THE LEG ULCER FORUM JOURNAL

Issue 29 2018

Reducing Unwarranted Variation:

Because Legs Matter

www.legulcerforum.org

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Vacancy x2
Please contact Lynne Blake if you
are interested in being involved in the LUF

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Welcome From the Editor

Helen Tilbe

This edition of the Leg Ulcer Forum journal focuses on ways in which leg ulcer management can be improved for those people who have this chronic condition. There has been a recent drive nationally to raise the profile of health issues relating specifically to legs. Key people have come together to address this through the Legs Matter campaign so it is timely for the journal to include an article by Una Adderley outlining the Legs Matter campaign. This leads on from issues highlighted in Betty's Story, which NHS England has kindly allowed us to include in this edition.

Kathy Radley offers a dermatological overview of the lower leg to complement leg ulcer management. As she explains, despite many patients experiencing issues which straddle the fields of dermatology and tissue viability, these specialities often run very separately, making it a challenge for people with leg ulcers to receive joined-up seamless care. Kathy's article aims to build on existing knowledge so that health care professionals feel more able to advise and support their patients with some of the more common dermatological conditions their patients may also experience whilst understanding when there is a need to request a referral to the dermatology service for the more complex issues.

Kim Drewery shares a case study centring on the challenges of managing complex multifactorial conditions affecting the lower legs. This also highlights the way in which the NHS can work in partnership with industry for the benefit of patients and health care professionals which will ultimately support the financially challenged NHS.

We also look at how other health care services such as allied health care professionals within the health system itself can add value to the management of lower leg conditions. Esther Afolabi and Jane Gardiner, specialist physiotherapists at Sheffield Teaching Hospitals NHSFT, present an article which highlights the added benefits allied health care professionals can bring to the management of lower leg problems.

As ever, we are extremely grateful to all the authors for their contributions. It is vital that, as professionals, we share practice and knowledge and raise the profile of lower leg problems with our colleagues and more widely.

Reflecting on 2018, the Leg Ulcer Forum held two conferences, one in Gloucester and the other more recently in Bristol. Although the programmes varied, the focus of both looked at where we are with leg ulcer management in 2018. Both days were well attended and very positively received.

The theme of the Gloucester conference was "Reducing Unwarranted Variation in Leg Ulcer Management". We were very pleased to welcome Margaret Kitching, Chief Nurse NHSE North , as the key note speaker. Her presentation looked at wound care as part of the Leading Change Adding Value Programme. This is a framework for all nursing and care staff specifically focussing on reducing 'unwarranted variation' in all services and care outcomes by identifying gaps and introducing measures to address these variations. A key tool for identifying inequity is audit and this subject was addressed in another presentation.

The title of the Bristol conference was" Because Legs Matter" and covered issues relating to the Legs Matter campaign. It included a presentation entitled "Wounds of the Lower Leg: Have we got it right?" from Brenda King, who, as well as being a key member of the Leg Ulcer Forum, also sits on the Legs Matter steering group. Brenda was looking at whether leg ulcer management is still moving in the right direction – what have we learnt over the years since chronic leg ulceration was acknowledged by health care professionals to be a condition requiring a clearer focus and what changes do we need to make to respond to the needs of people with leg ulcers in 2018?

Towards the end of the day, Irene Anderson successfully kept delegates engaged by chairing a lively debate "Who is involved in Venous Leg Ulcer Management?". This addressed the variations in the scope of practice for the increasing number of staff roles which now exist within the NHS workforce, from nursing associates to assistant practitioners and health care assistants. The subject was discussed with great passion and enthusiasm by the delegates.

I hope you enjoy this edition of the journal and if it inspires you to write something for a future issue then we'd love to hear from you.

Helen Tilbe
Clinical Nurse Specialist

A View from the Chair

Mark Collier

After a very successful Conference and AGM in Sheffield in April 2017, a new member was welcomed to the Executive Committee (Jackie Dark) - she had previously had the opportunity of being introduced to the realities of being an Executive Committee member having been a co-opted executive member for a period of around six months - the remainder of the year proved to be challenging for the promotion and ongoing activities of the Leg Ulcer Forum (LUF).

Unfortunately due to a change in a large number of NHS Trust views relating to the granting of leave/ time for attendance at study days etc. - primarily precipitated by the NHS drive at a National level to reduce the spend on the use of Agency staff, the second planned Autumn Educational Event had to be cancelled due to a lack of numbers - a shame for all as the programme promised to be both clinically and politically relevant, especially as the LEGS MATTER Campaign was just beginning to get off the ground - a campaign the Leg Ulcer Forum are proud to be to a co-sponsor/cooperating organisation of.

In November of 2017 the current Chair (Susan Knight) stood down - simply due to a change in her personal circumstances - and I was appointed, however I am pleased to confirm that Susan remains an active and valuable Executive Committee member and I am sure you would like me to thank her publically on your behalf for the sterling work she undertake during her tenure as Chair of the LUF. She now acts as the European Wound Management Association (EWMA) liaison link on behalf of the LUF. At around the same time it became apparent that our current administrator was experiencing difficulties in fulfilling her role with the LUF, again due to a change in personal circumstances.

