Improving the holistic wound care experience and integrating an education regimen

KEY WORDS
- Wound exudate
- Periwound skin maceration
- Absorbency and protection
- Education regimen
- Patient and clinician choice

Exudate from both acute and chronic wounds can be distressing to the patient, result in catastrophic tissue damage to the wound bed and surrounding skin, reduce quality of life and increase the need for specialist resources (Wound Essentials, 2012). Effective exudate management is, therefore, paramount to ensure wound healing can take place in a timely manner (Walker et al, 2010). This product review explores 38 ward-based patients who presented with acute and chronic exuding wounds; it examines and evaluates the proposed benefits of the Cutimed® Siltec foam dressing range alongside a pre-set education regimen for both the patient and clinician. The outcomes of the evaluation are exudate management, protection of the periwound skin, atraumatic application and removal, non adherence and benefits of using a patient information leaflet within the dressing regimen. The evaluation highlights not only a significant improvement within exudate management and damaged periwound skin healing, but emphasises the key importance of a collaborative approach through the education of patients and clinicians, ensuring concordance and informed choice of care continuation.

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Wound exudate is a key component produced biologically as part of the body's tissue healing process and affects people of all ages, varying diseases and comorbidities at any time within the wound-healing journey (Young, 2013). For a wound that is classed as healing along the normal expected continuum, exudate is vital for maintaining a moist environment as it provides crucial molecules and cell nutrients, such as growth factors, electrolytes, proteins, inflammatory mediators and matrix metalloproteinases, encourages cell proliferation and stimulates autolysis (White and Cutting, 2006; World Union of Wound Healing Societies [WUWHS], 2007).

Exudate levels of wounds that are progressing as expected tend to reduce over time; however, in those wounds that are deemed chronic in nature, wound exudate is believed to extend the inflammatory phase, impairing the healing capabilities of the tissues (Wound Essentials, 2012). If those wounds become affected by internal and/or external factors (*Table 1*), resulting in overhydration of excessive exudate production, moisture tends to leak out across healthy periwound skin and surrounding tissues. This, in turn, can result in the enlargement of the original wound border through maceration and resulting tissue destruction (Cutting and White, 2002). Strong dressing adherence and associated pain at dressing application and removal increases the risk of skin stripping, which can reduce patients' psychological and physical wellbeing, and result in greater demands being placed on available healthcare resources (Young, 2013).

Exudate management should encompass a holistic assessment of the wound type: its exudate levels, potential overhydration of tissue, the underlying causative factors and the dressing regimen employed (WUWHS, 2007). Due to clinicians having to frequently change dressings to prevent maceration, soiling and increased risk of cross contamination, reassessment in this patient group is vital if wound healing is to be facilitated effectively (Benbow and Stevens, 2010). The aim of exudate management is to maintain a moist wound environment, facilitating a wound bed that is never

Table 1. Factors that may have an effect on exudate production.

Wound healing	Localised	Systemic	Clinical
1. Inflammatory phase	4. Infection/inflammation	9. Cardiac, renal, hepatic failure	14. Wound position
2. Delayed or static healing	5. Trauma	10. Infection/inflammation	15. Concordance of patient
3. Autolytic debridement	6. Foreign bodies/reaction	11. Medication	16. Inappropriate dressing choice
	7. Oedema	12. Nutritional status	17. Inappropriate management of wound/products
	8. Fistula/sinus	13. Lymphoedema	

Adapted from Wicks (2012) and Wounds UK (2013).

Table 2. Criteria for dressing selection adaptation (WUWHS, 2007).

Does the dressing:	Is the dressing:
▸▸ Stay intact and remain *in situ* throughout expected wear time?	▸▸ Comfortable, conformable, flexible and of a bulk/weight that does not impede physical activity?
▸▸ Prevent leakage between dressing changes?	▸▸ Suitable for leaving *in situ* for a long duration?
▸▸ Cause maceration, allergy or sensitivity?	▸▸ Easy to open and apply?
▸▸ Reduce pain?	▸▸ Easy to remove without traumatising the tissues?
▸▸ Reduce odour?	▸▸ Available and accessible to the clinician and patient?
▸▸ Retain fluid away from the wound bed?	▸▸ Cost effective?

overhydrated or too dry (Wound Essentials, 2012). Dressings are primarily utilised within exudate management as the first choice of intervention and many are designed to handle fluid through varying mechanisms (Wicks, 2012).

