In today’s climate, the National Health Service (NHS) is facing increasing demands on services. The ‘Five year forward view’ (NHS England, 2014) identified unprecedented demands on NHS services due to an ageing, and a growing population with complex long-term conditions. It is due to this increasing pressure that healthcare services are looking at ways to change current care delivery methods.

With healthcare policy focused on community-based care, larger numbers of patients with complex long-term health conditions are living for longer and being cared for out of hospital in the community (Chalk and Legg, 2017). Community nurses are expected to provide a range of skilled healthcare interventions to patients at home (Carrier and Newbury, 2016). Despite this, a recent study by Kirby and Hurst (2014) examining community staffing and workload, identified that heavy workloads were common and often accompanied by reduced staffing numbers, impacting on the amount of time nurses could spend with individual patients. The study also showed that dependency on nurses from patients was high. This, in combination with the workload and staffing numbers, has the potential to result in challenging and difficult working environments for community nursing teams.

With healthcare policies encouraging services to adapt and evolve, nurses must evaluate and update their practice to ensure that they can meet the challenges they face in an evolving NHS.

Dawn Morris, district nurse team lead and community matron, Berwick upon Tweed, Northumberland

Wound Care People Ltd
which can be delivered in a variety of ways, such as bandages, hosiery and adjustable Velcro compression devices (AVCDs).

Compression achieves limb volume reduction in a number of ways, namely:
- Increasing uptake via the lymphatics
- Decreasing capillary filtration
- Moving fluid to non-oedematous areas

Traditionally, compression for chronic oedema management was delivered with compression bandaging. Compression bandaging requires specialist skills and knowledge for it to be applied at a therapeutic level (Freeman and Norris, 2016). Even with adequate training, nurses still fail to apply bandages at the recommended 40mmHg level of compression (Nelson et al, 1995; Taylor et al, 1998; Reynolds, 1999). In many cases, bandages are either applied too loosely or tightly, resulting in bandage slippage, leaky legs and non-healing wounds, as well as potential pain and discomfort for the patient until the nurse can come and change them. It is a challenge to train nurses with the knowledge and skills to safely apply compression bandages, especially with rising patient caseloads and nurse vacancies, leaving little time for training and supervision.

Physically, bandaging a leg can be challenging and can involve stooping, stretching, bending and lifting (Todd et al, 2014). This is often compounded by the environment in which community nurses work, i.e. patients do not have electric beds or even electric chairs to raise the limb to reduce the amount of bending and lifting. If a patient is immobile or obese, this can be even more challenging.

Adjustable Velcro compression devices (AVCDs) provide an effective alternative to compression bandaging (Mosti et al, 2015). These garments comprise Velcro straps which are layered to cover the affected limb. They work in accordance with Laplace’s law delivering graduated compression from the ankle to below the knee (Lund, 2000), offering low resting and high working pressures (Mullings, 2012).

AVCDs
Any patient who has been assessed and is suitable for compression could benefit from an AVCD. One example is the juxta range (medi UK), which is able to achieve consistent measurable compression due to its Built-in Pressure System (BPS™). The BPS is used to measure the level of compression, thereby ensuring that it is accurate and consistent (Lawrence, 2014). The simplicity of applying and measuring compression with AVCDs, means that patients, carers, and anyone who has received basic training will be able to apply the device at a safe therapeutic level of compression.

In comparison to compression bandaging, AVCDs are able to offer much more consistent levels of compression than bandages. A randomised control trial showed that inelastic bandages lose their pressure by up to 50% 24 hours after application, whereas AVCDs were able to maintain a consistent level of compression as the patient was able to readjust the AVCD as the garment became loose (Mosti et al, 2015). To ensure compression bandages maintain a therapeutic level of compression, they need to be reapplied on a regular basis. However, nurses do not have the resources to visit their patients daily to reapply their compression bandages. With the AVCD, patients/carers are able to readjust the pressure on a regular basis,
ensuring that the compression delivered is maintained at a therapeutic level in between community nurse visits (Damstra and Partsch, 2015).

Furthermore, patients wearing bandages are unable to access their skin to complete essential care to hydrate the skin and prevent further breakdown in between nurse visits. Patients wearing AVCDs can access their skin on a daily basis, ensuring that they can inspect their skin and maintain a regular skin care regimen. The AVCD can easily be removed for the patient to have a shower, apply emollients, clean and redress the wounds.

