Evaluation of clinical and financial outcomes of a new no-sting barrier film and barrier cream in a large UK primary care organisation

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Key words
Barrier cream; Barrier film; Clinical and financial outcomes; Continence; Pressure ulcer; Skin; Skin protection

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Abstract
The study involves 95 subjects within a UK Primary Care Organisation and was undertaken in two arms. The objective was to determine the clinical outcomes and clinical acceptability of a newly available range of no-sting barrier film and no-sting barrier cream products offering significant financial benefits. The importance of undertaking this study is underpinned by evidence in the literature relating to the use of no-sting barrier preparations within clinical practice. The first part of the study (arm 1) involved extensive evaluation of either the film or cream barrier in 36 patients and was compared to existing standardised barrier protection care within the organisation. The results indicated that the new product range met all the criteria for formulary inclusion and following this the barrier range was further evaluated in arm 2, 33 patients with barrier cream and 26 patients with barrier film. The entire study was conducted over a 3-month period with patient treatment lasting a minimum of 2 days to a maximum 4-week period adhering to the agreed evaluation protocol as approved by clinical governance. In arm 1 (n = 36), the clinical expectation of the product was met in 32 cases relating to ease of use, conformability, no-sting, quick drying, ease of absorption, compatibility with devices, frequency of application, prevention and management including visual skin improvement resulting in a recommendation for formulary listing in 31 of 36 cases. In arm 2 (n = 59), barrier film and barrier cream performance was consistently rated same as, better than or much better than the existing barrier used. A formulary listing recommendation was made in 51 of 59 cases.

Introduction
Human skin is considered to be the largest organ of the body (1) and has several important physical and biological functions, and is significant in its role as a protective barrier to the external environment. The integrity of the skin is essential for protection against invasive microorganisms, ultraviolet light, extremes of temperature, excessive moisture and chemical toxins. However, the skin is subject to both intrinsic and extrinsic changes which may render it less capable of performing many of its essential functions (2).

Key Messages
• this study considers the clinical and financial outcomes of a no-sting barrier film and cream
• economic models including nursing time and material costs favour the use of barrier films and creams
• the prevention and maintenance of skin integrity is of increasing concern
• the maintenance of healthy skin is viewed as an issue of patient safety, particularly with regard to pressure ulcer prevention
Clinical and financial outcomes of a barrier film and cream

J. Stephen-Haynes & C. Stephens

- urinary incontinence rises with age, with 31% of older women and 23% of older men being affected in the general population
- the use of barrier protection has been widely advocated during the last decade
- pre-evaluation spend within the evaluating NHS organisation is £150 000 per annum
- the aim of a barrier film or cream is to mimic the skin’s natural barrier function with the purpose of protecting, repairing, restoring or preventing skin damage
- Sorbaderm No-Sting Barrier Film can be used clinically for incontinence, peri-stomal skin protection, periwound skin protection and adhesive trauma protection

Intrinsic and extrinsic factors

The skin is covered with a naturally produced lipid layer that helps to maintain moisture balance, and prevents drying and flaking of the skin. Normal skin pH is around 5.5 which reduces the ability of bacteria to proliferate. Skin dryness may occur from excessive washing or the use of alkaline soaps, which changes the pH of the skin and reduces its barrier function. Bodily fluids including exudate, urine and faeces can corrode, waterlog and macerate the outer layer of the epidermis (stratum corneum). The ageing process leads to a 20% loss in the thickness of the dermal layer. As the fatty layer becomes thinner, certain areas of the body such as the face, neck and hands will lack the cushioning produced by the fatty deposits and as such these areas are at risk and can become susceptible to skin damage.

Skin protection and evidence

There is increasing evidence relating to the clinical and financial benefits of skin protection, particularly to no-sting barrier films and creams when compared to more traditionally used skin protection such as petroleum-based creams. A recently published review of the literature revealed disparity in methodologies, protocols and care settings in the study of no-sting barrier films, highlighting weaknesses in the quality of the evidence within the currently available literature and the need for improved clinical and financial investigation methodology.

