



**National Wound Care
Strategy Programme**

**Lower
Limb
Wounds**

Implementing the Lower Limb Recommendations and Learnings from the First Tranche Implementation Sites

Final Evaluation Report - Summary Version

July 2024

Working in partnership with

**Health
Innovation
Network**

NHS



Explanatory notes on this Evaluation

This document is presented with the visual identity of the National Wound Care Strategy Programme (NWCSP) branding, an NHS England commissioned programme. It is important to clarify that the independent evaluation was conducted by PA Consulting, and neither NHS England nor the NWCSP had any influence over the findings and conclusions presented herein. We acknowledge and appreciate the thorough and impartial work conducted by PA Consulting.



Foreword

It is with great pride that I introduce the Final Evaluation Report 'Implementing the Lower Limb Recommendations and Learnings from the First Tranche Implementation Sites.' This report not only signifies a key moment in our ongoing commitment to improving healthcare outcomes but also highlights the significant strides we have made in enhancing wound care across England.

The ongoing work to improve wound care has focused on addressing the unwarranted variations in wound care services and to elevate the standard of care provided to individuals suffering from lower limb wounds. This initiative has been central to our aim to reduce patient suffering, improve healing rates, prevent complications, and, ultimately, deliver care that is both high in quality and cost-effective.

The findings and recommendations detailed in this report are a testament to the hard work and dedication of countless staff providing NHS services. Their commitment has resulted in improved healing rates, reduced recurrence of leg ulcers, and a more streamlined use of resources.

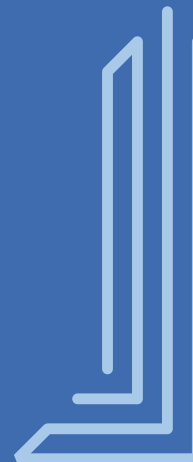
This work has not only improved outcomes for thousands of patients but also supported our environmental objectives by reducing the carbon footprint associated with healthcare delivery. It exemplifies how health innovation can align with ecological sustainability, advancing our goal towards a 'Net Zero' NHS.

The evaluation is a culmination of the hard work that has gone into improving lower limb wound services. It is a shining example of what we can achieve when we come together with a common purpose and a shared commitment to excellence. As we look to the future, the lessons learned from this work will undoubtedly influence and improve wound care practices across the NHS and beyond.

I invite all NHS staff and the wider public to engage with the findings of this report. Together, we can continue to drive improvements in patient care, making a lasting difference in the lives of those we serve.

Thank you to everyone who has played a part in this transformative work.

Charlotte McArdle
Deputy Chief Nursing Officer
NHS England



About the National Wound Care Strategy Programme – Lower Limb Workstream

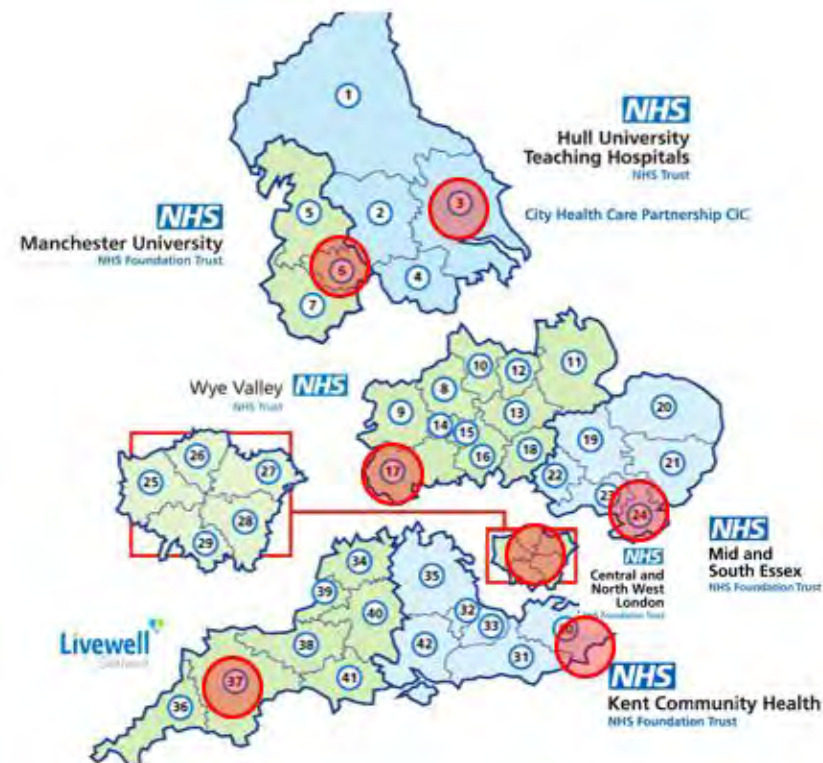
In 2018, the National Wound Care Strategy Programme (NWCSP) was established by NHS England to address the unwarranted variation in wound care services in England, the lack of robust wound care information, and inadequate levels of wound care knowledge and skills across the health workforce. The lower limb workstream aimed to help systems to improve wound healing, prevent harm, reduce patient suffering, increase staff productivity, and deliver financial savings.

