HOLISTIC ASSESSMENT

Prevalence of leg ulcers means that they present a significant challenge both in terms of management and NHS resources.

Holistic assessment and accurate diagnosis are key for leg ulcer management.

Measuring a patient’s ankle brachial pressure index (ABPI) is a vital part of wound assessment to identify or exclude peripheral arterial disease (PAD).

Holistic assessment

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With over 700,000 people in the UK estimated as having leg ulceration and the documented annual cost of its management being a staggering £1.94 billion (Guest et al, 2015; 2018), its impact on NHS resources is significant. As leg ulcer management is currently estimated to account for at least 1.3% of the healthcare budget in the UK, it is essential that clinicians adhere to best practice to achieve optimal outcomes. As wound care is predominantly a nurse-led discipline and the majority of wounds are managed in the community setting (Guest et al, 2015), it is essential that nurses take the lead as patient advocates in securing adequate provision for patients with leg ulceration to ensure that they receive evidenced-based, cost-effective clinical care.

However, in practice, there are many challenges and barriers which impact on the delivery of best practice. Recent wound care statistics have identified that 420,000 of the 730,000 leg ulcers treated by the NHS in the UK each year were classified as ‘unspecified’ (Guest et al, 2015). This suggests that the root cause of the problem is not being identified (Vowden and Vowden, 2016). Indeed, Guest et al (2015) suggested that approximately 30% of wounds lack a differential diagnosis. Without being able to understand the underlying cause, decisions cannot be made on the best course of treatment for patients. The absence of a clear decision on care can lead to a delay in patients receiving the correct treatment, thereby prolonging discomfort and ultimately increasing costs to the NHS (Ritchie and Taylor, 2018). Also, without fully understanding the underlying cause of any health problem, there is increased risk of recurrence, leading to a further burden on NHS resources and negative outcomes for patients.

There is a clear link between leg ulceration and its detrimental impact on a person’s health (European Wound Management Association [EWMA], 2017). Research links chronic leg ulcers closely to social isolation and low mood (Nogueira et al, 2012). It has also been demonstrated that lonely people:

- Are more likely to visit their GP
- Have higher use of medication
- Have higher incidence of falls
- Have increased risk factors for long-term care (Cohen, 2006).

This adds greater demands on healthcare services.

Why assessment is important

The nursing process is a scientific method of care delivery, which enables nurses to deliver patient-focused holistic care (Huckabay, 2009). This process can be broken down into five separate steps, including assessment, diagnosis, planning, implementation and evaluation (Royal Marsden NHS Foundation Trust, 2015).

This article will focus on assessment, which is the first phase of the process, influencing subsequent steps and enabling nurses to gather data, and make relevant observations and judgements to determine the care and treatment needed (Royal Marsden NHS Foundation Trust, 2015). Comprehensive assessment of a patient with a leg ulcer is possibly the single most important factor when deciding upon an effective care plan (Wounds UK, 2016). It is recommended that this involves general holistic assessment of the patient, their leg, as well as the wound and surrounding skin (Scottish Intercollegiate Guidelines Network [SIGN], 2010; Wounds UK, 2016).

Holistic assessment of a patient with a leg ulcer

As highlighted, wounds to the lower limb require a focused approach to assessment, which should include...
vacular assessment. Diagnosing the aetiology of an ulcer/wound during assessment helps to signpost clinicians towards the correct wound treatment regimen. There are many areas to explore during this holistic assessment.

Healthcare professionals must consider medical, psychological and social factors that can have an impact on wound healing, rather than look at a wound in isolation (Table 1). For example, if a patient has a poor diet, they will not be receiving adequate nutrients to aid tissue healing. History-taking must be comprehensive, with clear consideration and exploration of patients’ past and current medical history, current self-care and lifestyle. During the assessment stage, it is also important to ascertain how the wound is affecting the patient’s activities of daily living and gain an understanding of their expectations and goals to enable individualised patient-centred treatment plans.

Medical status and comorbidities should be reviewed, taking into consideration anything that will contribute to further damage of venous or lymphatic systems, such as diabetes, peripheral vascular disease or autoimmune diseases. Healthcare professionals should enquire about any previous deep vein thrombosis (DVT) or surgery to the legs, chronic oedema, skin conditions, or any previous history of ulceration. It is also important to ask if there has been a repeated pattern of ulceration, or if this is the first occasion, and whether there is a family history of ulcers.

