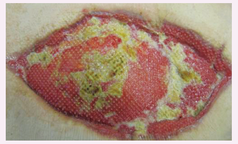

Figure 4.
*Case report 2: The abdominal wound before treatment with Silflex.*

Figure 5.
*Case report 2: Silflex in place, before application of NPWT.*

Figure 6.
*Case report 2: Silflex in place underneath the NPWT dressing.*

## CONCLUSION

For the modern community nurse faced with expanding case-loads and patients who would previously have been cared for as inpatients, cost-effective and practical clinical solutions are at a premium. This is particularly true in wound care, where there is a vast array of dressings available, leading to confusion among clinicians. It is important, therefore, that nurses have access to products that not only serve a multiplicity of purposes, but are also cost-effective, bearing in mind the current budget constraints in the NHS.

With its range of wound care applications — skin tears, burns, leg ulcers, pressure ulcers, NPWT — and all-round versatility, Silflex appears to be a viable option as it provides a balance of usability and cost-effectiveness for the modern community nurse. JCN

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# A solution to cost-effective wound management in the community

Julie Evans

For community nurses faced with expanding case-loads and patients who are now being discharged earlier into the community, the sheer range of conditions they come across means that cost-effective and practical, clinically-effective solutions are at a premium. This is particularly true in wound care, where nurses in the community need products that can be used on a variety of wound types that are also cost-effective. This article looks at the range of wound care knowledge needed by generalist nurses, before focusing on one dressing in particular, Silflex® (Advancis Medical, Nottinghamshire). With its all-round versatility, Silflex provides a balance of usability and cost-effectiveness.

KEYWORDS:
Advanced wound care ■ Wound contact layer ■ Cost-effectiveness

As the clinicians most often charged with carrying out health care on the frontline, nurses often find themselves bearing the brunt of wide-ranging changes in the NHS. With recent developments in government policy that place the patient at the centre of care and driving resources towards looking after patients in their own homes, this is becoming even more apparent (Department of Health [DH], 2008; NHS England, 2013).

Given that the focus of health care has now shifted onto primary care (Webster, 2013), the search for products that have a multiplicity of uses has become increasingly important. This is particularly true for community staff such as district nurses, practice nurses and health visitors, who may encounter all manner of problems when they first walk through the patient's front door and require a basic 'toolkit' to deal with problems ranging from incontinence, dementia, diabetes and, often, chronic wounds.

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There is also the resource factor to consider, as budgets are tight and equipment usage is now being scrutinised (Monitor, 2013). In wound care, the plethora of dressing technologies available means that there is a potential for a variety of dressings to be used on a single wound (Lee et al, 2009) — especially when a patient is being visited by a number of staff.

The new direction of health care in the UK demands that patient needs are paramount. Thus, clinicians should consider both the healing potential of a dressing, and also its effect on patients' daily activities as well as, if possible, involving them in decisions about their care. This means taking account of pain (World Union of Wound Healing Societies [WUWHS, 2004), trauma at dressing changes (a common reason for non-concordance and/or fear of dressing changes [Ross, 2004]), as well as ease of use.

Infection control is another important issue for nurses, particularly in the uncontrolled environment of a patient's home. A wound dressing that helps to mitigate against the spread of pathogens is beneficial, whether this means locking in bacteria-rich wound fluid, or providing a reliable seal around a wound (WUWHS, 2007).

This article looks at some of the wound types that community nurses encounter on a daily basis, before examining some common dressing solutions. Finally, a series of case reports demonstrate the benefits of using Silflex® as a dressing choice.

## WOUNDS COMMONLY SEEN IN THE COMMUNITY

### Skin tears

Skin tears most often affect those with fragile skin, such as the very young or, more commonly, older people. They can be seen on any part of the body, but in older people predominantly occur on the extremities such as the arms, legs and the back of the hands (Stephen-Haynes and Carville, 2011).

Skin tears usually present as partial-thickness wounds, where the epidermis has become separated from the dermis, or full-thickness wounds involving damage to the skin and subcutaneous tissue (Stephen – Haynes and Carville, 2011).

The main aims of management in skin tears include controlling any initial bleeding; cleansing using tepid saline or water to remove any debris; easing the skin flap back into place (maintaining sterility); and encouraging moist wound healing by applying a dressing, such as a secondary atraumatic wound dressing, which will protect the wound without causing further trauma on removal (Bianchi, 2012). Adhesive dressings and strips should be avoided, as they can re-open the wound when removed — instead, dressings can be held in place with stocking-like products, such as tubular bandages (Bianchi, 2012).

