

Lower leg improvements in secondary care: Implementing the National Wound Care Strategy Programme

KEY WORDS

- ▶ Chronic wounds
- ▶ Lower leg
- ▶ National Wound Care Strategy Programme (NWCSP)
- ▶ Secondary care
- ▶ Wounds

The National Wound Care Strategy Programme (NWCSP) seeks for improvement in the care of patients with wounds (The National Wound Care Strategy Programme — Lower Limb Recommendations, 2020). The recommendations offer a clear framework for the development for local delivery in clinical care settings. The Skin Integrity Team at Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust (DBTH) developed clinical pathways through collaboratively system leadership with the Doncaster Place Wound Care Alliance, ensuring secondary care was included and potential and historical barriers overcome, to implement the NWCSP recommendations. Here we describe the process of the translating national recommendations into clinical pathway and the issues that led to the development of a secondary care focused version.

The NWCSP acknowledges that there are unwarranted variations in wound care services across the UK, which offers major opportunities to improve care provisions, clinical outcomes and spend (NWCSP, 2020). An area that the NWCSP has produced recommendations for is Lower Limb wounds, those on the lower leg (below the knee) and foot that are slow to heal. It is estimated that approximately 1.5% of the adult population in the UK is affected by active leg and foot ulceration, which equates to 730,000 patients (Guest et al, 2015). There is considerable variation in practice and outcomes (Gray et al, 2018) which increases care costs and extends healing times (NHS Right Care, 2017).

The Skin Integrity Team at Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust (DBTH) identified the need to implement the NWCSP Lower Limb recommendations for the diagnosis and treatment of leg ulceration in a secondary care environment. DBTH worked with services in the Doncaster Place Wound Care Alliance collaboratively through system leadership to develop lower limb clinical pathways to meet the recommendations and reduce variation in care. A main element of the recommendations was the use of compression therapy in secondary care, however the skin integrity team were mindful that some would argue many nurses have difficulty with maintaining compression bandaging skills in

hospital setting (secondary care), which Anderson (2006) agreed with. Because of this historically at DBTH compression was discontinued on admission, following the removal of the bandages to enable a skin inspection and wound assessment to be undertaken, despite evidence showing compression therapy doubles the chances of venous leg ulcers (VLU) healing (O'Meara, 2012).

Therefore, it was crucial for the skin integrity team that a compression therapy system was available that aided safe and correct application, reduced the risk of complications, allowed continuity of care and could be supported by education and competencies within a secondary care environment. The implementations of the clinical pathways would be a huge change to DBTH requiring time to establish and embed into practice. Standards were set in line with the NWCSP recommendations, including the red flags being clearly identified at the start of the pathway, to ensure there were clear and measurable outcomes that would enable the process to be reviewed, adapted and measured.

METHOD

Development and Implementation of new clinical pathways

The stakeholders that included the specialists wound care services within the Doncaster Place

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Wound Care Alliance and Medicine Management at the Clinical Commissioning Group (CCG) worked corroboratively to review national guidance and recommendations and brainstorm ideas of developing and implementing standardised pathways for the guidance, prevention, assessment, management and treatment of lower leg wounds based on the NWCSP 2020 recommendations. Key stakeholders included:

- » The Skin Integrity Team, Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust
- » Tissue Viability and Lymphoedema Service, Rotherham Doncaster and South Humber NHS Foundation Trust (RDaSH)
- » Doncaster Medicine Management (CCG)
- » Foot Protection Service/Podiatry Service Rotherham Doncaster and South Humber NHS Foundation Trust.
- » Vascular Nurse Specialist Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust
- » District Nurse Educator, Rotherham Doncaster and South Humber NHS Foundation Trust.

The NWCSP key proposals to improve the care of lower legs includes (NWCSP, 2020):

- » Change the model of care provision to allow more people with chronic lower limb wounds to receive equitable care
- » Deliver care in a clinic setting, where possible
- » Encourage supported self-care, where possible
- » Increase the delivery of evidence-based care for chronic lower limb wounds
- » Undertake a lower limb assessment with 14 days of identification
- » For arterial leg offer offloading/casting for pressure relief
- » Rapid access to specialist vascular services for vascular reconstruction
- » Optimisation of comorbidities including disease management
- » For VLU use strong multilayer compression therapy
- » For VLU refer for endovenous ablation surgery
- » Post-healing compression therapy
- » Improve data and information to support clinical decision making and enable quality improvement to be monitored.

In addition to ensuring the clinical pathway met

the needs and recommendation of the NWCSP the collaborative group also ensured it enhance the quality of care, guided the healthcare professional through evidence-based decision-making, was cost effective, improve patient access to care and their quality of life.