During the Christmas/New Year period, the current administrator in discussion with the myself confirmed what had been anticipated, that due to her ongoing personal circumstances which were unresolved, she felt it best that she stepped away from the LUF so that she could concentrate on family matters, after which the search for a new administrator commenced.

I am pleased to announce that after a recruitment process, a new administrator was appointed in April 2018 - Lynne Blake - who I am sure many of you have now either had the chance to meet or correspond with, hence you will have also noticed the change of our registered address on our website - the contact phone number remains unchanged. Around the same time, the LUF Executive were also pleased to welcome another new member - Kim Drewery - who is a colleague of Brenda Knight and who has been actively involved previously with any conference that the LUF have held in Sheffield. For a full list of the current LUF Executive, their professional titles and current LUF roles please see page 2 of this journal.

This year the LUF has held two very successful Conferences in Gloucester and Bristol, both of which were extremely well evaluated and more than fulfilled the delegates expectations (based on their feedback). Although our membership is currently around 150 (but growing) we know they you are a dedicated and influential group of practitioners, so please do not hesitate to get in touch with me or any of the Executive via our Administrator to suggest subjects you would like us to cover in our future conference programmes - the LUF Conferences are the only ones dedicated solely to the management of Patients with Leg Ulceration and Associated Issues - and or send in your contributions / reports of any clinical evaluations/research that you have been involved with to the Journal. Remember your voice matters and the Executive are keen to represent you, a very important group of professionals.

Finally I would like to thank all of the current (and past members of) LUF executive committee - who are all employed professionally full time and who meet on behalf of the LUF in their own time - we have met in total four times during this year.

Here's to the year ahead and the promotion of evidence based best practice for the benefit of all patients at risk of or who are suffering from a Leg Ulcer.

Mark Collier
Nurse Consultant and Associate Lecturer - Tissue Viability (UK).

"This year the LUF has held two very successful Conferences in Gloucester and Bristol, both of which were extremely well evaluated"

Mary Hinds Director of Nursing
and Allied Health Professions PHA

Leg Ulcer Forum Northern Ireland

Caroline Graham

Mrs Vivienne Murdock
Chronic Oedema Nurse of the Year
Second Place

Northern Ireland's affiliation with the Leg Ulcer Forum UK spans over 20 years, during which time the executive committees of both specific areas have shared examples of best practice and worked together to ensure the shared vision of promoting evidence-based practice for the benefit of all patients at risk of or who are suffering from a leg ulcer. In doing this a strong relationship between all of the UK Leg Ulcer branches has been established.

Executive Committee Membership

During the last three years our executive committee has seen a change in membership. Roisin McSwiggan stepped down as chair and supported me into the role for the first 2 years. Roisin resigned from the committee in Autumn 2018, and we would like to thank Roisin for her vision and in guiding the NI LUF through some big changes not least the amicable split from the All Ireland LUF. At our last AGM in October 2018 we expanded our executive committee from 5 to 9, which included representatives from our 5 main Health & Social Services Trusts, a Private Hospital, Independent General Practitioner Nurse and Further Education Nurse Consultants. This has facilitated us to identify and allocate main roles within the group. We also continue to have the support and knowledge of our 2 Honorary Members. We meet four times per year and more frequently when preparing for conference. We have used each of our last two conferences to have our AGM and set our meetings for the subsequent year.

Conferences / Education

Education has been a big focus within our executive. Three years ago we held a study day on the recognition and management of lymphoedema. It dealt primarily with the practical issues such as the specialist area of bandaging as well as selecting and fitting of hosiery. This study day was repeated in 2 geographical areas in NI. This facilitated staff to attend with reduced travel distance. Both days were well attended and evaluated. We then supported a master class for Tissue Viability Nurses on the treatment and management of Lymphoedema. Our main speaker was Justine Whittaker who not only gave us a high level educational presentation but also made us really examine our individual practice with a few laughs along the way.

On 28th April 2017 we held a conference titled "New Horizons for the Management of Patients with Leg Ulcers". The response from almost 100 delgates and over 20 company sponsors was phenomenal. The day started with opening remarks from Mrs Mary Hinds (Director of Nursing and Allied Health Professionals at PHA). Her message very clearly linked the implications of chronic diseases such as leg ulcers to the bigger health care picture, incorporating patient experiences, economic effects and the impact we as professionals can have. Her talk was supported by Neil Skyes who elaborated on Health Economics. Brenda King updated us on the Regional UK LUF followed by an overview of which compression to use with individual patients. There was a talk from Alison Hopkins on the Best Practice Statement. Finishing with a very informative and useful talk by Paul Blair (Honorary Executive Member) on the various medical interventions for patients with leg ulcers.

