

Closing the gap in acute lower limb care: a two-year review

KEY WORDS

- ▶ Education
- ▶ Healing rates
- ▶ Leg ulcers
- ▶ Lower limb
- ▶ UrgoKTwo

KELLY PHILLIPS

*Lead Nurse, Skin Integrity Team,
Doncaster and Bassetlaw Teaching
Hospitals, NHS Foundation Trust,*

FRAN MCNAB

*Skin Integrity Team, Doncaster and
Bassetlaw Teaching Hospitals, NHS
Foundation Trust*

KATIE PHILLIPS

*Acting Clinical Nurse Specialist,
Skin Integrity Team, Doncaster and
Bassetlaw Teaching Hospitals, NHS
Foundation Trust*

TONI PLUMB

*Specialist Sister, Skin Integrity Team,
Doncaster and Bassetlaw Teaching
Hospitals, NHS Foundation Trust*

LOUISE WALL

*Specialist Sister, Skin Integrity Team,
Doncaster and Bassetlaw Teaching
Hospitals, NHS Foundation Trust*

VICTORIA DODD

*Specialist Sister, Skin Integrity Team,
Doncaster and Bassetlaw Teaching
Hospitals, NHS Foundation Trust*

GEMMA LONG

*Specialist Support Worker, Skin
Integrity Team, Doncaster and
Bassetlaw Teaching Hospitals, NHS
Foundation Trust*

ENIKKA BARNES

*Specialist Support Worker, Skin
Integrity Team, Doncaster and
Bassetlaw Teaching Hospitals, NHS
Foundation Trust*

Background: The management of leg ulceration through compression has predominately been considered a community care need. In 2021, Doncaster and Bassetlaw Teaching Hospitals, NHS Foundation Trust, in partnership with the Doncaster Wound Care Alliance, developed and launched a framework of interventions including education, a joint wound care formulary and clinical pathways, all aimed at standardising care. Additionally, they introduced the UrgoKTwo multicomponent compression system to provide seamless care across community, primary and secondary care using the National Wound Care Strategy Programme's (NWCSP) 2020 lower limb recommendations. As a result of changes implemented by the Skin Integrity Team at Doncaster and Bassetlaw Teaching Hospitals, NHS Foundation Trust, within secondary care, the knowledge of hospital staff increased by an average of 34% following attendance at structured education programmes, with 99% of staff being assessed as competent in the practical application of UrgoKTwo multicomponent compression bandage system. These improvements allowed the Skin Integrity Team to perform timely assessments, diagnoses and treatments for venous leg ulcers (VLUs), resulting in 89% of VLUs commencing UrgoKTwo multicomponent compression bandage system while patients were in the hospital and achieved healing within 12 months.

This paper presents the results of an audit undertaken after the development and implementation of an education programme and clinical pathways for lower leg ulceration within an inpatient hospital setting (secondary care). Ethical approval was not required as this was an audit of practice.

Traditionally, the principal responsibility for managing leg ulceration was within the realm of community care. Lian et al (2022) demonstrated the inadequate provision of care for patients with leg ulcers at a national level. Their findings revealed that 67% of NHS organisations lacked an inpatient service dedicated to managing patients with leg ulcers while in hospital. The Skin Integrity Team at Doncaster and Bassetlaw Teaching Hospitals (DBTH) NHS Foundation Trust and other partners of the Doncaster Wound Care Alliance (see Box 1), identified disparities in care provided to inpatients with leg ulceration. They reported gaps and variations in care provision including no clear criteria for timely lower limb referrals, no process or equipment available for

staff to undertake a lower limb assessment and compression bandages not being used, all of which leads to inconsistency with assessment, diagnosis and treatment of patients with lower leg ulcers at DBTH (Moore, 2022).

RESPONDING TO THE INEQUITIES

In response to this inequality, the Doncaster Wound Care Alliance agreed that new interventions were required to provide seamless care across community, primary and secondary care settings using the National Wound Care Strategy Programme (NWCSP) lower limb recommendations (NWCSP, 2020). In 2021, a framework of interventions was developed and launched including education, clinical pathways, and an updated joint wound care formulary for implementation across the three sectors. There had been an absence of in-house education and skills development for leg ulceration, and the use of compression therapy in the secondary care setting.

To address these gaps and facilitate long-term change in care, an education programme, already

Box 1. Doncaster Wound Care Alliance

The Doncaster Wound Care Alliance (Moore and Delahunty, 2023) consists of a partnership between wound care services, including:

- Skin Integrity Team (secondary care-based)
- Tissue Viability and Lymphoedema Service (community-based)
- Fylde Coast Medical Service (out-of-hours service)
- Foot Protection Service/Podiatry Service
- Primary Care Doncaster
- Doncaster District Nursing Service
- Doncaster Clinical Commissioning /South Yorkshire Integrated Care Board
- Doncaster Place Medicines Optimisation Team.