To ensure that the pathways were beneficial to the healthcare professionals providing patient care, the process was split into sections in line with the current Doncaster Wound Care Alliance tired service model. As a result four clinical pathways were developed with three supporting appendices:

- » Lower Leg Wound Guidance
- » Lower Leg Wound Pathways in Primary Care
- » Lower Leg Wound Pathways in Secondary Care
- » Lower Limb Assessment Pathways.

Clinical pathways were also developed for wounds of the foot, however this did not include an assessment pathway as the key stakeholders identified the large amount of changes and implementation that was needed, so made the decision to develop and implement these over a phased approach to ensure they were embedded into practice and sustainable. Therefore the wound of the foot assessment pathway development was under creation during the implementation phase of the below pathways, with the plan to launch the full guidance for the wounds of the foot in 2022. Pre and post data will be collected for this using the same methods as the lower leg wound pathways.

The Lower Leg Wound Guidance (*Figure 1*) was developed to establish possible wound type for wounds below the knee to the malleolus (ankle) supporting the healthcare professional to follow the most suitable plan for treatment and referrals. This then enable the healthcare professional to use the Lower Leg Wound Pathway for either the Primary Care (*Figure 2*) or Secondary Care (*Figure 3*) environment, supporting them through identification of red flags, immediate and necessary care recommendations as highlighted by the NWCSP, wound bed preparation, wound assessment, management and referrals as per the suspected wound type.

The referrals included:

- » The Skin Integrity Team at DBTH/Tissue Viability and Lymphoedema Service at RDaSH/Community or Practices Nurse Service in line

Lower Leg Wound Guidance

To establish the potential wound type for wounds below the knee to the malleolus (ankle).

Red Legs	Chronic Oedema (Lymphoedema)	Wet legs / Lymphorrhoea	Cellulitis	Haematoma	Skin Tear	Leg Ulcer Venous	Leg Ulcer Mixed	Leg Ulcer Arterial
Definitions								
Presents as redness, warmth and tenderness of the lower limbs, without signs of infection, in patients with a history of venous disease, chronic oedema and dermatological conditions. (Salmon 2016; Wounds)	Includes all forms of swelling, including lymphoedema, that has been present for longer than three months. (Best practice in the community Chronic oedema 2019).	Discharge of lymph fluid through the skin, caused by untreated oedema. It appears as beads of fluid. (Best practice in the community Chronic oedema 2019).	An inflammatory skin condition caused by acute infection of the skin, characterised by a superficial, diffuse, spreading skin infection without underlying collection of pus. Bilateral leg cellulitis is very rare. (Atkins 2016)	A bruise or collection of blood in the tissues. They appear as a dark red/black collection of blood standing proud of the skin. (Beldon 2011). (Collins et al, 2002).	A skin tear is a traumatic wound caused by mechanical forces, including the removal of adhesives. Severity may vary by depth (not extending through the subcutaneous layer). (Le Blanc K et al	A break in the skin that has been present for more than 14 days, in the presence of Venous Disease. (NICE 2020).	A break in the skin that has been present for more than 14 days, in the presence of Venous Disease and Peripheral Arterial Disease. (Harding 2015).	A break in the skin that has been present for more than 14 days, as a result of reduced arterial blood flow, in the presence of Peripheral Arterial Disease. (Moffatt 2001).
If there is a break in the skin that has been present for more								