Patients’ regular medication should be reviewed, including questions about any over-the-counter/self-issued, in case any of these medications might have an effect on wound healing. Medications, such as corticosteroids and non-steroidal anti-inflammatory medications, have been linked to an increase in wound infection and delayed healing (Anstead, 1998), due to the effect that they have on the inflammation process. Cytotoxic agents, such as methotrexate, chemotherapeutic agents and immunosuppressants, such as azathioprine, can all have a potential negative impact on wound healing (Levine, 2018).

Extrinsic factors, such as lifestyle choices, i.e. being sedentary, overweight or having a poorly balanced diet, can significantly impair wound healing and increase the risk of venous insufficiency. Healthcare professionals should also review the patient’s mobility — do they sit for lengthy periods which may result in venous insufficiency, or do they require help or walking aids to mobilise?

The history of the wound should also be reviewed, considering when it developed and if there are any predisposing causes, such as trauma or surgery. Documenting wound size, tissue type present, condition of the periwound skin, and if there are any signs of infection are also vital.

Details about previous dressing choices/treatments for both the current wound and any previous ulcers, and whether they aided healing and were acceptable to the patient, need to be ascertained to help with future care planning. Establishing if compression therapy has been previously used (e.g. hosiery kits, wrap systems, etc) and, most importantly, if the patient was able to tolerate the treatment is vital. Within an holistic approach, the patient’s choice/opinion should be considered, and so healthcare professionals need to gain an understanding of previous issues with concordance with treatment and to ensure that they keep the patient central to the decision-making process (Stanton et al, 2016).

Documentation of smoking status is vital, as this can impair wound healing due to nicotine being a vasoconstrictor which adversely affects the microcirculation (Silverstein, 1992).

Visual inspection of the lower limb provides a good insight as to the presence of venous disease, such as varicose veins, oedema or haemosiderin staining (Harding et al, 2015), while understanding the patient’s vascular status enables clinicians to assess whether an ulcer is venous or arterial in origin, or a combination of both, i.e. a mixed venous/arterial ulcer (Vowden and Vowden, 2001).

Measuring ankle brachial pressure index (ABPI) is widely used as a non-invasive method of testing the extent of peripheral arterial disease (PAD) in the lower limbs. In simple terms, it compares blood flow in the arms to that of the legs and a ratio is composed (Al-Qaisi et al, 2009). This index is the most commonly taught assessment tool for vascular assessment and is seen as a mandatory part of assessment for leg ulcer patients before starting compression therapy in primary care (Vowden and Vowden, 2001).

**Table 1: Factors to consider during wound assessment** (Carville, 2005)

- Underlying disease
- Vascularity
- Nutritional status
- Immune status
- Obesity
- Disorders of sensation or movement
- Psychological state
- Radiation therapies
- Drugs – prescribed, recreational and/or alternative
- Allergies and/or sensitivities
- Local factors
- Hydration
- Wound management
- Pressure, friction, and shear forces
- Foreign bodies
- Wound infection

**Practice point**

The outcome of comprehensive holistic assessment should provide an overview of the patient’s presenting medical condition, the cause, duration and status of the wound, along with any factors that might impede wound healing (Anderson and Hamm, 2012).
Although completing an ABPI reading is not a diagnosis of venous disease (Wounds UK, 2016), it assesses for underlying arterial involvement and so can guide the level of compression that may be used (Table 2).

The optimum treatment for venous leg ulcers is recognised as being 40mmHg compression therapy graduated from the ankle upwards (SIGN, 2010). Indeed, best practice guidance advises that any patient requiring compression levels greater than 17mmHg should have a vascular assessment (Wounds UK, 2016) to establish the underlying vascular status before applying compression therapy. For those wounds caused by arterial insufficiency, treatment with compression is contraindicated, as it could potentially restrict arterial perfusion causing further harm (Mosti et al, 2012). Patients with a mixed aetiology ulcer may benefit from reduced levels of compression of between 20 and 30mmHg. Without diagnosing the underlying aetiology of a leg ulcer, it is not possible to provide the correct treatment. Therefore, full vascular assessment is vital to establish the correct level of compression to be applied, or if it is contraindicated.

### CHALLENGES/BARRIERS TO FULL ASSESSMENT

With demands on healthcare professionals’ time within the community, it can be challenging to dedicate sufficient time to undertake thorough assessment of patients with leg ulcers. A key principle in delivering safe and effective practice is that healthcare professionals receive competency-based training; this is imperative in leg ulcer management. However, this can prove challenging in community and practice nursing, where teams may be smaller and securing time out of the work environment can be difficult. Furthermore, as staff may work in relative isolation, it can be challenging to ensure competency-based assessment with an adequately trained mentor. However, Leg Clubs® can support the standardisation of education, provide an environment for healthcare professional development and a teaching resource for research-based wound management (Hampton, 2016).