Our most recent conference was 25th October 2018. It was held around the centre of Northern Ireland and continued the theme of lymphoedema/ leg ulcers and titled "Reality, Myths, Practical and Legal Issues in Lymphorrhoea Management". The first half of the day was delivered and overseen by Karen Morgan who gave us a strong presentation based on evidence-based knowledge along with her lived experiences of managing patients with lymphorrhoea. Karen introduced and took us through the Wet Leg Pathway, which we plan to pilot in some specific areas in NI. She ended the morning with a practical session where all delegates applied bandages to each other's lower limbs. This was a great learning experience as well as a fantastic way for delegates to network and get to know each other. The networking continued during a sit-down lunch before delegates spent time visiting the stands of over 20 companies. This helped to identify experts from the different parts of industry as well as what they produce which help with providing patients with leg ulcers the best treatment. Our afternoon took a new delivery approach with presentations from a Dermatologist, a barrister and a service user, followed by them leading a question and answer session from the floor.

As a forum we have actively supported conferences linked to our own area, such as the Inaugural All Ireland Lymphoedema Conference which was held in 2017. We are also sponsoring colleagues to attend 2nd All Ireland Lymphoedema Conference will be held on Wednesday 13th November 2019 in An Grianan which is outside Drogheda. One of the aims of the conference is to increase understanding of why patients may present with red legs – other than cellulitis (and how they can be best managed). The day will also look at other common dermatological issues and care pathways linked to chronic oedema and lymphoedema. The event will also celebrate further developments across Ireland regarding chronic oedema/lymphoedema. We are also identifying conferences in UK which colleagues require support to attend.

We would like to extend our congratulations to our executive committee member Mrs Vivienne Murdock who won second place in the category Chronic Oedema Nurse of the Year 2019 BJN Awards. For the past number of years Vivienne has worked closely with her multidisciplinary colleagues in the South Eastern Trust establishing and developing work specifically in relation to a "Health Leg" project.

There are specific Leg Ulcer Study programmes provided by our Clinical Education Centre (CEC) and at Queens University which I partake in. These include updates, as well as more advanced study leading to a specialist Nursing qualification in Tissue Viability. Several of us have also worked closely with NIPEC (Northern Ireland Practice Education Council) to further explore Tissue Viability Nurse job descriptions and the role.

The Future

As an executive committee we intend to create stabilisation amongst our committee members and continue to plan for sustainability of the group, including the succession planning of members into specific roles with appropriate support. We aim to develop and grow our local membership. As well as actively supporting and adding to the Leg Ulcer Forum Facebook page, and such campaigns as the "Legs Matter". Overall our momentum is to ensure those caring for patients with leg ulceration are skilled and knowledgeable in providing person-centred safe effective care.

Caroline Graham
Chair Irish Affiliation

Leg Ulcer Forum Scotland

Carolyn Whitelock

In the last 12 months our group has faced up to many challenges as we strive to promote Leg Ulcer Education throughout the country. We currently have a Committee of 10 made up of mainly full time NHS staff from Glasgow, Edinburgh, St Andrews, Dundee and Aberdeen with specialties which include Community Specialist Nurses, Vascular Specialist Nurses, Dermatology Specialist Nurses, Tissue Viability Nurses and University Lecturers. Trying to manage both our personal workload and committee duties can be difficult, so we have kept our committee meeting to a minimum and we make use of the NHS video conference facilities to try and alleviate this issue as much as possible. We continue to achieve approximately 70% attendance at our meetings.

LUFS Conferences

In May 2018 the committee hosted our Annual Conference at the Dewar's Centre Perth, an excellent venue we have used several times before. At our morning session we had the pleasure of welcoming Irene Anderson who is the Principal Lecturer for Tissue Viability who gave a stimulating presentation on the Key Principle in Leg Ulcer Assessment. Irene was followed by Alison Coull a lecturer from Napier University in Edinburgh who delivered a very interesting and currently relevant presentation on Leg Ulceration in people who inject drugs which covered many risk factors and how harm may be reduced in relation to leg ulcer issues. The morning session was concluded by Janice Bianchi, Independent Lecturer who presented a very interesting update on skin tears management.

The afternoon programme was designed to link in with the morning lectures and in a bid to encourage delegates to fully engage and participate we divided them into 3 smaller groups to complete the 3 workshops. The first workshops consisted of an open discussion on Patient Centred Care with Janice Bianchi and Margaret Armitage. The second workshop was a Practical Doppler demonstration and presentation by Glynis Billimore and Tricia McShane and the 3rd workshop was an Emollients and Steroids presentation by Anne Ritchie. The workshops were repeated to allow delegates to attend all workshops. The afternoon session was very well attended and the content feedback within our evaluation was very positive.

The number of delegates attending our annual conference continued to be maintained at between 80 and 100 and feedback from both delegates and company sponsors are always well evaluated and comments and views are taken forward into the planning for the next year's event. I'm delighted to announce that this year's conference will be held further north in Aberdeen for the first time on the 16th May. LUFS is venturing further north than ever before to hopefully open up our Education Conference to a new audience attracting delegates from Highlands and Islands

Leg Ulcer Education in Scotland

As a committee we continuously strive to improve leg ulcer education and promote learning throughout Scotland. We continue however to have concerns about the lack of ongoing education and in particular the various standards of practice within Scotland. With these concerns in mind it was agreed at our Annual General Meeting in November 2018, that we would in conjunction with the principal educator for the National Education for Scotland (NES), carried out a survey of leg ulcer care throughout different areas in Scotland. This survey highlighted that the level of care and local education varied significantly throughout the country and we set about establishing our case for developing a standardised basic leg ulcer practical days to assist improved standard of leg ulcer care especially practical skills throughout Scotland. Leg Ulcer Forum Scotland Committee presented our findings to the Chief Nursing Officer (CNO) in Edinburgh, Ali Lister, Janice Bianchi and I presented the collated information from all areas in Scotland with examples of good practice which could hopefully be standardised and replicated in all areas. At the present time we are awaiting a response from the CNO to our presentation and proposed education plan.