Clark (8) and Deakin et al. (9) reported encouraging results in support of Sorbaderm™ no-sting barrier film and no-sting barrier cream to be equal to, if not better than the previously used no-sting barrier films. Deakin et al. (9) conducted the trial over a 5-day treatment period on 13 patients with norovirus, reporting that 9 of the 13 patients at the end of the evaluation presented with healthy skin and concluded that Sorbaderm™ no-sting barrier film provided the same or better protection and barrier function than the usual no-sting barrier film product previously used on the ward in all patients. Clark (8) conducted on 92 patients from a multi-centre evaluation of Sorbaderm™ barrier film (n = 74) and Sorbaderm™ barrier cream (n = 18) assessments and treatment over a 5-day period, conveying reports of positive visible changes in the appearance of treated and protected skin and the comfort and ease of use of the product.

The importance of skin protection and physiological rationale

The need for skin protection is significant in healthcare because of the increasingly growing elderly population, the naturally occurring changes as skin ages and the increasing number of patients with healthcare conditions that affect the skin. The aim of a barrier film or cream is to mimic the skin’s natural barrier function with the purpose of protecting, repairing, restoring or preventing skin damage. Barrier films offer protection at-risk and damaged skin, preventing excoriation and maceration and the importance of this is highlighted in the European Pressure Ulcer Guidelines.

Essential skin care, pressure ulcer prevention and continence care

This study is underpinned by the current government agendas regarding patient safety, pressure ulcer prevention and management and continence care. The National Patient Safety Agency (25) leads and contributes to improved, safe patient care by informing, supporting and influencing the health sector (www.npsa.nhs.uk/nrls). An important aspect of patient safety is the promotion and maintenance of skin integrity which is one of the most important roles for clinicians in all-care settings and must never be under-prioritised.

This is recognised in the Safety Express (26) UK government guidance to increase the proportion of patients who complete their episodes of care ‘harm free’ from pressure ulcers. Pressure ulcer prevention has also become progressively higher on political agendas as a result of the NICE 2005 guidelines (27), European Pressure Ulcer Advisory Panel guidelines (16) and more recently High Impact actions ‘Your skin matters’ (28) and QIPP (29). Additionally, the NHS Operating Framework (30) endorses the concept that quality care encompasses patient safety and assures effectiveness of interventions leading to positive patient experiences with a refocus on pressure ulcer clinical benchmarking (31).

Urinary incontinence rises with age, with 31% of older women and 23% of older men being affected in the general population (32) and between 30% and 80% of residents in nursing homes being incontinent (6). Faecal incontinence incidence also rises with age and about 12% of older people are affected by it (32). Persistent corrosive irritant exposure to
the skin, if left unprotected, often results in the development of painful excoriation, and ultimately can lead to more severe secondary tissue infection.

Financial implications

The NHS faces the challenge of delivering high quality of care and improving efficiency (29). This challenge arises from the increasing demand for healthcare resources due to demographic and technological change, and the ability of the NHS to meet this demand. In England, the recent White Paper outlined the Government strategy to address these issues which is centred upon efficiency improvements (29).

As the incidence of wounds is fragmented across various different subsets of the population, their impact remains largely hidden and the human and economic burden imposed by wounds is under-appreciated and poorly understood by policy makers (33). Additionally, it is difficult to directly extrapolate from the literature any cost analysis relating to maintaining skin integrity in terms of prevention, treatment and management.

The use of no-sting barrier films began in the United Kingdom in the late 1990s and the annual spend on such products has increased steadily as adoption of use has cascaded. Within the evaluating organisation the annual spend is £150 000 per annum (IMS Data).

The current financial challenges within the NHS may lead to the desire for immediate cost savings. The significant spend on creams, lotions and ointments may make this a tempting area to target savings yet there remains a strong emphasis on quality and there is a need to focus on quality of patient care in terms of clinical outcomes combined with the importance of the compatibility with other medical devices used in clinical practice. Importantly, Guest et al. (7) found that despite barrier films being more expensive to purchase than zinc oxide and petroleum-based products, the reductions in labour more than offset the additional cost stating that the potential savings in the right care settings could reach several millions of pounds. Therefore, economic models including nursing time and material costs favour the use of barrier films and creams. Clinical and service user acceptance, adoption of strategy costs and educational requirements must also be considered, as they also have significant financial impact.