From the outset, the lower limb workstream sought to drive local improvement of the quality of care and outcomes for people with wounds through;

- Setting standards for clinical practice
- Developing educational frameworks and resources to upskill the workforce
- Implementing, testing and validating standards with local systems
- Developing implementation and measurement tools

The seven First Tranche Implementation Sites (FlmpS) – namely Hull, Manchester, Wye Valley, Kent, Livewell Southwest, Mid & South Essex, and Central & North West London – have been instrumental in developing insight and knowledge into the programme management, data collection and collaborative working that is required to implement the leg ulcer recommendations. The learnings from each site have been harnessed to develop the leg ulcer best practice bundle alongside additional resources and materials which will aid the implementation efforts of wound care standards in future.

National Wound Care Strategy Programme



What has been done within the final evaluation of the NWCSP Lower Limb Workstream, and what are the next steps?



What the key metrics have told us about the programme

We have analysed and interpreted the data submitted via each implementation site and made available on the wound care dashboard, gauging real-world achievement against the proposed implementation case assumptions.



What participants have told us about the programme

The ThoughtExchange platform has been used to capture thoughts from participants within the lower limb workstream across all FImpS, alongside FImpS self-evaluations and artefacts provided to the NWCSP.



Conclusions & Recommendations

Consolidating the position from quantitative and qualitative analysis, we have been able to draw conclusions from the lower limb workstream and develop a series of recommendations for future adoption.

Based on the analysis in this review, there is a compelling case for adopting the principles of optimal lower limb wound care to improve outcomes

Since its inception in 2018, the National Wound Care Strategy Programme (NWCSP) lower limb workstream has **demonstrated the value of comprehensive lower limb wound care services** across the seven First Tranche Implementation Sites (FImpS), **significantly exceeding the implementation case assumptions in respect to clinical outcomes such as healing and recurrence rates**. In addition, refined **economic analysis suggests high value for money, combined with a positive environmental impact by reducing the carbon footprint**, in line with achieving sustainable service models.

What participants have said about the lower limb workstream:

“It has encouraged us to want to achieve excellence for people we work with and our colleagues - good for retention and wound healing”

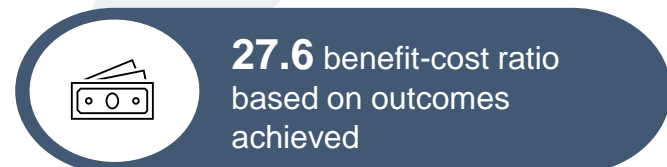
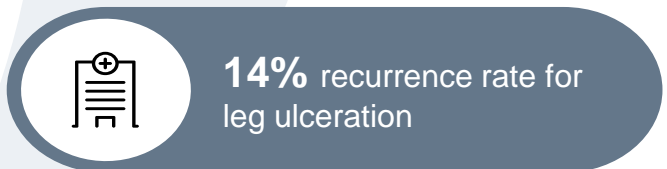
“The project has undoubtedly improved lower limb wound care across the region”

“The NWCSP raised awareness within the organisation of not just lower limb wounds but all wounds”

