 1	2001	2006
Number of patients seen	566	591
Overall Prevalence	17%	15%
Patients with an ulcer	96	89
Number of ulcers	137	121

The grades of ulcer were recorded and are detailed below

Table 2	2001	2006
Grade I	42	47
Grade II	70	40
Grade III	18	17
Grade IV	6	12

In both audits, the most common site for a pressure ulcer to occur was the sacral area, followed by heel area. It is interesting to note that the number of Grade II ulcers recorded in 2006 appears to have dropped considerably from the 2001 audit. A big emphasis has been placed on early assessment and prevention over the 5 years with increased availability of pressure reducing surfaces. Although Grade IV ulcers have increased, most were inherited from out with the hospital.

Risk Profile	2001	2006
High and Very High risk	214	217
At risk	168	145
No risk	175	175

Although the general patient population appears to be at increasingly high risk for the development of pressure damage, mainly related to age and co-morbidities, it can be seen that there was very little difference in risk status on the dates of the audit. The Waterlow risk assessment tool was used to determine risk status (Waterlow, 1988).

2001 2006

Low air loss
Dynamic full mattress
Dynamic overlay
Static overlay (Repose)
Softform

Use of Pressure Reducing /Relieving Equipment

A variety of systems were in use. The dynamic equipment used by the Trust is predominantly Pegasus Ltd, with a number of owned mattresses by Huntleigh Healthcare. The pressure reducing mattresses are Softform (Invacare Ltd) and Repose (Frontier Medical). There has been a big investment in Repose products over the 5 years, with mattresses, cushions, foot protectors all in use. The pie chart details the mattresses seen on the 2 days of the audit.

Publication

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Repose | Mattress Overlay | Cushion | Foot Protector

Study | Prevention | Cost Efficiencies

Two clinical evaluations of the Repose system

Wounds UK, 2006, Vol 2, No. 3; 14–25

Ann MacFarlane, Sue Sayer

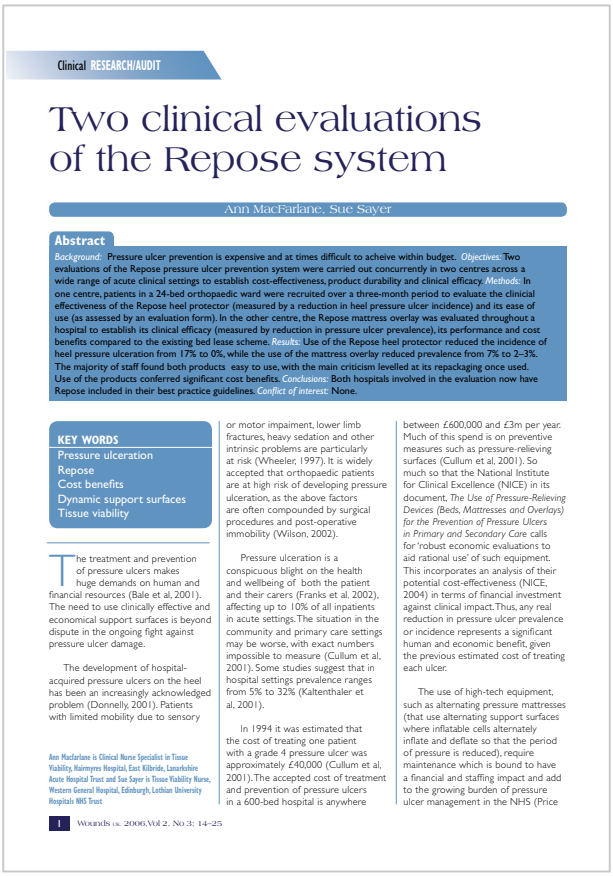
Background: Pressure ulcer prevention is expensive and at times difficult to acheive within budget.

Objectives: Two evaluations of the Repose pressure ulcer prevention system were carried out concurrently in two centres across a wide range of acute clinical settings to establish cost-effectiveness, product durability and clinical efficacy.

Methods: In one centre, patients in a 24-bed orthopaedic ward were recruited over a three-month period to evaluate the clinicial effectiveness of the Repose heel protector (measured by a reduction in heel pressure ulcer incidence) and its ease of use (as assessed by an evaluation form). In the other centre, the Repose mattress overlay was evaluated throughout a hospital to establish its clinical efficacy (measured by reduction in pressure ulcer prevalence), its performance and cost benefits compared to the existing bed lease scheme.

Results: Use of the Repose heel protector reduced the incidence of heel pressure ulceration from 17% to 0%, while the use of the mattress overlay reduced prevalence from 7% to 2–3%. The majority of staff found both products easy to use, with the main criticism levelled at its repackaging once used. Use of the products conferred significant cost benefits.

Conclusions: Both hospitals involved in the evaluation now have Repose included in their best practice guidelines.



Clinical RESEARCH/AUDIT

Two clinical evaluations of the Repose system

Ann MacFarlane, Sue Sayer

Abstract

Background: Pressure ulcer prevention is expensive and at times difficult to acheive within budget. *Objectives:* Two evaluations of the Repose pressure ulcer prevention system were carried out concurrently in two centres across a wide range of acute clinical settings to establish cost-effectiveness, product durability and clinical efficacy. *Methods:* In one centre, patients in a 24-bed orthopaedic ward were recruited over a three-month period to evaluate the clinicial effectiveness of the Repose heel protector (measured by a reduction in heel pressure ulcer incidence) and its ease of use (as assessed by an evaluation form). In the other centre, the Repose mattress overlay was evaluated throughout a hospital to establish its clinical efficacy (measured by reduction in pressure ulcer prevalence), its performance and cost benefits compared to the existing bed lease scheme. *Results:* Use of the Repose heel protector reduced the incidence of heel pressure ulceration from 17% to 0%, while the use of the mattress overlay reduced prevalence from 7% to 2–3%. The majority of staff found both products easy to use, with the main criticism levelled at its repackaging once used. Use of the products conferred significant cost benefits. *Conclusions:* Both hospitals involved in the evaluation now have Repose included in their best practice guidelines. *Conflict of interest:* None.

KEY WORDS
Pressure ulceration
Repose
Cost benefits
Dynamic support surfaces
Tissue viability

The treatment and prevention of pressure ulcers makes huge demands on human and financial resources (Bale et al, 2001). The need to use clinically effective and economical support surfaces is beyond dispute in the ongoing fight against pressure ulcer damage.

The development of hospital-acquired pressure ulcers on the heel has been an increasingly acknowledged problem (Donnelly, 2001). Patients with limited mobility due to sensory or motor impairment, lower limb fractures, heavy sedation and other intrinsic problems are particularly at risk (Wheeler, 1997). It is widely accepted that orthopaedic patients are at high risk of developing pressure ulceration, as the above factors are often compounded by surgical procedures and post-operative immobility (Wilson, 2002).

Pressure ulceration is a conspicuous blight on the health and wellbeing of both the patient and their carers (Franks et al, 2002), affecting up to 10% of all inpatients in acute settings. The situation in the community and primary care settings may be worse, with exact numbers impossible to measure (Cullum et al, 2001). Some studies suggest that in hospital settings prevalence ranges from 5% to 32% (Kaltenthaler et al, 2001).

In 1994 it was estimated that the cost of treating one patient with a grade 4 pressure ulcer was approximately £40,000 (Cullum et al, 2001). The accepted cost of treatment and prevention of pressure ulcers in a 600-bed hospital is anywhere between £600,000 and £3m per year. Much of this spend is on preventive measures such as pressure-relieving surfaces (Cullum et al, 2001). So much so that the National Institute for Clinical Excellence (NICE) in its document, *The Use of Pressure-Relieving Devices (Beds, Mattresses and Overlays) for the Prevention of Pressure Ulcers in Primary and Secondary Care* calls for 'robust economic evaluations to aid rational use' of such equipment. This incorporates an analysis of their potential cost-effectiveness (NICE, 2004) in terms of financial investment against clinical impact. Thus, any real reduction in pressure ulcer prevalence or incidence represents a significant human and economic benefit, given the previous estimated cost of treating each ulcer.

The use of high-tech equipment, such as alternating pressure mattresses (that use alternating support surfaces where inflatable cells alternately inflate and deflate so that the period of pressure is reduced), require maintenance which is bound to have a financial and staffing impact and add to the growing burden of pressure ulcer management in the NHS (Price

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Publication

Download this publication from the FMG website visit: https://bit.ly/3LHrQfR

Repose | Mattress Overlay | Foot Protector

Evaluation | Prevention | Cost Efficiencies | Acute | Durability

Repose: The new pressure ulcer management paradigm?

Wounds UK, Vol 3 Issue 4: December 2007

Lynne Watret, Clinical Nurse Specialist, Tissue Viability
Primary Care NHS Greater Glasgow and Clyde

This literature review focuses on an NHS development which appears to be challenging the use of traditional high-tech dynamic devices both in terms of clinical efficacy and cost effectiveness.

Health care professionals have a responsibility to ensure best use of resources.

This review suggests that there are sound reasons to examine the opportunities that the Repose product presents to provide patient comfort whilst challenging the paradigm that high-tech products are not necessarily the best solutions in pressure ulcer management.

Advertorial Literature Review | Lynne Watret

Repose:
The new pressure ulcer management paradigm?

Lynne Watret
Clinical Nurse Specialist, Tissue Viability
Primary Care NHS Greater Glasgow and Clyde

This literature review focuses on an NHS development which appears to be challenging the use of traditional high-tech dynamic devices both in terms of clinical efficacy and cost effectiveness.

According to certain estimates, the NHS spends between £2.4 and £3.1 billion each year managing pressure ulcers and associated conditions.[1] Typically, a NHS trust may spend between £60,000 and £300,000 annually on the provision of pressure relieving systems.[2] During the 1990's it was apparent to health care organisations that there was significant expenditure and growing usage of specialised pressure relieving systems. The challenge to clinicians was to demonstrate that cost effective outcomes were being achieved.

A paradigm shift

In 1995, occupational therapists at the University Hospital of Wales developed a static-air pressure redistribution mattress overlay with the purpose of replicating the performance of traditional dynamic mattress replacement systems, at a fraction of the cost. The development was then commercialised and marketed as the Repose mattress.

At the same time the Effective Healthcare Bulletin recommended the use of randomised controlled trials accompanied by economic analysis to provide reliable evidence on the relative cost-effectiveness of different intervention strategies. [3]

In a randomised controlled trial, Price et al (1999) compared the performance of the Repose favorably against the Nimbus Mattress in a study of patients at high-risk of developing pressure ulcers. The authors concluded "It is worth considering the use of alternatives with a lower unit cost. In this study no statistically significant difference was found between the low pressure overlay system (Repose) and the dynamic support system (Nimbus). The (Repose) appears to offer a similar level of benefit in preventing the development of pressure sores and merits further investigation due to the potential for major cost reduction". [4]

Subsequently a NICE commissioned report by the National Collaborating Centre for Nursing & Supportive Care (2003) stated "where appropriate, consideration should be given to selecting lower-cost devices". [5]

Further supporting evidence continues to be required to demonstrate significant results in comparisons between product as noted in the current EPUAP Pressure Ulcer Treatment Guidelines (2006) which states that "Information on the cost effectiveness of any of these devices is scarce".[6]

Use of Repose in a variety of health care settings

The Repose mattress is used in both primary and secondary care and can follow the patient throughout their journey of care. Hampton (2000) demonstrated the cost effectiveness of using Repose to facilitate discharge from hospital of patients at continued risk of pressure damage. [7]

Patient comfort

A silent and unobtrusive system located at home allows the patient to sleep with their partner and provides major positive benefits to the patient's quality of life. Research by Price et al (2003) demonstrated that Repose aids patient comfort. "In this pilot study of a new mattress overlay, statistically significant improvements in sleep and pain were noted over a four-week period". [08]

Repose and clinical outcomes

In a randomised trial involving 50 patients, Osterbrink (2005) concluded "Repose provides a highly effective system that can be used … for both preventative and therapeutic purposes. Evidence was presented that patients with wounds in the classically exposed body points at risk of pressure sores who were supported on the Repose system showed an improved tendency to heal." [9]

A study by MacFarlane and Sayer (2006) in an acute setting concluded "The use of the Repose mattress overlays resulted in a dramatic reduction in costs, while the prevalence of pressure ulcers and hospital-acquired pressure ulcers dropped by 4-5%". [10]

This finding was subsequently echoed and quantified in another acute setting where Ballard Wilson (2006) demonstrated substantial cost savings gained by the paradigm shift when she concluded "There has been a definite shift away from the use of dynamic systems. Due to the increased availability of Repose mattresses, patients are being 'upgraded' more quickly. ... Although cost impact has not been looked at, the Trust was spending in excess of £300,000 per year on dynamic systems. The budget for all pressure relieving equipment is now £62,000 per annum. [2]

Summary

Health care professionals have a responsibility to ensure best use of resources.

This review suggests that there are sound reasons to examine the opportunities that the Repose product presents to provide patient comfort whilst challenging the paradigm that high tech products are not necessarily the best solutions in pressure ulcer management.

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Publication

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Repose | Mattress Overlay

Literature Review | Prevention | Treatment | Cost Efficiencies | Patient Comfort | Sleep | Chronic Pain

Cost-effective pressure ulcer prevention: the paradigm shift?

Nursing in Practice advertorial published in Volume 3, Issue 4: December 2007

Lynne Watret Clinical Nurse Specialist, Tissue Viability, Primary Care NHS Greater Glasgow and Clyde

Repose static air pressure redistribution mattress overlay is an NHS invention. It has a low unit cost and may be viewed as a valuable inclusion in the pressure ulcer equipment armoury. The Repose system has the added advantage of being lightweight and low profile, which means it does not significantly alter the height of the bed for ease of moving and handling. It can also be used on a double bed and allows the patient to sleep with their partner and hence normalise life as much as possible.

Providing cost-effective solutions for the prevention and treatment of pressure ulcers is a challenge for health and social care professionals. The Repose range therefore represents an important addition to the presure ulcer equipment armoury. The Repose range can improve quality of care and help in chronic disease pain management.

Nursing in Practice November/December 2007 Advertisement feature 29

Cost-effective pressure ulcer prevention: the paradigm shift?

The key requirement of any healthcare delivery system is that services are delivered efficiently and effectively and that the total cost is kept under control.[1] Around 400,000 people develop a new pressure ulcer annually in the UK, costing the health service an estimated £1.8 - £2.6bn per annum[2]

The Repose static air pressure redistribution mattress overlay is an NHS invention (see Figure 1). It has a low unit cost and may be viewed as a valuable inclusion in the pressure ulcer equipment armoury. The Repose system has the added advantage of being lightweight and low profile, which means it does not significantly alter the height of the bed for ease of moving and handling. It can also be used on a double bed and allows the patient to sleep with their partner and hence normalise life as much as possible.

Cost-effectiveness and positive clinical outcomes

The Repose mattress can provide a cost-effective alternative to high-tech motorised dynamic systems in the prevention of pressure ulcers. Research by MacFarlane and Sayer showed that "[...] the use of Repose mattress overlays resulted in dramatic reduction in cost, while the prevalence of pressure ulcers and hospital-acquired pressure ulcers dropped by 4-5%."[3]

In a randomised trial involving 50 patients Osterbrink concluded: "Repose provides a highly effective system that can be used [...] for both preventive and therapeutic purposes."[4]

Heels are another common area of ulceration. The Repose range includes heel protectors that provide pressure relief. These are of particular value in vulnerable older patients and those with compromised perfusion or lack of sensation, such as diabetic patients who are at increased risk of developing heel lesions. Bale et al noted that although further research was required the foot protector demonstrated positive outcomes in improving the condition of damaged skin over a period of time in vulnerable patients.[5] MacFarlane and Sayer subsequently confirmed this.[3]

Improved quality of life

A system that is silent and unobtrusive provides major benefits to the patient's quality of life. A pilot study focusing on the sleep patterns of patients with chronic illness demonstrated that Repose significantly improved sleep patterns (mean time from 3.8 hours to 6.4 hours in four weeks) and self-reported pain.[6] The Repose foot protector has also been shown to reduce discomfort in patients with painful conditions.[5]

Seating

The Repose seat cushion provides a low-profile pressure-redistributing surface to complement the mattress when the patient is mobilising. The Repose cushion has the added advantage of maintaining the dimensions and height of the seat. Cushions of increased depth will alter the height of the chair, and may increase the risk of shearing force damage due to the patient sliding down the seat if the femur is not at right angles to the floor.

Research has shown that the Repose cushion was "significantly better than the other cushions at reducing the high pressure when slouching or sliding down."[7]

Suitable for all healthcare settings

The Repose system can be used across all health and social care settings indeed. Continuity of care may be enhanced if the system is utilised throughout the patients' journey of care. Hampton demonstrated the cost-effectiveness of using Repose to facilitate discharge from hospital of patients at continued risk of pressure damage.[8] A recent examination of usage in one large loan store demonstrated that the average life of a Repose mattress within the community is 19 months.[9] This highlights the value of the system at the primary/secondary care interface.

Conclusion

A NICE commissioned report by the National Collaborating Centre for Nursing and Supportive Care stated "where appropriate, consideration should be given to selecting lower-cost devices."[10] This was further reinforced by a Scottish Executive Discussion Document which stated: "we will become more dependent on efficiency savings and rigorous prioritisation".[11] Providing cost-effective solutions for the prevention and treatment of pressure ulcers is a challenge for health and social care professionals. The Repose range therefore represents an important addition to the pressure ulcer equipment armoury. The Repose range can improve quality of care and help in chronic disease pain management.

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Fig 1. Repose product set

Publication

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Repose | Mattress Overlay | Foot Protector | Cushion

Advertorial | Prevention | Treatment | Cost Efficiencies | Quality of Life | Sleep | Chronic Pain | Acute | Community | Loan Store

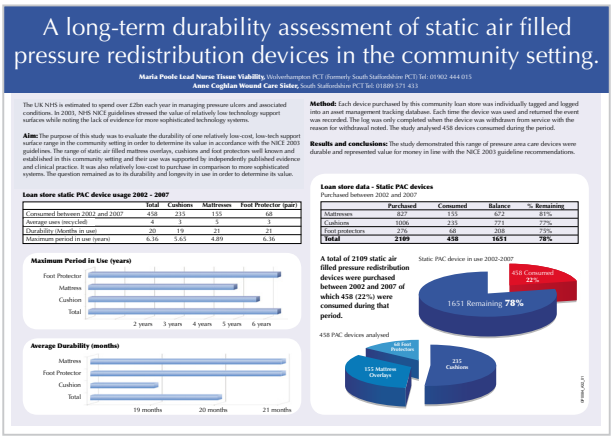
A long-term durability assessment of static air filled pressure redistribution devices in the community setting.

Maria Poole Lead Nurse Tissue Viability,
Wolverhampton PCT

Anne Coghlan Wound Care Sister,
South Staffordshire

The purpose of this study was to evaluate the durability of one relatively low-cost, low-tech support surface range in the community setting in order to determine its value in accordance with the NICE 2003 guidelines. The range of static air filled mattress overlays, cushions and foot protectors well known and established in this community setting and their use was supported by inpendently published evidence and clinical practice. It was also relatively low cost to purchase in comparison to more sophisticated systems. The question remained as to its durability and longevity in use in order to determine its value.

The study demonstrated this range of pressure area care devices were durable and represented value for money in line with the NICE guideline recommendations.