WOUND CARE

## Burns

Minor burns are often encountered in the community. Older people and those with reduced mobility or cognitive abilities are particularly susceptible (Edwards, 2012). Burns represent a considerable burden to NHS services, with up to a quarter of a million patients presenting to community health teams and many more visiting A&E each year in the UK alone (Edwards, 2012).

There is also the problem of scalds, particularly in patients with diabetes with sensory neuropathy who may put their feet into scalding bath water, for example (Vuolo, 2007). Burn pain is distressing (Edwards, 2009). Thus, dressing choice should be guided by the dressing's ability to ease discomfort (Benbow, 2009). Ideally, an atraumatic wound dressing should be used, as this will aid burn pain reduction at dressing change without adhering to the wound bed or surrounding skin (Timmons et al, 2009).

## Leg ulcers

Leg ulcers can be of venous, arterial or mixed aetiology. Thorough assessment to determine the underlying cause is crucial, as misdiagnosis can have severe consequences for the patient.

Venous disease is common among older people and develops when valves in the veins that normally allow blood to flow back toward the heart are weakened through age. This causes a build-up of fluid in the lower limb, which can eventually result in venous leg ulceration (Scottish Intercollegiate Guidelines Network [SIGN], 2010).

Arterial ulcers develop when blood flowing through the arteries diminishes, usually as a result of the build-up of fatty deposits over time which narrows the arteries (Dowsett, 2006). Lack of blood flow limits oxygen and nutrient supply to the lower limb, which can eventually result in ulceration.

Mixed aetiology ulcers are so-called because they usually have both venous and arterial involvement (although they can have a variety of less common contributing factors, such as diabetes or rheumatoid arthritis) (Ousey and McIntosh, 2008). Mixed aetiology ulcers are more complex to treat, as they are often the result of venous problems in the leg being worsened by arterial insufficiency.

Although compression therapy is the gold standard treatment in venous leg ulcers (controlling swelling in the lower limb and reversing the effect of venous hypertension by supporting/compressing the veins), it is also important to protect the wound bed underneath any bandaging with a contact layer, but to ensure that there is no trauma on removal (White, 2014).

**'There are so many wound dressings available, that choice can be overwhelming '**

## Pressure ulcers

Pressure ulcers are caused where pressure — from surfaces such as inappropriate mattresses, chairs or medical appliances — can compress the body's tissues so that the blood vessels are obstructed, starving tissues of oxygen and eventually causing tissue death. Pressure ulcers mainly develop over bony prominences, such as the sacrum, heels or buttocks, and are caused by pressure or shear, or a combination of both (Best Practice Statement, 2012). Certain groups of the population are at greater risk of pressure ulcers such as those who are immobile, have reduced sensation, or are unable to relieve pressure themselves.

Certain types of dressings can be useful in pressure ulcer management. For example, one study examined the use of soft silicone dressings in pressure ulcers, which were found to reduce damage to the surrounding skin, as well as decreasing maceration and trauma associated with dressing removal (Meaume et al, 2003). Similarly, soft silicone dressings can help to protect vulnerable areas in danger of pressure ulceration, minimising friction and sheer (Meuleneire and Rücknagel, 2013).

## DRESSING TYPES

There are so many wound dressings available, that choice can be overwhelming. Some dressings are more commonly used, while others have specific uses. For example, superabsorbent dressings have been developed to cope with wounds that produce high volumes of exudate, whereas other dressings have an added antimicrobial component to combat infection. Then there are bio-synthetic matrices, which incorporate collagen from animal sources to promote tissue growth. The most common types of dressings are briefly summarised below (Weir, 2012):

- Foams: these comprise a film-coated gel or a polyurethane material, which is hydrophilic in nature. There are many varieties of foam dressings, with differences in thickness and the ability to 'donate' or absorb moisture. They are also available with different adherent properties such as adhesives, hydrocolloid borders, silicone-based adhesives or non-adhesives
- Hydrocolloids: these dressings comprise tiny particles that absorb wound fluid and turn into a gel-like mass. They usually have a strong adhesive backing
- Alginates: these 'natural' dressings contain elements derived from algae and seaweed. They form a hydrophilic gel when they come in contact with wound exudate and are highly absorbent
- Hydrofibers: these dressings usually comprise a sterile, non-woven pad or ribbon, which incorporate sodium carboxymethylcellulose. Hydrofibers are designed to absorb large amounts of exudate, which is turned into a soft gel, promoting moist wound healing.