Box 2. Education modules

- Lower Limb Anatomy and Physiology
- Introduction to Leg Ulcer Aetiology
- Safe Soft Bandage Application
- UrgoKTwo Multicomponent Compression Selection and Application Competencies
- Introduction to Lymphoedema of the Lower Limbs
- Podiatry for Diabetic Foot Ulceration.

launched in the community and primary care, was initiated in secondary care at DBTH. The programme, created by the Skin Integrity Team with the Doncaster Wound Care Alliance, aimed to promote consistency in practice, which would reduce unwarranted variation in wound assessment and treatment. The education programme included various educational modules (See Box 2 for more details). Structured education across all three sectors provided a cohesive approach to wound care education, knowledge and skills for the entire Doncaster Wound Care Alliance.

As UrgoKTwo was the chosen multicomponent compression bandage system (Moore, 2022), the Urgo clinical specialist team and the Skin Integrity Team worked in partnership to deliver the educational programmes. This ensured that clinical staff attained the necessary competencies and developed confidence in applying the compression therapy system. This partnership ensured that education was delivered to a high and consistent standard and supported knowledge and skills with the compression system for all appropriate clinical staff.

Initially, four clinical pathways (See Box 3)

were developed and launched in June 2021. These pathways were designed to ensure that treatment could be initiated when the wound was identified in either community, primary or secondary care. Subsequently, a diagnostic lower limb assessment was scheduled to be undertaken within 14 days of referral by the designated team. In secondary care, this responsibility fell to the Skin Integrity Team.

The Skin Integrity Team was aware that there was a barrier to the use of compression in secondary care. It was crucial that the compression bandage system selected for first-line use was easy to apply, enabled continuity of care across different settings, could be supported by education within a secondary care environment and was supported by robust clinical evidence. UrgoKTwo multicomponent compression bandage systems were chosen across the Doncaster Wound Care Alliance due to the robust clinical evidence supporting the efficacy of the product, including its ability to enhance healing in patients with VLU's (Benigni et al, 2007; Hajjar et al, 2007; Sanderson et al, 2012). Additionally, Jünger (2009) identified that UrgoKTwo effectively provided sub-bandage pressures after seven days, with both Hanna et al (2008) and Weindorf et al (2012) stating that this was achieved despite people with varying skills applying the bandage system. This result was further supported by Dowsett (2022), who also confirmed that the system was safe and easy to apply across a range of clinical sectors.

IMPLEMENTING THE PATHWAY AND EDUCATION IN SECONDARY CARE

The education modules were launched across DBTH in April 2021, and the corresponding clinical pathways were launched in July 2021, accompanied by several face-to-face ward/department drop-in sessions. These were complemented by internal social media posts and emails to ensure that all staff were aware of the new framework, including the acceptable minimum standards of care for patients with lower limb ulcers. Further stages of implementation and changes occurred between July 2021 and June 2023, as shown in Figure 1.


As part of the overall pathway, DBTH initiated the lower leg wound guidance and the lower leg wound pathway upon admission or upon the development of a lower leg wound in an inpatient secondary care setting. A referral would then be


Figure 1. Timeline for implementation and change


2020	2021				2022		2023
April 2020	April 2021	May 2021	July 2021	Oct 2021	April 2022	July 2022	July 2023
The Doncaster Wound Care Alliance was established in April 2020, and lower limb education was launched for community and primary care.							
	Lower limb education and compression competency were provided at DBTH (secondary care) for a select group of staff						
		Pre-data collection	Post year 1 data was collected				
			Year 1 venous ulcers received 40mmHg compression bandages and were monitored for healing				
			The Doncaster-wide wound care formulary and clinical pathways were launched				
					The concept of 'compression buddies' was introduced		
					Lower limb education and compression competency were provided across DBTH (secondary care)		
					The formulary and clinical pathways were updated and relaunched		
					Post year 1 data was analysed		
					Year 2 venous ulcers received 40mmHg compression bandages and were monitored for healing		
					Post year 2 data collection started		
							The leg ulcer clinical pathways were updated and relaunched with vascular referral forms
							Post year 2 data analysed
							Healing rates for year 1 venous ulcers receiving 40mmHg compression bandages were analysed.
							Post year 3 data commenced
							Year 3 venous ulcers receiving 40mmHg compression bandages were monitored for healing rates.


made to the Skin Integrity Team, who triage all referrals within 72 hours. This initiative aimed to support clinical staff and ensure that the lower leg wound pathway had been initiated. Furthermore, it enabled the Skin Integrity Team to schedule a review for a lower limb assessment within 14 days of the referral, aligning with the recommendations from the NWCSP (2020). Following the skin


integrity team's lower limb assessment (provided that the patient remained an inpatient and was medically stable), a formal diagnosis was made and documented. In cases where the diagnosis indicated venous insufficiency, compression therapy of 40mmHg (UrgoKTwo multicomponent bandage system) was started, aligning with the NWCSP lower limb recommendations (2020).











Pathway for Leg Ulceration Secondary Care

Work down the pathway to guide you through the assessment, management and onward referrals required for Leg Ulceration. A Leg Ulcer is defined as skin loss that originates between the knee and malleolus (ankle).