Formulary inclusion review process

Worcestershire Health & Care NHS Trust Tissue Viability service has a higher-than average proportion of older people than the national trend with 18% over 65 years, compared with 16% nationally. For those over 75 years, this is 8.5% compared with an average of 7.8% (34) and includes 70 community nursing team bases, 5 community hospitals, 52 care homes and in-patient mental health facilities which services a population of 60 000 patients across the county.

The tissue viability services within this particular trust have a well-established County Tissue Viability Team and links nurse networks that have completed GCP training. The process within the Trust for the consideration of new products for wound management formulary introduction is vigorous, robust and is based on the Best Practice Statement: Development of a Formulary (35). This includes multiple evaluations across both acute and primary healthcare settings. Foremost is the agreement of a need for new wound management product; a literature review is undertaken following this agreement and a bespoke audit tool is approved to look at specific outcomes. Subsequent to clinical governance approval, the company representatives present the product to the appropriate healthcare professionals within the trust, and a level of support agreement is made to undertake an evaluation. Tissue Viability services agree to evaluate the product.

Sorbaderm™ product range

Sorbaderm no-sting barrier film is a non cytotoxic acrylate copolymer liquid film which forms a flexible long-lasting waterproof barrier for the protection of intact skin or for the treatment of damaged skin. It has a high moisture vapour transmission rate acting as a protective interface between the skin and bodily fluids, adhesive products, and mechanical stress and aims to mimic the body’s natural protection function. Sorbaderm no-sting barrier film can be used clinically for incontinence, peristomal skin protection, peri-wound skin protection and adhesive trauma protection. It provides up to 72-hours skin protection depending upon the severity of the corrosive fluid or exposure and as it does not contain alcohol, it does not sting. It is transparent, thus allowing for continuous visualisation and monitoring of skin at risk of breakdown. (8,9,36,37).

Sorbaderm no-sting barrier cream is a highly concentrated, long-lasting latex and fragrance-free protective barrier which does not clog incontinence or dressing devices, providing effective skin moisturising and long-term barrier protection from bodily fluids. The protective barrier lasts up to three incontinence periods and can reduce the risk of incontinence dermatitis. It should be used on at-risk skin: dry skin, chaffed skin, elderly skin, during episodes of faecal and urinary incontinence, for peristomal and peri-wound protection. It may be used on all parts of the body except the mucous membrane (8,9,36,37). Investigation of the barrier cream on broken areas of skin was authorised by the manufacturer with the data forming as part of the case to expand its indications for use.

Study product presentations Sorbaderm™ barrier film 1 ml applicator, 3 ml applicator, 28 ml spray and Sorbaderm™ barrier cream 92 g.

Materials and methods

This study involving 95 subjects was undertaken via two data collection arms.

The objective of arm 1 was to gain clinical usability and clinician and patient acceptability for potential wound management formulary inclusion.

Thirty six of a potential 40 subjects completed extensive evaluations of the Sorbaderm barrier film and cream conducted by the county tissue viability and continence teams investigating both tissue viability and continence-related skin issues using 12 parameters with patients monitored up to a 4-week period, with three specific patient assessments.
The areas included:

1. Clinical outcomes
2. Financial outcomes
3. Clinical acceptability

Once the data confirmed clinical and cost outcomes, a shortened questionnaire was developed, which focused on collecting data on clinical perception and allowed for wider involvement in the evaluation of a larger team across the organisation.

The objective of arm 2 was to extend the data collection to a wider team of clinicians across the organisation. Thirty three of 40 subjects used the barrier film and 26 used barrier cream.