There are other types of dressings, but most are combinations of the above. Also, many of the dressings listed above have specific uses, however, nurses often need access to a multipurpose dressing that can be used on the wide variety of wounds that they are likely to come across.

## Wound contact layers

Wound contact layers are usually made up of a thin, single layer of non-adherent mesh-like material, and are used to protect the fragile tissue on the wound bed. They are often applied in the early stages of healing to promote granulation (growth of new tissue and blood vessels) and epithelialisation (Benbow, 2002), as well as to protect this new tissue. Wound contact layers can be made from traditional materials such as gauze (Barrett, 2012), or from more advanced materials, such as soft silicone and should be used on clean wounds that do not exhibit necrotic tissue.

Wound contact layers protect against trauma, particularly at dressing change, and can also be used under another secondary dressing to ensure a moist wound-healing environment. Because they are designed to be non-adherent, they can be used on wounds with fragile periwound skin. Another key benefit of wound contact layers is that they are permeable, which allows moderate-to-heavy volumes of exudate to pass through to a secondary dressing.

Another significant benefit of wound contact layers that makes them ideal for varied community use is that they are designed to stay in place on the wound bed for several days without interrupting the growth of new tissue or 'sticking' to the wound bed. This means that they can be left in place between visits, in some cases for up to 14 days.

Wound contact layers have multiple applications, making them a perfect addition to a nurse's toolkit. They can be used in the following wounds:

- Skin tears
- Granulating wounds
- Skin conditions, particularly those with blisters
- Traumatic wounds
- Partial-thickness burns (NOT third-degree burns)
- Primary dressing in pressure ulcers and negative pressure wound therapy (NPWT).

## Negative pressure wound therapy (NPWT)

Although not a specific wound type, NPWT is a technique that nurses may increasingly come across in the community, particularly as there are now portable devices that can be used by the patient at home (Awad and Butcher, 2012).

During NPWT, wound contact layers are often used as the wound interface or the dressing that interacts directly with the wound bed, providing a layer between the wound bed and the filler dressing (the main dressing that packs the wound and helps produce the negative pressure). The wound contact layer can protect the vulnerable wound bed from ingrowth of new tissue into the wound filler (Malmsjö and Borgquist, 2010), which would be painful to remove. The use of a wound contact layer can also prevent other complications of NPWT, including pieces of the filler dressing becoming embedded in the wound and new tissue being torn away when the filler dressing is changed (Malmsjö and Borgquist, 2010).

**'Wound contact layers have a range of applications, which make them a perfect addition to a nurse's toolkit '**

## Silicone wound dressing technology

Some wound contact layers incorporate soft silicone. Silicones are a synthetic compound and can take the form of oils, rubbers or resins (Meuleneire and Rücknagel, 2013). Soft silicones are a particular type of silicone, designed to be malleable and 'tacky', so that they can lie on surfaces such as the wound bed while adhering gently to the wound edges. This phenomenon is enhanced because silicone is hydrophobic, meaning that it will not stick to the moist wound bed. Because silicones cannot be absorbed into the body, they are ideal as a wound bed interface (Meuleneire and Rücknagel, 2013). Wound dressings that incorporate silicone technology are primarily designed to protect the wound bed, be non-traumatic on removal and to allow the passage of exudate (Meuleneire and Rücknagel, 2013).

## SILFLEX® SOFT SILICONE WOUND CONTACT DRESSING

One dressing that has the potential to serve a variety of purposes for the busy community nurse is Silflex® Soft Silicone wound contact dressing (Advancis Medical, Nottinghamshire). As described above, this atraumatic soft silicone wound contact layer is designed to prevent secondary dressings adhering to fragile skin and delicate wound beds. It gently adheres to the skin surrounding a wound rather than to the wound bed, thereby minimising pain and trauma associated with dressing change, while allowing exudate to pass into a secondary dressing. Crucially, Silflex is designed not to impede granulation tissue or epithelial growth.

For the community nurse, however, perhaps the dressing's main property is its versatility. Silflex is available in a wide selection of sizes and can be trimmed to fit difficult-to-dress wounds, a common problem for nurses (Weir, 2012). It can be applied to a wide range of wounds, making it an ideal technology for nurses who may be confronted with different problems and need a dressing that performs a variety of roles. Wounds that Silflex can be used on, include:

- Leg ulcers
- Superficial burns
- Infected wounds
- Debrided or clean pressure ulcers
- Cuts and abrasions
- Paediatric wounds
- Cavity wounds
- Fungating wounds.

