

ADOPTING A MODEL OF CHANGE FOR HOSPITAL PRESSURE ULCER PREVENTION

SOFTFORM® PREMIER ACTIVE 2

MAKING THE CASE

DEVELOPING A MODEL FOR CHANGE

A cost-efficiency model was developed to overcome significant costs spent in one NHS Trust on rental of dynamic mattresses for pressure ulcer (PU) care. This model supports the use of Softform Premier Active 2 Hybrid Support Surface (Invacare) in the management of patients at risk of developing a PU and for those with existing pressure damage.

ABOUT SOFTFORM PREMIER ACTIVE 2

The Softform Premier Active 2 mattress offers a hybrid dual-purpose system, combining a high-specification static foam mattress with an optional dynamic pump. This system can be used to step up or step down care according to the patient's level of risk.

SOFTFORM PREMIER ACTIVE 2 DESIGN

The mattress comprises a layer of castellated foam cells that move independently for improved patient comfort and to provide a stable support surface. This is covered in a 4-way stretchable, vapour permeable, fluid-resistant cover with a concealed zip. The static foam mattress converts to a dynamic surface with the addition of a digital pump. The pump activates the air underlay, which alternates on a 10-minute cycle. It uses software to assess a patient's weight in order to supply the appropriate level of air, to create an alternating surface that is equivalent to a stand-alone dynamic support (*Figure 1*).

CAN IT REPLACE STAND-ALONE DYNAMIC SYSTEMS?

The drive for zero tolerance of hospital-acquired PUs has led to significant investment by hospitals in dynamic support systems (e.g. alternating mattresses). These mattresses are usually leased, rather than purchased, and need to be stored when not in use. The Softform Premier Active 2 can be used as both a high-specification foam mattress and as a dynamic support surface. All that is required is the simple attachment of a powered pump, eliminating the need to transfer the patient to a replacement mattress. This encourages a proactive rather than reactive approach to PU prevention.

CLINICAL EVIDENCE FOR USE

A study of the Softform Premier Active 2 mattress versus a standard alternating pressure air mattress was carried out to determine the effects on PU incidence over a 6-month period in two elderly acute care wards. Results indicated that the Softform Premier Active 2 mattress was as effective as a standard air mattress at preventing PUs in the high-risk elderly patient, but is less costly (Gray et al, 2008).

In a post-study questionnaire, staff said that they found the Softform Premier Active 2 mattress to be as good as the standard air mattress in terms of moving and handling, cleaning, patient acceptability and ease of set up (Gray et al, 2008).

A further audit of 20 patients was performed in a primary care trust to determine the clinical effectiveness of the Softform Premier Active 2 mattress (Stephen-Haynes, 2010). This demonstrated:

- healing in patients with up to Category III pressure ulcers (n=8)* (Note: patients with Category IV pressure ulcers were not included)
- skin integrity maintained (n=5)
- reduced spasms (n=1)
- patient comfort/improved sleep patterns (n=6)
- ease of use by all staff (n=20), with reduction in manual handling and maintenance of infection control.

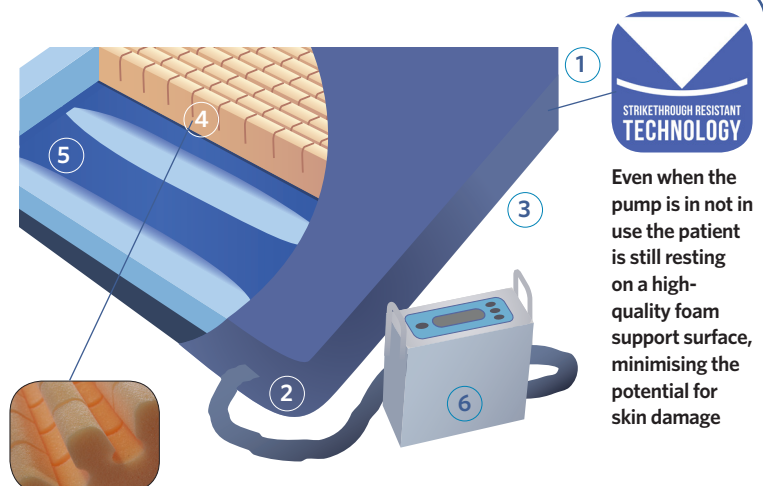
In summary, Softform Premier Active 2 is as effective as a standard alternating pressure mattress, but has the advantages of dual functionality and lower costs. This may give trusts the option to reduce the expenditure associated with the purchase or hire of a dynamic support surface. Ongoing trials are currently underway in patients at risk and up to Category IV PUs.