Publication

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Repose | Mattress Overlay | Foot Protector | Cushion

Evaluation | Prevention | Treatment | Cost Efficiencies | Durability | Community | Loan Store

Reduced heel pressure damage when using the Repose Foot Protector

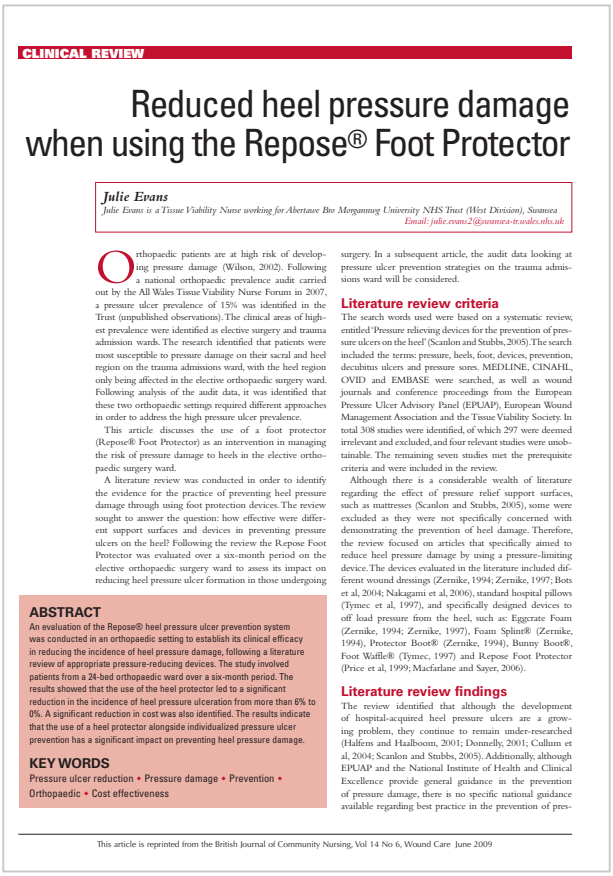
The British Journal of Community Nursing, Vol 14 No 6,
Wound Care June 2009

Julie Evans is a Tissue Viability Nurse
Abertawe Bro Morgannwg University NHS Trust (West Division),
Swansea

An evaluation of the Repose heel pressure ulcer prevention system was conducted in an orthopaedic setting to establish its clinical efficacy in reducing the incidence of heel pressure damage, following a literature review of appropriate pressure-reducing devices.

The study involved patients from a 24-bed orthopaedic ward over a six-month period. The results showed that the use of the heel protector led to a significant reduction in the incidence of heel pressure ulceration from more than 6% to 0%. A significant reduction in cost was also identified.

The results indicate that the use of a heel protector alongside individualized pressure ulcer prevention has a significant impact on preventing heel pressure damage.



CLINICAL REVIEW

Reduced heel pressure damage when using the Repose® Foot Protector

Julie Evans
Julie Evans is a Tissue Viability Nurse working for Abertawe Bro Morgannwg University NHS Trust (West Division), Swansea
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Orthopaedic patients are at high risk of developing pressure damage (Wilson, 2002). Following a national orthopaedic prevalence audit carried out by the All Wales Tissue Viability Nurse Forum in 2007, a pressure ulcer prevalence of 15% was identified in the Trust (unpublished observations). The clinical areas of highest prevalence were identified as elective surgery and trauma admission wards. The research identified that patients were most susceptible to pressure damage on their sacral and heel region on the trauma admissions ward, with the heel region only being affected in the elective orthopaedic surgery ward. Following analysis of the audit data, it was identified that these two orthopaedic settings required different approaches in order to address the high pressure ulcer prevalence.

This article discusses the use of a foot protector (Repose® Foot Protector) as an intervention in managing the risk of pressure damage to heels in the elective orthopaedic surgery ward.

A literature review was conducted in order to identify the evidence for the practice of preventing heel pressure damage through using foot protection devices. The review sought to answer the question: how effective were different support surfaces and devices in preventing pressure ulcers on the heel? Following the review the Repose Foot Protector was evaluated over a six-month period on the elective orthopaedic surgery ward to assess its impact on reducing heel pressure ulcer formation in those undergoing surgery. In a subsequent article, the audit data looking at pressure ulcer prevention strategies on the trauma admissions ward will be considered.

ABSTRACT
An evaluation of the Repose® heel pressure ulcer prevention system was conducted in an orthopaedic setting to establish its clinical efficacy in reducing the incidence of heel pressure damage, following a literature review of appropriate pressure-reducing devices. The study involved patients from a 24-bed orthopaedic ward over a six-month period. The results showed that the use of the heel protector led to a significant reduction in the incidence of heel pressure ulceration from more than 6% to 0%. A significant reduction in cost was also identified. The results indicate that the use of a heel protector alongside individualized pressure ulcer prevention has a significant impact on preventing heel pressure damage.

KEY WORDS
Pressure ulcer reduction • Pressure damage • Prevention • Orthopaedic • Cost effectiveness

Literature review criteria
The search words used were based on a systematic review, entitled 'Pressure relieving devices for the prevention of pressure ulcers on the heel' (Scanlon and Stubbs, 2005). The search included the terms: pressure, heels, foot, devices, prevention, decubitus ulcers and pressure sores. MEDLINE, CINAHL, OVID and EMBASE were searched, as well as wound journals and conference proceedings from the European Pressure Ulcer Advisory Panel (EPUAP), European Wound Management Association and the Tissue Viability Society. In total 308 studies were identified, of which 297 were deemed irrelevant and excluded, and four relevant studies were unobtainable. The remaining seven studies met the prerequisite criteria and were included in the review.

Although there is a considerable wealth of literature regarding the effect of pressure relief support surfaces, such as mattresses (Scanlon and Stubbs, 2005), some were excluded as they were not specifically concerned with demonstrating the prevention of heel damage. Therefore, the review focused on articles that specifically aimed to reduce heel pressure damage by using a pressure-limiting device. The devices evaluated in the literature included different wound dressings (Zernike, 1994; Zernike, 1997; Bots et al, 2004; Nakagami et al, 2006), standard hospital pillows (Tymec et al, 1997), and specifically designed devices to off load pressure from the heel, such as: Eggcrate Foam (Zernike, 1994; Zernike, 1997), Foam Splint® (Zernike, 1994), Protector Boot® (Zernike, 1994), Bunny Boot®, Foot Waffle® (Tymec, 1997) and Repose Foot Protector (Price et al, 1999; Macfarlane and Sayer, 2006).

Literature review findings
The review identified that although the development of hospital-acquired heel pressure ulcers are a growing problem, they continue to remain under-researched (Halfens and Haalboom, 2001; Donnelly, 2001; Cullum et al, 2004; Scanlon and Stubbs, 2005). Additionally, although EPUAP and the National Institute of Health and Clinical Excellence provide general guidance in the prevention of pressure damage, there is no specific national guidance available regarding best practice in the prevention of pres-

This article is reprinted from the British Journal of Community Nursing, Vol 14 No 6, Wound Care June 2009

Publication

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Repose | Foot Protector | Evaluation | Prevention | Treatment | Cost Efficiencies

Pressure Relief With Visco-Elastic Foam or With Combined Static Air Overlay? A Prospective, Crossover Randomized Clinical Trial in a Dutch Nursing Home

Wounds UK Vol. 25, No. 10 October 2013

Martin van Leen, MD; Prof Steven Hovius, MD, PhD; Ruud Halfens, PhD; Jacques Neyens, PT, PhD3,4; Prof Jos Schols, MD, PhD

Objective: Evidence of the best mattress for preventing pressure ulcers is not conclusive. In a single center, prospective, crossover trial on pressure ulcer incidence in nursing home residents, a static air overlay mattress, without a pump, on top of a visco-elastic foam mattress was compared with a visco-elastic foam mattress alone. **Methods:** The study was performed using a randomized crossover design. Forty-one patients with a score of 19 or lower on the Braden scale, but with no pressure ulcer at the start, were divided into 2 groups; 21 patients received a visco-elastic foam mattress (control group) and 20 patients a static air overlay on top of a visco-elastic foam mattress (intervention group) for a period of 6 months. In the second (crossover) period of 6 months, 19 patients partici-pated in each group. Patients were checked weekly and, only when signs of development of a pressure ulcer were present was treatment altered to reposition patients according to the nursing home pressure ulcer protocol. No statistically significant differences were noted between the 2 groups with regard to age, gender, or Braden scale score.

Conclusions: In this small study, static air overlay mattresses provided a better prevention than visco-elastic foam mattresses alone (5.2% vs 22.2%). The Braden scores of the patients in both groups did not change during the 6-month test. The decision to use repositioning only when there were signs of a pressure ulcer is acceptable when a static air overlay is in position. The 22.2% incidence of pressure ulcers in the foam group, however, may stress the need to continue repositioning when using this type of mattress.

ORIGINAL RESEARCH

Pressure Relief With Visco-Elastic Foam or With Combined Static Air Overlay? A Prospective, Crossover Randomized Clinical Trial in a Dutch Nursing Home

Martin van Leen, MD[1]; Prof Steven Hovius, MD, PhD[2]; Ruud Halfens, PhD[3]; Jacques Neyens, PT, PhD[3,4]; Prof Jos Schols, MD, PhD[3]

WOUNDS 2013;25(10):287-292

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Disclosure: The authors report no financial or other conflicts of interest.

Abstract: *Objective.* Evidence of the best mattress for preventing pressure ulcers is not conclusive. In a single center, prospective, crossover trial on pressure ulcer incidence in nursing home residents, a static air overlay mattress, without a pump, on top of a visco-elastic foam mattress was compared with a visco-elastic foam mattress alone. *Methods.* The study was performed using a randomized crossover design. Forty-one patients with a score of 19 or lower on the Braden scale, but with no pressure ulcer at the start, were divided into 2 groups; 21 patients received a visco-elastic foam mattress (control group) and 20 patients a static air overlay on top of a visco-elastic foam mattress (intervention group) for a period of 6 months. In the second (crossover) period of 6 months, 19 patients participated in each group. Patients were checked weekly and, only when signs of development of a pressure ulcer were present was treatment altered to reposition patients according to the nursing home pressure ulcer protocol. No statistically significant differences were noted between the 2 groups with regard to age, gender, or Braden scale score. *Results.* Of 41 patients, 3 died and were unable to participate in the crossover period, 8 patients (22.2%) developed a category 2 or higher pressure ulcer on a visco-elastic foam mattress (control group) and 2 (5.2%) on a static air mattress (intervention group)($P = 0.087$). There was a difference regarding pressure ulcer incidence between patients with a very low Braden score between 6 and 12, and patients with a mean score between 13-19. Out of 8 patients, in the 2(25%) who developed a pressure ulcer on a foam mattress, the ulcers showed no signs of healing. In the static air group all pressure ulcers healed by normal treatment according to a standardized pressure ulcer treatment protocol. *Conclusions.* In this small study, static air overlay mattresses provided a better prevention than visco-elastic foam mattresses alone (5.2% vs 22.2%). The Braden scores of the patients in both groups did not change during the 6-month test. The decision to use repositioning only when there were signs of a pressure ulcer is acceptable when a static air overlay is in position. The 22.2% incidence of pressure ulcers in the foam group, however, may stress the need to continue repositioning when using this type of mattress.

Key words: prevention, pressure ulcer, visco-elastic foam, static air overlay

Publication

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Repose | Mattress Overlay

Study | Prevention | Treatment | Static Air | Reactive Air | Visco-elastic Foam

Pressure Relief for Heels - An Effective Innovation

Melhuish JM, Bethaves T*, Williams R*, Harding KG. Wound Healing Research Unit, University of Wales College of Medicine,
Heath Park, Cardiff, UK. *University of Glamorgan, School of Electronics, Pontypridd, UK.

Protecting the heels of patients who have to remain supine for long time periods is difficult, the heel support surface having been demonstrated as a zone of high interface pressure, resulting in pressure sores of all grades presenting at the heel.

The aim to investigate the interface pressure distribution across a new heel pressure reduction system.

In Interface pressure readings for the Galtec sensors demonstrated pressures on the hospital mattress for five consecutive measurements were, heel *(115-300+)mmHg and the maximum pressure range for five consecutive measurements from the other two sensors was **(0-30) mmHg. For the foot protector placed on the mattress the heel pressure was reduced to 0 (0-0) mmHg, complete off-loading being demonstrated, with no major increases seen at the other two locations on the lower leg **(0-50) mmHg.

Repose®

Pressure Relief For Heels:
An Effective Innovation.

Melhuish JM, Bethaves T*, Williams R*, Harding KG. Wound Healing Research Unit, University of Wales College of Medicine, Heath Park, Cardiff, UK. *University of Glamorgan, School of Electronics, Pontypridd, UK.

Introduction
Protecting the heels of patients who have to remain supine for long time periods is difficult, the heel support surface having been demonstrated as a zone of high interface pressure, resulting in pressure sores of all grades presenting at the heel.

Aim
To investigate the interface pressure distribution across a new heel pressure reduction system.

Method
Four volunteers were asked to rest their leg on a normal hospital mattress and a new foot protector system (Repose Frontier Therapeutics) while supine. Interface pressure measurements were taken in twelve locations (Talley Oxford Pressure Monitor Fig 1) and three locations (Galtec Strain Gauge Fig 2) on the lower leg using two different interface pressure measurement systems. Dark field photography was used to examine the extent of heel contact (Fig 3).

Fig 1. Position of Talley Sensors.
Twelve Talley air filled sensors were applied to the lower leg of the volunteers in the position illustrated below.
Calibration curves for Oxford Talley sensors.

Fig 2. Position of Galtec Sensors.
Three 13mm strain gauge sensors were applied to the lower leg of the volunteers in the positions illustrated below.
Calibration curves for Galtec sensors.

Publication

Download this publication from the FMG website visit: https://bit.ly/3u45e2V

Repose | Foot Protector

Investigation | Prevention | Treatment | Off-loading

The Evaluation of a Prototype Handling Device to assist with Horizontal Lateral Transfers

Mike Fray and Sue Hignett Healthcare Ergonomics and Patient Safety Unit, Loughborough University, UK

A novel combination of existing technologies were used to design a prototype handling device to assist with the horizontal lateral transfer of patients. The development of the device suggested that there would be savings for both time and effort. A detailed ergonomics evaluation was conducted to evaluate the expected benefits. Experienced patient handling advisors carried out a comparison trial using three other frequently used lateral transfer devices.

Data were collected on the handling methods used; the patient experience; the user experience; and the forces required to complete the transfers.

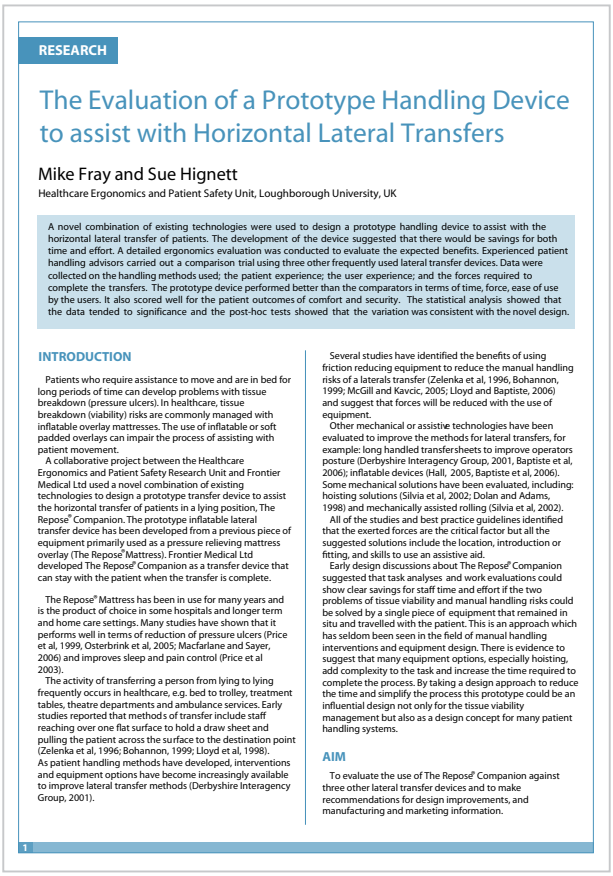
The prototype device performed better than the comparators in terms of time, force, ease of use by the users. It also scored well for the patient outcomes of comfort and security.

The statistical analysis showed that the data tended to significance and the post-hoc tests showed that the variation was consistent with the novel design.

The conclusion of this study shows that the prototype Repose Companion was very successful in reducing time, effort and potential error for the users whilst giving high scores for comfort and security for the 'patients'.

It can also be seen that the combination of different assistive technologies and the appropriate work evaluation methods can result in a benefit to users and patients in a health care setting.

This combination approach may lead to other opportunities in future patient handling solutions e.g. wearable hoist attachments, interchangeable combinations of bed and trolley.



RESEARCH

The Evaluation of a Prototype Handling Device to assist with Horizontal Lateral Transfers

Mike Fray and Sue Hignett

Healthcare Ergonomics and Patient Safety Unit, Loughborough University, UK

A novel combination of existing technologies were used to design a prototype handling device to assist with the horizontal lateral transfer of patients. The development of the device suggested that there would be savings for both time and effort. A detailed ergonomics evaluation was conducted to evaluate the expected benefits. Experienced patient handling advisors carried out a comparison trial using three other frequently used lateral transfer devices. Data were collected on the handling methods used; the patient experience; the user experience; and the forces required to complete the transfers. The prototype device performed better than the comparators in terms of time, force, ease of use by the users. It also scored well for the patient outcomes of comfort and security. The statistical analysis showed that the data tended to significance and the post-hoc tests showed that the variation was consistent with the novel design.

INTRODUCTION

Patients who require assistance to move and are in bed for long periods of time can develop problems with tissue breakdown (pressure ulcers). In healthcare, tissue breakdown (viability) risks are commonly managed with inflatable overlay mattresses. The use of inflatable or soft padded overlays can impair the process of assisting with patient movement.

A collaborative project between the Healthcare Ergonomics and Patient Safety Research Unit and Frontier Medical Ltd used a novel combination of existing technologies to design a prototype transfer device to assist the horizontal transfer of patients in a lying position, The Repose® Companion. The prototype inflatable lateral transfer device has been developed from a previous piece of equipment primarily used as a pressure relieving mattress overlay (The Repose® Mattress). Frontier Medical Ltd developed The Repose® Companion as a transfer device that can stay with the patient when the transfer is complete.

The Repose® Mattress has been in use for many years and is the product of choice in some hospitals and longer term and home care settings. Many studies have shown that it performs well in terms of reduction of pressure ulcers (Price et al, 1999, Osterbrink et al, 2005; Macfarlane and Sayer, 2006) and improves sleep and pain control (Price et al 2003).

The activity of transferring a person from lying to lying frequently occurs in healthcare, e.g. bed to trolley, treatment tables, theatre departments and ambulance services. Early studies reported that methods of transfer include staff reaching over one flat surface to hold a draw sheet and pulling the patient across the surface to the destination point (Zelenka et al, 1996; Bohannon, 1999; Lloyd et al, 1998). As patient handling methods have developed, interventions and equipment options have become increasingly available to improve lateral transfer methods (Derbyshire Interagency Group, 2001).

Several studies have identified the benefits of using friction reducing equipment to reduce the manual handling risks of a laterals transfer (Zelenka et al, 1996, Bohannon, 1999; McGill and Kavcic, 2005; Lloyd and Baptiste, 2006) and suggest that forces will be reduced with the use of equipment.

Other mechanical or assistive technologies have been evaluated to improve the methods for lateral transfers, for example: long handled transfersheets to improve operators posture (Derbyshire Interagency Group, 2001, Baptiste et al, 2006); inflatable devices (Hall, 2005, Baptiste et al, 2006). Some mechanical solutions have been evaluated, including: hoisting solutions (Silvia et al, 2002; Dolan and Adams, 1998) and mechanically assisted rolling (Silvia et al, 2002).