WUWHS (2007) proposes well-known criteria for dressing selection to aid the clinician in the decision-making process when choosing the most appropriate product to meet the individual patient's needs (*Table 2*).

HOLISTIC APPROACH TO EXUDATE MANAGEMENT

Ousey (2013) emphasised that due to the negative impact highly exuding wounds have on the patients' overall wellbeing, the assessment and reassessment must include an holistic package encompassing all aspects of the patients wound care journey.

Gorecki et al (2012) encouraged clinicians to be mindful of the discrepancy in priorities between the patient and clinician; where clinicians may focus on the wound healing process and outcomes, while patients prioritise discharge home from the care setting, pain and symptom control or odour reduction. It is, therefore, vitally important that patients are educated in product choice and rationale of use, the benefits and expected outcomes of that product with regard to their wound management, alongside their inclusion in the decision-making process, if concordance with wound care regimens is to be maximised (WUWHS, 2007).

Patient choice, direction of care and active involvement in decision making has become a key national agenda in the drive to improve patient experience, concordance and ultimately care outcomes (Moffatt, 2004; Department of Health [DH], 2010). Indeed, the fundamentals of any wound care regimen, aiming at the best possible successful outcome, requires the patient to be central to the care plan, and must encompass close collaboration and interaction between clinicians, patients, carers, the healthcare system and industry members. Overall education is an important aspect to this success (Wounds International, 2012).

AIM OF IMPLEMENTATION

With the ongoing burden that highly exuding wounds pose to the clinician and the inconsistency and/or lack of patient-tailored wound product

information, the initiative of implementing Cutimed® Siltec foam products in conjunction with a patient/clinician-tailored information document (*Figure 1*) for patients presenting with exuding wounds was agreed between the wound care lead nurse, consultant, registrar, procurement and industry at a large teaching NHS Foundation Trust. All ward-based patients who were referred to the wound care lead nurse for specialist intervention for exuding wound optimisation were given the opportunity to be included in the evaluation process.

The decision to evaluate the Cutimed Siltec foam dressing was based on supporting evidence in respect to its effectiveness within exuding wound management, particularly its absorbency, its nonadherence to the wound bed, its atraumatic removal and cost-effectiveness status (Stephen-Haynes and Timmons, 2009) and positive current clinical use within the wound care service across a wide range of patient ages, clinical conditions and wound groups.

Cutimed Siltec is promoted as a range of foam dressings with a non-adhesive wound contact layer, a super absorbent layer and a highly breathable top film layer, providing gentle and effective exudate management. The bordered variety (Cutimed Siltec B) has an adherent silicone border which offers secure fixation. The product has demonstrated in clinical case studies (Thomas, 2009; Süss-Burghart, 2009) that it absorbs and locks away excess exudate within the dressing, promoting a moist wound environment. It is also highly conformable and reliably retains exudate under various circumstances, including compression therapy.

Clinical indications for this product pertain to wounds with varying levels of exudate inclusive of venous and arterial leg ulcers, diabetic foot lesions, pressure ulcers, skin grafts, surgical and traumatic wounds, either as a primary or secondary dressing (Stephen-Haynes and Timmons, 2009). Although there are many super absorbers and advanced foam dressing products available to the clinician in the management of exuding wounds, not all products meet the needs or choice of individual patients for variety of reasons. With advanced wound care product development improving the mechanics and product functions, it is essential that clinicians ensure that a holistic approach to product use is maintained and this includes education and ongoing support to the end user to promote appropriate use and compliance.

Table 3. Patient demographics summary.

	Male	Female	Total
Gender	17	21	38 patients
Age	34–93 years	37–92 years	Mean age: 54 years
Wound type			
Leg ulcers (venous)			4
Pressure ulcers (sacrum)			12
Surgical site infections			4
Skin tears			3
Burn			3
Trauma/other			12
Low exudate			11
Moderate exudate			17
High exudate			9
No exudate (dry burn)			1
Average dressing change pre Cutimed® Siltec			12–48 hours

Exudate management was assessed throughout the evaluation using the nationally-recognised Applied Wound Management Continuum concept (Gray et al 2009).