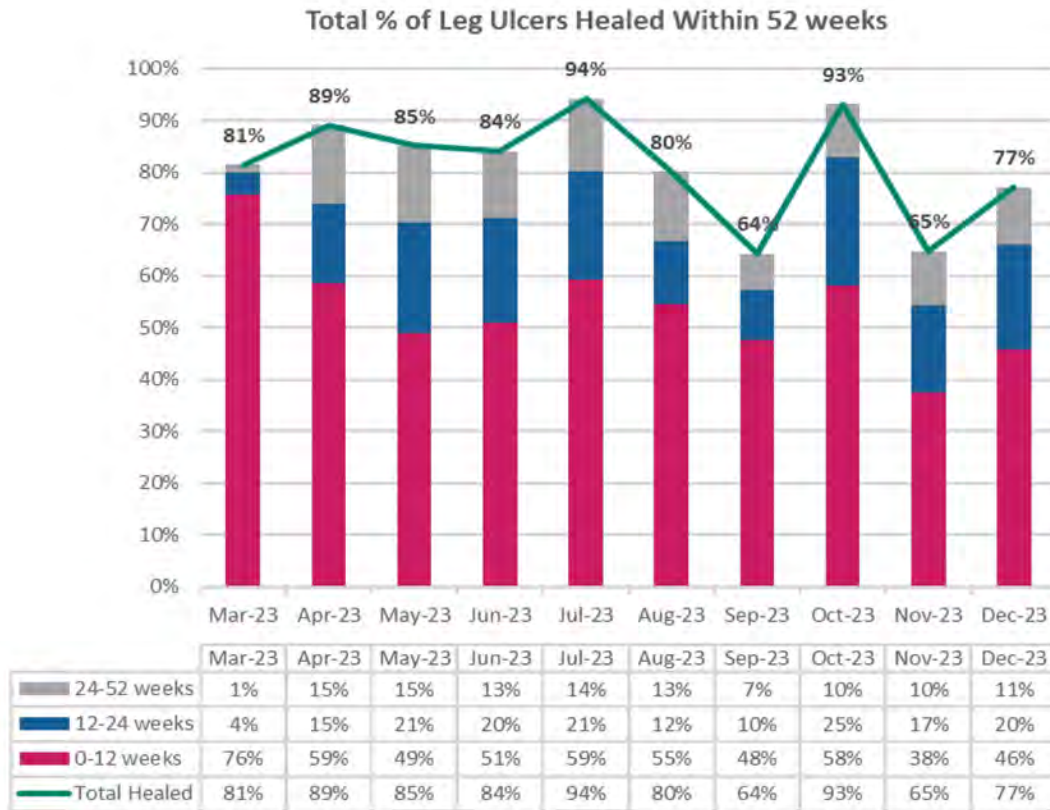
“The NWCSP has been a vehicle for driving initiatives forward”

“Data and clinical delivery are intrinsically linked, but often seen as separate issues, so having a national drive around this has been very useful”

Lower Limb Workstream Summary Metrics



Key findings from the quantitative evaluation include high healing and low recurrence rates observed, leading to a refined position on the economic benefits



- The profile of wound healing is non-linear as shown above, with the greatest proportion of healing occurring at 0-12 weeks following identification, and two-thirds of all healing occurring within 24 weeks
- The lower limb workstream has exceeded the stated academic baseline, implementation case and interim findings, in relation to both wound healing (84% for all wounds at 52 weeks) and recurrence rates (14%)

	Leg Ulcer	Non-Diabetic Foot Ulcer	Diabetic Foot Ulcer	
Total number of patients	1019	186	521	
Total number of patients recorded as healed at 52 weeks	813	165	465	
Cumulative Healing Rates:	0-12 Weeks	52.1%	57.5%	63.9%
	12-24 Weeks	68.8%	76.9%	79.1%
	24-52 Weeks	79.8%	88.7%	89.3%

- Healing rates have been found to be consistently high across leg ulcers and foot ulcers, however it is evident that there is more to be done to join up foot ulcer care as part of dedicated services
- There is a strong economic case for adoption of dedicated lower limb wound care services, as shown by the updated benefit-cost ratio of 27.6 derived from this evaluation

Achieving the majority of healing within 24 weeks of identification can have a positive impact on service provision and the environment

As a key finding for this evaluation, **over two-thirds of all reported lower limb wound healing occurred within the first 24 weeks post-identification**. This non-linear profile of wound healing timescales has several potential impacts on service delivery and workforce, including:

- **Reduction in clinical time and overall number of visits required to provide care**
- **Reduction in dressings, associated wound care products and prescribed medication required to deliver clinical care**
- Ability to shift the focus of delivery from reactive treatment, to more pro-active and preventative measures

Furthermore, in line with sustainable models of care as set out by the Delivering a 'Net Zero' Health Service report⁵, new service models must focus on sustainability and reducing emissions. Optimising the location of care ensures that patients interact with the service in the most efficient place, which may be closer to, or even in, their home. Not only does this improve patient experience and offer greater access to care, but it also reduces emissions by helping to avoid unnecessary hospital visits and potential admissions.