All of the studies and best practice guidelines identified that the exerted forces are the critical factor but all the suggested solutions include the location, introduction or fitting, and skills to use an assistive aid.

Early design discussions about The Repose® Companion suggested that task analyses and work evaluations could show clear savings for staff time and effort if the two problems of tissue viability and manual handling risks could be solved by a single piece of equipment that remained in situ and travelled with the patient. This is an approach which has seldom been seen in the field of manual handling interventions and equipment design. There is evidence to suggest that many equipment options, especially hoisting, add complexity to the task and increase the time required to complete the process. By taking a design approach to reduce the time and simplify the process this prototype could be an influential design not only for the tissue viability management but also as a design concept for many patient handling systems.

AIM

To evaluate the use of The Repose® Companion against three other lateral transfer devices and to make recommendations for design improvements, and manufacturing and marketing information.

1

Publication

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Repose Companion

Evaluation Prevention Treatment Lateral Transfers Patient Transfers Patient Comfort Acute

A review of evidence for use of the Repose product range

Wounds UK | Vol 11 | No 4 | 2015

Samantha Holloway, Senior Lecturer,
Cardiff University School of Medicine, Cardiff

The prevention and treatment of individuals with pressure ulcers requires the implementation of a range of strategies to include assessment of risk factors and the provision of appropriate interventions. Clinical approaches should comprise repositioning of the patient and also the use of pressure redistributing devices. Currently there are a range of support surfaces available, this review focuses on the currently available evidence for the use of the Repose mattress overlay and foot protector device.

The outcome of the review identified that there is a breadth of clinically relevant research available to demonstrate the utilisation and effectiveness of these specific products.

The evidence to support the use of the Repose range of products spans almost two decades and highlights the versatility of this static air overlay system with regards to the prevention and treatment of pressure ulcers. While there is often a focus on higher levels of evidence to support clinical practice, i.e. systematic reviews and meta-analysis, the strength of the research base to demonstrate the effectiveness of the Repose range of products lies in the provision of clinically-relevant forms of inquiry

PRODUCT EVALUATION

A review of evidence for use of the Repose® product range

KEY WORDS
- Heel protector
- Mattress
- Patient comfort
- Pressure ulcers
- Repose product range

The prevention and treatment of individuals with pressure ulcers requires the implementation of a range of strategies to include assessment of risk factors and the provision of appropriate interventions. Clinical approaches should comprise repositioning of the patient and also the use of pressure redistributing devices. Currently there are a range of support surfaces available, this review focuses on the currently available evidence for the use of the Repose mattress overlay and foot protector device. The outcome of the review identified that there is a breadth of clinically relevant research available to demonstrate the utilisation and effectiveness of these specific products.

Despite increasing knowledge regarding the aetiology of pressure ulcers (National Pressure Ulcer Advisory Panel, European Pressure Ulcer Advisory Panel (EPUAP), Pan Pacific Pressure Injury Alliance, 2014) clinicians are still seeking effective preventative strategies to avoid tissue breakdown. Of equal importance is the requirement for cost-effective solutions for the prevention and treatment of pressure ulcers (Palfreyman and Stone, 2015). Approaches to prevention include early assessment of risk factors and the provision of appropriate interventions, such repositioning and support surfaces (including mattresses and cushions) (Chou et al, 2013).

Current guidance uses the term 'pressure redistribution' when describing mattresses, overlays, cushions and seating (National Institute for Health and Care Excellence, 2014), with manufacturers of such products proposing that these systems reduce the pressure exerted at the interface between the patient and the supporting surface. The purpose of this literature review is to provide a compendium of available research evidence to support the use of one such range of pressure-redistributing devices:
- Repose, which is produced by Frontier Therapeutics Limited.

HOW REPOSE WORKS

The Repose range of products is manufactured from a thermoplastic polyurethane film which is a multi-stretch, moisture vapour-permeable material that provides a non-allergenic, soft and smooth user interface which in an experimental situation has been shown to minimise friction and reduce shear (Wang et al 2015). It is comprised of a single air cell and is described as a reactive mattress, which means that small movements result in interface pressure being equalised across the entire surface. Repose is not suitable for persons weighing in excess of 139 kg or with unstable fractures, or where the person cannot be fully supported by the Repose product. *Box 1* summarises the range of products currently available.

REVIEW OF THE EVIDENCE

The Repose range has undergone significant advances over the past 18 years, with the original Repose mattress overlay being developed as a joint commercial initiative between the University Hospital of Wales and the Frontier Medical Group based in South Wales. The evidence base for the efficacy of the range of Repose products is increasing and, according to recent company estimates, its products have been used in the

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1 Wounds UK | Vol 11 | No 4 | 2015

Publication

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Repose | Foot Protector | Mattress Overlay | Literature Review | Prevention | Treatment

Static Air Support Surfaces to Prevent Pressure Injuries
A Multicenter Cohort Study in Belgian Nursing Homes

J Wound Ostomy Continence Nurs. 2016;43(4):375-378

Brecht Serraes, MSc, RN, Intensive Care Unit, AZ Nikolaas, Sint-Niklaas, Belgium.
Dimitri Beeckman, PhD, RN , Department of Public Health, University Centre for Nursing and Midwifery, Ghent University, Ghent, Belgium.

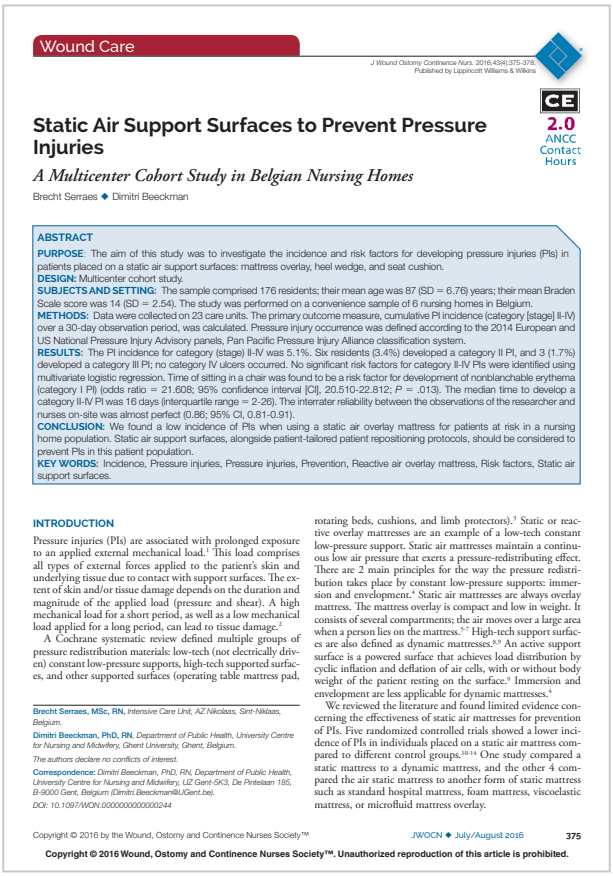
PURPOSE: The aim of this study was to investigate the incidence and risk factors for developing pressure injuries (PIs) in patients placed on a static air support surfaces: mattress overlay, heel wedge, and seat cushion.

DESIGN: Multicenter cohort study.

SUBJECTS AND SETTING: The sample comprised 176 residents; their mean age was 87 (SD = 6.76) years; their mean Braden Scale score was 14 (SD = 2.54). The study was performed on a convenience sample of 6 nursing homes in Belgium.

METHODS: Data were collected on 23 care units. The primary outcome measure, cumulative PI incidence (category [stage] II-IV) over a 30-day observation period, was calculated. Pressure injury occurrence was defined according to the 2014 European and US National Pressure Injury Advisory panels, Pan Pacific Pressure Injury Alliance classifi cation system.

CONCLUSION: We found a low incidence of PIs when using a static air overlay mattress for patients at risk in a nursing home population. Static air support surfaces, alongside patient-tailored patient repositioning protocols, should be considered to prevent PIs in this patient population.



Wound Care

J Wound Ostomy Continence Nurs. 2016;43(4):375-378.
Published by Lippincott Williams & Wilkins

CE 2.0 ANCC Contact Hours

Static Air Support Surfaces to Prevent Pressure Injuries

A Multicenter Cohort Study in Belgian Nursing Homes

Brecht Serraes ◆ Dimitri Beeckman

ABSTRACT

PURPOSE: The aim of this study was to investigate the incidence and risk factors for developing pressure injuries (PIs) in patients placed on a static air support surfaces: mattress overlay, heel wedge, and seat cushion.
DESIGN: Multicenter cohort study.
SUBJECTS AND SETTING: The sample comprised 176 residents; their mean age was 87 (SD = 6.76) years; their mean Braden Scale score was 14 (SD = 2.54). The study was performed on a convenience sample of 6 nursing homes in Belgium.
METHODS: Data were collected on 23 care units. The primary outcome measure, cumulative PI incidence (category [stage] II-IV) over a 30-day observation period, was calculated. Pressure injury occurrence was defined according to the 2014 European and US National Pressure Injury Advisory panels, Pan Pacific Pressure Injury Alliance classification system.
RESULTS: The PI incidence for category (stage) II-IV was 5.1%. Six residents (3.4%) developed a category II PI, and 3 (1.7%) developed a category III PI; no category IV ulcers occurred. No significant risk factors for category II-IV PIs were identified using multivariate logistic regression. Time of sitting in a chair was found to be a risk factor for development of nonblanchable erythema (category I PI) (odds ratio = 21.608; 95% confidence interval [CI], 20.510-22.812; P = .013). The median time to develop a category II-IV PI was 16 days (interquartile range = 2-26). The interrater reliability between the observations of the researcher and nurses on-site was almost perfect (0.86; 95% CI, 0.81-0.91).
CONCLUSION: We found a low incidence of PIs when using a static air overlay mattress for patients at risk in a nursing home population. Static air support surfaces, alongside patient-tailored patient repositioning protocols, should be considered to prevent PIs in this patient population.
KEY WORDS: Incidence, Pressure injuries, Pressure injuries, Prevention, Reactive air overlay mattress, Risk factors, Static air support surfaces.

INTRODUCTION

Pressure injuries (PIs) are associated with prolonged exposure to an applied external mechanical load.[1] This load comprises all types of external forces applied to the patient's skin and underlying tissue due to contact with support surfaces. The extent of skin and/or tissue damage depends on the duration and magnitude of the applied load (pressure and shear). A high mechanical load for a long period, as well as a low mechanical load applied for a long period, can lead to tissue damage.[2]

A Cochrane systematic review defined multiple groups of pressure redistribution materials: low-tech (not electrically driven) constant low-pressure supports, high-tech supported surfaces, and other supported surfaces (operating table mattress pad, rotating beds, cushions, and limb protectors).[3] Static or reactive overlay mattresses are an example of a low-tech constant low-pressure support. Static air mattresses maintain a continuous low air pressure that exerts a pressure-redistributing effect. There are 2 main principles for the way the pressure redistribution takes place by constant low-pressure supports: immersion and envelopment.[4] Static air mattresses are always overlay mattress. The mattress overlay is compact and low in weight. It consists of several compartments; the air moves over a large area when a person lies on the mattress.[5-7] High-tech support surfaces are also defined as dynamic mattresses.[8,9] An active support surface is a powered surface that achieves load distribution by cyclic inflation and deflation of air cells, with or without body weight of the patient resting on the surface.[9] Immersion and envelopment are less applicable for dynamic mattresses.[4]

We reviewed the literature and found limited evidence concerning the effectiveness of static air mattresses for prevention of PIs. Five randomized controlled trials showed a lower incidence of PIs in individuals placed on a static air mattress compared to different control groups.[10-14] One study compared a static mattress to a dynamic mattress, and the other 4 compared the air static mattress to another form of static mattress such as standard hospital mattress, foam mattress, viscoelastic mattress, or microfluid mattress overlay.

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The authors declare no conflicts of interest.

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DOI: 10.1097/WON.0000000000000244

Publication

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Repose | Mattress Overlay | Cushion | Wedge

RCT | Prevention | Treatment | Static Air | Reactive Air

Repose Foot Care Solutions: A 12-month Strategy to Reduce Hospital Acquired Heel Pressure Ulcers

Joanne Gaffing – Lead Tissue Viability Nurse,
University Hospital of Morecambe Bay NHS Foundation Trust

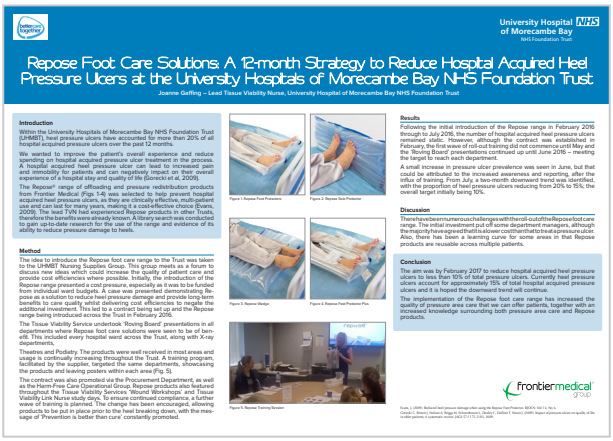
Within the University Hospitals of Morecambe Bay NHS Foundation Trust (UHMBT), heel pressure ulcers have accounted for more than 20% of all hospital acquired pressure ulcers over the past 12 months.

We wanted to improve the patient's overall experience and reduce spending on hospital acquired pressure ulcer treatment in the process. A hospital acquired heel pressure ulcer can lead to increased pain and immobility for patients and can negatively impact on their overall experience of a hospital stay and quality of life (Gorecki et al, 2009).

The Repose® range of offloading and pressure redistribution products from Frontier Medical (Figs 1-4) was selected to help prevent hospital acquired heel pressure ulcers, as they are clinically effective, multi-patient use and can last for many years, making it a cost-effective choice (Evans, 2009). The lead TVN had experienced Repose products in other Trusts, therefore the benefits were already known. A library search was conducted to gain up-to-date research for the use of the range and evidence of its ability to reduce pressure damage to heels.

The aim was by February 2017 to reduce hospital acquired heel pressure ulcers to less than 10% of total pressure ulcers. Currently heel pressure ulcers account for approximately 15% of total hospital acquired pressure ulcers and it is hoped the downward trend will continue.

The implementation of the Repose foot care range has increased the quality of pressure area care that we can offer patients, together with an increased knowledge surrounding both pressure area care and Repose products.


Repose Foot Care Solutions: A 12-month Strategy to Reduce Hospital Acquired Heel Pressure Ulcers at the University Hospitals of Morecambe Bay NHS Foundation Trust

Joanne Gaffing – Lead Tissue Viability Nurse, University Hospital of Morecambe Bay NHS Foundation Trust

Publication

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Repose | Mattress Overlay | Cushion | Wedge

Poster | Prevention | Treatment | Static Air | Reactive Air

Stop the Pressure - Emergency Department Addenbrooke's Hospital

Sarah Waller BA (Hons) , Tissue Viability Specialist Nurse,
Addenbrooke's Hospital

Concerns over the documentation and prevention of pressure ulcers within the Emergency Department (ED) (Fig 1) triggered a review of practice starting in 2009. The overall aim was to change practice to provide improved patient safety, quality of care and to prevent patient harm.

In addition, as the hospital is a centre of excellence with several specialities, a high proportion of patients admitted via the ED are 'at risk' of developing pressure damage. This includes patients who are immobile, have chronic illnesses, neurological or vascular problems or experienced major trauma.

In conjunction, there was a national concern with the increasing number of pressure ulcers as documented in the Francis report (2009), NHS Patient Safety Thermometer and the European Pressure Ulcer Advisory Panel (EPUAP) publications and supported by the Stop the Pressure campaign (NHS Midlands and East).

The change in practice has achieved the aims of improved patient safety and quality of care as part of the ongoing campaign at Addenbrooke's Hospital to reduce patient harm through pressure ulcer prevention from door to door.

Publication

Download this publication from the FMG website visit: https://bit.ly/3K8sm5V

Repose Companion

Poster Prevention Treatment Lateral Transfers Patient Transfers Patient Comfort Acute

Reducing Heel Pressure Ulcers at Ashford & St. Peter's Hospitals NHS Foundation Trust

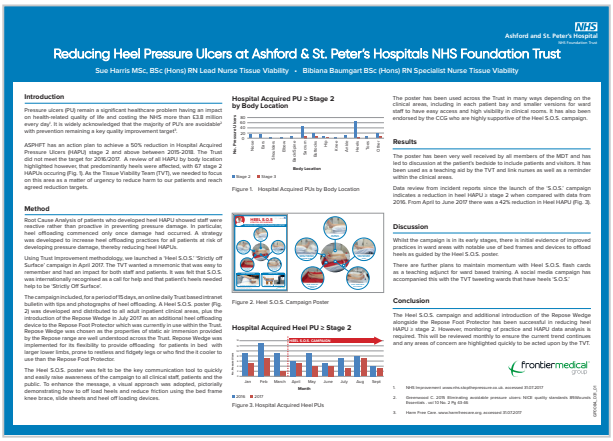
Sue Harris MSc, BSc (Hons) RN Lead Nurse Tissue Viability
Bibiana Baumgart BSc (Hons) RN Specialist Nurse Tissue Viability

ASPHFT has an action plan to achieve a 50% reduction in Hospital Acquired Pressure Ulcers (HAPU) stage 2 and above between 2015-2018. The Trust did not meet the target for 2016/2017. A review of all HAPU by body location highlighted however, that predominantly heels were affected, with 67 stage 2 HAPUs occuring (Fig. 1). As the Tissue Viability Team (TVT), we needed to focus on this area as a matter of urgency to reduce harm to our patients and reach agreed reduction targets.

Using Trust Improvement methodology, we launched a 'Heel S.O.S.' 'Strictly off Surface' campaign in April 2017. The TVT wanted a mnemonic that was easy to remember and had an impact for both staff and patients. It was felt that S.O.S. was internationally recognised as a call for help and that patient's heels needed help to be 'Strictly Off Surface'.

The Heel S.O.S. poster was felt to be the key communication tool to quickly and easily raise awareness of the campaign to all clinical staff, patients and the public. To enhance the message, a visual approach was adopted, pictorially demonstrating how to off load heels and reduce friction using the bed frame knee brace, slide sheets and heel off loading devices.

The Heel S.O.S. campaign and additional introduction of the Repose Wedge alongside the Repose Foot Protector has been successful in reducing heel HAPU ≥ stage 2. However, monitoring of practice and HAPU data analysis is required. This will be reviewed monthly to ensure the current trend continues and any areas of concern are highlighted quickly to be acted upon by the TVT.



Publication

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Repose | Foot Protector | Poster | Prevention | Treatment | Campaign | Off-loading

Evaluating a Static Pressure Redistributing Mattress in a Rehabilitation Ward

Veronica Pollard Tissue Viability Nurse,
Greater Glasgow and Clyde NHS Board

The NHS continues to strive to make cost savings whilst providing high quality care. As part of this measure, the Tissue Viability Team looked at using a static hybrid mattress for six months. This would provide cost savings from appropriate mattress choice following assessment in line with board policy and reduction in electricity usage. Staff time would be saved as patients would not need to be transferred to a dynamic mattress so often. Additionally, as there would be no pump, patients would not be disturbed by associated noise.

The Ultracore Plus mattress was felt to be a good option to evaluate. This comprises a U-shaped foam core with a Repose inflatable inner (which staff were already familiar with). It is appropriate to use on patients up to 222Kg, at all levels of risk and / or with up to grade two pressure ulcers. To ensure optimum inflation, the Repose inner should be re-inflated weekly.