At the present time Janice Bianchi leads on the Leg Ulcer module at the Caledonian University Glasgow and continues to present two courses per year which are fully subscribed. There are also online Leg Ulcer Modules at both Stirling University and Napier University Edinburgh.

We currently have two successful Leg Clubs in Scotland and it is thought that the peer support and patient education provided leads to its continued learning. The "Leg Matters" campaign continues to raise people's awareness of lower limb disease.

Future Conference

Leg Ulcer Forum Scotland Conference on 16th May 2019 in the Aberdeen Altens Hotel. We are currently planning our programme please see the LUF website for details of Flyer and how to book.

Carolyn Whitelock
Chair Scottish Affiliation

University of Hertfordshire

School of Nursing, Midwifery and Social Work



Leg Ulcer Management:
A Competency Based Course

Course code: 6HSK0055/7HSK0246
Semester: B January - March

Level: 6 & 7
Credit: 15

Who should attend this course?
A Registered Healthcare Professional, working in a healthcare environment, with access to leg ulcer service provision.

Course Aims
This module aims to enable students to achieve competence in the assessment and management of people with leg ulcers and a greater understanding of the issues involved in delivering effective leg ulcer services. You will need to have access to a clinical area where people with leg ulcers are managed and you will need a suitable Practice Assessor as this is a competency-based module.

Module Content
You will study the aetiology of leg ulcer development and the theoretical principles underpinning the assessment and management of people with leg ulcers and related conditions. You will also study the key elements of effective leg ulcer services.

Assessment
- Coursework: a report on leg ulcer service provision and the extent to which it meets patient needs
- Completion of Practice Portfolio
- Demonstrate competence in Doppler assessment and compression bandaging

Where is the module taught and by whom?
The module is taught at the College Lane Campus and is facilitated by lecturers with expertise in the area from the University and invited external speakers.

How does this module map the NHS KSF?
This module contributes to the development of knowledge and understanding for Core dimensions 1,2,3,4, HWB 1,2,3,5,6 and 7, and IK3

Computer equipment requirement
Delivery of the module will incorporate blended learning which aims to combine e-learning activities with campus-based learning. You will therefor need to have access to a suitable personal computer and a good reliable internet connection (broadband recommended). Most modern PCs or Macs (less than 3 years old) should be suitable.

When does this module run?
Wednesdays in Semester B: January to March (6 study days)

Sponsorship
A number of employers are entering into teaching contracts with Universities for the provision of postgraduate programmes, short courses and study days. In order to access this source of funding, you should contact the senior manager within your Trust who is responsible for the post-registration/ CPD provision.

Cost
To find out information about the fees visit go.herts.ac.uk/cpdfees

Course enquiries
Irene Anderson – Module Leader
tel 01707 285233
email i.1.anderson@herts.ac.uk

Booking enquiries
email cpdhealth@herts.ac.uk

Leg Ulcer Forum Conference

Tuesday 2nd July 2019
Colchester Stadium, United Way, Colchester, CO4 5UP

Leg Ulcers Framing the Future

The Only Conference Dedicated to Aspects of Leg Ulcer Management

Low cost event: Members Free, Non - members £25
(This includes the option of free membership.
The membership year is April to March)

To drive best practice and support both patients and practitioners in the management of lower limb conditions through the promotion and development of national standards, educational activities and increased awareness.

Places are limited so first come first served; reserve your place now.

Keynote Speaker: Una Adderley- Programme Lead for National Wound Strategy

Go to **www.legulcerforum.org** for further details

Time	Speaker and Title
9.00	Registration and Exhibition
9.30	Una Adderley- National NHS Strategy
10.00	Leanne Atkin- Legs Matter Update/National Lower Leg Workstream
10.30	Coffee/Exhibition
11.00	Vascular Surgeon/Helen Langthorne- EVRA Study & Spotting the Deteriorating Patient
12.00	Heidi Sandoz-Lower Limb Framework
12.45	AGM followed by Lunch and Exhibition
14.00	Brenda King- Coroners Case and Litigation
14.50	Refreshments and Exhibition
15.10	Irene Anderson- Competence with Leg Ulcer Management
16.00	Quiz and presentation of prizes
16.30	Close

Chronic oedema and lymphoedema is limiting wound healing, do you want to advance your skills in this field?

