

# The leg ulceration pathway: impact of implementation

Leg ulceration continues to be a common cause of suffering for patients and the treatment of these patients continues to place a significant burden on the NHS, especially community nursing services. In 2016, Atkin and Tickle (2016) detailed that the implementation of a pathway for the treatment of leg ulceration which aids diagnosis and uses compression hosiery kits as a first line could improve the patient experience, release nursing time and ensure effectiveness of care. This article provides information about the pathway, details relating to the introduction to community services and will quantify the impact in terms of healing and reduction in nursing time.

It is estimated that 730,000 patients suffer with lower limb ulceration, which equate to 1.5% of the adult population within the UK (Guest et al, 2015). This figure raises to 3% in those aged over 80 years (Gohel and Poskitt, 2010).

The management of patients with leg ulceration is estimated to cost the NHS between around £600million and £1.94billion every year (Healthcare Commission, 2004; Guest et al, 2017), with the majority of this spend used in primary care. Peak prevalence for the development of leg ulceration is between 60 and 80 years, with prevalence increasing with age (Farah and Davis, 2010). Therefore, with an ageing population, the number of patients affected with lower limb ulceration is likely to rise, leading to an increased burden on resources (Atkin and Tickle, 2016).

## LEG ULCERATION BURDEN AND ISSUES

The treatment for some patients with lower leg ulceration is often sub-optimal and NHS England (2017a) identified that this unwarranted variation in treatment resulted in increased costs and elongated healing rates. There have been many factors identified that, if addressed, could improve the quality of care whilst simultaneously reducing costs/service demands in relation to lower leg ulceration management. These include:

### Lack of assessment

The first step to guaranteeing effective high-quality care is to ensure accurate diagnosis (Atkin and Tickle, 2016). Prior to making any decisions regarding patient management, each patient needs to be holistically assessed. This enables the practitioner to establish an accurate diagnosis of the underlying aetiology and identify any factors that could delay wound healing.

### Lack of ankle-brachial pressure index (ABPI) assessment

Guest et al (2015) highlighted that only 16% of patients with a leg or foot ulcer had a Doppler assessment completed. The assessment of the patients' lower limb vascular status and calculation of the patients ABPI is vital, as this assessment will identify if there is any indication of peripheral arterial disease (PAD) and as such a potential contraindication to compression therapy. The lack of ABPI assessment suggests that complete holistic patient assessment is not being routinely performed.

### Lack of formal diagnosis

Of the 730,000 patients identified by Guest et al (2015), only 278,000 had a formal diagnosis of venous ulceration. This equates to only 38% of ulcerations being venous in origin, which is

## KEY WORDS

- » Compression
- » Leg ulcer
- » Leg ulcer pathway
- » Treatment algorithm

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much lower than the widely published figure that around 70% of all ulceration being attributed to venous disease (Casey, 2004). This does appear to suggest that there are issues in terms of formalised diagnosis of the underlying cause of the ulceration and this lack of diagnosis of venous disease could lead to the under use of compression therapy which will ultimately result in elongated healing times.

#### **Lack of use of compression**

The majority of lower limb ulcerations — between 60 and 80% (Scottish Intercollegiate Guidelines Network [SIGN], 2010) — have a venous component. Compression therapy is a fundamental prerequisite to the healing of venous leg ulcers and it has been systematically proven to increase rates of healing for patients with venous ulceration (O'Meara et al, 2012; Ashby et al, 2014). Compression therapy has traditionally been in the form of multilayer elastic bandages, but now there are a wide variation of options available, including 2-layer compression bandage systems and hosiery kits. Hosiery kits hold a number of advantages over bandage systems, including:

- ▶▶ Ease of use
- ▶▶ Consistent compression values (which are non-practitioner dependent)
- ▶▶ Enabling patients to wear their own footwear and aid self-care.

Additionally, the concept of using hosiery kits as a 'step-down' approach from compression bandaging (once the limb and exudate levels allows) has shown to reduce healthcare costs and release nursing time by reducing the frequency and duration of visits (Tickle, 2015).

#### **Variation in compression selection**

There are currently a plethora of compression options available for clinicians, which can create confusion about which should be used and understanding the rationale for one system over another (Atkin and Tickle, 2016). The characteristic and properties of the compression bandage or hosiery differs greatly according to elasticity and stiffness of the materials used. There are proven advantages of using one system over another in certain clinical situations, for example when

patients have a combination of leg ulceration and oedema. In these circumstances, inelastic systems will reduce the oedema more quickly than elastic bandages (Wounds International, 2013). This is due to the higher standing and working pressures, and lower resting pressures of inelastic systems.