The Ultracore Plus mattress has provided nursing staff with a cost-effective and time saving piece of equipment, which provides appropriate pressure redistribution for the patients identified. The mattress has allowed staff to plan preventative care without the need for ordering further equipment and associated time delays.

Patient experience has also improved as there is no longer the need for transferring to a different bed when a mattress is required.

Staff found the mattresses easy to set up and use and significantly, patients have reported the Ultracore Plus mattress as being comfortable and have been happy to continue with the evaluation TVT.


Evaluating a Static Pressure Redistributing Mattress in a Rehabilitation Ward

Veronica Pollard Tissue Viability Nurse, Greater Glasgow and Clyde NHS Board

Introduction

As recommended in the Healthcare Improvement Scotland, Prevention and Management of Pressure Ulcer Standards 2016[1], patients within Greater Glasgow and Clyde NHS Board have a daily pressure ulcer risk assessment using PUDRA[2], with those identified as 'at risk' having an individualised care plan. Often this care plan includes the use of a dynamic pressure redistribution mattress. However, the Tissue Viability team frequently see these mattresses being used inappropriately resulting in unnecessary cost to the Board in terms of rental and electricity use.

The NHS continues to strive to make cost savings whilst providing high quality care[3]. As part of this measure, the Tissue Viability Team looked at using a static hybrid mattress for six months. This would provide cost savings from appropriate mattress choice following assessment in line with board policy and reduction in electricity usage. Staff time would be saved as patients would not need to be transferred to a dynamic mattress so often. Additionally, as there would be no pump, patients would not be disturbed by associated noise.

The Ultracore Plus mattress (Figs.1& 2) was felt to be a good option to evaluate. This comprises a U-shaped foam core with a Repose inflatable inner (which staff were already familiar with). It is appropriate to use on patients up to 222Kg, at all levels of risk and / or with up to grade two pressure ulcers. To ensure optimum inflation, the Repose inner should be re-inflated weekly.

Method

Four mattresses were placed on the rehabilitation ward at Inverclyde Royal Greenock Hospital. Patients on this ward are at high risk of developing pressure damage and stay on the ward for more than seven days, allowing for an accurate assessment of the Ultracore Plus mattress on the skin and the patient experience.

The mattresses were kept in one bay and not removed from this area to allow for continuity and reduce the possibility of lost stock. Ward Tissue Viability Link Nurses ensured evaluation recording initial, interim and final assessment were completed and staff updated. The ward continued with their usual pressure ulcer prevention practice.

Patients chosen were without active pressure damage.

Figure 1. Ultracore Plus

Figure 2. Ultracore Plus in situ

Results

At the time of writing, 10 evaluations have been completed. In all cases, the mattresses were used for pressure ulcer prevention with the patients deemed to be at high risk and with varying medical histories including cardiac disease and diabetes. All patients have decreased mobility but are able to mobilise out of bed to a chair for periods of the day. All patients required manual turning; 70% received two hourly positional changes and 30% every three to four hours. 50% are incontinent.

The mattress has successfully prevented pressure damage occurring in conjunction with other standard preventative strategies.

As the evaluation continues, patients with existing pressure damage (up to grade 2) will be included. Patient comfort, ease of use, set-up, repositioning and inflation were all assessed and found to be either excellent or good.

From a cost savings perspective, figures are not yet available, but it is to be expected even just from the reduced number of dynamic mattresses rented, a cost saving is being realised.

Discussion

Initially staff were concerned the mattress would deflate and require more frequent than weekly reinflation. However, this has not been the case, with weekly reinflation incorporated, with no issues, into the routine weekly ward checks.

Conclusion

The Ultracore Plus mattress has provided nursing staff with a cost-effective and time saving piece of equipment, which provides appropriate pressure redistribution for the patients identified. The mattress has allowed staff to plan preventative care without the need for ordering further equipment and associated time delays.

Patient experience has also improved as there is no longer the need for transferring to a different bed when a mattress is required.

Staff found the mattresses easy to set up and use and significantly, patients have reported the Ultracore Plus mattress as being comfortable and have been happy to continue with the evaluation.

frontiermedical group

Publication

Download this publication from the FMG website visit: https://bit.ly/3LClpdY

Repose | Ultracore Repose Inside | Ultracore Repose Lite Inside

Evaluation | Prevention | Treatment | Cost Efficiencies | Time Savings | Patient Comfort | Acute

Managing Pressure Areas in Vulnerable Adults with a New Hybrid Mattress

Toni Paul Senior Sister,
Holcot Ward, Northampton General Hospital

Holcot ward, Northampton General Hospital is an acute medical ward for frail, elderly patients, often with advanced dementia or at end of life. These patients typify the group identified above and typically have extended stays.

On the ward, low beds are frequently used due to the patients reduced physical and cognitive function in combination with a high specification foam mattress.

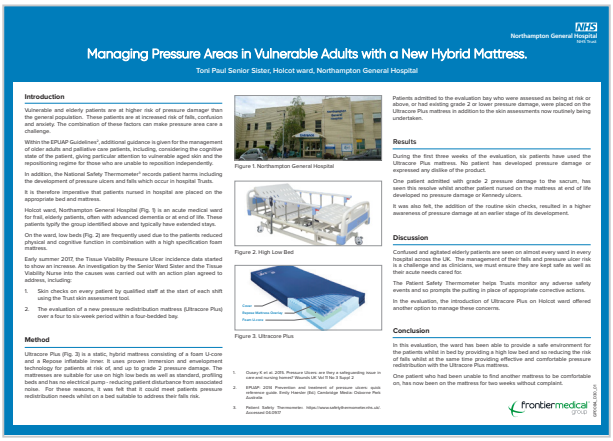
Early summer 2017, the Tissue Viability Pressure Ulcer incidence data started to show an increase. An investigation by the Senior Ward Sister and the Tissue Viability Nurse into the causes was carried out with an action plan agreed to address, including:

1. Skin checks on every patient by qualified staff at the start of each shift using the Trust skin assessment tool.
2. The evaluation of a new pressure redistribution mattress (Ultracore) over a four to six-week period within a four-bedded bay

Ultracore is a static, hybrid mattress consisting of a foam U-core and a Repose inflatable inner. It uses proven immersion and envelopment technology for patients at risk of, and up to grade 2 pressure damage.

In this evaluation, the ward has been able to provide a safe environment for the patients whilst in bed by providing a high low bed and so reducing the risk of falls whilst at the same time providing effective and comfortable pressure redistribution with the Ultracore mattress.

One patient who had been unable to find another mattress to be comfortable on, has now been on the mattress for two weeks without complaint.



Managing Pressure Areas in Vulnerable Adults with a New Hybrid Mattress.

Toni Paul Senior Sister, Holcot ward, Northampton General Hospital

Introduction

Vulnerable and elderly patients are at higher risk of pressure damager than the general population. These patients are at increased risk of falls, confusion and anxiety. The combination of these factors can make pressure area care a challenge.

Within the EPUAP Guidelines[2], additional guidance is given for the management of older adults and palliative care patients, including, considering the cognitive state of the patient, giving particular attention to vulnerable aged skin and the repositioning regime for those who are unable to reposition independently.

In addition, the National Safety Thermometer[3] records patient harms including the development of pressure ulcers and falls which occur in hospital Trusts.

It is therefore imperative that patients nursed in hospital are placed on the appropriate bed and mattress.

Holcot ward, Northampton General Hospital (Fig. 1) is an acute medical ward for frail, elderly patients, often with advanced dementia or at end of life. These patients typify the group identified above and typically have extended stays.

On the ward, low beds (Fig. 2) are frequently used due to the patients reduced physical and cognitive function in combination with a high specification foam mattress.

Early summer 2017, the Tissue Viability Pressure Ulcer incidence data started to show an increase. An investigation by the Senior Ward Sister and the Tissue Viability Nurse into the causes was carried out with an action plan agreed to address, including:

1. Skin checks on every patient by qualified staff at the start of each shift using the Trust skin assessment tool.
2. The evaluation of a new pressure redistribution mattress (Ultracore Plus) over a four to six-week period within a four-bedded bay

Method

Ultracore Plus (Fig. 3) is a static, hybrid mattress consisting of a foam U-core and a Repose inflatable inner. It uses proven immersion and envelopment technology for patients at risk of, and up to grade 2 pressure damage. The mattresses are suitable for use on high low beds as well as standard, profiling beds and has no electrical pump - reducing patient disturbance from associated noise. For these reasons, it was felt that it could meet patients pressure redistribution needs whilst on a bed suitable to address their falls risk.

Figure 1. Northampton General Hospital

Figure 2. High Low Bed

Figure 3. Ultracore Plus

1. Ousey K et al. 2015. Pressure Ulcers: are they a safeguarding issue in care and nursing homes? Wounds UK Vol 11 No 3 Supp 2
2. EPUAP. 2014 Prevention and treatment of pressure ulcers: quick reference guide. Emily Haesler (Ed.) Cambridge Media: Osborne Park Australia
3. Patient Safety Thermometer. https://www.safetythermometer.nhs.uk/. Accessed 04/2017

Patients admitted to the evaluation bay who were assessed as being at risk or above, or had existing grade 2 or lower pressure damage, were placed on the Ultracore Plus mattress in addition to the skin assessments now routinely being undertaken.

Results

During the first three weeks of the evaluation, six patients have used the Ultracore Plus mattress. No patient has developed pressure damage or expressed any dislike of the product.

One patient admitted with grade 2 pressure damage to the sacrum, has seen this resolve whilst another patient nursed on the mattress at end of life developed no pressure damage or Kennedy ulcers.

It was also felt, the addition of the routine skin checks, resulted in a higher awareness of pressure damage at an earlier stage of its development.

Discussion

Confused and agitated elderly patients are seen on almost every ward in every hospital across the UK. The management of their falls and pressure ulcer risk is a challenge and as clinicians, we must ensure they are kept safe as well as their acute needs cared for.

The Patient Safety Thermometer helps Trusts monitor any adverse safety events and so prompts the putting in place of appropriate corrective actions.

In the evaluation, the introduction of Ultracore Plus on Holcot ward offered another option to manage these concerns.

Conclusion

In this evaluation, the ward has been able to provide a safe environment for the patients whilst in bed by providing a high low bed and so reducing the risk of falls whilst at the same time providing effective and comfortable pressure redistribution with the Ultracore Plus mattress.

One patient who had been unable to find another mattress to be comfortable on, has now been on the mattress for two weeks without complaint.

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Publication

Download this publication from the FMG website visit: https://bit.ly/38ucKfr

Repose | Ultracore Repose Inside | Ultracore Repose Lite Inside

Evaluation | Prevention | Treatment | Patient Comfort | Acute

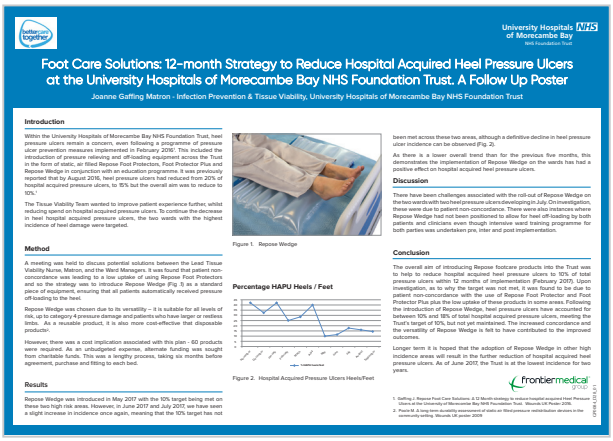
Foot Care Solutions: 12-month Strategy to Reduce Hospital Acquired Heel Pressure Ulcers at the University Hospitals of Morecambe Bay NHS Foundation Trust. A Follow Up Poster

Joanne Gaffing Matron - Infection Prevention & Tissue Viability,
University Hospitals of Morecambe Bay NHS Foundation Trust

Within the University Hospitals of Morecambe Bay NHS Foundation Trust, heel pressure ulcers remain a concern, even following a programme of pressure ulcer prevention measures implemented in February 2016. This included the introduction of pressure relieving and off-loading equipment across the Trust in the form of static, air filled Repose Foot Protectors, Foot Protector Plus and Repose Wedge in conjunction with an education programme. It was previously reported that by August 2016, heel pressure ulcers had reduced from 20% of hospital acquired pressure ulcers, to 15% but the overall aim was to reduce to 10%.

The Tissue Viability Team wanted to improve patient experience further, whilst reducing spend on hospital acquired pressure ulcers. To continue the decrease in heel hospital acquired pressure ulcers, the two wards with the highest incidence of heel damage were targeted.

The overall aim of introducing Repose footcare products into the Trust was to help to reduce hospital acquired heel pressure ulcers to 10% of total pressure ulcers within 12 months of implementation (February 2017). Upon investigation, as to why the target was not met, it was found to be due to patient non-concordance with the use of Repose Foot Protector and Foot Protector Plus the low uptake of these products in some areas. Following the introduction of Repose Wedge, heel pressure ulcers have accounted for between 10% and 18% of total hospital acquired pressure ulcers, meeting the Trust's target of 10%, but not yet maintained. The increased concordance and the versatility of Repose Wedge is felt to have contributed to the improved outcomes..



Foot Care Solutions: 12-month Strategy to Reduce Hospital Acquired Heel Pressure Ulcers at the University Hospitals of Morecambe Bay NHS Foundation Trust. A Follow Up Poster

Joanne Gaffing Matron - Infection Prevention & Tissue Viability, University Hospitals of Morecambe Bay NHS Foundation Trust

Introduction

Within the University Hospitals of Morecambe Bay NHS Foundation Trust, heel pressure ulcers remain a concern, even following a programme of pressure ulcer prevention measures implemented in February 2016[1]. This included the introduction of pressure relieving and off-loading equipment across the Trust in the form of static, air filled Repose Foot Protectors, Foot Protector Plus and Repose Wedge in conjunction with an education programme. It was previously reported that by August 2016, heel pressure ulcers had reduced from 20% of hospital acquired pressure ulcers, to 15% but the overall aim was to reduce to 10%.[2]

The Tissue Viability Team wanted to improve patient experience further, whilst reducing spend on hospital acquired pressure ulcers. To continue the decrease in heel hospital acquired pressure ulcers, the two wards with the highest incidence of heel damage were targeted.

Method

A meeting was held to discuss potential solutions between the Lead Tissue Viability Nurse, Matron, and the Ward Managers. It was found that patient non-concordance was leading to a low uptake of using Repose Foot Protectors and so the strategy was to introduce Repose Wedge (Fig. 1) as a standard piece of equipment, ensuring that all patients automatically received pressure off-loading to the heel.

Repose Wedge was chosen due to its versatility – it is suitable for all levels of risk, up to category 4 pressure damage and patients who have larger or restless limbs. As a reusable product, it is also more cost-effective that disposable products.

However, there was a cost implication associated with this plan - 60 products were required. As an unbudgeted expense, alternate funding was sought from charitable funds. This was a lengthy process, taking six months before agreement, purchase and fitting to each bed.

Results

Repose Wedge was introduced in May 2017 with the 10% target being met on these two high risk areas. However, in June 2017 and July 2017, we have seen a slight increase in incidence once again, meaning that the 10% target has not been met across these two areas, although a definitive decline in heel pressure ulcer incidence can be observed (Fig. 2).

As there is a lower overall trend than for the previous five months, this demonstrates the implementation of Repose Wedge on the wards has had a positive effect on hospital acquired heel pressure ulcers.

Figure 1. Repose Wedge

Percentage HAPU Heels / Feet

Figure 2. Hospital Acquired Pressure Ulcers Heels/Feet

Discussion

There have been challenges associated with the roll-out of Repose Wedge on the two wards with two heel pressure ulcers developing in July. On investigation, these were due to patient non-concordance. There were also instances where Repose Wedge had not been positioned to allow for heel off-loading by both patients and clinicians even though intensive ward training programme for both parties was undertaken pre, inter and post implementation.

Conclusion

The overall aim of introducing Repose footcare products into the Trust was to help to reduce hospital acquired heel pressure ulcers to 10% of total pressure ulcers within 12 months of implementation (February 2017). Upon investigation, as to why the target was not met, it was found to be due to patient non-concordance with the use of Repose Foot Protector and Foot Protector Plus plus the low uptake of these products in some areas. Following the introduction of Repose Wedge, heel pressure ulcers have accounted for between 10% and 18% of total hospital acquired pressure ulcers, meeting the Trust's target of 10%, but not yet maintained. The increased concordance and the versatility of Repose Wedge is felt to have contributed to the improved outcomes.

Longer term it is hoped that the adoption of Repose Wedge in other high incidence areas will result in the further reduction of hospital acquired heel pressure ulcers. As of June 2017, the Trust is at the lowest incidence for two years.

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1. Gaffing J. Repose Foot Care Solutions: A 12 Month strategy to reduce hospital acquired Heel Pressure Ulcers at the University of Morecambe Bay NHS Foundation Trust. Wounds UK Poster 2016.
2. Poole M. A long-term durability assessment of static air filled pressure redistribution devices in the community setting. Wounds UK poster 2009.

Publication

Download this publication from the FMG website visit: https://bit.ly/3LJ5Ml3

Repose | Foot Protector | Foot Protector Plus | Wedge

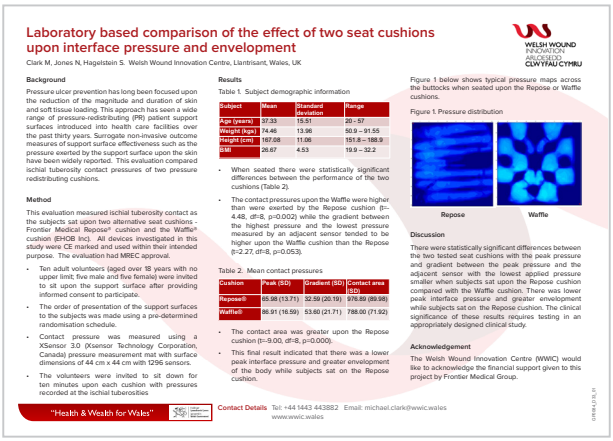
Evaluation | Prevention | Treatment | Acute

Laboratory based comparison of the effect of two seat cushions upon interface pressure and envelopment

Clark M, Jones N, Hagelstein S.
Welsh Wound Innovation Centre, Llantrisant, Wales, UK

Pressure ulcer prevention has long been focused upon the reduction of the magnitude and duration of skin and soft tissue loading. This approach has seen a wide range of pressure-redistributing (PR) patient support surfaces introduced into health care facilities over the past thirty years. Surrogate non-invasive outcome measures of support surface effectiveness such as the pressure exerted by the support surface upon the skin have been widely reported. This evaluation compared ischial tuberosity contact pressures of two pressure redistributing cushions.

There were statistically significant differences between the two tested seat cushions with the peak pressure and gradient between the peak pressure and the adjacent sensor with the lowest applied pressure smaller when subjects sat upon the Repose cushion compared with the Waffle cushion. There was lower peak interface pressure and greater envelopment while subjects sat on the Repose cushion. The clinical significance of these results requires testing in an appropriately designed clinical study.



Laboratory based comparison of the effect of two seat cushions upon interface pressure and envelopment

Clark M, Jones N, Hagelstein S. Welsh Wound Innovation Centre, Llantrisant, Wales, UK

WELSH WOUND INNOVATION CENTRE CLWYFAU CYMRU

Background

Pressure ulcer prevention has long been focused upon the reduction of the magnitude and duration of skin and soft tissue loading. This approach has seen a wide range of pressure-redistributing (PR) patient support surfaces introduced into health care facilities over the past thirty years. Surrogate non-invasive outcome measures of support surface effectiveness such as the pressure exerted by the support surface upon the skin have been widely reported. This evaluation compared ischial tuberosity contact pressures of two pressure redistributing cushions.