RED FLAGS	
Leg Ulcers with acute spreading or systemic infection with or without signs of sepsis	Obtain a wound swab and arrange for antibiotics to be commenced. Dress with a anti-microbial, absorbent pad (If required) and follow the Safe Soft Bandaging Pathway. Consider a referral to the Vascular Team. (Contact: TVALS or GP to arrange the referral).
Acute or chronic limb threatening Ischemia	Practice Nurses - Refer urgently to the Emergency Surgical Assessment Centre (ESAC). District Nurses - Contact TVALS or GP to arrange admission to ESAC.
Suspected acute deep vein thrombosis	Refer urgently to the Ambulatory Car Unit.
Suspected Skin Cancer	Refer to the Dermatology Department as per the 2 week wait protocol.

Follow the Pathway for Wound Cleansing and undertake and document a wound assessment. Identify the suspected Leg Ulcer type using the Lower Leg Wound Guidance and follow 1st line treatment until reviewed by the Vascular Service or A Lower Limb Assessment, including ABPI's has been completed with a confirmed diagnosis. Apply emollient to intact skin as per local policy and change the dressings as per exudate either 3 days or 7 days.

Suspected Venous or Mixed Leg Ulceration		Confirmed Venous or Mixed Leg Ulceration		Suspected Or Confirmed Arterial Ulceration
50% or more granulation WITHOUT active infection:	50% or more slough or necrosis present AND/OR at risk infection AND/OR active infection:	50% or more granulation WITHOUT active infection:	50% or more slough or necrosis present AND/OR at risk infection AND/OR active infection:	
UrgoStart Plus Pad to broken skin.	UrgoClean AG	UrgoStart Plus Pad to broken skin or UrgoStart Plus Border.	UrgoClean AG.	Acticoat Flex 3 or 7 to broken skin
Kliniderm Super Absorbent (if required).		Kliniderm Super Absorbent (if required).		Kliniderm Super Absorbent.
Bandages as per the Pathway for Safe Soft Bandaging (until a lower limb assessment has been undertaken/confirmed by a Tier 3 or 4 service).		Compression Bandages/ Stocking/ Hosiery/ Wraps as confirmed by a Tier 3 or 4 service. If you don't have to competencies for compression follow the Suspected Venous or Mixed Leg Ulceration plan.		Bandages as per the Pathway for Safe Soft Bandaging. Unless specified differently by the Vascular Service.
If the patient remains an inpatient for 14 days the Skin Integrity will arrange for a lower limb assessment to be undertaken to provide a diagnosis and identify if compression therapy can be commenced.				
Discharge Referrals and communications should follow the DBTH Pathway for Discharge Communication and Referrals for patients living with Wounds				

Ensure all wounds are referred to The Skin Integrity Team

If the named product on this pathway is not available a temporary second line product is available to use. This can be found within the main text of the Doncaster Wide Wound Care Formulary Document.

National Wound Care Strategy Programme 2020, Lower Limb Recommendations for Clinical Care.
Developed by: Tissue Viability and Lymphoedema Service, The Skin Integrity Team, Vascular Nurse Specialist 2021. Updated September 2022. For Review June 2024

Figure 2. Pathway for leg ulceration secondary care. Implemented July 2022

It is important to note that the adoption of these recommendations had not previously been standard practice in secondary care at DBTH.

During the first year (April 2021–March 2022),

the lower limb education module and compression competencies were launched at DBTH to ensure that staff members maintained their proficiency in applying the multicomponent bandage compression

