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An evaluation of a  
Static/Dynamic system  
across a Primary Care Trust

## **Meeting the patients objectives**

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The logo for Softform Premier Active is located in the bottom right corner. It features the word "Softform" in a large, bold, red sans-serif font. Above the letter "o" in "Softform" is a small blue oval containing the word "INVACARE" in white. Below "Softform" is the phrase "Premier Active" in a smaller, red, italicized sans-serif font. A small registered trademark symbol (®) is positioned to the right of "Softform", and a trademark symbol (™) is positioned to the right of "Active".

## Introduction

A pressure ulcer is a localized injury to the skin and/or underlying tissue usually over a bony prominence, which results from pressure or pressure associated with shear (EPUAP, 2009). Pressure ulcers, also referred to as pressure sores, bedsores and decubitus ulcers and are classified using the European Pressure Ulcer Advisory Panel (EPUAP (2009) classification index, and range from mild dis-colouration of the skin, to a deep wound extending to bone and into internal organs (Romanelli, 2006). There are several factors influencing the clinicians selection of appropriate pressure ulcer prevention and management strategies including patient safety which has become an increasing concern. The National Patient Safety Agency aims to lead and contribute to safe patient care by informing, supporting and influencing organisations and people working in the health sector ([www.npsa.nhs.uk/nrls](http://www.npsa.nhs.uk/nrls)). Similarly, pressure ulcers have become increasingly high on the political agenda since the NICE 2005 guidelines (Nice 2005) and the publication of the EPUAP (2009) guidelines. Importantly, the EPUAP (2009) guideline does not promote a particular brand of pressure reducing/relieving equipment but practical considerations in relation to cost, quality, guarantee, ease of replacement parts, the ability to step up to alternating pressure should be considered. The Professional code (NMC 2008) emphasises that care should be based upon the available evidence. This article reports on an audit undertaken within a PCT to determine the clinical and cost effectiveness of the Softform Premier Active® mattress. Preliminary results have been previously published (Stephen - Haynes 2009) and are presented here in full.

## Softform Premier Active® mattress

The Invacare Softform Premier® static pressure reducing mattress is a non turn mattress with a reinforced PU base, has a two way stretch vapour permeable cover with welded seams and a fully concealed welded zip.



The Invacare **Softform Premier Active®** is based upon the Softform Premier® mattress with the addition of a layer of alternating air cells inserted between the castellated foam insert and the mattress base. It has a 39 stone (248kg) weight limit, the pump weighs 2kg and the mattress weighs 13kg. The product has an 8 year warranty on the foam, a 4 year warranty on the cover and 2 year product support for the pump. The alternating inserts operates on a 2 Cell – 10 minute cycle and upgrade from the Softform® Premier is available with all parts being replaceable, this allows stepping up and down between static and dynamic alternating pressure with ease. In the event of a power failure, the patient remains on a static pressure reducing mattress.

## Rationale

The previous research undertaken by Thompson (2006) discusses 2 patient care scenarios from an overall evaluation of 40 patients including patients with a Waterlow (1995) score of 18-30, with or without a grade 1-2 pressure ulcer (EPUAP 1998a and EPUAP 1998b). Thompson identifies a number of clinical conditions nursed on the mattress including age- related general deterioration, cancer, cystic fibrosis, bariatric, renal failure, cardiac failure, diabetes and post operative recovery.

Thompson (2006) concludes that used in conjunction with a pressure ulcer prevention strategy the Softform Premier Active® may be used in the prevention and treatment of 'High Risk' patients and has the potential to reduce the reliance on alternating pressure air (fully dynamic) mattresses.

Gray et al (2008) undertook a study to compare the effect of using the Softform Premier Active®, versus a standard dynamic mattress on pressure ulcer incidence in two elderly care wards, on a sample of 50 subjects. The mean age was 82.4, mean Waterlow=22.2 (range 17-29). Of the 50, 4 developed a grade 2 pressure ulcer (sacral ulcer-3, heel ulcer-1) whilst on the Softform Premier Active® mattress. On the comparison mattress, a dynamic alternating underlay, 4 subjects also developed a pressure ulcer (sacral-2, heel-2). A conclusion is made that an 8% incidence in this particular group was "surprisingly low" and that the Softform Premier Active® pressure reducing mattress was as effective as the standard dynamic mattress in pressure ulcer prevention.