Arm 2 was conducted over a 3-month period with patient treatment lasting a minimum of 2 days to a maximum 4-week period adhering to the agreed evaluation as approved by clinical governance, a risk assessment system through which UK NHS organisations account for the quality of services and safeguard high standards of care.

Extensive evaluation of part one (n = 40) initiation and training visits commenced in January 2011, recruitment and data collection was performed until close of the evaluation in April 2011. Data analysis was performed during April and May 2011 and the results are presented as follows.

Patient consent was obtained following fulfilment of the inclusion criteria. Patients under 18 years of age, not willing to participate, affected by incapacity to consent or to follow product instructions were excluded from this evaluation. The evaluators could also exclude any patient in their opinion deemed to be unsuitable to undertake this evaluation for any other reasons.

Inclusion criteria

- Patient >18 years of age.
- Patient is willing to participate and has capacity to consent.
- Patient has an indication suitable for treatment with a barrier product.
- Patient will be seen regularly by the evaluator.

Exclusion criteria

- Patient is <18 years of age.
- Patient does not wish to participate or have capacity to consent.
- Patient is not suitable for barrier product treatment.
- Instructions for the product use cannot be followed.
- Any other reason the evaluator feels the patient should be excluded.

Indications and anticipated outcomes

Evaluators were instructed to seek indications where barrier films or creams are routinely used. Indications included periwound protection, incontinence and pressure ulcers.

The clinical indications explored were as follows:

- Prevention of skin breakdown
- Maintenance of skin condition
- Peri-wound maceration
- Excoriation and incontinence related skin protection
- Adhesive skin stripping

Initiation and training

To ensure competency, consistency and reduce data variability, evaluators were first selected for their tissue viability/continence care qualifications and competency with entire staff having completed an accredited course.

A study initiation visit was undertaken at each centre during which the protocol was comprehensively detailed to each evaluator by the same evaluation monitor. Inclusion and exclusion criteria were discussed in depth and example patient data sets outlined. Skin assessment procedures and indications for use were outlined. All evaluators undertook training on the correct application technique for each SorbadermTM product following instructions for use in the package insert and as demonstrated by the evaluation monitor who had undertaken training. Written instructions for use were provided on each product to each evaluator for future reference. All evaluation products were labelled ‘Clinical Evaluation Only’, recorded as distributed and unused product was collected at the end of the evaluation by the evaluation monitor.

The evaluation monitor conducted the initiation visit, first recruitment visit, a midway data check visit, remained on call throughout the evaluation and closed each evaluation centre with an evaluator final meeting.

Evaluators undertaking part two, the evaluation of barrier cream (n = 40) and barrier film (n = 40), were also members of the County Tissue Viability team. The evaluation monitor detailed the data collection forms and demonstrated product application techniques during a meeting of the county team.

All evaluators were provided with data collection forms, product and written instructions for use. Patient consent was obtained for inclusion in the evaluation. The evaluation monitor provided support throughout the evaluation process.

Results enrollment and clinical settings

Arm 1: Seven specialist tissue viability and Continence Care nurses across five centres were enrolled and initiated. Evaluating clinical settings were primary care, acute hospitals within primary care and nursing homes.

Arm 2: Forty members of the County Tissue Viability team were enrolled to conduct the single patient assessment evaluations across nurse bases and nursing homes.

Patient recruitment and initial assessment

Total of 95 patients were recruited into this two-part evaluation of a potential number of 120, 36 were recruited to part one comprehensive evaluation, and 59 recruited to part two evaluation.
Across the 95 subjects, Sorbaderm™ no-sting barrier cream was evaluated in 39 patients, Sorbaderm™ no-sting barrier film in 53 patients, \((n = 2)\) product type not completed and \((n = 1)\) withdrawn.

One patient was withdrawn from the comprehensive evaluation, the reason was not stated or declared to the monitor and one recruited patient did not complete any of the assessment data phase, the reason for this was not given or declared to the monitor. This was documented by the clinician as not being related to the study. Two patients were hospitalised half way through the assessment data phase and hence did not complete the 15-day minimum there were a total of 93 fully reported patients. No adverse events were reported within either arm of this evaluation.

