

Enhancing patient outcomes in leg ulcer care: Practice nurse collaboration in primary care

Leg ulceration is one of the most common wound types managed in community and primary care, with venous leg ulcers accounting for most cases. The burden of leg ulcer care is substantial, both in terms of patient quality of life and health system costs, with recent estimates placing the annual economic impact in the United Kingdom at £8.8 billion. In response to this challenge, a Trust wide restructuring of the leg ulcer algorithm was undertaken to empower practice nurses to deliver immediate, evidence based care, including the initiation of compression therapy up to 20 mmHg and the application of National Institute for Health and Care Excellence-recommended bordered dressings.

Prior to implementation in one practice, structured education sessions were delivered to practice nurses, focusing on recognition of red flags, referral criteria and correct use of compression hosiery and liners. An evaluation of use of the algorithm over a 12 month period demonstrated that timely initiation of treatment at the first appointment reduced delays associated with waiting for vascular assessment.

These findings highlight that often as the first point of contact practice nurses play a critical role in delivering immediate, guideline based interventions for leg ulcer management. Embedding evidence-based algorithms within primary care enhances continuity, equity, and efficiency, ultimately improving patient outcomes and reducing the wider economic burden of wound care.

The annual economic burden of wound care in the UK is estimated to be £8.8 billion, with Scotland contributing approximately £719 million, Northern Ireland £249 million, Wales £411 million, and England £6.9 billion (Harding and Queen, 2024). The UK population has shown continuous growth since the mid-1980s with the Office for National Statistics (ONS) provisionally reporting that, as of 30 June 2025, the population reached 69.5 million (ONS, 2025). The proportion of individuals aged ≥65 years increased across all four nations in the year to mid-2024, reflecting the ongoing trend of population ageing. Specifically, the number of older adults rose by 2.0% in both Scotland and Northern Ireland, 1.8% in England, and 1.5% in Wales (ONS, 2025).

The incidence and prevalence of wounds are expected to rise among individuals with obesity, diabetes, advancing age, and lower limb arterial disease; correspondingly, the burden of leg ulcers is also anticipated to increase (Sen, 2019). The financial cost of managing leg ulceration is high when including nursing care, medical care and

treatment-related costs, e.g. wound dressings, compression systems, community visits and hospital care. Urwin et al (2022) estimated that the national cost of managing venous leg ulcers was £102 million, with an annual per person cost of £4,787.70 using data collected from community activity, from VenUS IV (Ashby et al., 2014). For individuals whose venous leg ulcer was the primary (and most severe) wound, the mean 2-week treatment cost was £166.39 (95% CI [£157.78–£175.00]), with community staff time accounting for more than half of this expenditure. Costs were notably higher when antimicrobial dressings were used and when wound care was delivered in the patient's home.

The practice nurse's role in leg ulcer management

NHS England (2017) published Betty's story illustrating the variation between suboptimal and optimal care, and highlighting the practice nurse role in ensuring optimal care through accurate and timely assessment and appropriate wound management.

Practice nurses play a pivotal role within

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general practices, where they are responsible for planning and delivering patient care, treatment, and health education across all age groups. Working collaboratively with GPs and other healthcare professionals, practice nurses are integral to ensuring the consistent delivery of high-quality care within primary care settings (NHS England, n.d.).

Leg ulceration is one of the most frequently managed wound types in community settings and patients with venous ulcers comprising more than 60% of cases. Venous leg ulcers are estimated to affect approximately 1 in 500 individuals, rising to 1 in 50 among those aged ≥ 80 years (NHS, 2022). The development of a lower leg ulcer should prompt immediate assessment of risk factors for chronic venous disease, followed by targeted action to determine the underlying cause and initiate appropriate treatment. Early intervention at this stage is critical to preventing progression to more complex and chronic complications (Todd, 2018). Compression therapy is essential in managing venous leg ulceration and is supported by a vast array of research, yet Hopkins and Samuriwo (2022) reported in a national audit of wound prevalence in England that its use in home care settings varied widely, ranging from 14% to 62%.

