Notes on a six-month evaluation of juxtacures™ by one community nursing team

Sarah Williams

District nursing teams are under increasing pressure to cope with demands on their time and the skills to meet the needs of their local community. The author’s local nursing team has been struggling to manage the clinical skill mix required to meet the complex needs of their patients with lower leg wounds who should be treated with compression therapy. The task of managing compression therapy was mainly undertaken by nurses, but it was proving extremely time-consuming — especially when patients needed leg washing and compression treatment for bilateral leg wounds. After successfully using a Velcro™ compression system, a six-month evaluation of juxta products for the leg ulcer pathway was proposed for one community nursing team. This project was undertaken with an initial cohort of 17 patients to evaluate if switching to this product could help to improve the use of the team’s skill mix and reduce costs on wound products from the formulary by improving wound healing rates.

KEYWORDS:
- Wounds
- Lower limb
- Oedema
- Lymphovenous disease

Wound care costs the NHS £4.5–5.1 billion per year, with 86% incurred from indirect costs such as managing infection, maceration, delayed healing, pain and the additional nursing and hospital resources these complications cause (Guest et al, 2015). Wound exudate also contributes to a high spend on wound care products, especially if appropriate treatment is not provided in a timely manner, with comprehensive holistic patient assessment instigating compression therapy when necessary.

Costs to the health service can be broken down to the wound care products used and nursing time taken to dress wounds. As 86.7% of wound care in the UK in 2014 was delivered by registered nurses in the community (Dowsett et al, 2014), a scheme that makes better use of other members in the community nursing team could help to release registered nurses to perform the tasks that require their expertise.

Chronic venous leg ulceration is a long-term condition where patients frequently experience ulcer recurrence, alternating with periods of healed ulceration. Patients with open wounds are often reliant on the involvement and expertise of clinicians for wound care and the application of compression therapy. Compression therapy can be provided in the form of bandages or hosiery, depending on exudate volume and patient mobility (Wounds UK, 2016).

Registered nurses in community nursing teams have historically undertaken holistic patient assessments to determine if arterial sufficiency is adequate to apply compression therapy. Following assessment, the clinical skill of compression bandaging remained part of the nurse’s role. However, pressures on district nursing services are increasing due to rising demand and static, if not falling, budgets.

Indeed, a recent report by the King’s Fund, Understanding NHS financial pressures (Robertson et al, 2017), describes district nursing services as being under particular strain.

In the author’s trust, the imbalance in workloads across the team members required particular consideration and how they looked at revising current duties performed by unregistered members of the team (staff on bands 3 and 4), such as enabling them to apply compression garments, so that nurses’ time could be freed up to tackle venous leg ulcer treatment.

STANDARD TREATMENT FOR VENOUS LEG ULCERS

Standard treatment for venous leg ulceration is compression therapy (National Institute for Health and Care Excellence [NICE], 2012; Wounds UK, 2016). Registered nurses attend additional training to understand the theory behind compression treatment and are taught bandaging techniques to apply compression systems safely and competently. However, multilayer compression bandaging skills can vary among clinicians, which can result in sub-therapeutic treatment for the patient because of the subjective nature of the skill (Wounds International, 2013; Wicks, 2015).

There is also a question of concordance, as some patients are unable to tolerate the tightness of bandaging and may ask for it to be loosened, or find it too bulky and hot, which leads to odour and/or difficulties in wearing normal footwear (Wicks, 2015).

The task of compression bandaging in the community involves
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• Instantly adjustable
• Enables self care

Discover the medi Wound Care Therapy Chain within the medi World of Compression.

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a lengthy patient visit, including removing bandaging, washing the lower limb in buckets of warm water and reapplying four layers of bandaging. In the author’s trust, with 17 patients on a caseload, some requiring daily visits for compression therapy, this was taking up a huge amount of the team’s time.