Figure 1. Lower leg wound guidance

Lower Leg Wound Pathway - Primary Care

Red Legs	Chronic oedema (Lymphoedema) OR Wet Leg / Lymphorrhoea	Cellulitis (Only if skin is broken)	Haematoma	Skin Tear	Leg Ulcer Venous or Mixed	Leg Ulcer Arterial
1 Undertake a holistic assessment of the patient. 2 Cleanse the wound following the Wound Cleansing Pathway. 3 Undertake a holistic wound assessment. 4 If there are any clinical signs of local infection refer to the Wound Infection Pathway. 5 Identify if there are any Red Flags and action accordingly. 6 Identify the Lower Leg Wound type using the Lower Leg Wound Guidance and manage as below:						
RED FLAGS: Leg Ulcers with acute spreading or systemic infection with or without signs of sepsis Acute or chronic limb threatening Ischemia Suspected acute deep vein thrombosis Suspected Skin Cancer						
Obtain a wound swab and arrange for antibiotics to be commenced. Dress with an 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). Practice Nurses - Refer urgently to the Emergency Surgical Assessment Centre (ESAC). District Nurses - Contact TVALS or GP to arrange admission to ESAC. Refer urgently to the Ambulatory Care Unit. Refer to the Dermatology Department as per the 2 week wait protocol.						
Management						
All Tiers and District Nurses Apply: • Emollient to intact skin as per local policy. • Non-adherent dressing to broken skin. • Absorbent pad/ Foam (if required). • Alltress Liner 10mmity or follow the Safe Soft Bandaging Pathway.						
Tiers 1 and 2 Apply: • Emollient to intact skin as per local policy. • Non-adherent dressing to broken skin. • Absorbent pad/ Foam (if required). • Bandages as per the Safe Soft Bandaging Pathway.						
Tiers 1 and 2 and District Nurses Apply: • Mark the affected area with skin marker. • Arrange for antibiotics to be commenced.						
District Nurses/ Tier 3 • Follow the Lower Limb Assessment Pathway and commence the recommended compression.						
All Tiers and District Nurses Intact Haematoma: • Elevate limb and monitor.						
District Nurses/Tier 3 Broken Haematoma: • Flaminol Forte. • Non-adherent dressing. • Absorbent pad/ Foam (if required). • Bandages as per the Safe Soft Bandaging Pathway.						
Evacuated Haematoma: • Appropriate dressing as per the Wound Tissue Type Pathway. • Absorbent pad/ Foam (if required). • Bandages as per the Safe Soft Bandaging Pathway.						
Patients on anticoagulants or diagnosed with an underlying medical condition relating to bleeding: Apply: • Non-adherent dressing. • Absorbent pad/ Foam (if required). • Bandages as per the Safe Soft Bandaging Pathway.						
All Tiers and District Nurses: • Follow the Lower Body Skin Tear Pathway for Secondary Care.						
Patients with Leg Ulcer Venous or Mixed require District Nurses/Tier 3 care. Until the patients care has been taken over by a Tier 3/ District Nurse service dress as per the Chronic oedema (Lymphoedema) OR Wet Leg / Lymphorrhoea section.						
District Nurses/ Tier 3 • Follow the Lower Limb Assessment Pathway and commence the recommended compression.						
Patients with Leg Ulcer Arterial require District Nurses/Tier 3 care. Until the patients care has been taken over by a Tier 3/ District Nurse service apply: • Emollient to intact skin as per local policy. • Acticoat Flex 3 or 7 to broken skin. • Absorbent pad/ Foam (if required). • Bandages as per the Safe Soft Bandaging Pathway.						
Referrals						
• If there is no improvement within 7 days refer to TVALS. • If the skin becomes broken follow the Leg Ulcer Venous or Mixed section						
• Refer all Lymphoedema to TVALS. • If there is no improvement in the Wet Leg / Lymphorrhoea after 14 days refer to a Tier 3/ District Nurses service for a Lower Limb Assessment.						
• If the patient has had 2 or more episodes of lower limb cellulitis within the last 6 months refer to TVALS (who will assess if a vascular referral is required).						
• Refer to TVALS						
• As per the Lower Body Skin Tear Pathway for Secondary Care.						
• Refer to a Tier 3 or District Nursing service for a Lower Limb Assessment to be undertaken and for the recommended compression to be commenced. • If District Nurses/ Tier 3 are unable to complete a Lower Limb Assessment refer to TVALS.						
• Refer urgently to the Vascular Team (unless the Vascular Team have already confirmed a conservative plan).						

Reference: NICE (2020) Leg Ulcer. Gray, J. et al (2006) Venous and arterial leg ulcer. ABC of wound healing. British Medical Journal. Newton, H. (2011) Leg ulcers: Differences between venous and arterial. Wounds, Essential National Wound Care Strategy Programme (2020) Lower Limb Recommendations for the Clinical Care. Provided by: The Vascular and Lymphoedema Service and The Skin Injuries Team April 2021. For Review June 2024.

Figure 2. Lower leg wound pathway: primary care

with the Doncaster Wound Care Alliance tiered service model for a lower limb assessment for diagnosis and treatment to be undertaken and commenced, such as compression therapy

- ▶ The Vascular Service at DBTH for investigations and consideration for underlying causation treatment such as surgical/ endovenous interventions
- ▶ Dermatology opinion
- ▶ Community Tissue Viability and Lymphoedema Service at RDaSH for lymphoedema management care in line with the International Lymphoedema Framework Recommendations
- ▶ Community or Practices Nurse for ongoing wound interventions.

A Lower Limb Assessment Pathway (Figure 4) was developed to ensure that assessment was undertaken based on minimum data set and that the process was consistently followed throughout the Doncaster Place Wound Care Alliance. There were three supporting appendices to this pathway to assist with documentation, scheduled follow up and compression therapy options.