Table 4. Priority of symptoms at referral stage .

Priority at day one	Clinician	Patient
Maceration to periwound skin	0	6
Exudate management	38	17
Pain at wound/peri skin site	0	15

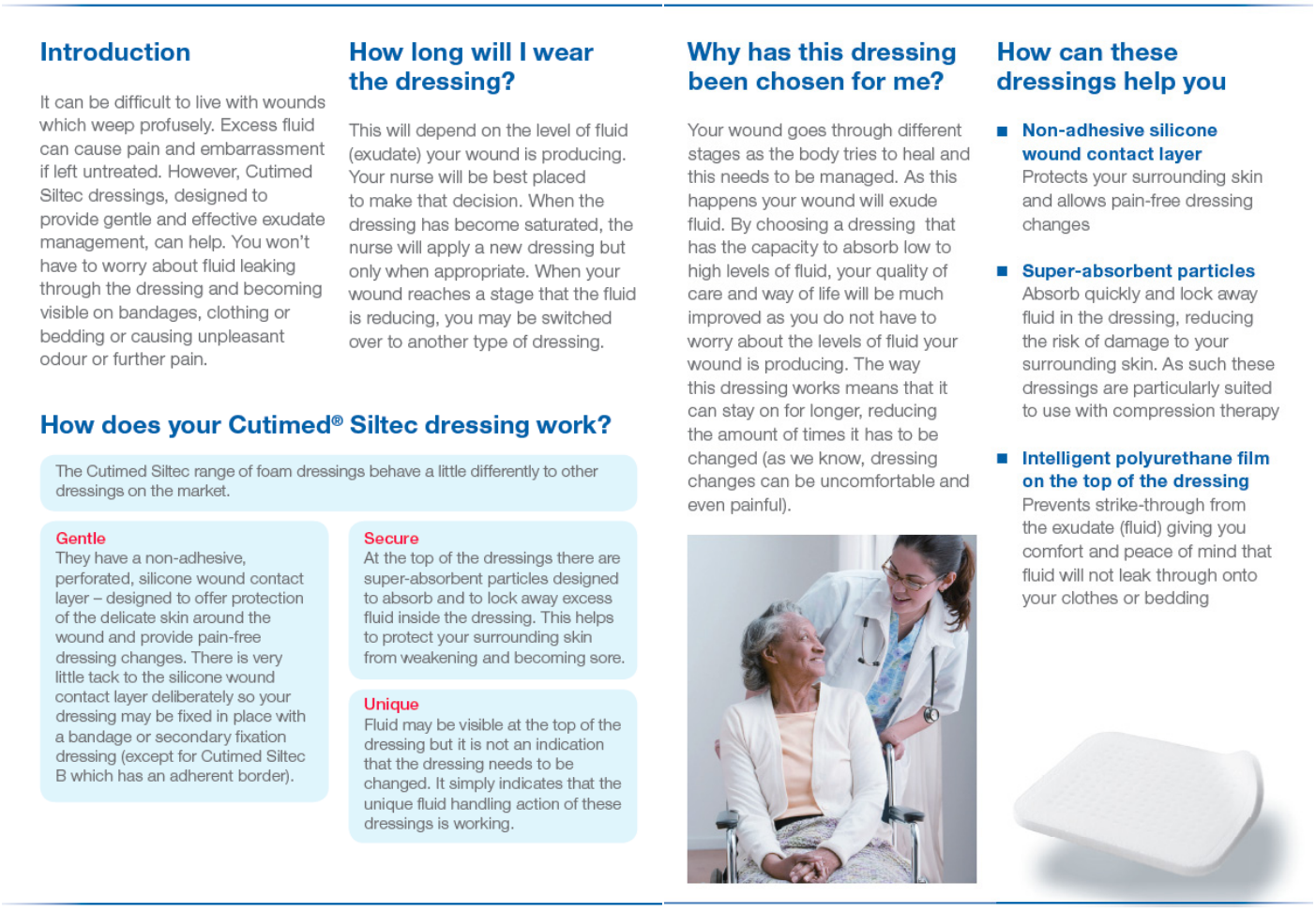
METHODS

A total of 38 patients, who were referred with exuding wounds, were recruited over a 2-month period through the Trusts' wound care service, inclusion criteria were that the patient had an exuding wound that was not being managed by