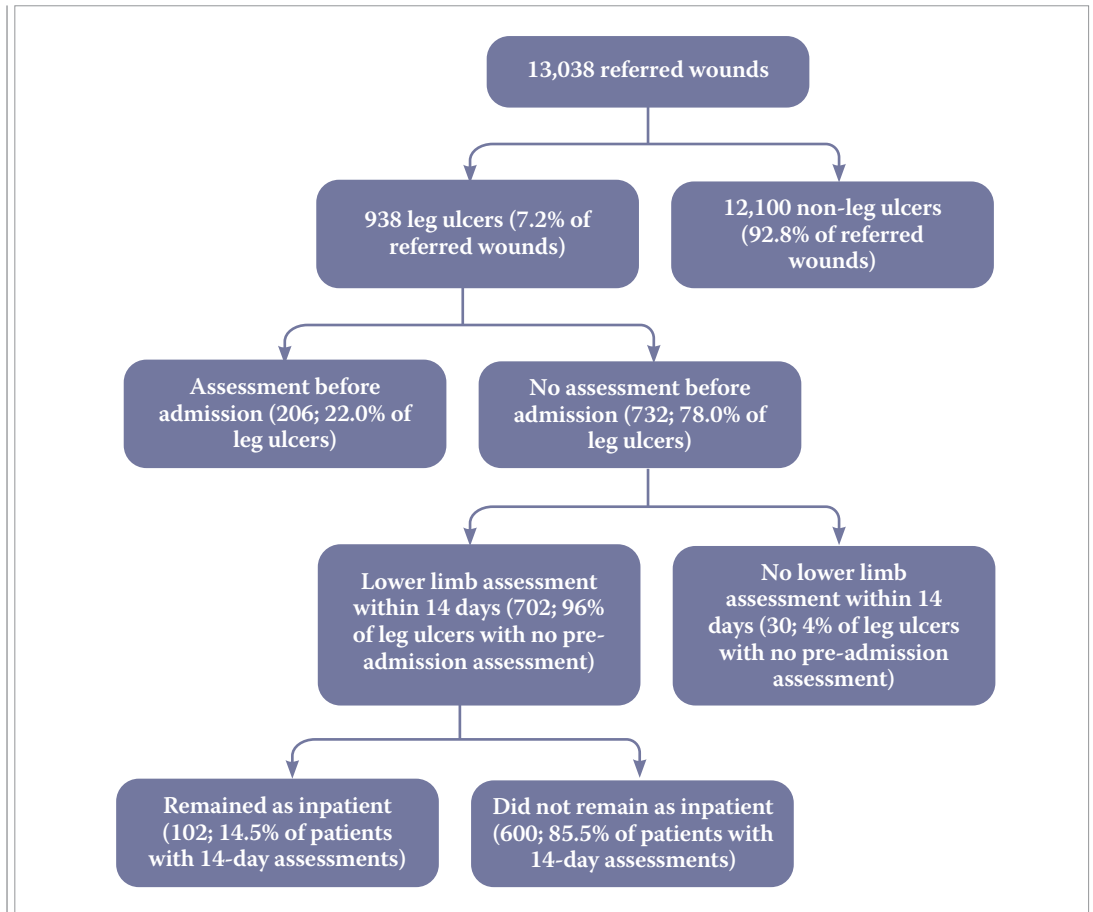


Figure 3. Wounds referred to the Skin Integrity Team versus the number of cases per category

systems. Initially, it was aimed at six clinical staff per ward to ensure that there would be at least one staff member with the necessary competencies to care for the leg ulcer and reapply compression bandages when required. The Skin Integrity Team maintained support and advice for staff if required during this time. The uptake was initially slow due to staffing challenges faced by the Trust during this period, as a result of staff vacancies and sickness related to the COVID-19 pandemic. The Skin Integrity Team identified that further support was required to ensure patients would receive a dressing change and reapplication of compression bandages while ward staff continued to gain knowledge and competencies in this area. Therefore, a new role was created within the team to support staff in clinical areas with the practical skills of reapplication of compression bandages. We developed two skin integrity specialist support worker posts, and they became 'compression buddies' as part of their

role. The 'compression buddy' ensured that staff members had access to guidance and assistance from knowledgeable experts, further promoting the effective and consistent use of compression bandages. They also ensured that patients received timely and appropriate dressing changes and reapplication of compression bandages if staff with a compression competency were not on shift that day.

During the second year (April 2022–March 2023), a stand-alone lower limb education module was integrated into trust-wide education for nurses and healthcare assistants to enhance their skills in managing leg ulceration and applying bandages. Nurses were also included in a module on compression bandaging, using the UrgoKTwo compression systems.

In July 2022, during the second year (April 2022–March 2023), the lower leg wound pathway in secondary care was updated following feedback from staff using the pathway. The purpose of this update

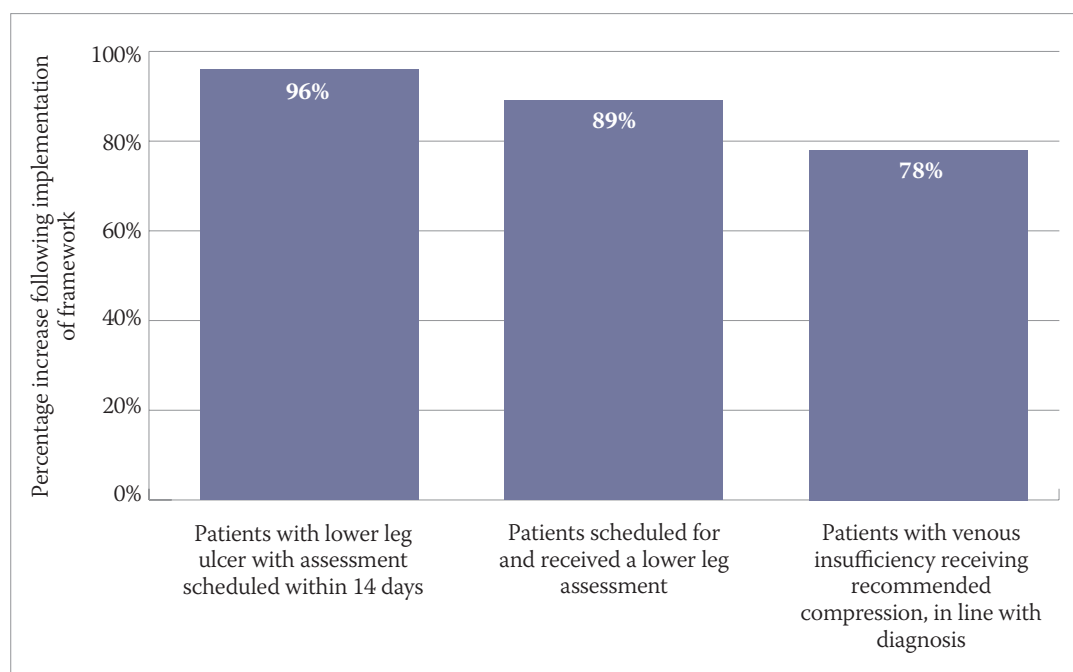


Figure 4. Management of lower leg ulcers at Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust

was to separate leg ulceration and make the pathway of care clearer. It was also updated to include the National Institute for Health and Care Excellence 2019 recommendations (Figure 2).