Too often, in the author’s clinical experience, short appointments are given to patients requiring leg ulcer care within busy clinical settings, leading to limited history-taking, ineffective assessment, and subsequently poor care planning. Adequate time needs to be allocated for full holistic assessment, as this will guide the clinician in their care planning. Furthermore, to provide holistic care, treatment pathways need to be undertaken in partnership with the patient (Stanton et al, 2016).

Knowledge and training are paramount for any clinical skill and this is no different with leg ulcer care. Healthcare professionals need to receive regular, up-to-date training so that they have the current knowledge and competencies required to undertake all aspects of leg care, including full assessment and management, based on best practice (Wounds UK, 2016).

<table>
<thead>
<tr>
<th>Table 2: ABPI readings (Harding, 2015)</th>
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<tbody>
<tr>
<td>ABPI reading</td>
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<tr>
<td>&lt;0.5</td>
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<tr>
<td>0.51–0.8</td>
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<tr>
<td>0.81–1.0</td>
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<td>&gt;1.0–1.3</td>
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#### Barriers to ABPI assessment

While the importance and relevance of ABPI assessment is largely reported, Guest et al (2015; 2018) highlighted that it is not being carried out often enough. This could be because there are potential barriers to its completion.

First, when should you assess a patient with a wound to the lower limb? There is often a gap between presentation of a patient with a wound and completion of holistic assessment, including vascular examination. It has previously been recommended that any wound which has failed to heal within six weeks be defined as an ulcer and that a full assessment should be scheduled (Royal College of Nursing [RCN], 2006). However, more recent guidance suggests that a leg ulcer is defined as a break on the skin which fails to heal within two weeks (National Institute for Health and Care Excellence [NICE], 2016). Therefore, a full holistic and vascular assessment is recommended if a wound fails to heal within this two-week period, and, ideally, within 10 days from presentation if the patient has any skin changes or oedema associated with venous disease to aid prompt diagnosis of aetiology and initiation of appropriate treatment (Wounds UK, 2013).

With the current recommendation for patients to be treated at the earliest possible opportunity, it is suggested that appropriate patients with acute wounds to the lower limb (i.e. those with an initial diagnosis, no signs of critical ischaemia, intact sensation and a normal limb shape),
should be treated immediately with light Class 1 compression of up to 17mmHg to prevent deterioration (Wounds UK, 2015; 2016). If the wound subsequently fails to heal within two weeks, they should undergo full holistic assessment, including vascular examination (Wounds UK, 2016).

Local service provision and patient pathways need to be introduced to follow guidance. The time needed to complete traditional ABPI assessment, including the 20-minute resting period, is often seen as a barrier for its completion to community nurses faced with high caseloads and low staff numbers (Kirby and Hurst, 2014).

It is well known that completion of traditional ABPI assessment requires meticulous attention to ensure that current measurement values are obtained (Vowden and Vowden, 2001). As with any other skill, if this is not routinely practised, inaccuracies may occur. Also, in the author’s clinical opinion, there are many areas where mistakes which can lead to errors in ABPI readings can be made; such as incorrect cuff placement, true systolic pressures being missed when listening for returning sounds, using an incorrect probe or cuff size, or repeatedly inflating the cuff. Furthermore, difficulties can occur in patients presenting with chronic or severe oedema or tissue fibrosis (Guest et al, 2015). The calculation of the pressures themselves to obtain the ABPI ratio figure is another area where inaccuracies can occur.

A less time-consuming method of taking ABPI measurements has been suggested as a way of helping clinicians to better manage their time (Yap Kannan et al, 2016). Furthermore, developments in science and technology in health care have been encouraged in the ‘Five year forward view’ (NHS England, 2014), such as new technology in ABPI assessment, which offers prompt, accessible vascular screening, for example, MESI ABPI MD (Freeman, 2017).

This system was developed using improved oscillometric plethysmography technology, which offers a fast, simple and accurate solution for the measurement of ABPI in clinical practice. By utilising three colour-coded blood pressure cuffs to either arm and to each ankle, with the simple push of a button, ABPI can be measured and calculated in one minute. The results of the left and right ABPI are displayed on the screen with a colour-coded alert to the presence and level of arterial disease, as suggested by TASC II guidelines (Norgren et al, 2007).

