

The clinical performance of a silicone foam in an NHS community trust

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The NHS spends the majority of its budget on labour costs and it could be argued that frontline staff such as community nurses are the organisation's most valuable resource. However, optimal wound care is dependent upon effective patient engagement, the application of clinical expertise and access to wound management products. The tension between increasing demands for services and the number of nurses is already causing problems in care provision as staff cuts and excessive workload inevitably endanger patient care. Enhancing efficiency through the use of innovative products will become essential in the future if nurses are to continue to provide expert care against a backdrop of cost-savings. This article details the appraisal process undertaken within Worcestershire Health and Care NHS Trust to investigate the in-practice clinical performance of a silicone foam dressing (Allevyn™ Life Smith & Nephew, Hull).

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KEYWORDS:

Wound dressings ■ Foams ■ Health economics

Demand for health care in the UK continues to accelerate although without any additional input into resources, imposing further strain on services and putting organisations such as the NHS under increasing pressure. A continuing upward trend in life expectancy, the rising prevalence of chronic disease and higher patient expectations are all factors contributing to this increasing demand for resources.

Simultaneously, as the average age of the population grows, the ability of tax revenues to fund healthcare services decreases. Economic recession further exacerbates this disparity between

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healthcare demand and resources by reducing economic growth.

It is inevitable that organisations such as the NHS will have to respond to such pressures — indeed the government paper *Equity and Excellence: liberating the NHS* sets out targets for increased productivity, which are expected to achieve £20bn in savings by 2014 (Department of Health [DH], 2013a). And this is not a short-term issue — recent research commissioned by the Nuffield Trust suggests that the recent budget cuts are just the beginning of a productivity drive that may continue until 2020 at least (The Nuffield Trust, 2013).

The NHS spends about 70% of its budget on labour costs (NHS Confederation, 2013), and it could be argued that frontline staff such as community nurses are the organisation's most valuable resource. The role of the nurse is

vital in tackling the highly complex challenges posed by wound management. The diverse range of wound aetiologies and associated comorbidities, coupled with the multiplicity of factors that influence the progress of a wound demand a high degree of nursing expertise. Each wound presents a unique combination of challenges that the nurse must identify, prioritise and address via an appropriately tailored management strategy.

The implications of increasingly constrained healthcare resources are already apparent in patient-facing areas. Nursing resources are under particular pressure following a reduction in staff numbers over recent years, with a 2013 RCN labour market review stating that the number of district nurses in England fell by 39% between 2002 and 2012 (RCN, 2013a).

In a separate report the RCN suggest that '...there are now red lights flashing across the UK, warning that we are heading for a nursing shortage that could have serious implications for health services and patients' (RCN, 2013b).

These reductions in qualified nurses are mirrored by a decrease in training places for nurses between 2010 and 2012, and compounded by a net flow of nurses out of the UK to other countries (RCN, 2013c). A scenario analysis modelling the long-term effects of these trends on the future NHS nursing workforce in England predicts that the number of nurses could fall by 28% (100,000) by 2022 (Buchan and Seccombe, 2013).

Inevitably these changes have an effect on the staff themselves. Nurses are under increasing pressure (RCN, 2013b) and in a 2012 RCN survey,

89% of nurses reported that their caseloads had increased in the last year, with 62% reporting a significant increase (RCN, 2013d). This has resulted in a reduction in the time nurses can allocate to patients, with 60% of community nurses reporting spending less time with their patients than they did in the previous year (RCN, 2013d).

Another recent report suggests that staff cuts and excessive workloads are already having a considerable impact, with unprecedented levels of stress and ill-health among nurses (RCN, 2013e). Worryingly, 55% of nurses reported that they have been made unwell by stress over the previous year, with one of the key causes being an inability to deliver the care they would like (RCN, 2013e). The DH has recognised these pressures, highlighting the need to 'release time to care' (DH, 2013b).

IMPACT ON WOUND CARE

Although the tension between the demand for health care and the availability of resources has consequences for all aspects of health provision, it could potentially have a disproportional impact on patients with wounds. Wounds affect a large number of individuals, however, outside of those directly involved in delivering wound care it remains a somewhat overlooked specialty. Also, the changes driving healthcare demand — the ageing population and a growing prevalence of chronic diseases — are acutely relevant to wound management, contributing to a growth in chronic complex wounds.