Whilst work is in progress to validate the environmental impact in relation to the NWCSF recommendations, early indications suggest that the programme has had a positive impact. To quantify the carbon (net zero) impact of the programme, the NWCSF Team worked with the Health Innovation Network National Net Zero Lead to explore the potential carbon impact.⁶ Whilst there are recognised limitations in relation to available metrics, the underpinning methodology used was based primarily on a comparison of the national baseline for venous leg ulcers and the healing rates of leg ulcers at the FlmpS during the 10-months of data capture (March to Dec 23).

⁵ NHS England, 2020. Delivering a 'Net Zero' National Health Service, London: NHS England.

⁶ National Wound Care Strategy Programme FlmpS Evaluation: Carbon (Net Zero) Impact Report

There is a high degree of confidence that a healed leg ulcer has a lower carbon impact than an unhealed leg ulcer (annual variance of 656 kg CO₂e). A scenario has been modelled which shows that if all the patients that received best practice care in line with the Lower Limb Recommendations had received sub-optimal care, the estimated carbon impact would have been 693,446 CO₂e; an annual net impact (i.e. more carbon-intensive) of 473,305 kg CO₂e.

However, it can be difficult to understand carbon intensity based on kg CO₂e, so it is often common practice to turn this data into carbon equivalencies. For this evaluation, several carbon equivalencies were used. This is to give some form of scale and frame of reference to how carbon-intensive care is and the associated savings. The net annual impact of 473,305 kg CO₂e is equivalent to 1,764,690 car miles or 277 cars driven yearly. To absorb the same amount of carbon emissions, it would require planting 19,224 trees, covering an area equivalent to 3 football pitches, every year.

Although there are limitations to the current data, it is important to signal the potential carbon reduction impact of good patient care, to continue to develop new models of delivery and to support adoption of best practice.

As data in relation to wound care and outcomes continues to mature, further analysis in relation to carbon impact should be undertaken to increase the accuracy of the analysis and the assumptions.

Estimated carbon (net zero) impact from patients receiving optimal care during the lower limb workstream for leg ulcers:



473,305kg of CO₂e reduced during the programme, equivalent to;



1,764,960 car miles, or



277 cars driven in a year

The qualitative review has been structured around intervention themes outlined within the implementation case, drawing on feedback from several sources

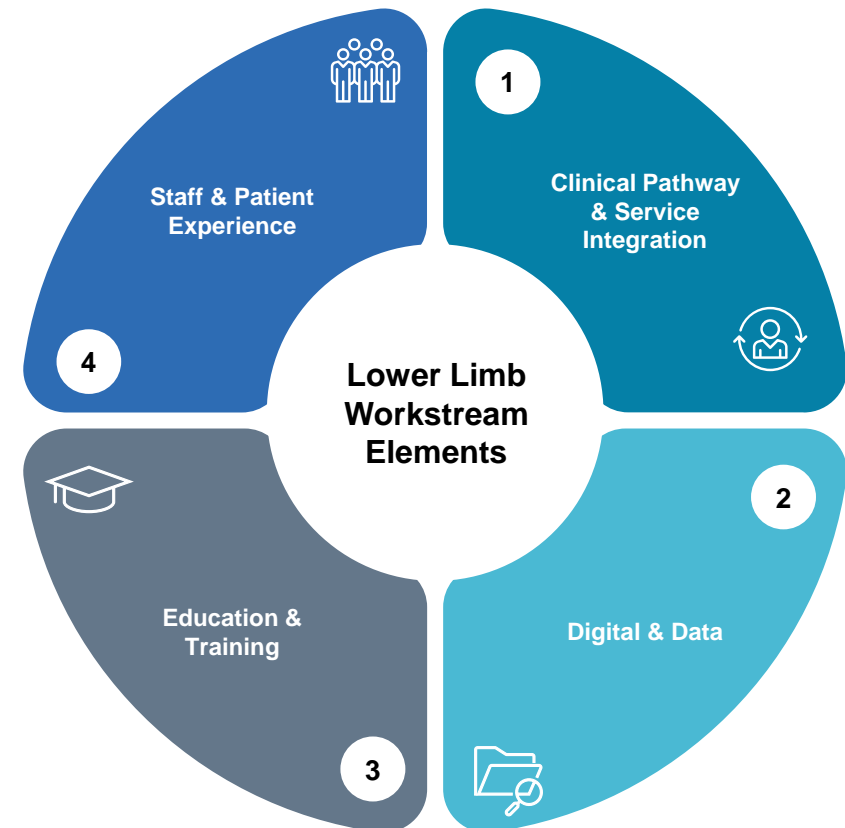
This analysis draws on several sources used to inform the final evaluation as outlined below:

- 1 ThoughtExchange survey** - 29 respondents and over 400 interactions with the platform, highlighting the key issues and alignment across sites
- 2 Review of FImpS self-completed final evaluation blueprints**, containing details of their specific programmes of work and progress
- 3 Desktop review of artefacts** and accompanying resources provided by FImpS

A core part of the review has been the interaction with clinical, analytical and programme management staff from across FImpS achieved via the ThoughtExchange platform, which is a tool for multi-directional dialogue, enabling participants to anonymously share thoughts, and to prioritise thoughts shared by others to easily identify areas which most resonate with the group. This ThoughtExchange was sent to all sites from wave 1, 2 and 3 to gain their perspectives on the successes and challenges of the lower limb workstream.


Overall, the ThoughtExchange responses indicate that the NWCSF lower limb workstream has been effective in driving initiatives forward, improving data collection, and facilitating knowledge sharing among various organisations. It has also helped in implementing a significant change to the pathway, improving patient outcomes, and providing a national picture of best practice. However, there are areas that need improvement such as poor-quality community datasets, difficulty in achieving integrated data requirements, and unrealistic data ambitions. There is also a need for better engagement from all primary care services, standardisation in wound care templates, and a more focused approach towards data.

The qualitative review section has been structured around 4 key pillars from the initial implementation case:






In consideration of the findings in this evaluation, a series of recommendations have been developed to promote future adoption of dedicated wound services (1/2)

Drawing on the key findings throughout the quantitative and qualitative analysis of this final evaluation, a series of recommendations have been developed and presented below with the aim of promoting future adoption and uptake of lower limb recommendations. **The four recommendations listed in bold are suggested as the key to future scaling of optimal wound care.**