University of Glasgow

Places still now available for courses in 2019

For further details see:
www.gla.ac.uk/schools/medicine/nursing/cpd

Which route is right for you?
- Graduate Certificate in Lymphoedema Practice
- Graduate Certificate in Specialist Lymphoedema Management
- Graduate Diploma in Specialist Lymphoedema Management
- Postgraduate Certificate in Advanced Lymphoedema Management

Contact: lymph@glasgow.ac.uk
Tel: Tracy on 0141 330 6271
Follow us on Twitter: @UofGLymphoedema

University of Hertfordshire

School of Postgraduate Medicine

Managing Chronic Oedema

Code: 7LMS0179, Credits: 30, Level: M

This 5-day course has been developed to enable practitioners to consolidate and enhance professional competence and skill in managing patients with chronic oedema and associated skin conditions. The course been developed in response to best practice requirements that include supervised practice and formal assessment of bandaging competency. Students will be supported by a practice supervisor who has relevant experience and skills. You may also choose to study it as part of a longer academic award; MSc Clinical Skin Integrity & Wound Management or Postgraduate Diploma or Certificate.

Dates

16th 17th April 2019
10th 11th June 2019
9th July 2019 Practical Assessment

Course fee

£1330

Venue

University of Hertfordshire
College Lane Campus
Hatfield, Hertfordshire
AL10 9AB.
www. herts.ac.uk

For further information on
wound management/dermatology courses
contact Madeleine Flanagan
email m.flanagan@herts.ac.uk
Tel +44 (0) 1707 286400

Content

This course focuses on acquisition of practical skills & management of patients with chronic oedema.

Students will study a selection of topics such as:

- Prevalence and incidence of chronic oedema
- National guidelines, evidence-based practice
- Physiology of oedema formation & skin breakdown
- Risk factors & associated co-morbidities
- Aetiology of chronic oedema/skin manifestations e.g. lymphodema
- Assessment: patient & lifestyle factors investigations
- Advances in therapeutic interventions: skin care, wound care, compression therapy
- Patient centered management, documentation & outcome monitoring
- Patient Quality of Life
- Models of service delivery, referral criteria.

Who Should Attend?

This course is suitable for practitioners with a special interest in chronic oedema management who want to develop & consolidate practical skills. The course will be of interest to Community Nurses, Tissue Viability and Dermatology Nurses who are managing people with chronic oedema and associated skin conditions on a regular basis.

Assessment

1. Local audit of clinical practice
2. Application of compression bandaging.

Application

Please contact:

Madeleine Flanagan
Programme Leader Skin Integrity
email: m.flanagan@herts.ac.uk
Tel office: 01707 286400
Mobile: 07736 660584

Photos from 2018 Conferences

Improving care of the lower limb

The Legs Matter Campaign

Una J Adderley
PhD, RN
Lecturer in Community nursing, School of HealthCare, University of Leeds, UK.

On April 25th 2018, the new 'Legs Matter' campaign will launch at the Tissue Viability Society conference in Newcastle. This campaign will aim to improve care for people with lower leg conditions. Leg and foot ulcers are common, debilitating and costly conditions (Cullum et al., 2016, Guest et al., 2015). Leg ulcers are four times more common than pressure ulcers or diabetic foot ulcers and 56% of people with leg ulcers do not get a diagnosis of the cause of their leg ulceration (Guest et al., 2015). Care is too often sub-optimal and too late. Many people with leg ulcers and their generalist clinicians such as GPs, practice and community nurses, nursing home nurses and nurses working in hospitals are unaware of the appropriate prevention and treatment options.

In November 2016, the Tissue Viability Society invited a group of other concerned organisations to meet to discuss how we might work together to improve care in the UK. It was agreed to form a coalition of charities and not-for profit organisations to work together. This coalition includes the Leg Ulcer Forum, the Tissue Viability Society, the Society of Vascular Nurses, the Lindsay Leg Club, Accelerate CIC, the British Lymphology Society, the Foot in Diabetes UK and the College of Podiatry.

The initial discussions focussed around how we might be most effective. Someone with a lower leg condition will encounter a number of people along their journey to diagnosis and a treatment – from the pharmacist, to the community nurse, to the GP and beyond. We decided that we wanted the campaign to enable every single person on that journey – including the service user themselves – to have easy access to the information they need to take the next best step for themselves or the service user. Therefore, we decided that the Legs Matter campaign would bring together and signpost the information and services that already exist, to enable people to get the timely advice and treatment they need.

Our aim is to make the public (including service users, carers and those at risk – both male and female and of every age, from young pregnant women to the elderly) more aware of conditions of the lower leg and foot and the importance of seeking out the right treatment in a timely manner. To complement this, we also want to educate healthcare professionals who are not tissue viability specialists on the signs, seriousness and implications of lower leg and foot conditions, and the importance of considering the lower leg and foot when assessing and treating patients. We hope this campaign will also support tissue viability specialist healthcare professionals to continue championing better lower leg and foot care in their clinical setting.

The Legs Matter coalition is not short of clinical expertise and enthusiasm but we lacked marketing expertise and time. We therefore agreed that we needed to identify a suitable marketing organisation and find funds to employ them. A marketing company kindly gave us a free day where we spent time identifying who our primary target audience should be and some initial 'branding'. It was agreed that although we wanted to reach policy makers, commissioners and educators, our primary target audience should be those members of the public affected by lower limb problems and generalist clinicians such as GPs, community pharmacists and non-specialist nurses.