**USING A VELCRO™ WRAP COMPRESSION DEVICE**

It has been found that accurate compression can be quickly and easily applied by using a Velcro™ wrap compression device (e.g. juxtacures™ / juxtalite™, medi UK) (Freeman and Norris, 2016; Wicks, 2016). Using the Velcro wrap compression system also ensures that compression is accurately and consistently applied at the same level at each visit (see Practice point box), regardless of which practitioner is performing the task, thereby ensuring effectiveness of treatment.

**MANAGING EXUDATE**

Patients with highly exuding wounds often require a greater number of clinical visits and use more dressing materials and consumables (Morgan, 2015), and can prove costly to treat. In the author’s trust, due to time restraints on district nurses, full patient assessments were being delayed for patients with lower limb wounds. This, in turn, prevented the right treatment from being started in a timely manner, which would often delay healing. Rising costs of wound care provision is also a constant challenge, and so the author’s trust were looking to find ways to reduce costs without compromising patient safety, satisfaction and healing rates. By introducing a Velcro wrap compression device (the juxta range), it was hoped that there would be a reduction in the time spent on face-to-face patient visits, thus releasing registered nurses to undertake patient assessments and start them on the right treatment pathway sooner.

**SIX-MONTH EVALUATION**

Although the juxta device requires an initial up-front cost, it is reusable and lasts for six months (Wicks, 2016). Thus, after discussion with medicines management, including the finance manager, and team leads at North Somerset Community Partnership, it was decided to evaluate the cost implications of using this compression system over a six-month time frame to see the benefits to the team’s wound formulary budget.

After initial discussion about the project with the team leads at North Somerset Community Partnership, 17 patients were identified in the caseload as having lower limb wounds. All were reviewed to ensure that a recent Doppler assessment had been undertaken and they were suitable candidates for compression therapy. A business case was outlined and put before the organisation and it was agreed to evaluate the product for six months and review progress. Patients were then approached and consent sought to participate in the evaluation. Pre-evaluation questionnaires were completed with patients to provide a baseline of their satisfaction with their current treatment and lower limb care.

The tissue viability service provided a one-day training session for the band 3 staff in the team to increase their knowledge around wound infection, anatomy and physiology of chronic venous leg ulcers and compression theory, the need for compression therapy, and how to apply it safely. medi UK also provided numerous staff training sessions to educate all team members in the use of the juxta range. This included ensuring that the right product was chosen for the right patient, and how to support the patient and help them feel confident with the new treatment plan.

Simple ankle and calf circumference measurements were required for each patient so that the correct-sized wrap could be ordered. As oedema in lower limbs reduces with correct application of compression (Mosti et al, 2015), the device can be altered to fit each individual accurately. This system was chosen as, uniquely, it is easy to be accurate with the compression applied using the Built-in Pressure System™ (BPS).

Once the Velcro wrap garment had been fitted, the team would reassess the patient’s satisfaction and address any concerns. If possible, carers or family members were involved in application of the device to increase the patient’s ability to self-care. The vision for the NHS set out in The Five Year Forward View proposes that clinicians need to encourage patients with long-term conditions to self-care or become involved in the long-term management of their condition (NHS England, 2014). The benefits of the juxta range mean that compression therapy can be safely and easily applied by patients/carers, so that they can be actively engaged in their own care — a factor which helps to promote concordance with treatment (Wounds UK, 2016).

Throughout the six-month evaluation period, the project was regularly reviewed with patients and staff to evaluate satisfaction and discuss any issues raised, such as self-empowering patients to undertake readjustment themselves if the device slipped between nurse visits.

**Costs...**

The juxta system, which includes all compression and two liners required to compress the foot and leg, along with the Built-in Pressure System (BPS), for six months costs £153.93 (electronic drug tariff current price 2017).

**Practice point**

Both juxtacures and juxtalite have a Built-in Pressure System™ (BPS) card, which measures the level of compression to ensure accurate application and consistent pressures (Lawrence, 2014).
noted that in less than four weeks of the product being fitted, the cost had been recuperated and savings were being made. Savings over a six-month period for 15 patients (one patient died and one declined to use the product) were about £30,000–£11,000 on staff time and £19,000 on dressings and bandages.