For the skin integrity team it was crucial that within the compression therapy options there was a first line option for secondary care to use that aided safe and correct application, as ward and department staff were not familiar with compression therapy and did not have the knowledge, skills or competencies for safe application. Historically compression is discontinued in secondary care despite evidence showing compression therapy doubles the chances of VLUs healing (O'Meara, 2012). Some would argue that this is because many nurses have difficulty with maintaining compression bandaging skills (Anderson, 2006). Compression therapies were reviewed and it was identified that the multilayer compression bandage system to use was UrgoKTwo. Young et al (2013) stated that UrgoKTwo benefits from PresSure system that has shown to aid the safe and correct application of the therapeutic pressures from the first application, reducing the risk of complications and potential for variation between health professionals, allowing for continuity of care and enabling education and competencies in the application to be achieved. A hosiery system was considered however due to the

1 Undertake a holistic assessment of the patient.		RED FLAGS:				
2 Undertake wound cleansing in accordance with the Wound Cleansing Policy and consider using Protosam Debridement pad to support soft mechanical debridement.		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 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.			
3 Undertake a holistic wound assessment.		New acute or chronic limb threatening Ischemia	Refer urgently to the Vascular Team via switch board.			
4 If there are any clinical signs of local infection refer to the Wound Infection Pathway.		Suspected acute deep vein thrombosis	Follow the Venous Thromboembolism (VTE) – Prevention and Treatment of VTE in Patients admitted to hospital – PAT/144V3.			
5 Identify if there are any Red Flags and action accordingly.		Suspected Skin Cancer	Refer to the Dermatology Department as per the 2 week wait protocol.			
6 Identify the Lower Leg Wound type using the Lower Leg Wound Guidance and manage as below:						
Red Legs	Chronic oedema (Lymphoedema) and/or Wet Leg (Lymphorrhoea)	Cellulitis (Only if skin is broken)	Haematoma	Skin Tear	Leg Ulcer Venous or Mixed	Leg Ulcer Arterial
Management						
Apply: <ul style="list-style-type: none"> Emollient to intact skin as per local policy. Appropriate Non-adherent dressing to broken skin. Absorbent pad (if required). Bandages as per the Safe Soft Bandaging Pathway. 		<ul style="list-style-type: none"> Mark the affected area with a skin marker. Arrange for antibiotics to be commenced as per the Antimicrobial Formulary. Apply: <ul style="list-style-type: none"> Emollient to intact skin as per local policy. Appropriate dressing as per the Wound Infection Pathway. Absorbent pad (if required). Bandages as per the Safe Soft Bandaging Pathway. (or 2 layers of clifix if patient unable to tolerate bandages). 	Intact Haematoma or patients on anticoagulants or patients with an underlying medical conditions relating to bleeding: <ul style="list-style-type: none"> Non-adherent dressing. Absorbent pad (if required). Follow the Safe Soft Bandaging Pathway. Broken Haematoma apply: <ul style="list-style-type: none"> Flaminal Forte. Non-adherent dressing. Absorbent pad (if required). Bandages as per the Safe Soft Bandaging Pathway. Evacuated Haematoma: <ul style="list-style-type: none"> Appropriate dressing as per the Wound Tissue Type Pathway. Absorbent pad (if required). Bandages as per the Safe Soft Bandaging Pathway. 	Follow the Lower Body Skin Tear Pathway for Secondary/ED Outpatient Department Care.	Apply: <ul style="list-style-type: none"> Emollient to intact skin as per local policy. Appropriate Non-adherent dressing to broken skin. Absorbent pad (if required). Bandages as per the Safe Soft Bandaging Pathway. 	Apply: <ul style="list-style-type: none"> Emollient to intact skin as per local policy. Acticoat Flex 3 or 7. Absorbent pad (if required). Bandages as per the Safe Soft Bandaging Pathway.
Referrals						
Report all wounds via the Skin Integrity Datix/Dashboard.						
If there is no improvement in 7 days refer to the Skin Integrity Team via questions and comments on the dashboard.	If the skin becomes broken report via the Skin Integrity Datix/Dashboard.	On discharge refer to the Tissue Viability and Lymphoedema Service (Discharge form B).	If the patient has had 2 or more episodes of lower limb cellulitis within the last 6 months refer to the Vascular Team.	As per the Lower Body Skin Tear Pathway for Secondary/ED Outpatient Department Care.	Refer all new diagnosed Venous Leg Ulcers to the Vascular Team (non urgent).	Refer urgently to the Vascular Team unless the Vascular Team have already confirmed a conservative plan).
NB: If the patient remains an inpatient for more than 14 days the Skin Integrity will arrange for a lower limb assessment to be undertaken.						
Discharge Referrals						
Doncaster Patients <ul style="list-style-type: none"> All house bound patients refer to the District Nursing service using discharge form B Non-house bound patients requiring Tier 1/Tier 2 wound care refer to the Practice Nurse using discharge form A Non-house bound patients requiring Tier 3 wound care refer to the Single Point of Access using discharge form B Patient requiring a referral to the Skin Integrity Complex Wound Clinic refer using discharge form B Patient requiring a referral to the Tissue Viability and Lymphoedema Service refer using discharge form B 				Non-Doncaster Patients <ul style="list-style-type: none"> House bound patients refer to their local District Nursing service. Non-house bound patients refer to their Practice Nurse. 		
NB: If the patient is discharged prior to 14 day refer to a Tier 3 service or to the District Nurses to arrange for a lower limb assessment to be undertaken.						