COST

The Softform Premier Active 2 can be purchased as a replacement mattress for only a small incremental increase on the price of a standard foam mattress. The digital pump can be purchased separately according to demand — i.e. more mattresses will be needed than pumps.

Figure 1: Key features of the Softform Premier Active 2

- 1 **Strikethrough Resistant Technology™ cover** — designed to combat rigorous hospital cleaning procedures. Made from breathable, yet highly durable and highly chemical-resistant polyurethane polymer, which makes it more resistant to abrasion and damage
- 2 **Concealed zips and welded seams** — reduce the risk of fluid ingress for improved infection control
- 3 **Side wall support** for ease of handling and patient transfer
- 4 **Castellated foam insert** — the size of each foam cell and the design of the key hole cuts allow the mattress to absorb shear and friction forces, and ensure the patient is immersed into the foam for optimal pressure redistribution
- 5 **Air cells** — placed underneath the foam layer for improved patient comfort. Channels concealed within the foam, supply air to the cells and are undetectable by the patient
- 6 **Digital pump** — plugs into a concealed pump hose. Incorporates simple on/off switch, LCD screen and intelligent software. Converts the static mattress to a dynamic mattress.



Explanation of how to use this guide: This document can be used to make the case for implementing effective prevention and management measures and may be supported by data from your own care setting. As well as economic impact, it is important to know the impact of interventions on patient quality of life and outcomes.

SUPPORT SURFACES FOR PU PREVENTION

PU's are serious and distressing adverse events that can indicate a failure to provide appropriate care. Support surfaces minimise pressure damage to tissues by redistributing the mechanical loads imposed on the skin and soft tissues due to patient immobility.

The recent NICE guidelines recommend that all individuals considered at risk of developing a PU should be considered for a high-specification foam mattress. If this is not sufficient to redistribute pressure, a dynamic support surface should be considered. A standard-specification foam mattress should not be used for patients with an existing PU (NICE, 2014).

The latest developments in hybrid technology mean that one mattress can be used, which when combined with an alternating pump to create a dynamic surface, can minimise delay and disruption to the patient, while reducing the cost of care.

ECONOMIC BENEFITS OF ADOPTING THE NEW MODEL

The adoption of a model using hybrid technology has demonstrated substantial cost savings in a busy acute care hospital with over 600 beds (Adams, 2014). The cost-efficiency model brought together all key stakeholders to effect change to new mattress technology. The process to implement an improved bed management programme using the Softform Premier Active 2 mattress involved a number of key steps:

Implementing the model in practice:

1. Securing capital funding to replace existing equipment
2. Establishing an inventory and rationalising bed stock
3. Releasing revenue by eliminating rental costs of dynamic therapy
4. Purchasing of new hybrid mattresses (600 beds) plus 300 pumps and replacing all existing foam mattresses
5. Training of all bed management and mattress maintenance staff.

This allowed the hospital to standardise its mattress provision and maintenance programme (all mattresses come with a 5-year warranty). The use of one high-specification foam mattress as standard across the hospital trust also increased nurses' certainty in knowing that best care is provided for all patients, and has eliminated the need to perform a bed audit (now done by the manufacturer as a sole supplier).