**ARM 1: extensive protocol evaluation**

Patients were recruited in accordance to satisfactory fulfilment of inclusion criteria. Gender, care setting, clinical indication type, location and duration of exposure/damage, previous or current barrier use, baseline skin assessment, exudate or incontinence type and volume/frequency, and if any adhesive skin stripping was present on initiation to the evaluation were all recorded. Baseline pain score, wound measurements and photographs were obtained on initiation to the evaluation.

There was an equal number of male \((n = 18)\) and female \((n = 18)\) enrolment, of which one male withdrew and one female did not complete the evaluation; results are presented for 17 males and 17 females.

Thirty six patients were recruited from a variety of clinical settings, nursing home \((n = 20)\), community hospital \((n = 11)\), terminal care \((n = 2)\) and own home \((n = 3)\); \((n = 32)\) completed full evaluation, \((n = 2)\) hospitalised prior to evaluation close, \((n = 1)\) withdrawn and \((n = 1)\) data was incomplete.

Patients with a wide variety of clinical indications, tissue types and anatomical sites were recruited into the evaluation (see Figures 1–3). The indications were reported as: incontinence \((n = 17)\), surgical wounds \((n = 3)\), laceration \((n = 1)\), pressure ulcers \((n = 6)\), trench foot (a medical condition of the foot caused by prolonged exposure to cold and wet conditions) \((n = 1)\), PEG site \((n = 1)\), stoma site \((n = 1)\), extravasation \((n = 1)\), sweat rash \((n = 2)\), dry skin \((n = 1)\), fungating wound \((n = 1)\) and withdrawn \((n = 1)\). The tissue types were excoriated \((n = 12)\), macerated \((n = 9)\), intact \((n = 7)\), dry flaky \((n = 2)\), erythema \((n = 3)\), not completed \((n = 2)\) and withdrawn \((n = 1)\).

The anatomical locations were sacrum \((n = 19)\), groins \((n = 4)\), abdomen \((n = 3)\), feet \((n = 2)\), back \((n = 1)\), arms and legs \((n = 3)\), head \((n = 1)\), axilla/chest \((n = 1)\), hand \((n = 1)\); and withdrawn \((n = 1)\).

Indication and skin damage duration varied significantly between 1 and 52 weeks. Twelve subjects were recruited with open wounds and exudate volumes were assessed. Exudate levels ranged between none and moderate, the highest populated field being moderate. The levels were none \((n = 1)\), very low \((n = 1)\), low \((n = 1)\) and moderate \((n = 9)\). Exudate type varied from Sero-sanguinous \((n = 3)\), haemopurulent \((n = 2)\), purulent \((n = 4)\), none \((n = 1)\) and not completed \((n = 2)\). Seven patients were reported to have wound infection.

Incontinence frequency ranged between infrequent and very frequent, highest populated fields being frequent and very frequent: infrequent \((n = 1)\), frequent \((n = 10)\) and very frequent \((n = 4)\). Incontinence type varied from urine \((n = 4)\), faecal \((n = 1)\), double \((n = 2)\), highly corrosive diarrhoea \((n = 1)\), moderately corrosive diarrhoea \((n = 2)\) and mildly corrosive diarrhoea \((n = 4)\) and skin damage in two patients related to excessive sweating.

Eight subjects were recruited with pre-existing adhesive skin stripping.

Photographs and skin assessments were conducted at each visit during treatment with the new barrier cream or barrier film.

**Results of arm 1**

Hours between Sorbaderm™ applications was mostly populated at 24 hours as a daily application for both dressing change and incontinence despite frequency of incontinence varying significantly between 1 and 20 episodes. Throughout the duration of the evaluation, moderate exudate and frequent incontinence levels remained the highest populated fields. Patients undergoing less frequent dressing changes received applications at 36, 48 and 72 hours. Applications at 6 and 12 hours were performed for incontinence episodes >10 and corrosive fluids.