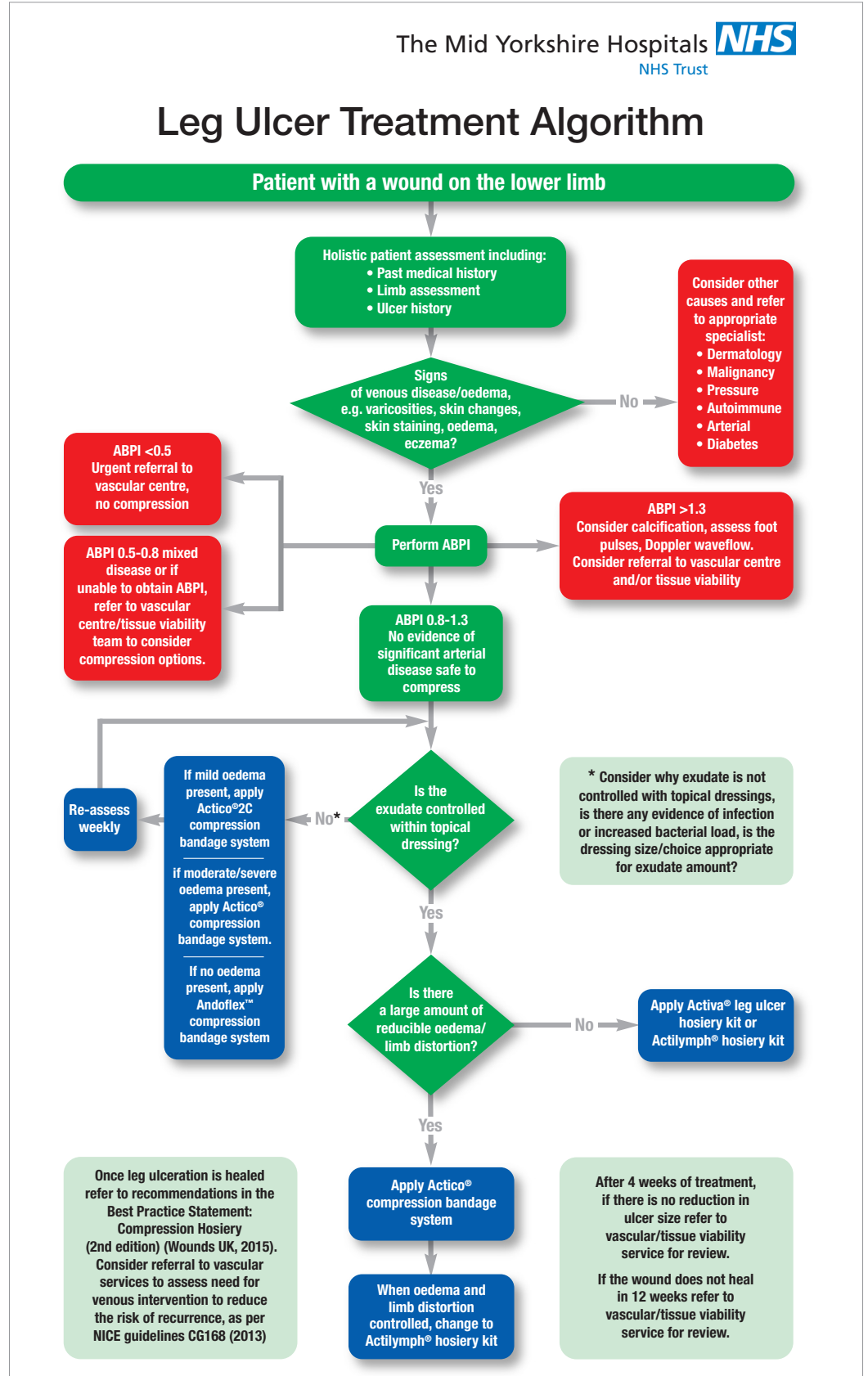
#### **LEG ULCER PATHWAY**

The introduction of formalised pathways that are evidence based is one solution to help reduce unwanted variation as standardising clinical process through the use of pathways is known to optimise quality of treatment and improves patient satisfaction (Hensen et al, 2005). The leg ulcer pathway published by Atkin and Tickle (2016) provided a simple algorithm for the practitioner that is underpinned by clinical evidence and international consensus, aiming to assist practitioners with compression selection for venous leg ulceration. The algorithm was adapted for implementation within Mid Yorkshire NHS Trust, to include brands to further guide clinicians with product selection (*Figure 1*) (Wounds UK, 2016).