EVALUATING THE PATHWAY AND EDUCATION

The pathway and education have been evaluated by the Skin Integrity Team and the results are presented below.

Pre pathway assessment, diagnosis and treatment

Before the implementation of the clinical pathway at DBTH, a review was conducted to evaluate which patients had received timely assessments, a diagnosis and appropriate compression during the period of May 2021–June 2021 (8 weeks). A total of 31 patients were referred to the Skin Integrity Team during this time, with chronic lower leg wounds that had a duration of 4 weeks or more.

The findings indicated that no leg ulcers were scheduled for a lower limb assessment within 14 days, resulting in no lower limb assessments or diagnosis being achieved. Therefore, no patients were given compression bandages at the appropriate

level of 40mmHg (excluding patients solely managed by the vascular team without the skin integrity involvement). A review of patient records highlighted a disorganised approach to treatment plans for VLUs that aligned with the evaluation results from Vernon et al (2019), who reported a similar picture for skin tears.

These results highlighted deficiencies in the system and the urgent need for improved processes and education to ensure timely assessments, accurate diagnoses and appropriate treatment for patients with lower limb wounds, especially VLUs.

Post-pathway assessment, diagnosis and treatment

To evaluate the impact following the implementation of the framework, data were collected from 1 July 2021 to 30 June 2023 (2 years).

A total of 13,038 wounds were referred, of which 838 (11%) were leg ulcers. Among these, 206 (22%) had already received a lower leg assessment and diagnosis before hospital admission, and their treatment plan was continued as inpatients, while 732 (78%) had not received an assessment and diagnosis before admission (Figure 3).

Out of the 732 lower leg wounds, the Skin

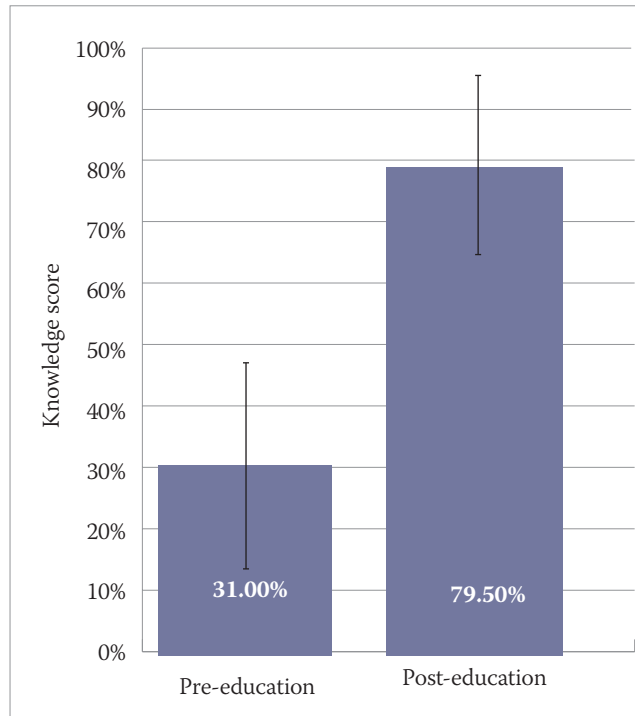


Figure 5. Average knowledge score in managing leg ulceration at Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust

Integrity Team at DBTH triaged 732 within a maximum of 72 hours. Lower limb assessments for 702 out of 732 were scheduled within 14 days by the Skin Integrity Team. The remaining patients were scheduled for assessments after 14 days for reasons unknown.

Only 102 out of 702 patients remained inpatients and were able to have a lower limb assessment at the scheduled time. Reasons for patients being unable to have the limb assessment included receiving end-of-life care, being critically unstable and receiving critical outreach care, being in isolation and receiving enhanced care for the COVID-19 virus and death. Notably, during January 2022–March 2022, the Skin Integrity Team provided a reduced service across the Trust due to COVID-19-related changes, resulting in the lower limb assessment pathway not being implemented or monitored during this period.

Of the 102 patients who remained as inpatients and were medically stable for a lower limb assessment, 91 received an assessment and diagnosis. This included 43 cases of VLUs, 30 cases of mixed aetiology ulcers and 18 cases of arterial ulcers. The remaining 11 patients had their assessments delayed beyond 14 days due to

the clinical workload and staffing constraints within the Skin Integrity Team.

Among the patients diagnosed with a VLU, 33 received the recommended 40mmHg compression with UrgoKTwo. The remaining 10 patients received alternative treatments: 4 patients received 20mmHg compression due to experiencing pain and declining high-level compression, 3 patients received 20mmHg compression due to a diagnosis of acute congestive cardiac failure, 2 patients received safe soft bandaging/no compression as per a vascular consultant's request and 1 patient received safe soft bandaging/no compression due to a leg fracture.