Coincidentally, around the same time as the campaign planning was beginning, NHS England started the 'Leading Change, Adding Value' Improving Wound Care project (NHS England, 2016). The coalition debated whether the NHS England initiative would make the 'Legs Matter' campaign unnecessary but after discussion it was

agreed that the campaign still needed to go ahead to complement the more policy-focussed work of NHS England.

Funding was essential if we were to procure the required marketing expertise. The coalition agreed that each organisation would contribute according to its ability. The Tissue Viability Society ring-fenced a generous sum towards the project and other coalition organisations made smaller but valuable contributions which increased the available pot of money. Some coalition organisations were unable to contribute financially because their conditions of business required them to reinvest any profit back into their organisations for the benefit of their service users. Other s had already committed spending in way that complemented the Legs Matter campaign and it was agreed that further financial commitment was not expected. These initial sums of money were enough for us to prepare a tender for marketing companies to bid against. We invited bids from six companies. The decision as to which company to commission was agreed through consensus.

Working collaboratively with our marketing company, we agreed that we needed to develop a public health campaign supported by an online website that would be useful for both the public and generalist practitioners. There was much discussion about the style of the campaign but we agreed that the most important thing was to convey the positive message that with the right care, much could be done to improve lower limb problems. Our audiences already encounter several health messages every day. We want to cut through this noise to highlight the issue of leg problems in a way that is engaging, memorable and creates the right amount of urgency without creating unhelpful alarm. Our aim is deliver a straightforward message with a clear, distinctive visual style that is aimed at both healthcare professionals and the general public. We hope that striking visuals will attract service users with early stage leg problems to find out more about what they can do to stop things getting worse. We also hope that the campaigning tone of the words will empower people with leg problems to seek advice and give confidence to clinicians who provide care for such people.

We therefore decided to develop a colourful and upbeat campaign. The marketing company developed four possible design approaches. The Legs Matter coalition has involved service user and public participation from the beginning. A member of the Leg Club has been involved in all strategic decisions throughout the project but we have also consulted with other members of the public at other key points. So when choosing which design approach was most likely to appeal to our target audiences, we sought the opinions of current service users. Their feedback was extremely helpful and we ended up selecting a more youthful and less conservative design for the campaign materials. When we were wrestling with whether or not the campaign title needed to name both the leg and the foot, our service user and public advisors made it quite clear that in their mind 'lower leg' included the foot.

Service user involvement has also been very helpful in gathering suitable images for the website. There was much debate about these images as we wanted images that were realistic and honest but not the gruesome images that are so often associated with leg and foot ulceration. A clinic was transformed into a photo studio for an afternoon as our service users kindly gave their time and expertise to help us provide images that were honest but not too shocking for public display. Other service users are helping the campaign through allowing us to publish their stories of their leg ulcer journey and by providing user feedback on the copy that will appear on the website. As we move forward, we plan to increase service user and public participation by inviting a few more service user / public representatives to join the steering group.

The public health campaign will aim to bring leg problems into the open and to encourage traffic to the website in a budget friendly way. The coalition already has excellent connections and will use social media to get the 'Legs Matter' message out as widely as possible. The hashtag #legsmatter should become very familiar. NHS England is supporting the Legs Matter campaign and will integrate the campaign into its ongoing 'Improving Wound Care Project' which is part of the 'Leading Change Adding Value' Nursing and Midwifery Framework. We are also developing new collaborations with organisations that support our target audience such as non-tissue viability clinical organisations and charities such as the Queens Nursing Institute and the Royal Society of Medicine. We will also hope to engage the interest of public organisations such as Age UK and the Royal Voluntary Service, industry partners that provide products to our target clinicians and organisations such as universities that educate adult nurses and community nurses. We will also seek out media opportunities to raise awareness through publications such as magazines and newspapers read by our target audience, and interviews on radio and television.

The website will signpost the public and clinicians to high quality resources and information about lower leg problems as well as acting as a repository of key information about the campaign. We are very aware that if successful, our campaign will raise service users' expectations which may increase demands on clinicians. With this in mind we are giving equal priority to the information and support needs of both the public and clinicians.

The website will be divided into sections, one for people with leg problems and another for clinicians who are caring for people with leg problems. Both sections will include information on signs and symptoms, treatment, and practical information on how to look after skin and prevent future problems but each section will present this information in a way suitable for that particular audience. As the website develops, we hope to have links to ongoing research studies, information for policy makers and commissioners of care and a section that celebrates good practice and news relating to the campaign. We hope to emulate the 'Stop the pressure campaign' which has had such a positive impact on the prevention of pressure damage. In November 2017 we received an Urgo Foundation award. This funding has given the campaign much-needed financial stability enabling us to push ahead confidently.