#### **COMMUNITY IMPACT INCLUDING WIDER IMPACT**

It is known that a significant proportion of community nursing time is taken up caring for patients with leg ulceration (Drew et al, 2007). The pressure facing community services due to NHS austerity and increasing workloads has resulted in community services being stretched. Community nurses within Mid Yorkshire NHS Trust reported that they believed the quality of care they were providing was being compromised and that they were instead delivering task-focused care. The situation was being made worse by the national problem of nurse recruitment. The solutions to both, the funding and recruitment issues, are difficult to address, if not impossible to solve locally. Therefore, the Trust explored 'smarter' ways of working that could reduce nursing input, reduce cost but also result in improved quality of care. The leg ulcer pathway was thought to be one way of 'smarter working'. It was piloted by an adult community nursing team within Mid Yorkshire NHS Trust. The team underwent

Figure 1. The Leg Ulcer pathway



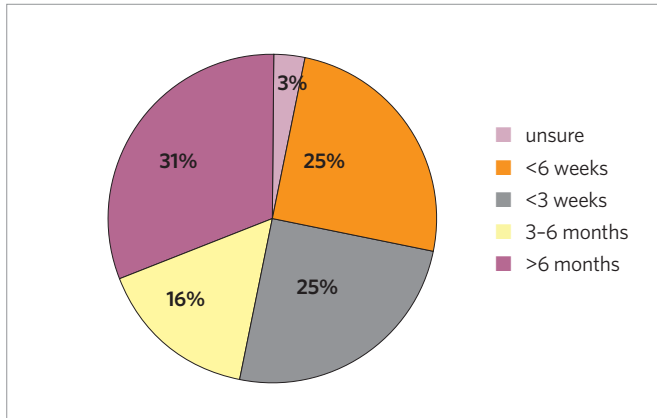


Figure 2. The length it took for the leg ulcer to heal

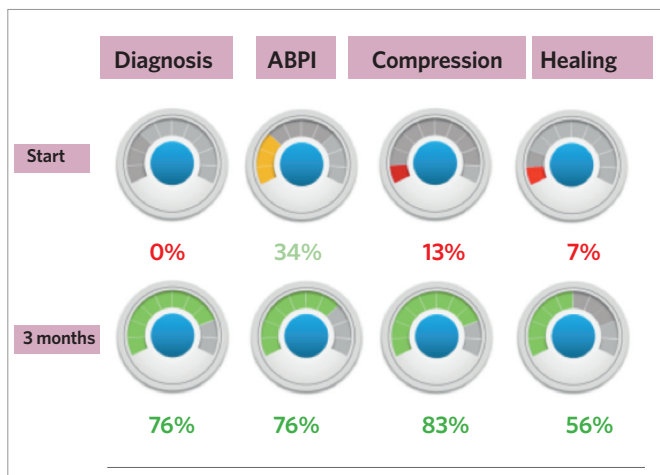


Figure 3. Healing outcomes using the leg ulcer algorithm

education and training about the pathway and the compression systems recommended within the algorithm. A pre-implementation audit was undertaken which showed that the service had 34 patients with leg ulceration as their caseload, resulting in 74 visits per week and accounting for 18% of the overall team activity. The duration of the patients' ulceration was recorded (Figure 2), with a third of the patients suffering with ulceration for over 6 months. This was far from the recommendation that 70% of patients with simple ulceration be should be healed within 18 weeks and 70% of ulceration classed as complex should be healed at 24 weeks (NHS England, 2012). In addition, only 2 (6%) of patients were showing signs of healing in terms of a 30–40% reduction of wound surface area after 4–6 weeks of treatment (Margolis et al, 2004; Sibbald et al, 2013). Reviewing the documentation, only 34% of patients had a

recorded ABPI, only 13% of the patients were in compression therapy and none of the patients had a diagnosis, in terms of venous, arterial or mixed-disease ulceration stated.

After 3 months of using the pathway to steer decision-making for patients with ulceration, the audit was repeated. It showed clear areas of improvement: after 3 months, 10 (31%) of the patients were healed and a further 7 patients (20%) were showing signs of healing, using the measurement of wound bed reduction over the last 4 weeks. A combination of treating the patients and encouraging self-care, with the use of compression hosiery, resulted in a reduction of weekly visits from 74 to 42, a 43% decrease in activity. In addition, auditable documentation had improved, with 76% of patients having their ABPI assessment recorded, 76% of patients had a recorded diagnosis and the use of compression had increased from 13% to 83% (Figure 3).

The introduction of the algorithm and embedding it into everyday clinical practice has resulted in increased healing rates, improved documentation and a reduction in nursing visits. By using hosiery kits first line and as a step down encourages self-care, which is in line with NHS five year forward plan (NHS England, 2017b). It can be used by non-registered practitioners, allowing teams to optimise resources and utilise the skills of healthcare assistants. It is vital that the NHS reviews workforce planning, developing non-registered practitioners, especially in light of the current shortage of nurses and the fact that this year undergraduate nursing recruitment has dropped considerably (Royal College Nursing, 2017). Furthermore, the improvement seen in documentation and clinical care aids the NHS organisation in meeting local and national targets, such as the current CQUIN for wound assessment.