Figure 3. Lower leg wound pathway: secondary care

procurement and cost of these, with multiple sizes, fabrics and colour it was identified by the key stake holders and secondary Care Procurement it was not suitable as a first line product in secondary care.

A training programme was launched at DBTH providing education, skills and competencies around lower limb aetiology, wound causation and development and interventions to enable health professionals to follow and implement the clinical pathways. A key factor in reducing unwarranted variation in the assessment and treatment of wounds is ensuring that healthcare professionals have relevant and up-to-date evidence-based knowledge and skills to deliver the care effectively, timely and in the right place where an appropriate clinician is available; while overcoming barriers.

Figure 5 shows the UrgoKTwo competency document which is used to confirm healthcare professional competence before enabling them to start applying the treatment following a diagnosis and treatment plan.

RESULTS

Following the development of the clinical pathways data was collected before the implementation to establish a baseline in relation to the NWCSF recommendations. It was acknowledged that it would take time to embed and sustain all the recommendations at once, therefore it was decided that for the first 12 months the following areas would be monitored and measured be to quantify the outcomes achieved in a secondary care environment by implementing the NWCSF recommendations through clinical pathways:

- ▶▶ Change the model of care provision to allow more people with chronic lower limb wounds to receive equitable care – pathway development and implementation
- ▶▶ Deliver care in a clinic setting – number of lower leg wounds referred to the skin integrity team (acute wounds versus chronic)
- ▶▶ Increase the delivery of evidence-based care for chronic lower limb wounds – the number of patients with a chronic wound that required a lower limb assessment versus having the assessment undertaken
- ▶▶ Undertake a lower limb assessment within 14 days of identification (a decision was made by the skin integrity team that during the first phase of implantation the assessment pathway, due resources and time supporting the implementation of the other pathways throughout the Trust, would be complete for chronic within 14 days and acute within 21 days if wound is still present and transitioned to a chronic wound, with the plan to increase the acute wounds to 14 days in the future)
- ▶▶ For VLU use strong multilayer compression therapy – the number of patients that were suitable and had a lower limb assessment to be undertaken by the skin integrity team
- ▶▶ Post-healing compression therapy
- ▶▶ Improve data and information to support clinical decision making and enable quality improvement to be monitored.