Practice nurses are central to realising the ambitions of *Fit for the Future: 10 Year Health Plan for England* (Department of Health and Social Care, 2025), particularly in the management of leg ulceration. Timely and appropriate assessment and treatment can significantly reduce the clinical burden, impaired quality of life, and substantial economic costs associated with this condition, as consistently demonstrated in the literature (Guest et al, 2018; World Union of Wound Healing Societies, 2019; National Wound Care Strategy Programme, 2024). The *10 Year Health Plan for England* has three key pillars; from hospital to community, from analogue to digital, and from sickness to prevention, aligning closely with contemporary models of leg ulcer care delivered in primary care.

As leg ulcer management is predominantly community based, the introduction of Neighbourhood Health Centres position practice nurses to provide accessible, coordinated care that supports timely assessment, accurate diagnosis, and effective treatment. Their established role in long term condition management further enables practice nurses to drive prevention through early identification of venous disease, patient education, recognition and optimisation of comorbidities supported with strategies to minimise recurrence.

Implementing a new algorithm

In 2024, the National Wound Care Strategy Programme (NWCSP) published updated recommendations for the treatment of lower limb ulcers focusing on immediate and necessary care (NWCSP, 2024). In response, the leg ulcer service lead in Dudley revised the existing evidence-based leg ulcer algorithm to enable practice nurses to initiate prompt, evidence based treatment at first presentation, reflecting that practice nurses were most likely to encounter these patients early in their care journey. Prior to implementation of the updated leg ulcer algorithm, in 2023, for a patient from practice nurse referral to their first leg ulcer service (LUS) appointment had a mean waiting time of 85 days (median waiting time of 65 days) versus a mean waiting time of 44 days (median waiting time of 21 days) post implementation.

The Trust's established leg ulcer algorithm, previously followed by the leg ulcer service and selected district nurse bases, was restructured to enable all clinicians delivering wound care across the Trust to provide immediate and appropriate compression therapy of up to 20 mmHg. It was recognised that practice nurses had received limited education and often lacked confidence in managing lower limb conditions. To address this, one practice was selected to pilot the updated referral algorithm with support from the leg ulcer service. Before implementation, the leg ulcer team delivered a two day educational programme, during which practice nurses were introduced to the algorithm, trained to recognise red flags, guided on appropriate referral points to other services and instructed on the correct application of compression hosiery and liners.

Throughout the process, the leg ulcer lead worked collaboratively to answer questions, and contact details for the leg ulcer service were shared to ensure ongoing access to specialist advice. The revised algorithm highlighted that, when no red flags are identified [Table 1], practice nurses could initiate treatment by applying Altiform compression hosiery or Altipress liners at ≤ 20 mmHg, together with UrgoStart Plus Border for local wound management. This approach could be commenced for any patient exhibiting signs of chronic venous insufficiency, irrespective of whether an active leg ulcer was present [Figure 1].

Results

The algorithm was implemented and evaluated at one GP practice. Information was collected to evaluate if the algorithm had

Table 1. Red flags.

1. Acute infection (e.g. increasing unilateral erythema, swelling, pain, pus, heat).
2. Symptoms of sepsis.
3. Acute or suspected chronic limb threatening ischaemia.
4. Suspected acute deep vein thrombosis (DVT).
5. Suspected skin cancer.
6. Bleeding varicose veins.