### CONCLUSION

This formalised leg ulcer pathway provides a practical treatment guidance to assist practitioners in the management of lower limb ulceration. The introduction of the pathway to one community nursing service has led to increased healing rates and a reduction in nursing requirements. Standardising

ways of working through the use of algorithms that are backed by clinical evidence form part of the solution of modernizing the NHS services. It will help to future-proof the NHS against the aging population and reduction in nursing staff. The roll out of the pathway throughout the organisation is now underway and it is hoped that the overall service impact will be published next year. **WUK**

## REFERENCES

- Ashby RL, Gabe R, Ali S et al (2014) Clinical and cost-effectiveness of compression hosiery versus compression bandages in treatment of venous leg ulcers (Venous leg Ulcer Study IV, VenUS IV): A randomised controlled trial. *Lancet* 383(9920):871–79
- Atkin L, Tickle J (2016) A new pathway for lower limb ulceration. *Wounds UK* 12(2):32–6
- Casey G (2004) Causes and management of leg and foot ulcers. *Nurs Stand* 18(45):57–8
- Drew P, Posnett J, Rusling L (2007) The cost of wound care for a local population in England. *Int Wound J* 4(2):149–55
- Farah R, Davis Mp (2010) Venous leg ulcerations: a treatment update. *Current Treatment Options in Cardiovascular Medicine* 12(2):101–16
- Gohel MS, Poskitt KR (2010) Chronic ulceration of the leg. *Surgery* 28(6):273–6
- Guest Jf, Ayoub N, McIlwraith T et al (2017) Health economic burden that different wound types impose on the UK's National Health Service. *Int Wound J* 14(2):322–30
- Guest Jf, Ayoub N, McIlwraith T et al (2015) *Health Economic Burden that Wounds Impose on the National Health Service in the UK*. Available at: <http://bmjopen.bmj.com/content/5/12/e009283> (accessed 16.10.2017)
- Healthcare Commission (2004) *National Audit of the Management of Leg Ulcers*. Healthcare Commission, London
- Hensen P, Ma HI, Luger Ta, Roeder N, Steinhoff M (2005) Pathway management in ambulatory wound care: defining local standards for quality improvement and interprofessional care. *Int Wound J* 2(2):104–11
- Margolis DJ, Allen-Taylor L, Hoffstad O, Berlin JA (2004) The accuracy of venous leg ulcer prognostic models in a wound care system. *Wound Repair Regen* 12(2):163–8
- NHS England (2012) *MSK implementation pack: Extension of Patient Choice of Any Qualified Provider in Venous Leg Ulcer and Wound Healing*. Ref:120116
- NHS England (2017a) *NHS Right Care Scenario: The Variation Between Sub-Optimal and Optimal Pathways*. Available at: <https://www.england.nhs.uk/rightcare/wp-content/uploads/sites/40/2017/01/nhs-rightcare-bettys-story-narrative-full.pdf> (accessed 16.10.2017)
- NHS England (2017b) *Next Steps on the NHS Five Year Forward View*. Available at: <https://www.england.nhs.uk/publication/next-steps-on-the-nhs-five-year-forward-view/> (accessed 16.10.2017)
- O'Meara SO, Cullum N, Nelson AE, Dumville JC (2012) *Cochrane Database Syst Rev* 11:CD000265
- Royal College Nursing (2017) *Nursing Shortage May Worsen*. Available at: <https://www.rcn.org.uk/news-and-events/news/nursing-shortage-may-worsen> (accessed 16.10.2017)
- Sibbald RG, Goodman L, Reneeka P (2013) Wound Bed Preparation 2012. *J Cutan Med Surg* 17(Suppl 1):S12–22
- Scottish Intercollegiate Guidelines Network (2010) *Management of Chronic Venous Leg Ulcers: A National Clinical Guideline*. Available at: <http://www.sign.ac.uk/assets/sign120.pdf> (16.10.2017)
- Tickle J (2015) Managing venous leg ulcers and oedema using compression hosiery. *Nursing Standard* 30(8):57–63
- Wounds International (2013) *Principles of Compression in Venous Disease: a Practitioner's Guide to Treatment and Prevention of Venous Leg Ulcers*. Available at: [http://www.woundsinternational.com/media/issues/672/files/content\\_10802.pdf](http://www.woundsinternational.com/media/issues/672/files/content_10802.pdf) (accessed 16.10.2017)
- Wounds UK (2016) *Best Practice Statement: Holistic Management of Venous Leg Ulceration*. Available at: [http://www.wounds-uk.com/pdf/content\\_12022.pdf](http://www.wounds-uk.com/pdf/content_12022.pdf) (accessed 16.10.2017)

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