Method

This evaluation measured ischial tuberosity contact as the subjects sat upon two alternative seat cushions - Frontier Medical Repose® cushion and the Waffle® cushion (EHOB Inc). All devices investigated in this study were CE marked and used within their intended purpose. The evaluation had MREC approval.

- Ten adult volunteers (aged over 18 years with no upper limit five male and five female) were invited to sit upon the support surface after providing informed consent to participate.
- The order of presentation of the support surfaces to the subjects was made using a pre-determined randomisation schedule.
- Contact pressure was measured using a XSensor 3.0 (Xsensor Technology Corporation, Canada) pressure measurement mat with surface dimensions of 44 cm x 44 cm with 1296 sensors.
- The volunteers were invited to sit down for ten minutes upon each cushion with pressures recorded at the ischial tuberosities

Results

Table 1. Subject demographic information

Subject	Mean	Standard deviation	Range
Age (years)	37.33	15.51	20 - 57
Weight (kgs)	74.46	13.96	50.9 – 91.55
Height (cm)	167.08	11.08	151.8 – 188.9
BMI	26.67	4.53	19.9 – 32.2

- When seated there were statistically significant differences between the performance of the two cushions (Table 2).
- The contact pressures upon the Waffle were higher than were exerted by the Repose cushion ($t=-4.48$, $df=8$, $p=0.002$) while the gradient between the highest pressure and the lowest pressure measured by an adjacent sensor tended to be higher upon the Waffle cushion than the Repose ($t=2.27$, $df=8$, $p=0.053$).

Table 2. Mean contact pressures

Cushion	Peak (SD)	Gradient (SD)	Contact area (SD)
Repose®	65.98 (13.71)	32.59 (20.19)	976.89 (89.98)
Waffle®	86.91 (16.59)	53.60 (21.71)	788.00 (71.92)

- The contact area was greater upon the Repose cushion ($t=-9.00$, $df=8$, $p<0.000$).
- This final result indicated that there was a lower peak interface pressure and greater envelopment of the body while subjects sat on the Repose cushion.

Figure 1 below shows typical pressure maps across the buttocks when seated upon the Repose or Waffle cushions.

Figure 1. Pressure distribution

Repose Waffle

Discussion

There were statistically significant differences between the two tested seat cushions with the peak pressure and gradient between the peak pressure and the adjacent sensor with the lowest applied pressure smaller when subjects sat upon the Repose cushion compared with the Waffle cushion. There was lower peak interface pressure and greater envelopment while subjects sat on the Repose cushion. The clinical significance of these results requires testing in an appropriately designed clinical study.

Acknowledgement

The Welsh Wound Innovation Centre (WWIC) would like to acknowledge the financial support given to this project by Frontier Medical Group.

"Health & Wealth for Wales"

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www.wwic.wales

Publication

Download this publication from the FMG website visit: https://bit.ly/3qYQrEG

Repose Cushion

Laboratory Evaluation | Prevention | Treatment | Pressure Mapping | Peak Interface Pressure | Envelopment

Static air support surfaces to prevent pressure injuries

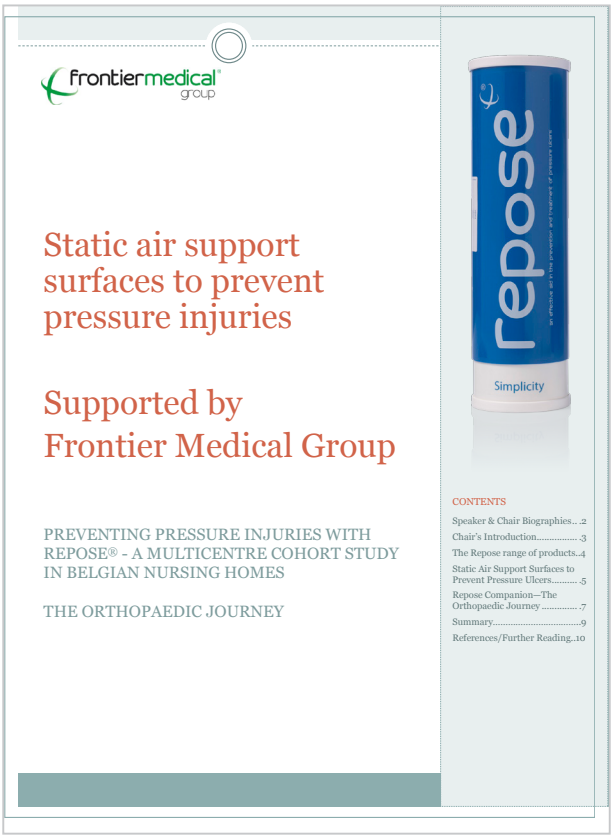
Professor Keith Harding, Cbe Frcgp Frcp Frcs Flsw
Medical Director, Welsh Wound Innovation Centre (WWIC)

The aim of this booklet is to share the details of a national symposium that discussed the role of static air support surfaces, namely Repose Mattress Overlay, Cushion, Wedge and Foot Protectors, in pressure ulcer prevention. The first piece of research investigates the potential role of the Repose range in preventing pressure ulceration in 176 mobility restricted residents in nursing homes in Belgium.

The second section discusses the reactions and interventions of an orthopaedic multidisciplinary team in an English hospital, who were responding to a national newspaper report that patients were most at risk of developing pressure damage following admission to their hospital. This publication and its contents would merit inclusion as part of the Nursing and Midwifery Council (NMC) revalidation process for nurses to retain their registration. The time taken to read the publication can be recorded as part of the 35 hours of continuous professional development.

Further reflection on the content and linking it to clinical practice and the NMC code can then form one of the five written reflective accounts. The appendices at the end of this document provide NMC templates for the reflective account and subsequent reflective discussion.

The presentations summarised in this document demonstrate how static support surfaces can reduce pressure damage both from a research and clinical practice perspective. Developing the research evidence in the field of static support surfaces can only enhance the current body of knowledge.



Publication

Download this publication from the FMG website visit: https://bit.ly/3NJMOwa

Repose | Mattress Overlay | Cushion | Foot Protector | Wedge | Companion

Literature Review | Prevention | Treatment | Lateral Transfers | Patient Transfers | Acute | Community | Manual Handling

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, June, 2019.05.015

Dimitri Beeckmana, Brecht Serraesa, Charlotte Anrysa, Hanne Van Tiggelena, Ann Van Heckea, Sofie Verhaeghe

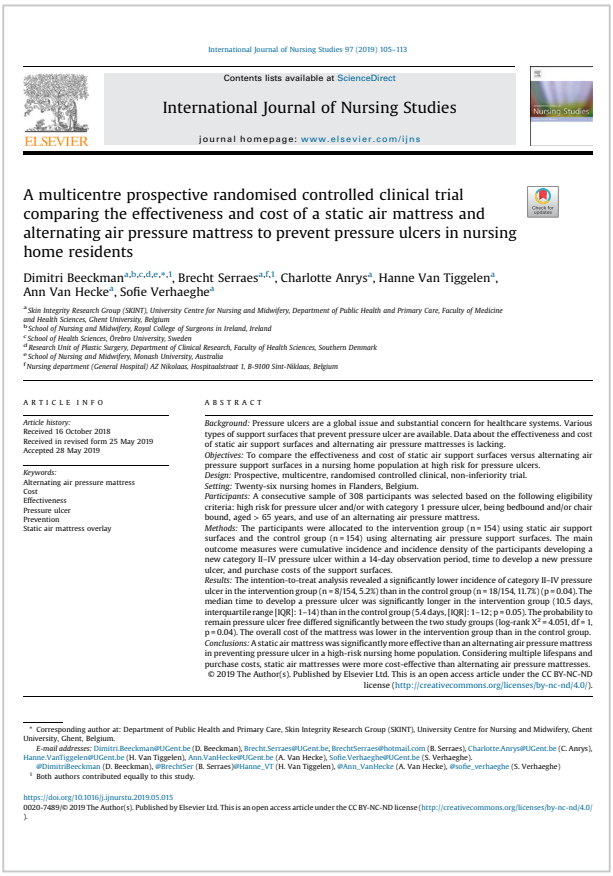
Objectives: To compare the effectiveness and cost of static air support surfaces versus alternating air pressure support surfaces in a nursing home population at high risk for pressure ulcers.

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.

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.



International Journal of Nursing Studies 97 (2019) 105–113

Contents lists available at ScienceDirect

International Journal of Nursing Studies

journal homepage: www.elsevier.com/ijns

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

Dimitri Beeckman[a,b,c,d,e,*,1], Brecht Serraes[a,f,1], Charlotte Anrys[a], Hanne Van Tiggelen[a], Ann Van Hecke[a], Sofie Verhaeghe[a]

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ARTICLE INFO

Article history:
Received 16 October 2018
Received in revised form 25 May 2019
Accepted 28 May 2019

Keywords:
Alternating air pressure mattress
Cost
Effectiveness
Pressure ulcer
Prevention
Static air mattress overlay

ABSTRACT

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, 5.2%) than in the control group (n = 18/154, 11.7%) (p = 0.04). The median time to develop a pressure ulcer was significantly longer in the intervention group (10.5 days, interquartile range [IQR]: 1–14) than in the control group (5.4 days, [IQR]: 1–12; p = 0.05). The probability to remain pressure ulcer free differed significantly between the two study groups (log-rank X^2 = 4.051, df = 1, p = 0.04). 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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[1] Both authors contributed equally to this study.

https://doi.org/10.1016/j.ijnurstu.2019.05.015
0020-7489/

Publication

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Repose | Mattress Overlay | Cushion | Wedge

RCT | Prevention | Treatment | Static Air | Reactive Air | Community | Nursing Home

START Study Infographic

2019

308 patients >65 years

26 Care homes

High risk

Braden score ≤12 and/or Braden subscale score for mobility ≤2

Intervention

Repose

Control

(alternating air pressure mattress)

Incidence

5.2% Intervention

11.7% Control

Time to develop

10.5 days Intervention

5.4 days Control

Incidence density

0.41/100 days

0.89/100 days

Cost

£ 0.18

£ 0.48

Repose Works!

1/2 the incidence rate p = 0.04

Pressure ulcer free for twice as long p = 0.05

Less than 1/2 the cost

The findings suggest Repose is both **clinically** and **cost effective** when compared to alternating mattresses

Start Study: An RCT to compare the effectiveness of a static air mattress versus an alternating air pressure mattress to prevent pressure ulcers

Dimitri Beeckmana, Brecht Serraesa, Charlotte Anrysa, Hanne Van Tiggelena, Ann Van Heckea, Sofie Verhaeghe

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.

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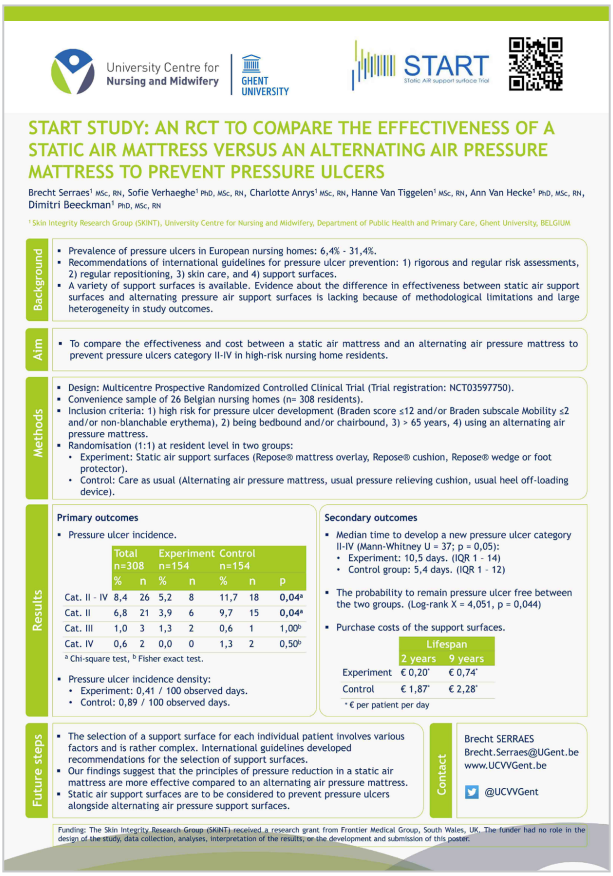
Methods: The participants were allocated to the intervention group (n = 154) using static air support surfaces and the control group (n = 154) using alternating air pressure support surfaces. The main outcome measures were cumulative incidence and incidence density of the participants developing a new 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.

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.



Publication

Download this publication from the FMG website visit: https://bit.ly/3j3oVBE

Repose | Mattress Overlay | Cushion | Wedge

RCT | Prevention | Treatment | Static Air | Reactive Air | Community | Nursing Home

Rocks in their Shoes

Viola Sidambe Tissue Viability Clinical Nurse Specialist,
Coventry and Warwickshire NHS Trust

Our Trust was selected to take part in the NHSI Pressure Ulcer Collaborative in October 2017 to April 2018. One of the aims of the collaborative was to facilitate a reduction in the numbers and severity of pressure ulcers within the participating areas.

We used this opportunity to focus on heel pressure ulcer prevention in one of the high reporting areas within our Trust. This area was Ward 53 Orthopaedics.

Recognising that it is the people that do the work that can fix the problem we engaged with staff in the area and asked them to identify the “rocks in their shoes” regarding pressure ulcer prevention.

Rocks in shoes are things that irritate or make your work harder.

Following the success of the Repose Wedge trial on the Orthopaedics ward we identified 6 other areas in the Trust that have high numbers of heel pressure ulcers. These areas are now also using the Repose Wedge to elevate patient’s heels with good outcomes.

To date seven wards that have implemented the Repose Wedge.

NHS
University Hospitals Coventry and Warwickshire NHS Trust

Rocks in their Shoes

Viola Sidambe Tissue Viability Clinical Nurse Specialist, Coventry and Warwickshire NHS Trust • Viola.Sidambe@uhcw.nhs.uk

Background

Pressure ulcers remain a challenge for patients who develop them and the healthcare professionals involved in their prevention and management (NHS Improvement 2018[1]).

Our Trust was selected to take part in the NHSI Pressure Ulcer Collaborative in October 2017 to April 2018. One of the aims of the collaborative was to facilitate a reduction in the numbers and severity of pressure ulcers within the participating areas.

We used this opportunity to focus on heel pressure ulcer prevention in one of the high reporting areas within our Trust. This area was Ward 53 Orthopaedics.

Recognising that it is the people that do the work that can fix the problem we engaged with staff in the area and asked them to identify the “rocks in their shoes” regarding pressure ulcer prevention.

Rocks in shoes are things that irritate or make your work harder.

Figure 1. Rocks in their Shoes

Method

During the pressure ulcer collaborative meetings the team was taught several improvement methodologies but we however chose the UHCW Improvement method used by our Trust as we felt it was far superior and was already used within our organisation.

The structure of this management system involves putting patients first, it is inclusive and everyone has a voice. People who do the work fix the problems. This model also prescribes respecting people and structured discipline.[2]

The collaborative meetings identified that the' rock in the staff shoe' was lack of equipment. toughs had been used previously in the trust but were no longer available. Consequently, staff were using pillows to offload, but recognised that this did not work effectively as the pillows tended to compress and heels ended back resting on the bed mattress.

The staff considered their next steps and chose to evaluate the Repose wedge from Frontier Medical Group. The criteria for choosing this product was that:

- It is reusable and can be easily decontaminated
- Is durable, easy to use easy to store
- Is cost effective
- Patients find it comfortable
- It has a two year warranty

Additionally, education and training was given to ward staff by Frontier Medical Group on the effective use of the product.

Figure 2. Repose® Wedge from Frontier Medical Group

Results

Following feedback and ideas from staff the Repose® Wedge from Frontier Medical Group, trial started in January 2018 on ward 53 Orthopaedics and to date the ward have had a 62.5% reduction in pressure ulcers.

Staff on the wards love using the Repose Wedge and have said the following about it.

> Repose Wedge is really good and we have had no issues with it
>
> Repose is great for elevation and definitely better than pillows
>
> We perform a daily check and count of the Repose as part of our routine, this has become embedded on the ward and we are often concerned when a patient doesn't have Repose in place

1. NHS Improvement (2018) – Pressure Ulcer Core Curriculum
2. Charles Kenny (2010) Transforming Healthcare: Virginia Mason Medical Centre's Pursuit of the Perfect Patient Experience

Conclusion

Following the success of the Repose wedge trial on the Orthopaedics ward we identified 6 other areas in the Trust that have high numbers of heel pressure ulcers. These areas are now also using the Repose wedge to elevate patient's heels with good outcomes.

To date seven wards that have implemented the Repose Wedge.

WARD	Heel PU numbers before Repose	Heel PU numbers after Repose implementation
Ward 40	14	4
Ward 53	16	6
Ward 53 ECU	0	0
Ward 52	10	3
Ward 20	7	3
Ward 21M	12	2
Ward 1	16	2

The next steps in the process will be to:-

- Continue to measure improvements
- Sustainability
- Roll out the Repose wedge to other areas in the Trust that have high incidents of pressure ulcers

frontiermedical group

CW18-LCN0_01

Publication

Download this publication from the FMG website visit: https://bit.ly/3K1ayd0

Repose | Wedge | Evaluation | Prevention | Treatment | Heels | Acute

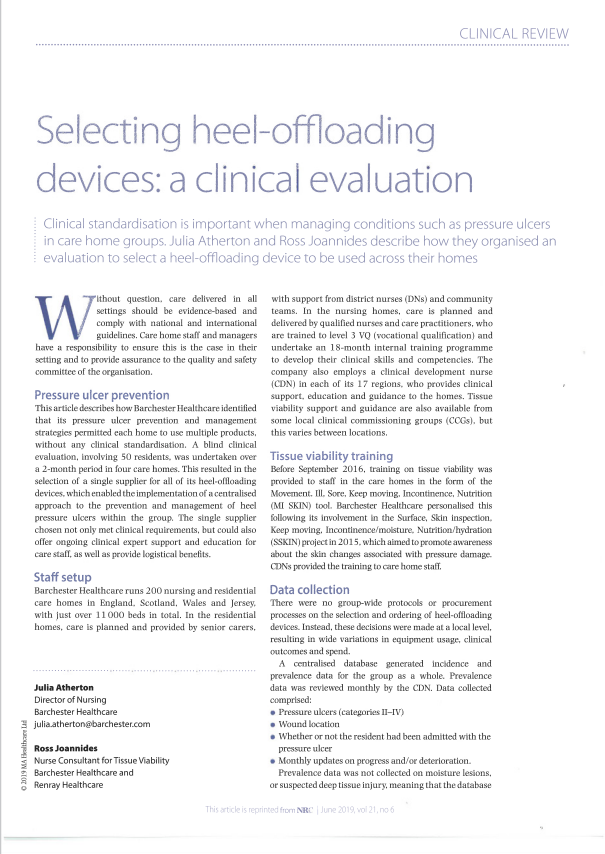
Selecting heel-offloading devices a clinical evaluation

Julia Atherton, Director of Nursing
Barchester Healthcare
Ross Joannides, Nurse Consultant for Tissue Viability
Barchester Healthcare and Renray Healthcare

The article shows how a fragmented approach in the selection of heel-offloading equipment in the Barchester healthcare nursing and care homes was replaced to ensure the standardised delivery of evidence-based practice. Repose boots were placed on Barchester's internal supplier catalogue, as a single provider for the group as a whole. The process has enabled the development of a clinically effective and cost-efficient product into the care home group that meets the needs of the care home residents.