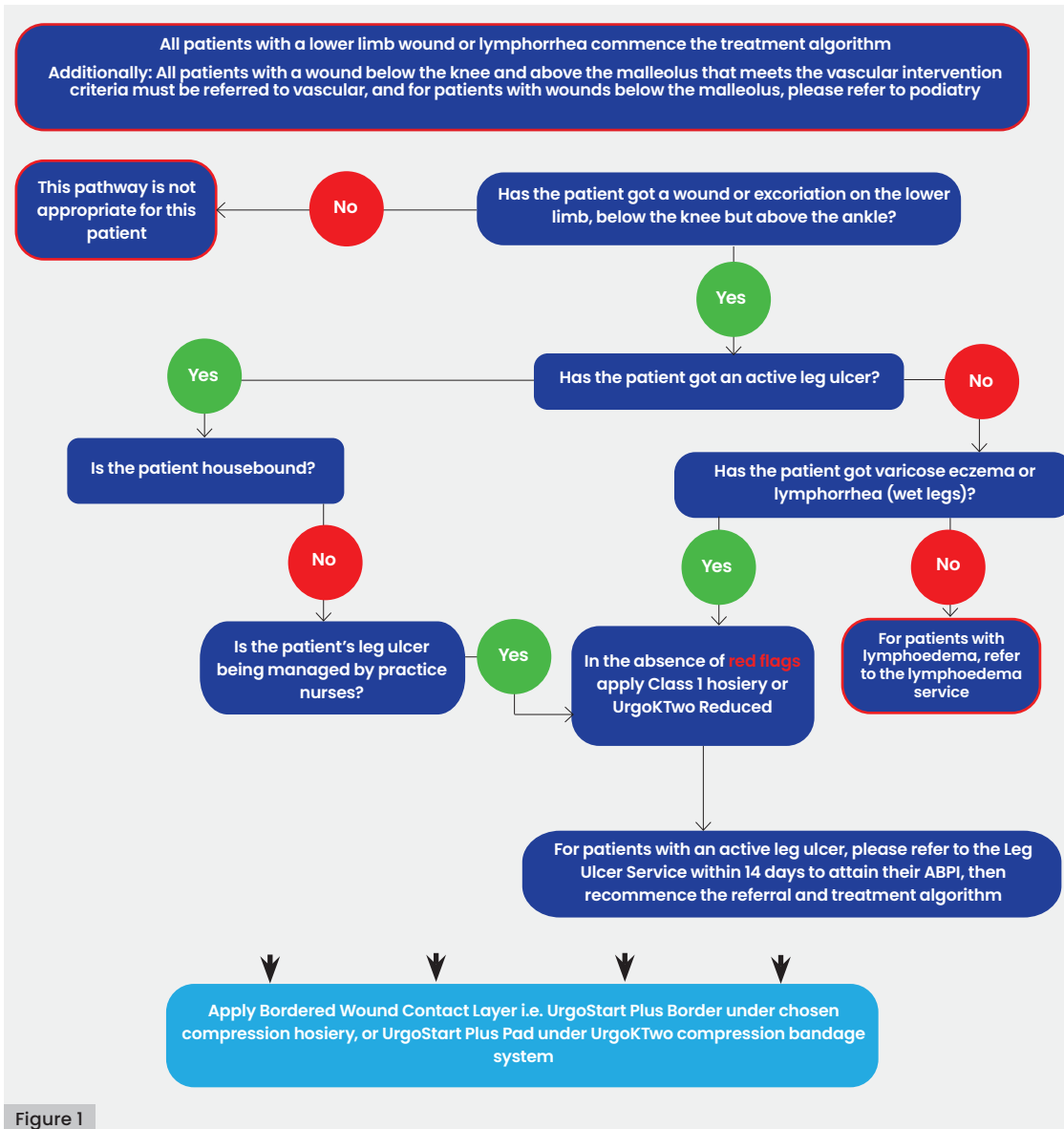


Figure 1. Referral and Community Treatment Algorithm, The Dudley Group NHS Foundation Trust

Figure 1

been followed, specifically the application of compression hosiery and a National Institute for Health and Care Excellence-recommended bordered dressing as the initial treatment. The practice nurses identified 71 patients with a lower limb wound. Following initial assessment, 52 patients were deemed appropriate for inclusion by the practice nurses. Of these 52 patients, 32 healed without intervention from the LUS or other specialists, 15 patients healed between 1 week – 12 weeks within the LUS. For the remaining 5 patients, 3 remain under

the care of practice nurses and 2 are being managed in their own home by community staff [Table 2].