Examples of costs per patient are shown in Table 1. (Staff time was calculated by taking the mid-point annual salary for each nurse, bands 2–7, based on 2016 salaries. These costs were worked out by asking the nurse how long they took for each patient when treating with compression bandages. This was repeated when the patient moved into the Velcro juxta wrap system. The reduction in nurse time was very apparent, as often half the time was being spent than when the patient was in compression bandages. This was in keeping with ease of use of this product, as well as being simple to apply, as whoever applies the Velcro juxta device has the BPS card to confirm the accuracy of the level of compression being applied.)

The two patients in Table 1 were chosen because they reflected the most common episodes of venous leg ulceration and associated conditions seen in clinics and within community nurse caseloads, i.e. wet legs due to venous oedema, multiple episodes of ulceration over a long period of time, and static wounds. In addition, both patients were showing no signs of improvement or healing before the juxta evaluation (see Box).

Patient satisfaction was assessed at regular intervals. This was measured using a five-point score (where 1=poor and 5=good). The patients’ pain levels, sleep quality, and quality of life were assessed, along with whether they were able to wear normal clothing and shoes, as well as whether they/their carer could adjust the compression.

Only one patient in the evaluation group failed to improve, but she had taken five years to accept compression bandaging and therefore was unlikely to be responsive to change in the short term.

### Table 1: Weekly treatment costs and savings in nurse time/costs

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<thead>
<tr>
<th>Dressing and bandage cost</th>
<th>Patient one</th>
<th>Patient two</th>
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<tbody>
<tr>
<td>Before introduction of juxta system</td>
<td>£384.32</td>
<td>£16.84</td>
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<tr>
<td>Four weeks after introducing juxta system</td>
<td>£76.72</td>
<td>£12.80</td>
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<tr>
<td>16 weeks after introducing juxta system</td>
<td>£44.60</td>
<td>£6.16</td>
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<tr>
<td>Maximum weekly saving</td>
<td>£339.72</td>
<td>£10.68</td>
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<th>Staff time in minutes per week</th>
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<tr>
<td>Before introduction of juxta system</td>
<td>840</td>
<td>80</td>
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<tr>
<td>Four weeks after introducing juxta system</td>
<td>420</td>
<td>30</td>
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<tr>
<td>16 weeks after introducing juxta system</td>
<td>280</td>
<td>30</td>
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<tr>
<td>Maximum weekly saving</td>
<td>560</td>
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<th>Staff costs</th>
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<tr>
<td>Before introduction of juxta system</td>
<td>£174.49</td>
<td>£16.62</td>
</tr>
<tr>
<td>Four weeks after introducing juxta system</td>
<td>£87.25</td>
<td>£5.40</td>
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<tr>
<td>16 weeks after introducing juxta system</td>
<td>£58.16</td>
<td>£4.65</td>
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<tr>
<td>Maximum weekly saving</td>
<td>£116.33</td>
<td>£11.97</td>
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</tbody>
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### PATIENTS ONE AND TWO

**Patient one** had experienced multiple episodes of ulceration over a number of years. The latest episode was one year six months’ duration at the time of the initial assessment. This wound extended around the gaiter region and was approximately 20 cm long on the right leg. There was another small wound present on the right dorsum, due predominantly to exudate damage. The wounds on his left leg were of mixed aetiology (venous and arterial). Exudate volume for both legs was distressingly high, requiring daily nurse input. In addition, the wounds showed no signs of improvement. His wife was having to put waterproof draw sheets on the bed to prevent the exudate seeping into the mattress, as well as wrapping the legs up to form boots to contain the moisture.

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Although the patient’s wife was taught to apply and adjust the Velcro juxtacures wrap at each dressing change, allowing them to go away on holiday, she chose not to manage her husband’s legs on her own when back home, and so the nurses continued to attend daily.