The implementation of the framework at DBTH resulted in significant improvements in the management of lower leg ulcers (Figure 4).

EDUCATION

Between September 2021 and March 2023, a total of 21 education sessions were conducted. Before the education sessions, staff were asked to complete a locally developed non-validated questionnaire to assess their knowledge of lower limb care.

In the first year of education (April 2021–March 2022), 33 clinical staff participated in the program. Their average pre-education knowledge score was 31%. Upon completion of the program, the average knowledge score significantly increased, ranging from 64% to 95%, with a median of 79.5% (See Figure 5). All the staff who completed the training were assessed as competent in the application of multicomponent compression during the training day.

During the second year of education (April 2021–March 2022), an additional 40 clinical staff attended the programme. The average pre-education knowledge score was 64% (33% more than the previous year) and the average post-education knowledge score had increased to between 87–95%, giving a median of 91%, indicating a significant improvement in knowledge and understanding for the second year in a row. Of the 40 attendees, 39 (99%) were deemed competent in the application of the UrgoKTwo multicomponent compression bandage system. The one participant who did not meet the outcomes successfully on the day was offered further support.

The improved post-education knowledge scores and competency levels over the 2 years highlight the positive impact of these sessions on the quality

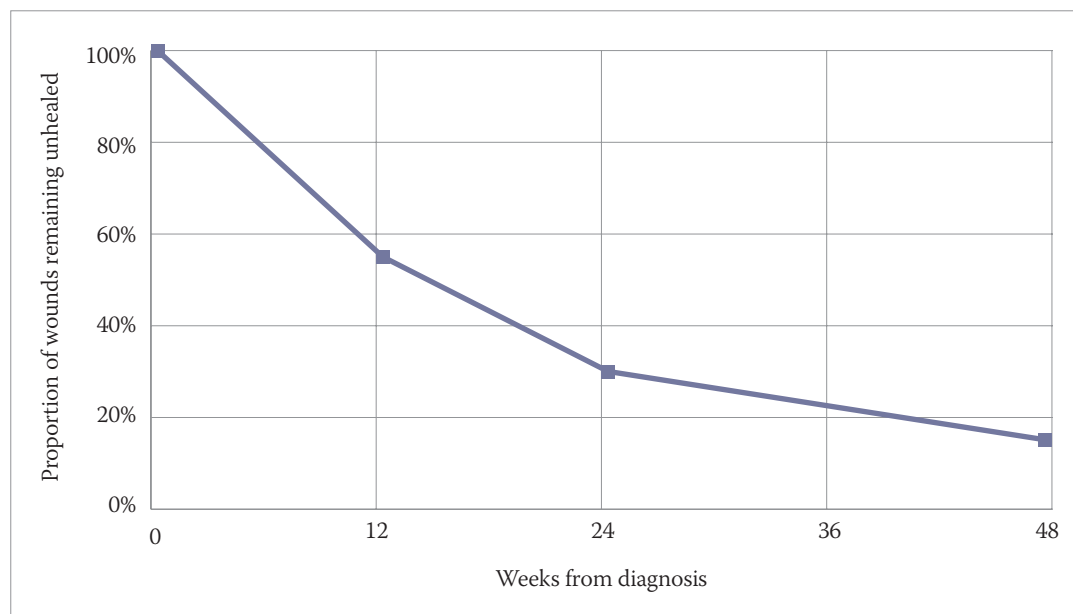


Figure 6. Venous leg ulcer healing rates by week following implementation of UrgoKTwo compression systems at Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust

of care provided to patients with leg ulcers. In addition, this approach has ensured no adverse incident reports have been associated with the use of multicomponent compression therapy systems within DBTH.

Feedback from these education events over the two years was extremely positive:

- ▶▶ 99% agreed that the course delivered in partnership with Urgo Medical was useful
- ▶▶ 100% agreed that the facilitator was engaging
- ▶▶ 100% agreed that the facilitator was knowledgeable
- ▶▶ 99% agreed that they were able to ask questions
- ▶▶ 99% agreed that the facilitator was able to answer any questions.

HEALING RATES

The healing rates for patients were collected over a 48-week period from the patient being diagnosed with a VLU and the initiation of 40mmHg compression bandages as inpatients at DBTH. Additional criteria were required to monitor the patient's healing data. These criteria included the patient being discharged into the Doncaster Wound Care Alliance (as records outside of Doncaster were inaccessible) and not passing away before achieving healing.

In the first year of implementation (between 1 July 2021 and 30 June 2022), 13 patients met the

criteria for data collection. This resulted in 11 patients (85%) achieving healing by week 48 (see Figure 6):


- ▶▶ 6 patients (46%) achieved complete healing within 12 weeks
- ▶▶ An additional 3 patients (24%) achieved complete healing by 24 weeks
- ▶▶ Another 2 patients (15%) achieved complete healing by 48 weeks
- ▶▶ The remaining 2 patients (15%) did not achieve healing by week 48.