## Method

Following these previous reviews by Thompson (2006) and Gray (2008) it was agreed to audit the Invacare Softform Premier Active® within the PCT. An audit of 20 patients was undertaken which included patient outcomes, comfort, infection control and EBME. Clinical Governance gave permission for the audit. The PCT purchased 5 mattresses and were supplied with a further 5 mattresses by Invacare.

An audit tool was developed and agreed by the Consultant Nurse, Equipment Loans Manager and Clinical Governance. The audit was arranged through the Central Equipment Loan Service and included the following criteria:

- |                            |                 |
|----------------------------|-----------------|
| • Age                      | • Mobility      |
| • Weight                   | • Comfort       |
| • Waterlow risk assessment | • Functionality |
| • Rationale for use        | • Audit support |
| • Skin condition           | • Cost          |
| • Clinical effectiveness   |                 |

The patient criteria for inclusion included: Up to a grade 3 pressure ulcer (EPUAP 1998a)\*, patients with neurological disorders and degenerative conditions with a requirement to improve/maintain skin condition, improve comfort or requirement for an alternative system. All patients were offered and had access to the existing range of equipment available across the PCT. Additionally, some areas not considered in the original audit were highlighted and are of particular interest including reduction in spasm, alteration to sleep pattern and reduction of motion sickness as well as patient acceptability.

\* EPUAP 2009 not available at the time of commencement of the evaluation

## Results

- Age ranges from 45 - 99, mean= 71.3 years
- Recorded weights: Min 8st (51kgs) Max 25st (159kgs)
- Waterlow risk of 11 -25
- Intact skin = 8
- Grade 1 = 1
- Grade 2 = 9
- Grade 3 = 2

Of the 20 patients evaluated, 10 showed signs of skin improvement within 2 weeks, none of the patients' skin condition deteriorated, 14 patients found the mattress to be more comfortable than previous equipment, 4 found it to be as comfortable, 2 did not comment.

A total of 2 found an improvement relating to motion sickness, 1 found it decreased spasms and 1 found their sleep pattern improved. 8 patients found the system quieter than their previous equipment.

All 20 staff found the equipment easy to use, 16 recommended it for purchase, and 4 did not comment.

### Patient outcome of evaluation

Outcome	Number of Patients
Skin improvement	10
Skin deterioration	0
More comfortable	14
As comfortable	4
Improvement in motion sickness	2
Decreased spasm	1
Improved sleep pattern	1



Age	Diagnosis	Waterlow risk assessment	EPUAP classification	Outcome
71	MND	18	2	Improve skin and comfort
56	MS	20	0	Maintain skin
57	MS	18	0	Maintain skin
99	Frail	20+	0	
62	Myeloma	27	2	Maintained
78	Cardiac failure	17	2	Healed
91	Angina	12	2	Healed
51	Paraplegic	21	3	Improved ulcer
88	Cardiac failure	18	2	Improved ulcer
84	Osteoarthritis	23	2	Maintained
57	MS	20	0	Maintained
75	MND	20	1	Improved ulcer Improved motion sickness
68	Cancer of cervix	11	0	Maintained
80	Cancer of lung	21	0	Maintained
50	MS	20+	3	Healed
92	Cardiac failure	15	2	Maintained
70	MS Palliative	21	2	Passed away. Skin maintained Improved motion sickness
82	Palliative	21	0	Passed away Skin maintained
45	MS	25	0	Reduced spasms Improved sleep Skin maintained
64	MS	24	2	Healed

## Conclusion

The maintenance, purchase and appropriate use of equipment requires a multi-professional approach. The audit indicates that despite significant age, chronic illness and palliative care needs the Softform Premier Active® mattress offered a number of clinical benefits, including:

- Maintaining skin
- Improvement in patients with up to a grade 3 pressure ulcer
- Patient comfort
- Reduced spasms
- Improved sleep pattern

The Softform Premier Active® mattress offers some significant factors including: ease of use, simple operation within a quiet system, high weight limitations, ease of storage, ease of manual handling, maintenance of infection control and the availability of replacement parts. Importantly, nursing care, re-positioning, skin care, nutrition and an overall holistic assessment and plan of care by motivated well informed staff make a significant contribution to overall care.