Number of applications at 6 hours \((n = 2)\), 12 hours \((n = 7)\), 24 hours \((n = 16)\), 36 hours \((n = 1)\), 48 hours \((n = 5)\), 72 hours \((n = 2)\), not completed \((n = 2)\) and withdrawn \((n = 1)\).
was rated very satisfied \((n = 29)\), satisfied \((n = 3)\), not completed \((n = 3)\) and withdrawn \((n = 1)\). Quick dry was rated as very satisfied \((n = 21)\), satisfied \((n = 1)\), not applicable (cream used) \((n = 11)\), not completed \((n = 2)\) and withdrawn \((n = 1)\). Easily absorbed was rated as very satisfied \((n = 17)\), not applicable film used \((n = 15)\), not completed \((n = 3)\) and withdrawn \((n = 1)\). Rated for prevention very satisfied \((n = 24)\), satisfied \((n = 6)\), not applicable \((n = 3)\), not completed \((n = 2)\) and withdrawn \((n = 1)\). No sting was rated as very satisfied \((n = 30)\), satisfied \((n = 3)\), not completed \((n = 2)\) and withdrawn \((n = 1)\). Compatibility with incontinence pads was rated as very satisfied \((n = 7)\), satisfied \((n = 3)\), neutral \((n = 2)\); \((n = 5)\) of 17 incontinence patients did not use or did not complete the data. Overall performance against usual brand was much better than in 11, same as in 22, not completed by two and one withdrawn. Clinical expectation met yes \((n = 32)\), not completed \((n = 3)\) and withdrawn \((n = 1)\). Formulary listing were yes \((n = 31)\), no \((n = 1)\), not completed \((n = 3)\) and withdrawn \((n = 1)\).

**Arm 2 results: Sorbaderm™ no-sting barrier cream**

Sorbaderm™ no-sting barrier cream was evaluated on 26 patients. Twenty-one evaluators being regular barrier cream users, 17 of whom regularly used Cavilon™ barrier cream. Indications treated incontinence \((n = 19)\), dermatitis \((n = 5)\), stoma \((n = 1)\) and sweating \((n = 1)\). Pre-evaluation skin was intact \((n = 9)\) and broken \((n = 14)\). Of the 19 incontinence patients treated 17 reported no interference with incontinence pads or other materials, 2 did not complete this section. Number of applications in 72 hours was 1–2 \((n = 10)\), 3–4 \((n = 6)\), 5–6 \((n = 9)\) with varied wash episodes up to in excess of 10 per day. Visible improvement to skin was yes in 18 and no in 6 patients. Adhesive devices used in five evaluated patients \((n = 5)\) recorded no interference with device adherence and 5 recorded no skin stripping. Skin protected from further damage: yes in 19, none recorded no. Skin was found to be less flaky \((n = 17)\), more supple \((n = 16)\) and no residue \((n = 25)\) was recorded with comments of less greasy than other barrier cream used. Performance was consistently rated same as, better than and much better than. Formulary listing recommendation was yes in 21 and unknown in 5.

**Part two results: Sorbaderm™ no-sting barrier film**

Sorbaderm™ no-sting barrier film was evaluated on 33 patients 1 ml \((n = 22)\), 3 ml \((n = 1)\) and 28 ml spray \((n = 10)\). Thirty-three evaluators recorded being regular barrier film users with all indicating Cavilon™ no-sting barrier film as usual brand. Indications treated peri-wound maceration \((n = 19)\), excoriation due to incontinence \((n = 8)\), adhesive skin stripping \((n = 3)\), friction and shear \((n = 3)\). Exudate levels were rated as very low \((n = 5)\), low \((n = 4)\), moderate \((n = 8)\) and high \((n = 8)\). Quick drying was recorded as yes \((n = 32)\) and no \((n = 1)\); no-sting \((n = 32)\) and yes to sting \((n = 2)\) both of whom had excoriated skin on initiation to the evaluation. Compatibility with adhesive devices was
yes in \((n = 19)\) with no reports of skin stripping. Visible improvement to the skin was consistently rated same as, better than and much better than. Overall performance was rated same as, better than and much better than. Ease of use was rated same as, better than and much better than. Formulary listing recommendation was rated as yes \((n = 30)\) and unknown \((n = 3)\).