Of the 2 patients with prolonged healing by 48 weeks and the 2 patients who did not achieve full healing by 48 weeks, the contributing factors are as follows:


- ▶▶ Developed squamous cell skin carcinoma on the same limb
- ▶▶ Experienced episodes of non-compliance at home with the compression bandages and removed them on several occasions
- ▶▶ Had multiple underlying medical conditions including several episodes of acute congestive cardiac failure during the 48-week monitoring period.


Data collection for healing rates for the patients meeting the criteria throughout the second year of implantation (1 July 2022–30 June 2023) is ongoing.


Figure 7. Venous leg ulcer healing rates by week following implementations at NHS Foundation Trust



PRIMARY CARE
DONCASTER







Leg Ulcer Pathways - Secondary Care

Work down the pathway to guide you through the assessment, management and onward referrals required for Leg Ulceration. A Leg Ulcer is defined as skin loss that originates between the knee and malleolus (ankle).

Red Flags	Emergency Actions Required	
Leg ulcer with systemic/ severe infection / sepsis with (tachycardia, pyrexia, hypotension, patient feeling unwell, spreading cellulitis, crepitus, significant deterioration over a short period of time).	Refer urgently to the Vascular Team via switch board.	
Clinical evidence of acute limb ischaemia (acute pain, pallor, pulseless, perishingly cold, paraesthesia / acute sensory change, paralysis / acute motor dysfunction for <2 weeks).		
Leg Ulcers with spreading infection (cellulitis).	Obtain a wound swab and arrange for antibiotics to be commenced. Dress with a non-adherent dressing, absorbent pad (if required) and follow the Safe Soft Bandaging Pathway. Ask the managing clinician to consider if a Vascular referral is required.	
Suspected acute deep vein thrombosis.	Follow the Venous Thromboembolism (VTE) – Prevention and Treatment of VTE in Patients admitted to hospital – PAT/T 44 V3.	
Suspected Skin Cancer.	Refer to the Dermatology Department as per the 2 week wait protocol.	
Amber Flags	Urgent action Required	
Do you suspect poor arterial blood supply because the patient has either: <ul style="list-style-type: none"> Constant pain in the foot (typically relieved by dependence and worse at night). A non-healing wound of more than 2 weeks duration and / or gangrene on the foot. 	Complete the Vascular Service – Peripheral Arterial Disease (PAD) / Chronic Limb- Threatening Ischemia Disease Referral Form Send to: dbth.vascular-admin@nhs.net	
Does the patient have any risk factors or visual signs for venous disease on the lower limb including with either: <ul style="list-style-type: none"> Ulceration that Static or deteriorating despite optimum compression therapy. Acute venous bleeding from the leg requiring first aid treatment. 	Complete the Vascular Service –Venous Insufficiency Referral Form. Send to: dbth.vascular-admin@nhs.net	
Assessment and Treatment		
1. Follow the Pathway for Wound Cleansing and undertake and document a wound assessment.		
2. Apply emollient to intact skin as per local policy and change the dressings as per exudate either 3 days or 7 days		
3. Identify the suspected Leg Ulcer type using the Lower Leg Wound Guidance and follow below guidance.		
4.		
Suspected Venous or Mixed Leg Ulceration	Confirmed Venous or Mixed Leg Ulceration	Suspected Or Confirmed Arterial Ulceration
50% or more granulation WITHOUT active infection: UrgoStart Plus Pad to broken skin. Kliniderm Super Absorbent (if required).	50% or more granulation WITHOUT active infection: UrgoStart Plus Pad to broken skin or UrgoStart Plus Border. Kliniderm Super Absorbent or Biatain Silicone (if required).	50% or more slough or necrosis present AND/OR at risk infection AND/OR active infection: UrgoClean AG. Acticoat Flex 3 or 7 to broken skin. Kliniderm Super Absorbent.
Bandages as per the Pathway for Safe Soft Bandaging (until a lower limb assessment has been undertaken/confirmed by a Tier 3 or 4 service).	Compression Bandages/ Stocking/ Hosiery/ Wraps as confirmed by a Tier 3 or 4 service. If you don't have to competencies for compression follow the Suspected Venous or Mixed Leg Ulceration plan.	Bandages as per the Pathway for Safe Soft Bandaging. Unless specified differently by the Vascular Service.
5. Ensure all wounds are referred to The Skin Integrity Team		
If the patient remains an inpatient for 14 days the Skin Integrity will arrange for a lower limb assessment to be undertaken to provide a diagnosis and identify if compression therapy can be commenced.		
Discharge Referrals and communications should follow the DBTH Pathway for Discharge Communication and Referrals for patients living with Wounds		
If the named product on this pathway is not available a temporary second line product is available to use. This can be found within the main text of the Doncaster Wide Wound Care Formulary Document.		

National Wound Care Strategy Programme 2020, Lower Limb Recommendations for Clinical Care.
Developed by: Tissue Viability and Lymphoedema Service, The Skin Integrity Team, Vascular Nurse Specialist 2021. Updated September 2022. For Review June 2024.