Greene and Meskell (2016) explored patients’ perceptions regarding the impact of lower limb chronic oedema on their quality of life. They found that 76% of patients reported a sense of altered body image. 55% of the patients felt that their chronic oedema affected their social and leisure activities, and they often felt that they could not participate in certain activities or wear appropriate clothing for the occasion. Patients have reported that wearing the juxta wrap as an alternative to compression bandaging is life-changing, enabling them to work, wear normal shoes and manage their skin, while also seeing wound healing and limb reduction (Bradley et al, 2017; Hodgman, 2017).

In many cases, nursing visits can be reduced as the patient is able to apply and readjust the juxta wrap. Bradley et al (2017), in their evaluation of 10 patients using juxtacures®, were able to reduce their clinic time by over half — from seven to two hours 50 minutes — and all patient visits were reduced from twice weekly to once per week.

Elvin (2015) evaluated 26 patients in juxta wraps who were previously managed in compression bandages. With this conversion, they saw a significant reduction in bandage and dressing spend over six months — £14,550.12 and £5,383.56 respectively. This was attributed to the accuracy and adjustability of the compression delivered by the juxta wraps, as patients were taught how to readjust the garment in between nurse visits, thus maintaining a therapeutic level of compression. As a result, exudate volume reduced, alleviating the need for costly absorbent dressings. A time saving of 32 hours and 26 minutes a week was reported.

**CASE STUDY — CHRONIC OEDEMA**

Karen (name changed for confidentiality) is a 67-year-old lady living with her husband and two adult sons. She has a past medical history of diabetes, depression, deep vein thrombosis (DVT), pulmonary embolism (PE), obesity, asthma, lymphoedema, Caesarean section, and recurrent urinary tract infection (UTI). She developed ankle swelling in the 1990s and this worsened after she had a DVT and PE in 2000. She did not receive any treatment for her leg swelling until she was referred to her local lymphoedema service in 2009. Karen has had two episodes of cellulitis, resulting in hospital admission and intravenous (IV) antibiotics.
In 2015, she was discharged from the lymphoedema team. At this stage she was referred to the district nursing (DN) service for management. Since Karen came onto the DN caseload she has had recurrent leg ulcers and leaky legs. The frequency of visits ranged from three times per day to once a week (Figures 1 and 2).

The deterioration of Karen’s legs over the years has severely impacted upon her quality of life. She is living in constant pain, which affects all aspects of daily life. She is unable to stand for extended periods of time, which severely affects what she can do — she cannot cook for her family, leave the house, or get up the stairs, which has impacted on her personal relationship with her husband. Karen has depression and anxiety, which is exacerbated by her legs. She has an altered body image and does not feel confident leaving the house, she is also very restricted in the clothes she can wear. As the wounds have never fully healed, she has lost confidence in the nursing team’s ability to heal and manage her condition.

Managing Karen’s condition from a nursing perspective has also been challenging. There was a decreased morale in the team, as the legs would never fully heal and deteriorate quickly. The team did not feel that they had the specialist knowledge and skills to manage Karen, but there were no specialist services who they could refer her on to. There was also a cost implication as, at times, nurses were visiting up to three times a day and using vast amounts of dressings and trialing new products to see if they would help.

### Table 1: Comparison of Karen’s experience in bandaging and juxtafit

<table>
<thead>
<tr>
<th>Bandaging</th>
<th>Juxtafit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant pain</td>
<td>No pain</td>
</tr>
<tr>
<td>Unable to stand to cook family meal</td>
<td>Able to stand and cook family meal</td>
</tr>
<tr>
<td>Unable to wear footwear and clothing</td>
<td>After nine months, visits reduced to once per month</td>
</tr>
<tr>
<td>Nursing visits of up to three times per day</td>
<td>After seven months, all wounds had fully healed</td>
</tr>
<tr>
<td>No sign of wound healing after three years</td>
<td>Exudate volume reduced and the wound progressed to healing</td>
</tr>
<tr>
<td>Oedema continued to increase</td>
<td>Oedema greatly reduced</td>
</tr>
<tr>
<td>Reduced mobility, difficult to leave the house</td>
<td>Mobility improved, able to go out for shopping and family occasions</td>
</tr>
<tr>
<td>Reliant on DNs to manage her legs</td>
<td>Able to manage juxtafit with her family, with minimal support from DNs</td>
</tr>
</tbody>
</table>

### Practice point

AVCDs enable patients to play an active role in their care, as they can be removed and reapplied with minimal training, which results in improved quality of life (Mullings, 2012; Everette, 2016).