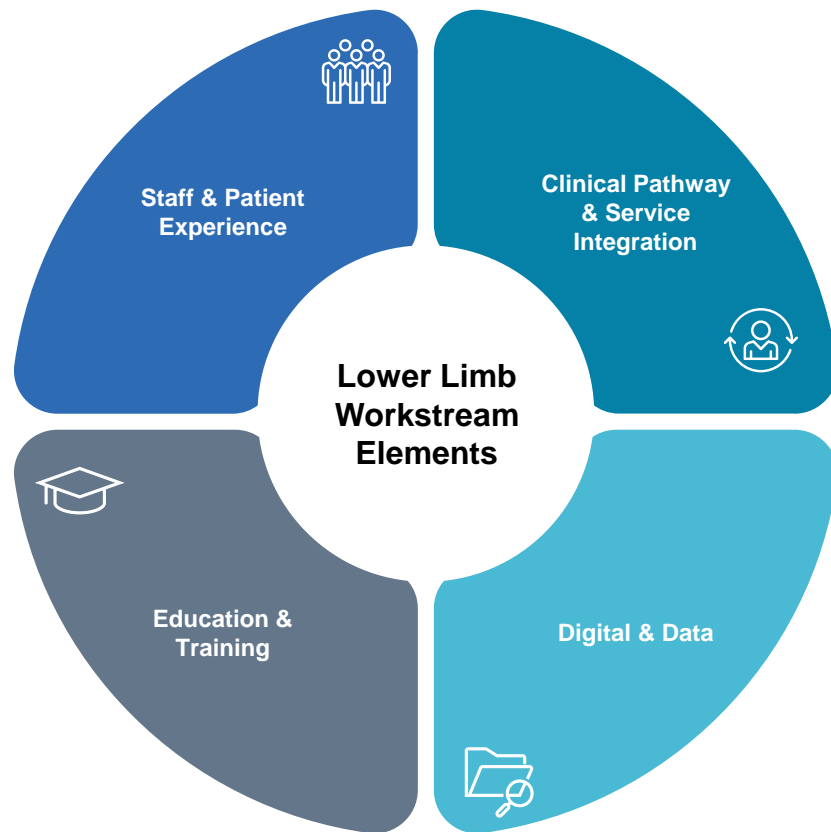
Pillar	Conclusions	Recommendations
 <p data-bbox="180 901 422 961">Clinical Pathway & Service Integration</p>	<ul style="list-style-type: none"> The lower limb workstream has exceeded the stated academic baseline, implementation case and interim findings, in relation to both wound healing and recurrence rates. The profile of wound healing is non-linear, with the greatest proportion of healing occurring at 0-12 weeks following identification. There is a strong economic case for adoption of dedicated lower limb wound care services, as shown by the updated benefit-cost ratio of 27.6 derived from this evaluation. The overall application of strong compression therapy in suitable cohorts is low. This may be in part relating to recording of the information and take into consideration factors such as patient preference, time and techniques used, clinical experience and other identified contraindications or precautions for this modality. Whilst there is some indication that completion of timely assessment and application of compression may positively correlate to healing rates, further work to substantiate these finding would bolster the case for adoption. Early indications suggest that delivery of optimal wound care is likely to have a positive environmental impact. Healing rates have been found to be consistently high across leg ulcers and foot ulcers, however it is evident that there is more to be done to join up foot ulcer care as part of dedicated services. 	<ul style="list-style-type: none"> ICBs should commission dedicated leg ulcer services at place level, requiring providers to report on agreed, standardised metrics. Implementation of the leg ulcer best practice bundle should be harnessed to achieve widespread adoption. Providers should give prominence to wound care as a transformation priority, on the strength of the clinical outcomes, value for money and positive staff and patient feedback as evidenced within this review. Equity of service provision should be addressed for diabetic and non-diabetic foot ulcers services. Integration of dedicated wound care services should consider any possible effects on up or downstream services, to ensure no unintentional increase in waiting times for specialist intervention. Further exploration of the relationship between timely assessment, application of compression and healing rates is needed to validate the findings from this evaluation. Future adoption of wound care best practice should have a stronger emphasis on foot ulceration, ensuring the appropriate clinical teams are actively engaged.

In consideration of the findings in this evaluation, a series of recommendations have been developed to promote future adoption of dedicated wound services (2/2)

Pillar	Conclusions	Recommendations
 <p>Digital & Data</p>	<ul style="list-style-type: none"> Recording of key metrics has improved since the interim evaluation, however capturing outcomes is currently onerous for clinicians and as a result, inconsistencies remain in tracking outcomes of dedicated lower limb wound care services. Robust analysis on the available data is challenging due to several factors, namely the staggered onboarding of sites and the changing list of metrics as the lower limb workstream has progressed. Use of wound management digital systems (WMDS) have the potential to yield benefits in relation to patient experience and tracking wounds, however, need to be fully integrated with Electronic Patient Record (EPR) systems to avoid double-entry. Standardisation around assessment proformas and operating procedures may augment clinical practice, however further evaluation is needed to determine any links between improved patient outcomes and the use of WMDS. 	<ul style="list-style-type: none"> Data collection should focus on five core aspects of wound care, including total caseload, comprehensive assessment, treatment, healing rates and recurrence. This standardisation will enable identification of unwarranted variation and targeted improvement efforts at both national and regional levels. Digital Systems used to augment wound care services should demonstrate full integration with existing EPR systems, ensuring data collection is automated and captured in relevant national datasets - such as the Community Services Datasets (CSDS) - to avoid placing burden on clinicians to manually record metrics. Standardise wound care assessment templates, with a view to work towards standardising clinical data collection and reporting via EPR systems. Implementation of WMDS should be clinician led to achieve sustainable usage. Introducing a new digital technology into a workplace requires the workforce to accept and champion its usage. Lead clinicians should have credibility within their teams, should be early adopters and take steps to encourage their colleagues to implement appropriately.
 <p>Education & Training</p>	<ul style="list-style-type: none"> Utilising NHS England (formerly Health Education England) Tiers 1 and 2 training modules as a baseline for lower limb care has been well received by FImpS. Training and delivery methods need to be targeted to local service needs and priorities. 	<ul style="list-style-type: none"> Standardising education will ensure consistency in assessment and management. Each service will have their own individual needs in relation to training and should consider various delivery methods to ensure uptake. Providing services with a national forum to share learning is an integral aspect to adopting wound care standards.
 <p>Staff & Patient Experience</p>	<ul style="list-style-type: none"> The response to dedicated wound care services from both staff and patients has been overwhelmingly positive, as evidenced by engagement surveys carried out by several FImpS and the ThoughtExchange survey. 	<ul style="list-style-type: none"> Service provision should continue to support shared decision making between practitioners and service users, enabling personalised care planning and embedding a continuous improvement approach.