We think that improving leg ulcer care is more about improving knowledge of appropriate care and re-organisation of services than about the NHS investing more money. Incorrect treatment can inflate costs tenfold (NHS England, 2017). Better care should bring financial benefits as well as patient benefits. We hope that the tissue viability community will unite around the "Legs Matter" banner to "Stand up for legs" to educate service users and carers to seek appropriate help and help healthcare professionals recognise early stage disease and quickly provide appropriate high quality care.

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Betty's story:

Leg ulcer wound care

Acknowledgement: NHS England have kindly given permission for this article to be included in the journal.

Reference: NHS RightCare scenario-NHS England. Available from: http://www.england.nhs.uk/rightcare/.../nhs-rightcare-bettys-story-narrative-full.pdf [Accessed 9th October 2018].

NHS RightCare scenario: The variation between sub-optimal and optimal pathways

The story of Betty's experience of having a leg ulcer, and how it could be improved.

In this scenario – using a fictional patient - Betty – we examine a leg ulcer wound care pathway, comparing a sub-optimal but typical scenario against an ideal pathway. At each stage we have modelled the costs of care to commissioners and describe the impact of sub-optimal care and ideal care on the outcomes and experience of 'Betty'.

This document is intended to help commissioners and providers understand the implications – both in terms of quality of life and costs – of shifting the wound care pathway from an uncoordinated and reactive approach to a proactive evidence-based approach.

This scenario has been produced in partnership using the NHS RightCare methodology and the work of Leading Change, Adding Value: A framework for nursing, midwifery and care staff (1). The aim is to help clinicians and commissioners improve value and outcomes for this patient group.

Two summary slide packs are also included as appendices.

Introduction

A recent research study has estimated that the annual cost of managing wounds in the NHS and associated comorbidities is £5.3 billion. This is comparable to the £5 billion spent on managing obesity in the NHS. Over a year approximately 4.5% or 2.2 million people of the UK adult population will have a wound and about 30% of wounds in this study lacked a diagnosis (2) documented in the GP records.[1]

In the UK most wounds are managed largely in the community by GPs and more commonly by nurses. (2) (3)

The most commonly treated wounds are leg ulcers (3). Leg ulcers are chronic wounds that occur in the lower leg; they are distressing and painful to those who have them, prone to infection and have a negative impact upon a patient's mobility and quality of life. (5)

1.5% of the UK population (with wounds) are estimated to have a leg ulcer and 19% of the leg ulcers in this research study were not characterised (2). To ensure the most appropriate treatment, the 'character' of leg ulcers needs to be diagnosed to determine the predominant cause, such as venous, arterial or mixed aetiology.

Improved wound care including effective assessment, diagnosis, treatment and prevention of wound care complications can minimise treatment costs (2) and importantly improve outcomes and experience for people with a wound.

This scenario demonstrates opportunities to reduce the unwarranted variation but this requires good organisation of care.

The evidence underpinning leg ulcer care is not new as shown in the Effective Health Care Bulletin in 1997 and yet unwarranted variation exists as demonstrated in the research (2) (6). Why is this? Why does this continue?

This scenario gives some insight into what might be happening based on the research and discussion with clinicians.

The "Effective Health Care Bulletin on compression therapy for venous leg ulcers concluded:

"There is widespread variation in practice, and evidence of unnecessary suffering and costs due to inadequate management of venous leg ulcers in the community."

(NHS Centre for Reviews and Dissemination, 1997)"
(7)(p.2)

[1] **Other studies estimate an overall point prevalence of wounds is:**
- 12% of the population in Hull and East Riding of Yorkshire (3)
- 0.147% of the population in Leeds with a complex wound receiving health care (4)
- 0.64% of those receiving community services in Manchester (Unpublished)

Introducing Betty

Betty is a 70 year old widow. She lives on her own in a village 10 miles outside the nearest city. She has arthritis in her knees and is overweight after she gave up smoking 10 years ago, but otherwise is quite well. Betty retired from her job as a shop assistant and has a good social network in the village.

She's noticed that her legs feel heavy and tired after a day out and in the summer they swell so she has to be careful which shoes / sandals she wears. The skin on her legs is getting a bit dry so she tries to remember to use her favourite skin cream on her legs at night.

Betty has tried to limit the impact of arthritis on her life by joining a local rambling group where she joins the 'B group' for the weekly walk of three to four miles and all the social events.

Once a week Betty takes a trip into the nearest city to have lunch with her friends and afterwards they all go to Aqua-fit, to be honest they do spend more time chatting than exercising in the pool and then reward themselves with a calorie rich lunch!

Betty's journey: NHS health check

Betty's journey is not unusual. When Betty reaches 70 she is invited for an NHS health check with the General Practice Nurse (GPN) where she is identified as being overweight with a BMI of 30 and would benefit from some behaviour change advice. Betty comes back to see a Healthcare Assistant (HCA) for lifestyle advice.

Betty and the HCA, who is herself a mature lady and somewhat overweight, agree that being overweight is part of growing older and hard to address, especially as going to a gym where everyone wears Lycra does not appeal.

Graze to the leg

Now at 74, Betty grazes the inside of her ankle during a walk; she thinks it might have been going over a stile. She first notices it when her tights stick to the skin a few days later. Not wanting to 'bother' her doctor she manages it herself from her first-aid kit using a small adhesive plaster to prevent the graze sticking to her tights and changes it every couple of days. As this is uncomfortable she pops into the local pharmacy while she is in town to ask the advice of her pharmacist, who sells her some small non-adherent dressings.