Although this was a small scale pilot, the evaluation clearly demonstrates the significant benefits of implementing a focused, evidence based leg ulcer algorithm for both patients and services. The approach contributed to timely healing, improved patient quality of life, reduced waiting times and strengthened the clinical skills and confidence of practice nurses. These gains directly reflect the core pillars of

Table 2. Algorithm evaluation

Category	Number of patients	Description
Identified with a lower limb wound	71	Total number of patients presenting to practice nurses with a lower limb wound
Included following initial assessment	52	Met inclusion criteria for management on algorithm
Healed without specialist input	32	Managed entirely by practice nurses
Healed with the leg ulcer service (1-12 weeks)	15	Required leg ulcer service input
Remained under practice nurse care after 12 weeks	3	Ongoing management required
Managed by community staff	2	Required ongoing community care

the NHS 10 Year Plan, supporting its ambitions to shift care into the community, enhance prevention and reduce unwarranted variation. The evaluation highlights not only the clinical value of the algorithm but also its strategic relevance in advancing national priorities for modern, sustainable, community centred care.

Following the evaluation period, although practice nurses continued to refer all leg ulcer patients to the local leg ulcer service, patients were receiving appropriate timely treatment from their initial appointment while on the waiting list for full vascular assessment.

Applying the algorithm: Insights from case studies

All patients under the care of the practice nursing team were treated using UrgoStart Plus Border in combination with Class 1 Altiform hosiery.

Case study 1

A woman with a medical history of atrial fibrillation, heart failure, chronic kidney disease stage 3, type 2 diabetes and hypertension, sustained a traumatic wound to her left malleolus in the garden. The patient presented to her GP the next day and the wound measured 2 cm × 2 cm. A practice nurse appointment was arranged within 5 days, where advice was sought from the Trust's heart failure team to ensure that the patient was suitable for class 1 compression hosiery. On confirmation that the patient was suitable for compression hosiery, the practice nurses commenced treatment in accordance with the Trust's Leg Ulcer Algorithm [Figure 1].

On day 37 post injury, UrgoStart Plus Border was applied and measurements taken for compression hosiery. It should be noted

that compression cannot be applied until confirmation to use has been received from the heart failure team. Altiform class 1 (14–17 mmHg) was applied on day 48. The delay in treatment was due to time required for fulfilment of the prescription from pharmacy and time to the next practice nurse appointment. The lady's wound achieved full healing at day 78 from injury. The patient was discharged from the practice nurses care but remains in Altiform compression hosiery for maintenance treatment.

Case study 2

An 82-year-old woman, with a medical history of asthma and spinal stenosis, sustained a traumatic wound to the left medial aspect of her leg following impact from a falling brick in June 2025. The patient attempted self-management at home for 6 weeks before arranging a GP appointment. At day 42 post injury, she was reviewed jointly by her GP and practice nurse. The wound measured 3 cm × 2 cm. The leg ulcer algorithm was commenced, UrgoStart Plus Border treatment initiated and limb measurements taken. Altiform class 1 (14–17 mmHg) was applied at day 53 and full healing was achieved at 67 days from injury.

Future

At the time of the pilot and initial implementation, practice nurses and general practices were not receiving any remuneration for providing leg ulcer care. The proactive engagement shown by Lion Health community service team during this period was pioneering. This initial work marked the beginning of a new programme of service development and implementation continues to progress. To date,

35 of the 43 practices across six primary care networks have nominated at least one member of their practice nursing team to attend the leg ulcer training.

Planned activity for 2026 includes monthly virtual pathway training sessions specifically designed for practice nurses to support consistent delivery of evidence based immediate and necessary care using the algorithm and named products including Altiform Class 1 and UrgoStart Plus Border. The 2-day leg ulcer training courses will continue throughout 2026 to ensure that all remaining practices are fully incorporated into the programme.

Conclusion

Following implementation of the algorithm practice nurses continue to refer patients with leg ulcers to the local leg ulcer service; however, the revised algorithm has ensured immediate and appropriate care is implemented in a timely manner and no patients are without appropriate intervention while awaiting a full vascular assessment. This approach not only reduces delays in care, but also improves patient comfort, minimises the risk of ulcer deterioration and promotes earlier engagement with evidence based management strategies. By enabling practice nurses to deliver immediate interventions the algorithm has strengthened continuity of care and enhanced collaboration between community services and specialist teams, ultimately supporting improved healing outcomes and more efficient use of healthcare resources. ●

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