**Overall Performance Combined results parts one and two of this evaluation**

The combined patient evaluation ratings for overall performance, ease of use and formulary listing recommendation are listed below.

Overall performance \((n = 92)\) was rated as slightly worse \((n = 1)\), same as \((n = 44)\), better than \((n = 15)\), much better than \((n = 32)\) and reported \((n = 92)\).

Ease of use \((n = 92)\) was rated as slightly worse \((0)\), same as \((n = 24)\), better than \((n = 17)\), much better than \((n = 51)\) and reported \((n = 92)\).

Formulary listing was reported in 83, of whom 82 voted yes to enlist and 1 voted no to enlist with the remaining not stating any answer in this field.

**Discussion**

This study has explored a wide variety of clinical indications and anatomical locations providing a broad overview of clinical performance within an organisation having limited access to variations of barrier products. Principally owing to strict adherence to skin care guidelines and a formulary in place within the trust. This is dissimilar to other work undertaken in this field \((6,8)\) where the variance on barrier product use included as comparators afforded less consistent results.

The study findings on performance, visible skin improvement and ease of use are in line with and further support the results obtained in the two previous evaluations conducted by Clark \((8)\) and Deakin *et al.* \((9)\). The overall rating for clinical performance of the product evaluated was consistently the same as or much better than the usual brand used and the results indicate support for formulary listing and cost savings. Good response rate within all arms of this evaluation is essential to tissue viability and continence team cohesion and the strategic initiation and monitoring method implemented.

Annual spend is approximately £150 000 per annum on skin barrier products within the NHS Trust. A 12% cost saving on a ‘like’ for ‘like’ prescribing change would offer an instant £18 000 saving per annum. Appropriate product use relating to selecting appropriate patients for use, maximising wear time through education and training of the staff could also potentially lead to a reduction in overall product unit use. The development of bespoke educational materials will also assist with this and include, educational package, patient information, skin assessment tool, website structured education and intensive training over 12-month period with bespoke educational resources, product information, patient information and knowledge checker. This will take place over the next 3 months and will be supported by Aspen Medical. Within the NHS organisation there will be close observation of skin barrier usage and spend.

**Study limitations**

- Although in line with Clark \((8)\) and Deakin *et al.* \((9)\) this evaluation has not been a direct comparative evaluation but a subjective comparison to previous or usual treatment has been reported. Clark \((8)\) acknowledges that there may be disparity between observers interpretation.
- Baseline and consecutive pain scale assessments were not sufficiently recorded preventing a quantifiable pain and no-sting outcome to be drawn.
- Baseline and consecutive wound, skin damage area measurements were not sufficiently recorded preventing a quantifiable clinical outcome to be drawn.
- Gaps in data collection, is a learn for next time and an increased monitoring strategy will be implemented for future data collection projects

**Implications for future clinical practice and future recommendations**

The increasing emphasis on the use of skin assessments and the development of skin care pathway is an important component for maintaining skin integrity. The use of skin barriers continues to improve clinical outcomes for patients, which, given the increasing emphasis and current agenda on essential skin care is important. Whilst the use of skin barriers contribute to skin care, it is critically important for clinicians to possess skills in the prevention and management of skin integrity, pressure ulceration and continence care and have knowledge of both the strategies and evidence underpinning practice. There is a further need for the development of essential skin care education for all registered and non-registered clinicians.

This study has been undertaken over a longer evaluation period than previous evaluations \((8,9)\) affording longer term use analysis and benefits. It also reinforces the work of Clark \((8)\) and Deakin *et al.* \((9)\) in support of clinical performance and visible clinical outcomes of barrier protection as an essential element of the overall strategy for skin care.

A future recommendation is suggested for a direct comparative objective evaluation to further validate this work.

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Clinical and financial outcomes of a barrier film and cream

J. Stephen-Haynes & C. Stephens


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