Patient two’s leg ulcer had been present for over a year. The wound/excoriation extended around the lower lateral and posterior aspects of the right leg. He also experienced a fairly high volume of exudate, requiring twice-weekly nurse visits.

The exudate was also having a detrimental effect on the surrounding skin and foot.

Both patients signed up to the new compression therapy regimen and were positive with the change. They both needed a few adjustments made to the product placement and foot options in the first week due to discomfort, but thereafter they continued successfully in the Velcro juxta devices to week 16 of the evaluation and beyond.

Both patients one and two have shown signs of healing. At the initial assessment, patient one had approximately 80% sloughy and 20% granulation tissue in the wounds, but by the latest assessment this had improved to approximately 20% sloughy, 40% granulation and 40% epithelial tissue. The most notable improvement was the exudate volume, which reduced significantly enabling the nurses to reduce their visits and his wife no longer needed to wash his legs on a daily basis. She believed the slowing down in washing would have an impact on their water usage, especially as they were on a water meter.

Patient two started with 100% granulation tissue present and has now healed. He is able to get his shoes on, as he wears the juxtacures comfort compression anklets on his feet (to keep the swelling out of his feet), and is able to go for short walks outside his house.
Results
Findings from the six-month evaluation also included feedback from nursing staff, which was gained during appraisals with the team coordinator. Staff reported that the previously labour-intensive task of applying compression therapy was no longer so time-consuming or onerous, both physically and mentally. This task was now being enthusiastically shared by the whole team, which increased staff morale and they commented that it had ‘revolutionised’ how they view compression.

The UCS™ premoistened debridement cloth was also used within the treatment plan in an attempt to further improve the time spent with the patient and enhance wound cleaning. Wounds require debridement to facilitate assessment and healing (Gillies, 2016), and the solution contained in UCS not only helps to provide a deep clean within the wound bed, but can also be used on the skin and periwound area to clean, soften and moisturise any dry skin. Downe (2014) stated how UCS removes dry, scaly skin plaques.

The feedback reported by the nurses was that UCS helped to reduce the time previously required for washing wounds and legs in buckets and therefore the manual handling of buckets was not required. The nurses’ time saved using UCS and juxtaures is represented in Table 1 (for patient one it was 560 minutes and patient two 50 minutes per week for wound cleansing, debridement, skin care and compression therapy).

Patient perspective
A paper patient feedback form was given to the patients to complete at several points throughout the evaluation to gauge their satisfaction with the new treatment regimen and to see if they had any concerns. All the patients who remained in the evaluation reported that this was a comfortable device and some stated that they found it more comfortable than the previous bandaging system. In some cases, patients who had long-standing, non-healing wounds progressed to healing with juxtaures. Patients’ pain perception also improved while using the device, compared with that experienced with previous compression bandaging. There was no negative feedback from patients regarding this treatment plan, and one patient was discharged from the caseload as her wound had healed and her sister was able to help her apply the device independently to reduce the risk of ulcer recurrance.

Some of the comments from patients included:
- ‘The best foot option ever applied’
- ‘Anyone requiring compression should be in juxta’
- ‘Have had problems with my legs for 40 years — best compression yet.’

SUMMARY
The project is drawing to the end of the six months with positive feedback from both staff and patients. The ever-increasing workload for community nursing staff means that any innovations that save nursing time and money, improve patient outcomes and encourage a greater degree of self-care, are to be welcomed.

In the author’s clinical opinion, use of the juxta range needs to be incorporated into the current lower limb care pathway. The culture in North Somerset Community Partnership is moving from compression bandaging being a nurse-led intervention to encouraging more self-care from patients with lower-limb wounds, as well as involvement of staff from lower bands in this aspect of care. This should ultimately reduce both staffing costs and money spent on wound care products. However, any system change will take time and resources to embed, and staff will require additional support and training to make such changes a success.

REFERENCES