current regimens and exclusion referred to those patients who did not have an exuding wound and or who did not wish to change their current dressing regimen. One patient who wished to be included was referred with a partial exuding burn that also had dry regions to the wound; previous products had adhered to the wound, hence the patient's wish to try a different product to his previous regimens. Patients were initially provided with verbal information regarding the evaluation process, its aims and objectives and the choice to getting involved or carrying on with their current regimens.

Due to the product being utilised within the organisation as part of the formulary review process, and benefits were reviewed through an evaluation process, no ethical approval was required. The evaluation took place over a 2-month period, with each patient being monitored over a 28-day span, due to the nature of short bed stays in the acute sector or their discharge from service (*Table 3*). The evaluation data collection related to patient demographics, objectives of therapy, previous treatments used, wound status and patient/clinician experience of product and education leaflet. Both patient and clinician were asked: "What is your priority of management" at day one (*Table 4*) and "would you wish to continue with this product and was the education leaflet helpful" as part of the data collection at mid-point (2 weeks) and discharge.

The first 38 patients who were referred had all agreed to take part within the evaluation. Verbal/



Introduction

It can be difficult to live with wounds which weep profusely. Excess fluid can cause pain and embarrassment if left untreated. However, Cutimed Siltec dressings, designed to provide gentle and effective exudate management, can help. You won't have to worry about fluid leaking through the dressing and becoming visible on bandages, clothing or bedding or causing unpleasant odour or further pain.

How long will I wear the dressing?

This will depend on the level of fluid (exudate) your wound is producing. Your nurse will be best placed to make that decision. When the dressing has become saturated, the nurse will apply a new dressing but only when appropriate. When your wound reaches a stage that the fluid is reducing, you may be switched over to another type of dressing.

How does your Cutimed® Siltec dressing work?

The Cutimed Siltec range of foam dressings behave a little differently to other dressings on the market.

Gentle
They have a non-adhesive, perforated, silicone wound contact layer – designed to offer protection of the delicate skin around the wound and provide pain-free dressing changes. There is very little tack to the silicone wound contact layer deliberately so your dressing may be fixed in place with a bandage or secondary fixation dressing (except for Cutimed Siltec B which has an adherent border).

Secure
At the top of the dressings there are super-absorbent particles designed to absorb and to lock away excess fluid inside the dressing. This helps to protect your surrounding skin from weakening and becoming sore.

Unique
Fluid may be visible at the top of the dressing but it is not an indication that the dressing needs to be changed. It simply indicates that the unique fluid handling action of these dressings is working.

Why has this dressing been chosen for me?

Your wound goes through different stages as the body tries to heal and this needs to be managed. As this happens your wound will exude fluid. By choosing a dressing that has the capacity to absorb low to high levels of fluid, your quality of care and way of life will be much improved as you do not have to worry about the levels of fluid your wound is producing. The way this dressing works means that it can stay on for longer, reducing the amount of times it has to be changed (as we know, dressing changes can be uncomfortable and even painful).

How can these dressings help you

- **Non-adhesive silicone wound contact layer**
  Protects your surrounding skin and allows pain-free dressing changes
- **Super-absorbent particles**
  Absorb quickly and lock away fluid in the dressing, reducing the risk of damage to your surrounding skin. As such these dressings are particularly suited to use with compression therapy
- **Intelligent polyurethane film on the top of the dressing**
  Prevents strike-through from the exudate (fluid) giving you comfort and peace of mind that fluid will not leak through onto your clothes or bedding

Figure 1. This is an excerpt of the education leaflet each patient and nurse received after the initial assessment. A copy was placed within the nursing notes and another copy was kept with the patient at his/her bedside.

Table 5. Results from data collection questionnaire.