The new size of the heel-offloading devices appears to be more comfortable for residents and have improved clinical outcomes. As the new system has only just been implemented throughout the homes, the benefits for both staff and residents are still being monitored; a full review will be carried out in July 2019.

The CDNs were provided with PowerPoint presentations, which enabled them to deliver the new training programme. This had a greater focus on the identification and management of risk , including the selection of pressure-redistributing equipment. The CDNs were responsible for delivering the new classroom-based programme to nurses, care practitioners and senior carers in their region.



CLINICAL REVIEW

Selecting heel-offloading devices: a clinical evaluation

Clinical standardisation is important when managing conditions such as pressure ulcers in care home groups. Julia Atherton and Ross Joannides describe how they organised an evaluation to select a heel-offloading device to be used across their homes

Without question, care delivered in all settings should be evidence-based and comply with national and international guidelines. Care home staff and managers have a responsibility to ensure this is the case in their setting and to provide assurance to the quality and safety committee of the organisation.

Pressure ulcer prevention

This article describes how Barchester Healthcare identified that its pressure ulcer prevention and management strategies permitted each home to use multiple products, without any clinical standardisation. A blind clinical evaluation, involving 50 residents, was undertaken over a 2-month period in four care homes. This resulted in the selection of a single supplier for all of its heel-offloading devices, which enabled the implementation of a centralised approach to the prevention and management of heel pressure ulcers within the group. The single supplier chosen not only met clinical requirements, but could also offer ongoing clinical expert support and education for care staff, as well as provide logistical benefits.

Staff setup

Barchester Healthcare runs 200 nursing and residential care homes in England, Scotland, Wales and Jersey, with just over 11 000 beds in total. In the residential homes, care is planned and provided by senior carers, with support from district nurses (DNs) and community teams. In the nursing homes, care is planned and delivered by qualified nurses and care practitioners, who are trained to level 3 VQ (vocational qualification) and undertake an 18-month internal training programme to develop their clinical skills and competencies. The company also employs a clinical development nurse (CDN) in each of its 17 regions, who provides clinical support, education and guidance to the homes. Tissue viability support and guidance are also available from some local clinical commissioning groups (CCGs), but this varies between locations.

Tissue viability training

Before September 2016, training on tissue viability was provided to staff in the care homes in the form of the Movement. Ill. Sore. Keep moving. Incontinence. Nutrition (MI SKIN) tool. Barchester Healthcare personalised this following its involvement in the Surface. Skin inspection. Keep moving. Incontinence/moisture. Nutrition/hydration (SSKIN) project in 2015, which aimed to promote awareness about the skin changes associated with pressure damage. CDNs provided the training to care home staff.

Data collection

There were no group-wide protocols or procurement processes on the selection and ordering of heel-offloading devices. Instead, these decisions were made at a local level, resulting in wide variations in equipment usage, clinical outcomes and spend.

A centralised database generated incidence and prevalence data for the group as a whole. Prevalence data was reviewed monthly by the CDN. Data collected comprised:

- Pressure ulcers (categories II–IV)
- Wound location
- Whether or not the resident had been admitted with the pressure ulcer
- Monthly updates on progress and/or deterioration.

Prevalence data was not collected on moisture lesions, or suspected deep tissue injury, meaning that the database

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This article is reprinted from NRC | June 2019, vol 21, no 6

Publication

Download this publication from the FMG website visit: https://bit.ly/3LIaXlb

Repose | Foot Protector | Foot Protector Plus

Evaluation | Prevention | Treatment | Heels | Community | Nursing Home | Care Home

Fractured NOF Heels OFF

Christopher Gray, Matron MSK
Cambridge University Hospitals NHS Foundation Trust
Carole Young, Lead Tissue Viability Nurse Specialist
Cambridge University Hospitals NHS Foundation Trust

Between January and June 2018, Cambridge University Hospital saw the number of hospital-acquired category 2 heel pressure ulcers in patients who had recently been admitted with a fractured Neck of Femur (NOF) double from 28 (July - Dec 2017) to 59 (Jan - June 2018). Each pressure ulcer incident was investigated using the trusts internal investigation template to identify any care delivery or organizational problems.

Further “deep dives” into incidents involving heel pressure ulcers took place between July 2018 to August 2018 which looked at the whole patient journey from arrival in the Emergency Department (ED) through to theatre and onto the ward.

Therefore we commenced a focused education and implementation campaign in October 2018 across the organization targeting the areas where these patients were nursed to ensure patients who had a fractured NOF had their heels off-loaded using foot protector. To gain awareness the campaign was titled “Fractured NOF, Heels Off”.

The aim of the campaign was to;

- Raise awareness of heel pressure ulcers in patients with a fractured NOF.
- Implement heel off-loading from arrival through theatres to the wards.
- Reduce the incidence of heel pressure ulcers in this group of patients.

The introduction of a full campaign for patients with fractured NOF across the areas treating the patient group, along with the introduction of Repose Foot Protector and Wedge to provide total heel offloading has, in the author’s trust resulted in a reduction in heel pressure damage by 40%. The authors and their teams continue to monitor the incidence rate of heel pressure ulcers and keep the awareness of this issue at the forefront of the staff’s mind for the benefit of the patients.

Publication

Download this publication from the FMG website visit: https://bit.ly/3uMomSi

Repose | Foot Protector | Wedge

Evaluation | Prevention | Treatment | Acute | Heels | Campaign | Off-loading | NOF

Cost neutral implementation of a pressure relieving product to reduce patient harm

Sarah Charlton RGN MSc Lead TVN, Wound Management Team,
Southend University Hospital NHS Trust

Length of hospital stay is known to increase significantly for patients with a pressure ulcer. For nursing teams who are working in an extremely challenging and demanding environment caring for patients with pressure damage is challenging and labour intensive.

Despite the high profile around pressure ulcer care and prevention, and introduction of different national and local initiatives over recent years, e.g. Stop the Pressure day, educational days, pressure ulcer champions and root cause analysis investigations, the prevalence of hospital-acquired heel pressure ulcers in the NHS Trust remains persistently high.

To support the reduction of prevalence rates of hospital-acquired heel pressure ulcers within the Trust, the Tissue Viability Team undertook a project to implement the use of heel lift devices in line with best practice guidelines. The particular heel products being considered were reusable and available as a heel offloading boot and a wedge.

The case demonstrated that the cost of purchasing and implementing the device was financially cost neutral whilst delivering pressure area care in line with best practice guidelines. The next phase will be to oversee the effective implementation of the device across the Trust, and following this to analyse the data to ascertain if a reduction in heel pressure ulcer prevalance has been achieved.

Southend University Hospital NHS
NHS Foundation Trust

Cost neutral implementation of a pressure relieving product to reduce patient harm.

Sarah Charlton RGN MSc Lead TVN, Wound Management Team, Southend University Hospital NHS Trust • Sarah.Charlton@southend.nhs.uk

Background

In the UK pressure ulcers represent a significant patient harm, and can cause pain and distress to patients and their families. They are expensive to local health economies with reported daily care costs ranging from £43 to £374[1].

Length of hospital stay is known to increase significantly for patients with a pressure ulcer[2]. For nursing teams who are working in an extremely challenging and demanding environment caring for patients with pressure damage is challenging and labour intensive.

Figure 1.- Southend University Hospital NHS Trust

Method

Despite the high profile around pressure ulcer care and prevention, and introduction of different national and local initiatives over recent years, e.g. Stop the Pressure day, educational days, pressure ulcer champions and root cause analysis investigations, the prevalence of hospital-acquired heel pressure ulcers in the NHS Trust remains persistently high.

Heels are the second most common site for pressure ulcers[3]. Complete removal of pressure is central to their prevention and management[4]. Heel offloading devices can be used to provide additional protection to the heel[5]. Whilst there is debate on the merits of different types of heel offloading devices, international guidelines[6] suggest that heels with category 1 and 2 damage can be elevated on pillows and other devices should be used for managing category 3 and 4 heel pressure ulcers.

To support the reduction of prevalence rates of hospital-acquired heel pressure ulcers within the Trust, the Tissue Viability Team undertook a project to implement the use of heel lift devices in line with best practice guidelines. The particular heel products being considered were reusable and available as a heel offloading boot and a wedge.

Figure 2.- Heel Offloading

Results

To secure senior management agreement for the project, a business case was presented. Using data from the Safety Thermometer, the case showed the Trust had above national average pressure ulcer prevalence and presented prevalence data for hospital-acquired heel pressure ulcers over two years 2017 and 2018. Estimated costs for treating these pressure ulcers were provided via the pressure ulcer productivity calculator[7]. Although this uses 2016/2017 prices it gives a starting point to estimate costs to the Trust of these pressure ulcers.

	Category 1	Category 2	Category 3	Category 4
No. of Pressure Ulcers	9	27	4	0

2017/2018	Central Estimate	Lower Range	Higher Range
Category 1	15,000	12,000	18,000
Category 2	183,000	148,000	221,000
Category 3	45,000	36,000	54,000
Category 4	-	-	-
Total	243,000	196,000	293,000

References
1. NHS Improvement, December 2017, Bennett, Dealey and Posnett, 2012
2. One study found that adult patients who develop pressure ulcers had an extended stay of over 4 days (Graves, 2009). Another study found patients over 75 years of age, who develop a pressure ulcer in hospital, had a 10 day longer stay (Bennett, 2004)
3. Clark et al 2008, Dealey 2009
4. EPUAP 2010, Dealey 2008
5. Clark et al 2008, EPUAP 2010
6. EPUAP 2010
7. 2019. NHS Improvement Pressure Ulcers Productivity Calculator. [Online]. [3 September 2019]. Available from: https://improvement.nhs.uk/resources/pressure-ulcers-productivity-calculator/

Figure 3.- Repose Foot Protector and Repose Wedge

frontiermedical group

Publication

Download this publication from the FMG website visit: https://bit.ly/3Kip0NK

Repose | Foot Protector | Wedge

Evaluation | Prevention | Treatment | Heels | Acute | Off-loading

Laboratory evaluation of two pressure redistributing mattress overlays

Michael Clark, Nia Jones, Kirsty Kettley
Welsh Wound Innovation Centre, Llantrisant, Wales, UK

This study compared sacral and heel contact pressures while healthy volunteers rested upon two pressure redistributing mattress overlays – the Repose (Frontier Medical Group) and Waffle (EHOB Inc).

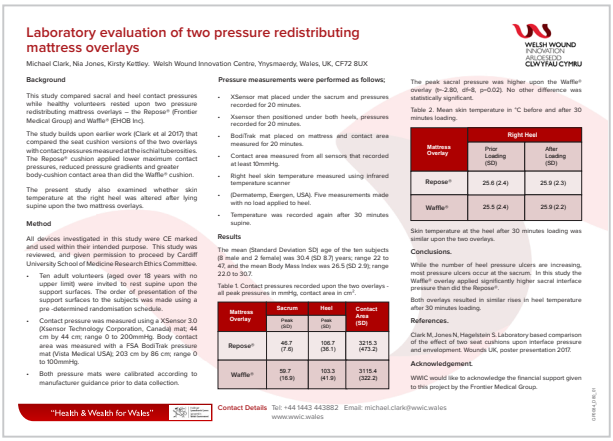
The study builds upon earlier work (Clark et al 2017) that compared the seat cushion versions of the two overlays with contact pressures measured at the ischial tuberosities.

The Repose cushion applied lower maximum contact pressures, reduced pressure gradients and greater body-cushion contact area than did the Waffle cushion.

The present study also examined whether skin temperature at the right heel was altered after lying supine upon the two mattress overlays.

While the number of heel pressure ulcers are increasing, most pressure ulcers occur at the sacrum. In this study the Waffle overlay applied significantly higher sacral interface pressure than did the Repose.

Both overlays resulted in similar rises in heel temperature after 30 minutes loading.



Laboratory evaluation of two pressure redistributing mattress overlays

Michael Clark, Nia Jones, Kirsty Kettley. Welsh Wound Innovation Centre, Ynysmaerdy, Wales, UK, CF72 8UX

WELSH WOUND INNOVATION AROLWG CLWYFAU CYMRU

Background

This study compared sacral and heel contact pressures while healthy volunteers rested upon two pressure redistributing mattress overlays – the Repose® (Frontier Medical Group) and Waffle® (EHOB Inc).

The study builds upon earlier work (Clark et al 2017) that compared the seat cushion versions of the two overlays with contact pressures measured at the ischial tuberosities. The Repose® cushion applied lower maximum contact pressures, reduced pressure gradients and greater body-cushion contact area than did the Waffle® cushion.

The present study also examined whether skin temperature at the right heel was altered after lying supine upon the two mattress overlays.

Method

All devices investigated in this study were CE marked and used within their intended purpose. This study was reviewed, and given permission to proceed by Cardiff University School of Medicine Research Ethics Committee.

- Ten adult volunteers (aged over 18 years with no upper limit) were invited to rest supine upon the support surfaces. The order of presentation of the support surfaces to the subjects was made using a pre -determined randomisation schedule.
- Contact pressure was measured using a XSensor 3.0 (Xsensor Technology Corporation, Canada) mat; 44 cm by 44 cm; range 0 to 200mmHg. Body contact area was measured with a FSA BodiTrak pressure mat (Vista Medical USA); 203 cm by 86 cm; range 0 to 100mmHg.
- Both pressure mats were calibrated according to manufacturer guidance prior to data collection.

Pressure measurements were performed as follows:

- XSensor mat placed under the sacrum and pressures recorded for 20 minutes.
- Xsensor then positioned under both heels, pressures recorded for 20 minutes.
- BodiTrak mat placed on mattress and contact area measured for 20 minutes.
- Contact area measured from all sensors that recorded at least 10mmHg.
- Right heel skin temperature measured using infrared temperature scanner
- (Dermatemp, Exergen, USA). Five measurements made with no load applied to heel.
- Temperature was recorded again after 30 minutes supine.

Results

The mean (Standard Deviation SD) age of the ten subjects (8 male and 2 female) was 30.4 (SD 8.7) years; range 22 to 47, and the mean Body Mass Index was 26.5 (SD 2.9); range 22.0 to 30.7.

Table 1. Contact pressures recorded upon the two overlays - all peak pressures in mmHg, contact area in cm^2.

Mattress Overlay	Sacrum	Heel	Contact Area (SD)
	Peak (SD)	Peak (SD)	
Repose®	48.7 (7.6)	106.7 (36.1)	3215.3 (473.2)
Waffle®	59.7 (16.9)	103.3 (41.9)	3115.4 (322.2)

The peak sacral pressure was higher upon the Waffle® overlay (t=-2.80, df=8, p=0.02). No other difference was statistically significant.

Table 2. Mean skin temperature in °C before and after 30 minutes loading.

Mattress Overlay	Right Heel	
	Prior Loading (SD)	After Loading (SD)
Repose®	25.6 (2.4)	25.9 (2.3)
Waffle®	25.5 (2.4)	25.9 (2.2)

Skin temperature at the heel after 30 minutes loading was similar upon the two overlays.

Conclusions.

While the number of heel pressure ulcers are increasing, most pressure ulcers occur at the sacrum. In this study the Waffle® overlay applied significantly higher sacral interface pressure than did the Repose®.

Both overlays resulted in similar rises in heel temperature after 30 minutes loading.

References.

Clark M, Jones N, Hagelstein S. Laboratory based comparison of the effect of two seat cushions upon interface pressure and envelopment. Wounds UK, poster presentation 2017.

Acknowledgement.

WWIC would like to acknowledge the financial support given to this project by the Frontier Medical Group.

"Health & Wealth for Wales"

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Publication

Download this publication from the FMG website visit: https://bit.ly/3uVtiVb

Repose | Mattress Overlay

Laboratory Evaluation | Prevention | Treatment | Pressure Mapping | Peak Interface Pressure | Envelopment

In-Vitro Analysis of the Pressure Redistribution Properties of Reactive Air and Foam Cushions

Lewys Webber, Product Designer,
Frontier Medical Group, UK

With the overall prevalence of pressure injuries standing at 9.3%1 and with costs to treat ranging from $21,000 – $152,0003, pressure injuries are serious, costly and yet preventable.

In today's healthcare environment, it's more important than ever to be able to prove that the interventions in place to treat and prevent pressure injuries are both clinically and cost-effective. With a variety of solutions available, a challenge for clinicians is making the right choice for the patient.

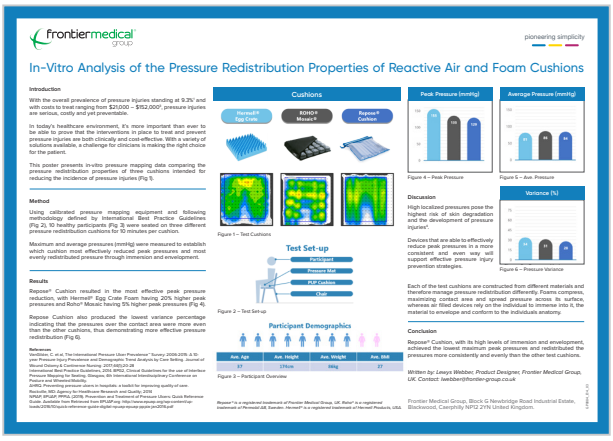
This poster presents in-vitro pressure mapping data comparing the pressure redistribution properties of three cushions intended for reducing the incidence of pressure injuries.

Using calibrated pressure mapping equipment and following methodology defined by International Best Practice Guidelines, 10 healthy participants were seated on three different pressure redistribution cushions for 10 minutes per cushion.

Repose Cushion resulted in the most effective peak pressure reduction, with Hermell Egg Crate Foam having 20% higher peak pressures and Roho Mosaic having 5% higher peak pressures.

Repose Cushion also produced the lowest variance percentage indicating that the pressures over the contact area were more even than the other cushions, thus demonstrating more effective pressure redistribution.

Repose Cushion, with its high levels of immersion and envelopment, achieved the lowest maximum peak pressures and redistributed the pressures more consistently and evenly than the other test cushions.



Publication

Download this publication from the FMG website visit: https://bit.ly/3DAC8LK

Repose | Cushion

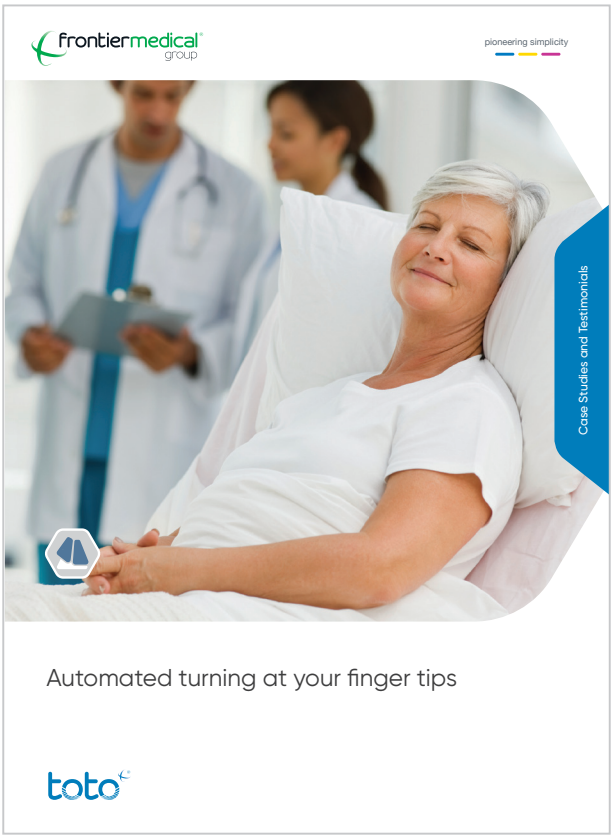
Laboratory Evaluation | Prevention | Treatment | Pressure Mapping | Peak Interface Pressure | Envelopment

Toto Case Study and Testimonial Booklet

Helen Parks. Clinical Advisor to the Community Equipment Service. DipCot. S.R.O.T

This clinical publication details three case studies and four testimonials, from the perspective of both the patient and caregiver using Toto the lateral patient turning system in a community setting.

