

Risk assessment and anatomical foam heel dressings in emergency department contribute to

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Summary

Pressure ulcers affect large numbers of patients within health services. Preventive measures need to be implemented early in a patient hospital stay and at all levels of hospital care. A successful ulcer prevention program will address contributing factors such as pressure, shear forces, friction and moisture. This paper reports the results of a 'quality activity' undertaken to assess the role of an anatomical heel dressing, Allevyn Heel (Smith & Nephew), as part of a preventive pressure-area management strategy in at-risk patients in a hospital emergency department. Allevyn Heel dressings were applied to one hundred patients assessed as being at moderate to high risk of developing a pressure ulcer after presenting to Box Hill Hospital emergency department in Victoria, Australia. A random audit of twenty patient histories was performed at the end of the quality activity to determine how many patients, if any, developed a pressure ulcer. All twenty patient histories randomly audited at the end of the two-week period had no documentation of evidence of a pressure ulcer. Allevyn Heel was reported to be easy to use and comfortable for patients. This quality activity was successful in bringing pressure area management to the fore of emergency care consideration. The results of this activity show that emergency departments can successfully participate in the prevention of pressure ulcers by instituting preventive measures from the time a patient first presents to hospital, thereby helping to facilitate better long-term health outcomes.

Introduction

The Australian Council on Healthcare Standards recognises hospital acquired pressure ulcers as a clinical indicator of

the standard of care a facility provides¹. The council's latest report summarises clinical indicator data from healthcare organisations (HCOs) across Australia and New Zealand and reveals that for every 10,000 bed days approximately eight patients record one or more pressure ulcers¹. Furthermore, of the 654 HCOs reported on, 28 have significantly higher rates of pressure ulcers than their peer organisations¹.

Institutions that do not provide intervention strategies to minimise the risk of patients developing pressure ulcers are at risk of litigation². The precedent set by a UK patient who successfully sued a health authority for £100,000 (approximately AUD250,000) after developing a pressure ulcer following hip surgery³, suggests it may be cheaper to prevent pressure ulcers than to deal with them after they have occurred.

In 2003, the Victorian Quality Council (VQC) undertook their second statewide Pressure Ulcer Point Prevalence Survey (PUPPS 2). The survey identified that more than one in five

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patients within Victoria's health services had a pressure ulcer at some point during their hospital admission; 20% of these pressure ulcers involved the heel².

Pressure, shear, friction and moisture are the four main external factors that contribute to the development of pressure ulcers⁴. Pressure ulcers predominantly occur during periods of acute or prolonged illness and commonly affect patients who are neurologically impaired, immobile for long periods of time or frail and elderly². Additional predisposing risk factors include poor nutritional status and medical comorbidities such as diabetes and peripheral vascular disease⁴.

The PUPPS 2 report suggests that early detection and prevention, combined with increased use of a risk assessment tool, will decrease the incidence of pressure ulcers in our hospitals. The report recommended that all health services develop evidence based, targeted strategies to 'implement, focus and sustain' a pressure ulcer prevention and management program².

However, there has been little focus to date on initiating such measures when a patient first presents to hospital – usually when seeking acute management of a medical problem via the emergency department (ED).

In an EDs, patients can wait immobile on trolleys for long periods of time prior to their admission to a ward or discharge home. The average length of stay in an Australian hospital ED during 2003 – 2004 was three hours and forty minutes⁵. Irreversible tissue damage from unrelieved pressure can develop in a vulnerable patient in as little as thirty minutes².

Shear forces are often encountered when patients cannot support their own body weight, maintain postural alignment or move independently⁶. Friction is commonly experienced when a patient cannot sufficiently be lifted during repositioning and is dragged over rough bedlinen⁶. These forces have become even more evident since the implementation of 'back-safe' prevention strategies; bed-bound patients are increasingly relied upon to move themselves and are often encouraged to use the heel as a stabilising force when shifting position². Patients encounter this issue in the ED, as they do in any other ward.

Pressure ulcer preventive dressings with low friction external surfaces have been shown to significantly reduce shear forces



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and friction⁷. Other forms of protection designed to prevent tissue abrasion may also be effective⁶. However, many EDs do not routinely have or use these devices.

In light of these findings, the authors recently undertook a 'quality activity' at Box Hill Hospital (BHH) ED to assess the role of an anatomical heel dressing, Allevyn Heel, as part of a preventive pressure area management strategy in at-risk patients in the ED. This assessment was combined with staff education regarding pressure ulcer development and management, and formed part of individual pressure ulcer management plans.

The quality activity also aimed to increase the department's awareness and utilisation of the Eastern Health risk assessment tool for predicting pressure ulcer risk and to improve staff compliance with pressure area management strategies.

Methods

This quality activity evaluated 100 patients who presented to BHH ED over a two-week period and were assessed as being at moderate to high risk (score of ≤ 14 on the Braden scale) of developing a pressure ulcer. Allevyn Heel dressings were applied to this group of patients. Patients who presented with existing heel ulcers were not eligible for inclusion in the study.

Seven education sessions capturing nursing staff across all emergency shifts were provided by Smith & Nephew in the week preceding the commencement of the quality activity. During these sessions, staff became familiar with the activity evaluation documents, including the Eastern Health risk assessment tool (the Braden scale for predicting pressure sore risk), and Smith & Nephew product information.