Outcomes	Clinical benefits	Comments
Exudate management	▸▸ Absorption of exudate ▸▸ No leakage ▸▸ No malodour ▸▸ Good adherence of product ▸▸ Dressing change average from 12 hours to 4 days	▸▸ "Patient felt safe and trusted the dressing." Consultant (C) ▸▸ "Doesn't leak like the other one." Patient (Pt) ▸▸ "Kept my skin dry." Pt ▸▸ "Less visits to GP practice nurse – Could go back to work." Pt
Healing of periwound skin maceration	▸▸ No adherence to macerated tissue ▸▸ No leakage onto periwound skin region ▸▸ All periwound skin tissue damage healed at day 14	▸▸ "Less changes, and no inconvenience of it leaking." C ▸▸ "Didn't stick to the scabby areas." Pt ▸▸ "Feels soft and strong." Pt ▸▸ "I trust the dressing not to stick to my wound." Pt ▸▸ "No problem on baby's skin." C ▸▸ "Didn't cause damage to the red, inflamed skin borders." C
Dressing removal	▸▸ Atraumatic application 85% patients at day one ▸▸ Atraumatic application 100% patients at day 4 second dressing change ▸▸ Atraumatic removal 100% patients at first dressing change	▸▸ "Before trial patient needed Entonox to help with pain during dressing changes. With Cutimed Siltec, no longer needed Entonox and didn't hurt at all after second dressing." C ▸▸ "Those dressings helped my mum's legs in that they didn't hurt when the nurse took them off." Pt
▸▸ Patient wear ability and comfort	▸▸ Good adhesion ▸▸ Comfortable ▸▸ Gentle ▸▸ Conformable and flexible ▸▸ Easy to fit and apply	▸▸ "No pain on removal didn't leave a sticky residue on skin." C ▸▸ "With previous dressing pain was 5/5 with this new dressing my pain reduced to 0." Pt ▸▸ "Didn't curl up and leak like my other one." Pt ▸▸ "I could flex my hand and it stayed in place." Pt ▸▸ "Didn't move under bandages." Pt ▸▸ "Stays in place better than my other dressings, especially when I walk." Pt ▸▸ "Dressing sat comfortable around my chest drain." Pt ▸▸ "I like the feel of the dressing." Pt

written consent was documented in the medical and nursing notes. Each patient and nurse at the onset of the evaluation were given a tailored education document and dressing product, a copy of the education leaflet was placed within the nursing notes and a copy kept with the patient at the bedside. All patients remained in the evaluation either to the 28-day endpoint or up to discharge from the service.

Following entry into the evaluation and information provision each patients wound was cleansed as required prior to being dressed with the Cutimed Siltec product. The previous wound care continuum dressing regimen was consistently adhered to; those wounds that required the foam as a secondary product would continue to deploy the same wound filler prior to the evaluation as with those wounds that were being managed with barrier films, creams, bandaging and compression therapy.

It is essential in any evaluation to remove all variables that can affect outcomes (Mayer, 2004). The wound assessment documentation was reviewed at day 3 and day 7 by the lead nurse to ensure accurate up to date data collection and to monitor utilisation of the educational leaflet.

RESULTS

The overall results from the evaluation of 38 patients demonstrated positive outcomes with regards to exudate containment and maintenance of a moist wound bed, periwound skin healing and protection, atraumatic application and removal

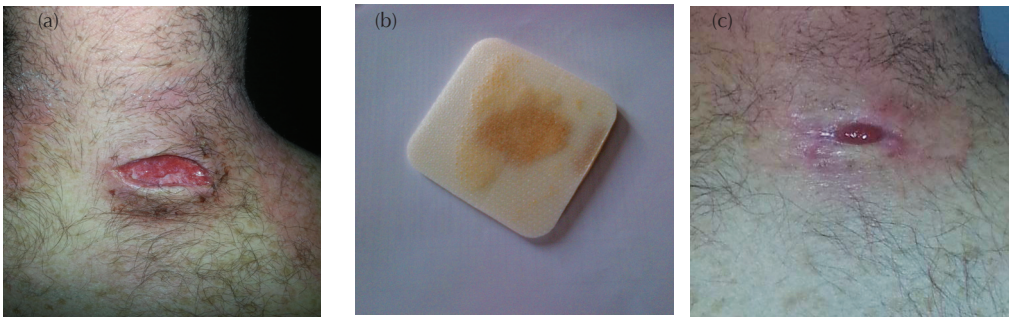
Table 6. Patient and clinician experience from data collection questionnaire.