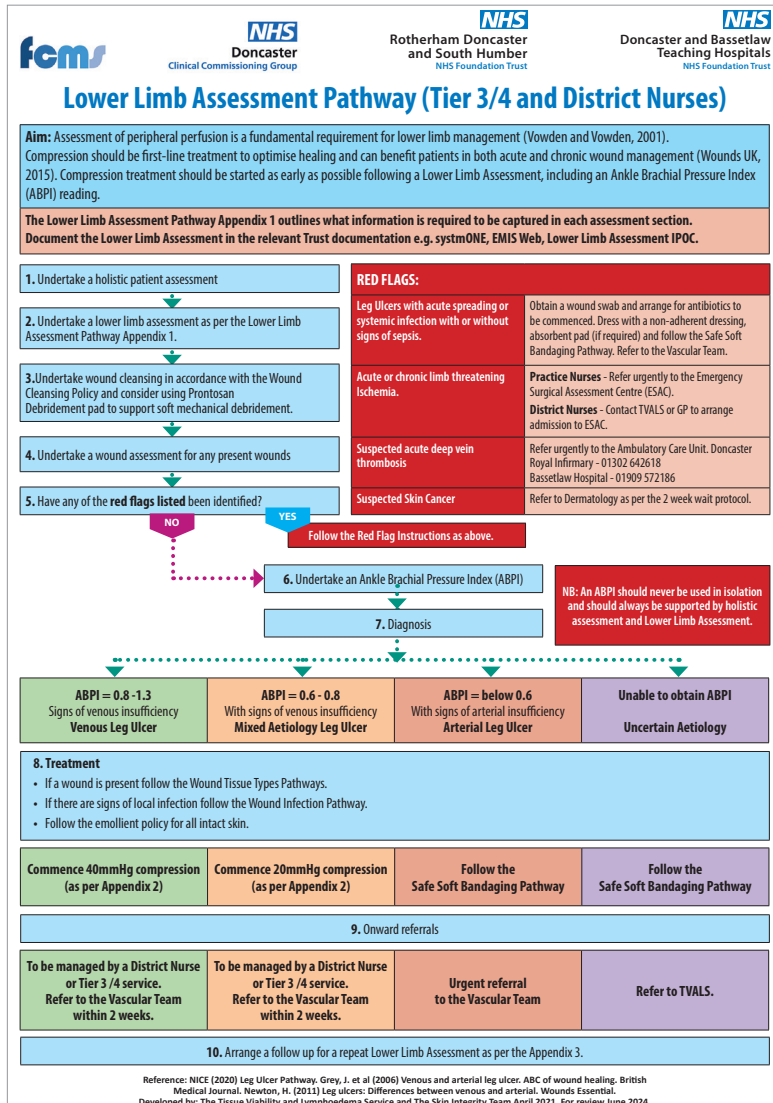


Figure 4. Lower limb assessment pathway

measured were achieved (Table 1). Whereas the post-implementation data from July to December 2021 (Table 2) showed there was an increase in all recommendations being achieved, thus improving practice (Figure 6):

- ▶▶ For DBTH inpatients 96% being scheduled for a lower leg assessment within 14 days for a chronic wound and within the next 28 days for an acute wound that transitioned to chronic; if the patient remained an inpatient
- ▶▶ 100% of inpatients suitable for a lower leg assessment receiving one within the scheduled time frame; if the patient remained an inpatient.
- ▶▶ 100% of patient that received a lower leg assessment has a diagnosis documented.
- ▶▶ 94% of patients receiving recommended treatment ± compression in line with the diagnosis.

DISCUSSION


The NWCSP Lower Limb recommendations signpost to relevant clinical guidelines or outline evidence-informed care that will improve healing and optimise the use of healthcare resources (NWCSP, 2020). The recommendations outline care interventions with the aim of promoting a rapid diagnosis, fast access to appropriate interventions for treatment or service provision. The skin integrity team felt this could be achieved by developing and implementing clinical pathways, which was also a recommendations from the NWCSP (2020) and Wounds UK (2016).


Kiyama et al (2003) stated clinical pathway implementation aligns clinical practice with guideline recommendations in order to provide high-quality care within an institution. There is evidence that shows they serve as useful tools to reduce variations in clinical practice, thereby maximising patient outcomes and clinical efficiency. This includes work by Fletcher et al (2018) and Adamina et al (2011) who expand stating they improve cost-effectiveness through standardisation of practice. Hegarty et al (2014) identified a consistent finding from 28 clinical pathways that they all contribute to better clinical outcomes compared with usual or standard care processes with 8 resulting in a reduced length hospital stay (Adamina et al, 2011; Allen et al, 2008; Barbieri et al, 2009; Chen et al, 2014; Kul et al, 2012; Leigh et al, 2012; Lemmens et al, 2009; Van Herck et al, 2010).

The second phase of the implementation (post-12 months) will include recommendations around:


- ▶▶ Encourage supported self-care, where possible
- ▶▶ For arterial leg offer offloading/casting for pressure relief
- ▶▶ Rapid access to specialist vascular services for vascular reconstruction
- ▶▶ Optimisation of comorbidities including disease management
- ▶▶ For VLU refer for endovenous ablation surgery.

The preclinical pathways implementation data (May and June 2021) identified that none of the NWCSP recommendations that were being






NHS Doncaster
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NHS Doncaster and Bassetlaw Teaching Hospitals
NHS Foundation Trust

**Assessment of Competency:
Practical Application of Compression Bandaging: UrgoKTwo**

Name:	There is an expectation with all competencies that you will be able to articulate underpinning anatomy and physiology including compression theory.			
Competency	Date of Compression Champion Training and over 80% pass mark achieved	Date application observed	Date application supervised	Date application supervised in practice (if required)
Attended Skin Integrity Champion session or Wound Care Alliance Training and achieved >80% in post-course questionnaire within past 2 years.				
Demonstrates knowledge of the significance of limb assessment prior to application of compression and is able to clearly explain this.				
Demonstrates knowledge of limb reshaping or additional protection if required within the UrgoKTwo systems: 1) required limb shape 2) areas requiring protection eg. tendons at joint of lower leg and foot				
Demonstrates knowledge of significance of measuring the ankle circumference, to include position, when to measure, anatomical landmarks and subsequent regularity.				
Demonstrates knowledge of appropriate UrgoKTwo system to use, once limb has been assessed appropriate to ankle circumference and ABPI.				
Demonstrates knowledge of ideal limb position required in order to apply the compression bandage e.g. foot flexed to 90 degrees and the issues of manual handling.				
Demonstrates an ability to accurately apply KTech to include positioning, overlap, technique and tension with reference to the Pressure Indicator.				
Demonstrates an ability to accurately apply KPress to include positioning, overlap, technique and tension with reference to the Pressure Indicator.				
Declaration of Competence I declare that I have undertaken a period of supervised practice with a suitably qualified practitioner. I have demonstrated a clear ability to apply the UrgoKTwo compression system safely identifying the underpinning theoretical knowledge. Mentee:..... Date:..... Mentor:..... Date:.....		Approved Competence: Name of SIT Nurse:..... Signature of SIT Nurse:..... Date:..... 3 year review date:.....		