## Evidence

The dressing's versatility is demonstrated in the literature (Edwards, 2009; Timmons et al, 2009). The use of Silflex in burns, for example, has been observed in practice, with one author commenting on its particular usefulness in combating pain, one of the most difficult-to-manage symptoms of burn wounds. In a series of case reports, Edwards (2009) found that the atraumatic nature of Silflex helped to prevent the anticipation of pain at dressing change, thereby improving the overall pain experience of the patient.

Another series of studies by Timmons et al (2009), looked at the application of Silflex in a number of clinical scenarios, including NPWT on an open abdominal wound, a patient with a surgical excision to his left neck/cheek following a bone graft, a fall-related trauma wound and a skin graft on a leg ulcer. In all cases, Silflex enabled the clinicians to apply effective therapies to wounds without causing excessive trauma to the wound bed or to the surrounding skin. This helped improve the patient's quality of life through reducing anxiety.

**Table 1:** Features of Silflex

| |
|---|
| Atraumatic, silicone dressing for pain-free removal |
| Cost-effective |
| Large range of sizes for simplified dressing selection |
| Can be cut to size (ensuring sharp scissors are used) |
| Hydrophobic silicone coating prevents the dressing adhering to the wound bed |
| Conformable for increased patient compliance |
| Unique large dressing size, 60 x 35cm |
| Large open pores reduce the potential for clogging and pooling underneath the dressing, allowing exudate to pass through |

## Cost-effectiveness

With increased focus on value for money in today's health and social care arena, cost-effectiveness of any product should be considered (Audit Commission, 2011). As mentioned above, healthcare budgets are tight and equipment usage is heavily scrutinised as a way of driving down costs (Monitor, 2013).

This is particularly relevant in wound care, where there are so many products available. Apart from its versatility, evidence presented supports its clinical effectiveness at aiding wound healing, therefore, providing a cost-effective option of wound management. Silflex, therefore, represents a competitive option. This is partly because it has been designed and manufactured locally in the UK, enabling distribution costs to be kept to a minimum.

## CASE REPORTS

The following case reports examine the use of Silflex in a number of clinical scenarios.

## Case report 1 — skin tear

Mr X is a 66-year-old male patient with a history of transitional cell carcinoma of the bladder and osteoarthritis. He presented with a skin tear to the right arm on 16 July, 2012 (*Figure 1*), which was bleeding but was clean with no sign of clinical infection.

The clinical objectives during treatment (*Figure 2*) were to stop the bleeding, prevent infection and to promote skin closure and restore the arm to its original state. The wound management challenge was to prevent further trauma and to stop the dressing from adhering to the surrounding skin.

The Silflex dressing did not adhere to the skin tear or the surrounding skin, the skin tear healed quickly and was fully healed within one week (*Figure 3*).

*Samantha Whiting, practice nurse, Mayfield Surgery, Derby*

## Case report 2 — use with NPWT

This case focuses on an abdomen that was left open following an initial surgery for perforated diverticulum, with subsequent faecal peritonitis. This patient had several laparotomies after the initial surgery and a formation of stoma. The abdomen was left open due to the multiple entries required because of the nature of the condition.

The patient was referred to the tissue viability team for management of the abdominal wound. The abdomen was grossly oedematous with copious volumes of serous exudate and unsuitable for primary closure. A Bogota bag was *in situ* as a temporary abdominal closure method.

Once the Bogota bag was removed, an abdominal vacuum-assisted closure dressing was initially used as per local policy for the management of exposed bowels.

Once granulation was achieved over the bowels (*Figure 4*), Silflex was applied as the primary, non-adherent wound contact layer (*Figure 5*). At this point the wound measured 25x13cm.

At first review after application of Silflex and NPWT (*Figure 6*), the wound size had reduced to 23x12cm. This improvement continued until the wound had re-epithelialised. Overall, the dressing was found to be non-adherent to the wound bed and atraumatic to the granulating tissue on removal, and easy and effective to use.

*Kumal Rajpaul and Bernadette Byrne, tissue viability nurse specialists, King's College Hospital, London*

Figure 1.
*Case study 1: skin tear, right arm (16 July, 2012).*

Figure 2.
*Case report 1: skin tear, right arm (19 July, 2012).*

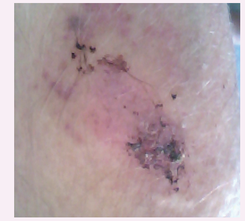

Figure 3.
*Case report 1: skin tear, right arm (23 July, 2012).*



JCN 2014, Vol 28, No 2