"Did you read the information leaflet provided?"	**Yes**	**No**	**Comments**
Patient	38–100%	0–0%	"Very interesting and unusual to get so much information beforehand."
Nurse	38–100%	0–0%	" I am new to nursing and wound care and this has helped me a lot to explain things to my patient."
Lead Nurse Wound Care	01–100%	0–0%	"The format, information and presentation is easy for patients to understand and a good update for nurses and doctors."
"Did you understand the information leaflet provided?"	**Yes**	**No**	
Patient	38–100%	0–0%	"Easy to read."
Nurse	38–100%	0–0%	"It's a good training tool too."
Lead Nurse Wound Care	01–100%	0–0%	"Covers the basics for everyone."
"Did the information leaflet help you within your wound care experience?'	**Yes**	**No**	
Patient	38–100%	0–0%	"Very helpful so I understand the reason why my nurse gave me it." "My family read it and my husband kept it for the district nurse to read." "I kept it with me when I was transferred to other ward."
Nurse	38–100%	0–0%	"Good for communication." "Why don't other companies do this?"
Lead Nurse Wound Care	01–100%	0–0%	" Innovative idea to involve clinicians and patients within education of wound care before a product is prescribed." "It doesn't take that much time and keeps the patient on board throughout the journey."
"Do you wish to continue to use this product regime?"	**Yes**	**No**	
Patient	38–100%	0–0%	"Didn't get on with the other dressing." "I don't want to have any other dressings." the leaflet will help me ask for this dressing from my GP."
Nurse	38 –100%	0–0%	"Less input needed — patient could do his own dressing." "Patient took dressings home — didn't want to use anything else." "Patient wanted to continue using the dressing until it healed." "It's as good as the top end product I always go for so that's a positive for the dressing."
Lead Nurse Wound Care	01–100%	0–0%	"this product should go in my tool box as an alternative choice" "after this evaluation I guess my patients will be requesting it by name"

(*Table 5*). When both patients and clinicians were asked whether they wished to continue with Cutimed Siltec B rather than products previously used, all said 'yes' (*Table 6*). All participants within the evaluation felt that the education leaflet and verbal explanation for product use and rationale was a welcome addition within the wound care journey and supported both the patient and clinician awareness and understanding compared to previous experiences with other regimens where leaflets of this type were not available. Both clinician and patient felt that the leaflet was transferable from clinical area to clinical area, which increased more clinician's knowledge and

Case study.

One of the 38 patients was a 32-year-old male who presented following surgical debridement of an upper right scapular abscess which had been present for two weeks prior to surgical intervention. Although the wound was granular, clean with intact periwound skin the post debridement high exudate levels were not being satisfactorily contained with the adhesive foam product that was being utilised, resulting in twice-daily dressing changes. Due to the location of the abscess, the frequent dressing changes and pain symptoms, the patient was unable to return to work as a car mechanic. Within the first week of the evaluation, the dressing changes were reduced to every 72 hours and at day 14 weekly dressing changes were undertaken with the patient being able to return to his work.



Day 1 (a): After surgical debridement of 2-week old abscess; high exudate levels requiring twice-daily dressing changes with current adhesive foam product. Day 4 (b): After removal of Cutimed® Siltec; thrice weekly changes. Day 14 (c): Significant wound reduction, exudate low, periwound skin protected; weekly dressing change.

maintained a consistent approach to care delivery within the wound care journey.

CONCLUSION

The optimal goal of effective exudate management within wound care is containment, protection and healing alongside the promotion and maintenance of patient comfort, safety, quality of life and a resulting positive wound care journey through education and collaboration with our patients across all avenues of healthcare. Equally important is key involvement of both the patient and clinician within the decision making process and subsequent choice of the most evidence-based appropriate wound dressing product to enable concordance and achievement of satisfactory outcomes where possible.

The implementation and evaluation of a absorbent foam product such as Cutimed Siltec in conjunction with a patient tailored educational leaflet is a welcome addition to the ever changing wound care 'tool box', essential for tissue viability nurses and clinicians alike in the challenging arena of exudate management for acute and chronic wounds. WUK

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