Developed by The Skin Integrity Team, Tissue Viability and Lymphoedema Service and RDaSH community Practice Educators.

However in contrast Carthey et al (2011) states that in an effort to reduce variance in practice there is a propensity to try and specify every conceivable aspect of care which may lead to multiple guidance on the same area and in many cases very complex guidance. Hegarty et al (2014) agrees stating adherence to clinical pathway remains suboptimal, which in turn contributes to preventable harm and suboptimal patient outcomes. Then again Kiyama et al (2003) suggests that despite this they still they have the capacity to promote safe, evidence-based care by providing locally oriented recommendations for the management of a specific condition, while contributing to the reduction of complications and treatment errors. This is supported by Wounds UK (2016) who states a structured treatment pathway should be used in the management of all VLUs.

NHS Improving Quality (2019) published the National Evaluation of the Department of Health's Integrated Care Pilots 2012 results which stated there is a lack of common definitions of concepts underlying integrated care working. As a consequence, many terms including 'integrated care', 'coordinated care' and 'collaborative care' are used resulting in inevitable variations. Despite this The Department of Health (2012) state that a collaborative approach can improve communication, save time, reduce duplication of effort, improve working relationships and provide a better experience for people who use health and social care services. Therefore it can be suggested that by

Figure 5. Assessment of competency: UrgoKTwo

Table 1. Preclinical pathways implementation data at Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust (DBTH) May/June 2021		
	Numbers	Percentage
Patients admitted to DBTH with a lower leg wound	42	n/a
Chronic wounds (more than 14 days duration)	38	90%
Acute wounds (14 days or less duration)	4	10%
Patients requiring a lower leg assessment for their chronic wound (no history of one in the last 12 months as a minimum)	34	81%
Patients had a of lower leg assessment wounds scheduled for within 14 days (for chronic wounds) or 28 days (for acute wounds that transition to chronic), if the patient remains an inpatient	0	0%
Patients suitable for a lower leg assessment at their scheduled time	0	0%
Suitable patients had a lower limb assessment undertaken at their scheduled time	0	0%
Patients have a documented diagnosis following the lower leg assessment	0	0%
Patients received recommended treatment ± compression therapy in relation to their diagnosis	0	0%

Table 2. Post 6 months clinical pathways implementation data at DBTH July to December 2021

	Percentage (n)
Patients admitted to DBTH with a lower leg wound	281
Chronic wounds (more than 14 days duration)	67% (187/281)
Acute wounds (14 days or less duration)	33% (94/281)
Patients requiring a lower leg assessment for their chronic wound (no history of one in the last 12 months as a minimum)	83% (233/281)
Patients had a of lower leg assessment wounds scheduled for within 14 days (for chronic wounds) or 28 days (for acute wounds that transition to chronic), if the patient remains an inpatient	83% (223/233)
Patients suitable for a lower leg assessment at their scheduled time	16% (35/233)
Suitable patients had a lower limb assessment undertaken at their scheduled time	100% (35/35)
Patients have a documented diagnosis following the lower leg assessment	100% (35/35)
Patients received recommended treatment ± compression therapy in relation to their diagnosis	94% (33/35)

enabling organisations and teams to work together and respect other perspectives in healthcare it empowers and assists stakeholders to work more effectively as a team to address current challenges to help improve patient outcomes.

Compression therapy has been considered the gold standard of care for venous hypertension and leg ulcers since the late 1980s (EWMA, 2003) and as research has translated into clinical practice, bandage application practices have changed and improved, reducing healing times and increasing patient comfort and wellbeing (Young et al, 2013).

Wounds UK (2015) confirmed that compression should be first-line treatment to optimise healing and can benefit patients both acute and chronic management. However, it is vital that the healthcare professional has established that compression is safe to use for the individual. Therefore, a lower limb assessment and diagnosis is required to ensure early, safe and effective management can be commenced.