Although it has been estimated that the care of chronic wounds consumes 3% of the NHS budget — equating to £2.7–3.7bn per annum (2005/6 figures adjusted for inflation) — wounds remain a 'hidden epidemic' (Posnett and Franks, 2007; Curtis, 2012). The difficulty of extrapolating the true cost of wound care — in terms of prevention, treatment and management — directly from the literature mean that the human and economic burden of wounds may be poorly understood by policy makers. Consequently, the

funding allocated to wounds can be disproportionate to the considerable impact they exert, both physically and financially, and their management might continue to be a low priority compared to other clinical specialities.

The current problems with healthcare funding and the resulting pressures on staff are particularly acute in wound management, since it is predominantly undertaken by nurses. One survey conducted in northern England (Bradford and Airedale) showed that nursing time represented 68.6% of the district nursing budget, with the remainder being spent on dressings and bandages (Vowden et al, 2009). In this region alone, which covers a population of 488,000, nurses devoted a total of 51,700 hours per year to wound management (Vowden et al, 2009).

However, despite the resources involved, nursing time is essential to wound management. Wounds cannot be managed solely by pharmaceutical intervention alone and effective care is ultimately dependent upon the nurse's expertise in assessment, diagnosis, dressing change and making informed decisions about treatment selection. These activities are labour-intensive and nurses need sufficient time to perform them effectively. Since the organisational pressures described above will put increasing pressure on nurses, it is vital to consider ways in which their time can be used most effectively.

Dressing change

The frequency of dressing change is one aspect of wound management where efficiency savings can be achieved and is, therefore, likely to become an even more critical factor in the future.

In the authors' view, reducing the frequency of visits nurses have to make is an important way of saving resources, which can then be allocated to the most pressing clinical issues. Most advanced wound care products are not only designed to deliver high standards of clinical performance for patients, they also have to optimise the use of resources. In order to meet future demand for high quality wound

management these products will become increasingly important.

ALLEVYN™ LIFE

Allevyn™ Life (Smith & Nephew, Hull) is a wound dressing designed with patient wellbeing as a key consideration. The concept is that improved wellbeing-related features will help to address some of the issues patients experience on a daily basis. These features include:

- ▶ Hyperabsorbent layer designed to lock fluid away, preventing leakage during wear
- ▶ Masking layer that aesthetically conceals the presence of exudate and reduces its visual impact between dressing changes
- ▶ Quadri-lobe shape with a wide border designed to fit the contours of the human body, so the dressing conforms securely and allows the patient to shower.

In employing a design intended to combat the common problems of living with a wound, such as exudate leakage and conformability, the dressing has the potential to improve wound management practice and reduce the use of associated resources, such as nursing time.

The primary reason for a wound-related nursing visit is to assess the wound and change the dressing. This usually happens when the dressing is no longer effective against wound-related symptoms, negatively affecting the patient's wellbeing. Thus dressing changes tend to be prompted when:

- ▶ The dressing is saturated and begins to leak causing distress and discomfort
- ▶ The surface of the dressing becomes soiled by unsightly strikethrough, which distresses the patient
- ▶ The dressing starts to detach during the course of normal movement.

If a dressing could better counter these negative factors, it may be possible to increase the interval between changes. This would allow nurses more time to re-assess a wound, rather than simply visiting to replace a dressing that is no longer effective.

APPRAISAL PROCESS

Background

Worcestershire Health and Care NHS Trust tissue viability service serves a population with a higher than average proportion of older people — 19.3% aged over 65 years, compared to 16.4% nationally (Office for National Statistics, 2013). This trend continues in the over seventy-fives, with 8.9% of the local population fitting this age group, compared with a national figure of 7.8% (Worcestershire County Council, 2011).

The trust includes 70 community nursing team bases, 52 practice nursing teams, five community hospitals and 52 care homes, as well as a number of in-patient mental health facilities, all serving a county-wide population of approximately 566,557 (Office for National Statistics, 2013).

Like the wider NHS, the trust needs to reduce costs and improve efficiency in the face of escalating demand. Given this challenge, the trust's management is keen to explore new opportunities to enhance efficiency and improve patient experience.

Method

The tissue viability services within the trust have a well-established county tissue viability team with a network of link nurses who have completed Good Clinical Practice (GCP) training. The process for considering new products for the wound formulary within the trust is based on best practice (Wounds UK, 2008).