Figure 3. Both legs in juxtafit.
In July 2017, the DN team were introduced to juxtafit®, an AVCD produced by medi UK. Karen was assessed and fitted with a thigh-length juxtafit to both legs in July 2017 (Figure 3). Once juxtafit was fitted, Karen and her family were shown how to readjust the device and how to use the BPS and readjust the compression in between DN visits.

The team initially visited twice per week to support Karen and her family and attend to dressing changes. Over the course of the next nine months, these visits reduced to once per month. After six months in juxtafit, the ulcer on her right leg healed and the following month the ulcer on the other leg healed.

A dramatic change was seen in Karen over the months since she started using juxtafit. She quickly saw a reduction in limb size and volume of exudate being produced. This encouraged her and boosted her confidence in the product and the abilities of the nursing team. As the oedema reduced, Karen was able to mobilise more and more — she was able to go out to the shops for the first time in many years. She was also able to attend a family Christmas gathering, which she had not felt able to do when she had active ulceration and leaky legs. As Karen’s legs improved, she felt the symptoms of her anxiety and depression lessened and her confidence grew. Juxtafit also gave Karen and her family the ability to self-manage; she could remove the device and have a shower, as she did not need to wait in for the nurses to visit to bandage the leg.

Juxtafit offered a simple solution to managing a complex patient. The BPS ensured that Karen received a therapeutic level of compression throughout the day, and she and her family were able to readjust and maintain the compression in between the nursing visits. A dramatic reduction in limb volume was seen, and wound exudate volume also decreased, alleviating the need for costly dressings. The frequency of nurse visits was reduced over the nine months, but also the duration of each visit lessened, even in the first few weeks. When Karen was in bandages, a visit would take an hour, whereas when she went into juxtafit, this reduced to 20–30 minutes.

Patient Feedback

Before I tried juxta I had many different stockings and dressings, but they all slipped and cut into my ankle and the back of my knee. They were uncomfortable and difficult to apply. Wearing juxta has made a world of difference to me — they are comfortable, easy for my family to apply, and I feel in control of my chronic oedema.

My confidence has really increased. Before, I never left the house, now I manage to go out weekly for shopping, and, this year, for the first year in a very long time, I went out for Christmas. I have also managed to have a party for our wedding anniversary. I am very thankful to have found this product.

Clinician Feedback

Finding a suitable product to use for this patient with a 24-year history of thigh-high, complex chronic oedema has been a challenge over the years.

Using juxtafit has improved this patient’s quality of life without any doubt, both physically and psychologically. It has also dramatically decreased our workload and the associated costs in treating this patient.

This product is easy to use and provides great results.

Conclusion

With more patients needing to be treated for long-term, complex conditions in the community, it is vital that healthcare professionals choose treatment options which are both clinically and cost-effective, while also keeping the patient at the centre of all care. Chronic oedema has been identified as increasing in prevalence, with many patients also having leg ulcers (Moffatt et al, 2016; Todhunter, 2017). However, AVCDs have been found to be effective at reducing limb volume and aiding healing of venous leg ulcers, while...
also improving patient quality of life and enabling them to be actively involve in their own care. They also reduce the need for nurse visits, thereby easing demands on community nurses’ time and resources (Elvin, 2015).

REFERENCES


Using the juxta range within current care pathways

The indications for which the juxta range are suitable treatment options may present in acute or primary care, with the majority of patients being treated in a community setting. Healthcare Improvement Scotland (2018) has recently recommended using the juxta range as an alternative to traditional compression bandaging for the treatment of venous leg ulcers and lymphoedema. Although compression bandaging has been seen as the ‘gold standard’ treatment option, patients are dependent on healthcare professionals to apply, adjust and remove bandages, and the level of compression applied is dependent on the healthcare professional’s skill in application.

However, across the juxta range, a pressure measurement card (Built-in Pressure system™ [BPS]) allows the compression pressure to be measured and monitored, so that the optimum level is maintained. Self-adjustment of the Velcro wraps provides a safe and consistent level of compression and promotes self-care in the community, thereby reducing nursing time and resources without markedly changing current care pathways (Healthcare Improvement Scotland, 2018).

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**REFERENCE**

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