Wounds UK (2016) highlight a number of patient factors that should be considered in relation to the suitability for compression and the type of compression required. They also provide advantages

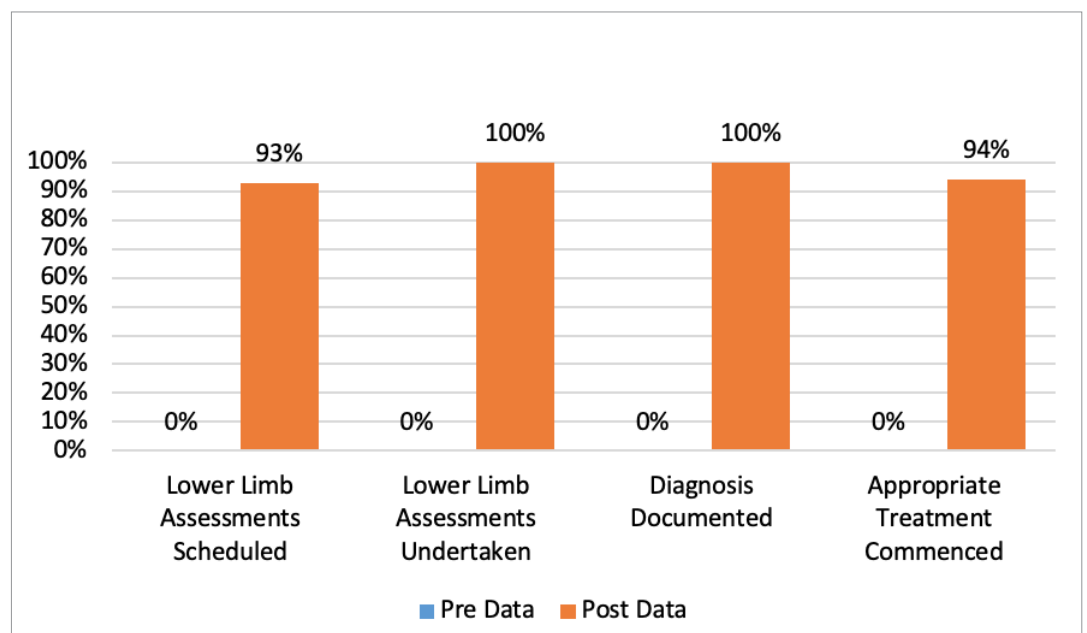


Figure 6. Comparison pre and post clinical pathways implementation data at DBTH as of December 2021

around hosiery kits over bandages, however this then limits the recommendations for areas in practice where hosiery kits are not feasible or cost-effective; such as in a hospital setting in secondary care. Therefore, the skin integrity team identified that a multilayer compression bandage system would be the most suitable for that environment as firstline.

A multilayer compression bandage system was selected as part of the NWCSP recommendations following a Cochrane review on compression that concluded that multicomponent bandage systems are more effective than single component bandage systems in healing VLU's (O'Meara, 2012). UργοKTwo was selected for use at DBTH and across the Doncaster Place Wound Care Alliance due to Benigni et al (2007), Sanderson et al (2012) and Hajjar et al (2007) all finding that the product effectively supported wound healing in patients with VLU's. In addition, Jünger (2009) identified that it effectively provided sub-bandages pressures after seven days and both Hanna et al (2008) and Weindorf et al (2012) stated this was achieved despite people with varying skills applying the bandage system. Therefore it can be suggested it is a safe and easy to apply bandaging system.

Next steps

Data will continue to be collected and analysed for the first implementation stage that remains from January to June 2022. This includes healing rates for all patients from May 2021 at 12 weeks, 24 weeks and 48 weeks. During this time the clinical pathways will be enhanced to include an interactive primary dressing to establish if this will enhance the healing rates further when compared with the first 12 months with compression alone.

From July 2022 additional data will be collected when additional pathways are developed and launched around supported self-care, arterial leg offer offloading/casting for pressure relief, rapid access to specialist vascular services for vascular reconstruction, optimisation of comorbidities including disease management and VLU referrals for endovenous ablation surgery. The current pathways will also be updated taking into consideration skin tone and diverse populations in relation to terminology, language and images. Education is to continue throughout the process to ensure the clinical pathways continue to be embedded onto standard

practice. Work is also underway to implement a Foot Ulcer Assessment Pathway to work on the same principles as the clinical pathways for the lower leg to improve practice for the care of foot wounds.

CONCLUSION

The recommendations published for lower limb care by the National Wound Care Strategy Programme (NWCSP) (2020) seek to improve in the care of patient with wounds. The Skin Integrity Team at Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust (DBTH) identified the need to implement the NWCSP Lower Limb recommendations for the diagnosis and treatment of leg ulceration in a secondary care environment.

A collaborative group developed clinical pathways in line with the NWCSP lower limb recommendations to reduce variations and implement best practice, which was supported by education and training covering all aspects, knowledge, skills and competencies within the pathways.

An increase was seen in adherence to all recommendations being measured within the first phase of implementation suggesting improving practice had been achieved. WUK

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DECLARATION OF INTEREST

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