The first step in submitting any new wound management product for consideration is gaining consensus about its potential benefits from the tissue viability team. Once consensus has been reached, a bespoke appraisal form is created to measure the product's performance against the relevant criteria.

Once approval for the appraisal process is gained from the clinical governance department, an appropriate level of involvement is agreed with the manufacturing

company to ensure the evaluation process is underpinned by the required level of collaborative support. Joint training on the product and the evaluation process is provided to all staff involved by the company representative and the tissue viability team, not only to ensure appropriate use of the product, but also to ensure that its performance is properly documented.

The objective of this in-practice appraisal was to determine the usability, acceptability and clinical performance of Allevyn Life. To ensure competency, consistency and reduce data variability, only nurses who had completed an accredited tissue viability course were involved in the appraisal process.

In this appraisal, across the trust two tissue viability nurses and 36 county link nurse team nurses were briefed on the evaluation process by the same evaluation monitor (lead TVN and company clinical project lead), and the dressing's indications and contraindications were discussed in depth.

All of the participating nurses underwent training on the appropriate application technique and written instructions for use were provided for future reference. The lead TVN and company clinical project lead attended each subsequent county-wide tissue viability meeting and were available to the nurses throughout the evaluation.

The participating nurses used the dressing on wounds that they considered suitable based on their clinical opinion in conjunction with the product's indications for use. Nurses documented their experiences throughout and discontinued the dressing whenever clinically appropriate, for example when the therapeutic objective had been achieved.

The appraisal itself took the form of a series of case reports in which the use of Allevyn Life was carefully documented. This meant that in addition to the nurses' opinions

on performance it would also be possible to understand the dressing's performance in the context of a nurse's particular clinical practice.

Appraisal criteria

In order to ensure consistency in the information gathered, a bespoke paper-based appraisal proforma was used. This ensured that specific information was gathered on the clinical performance of the dressing in relation to a number of key criteria, namely:

- ▶ Wound type
- ▶ Wound duration
- ▶ Wound characteristics
- ▶ Product used before Allevyn Life
- ▶ Typical wear time of previous product
- ▶ Duration of Allevyn Life use
- ▶ Typical wear time achieved with Allevyn Life
- ▶ Clinician opinion on the dressing's performance (i.e. ability to manage exudate).

The parameters were designed to ascertain whether the dressing was acceptable to nurses and patients, its wear time, and whether it effectively managed exudate. Nurses were also asked to indicate if they would recommend the product for use in their practice. Finally, all of the data was entered into a database and analysed using Microsoft Excel.

RESULTS

A total of 40 product appraisal case series proforma were completed.

Circumstances of product use

The care setting was reported in 39 of the 40 cases and the majority of cases took place in primary care (79.5%; n=31), with the remaining cases being located in secondary care (7.7%; n=3) and 'other' settings (for example, nursing homes ([12.8%; n=5]).

Patient gender was recorded in 38 cases, with the majority being female (60.5%; n=23). The modal age range was 81–90 years (38.9%; n=14,) while the median age range was 71–80 years.

The dressing was used as both a primary (37.8%, n=14) and, most commonly, as a secondary dressing (62.2%, n=23).

Type of wound

The nurses used Allevyn Life in a variety of different clinical circumstances. The type of wound being treated was recorded in 37 of the 40 cases and a range of six different wound types were treated (Figure 1), the most common being:

- ▶ Pressure ulcers 40% (n=15)
- ▶ Trauma wounds (24.3%: n=9)
- ▶ 'Other' wounds (18.9%: n=7)
- ▶ Fungating wounds (10.8%: n=4)
- ▶ Leg ulcers and surgical wounds, both of which comprised 2.7% (n=1).

Exudate volumes

The exudate volume of the wound before using Allevyn Life was also documented, with the nurses selecting from the following subjective categorisations (Figure 2):

- ▶ None
- ▶ Low
- ▶ Moderate
- ▶ Heavy.