This device also provides a visual image of the pulse wave detected, which provides further diagnostic information regarding vascular status that can be used alongside holistic assessment. With no need for lengthy rest periods, mathematical calculations, subjective listening skills, or difficult competencies to learn and maintain, it offers clinicians working in community settings an alternative to traditional methods of obtaining ABPI, particularly where time pressures may result in absence of full vascular assessment.

Evidence has shown comparable results to the handheld doppler method, and that it offers comprehensive detection of critical limb ischaemia (Span et al, 2016). As MESI ABPI MD is lightweight and portable, it can be used in a variety of care settings, such as patients’ homes, community clinics and Leg Clubs. Staines (2018) identified that nurses, when asked, stated that they would use MESI ABPI MD in practice, rather than the traditional doppler method, to provide efficient assessment (Figure 1).

For some patients, there may be difficulties in obtaining accurate ABPI readings, e.g. those presenting with chronic or severe oedema or tissue fibrosis (Guest et al, 2015), or other medical conditions. If clinically indicated, patients should be referred for further assessment or specialist review.

REASSESSMENT AND WELL LEG/REDUCTION OF RECURRENT

Despite successful healing, this is not the end of the patient journey and care for those with venous leg ulceration. With the risk of recurrence within the next 12 months estimated to be as high as 26–69% (Harding et al, 2015), patients need to receive ongoing maintenance treatment (Wounds UK, 2016). Maintenance therapy and monitoring should be incorporated as a key part of any leg ulcer care pathway so that patients can receive ongoing care and advice.

Patient education and involvement from the onset of care can help to improve concordance with self-care both during the healing and maintenance phases (Jin et al, 2008). Patients need to understand
that the agreed self-care plan, which should include a good skin care regimen and exercise (Wounds UK, 2015), is a lifelong commitment to prevent recurrence. In the author’s clinical experience, involving and informing family and carers can also help to support the patient to take ownership of their condition.

Guidelines support the continued use of compression hose or wraps to reduce the risk of recurrence of ulceration, which should be applied at the strongest compression that a patient can tolerate (SIGN, 2010; Wounds UK, 2016). Along with prevention therapy, patients should be reassessed at regular intervals during the first year post wound healing. It is recommended that this takes place at three, six and 12 months, and thereafter annually (Wounds UK, 2016). Where clinically indicated, and in concordance with local policy, reassessment may need to include repeat ABPI to check that there have been no changes in arterial status and that the patient remains suitable for compression therapy (Freeman, 2017). Reassessment should, therefore, also be part of the local leg ulcer care pathways.

To facilitate patient self-care, healthcare professionals should develop a therapeutic, non-judgemental relationship by listening to any concerns that they might have, managing their expectations, and empowering them to make decisions about the best options for lifelong prevention. Any maintenance system should be simple and practical to use (Wounds UK, 2015), so that it fits in with a patient’s lifestyle.

With time being a rare commodity in the community, models of care such as Leg Clubs provide opportunities for patients to receive ongoing care and advice to prevent recurrence, along with the provision of early intervention should a problem arise, due to their unique ethos of ‘no appointment necessary’. The model breaks traditional boundaries and evidence demonstrates that patients who attend Leg Clubs have better healing and lower recurrence rates than those treated in conventional settings (Lindsay, 2017).

Ongoing maintenance, as part of the ‘well leg’ regimen, is a core aspect of the Leg Club model, where a patient’s care never ends despite wound healing. This provides an opportunity for clinicians to review any problems that a patient may have through holistic-based discussions, as patients can attend for review at any time through the ‘well leg’ pathway, rather than just at pre-agreed intervals.

**CONCLUSION**

The high prevalence of leg ulceration in the UK, which results in the utilisation of significant NHS resources, presents many challenges to anyone involved with caring for patients with lower leg problems. Ultimately, any assessment should incorporate a full holistic approach to provide accurate diagnosis and care planning at an early stage. Healthcare professionals have a duty of care to ensure that they have had training and the adequate competencies to undertake lower limb care.

Along with full holistic history-taking, vascular assessment is a key component of lower limb assessment. However, time pressures in primary care can impact on a clinician’s ability to complete an ABPI to exclude arterial disease. Healthcare providers need to ensure that staff have sufficient time allocated and consider modern technology to assist clinicians in offering adequate and timely appointments. The incorporation of a psychosocial model, such as the Leg Club®, gives an opportunity for an evidence-based approach to patient-centred care and to promote ongoing preventative support.

**Remember**

‘Improving the assessment of wounds’ was specified as a key goal of the Commissioning for Quality and Innovation (CQUIN) scheme for 2017–2019 (NHS England, 2016).
REFERENCES