To learn more please download the full clinical publication from the link and QR code below.



Publication

Download this publication from the FMG website visit: https://bit.ly/3LuCeaC

Toto

Case Studies | Testimonials | Prevention | Treatment | Community | Loan Store | Manual Handling | Patient | Caregiver | Sleep | Amputee | Tetraplegic

Real-world experience of using the Toto Lateral Turning System in a busy spinal unit benefits and tips in practice

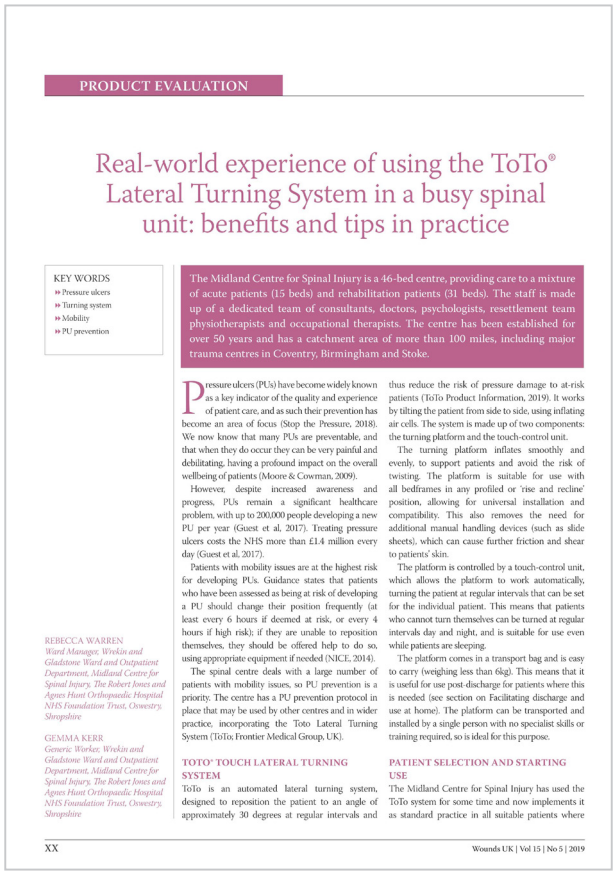
Wounds UK | Vol 15 | No 5 | 2019

Kirsten Mahoney, Clinical Nurse Specialist Wound Healing, Primary, Community and Intermediate Care Division, Cardiff and Vale University Health Board Cardiff

The Midland Centre for Spinal Injury is a 46-bed centre, providing care to a mixture of acute patients (15 beds) and rehabilitation patients (31 beds). The staff is made up of a dedicated team of consultants, doctors, psychologists, resettlement team physiotherapists and occupational therapists. The centre has been established for over 50 years and has a catchment area of more than 100 miles, including major trauma centres in Coventry, Birmingham and Stoke.

Using the Toto system has proved to be extremely beneficial for patients, staff and the department. Staff and patients alike have given excellent feedback and would recommend the system.

Setting up a protocol using the Toto system for suitable patients has facilitated improvements in patient care and staff efficiency, which could be applied to other busy departments where PU prevention in vulnerable patients is a priority.



PRODUCT EVALUATION

Real-world experience of using the ToTo® Lateral Turning System in a busy spinal unit: benefits and tips in practice

KEY WORDS
- Pressure ulcers
- Turning system
- Mobility
- PU prevention

The Midland Centre for Spinal Injury is a 46-bed centre, providing care to a mixture of acute patients (15 beds) and rehabilitation patients (31 beds). The staff is made up of a dedicated team of consultants, doctors, psychologists, resettlement team physiotherapists and occupational therapists. The centre has been established for over 50 years and has a catchment area of more than 100 miles, including major trauma centres in Coventry, Birmingham and Stoke.

Pressure ulcers (PUs) have become widely known as a key indicator of the quality and experience of patient care, and as such their prevention has become an area of focus (Stop the Pressure, 2018). We now know that many PUs are preventable, and that when they do occur they can be very painful and debilitating, having a profound impact on the overall wellbeing of patients (Moore & Cowman, 2009).

However, despite increased awareness and progress, PUs remain a significant healthcare problem, with up to 200,000 people developing a new PU per year (Guest et al, 2017). Treating pressure ulcers costs the NHS more than £1.4 million every day (Guest et al, 2017).

Patients with mobility issues are at the highest risk for developing PUs. Guidance states that patients who have been assessed as being at risk of developing a PU should change their position frequently (at least every 6 hours if deemed at risk, or every 4 hours if high risk); if they are unable to reposition themselves, they should be offered help to do so, using appropriate equipment if needed (NICE, 2014).

The spinal centre deals with a large number of patients with mobility issues, so PU prevention is a priority. The centre has a PU prevention protocol in place that may be used by other centres and in wider practice, incorporating the Toto Lateral Turning System (ToTo; Frontier Medical Group, UK).

TOTO® TOUCH LATERAL TURNING SYSTEM

ToTo is an automated lateral turning system, designed to reposition the patient to an angle of approximately 30 degrees at regular intervals and thus reduce the risk of pressure damage to at-risk patients (ToTo Product Information, 2019). It works by tilting the patient from side to side, using inflating air cells. The system is made up of two components: the turning platform and the touch-control unit.

The turning platform inflates smoothly and evenly, to support patients and avoid the risk of twisting. The platform is suitable for use with all bedframes in any profiled or 'rise and recline' position, allowing for universal installation and compatibility. This also removes the need for additional manual handling devices (such as slide sheets), which can cause further friction and shear to patients' skin.

The platform is controlled by a touch-control unit, which allows the platform to work automatically, turning the patient at regular intervals that can be set for the individual patient. This means that patients who cannot turn themselves can be turned at regular intervals day and night, and is suitable for use even while patients are sleeping.

The platform comes in a transport bag and is easy to carry (weighing less than 6kg). This means that it is useful for use post-discharge for patients where this is needed (see section on Facilitating discharge and use at home). The platform can be transported and installed by a single person with no specialist skills or training required, so is ideal for this purpose.

PATIENT SELECTION AND STARTING USE

The Midland Centre for Spinal Injury has used the ToTo system for some time and now implements it as standard practice in all suitable patients where

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Ward Manager, Wrekin and Gladstone Ward and Outpatient Department, Midland Centre for Spinal Injury, The Robert Jones and Agnes Hunt Orthopaedic Hospital NHS Foundation Trust, Oswestry, Shropshire

GEMMA KERR
Generic Worker, Wrekin and Gladstone Ward and Outpatient Department, Midland Centre for Spinal Injury, The Robert Jones and Agnes Hunt Orthopaedic Hospital NHS Foundation Trust, Oswestry, Shropshire

XX

Wounds UK | Vol 15 | No 5 | 2019

Publication

Download this publication from the FMG website visit: https://bit.ly/3LzONBu

Toto

Evaluation | Prevention | Treatment | Acute | Spinal Injury | Manual Handling | Rehabilitation | Patient Care | Staff Efficiency

NHS Fife Toto Testimonial - The use of Toto in an acute setting

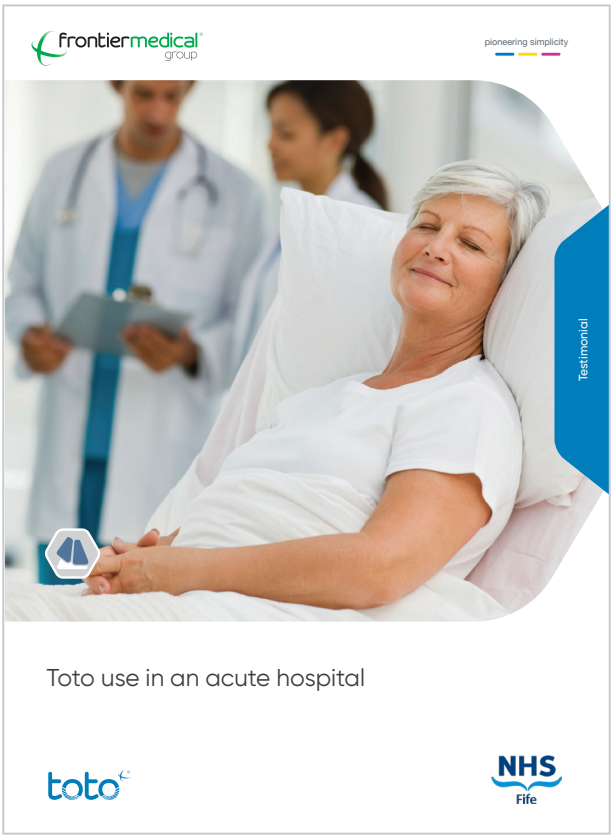
Jane Nicoll, Lead Tissue Viability Nurse (Acute Services)
NHS Fife, Victoria Hospital, Kirkcaldy

Frontier introduced the Toto system to the Tissue Viability Team who considered it for use in the acute hospital environment. The main aims were to improve patient comfort and also reduce manual handling for staff. Introducing the Toto to an acute hospital appeared to have definite advantages and the system is compatible with the current mattress system in use across the hospital site (hybrid active mattresses). Compatibility with the mattress system is important as the Toto tilts a patient on their side at a 30 degree angle. There is a possibility with some dynamic mattress systems that the depth of the mattress and the tilt action could take the patient close to the top of the bedrail. In this case bedrail extensions would be required. The hybrid active mattress is the same depth as a standard size hospital mattress.

Two systems were purchased and installed in to the 30 bedded Orthopaedic trauma ward. Frontier provided focussed training for the staff, supported by the TVN Team. The typical patient demographic in the ward is elderly patients who have sustained fractured neck of femurs. The ward model is unique in Scotland as the team specialise in both orthopaedics and geriatric medicine.

The staff reported immediate benefits particularly overnight as it required fewer staff to carry out the SSKIN bundle interventions. The Toto repositioned the patient; this would have taken 2 staff members previously. With the Toto in place, only one staff member was required to check on patient comfort and the additional elements of the SSKIN bundle.

The introduction of the Toto to an acute hospital has been positive overall. The main benefits being: improved patient comfort due to reduced handling; less manual handling for staff. It is an easy product to set up and use. The company have supported with education which is essential when introducing a new piece of equipment.



Publication

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Toto

Testimonial | Prevention | Treatment | Acute | Manual Handling | Repositioning | Patient Comfort | SSKIN | Dynamic Mattress Systems | Hybrid Active Mattress Systems | Orthopaedics | Geriatric

Psychometric testing and evaluation of user acceptance of an automatic lateral turning device for the prevention of pressure ulcers

Journal of Tissue Viability, July, 2021

Nils Lahmann

Introduction: Repositioning of patients with reduced or impaired mobility could lessen pressure ulcers (PU). Automated preventive devices can support nurses, but user acceptance must be determined with valid and reliable tools. This study measured user acceptance of an automatic lateral turning device, using a self-developed questionnaire.

Method: The study included 194 nurses in leadership positions from 75 institutions. A two-page user acceptance questionnaire was designed and tested for internal validity (exploratory factor analysis; EFA) and reliability (Cronbach's-α). A linear regression analysis was used to test the model's theoretical framework.

Results: The overall response rate was 74.9%. The EFA revealed five exploratory factors ("pain/well-being", "PU prevention", "handling", "nurse support", and "obese patient support") from the two outcomes ("general satisfaction" and "can replace manual repositioning"). The adjusted r was 0.607 for "general satisfaction", with the maximum standardized β for "PU prevention" (0.476), "pain/well-being" (β =0.197) and "handling" (β =0.145). The adjusted r for "can replace manual positioning" was 0.458. The β for "nurse support" was 0.264, followed by "pain-wellbeing" β =0.224) and "obese patient support" (β =0.218).

Conclusion: The psychometric testing results were satisfactory. Overall user acceptance of the automatic lateral turning device was high. A positive evaluation of the system's functionality regarding the prevention of PU, is essential for patient and staff satisfaction, as well as user recommendation.

Journal of Tissue Viability 30 (2021) 216–221

Contents lists available at ScienceDirect

Journal of Tissue Viability

journal homepage: www.elsevier.com/locate/jtv

Psychometric testing and evaluation of user acceptance of an automatic lateral turning device for the prevention of pressure ulcers

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ARTICLE INFO

Keywords:
Pressure ulcer
User acceptance
Preventive device
Lateral turning

ABSTRACT

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1. Introduction

Pressure ulcers (PU) are a serious issue in elderly institutionalized patients [1,2], and are an indicator of the standard of health care [3]. PU cause pain and a reduced quality of life [4]. To identify those at risk, relevant risk factors have been determined [5,6] and a number of preventive interventions have been established [7], with supporting evidence published in clinical practice guidelines for PU prevention [8]. Of these interventions, the repositioning of individuals with impaired mobility, and the use of appropriate support surfaces are the most significant in preventing PU [9–11]. Repositioning of at-risk patients is an essential task in nursing: in bedridden patients, this usually means changing the patient's position, for example, from their left side to their back, or to their right side. A 30° angle for positioning patients has been shown to reduce PU incidence significantly [12]. Although efficient, manual repositioning can be very time-consuming; depending on the patient's condition, this maneuver can take over 15 min [13]. Furthermore, it is a burden for caregivers and may result in work-related musculoskeletal disorders [14,15]. Assistive devices reduce biomechanical loading in the lower back and upper extremities during patient-turning tasks [16]; however, user acceptance is a prerequisite for such technologies [17]. User acceptance is usually validated through the efficacy, effectiveness, and usability of the device [18]. Tools to measure user acceptance must be valid, reliable, and appropriate for the device [19]. In this study, a survey was designed and conducted to measure user acceptance of an automatic lateral turning device to prevent PU. The following research questions were addressed:

- Is the self-designed survey valid and reliable for measuring user acceptance of an automatic lateral turning device?
- If the survey is deemed valid and reliable, what is the user acceptance of the automatic lateral turning device?
- Are there differences in user acceptance, depending on the user and clinical location (i.e., the responder's occupational status or medical discipline)?

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https://doi.org/10.1016/j.jtv.2021.02.007
Received 21 July 2020; Received in revised form 4 February 2021; Accepted 19 February 2021
Available online 23 February 2021
0965-206X/

Publication

Download this publication from the FMG website visit: https://bit.ly/3uPYlkX

Toto

Evaluation | Prevention | Treatment | Manual Handling | Repositioning | Patient Comfort | Staff Support | User Acceptance | Pain | Well-being | Obese Patient

The use of Toto a lateral patient turning system on respiratory and infectious disease wards

Debbie Norman, Abby Harwood & Rachel Linden
University Hospitals Coventry and Warwickshire NHS Trust

Following an identified need, the department/wards were looking at ways to improve pressure area care and the patient experience particularly at end of life/ for those patients on the care of the dying pathway.

Staff wanted to improve both patient and families quality of life experience whilst providing appropriate and effective management of the patients' pressure areas.

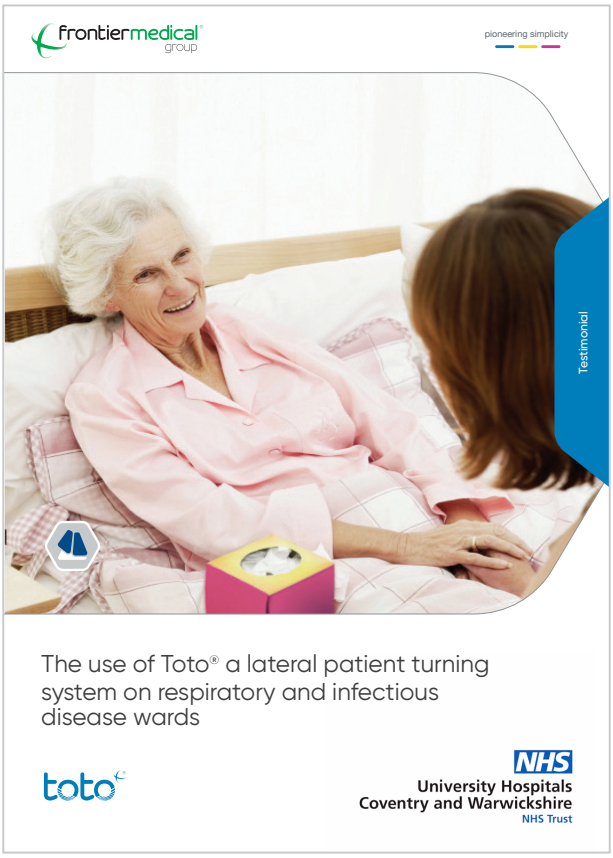
It was identified that two hourly manual repositioning which was standard practice for this patient group could be challenging for staff in terms of time and for the patient and families who were not always wanting to be moved or have their family member moved.

Whilst evaluating the Toto we used it predominantly for end-of-life patients in conjunction with a dynamic mattress system and bed rails in all cases. Family members told us that they felt they had more time with their relatives because they were being repositioned without us having to go in.

Staff say that knowing the patient is being turned gives them peace of mind and it is a relief knowing that the patient would be turned in as prescribed. Registered staff still check skin at least once per shift and all other pressure area care was the same as usual practice.

Following the successful evaluation, we have now applied for funds to purchase a Toto for each ward area and have the option to rent further units when required.

For respiratory patients, Staff have also recognised that for some patients having to be manually repositioned can lead to increased distress and this can impact on their breathing. As a result, they have declined to be moved, despite knowing the risks associated with not doing so. It is felt that using a Toto would help with repositioning without affecting their respiratory function in the way that manual repositioning does.



Publication

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Toto

Testimonial | Prevention | Treatment | Acute | Manual Handling | Repositioning | Patient Comfort | End-of-life | Quality-of-life | Dynamic Mattress Systems

dermisplus®

PREVENT

Collaborative evaluation of a pressure redistribution pad in reducing device related pressure damage in critical care units across two health boards

Karen Williams, Sister Critical Care,
Morriston Hospital ABMU Health Board
Julie Evans, Tissue Viability Nurse,
Morriston Hospital ABMU Health Board
Jane James, Tissue Viability Nurse,
Hywel Dda Health Board

The critical care units in Abertawe Bro Morgannwg University Health Board (48 beds) and Hywel Dda Health Board (16 beds) had zero tolerance to avoidable healthcare acquired pressure ulcers (AHCAPUs); robust scrutiny of all AHCAPUs; and both had implemented many successful improvement measures with respect of reducing pressure damage.

However, device related pressure ulcers (DRPUs) remained a common occurrence, with 8-10 AHCAPUs occurring monthly (2017). Different types/methods of pressure redistribution devices had been trialled with no significant reduction in DRPUs..

The authors acknowledge that using pressure redistribution pads in the prevention of DRPUs is not new approach. However, previous evaluations had not given the clinicians confidence in their effectiveness due to the inflexibility of products and requirement to stock numerous sizes. The effectiveness of this evaluation has led to a change in practice in prevention of DRPUs in this very high risk patient group and as a result planned implementation in other areas.

Collaborative evaluation of a pressure redistribution pad in reducing device related pressure damage in critical care units across two health boards

Karen Williams, Sister Critical Care, Morriston Hospital ABMU Health Board
Julie Evans, Tissue Viability Nurse, Morriston Hospital ABMU Health Board · Jane James, Tissue Viability Nurse, Hywel Dda Health Board

Background

The critical care units in Abertawe Bro Morgannwg University Health Board (48 beds) and Hywel Dda Health Board (16 beds) had zero tolerance to avoidable healthcare acquired pressure ulcers (AHCAPUs); robust scrutiny of all AHCAPUs; and both had implemented many successful improvement measures with respect of reducing pressure damage.