Location and dimensions

Further data were collected on the locations (n=40) and dimensions (n=36) of the wounds treated. Analysis showed that Allevyn Life was used to treat wounds in ten areas of the body (Figure 3), in the following order:

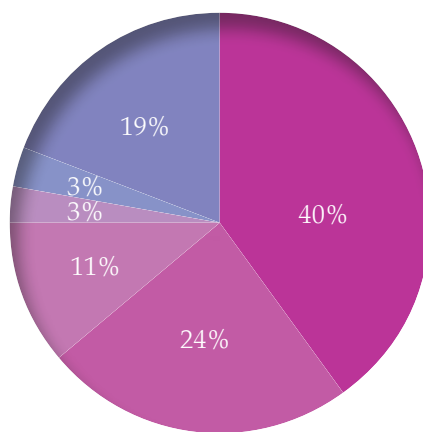
- ▶ Buttock/sacrum/back (32.5%; n=13)
- ▶ Lower leg/shin (17.5%, n=7)
- ▶ Arm/elbow hand (12.5%; n=5)
- ▶ Chest/breast/sternum (10.0%; n=4)
- ▶ Hip (10.0%; n=4)
- ▶ Head/neck/shoulder (5.0%; n=2)
- ▶ Upper leg/knee (5.0%; n=2)
- ▶ Ankle/malleolus, rear-foot/heel, forefoot/toes (all 2.5%; n=1).

Wound area

Wound area was calculated from the length and width data provided for 36 of the cases. Based on these data the mean wound length and width were calculated to be 4.1cm and 3.5cm respectively, with mean wound area calculated as 11.3cm² (assuming the wound had an elliptical shape).

Previous dressings

The dressing used before Allevyn Life was detailed in 36 cases (Figure 4). The most frequently used product



- Pressure ulcers
- Trauma wounds
- Fungating wounds
- Leg ulcers
- Surgical wounds
- Other

Figure 1. Wound types treated.

was a foam dressing (66%; n=24) followed by a combination of two or more products (14%; n=5).

Dressing size

All four sizes of Allevyn Life were used during the appraisal and, of these, the most frequently used was the 10.3x10.3cm (47.1%; n=16) followed by:

- ▶ 12.9x12.9cm (32.4%; n=11)
- ▶ 15.4x15.4cm (14.7%; n=5)
- ▶ 21x21cm (5.9%, n=2).

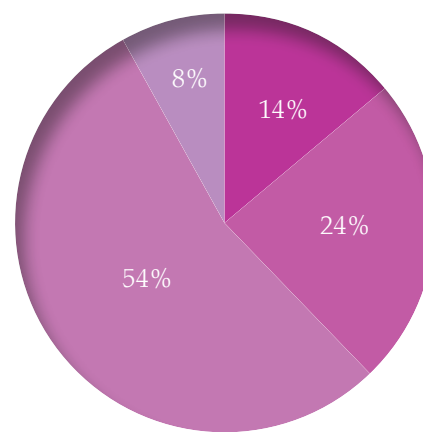
In-practice use

Dressing wear time

During the appraisal the mean duration of Allevyn Life usage was 14 days (n=22). As part of the appraisal nurses were asked to report on the wear time they had typically achieved during their use of Allevyn Life. They were also asked to specify what dressing they had been using previously and the typical wear time achieved.

As mentioned above, in 90% of cases (n=36) nurses reported the type of dressing they had been using previously, with the majority specifying a foam (66%; n=24), followed by:

- ▶ A combination of two or more dressings (13.9%, n=5)
- ▶ No dressing (7.5%; n=3)
- ▶ Negative pressure wound



- None
- Low
- Moderate
- Heavy

Figure 2. Wound exudate levels.

therapy, non-woven dressings, film dressings and 'other', each of which comprised 2.5% (n=1).

In 92.5% of cases (n=37) the wear time typically being achieved before the application of Allevyn Life was detailed. On the basis of these responses, the pre-Allevyn mean wear time was calculated at 2.1 days. In the case of the 24 foam dressings used as a primary dressing pre-Allevyn Life, nurses supplied a typical wear time for 21 cases and from this a mean wear time was calculated as 2.2 days.

The wear time typically achieved during the use of Allevyn Life was supplied in 36 of the 40 cases (90%), with the mean wear time calculated as 3.7 days. There were 28 cases where the wear time achieved with the use of Allevyn Life and that of the dressing previously employed were recorded, and, therefore, the increase in wear time could be directly calculated. The mean increase in wear time achieved with the use of Allevyn Life compared with the dressing previously employed was 1.46 days (from 2.15 to 3.61 days).