Updating pathways

Following our initial launch of the framework, we have further updated the leg ulcer pathways

(see Figure 7) in response to the development of vascular service venous disease and vascular service peripheral arterial disease referral forms. These

updates have created a streamlined system across healthcare areas, promoting a focused approach and enabling timely referrals. Ongoing review and data collection of the implementation of these new changes in year three will continue.

SUMMARY

To address inequalities in care and reduce gaps and variations in the provision of care for patients with leg ulcers in secondary care, DBTH introduced improvement measures. These measures were guided by the lower limb recommendations outlined in the NWCSP (2020). The goal was to develop collaborative education and clinical pathways that would provide seamless instructions and support for the management of lower limb wounds across the Doncaster Wound Care Alliance, including secondary care.

To support the implementation of these improvement measures, a joint collaborative approach was taken by the Skin Integrity Team at DBTH and Urgo Medical, which was instrumental in avoiding significant delays in the implementation process. Urgo Medical's contribution in terms of educational development and delivery, as well as product support, proved invaluable. The results demonstrate that the implementation of evidence-based clinical and referral pathways, supported by appropriate education, has led to timely and consistent care and improved healing rates for patients with VLUs treated within the acute sector.

Limitations

There were limitations to data collection that included:

1. No data being collected during the period of January 2022–March 2022 due to a reduced skin integrity service available across the Trust as a result of COVID-19 related changes and service cover
2. Inaccessibility of patient records for those discharged outside of the Doncaster area
3. The compliance of the pathways in community and primary care was not reviewed as part of this work for those discharged from DBTH before the scheduled lower limb assessment undertaken by day 14
4. Social care, residential care, and nursing homes are not included within the Doncaster Wound

Care Alliance at this time.

WUK

Acknowledgements

The researchers appreciate the time and effort of the participants in providing information for this study.

Declaration of interest

In 2021, Kelly Phillips (nee Moore) received the Urgo Medical Rising Star Award for recognising new and emerging talent in wound care based on the abstract for this practice development work. Urgo Medical supports the educational programme the Skin Integrity Team delivers to DBTH staff.

REFERENCES

- Benigni JP, Lazareth I, Parpex P et al (2007) Efficacy, safety and acceptability of a new two-layer bandage system for venous leg ulcers. *J Wound Care* 16(9): 385–90. <https://doi.org/10.12968/jowc.2007.16.9.27866>
- Dowsett C (2022) Reducing variation in venous leg ulcer management: a focus on compression. *Wounds UK* 18(4): 58–64. <https://tinyurl.com/mv8wdf8w> (accessed 4 October 2023)
- Hajjar ER, Cafiero AC, Hanlon JT (2007) Polypharmacy in elderly patients. *Am J Geriatr Pharmacother* 5(4): 345–51
- Hanna R, Bohbot S, Connolly NV (2008) A comparison of interface pressures of three compression bandage systems. *Br J Nurs* 17(20): S16–24. <https://doi.org/10.12968/bjon.2008.17.sup9.31661>
- Jünger M, Ladwig A, Bohbot S, Haase HV (2009) Comparison of interface pressures of three compression bandaging systems used on healthy volunteers. *J Wound Care* 18(11): 474–80. <https://doi.org/10.12968/jowc.2009.18.11.45000>
- Lian Y, Anderson I, Keevil V, Gohel M (2022) A point prevalence audit on the number of inpatients with a leg ulcer eligible for compression therapy in a large university NHS hospital. *J Wound Care* 31(7): 590–7. <https://doi.org/10.12968/jowc.2022.31.7.590>
- Moore K (2022) Lower leg improvements in secondary care: Implementing the National Wound Care Strategy Programme. *Wound UK* 18,2. <https://tinyurl.com/46ch8emu> (accessed 4 October 2023)
- Moore K, Delahunty M (2023) Reducing unwarranted variation in wound care across a local healthcare economy. *Wounds UK* 19(2): 48–57. <https://tinyurl.com/mwrszknn> (accessed 4 October 2023)
- National Institute for Health and Care Excellence (NICE) (2019) UrgoStart for treating leg ulcers and diabetic foot ulcers. <https://www.nice.org.uk/guidance/mtg42> (accessed 4 October 2023)
- National Wound Care Strategy Programme (2020) Lower Limb Recommendations for Clinical Care. <https://tinyurl.com/y9v8t4b9> (accessed 4 October 2023)
- Sanderson H (2012) Ensuring patient comfort and concordance with the UrgoKTwo Compression Bandage System. Poster presentation. Harrogate: *Wounds UK*
- Vernon T, Moore K, Vowden K, Vowden P (2019) A safe first-line approach to managing skin tears within an acute care setting (part 2). *Wounds UK* 15(2): 48–53. <https://tinyurl.com/2p97k52f> (accessed 4 October 2023)
- Weindorf M, Stoffels I, Klode K, Dissemont JV (2012) Effect of optic marks on compression bandages on the pressure of compression bandages: First results of a prospective clinical study in different collectives of users. *Phlebologie* 41(1): 18–24. <https://doi.org/10.1055/s-0037-1621797>