Nursing time to transfer patients using a hoist, slides and other equipment has also been minimised (previously took 30 minutes), with a subsequent reduction in manual handling. This is estimated to have saved at least 2.5 full-time nurses a year.

Training provided by a dedicated clinical specialist was key for the correct and safe use of the mattress and pump and for the nurses to recognise the system's benefits. This has now been incorporated into the tissue viability training programme for PU prevention and management and continues as mandatory.

Around one-third of patients had required dynamic therapy in the 18 months prior to implementation. Post-implementation, far fewer alternating mattresses have been requested. Further, the cover of the new mattress is resistant to strikethrough and can be cleaned on the ward rather than being removed for decontamination, improving cost-efficiency savings as well as infection control. The NHS Trust is now looking to adopt a similar model to provide pressure-redistributing cushions for patients who sit out and require additional protection.

The implementation of this model across the hospital trust financed itself in the first year (£255,778 cost savings) and allowed for the provision of a new bariatric equipment facility. **Over the next 7 years, the new bed and mattress management system is estimated to save the trust around £1.85m (Figure 2).**

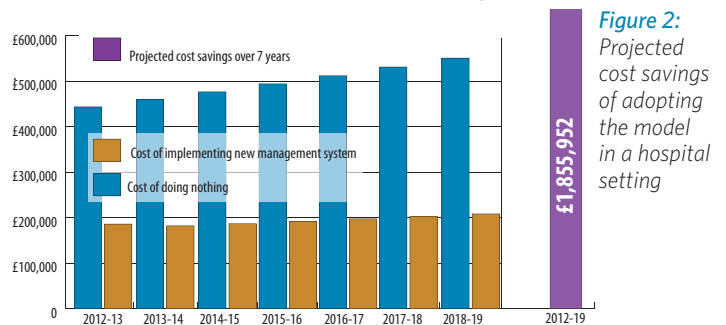


Figure 2: Projected cost savings of adopting the model in a hospital setting

Q WHAT ECONOMIC BENEFITS HAVE YOU SEEN IN YOUR HOSPITAL?

Use the steps in the model described to evaluate your mattress portfolios and assess whether similar savings can be made to your budgets. For example, does this allow you to:

- Q: Eliminate or minimise rental costs by switching to a single system?
- Q: Reduce decontamination/cleaning costs?
- Q: Return time to nursing (e.g. no longer need to move patients to start dynamic therapy)?
- Q: Release budget for provision of additional services?

IMPACT ON PATIENT QUALITY OF LIFE

The ability to use the hybrid mattress as either a dynamic or static surface prevents any delay in transferring patients to a suitable support surface and allows patients to stay on the mattress at a time when their health deteriorates (Adams, 2014). Clinical evidence suggests that patients are more comfortable, able to sleep better and are less disturbed when using the Softform Premier Active 2 (Stephen-Haynes, 2010). This may also be linked to improved patient outcomes, with a potential to reduce hospital-acquired PUs (Stephen-Haynes, 2010).

Q WHAT CLINICAL BENEFITS HAVE YOU SEEN IN YOUR HOSPITAL?

If you were to explain to a colleague why you have chosen the Softform Premier Active 2, what would you give as the main clinical benefits? For example:

- ✓ Faster reaction time to meet patient needs?
- ✓ Reduced incidence of PUs?
- ✓ Shorter hospital stay with fewer complications?

References

- Adams N. Gearing up for change. Poster. Wounds UK, 2014. Available from <http://bit.ly/1lf2mx>
- NICE (2014) Pressure ulcers: prevention and management of pressure ulcers. Clinical Guidelines [CG179] Available from: <http://bit.ly/1BJ0Bq6>
- Gray D, Cooper P, Bertram M, et al (2008) A clinical audit of the Softform Premier Active™ mattress in two acute care of the elderly wards. *Wounds UK* 4(4): 124-8
- Stephen-Haynes J (2010) Achieving effective outcomes: monitoring the effectiveness of the Softform Premier Active mattress. *Br J Community Nurs Suppl*: S48, S50-4