Nurses completed a risk assessment form and questionnaire for each patient to whom an Allevyn Heel dressing was applied. The questionnaire included questions such as 'How easy was Allevyn Heel to apply?' and 'How did the patient respond to the application of Allevyn Heel?' Identifying data were removed from the evaluation booklets to protect patient anonymity.

A Division 2 nurse was utilised throughout the quality activity to assist fellow staff in the completion of the evaluation documentation and to encourage compliance and consistency

Patient characteristic	Number (n)	
Females	60	
Males	40	
Multiple risk factors	82	
Diagnosis		
- neurological	21	
- medical	13	
- respiratory	12	
- orthopaedic	7	
- cardiac	4	
- gastroenterology	4	
- haematology	2	
- febrile	1	
- endocrine	1	
- not provided	35	
Risk assessment score on admission		
- moderate	49	
- high	49	
- not provided	2	
General appearance of heel on admission		
	Left	Right
- healthy	58	59
- inflamed	9	9
- macerated	0	0
- dry and flaky	30	28
- other	5	5

Table 1. Patient characteristics

of reporting.

Logbooks were kept to track patient destinations following their discharge from the ED. At the completion of the activity, 20 patient histories were randomly chosen for an audit to determine which patients had developed a pressure ulcer following the institution of ulcer preventive

measures, including the use of an anatomical heel dressing, in the BHH ED.

Results

The mean age of the 60 females and 40 males enrolled in the study was 78.3 years (age range: 34–102 years); 82% had multiple comorbidities, with 62% classified as bedbound and so at high risk of pressure ulcers (Table 1).

The heels of most patients appeared healthy on admission (left heel $n = 58$; right heel $n = 59$); 29% (including left and right heels) were reported to be 'dry and flaky', while 9% appeared inflamed. Heel maceration was not observed in any patients on admission.

Allevyn Heel dressing was found to be 'easy' or 'very easy' to use 86% percent of staff and 87% of dressings were applied in under five minutes (Table 2). Surgifix tubular elastic net bandage or Easifix Cohesive self-adhesive retention bandage (both Smith & Nephew) were used to secure the heel dressings. Allevyn Heel conformed well to patient heels, with 81% of staff reporting that the dressing provided a 'moderate fit' and 10% rating the fit as 'superior'.

All patients who were able to respond to questioning ($n=55$) rated the Allevyn Heel dressing as 'comfortable' or 'very comfortable'. All nursing staff stated that, if indicated, they would continue to use the dressing after the study concluded.

Additional pressure relieving devices, namely high density mattresses or elevation of the heels with pillows, were used in 57 patients. There were anecdotal reports that the lack of availability of additional support aids, such as pillows and wedges to maximise patient positioning, resulted in poor turning schedules.

Pressure ulcers were not documented in any of the 20 patient histories included in the random audit at the end of the two-week study period.

Discussion

This quality activity reveals that a substantial number of patients presenting to BHH ED are at high risk of developing a pressure ulcer and highlights the need for an enduring and effective risk assessment and pressure ulcer prevention program within BHH ED.

EDs, by definition, are used to dealing with problems acutely. The need to consider the impact of emergency care in the longer term can be usurped by the imperative to deal with other more immediate priorities. The BHH ED nurses coordinating this quality activity felt the activity was most helpful in bringing pressure area management to the forefront of emergency care consideration. This was reflected in the number of staff enquiries into the availability of further

Ease of application

Very Easy	Easy	Acceptable	Difficult
54	32	13	1

Dressing conformity

Superior fit	Moderate fit	Slight fit	Did not fit
10	81	9	0

Time taken to apply

<5 min	5–10 min	10–15 min	15–20 min
87	12	1	0

Patient response to application

Very comfortable	Comfortable	Uncomfortable	Unable or did not respond
25	30	0	45

Table 2. Allevyn Heel dressing characteristics

pressure relieving aids and devices during and after the study.

The small number of patients included in the final random audit should be considered when interpreting the results of this activity. The pressure to maintain patient throughput in a busy ED sometimes limited the ability of nurses to enrol patients in the activity; some 'at-risk' patients may have been overlooked, biasing the audit findings. Staff compliance with paperwork throughout the study was also reduced during busier periods.

As a result of this study's findings, all patients presenting to BHH ED who are considered 'at-risk' for a pressure ulcer have Allevyn Heel applied as part of a multidisciplinary, multi-faceted prevention initiative.

Eastern Health also aims for all wards to have access to pressure relieving devices as needed to continue and/or enhance the ulcer preventive measures now being initiated in the ED. BHH ED will continue to review incident reports on pressure ulcers to evaluate the effectiveness of their preventive measures.

The PUPPS 2 report states that completion of a risk assessment tool to distinguish between hospital and community acquired pressure ulcers is vital as it highlights the needs of a facility regarding pressure area management¹. BHH ED will continue to use the Eastern Health risk assessment tool for predicting pressure ulcer risk and educate all staff in its use.

Conclusion

Implementing pressure relieving strategies in the ED is part of the holistic care of the acutely unwell patient and may facilitate better long-term health outcomes for the patient.

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This study was funded by Smith & Nephew. Allevyn Heel

is a trademark of Smith & Nephew. Easifix and Surgifix are registered trademarks.

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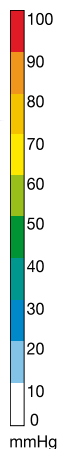
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