However, device related pressure ulcers (DRPUs) (Fig. 1) remained a common occurrence, with 8-10 AHCAPUs occurring monthly (2017). Different types/methods of pressure redistribution devices had been trialled with no significant reduction in DRPUs.

Figure 1. Example of a medical device which can result in a DRPU

Management Approach

The two Health Boards collaborated in a joint evaluation of a pressure redistributing pad (Fig. 3 Dermis Plus, Frontier Medical) which appeared thinner and offered increased flexibility to mould into and under medical devices.

Over a one month period, patients with medical devices received a redistributing pad, sized and cut to mould the device. These were issued to those with: cervical hard collars; facial respiratory masks; oxygen nasal specs; tracheotomy devices; nasogastric tubing (Fig. 2). Individuals with existing skin damage were excluded.

Figure 2. Examples of medical devices used in conjunction with Dermis Plus.

Outcomes

The results were collected over a one month period from 40 patients with a variety devices. During this period no DRPUs occurred in either Health Board. Staff feedback was positive reporting: ease of use; adaptability; easy to clean. There were no incidences of patients requesting removal from the evaluation and no devices were excluded because the product would not conform. There were no instances of other skin damage reported which had been seen previously such as skin stripping; moisture capture or other skin irritation.

Figure 3. Dermis Plus Pressure Redistribution Pads

Conclusion

The authors acknowledge that using pressure redistribution pads in the prevention of DRPUs is not new approach. However, previous evaluations had not given the clinicians confidence in their effectiveness due to the inflexibility of products and requirement to stock numerous sizes. The effectiveness of this evaluation has led to a change in practice in prevention of DRPUs in this very high risk patient group and as a result planned implementation in other areas.

frontiermedical group

Publication

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Dermisplus Prevent

Evaluation | Prevention | Pressure Redistribtion Pads | MDRPUs | Medical Device | AHCAPUs | Acute | Gel Pads

Use of dermal gel pads in preventing and managing pressure ulcers in ICU: an audit

British Journal of Nursing 2018, Vol 27, No 20: TISSUE VIABILITY SUPPLEMENT

Joanna Swan, Lead Tissue Viability Nurse,
University Hospitals Birmingham NHS Trust

Most of the pressure ulcers (PUs) that developed in the intensive care unit (ICU) of an acute trust were medical-device related. While use of a dermal pad was recommended as part of its pressure ulcer prevention strategy, staff were concerned that it tended to tear or split while in use.

An alternative gel pad (Dermisplus Prevent, Frontier Medical), that was cost-effective and appeared to be more robust, was identified. A 4-week non-comparative audit involving 37 patients was therefore undertaken to investigate the effect of this alternative gel pad on PU incidence in the ICU. With the exception of the change in the gel pad used, there was no difference to the overall PU prevention strategy. No new PUs developed during the audit period with the new gel pad, although there was also no reduction in incidence compared with the previous 3 months. None of the four patients (11%) with blanching erythema developed category 1 PUs.

There were also no reports of tearing or splitting with the new gel pad. The ICU staff commented that they found the new gel pad simpler to use, easier to clean and more robust than the previous product used. Following the audit, the ICU incorporated the new gel pad into its PU prevention strategy.

Use of dermal gel pads in preventing and managing pressure ulcers in ICU: an audit

ABSTRACT

Most of the pressure ulcers (PUs) that developed in the intensive care unit (ICU) of an acute trust were medical-device related. While use of a dermal pad was recommended as part of its pressure ulcer prevention strategy, staff were concerned that it tended to tear or split while in use. An alternative gel pad (Dermisplus® Prevent, Frontier Medical), that was cost-effective and appeared to be more robust, was identified. A 4-week non-comparative audit involving 37 patients was therefore undertaken to investigate the effect of this alternative gel pad on PU incidence in the ICU. With the exception of the change in the gel pad used, there was no difference to the overall PU prevention strategy. No new PUs developed during the audit period with the new gel pad, although there was also no reduction in incidence compared with the previous 3 months. None of the four patients (11%) with blanching erythema developed category 1 PUs. There were also no reports of tearing or splitting with the new gel pad. The ICU staff commented that they found the new gel pad simpler to use, easier to clean and more robust than the previous product used. Following the audit, the ICU incorporated the new gel pad into its PU prevention strategy.

Key words: Medical-device related pressure ulcers ■ Prophylaxis ■ Intensive care unit ■ Robustness ■ Ease of use ■ Cost-effectiveness

Patients in the intensive care unit (ICU) are considered to be at high risk of pressure ulceration for a variety of reasons, ranging from motor and sensory loss due to the use of analgesics, sedatives and/or muscle relaxants, to issues related to underlying disease processes. A systematic review found that age, perfusion, mobility/activity and vasopressor infusion were significant risk factors for pressure ulceration in critically ill patients (Alderden et al, 2017). Others have found that diabetes, length of hospital stay and low serum albumin are also important (Frankel et al, 2007; Sayar et al, 2009; Efeli and Gunes, 2013; de Almeida Medeiros et al, 2018).

In 2017–18, the pressure ulcer (PU) prevalence in England was reported to be between 4.1% and 4.6% (Clinical Audits and Registries Management Service (CARMS), 2017). However, as these audits exclude category I, deep tissue injury (DTI) and device-related PUs, the full prevalence is likely to be substantially higher. There is little accurate prevalence data for PUs in ICU, but the incidence rate has been reported to be between 3% and 20% (Richardson et al, 2017). This range is likely to relate to the local reporting systems used and methodological differences in the studies that calculated the rates. However, it could be argued that, despite the shift in culture that PUs are not an inevitable event for ICU patients, the higher rates observed in this setting are to be expected, given that this patient population is at increased risk.

Guest et al (2017) found the cost of PUs to the NHS is £531.14 million. However, this is an underestimate as the study did not include hospital prescriptions associated with the treatment of these ulcers, or PUs in residential and nursing homes. Furthermore, the impact on patients' wellbeing, quality of life and society also need to be considered.

Current PU prevention strategies for ICU patients include regular repositioning, use of pillows to offload heels, employment of pressure-redistributing equipment such as mattresses, cushions and offloading boots, and nutritional support (National Pressure Ulcer Advisory Panel (NPUAP), European Pressure Ulcer Advisory Panel (EPUAP) and Pan Pacific Pressure Injury Alliance (PPPIA), 2014). A randomised controlled trial found that silicone foam dressings were effective in preventing heel and sacral PUs in the ICU setting (Santamaria et al, 2015). In this single-site RCT, a five-layer silicone foam dressing was applied in the emergency department before admission to ICU. However, a consensus panel of experts subsequently concluded there was inadequate evidence to recommend the use of five-layer silicone bordered dressings in PU prevention (Black et al, 2015).

At the University Hospitals Birmingham NHS Trust, due to the nature of the interventions required in critical care, the ICU is the biggest inpatient user of medical devices. Various methods are used to secure and support medical devices, such as support arms for ventilator tubing, oral endotracheal tubes fasteners that avoid the need for tape, and a catheter/drainage tube holder, but this often differs from unit to unit and there is little robust evidence to support their use. Dermal gel pads (DGPs) (Aderma, Smith & Nephew) are used to provide some pressure redistribution under and around such devices and under vulnerable bony prominences.

The trust has the largest ICU in Europe. While its PU incidence is low, more than 85% of these ulcers are device related. No avoidable category III or IV PUs developed in the ICU in 2017–18, making device-related DTI the biggest PU-related burden across the ICU floor. Guidelines incorporating NPUAP/EPUAP/PPPIA (2014) guidance are in place, with additional local guidance on the use of devices for preventing PUs and redistributing pressure. All registered and unregistered nurses are expected to complete PU competencies every 3 years, and all ICU staff receive yearly update training on

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Accepted for publication: September 2018

This article is reprinted from the British Journal of Nursing 2018, Vol 27, No 20: TISSUE VIABILITY SUPPLEMENT

Publication

Download this publication from the FMG website visit: https://bit.ly/3LJ5YRj

Dermisplus Prevent

Evaluation | Prevention | Pressure Redistribtion Pads | MDRPUs | Medical Device | AHCAPUs | Acute | Intensive Care Unit | Cost Efficiencies | Gel Pads

Evaluating the use of the Dermisplus Prevent pad to prevent pressure damage among patients at risk of pressure ulceration

Wounds UK | Vol 14 | No 4 | 2018

Kirsten Mahoney, Clinical Nurse Specialist Wound Healing, Primary, Community and Intermediate Care Division, Cardiff and Vale University Health Board Cardiff

While pressure and shear can be reduced through the use of appropriate patient support surfaces; gel pads and wound dressing materials may also be used to protect skin and soft tissues from mechanical loading.

This case series reports recent experience in the use of one soft polymer gel pad (Dermisplus Prevent, Frontier Medical, UK) to reduce the risk of pressure damage. The patients who took part in the case series were at risk of developing pressure related damage to the skin either based on their Waterlow score or on the nurses' clinical judgement.

Four patients participated in the evaluation and are presented as case studies. Overall the product was well tolerated by all 4 patients. There was a marked improvement in pain scores in 3 out of 4 patients with the final patient having neuropathy and so did not experience any pain. In the two patients with erythema this was reduced in both cases. Dermisplus Prevent was washable and durable and did not disintegrate or show any signs of deterioration during the two-week evaluation. The product was well accepted by the patients all of which said they would use the product.

PRODUCT EVALUATION

Evaluating the use of the Dermisplus® Prevent pad to prevent pressure damage among patients at risk of pressure ulceration

KEY WORDS
- Gel pad
- Pain
- Pressure ulcer
- Prevention

While pressure and shear can be reduced through the use of appropriate patient support surfaces; gel pads and wound dressing materials may also be used to protect skin and soft tissues from mechanical loading. This case series reports recent experience in the use of one soft polymer gel pad (Dermisplus® Prevent, Frontier Medical, UK) to reduce the risk of pressure damage. The patients who took part in the case series were at risk of developing pressure related damage to the skin either based on their Waterlow score or on the nurses' clinical judgement. Four patients participated in the evaluation and are presented as case studies. Overall the product was well tolerated by all 4 patients. There was a marked improvement in pain scores in 3 out of 4 patients with the final patient having neuropathy and so did not experience any pain. In the two patients with erythema this was reduced in both cases. Dermisplus® Prevent was washable and durable and did not disintegrate or show any signs of deterioration during the two-week evaluation. The product was well accepted by the patients all of which said they would use the product

Pressure ulcers are caused by high or sustained skin and soft tissue deformation due to pressure and/or shear (The National Pressure Ulcer Advisory Panel (NPUAP), European Pressure Ulcer Advisory Panel (EPUAP) Pan Pacific Pressure Injury Alliance (PPPIA), 2014). There are several contributory factors that may increase the risk of developing a pressure ulcer including poor mobility, incontinence, extremities of age, neurological conditions, poor nutrition, poor posture or deformity and an episode of serious illness (National Institute for Health and Care Excellence (NICE), 2014). The exact prevalence of pressure ulcers in the UK is difficult to establish due to lack of consistency in reporting methodologies however NICE (2014) reported that the prevalence of pressure ulcers among in-patients in hospitals in England was 4.7%. More recently Clark et al (2017) reported an 8.9% prevalence of pressure ulcers across all acute and community hospitals across Wales. Clark et al collected data using the European Pressure Ulcer Advisory Panel (EPUAP) methodology (Vanderwee et al, 2007) where the skin of all consenting patients was visually inspected by two nurses and is likely to be more accurate than estimates based on staff recollection of which patients have pressure ulcers. The prevalence of pressure ulcers in non-hospital settings is yet to be accurately established. Vowden and Vowden (2009) reported the numbers of superficial and severe pressure ulcers in hospital or in patients' home in Bradford with 40 and 115 patients respectively with pressure ulcers. From a database review, Guest et al (2015) considered that 7% of wounds that presented to GP practices were pressure ulcers. The cost of treating pressure ulcers has been estimated at £1.4–2.1 billion per year (Dealey et al, 2012), this cost includes dressing expenditure, nursing time, treatment of complications and pressure redistributing products. The cost of pressure ulceration is not just financial; for affected patients there are often negative impacts on their quality of life (Essex et al, 2009) including pain, odour, social isolation and even death.

Successful prevention of pressure damage involves identification of a patient's specific risk

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84 Wounds UK | Vol 14 | No 4 | 2018

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Dermisplus Prevent | Pads

Evaluation | Prevention | Pressure Redistribtion Pads | Gel Pads | Pain | Community

Evaluation of Dermisplus Prevent as an alternative to current product, to prevent pressure ulcers including medical device related pressure ulcers

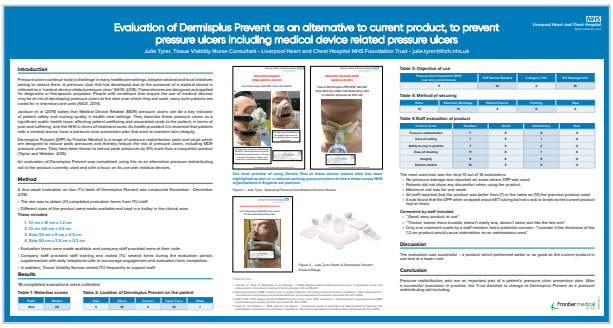
Julie Tyrer, Tissue Viability Nurse Consultant
Liverpool Heart and Chest Hospital NHS Foundation

Pressure ulcers continue to be a challenge in many healthcare settings, despite national and local initiatives aiming to reduce them. A pressure ulcer that has developed due to the presence of a medical device is referred as a 'medical device related pressure ulcer' (NHSI, 2018). These devices are designed and applied for diagnostic or therapeutic purposes. People with conditions that require the use of medical devices may be at risk of developing pressure ulcers at the sites over which they are used, many such patients are cared for in intensive care units (NICE, 2015).

Dermisplus Prevent (DPP) by Frontier Medical is a range of pressure redistribution pads and strips which are designed to reduce peak pressures and thereby reduce the risk of pressure ulcers, including MDR pressure ulcers. They have been shown to reduce peak pressures by 10% more than a competitor product (Taylor and Webber, 2016).

An evaluation of Dermisplus Prevent was completed, using this as an alternative pressure redistributing aid to the product currently used and with a focus on its use with medical devices.

Pressure redistribution aids are an important part of a patient's pressure ulcer prevention plan. After a successful evaluation in practice, the Trust decided to change to Dermisplus Prevent as a pressure redistributing aid including.


Evaluation of Dermisplus Prevent as an alternative to current product, to prevent pressure ulcers including medical device related pressure ulcers

Julie Tyrer, Tissue Viability Nurse Consultant • Liverpool Heart and Chest Hospital NHS Foundation Trust • julie.tyrer@lhch.nhs.uk

Introduction

Method

Results

Discussion

Conclusion

Publication

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Dermisplus Prevent | Pads | Strips

Evaluation | Prevention | Pressure Redistribtion Pads | MDRPUs | Medical Device | AHCAPUs | Acute | Intensive Care Unit | Cost Efficiencies | Gel Pads

Evaluation of Dermisplus Prevent as an alternative to current product, to prevent pressure ulcers including medical device related pressure ulcers

Wounds UK | Vol 16 | No 1 | 2020

Julie Tyrer, Tissue Viability Nurse Consultant
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PRODUCT EVALUATION

Evaluating Dermisplus® Prevent for the avoidance of development of medical device-related pressure ulcers

KEY WORDS
- Dermisplus Prevent
- Evaluation
- Medical device-related pressure ulcers
- Pressure ulcer prevention

Medical device-related pressure ulcers (MDRPUs) can be a key indicator of patient safety and nursing quality in healthcare settings (Jackson et al, 2019). Preventing the development of this type of pressure ulcer can be challenging since the medical device may be an essential part of the patient's care and treatment plan (Black and Kalowes, 2016). The use of silicone between the skin and the device has been recommended as one method of reducing the risk of developing MDRPUs (Galetto et al, 2019). **Aim:** To assess how well Dermisplus Prevent maintains skin integrity compared to the current product used. **Method:** Twenty evaluation forms for Dermisplus Prevent were completed to assess its performance against specific criteria. **Results:** The product was well reviewed when assessing pressure redistribution, ease of use and patient comfort. All staff reported that the product performed better than or the same as the current product used in practice. **Conclusion:** Dermisplus Prevent appears to be an effective and cost-effective product to assist in the prevention of pressure ulcers, including MDRPUs.

Pressure ulcers continue to be a challenge in many healthcare settings, despite national and local initiatives aiming to reduce them (NHS Improvement, 2018; 2019 National Wound Care Strategy Programme, 2020). A pressure ulcer that has developed due to the presence of a medical device (designed and applied for diagnostic or therapeutic purposes) is called a medical device-related pressure ulcer (MDRPU) (NHS Improvement, 2018).

Any adult or child patient with conditions that require the use of medical devices may be at risk of developing pressure ulcers at the sites at which these are used. However, patients cared for at intensive care units are at a greater risk of developing MDRPUs (National Pressure Ulcer Advisory Panel [NPUAP], European Pressure Ulcer Advisory Panel [EPUAP] and Pan Pacific Pressure Injury Alliance [PPPIA], 2014; National Institute for Health and Care Excellence [NICE], 2015).

Jackson et al (2019) stated that MDRPUs can be a key indicator of patient safety and nursing quality in healthcare settings. They described this type of pressure ulcer as a significant public health issue, because of the associated costs to patients in terms of pain and impact on their quality of life, and to the NHS in terms of treatment costs.

THE SIZE OF THE PROBLEM

It has been reported that 11.9% of pressure ulcers are MDRPUs (Van Gilder et al, 2009) and that 50% of hospital-acquired pressure ulcers are MDRPUs (Pittman et al, 2015). However, this is still an area which is understudied, with differences and inconsistencies in assessing, recording and reporting MDRPUs. An accurate incidence rate is not known (Barakat-Johnson et al, 2019). It is thought that MDRPUs are under-reported and they have been described as a 'hidden' category of pressure damage. NHS Improvement in the 'Pressure Ulcers: Revised Definition and Measurement Framework' recommend that Tissue Viability Nurses (TVNs) code and record MDRPUs in their local incident reporting systems and the National Reporting and Learning System (NHS Improvement, 2018).

Prevention of these pressure ulcers is more challenging since the device may be an essential part of the patient's care and treatment and cannot

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How to manage a tracheotomy pressure injury - An innovative approach

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Patients with medical devices in situ are 2.4 times more likely to develop a pressure injury than those without. A medical device, for example, permanent tracheotomy as in this case, is likely to exert suffice and sustained pressure over skin susceptible to breaking down. Guidance on the correct placement and fixation of a permanent tracheotomy is important.

Whilst incorporating a Multidisciplinary Team (MDT) approach, we report on a solution for an individual with complex care needs who had developed an unstageable, tracheotomy acquired pressure injury.

The Multidisciplinary team consisted of; a healthcare scientist, tissue viability nurse, district nurse and carers

Mr B is a 26 year old man who due to a road traffic accident in 1995 suffered a complete spinal cord injury at C1 with a diagnosis of quadriplegia. He has Long-term ventilation via a permanent tracheotomy and lives independently but is fully supported by his nursing team for his specialised care needs and all aspects of Aided Daily Living.

The innovative use of a pressure redistribution pad by a MDT has reduced the secondary complications from pressure damage ensuring a positive patient experience meaning that they can continue to live in and as part of the community.

Publication

Download this publication from the FMG website visit: https://bit.ly/3DCxZXV

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