Four key recommendations have been identified through the lessons learned from the First Tranche Implementation Sites to inform future adoption of lower limb wound care best practice

To complement the findings contained within this final evaluation in relation to the lower limb workstream elements, four key recommendations have been outlined with the aim of promoting future adoption and uptake of lower limb best practice wound care.



- 1** Data collection should focus on five core aspects of wound care, including total caseload, comprehensive assessment, treatment, healing rates and recurrence. This standardisation will enable identification of unwarranted variation and targeted improvement efforts at both National and Regional levels. **National & Regional**
- 2** ICBs should commission dedicated leg ulcer services at place level, requiring providers to report on agreed, standardised metrics. Implementation of the leg ulcer best practice bundle should be harnessed to achieve widespread adoption. **ICBs**
- 3** Providers should give prominence to wound care as a transformation priority, on the strength of the clinical outcomes, value for money and positive staff and patient feedback as evidenced within this review. Equity of service provision should be addressed for diabetic and non-diabetic foot ulcers services. **Places & Providers**
- 4** Digital Systems used to augment wound care services should demonstrate full integration with existing Electronic Patient Record systems, ensuring data collection is automated and captured in relevant national datasets - such as the Community Services Datasets - to avoid placing burden on clinicians to manually record metrics. **Places & Providers**

Acknowledgements

We would like to express our sincere gratitude to all the individuals and organisations who contributed to the success of the National Wound Care Strategy Programme (NWCSP) and its Lower Limb Workstream.

Firstly, we are deeply thankful to the staff at the First Tranche Implementation Sites for their dedication to implementing the Lower Limb Recommendations. Their time, collaborative approach, and commitment have made this evaluation and the positive findings possible. Special thanks go to the teams at Kent Community Health NHS Trust, Hull University Teaching Hospitals Trust & City Healthcare Partnership, Manchester Foundation Trust, Wye Valley NHS Trust, Mid and South Essex (MSE) Community Collaborative, Livewell Southwest, and Central and North West London NHS Foundation Trust.

We would also like to acknowledge the vision of Una Adderley, whose guidance has been pivotal to the programme. The delivery of the project would not have been possible without the efforts of Simon Wootton, whose leadership was instrumental in bringing this project to fruition.

For their work on Data, Digital, and Information, we extend our gratitude to Ann Jacklin and Mike Watson, who have been crucial to the project's success.

We are particularly thankful to our clinical leads, Krishna Gohil and Rachael Lee for their expertise in leg and foot ulceration, which has guided us through the complexities of clinical implementation, and again to Rachael Lee for ensuring smooth continuation and final delivery of the evaluation.

We also extend our gratitude to Pete Waddingham for his Net Zero work, contributing to our sustainability goals.

Thank you to the administrative and project support team who ensured the smooth delivery and coordination of the programme throughout.

Our advisory groups, including the Lower Limb Clinical Group and the Education Group, deserve special recognition for their work in advising, challenging, and co-producing resources. Their input has been invaluable.

We are also grateful for the efforts of the Royal College of Surgeons, the Vascular Society, and the respective working groups for their work on the vascular referral forms, which have been essential to our clinical processes.

The eLearning for Health Team has been instrumental in building the online education modules, providing crucial resources for ongoing learning and development.

The Wound Care Workforce Framework created by Skills for Health has been a foundational element of our project, and we thank them for their contributions.

Your collective efforts have been integral to the success of this project, and we are immensely thankful for your dedication and hard work.

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 [NatWoundStrat](https://twitter.com/NatWoundStrat)

 NatWoundStrat@mft.nhs.net