The percentage increase in wear time for each case was also calculated and the mean percentage increase in wear time over the 28 cases was 84% (median 87%). A further analysis was performed to examine the change in wear time when nurses switched from

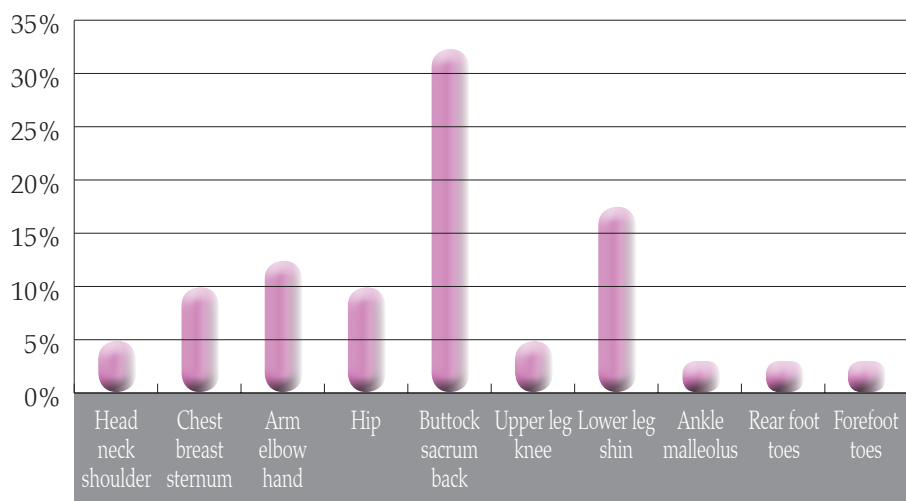


Figure 3.
Wound location.

using a previous foam dressing (either as a primary or secondary dressing) to Allevyn Life. There were 22 such cases where both wear times had been recorded, with the mean increase being 1.56 days (from 2.30 to 3.86 days) in favour of Allevyn Life. The mean percentage increase in wear time over these 22 cases (calculated from the percentage increases for each case) was a case-by-case increase in reported wear time of 79% (median 87%).

Product performance

Nurses were asked to document

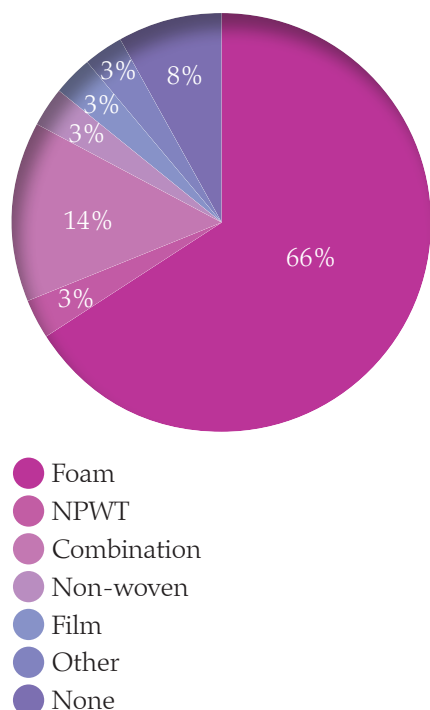


Figure 4.
Dressing type used before Allevyn Life.

their experience of the in-practice performance of Allevyn Life following their use of the dressing. A rating scale was used so that dressing performance in relation to the various parameters was rated as being: 'poor', 'fair', 'good', 'very good', or 'excellent'. The rating for each parameter was summarised across all cases (Figure 5).

Comparison to current practice

Having used Allevyn Life as part of their dressing regimen, nurses were asked to contrast the experience with that of the dressing regimen employed previously. This comparison explored dressing performance across four criteria:

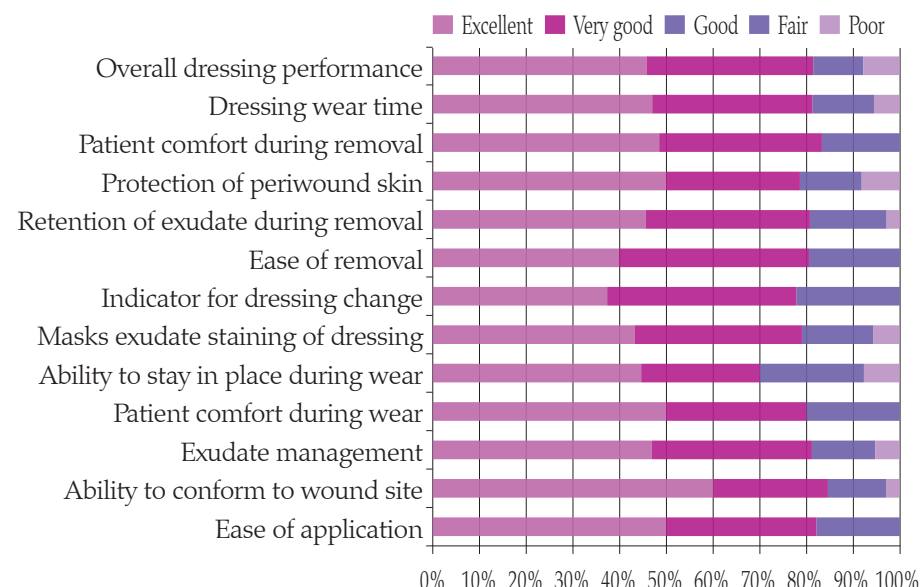


Figure 5.
Product performance ratings.

- ▶ Ease of use
- ▶ Dressing wear time
- ▶ Ability to stay in place
- ▶ Overall dressing performance (Figure 6).

Nurse recommendation

On the basis of their in-practice experience of using Allevyn Life nurses were asked to indicate if they would recommend the dressing for inclusion in the wound management formulary. Ninety-four per cent of respondents indicated 'yes'.

DISCUSSION

During this appraisal nurses used Allevyn Life in various care settings, with patients from a range of age groups presenting with a variety of wounds, and with varying volumes of exudate (Figures 1–3). The product was, therefore, subjected to a range of clinical challenges approximating the 'norm' in wound management, meaning the results were likely to be applicable to the wider trust.

In-practice performance

The in-practice performance of Allevyn Life was rated highly by the majority of nurses. For each of the 13 dressing performance parameters that the nurses were asked to score, the ratings of 'good' to 'excellent' predominated, constituting more than 90% of responses in each case (Figure 6).



Five-minute test

Answer the following questions about this article, either to test the new knowledge you have gained or to form part of your ongoing practice development portfolio.

- 1 – How are the financial cuts in the NHS affecting nurses' roles?
- 2 – Name some of the key factors needed for the community nurses to provide best practice wound care.
- 3 – What are some of the properties of the dressing product discussed here?
- 4 – How do these properties aid the wellbeing of patients?
- 5 – Can you list five pieces of knowledge you can take from this article into your practice?

Comparison to current practice

Allevyn Life compared favourably with the dressing used previously across the four parameters (*Figure 6*). Across all four criteria — and in over 90% of cases — the nurses indicated that in their experience the performance of Allevyn Life was 'better' or 'the same' as the dressing products they had previously used.

In-practice impact

Most wound care is undertaken by district nurses in patients' homes (Drew et al, 2007). In addition to patient contact time, these visits incur

a great deal of travelling time, which can represent a substantial proportion of district nursing resources when extrapolated across a whole trust.

As outlined above, demographic and workforce trends will undoubtedly lead to further pressures on nurses and the ability to free up clinical time by using new products will have significant benefits. This appraisal illustrates the potential for releasing nurses' time when dressings are used that have been designed with efficiency and patient wellbeing in mind.

In the 28 cases where wear time data were available for both the previously used dressing and Allevyn Life, the mean increase in wear time after the switch to Allevyn Life was 1.46 days. The difference in dressing change frequency after switching to Allevyn Life was also calculated for each case with a mean reduction of 1.64 changes per week (a change from 4.52 to 2.88 changes per week).

For the 22 cases where nurses switched from using a foam dressing (either as a primary or secondary dressing) to Allevyn Life, the mean increase in wear time achieved with Allevyn Life was 1.56 days. The difference in dressing change frequency after switching to Allevyn Life from a foam primary or secondary dressing was also calculated for each case, with a mean reduction of 1.53 changes per week (a shift from 4.19 to 2.66 changes per week). This suggests that across the range of wounds included in this

appraisal it could be possible, on average, to free up between one and two visits per patient, per week.

Previously published data indicates that the prevalence of patients with a wound in the general population is about 3.73 per 1,000 population (Drew et al, 2007). The primary care trust featured here covers a population of 566,557 (Office for National Statistics, 2013), meaning there are potentially 2,113 patients with a wound, of which approximately 74% (1,564 patients) are being treated in community at any one time (Drew et al, 2007).

Survey data on dressing change frequency (Smith & Nephew, 2013) shows that approximately 30% of patients receive three or more visits per week. Therefore, as an estimate, the authors assume that the reduction in visit frequency could be realised in 30% of the trust's patient population, amounting to 469 patients.

If Allevyn Life were used for these patients with a reduction in change frequency of 1.64 changes per week, this would release 769 district nursing visits each week. If each visit takes 31 minutes (O'Keefe, 2006) this would free up a total of 397 hours of district nursing time per week. Over the course of a year, this strategy could release approximately 40,000 visits (20,644 hours or around 2,500 working days).

As a more conservative estimate of the potential to release nursing time, it could be assumed that the target group was those patients being treated using foam dressings. This would then apply to a smaller group of patients. Assuming that 20% of the 469 patients (94 patients) were being treated using foam dressings (healthcare data available from IMS Health — www.imshealth.com/portal/site/imshealth), and these patients were able to be visited one less time per week (rather than 1.53 as the data for the shift in foam dressing change frequency suggests), this would free up 48.5 hours per week, or 2,522 hours per year. Even this conservative estimate

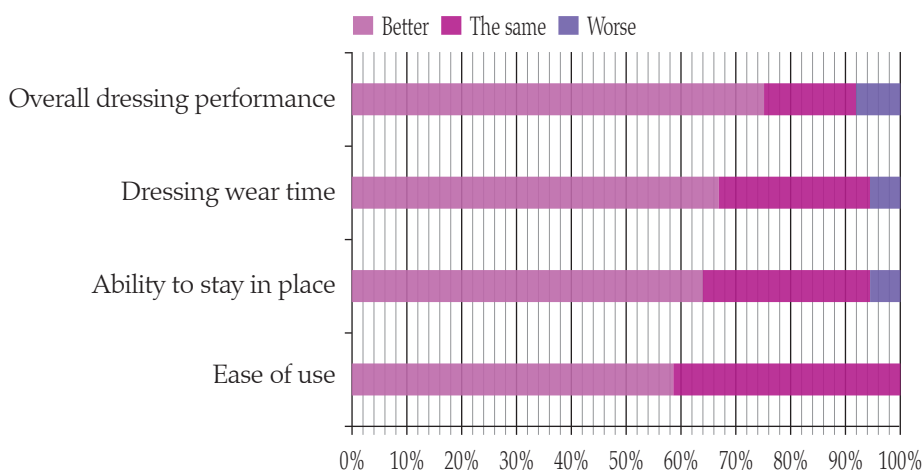


Figure 6. Product performance ratings.

still represents a substantial release of nursing time.

CONCLUSION

Optimal wound care is dependent on effective patient engagement coupled with the application of clinical expertise and access to appropriate wound management products. This appraisal has demonstrated that the in-practice performance of Allevyn Life was highly rated by nurses, showing a high level of usability and acceptability and resulting in the majority of respondents recommending the product for inclusion in the local formulary.

The benefit of Allevyn Life in terms of extending dressing wear time illustrates how products can positively influence practice and potentially support nurses in meeting some of the efficiency challenges they face. In extending the interval between dressing changes while still helping to mitigate the impact of wounds on patients, Allevyn Life contributed to a release of resources, most crucially nurse time.

The tensions between increasing demands for healthcare efficiency and a finite supply of resources are already manifesting themselves in frontline clinical areas, with suggestions that staff cuts and excessive workload are putting patient care at risk (RCN, 2013f).

The ability of community nurses to enhance efficiency through appropriate use of innovative products is essential if this increasing disparity between demand and supply is to be reconciled. **JCN**

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KEY POINTS

- Demand for health care in the UK continues to accelerate although without any additional input into resources.
- The role of the nurse is vital in tackling the highly complex challenges posed by wound management.
- The tension between increasing demands for services and the number of nurses is already causing problems in care provision as staff cuts and excessive workload inevitably endanger patient care.
- Enhancing efficiency through the use of innovative products will become essential in the future if nurses are to continue to provide expert care against a backdrop of cost-savings.
- This article investigates the performance of Allevyn Life™ (Smith & Nephew, Hull), an innovative wound dressing with a hydrocellular foam layer, which has been designed with patient wellbeing as a key consideration.

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