GP visit

As the graze on her ankle is not getting any better five weeks later Betty decides to see her GP about it. It is not an emergency so when she sees the GP a week later, she is reassured because the GP is not worried about what the GP calls a 'wound'. However the skin around her 'graze' is red and inflamed and because there is yellow tissue (to her it looks like pus) inside the 'graze', the GP prescribes antibiotics three times a day.

The GP suggests that Betty should continue to use non-adherent dressings on the wound and gives advice regarding changing the dressing and to come back at the end of the course of antibiotics if it isn't any better.

> In people with chronic leg ulcers systemic antibiotics should only be used if there is evidence of clinical infection (8). In Betty's case there were no signs of clinical infection.

Two weeks later she returns to the GP, the wound is still present with red edges, a yellow centre and the surrounding skin is also red and inflamed. The GP decides to refer Betty to the GPN for wound care saying, "Let's see if the professionals at wound care can make some progress as it's a bit stuck, isn't it?"

The General Practice Nurse (GPN)

The GPN assesses the wound and notes the continued redness, inflammation and yellow material inside the wound. Due to these signs she discusses with the GP whether another course of antibiotics is required. Both agree that a second course of antibiotics – the same as before – would be useful to clear any infection. The GPN also recommends an antimicrobial dressing to help clear up any infection. Over the next six weeks the GPN treats the wound at weekly appointments. She gives Betty a number of spare dressings for in between times, in case the wound fluid leaks through to her tights.

Personal hygiene

Betty would prefer a dressing that she can manage herself and which would allow her to resume Aqua-fit and have a bath, however as her appointments with the nurse are short there is no opportunity for Betty to discuss this. The fact that her dressing isn't waterproof means that she is unable to have her regular bath and instead resorts to a thorough strip wash. Betty has not been given any advice on whether to have a bath or shower. Betty feels dirty with the constant draining of fluid from the wound onto her leg and this is affecting her social life. She becomes self-conscious over the months about her inability to have a regular bath and stops going out for lunches with her girlfriends that coincided with Aqua-fit.

> Research has shown that the leakage and odour from leg ulcers can cause embarrassment, resulting in social isolation, low mood, depression and poor self-esteem. Interventions to improve leakage and odour have often proved to be inadequate. (5)

Betty finds that she needs to change the dressing at least twice between her visits to the nurse; she starts wearing trousers every day to avoid people seeing the dressing and the red, angry skin. Betty normally only wears 'slacks' in the garden and when rambling and now feels scruffy in trousers, and no longer feels smart when she is out and about in the village.

Loss of identity

A little bit of her identity has changed as she is used to being known as the very smart Mrs Smith who worked at the local shop. Gradually Betty needs to change the dressing more often as her leg is very weepy and the GPN increases the visits to three times a week.

> Re-assessment of the leg ulcer should be carried out at 12 weeks if no progress at 12 weekly intervals. (8)

Betty has felt off colour with the courses of antibiotics which have made her feel nauseous (and she's experienced some diarrhoea after the antibiotics – but she doesn't like to mention it). She misses the Aqua-fit and can no longer go on the rambles as her ankle is sore and swollen. She is also concerned about the rubbing of her walking shoes on the ankle and getting another injury. The GPN and GP aren't aware of the emerging impact of this small wound on her fitness, social arrangements and mood. She is slowly becoming more isolated and miserable.

After trying an antimicrobial dressing for six weeks the GPN changes the dressing to an alternative – a hydrofibre and silver dressing covered with a foam dressing and a barrier film to protect the skin around the wound. The GPN recommends dressing the wound two to three times per week to see if this will 'help shift the infection'.

> NICE guidelines state there is at present no robust clinical or cost-effectiveness evidence to support the use of antimicrobial dressings (for example, silver, iodine or honey) over non-medicated dressings for preventing or treating chronic wounds. Indiscriminate use should be discouraged because of concerns over bacterial resistance and toxicity. (9)

After dressing Betty's leg for three months the GPN is frustrated at the lack of improvement in Betty's ankle, as she feels that they should be making some headway by now. The GPN has started to feel less confident about wound management admitting that it has been a few years since she has had an update and doesn't treat people with leg ulcers very often. She knows that incorrectly applied compression can lead to amputation of legs and toes. She has asked to go on a study day however this has been delayed due to her GPN colleague being off on long term sick and the need to cover

her colleague's clinics. She is feeling quite isolated in her health professional role.

Wound assessment

An opportunity arises to attend a study day organised by the local Tissue Viability Nurse and the university on wound care. The GPN attends and manages to talk to a Tissue Viability Nurse about Betty. She recognises that Betty's persistent wound on her ankle may have developed into a leg ulcer. The GPN is reminded that she needs to use a hand held Doppler ultrasound to assess the arterial supply to Betty's leg before doing anything else. However the GPN doesn't have access to the handheld Doppler or the experience of completing this assessment. Furthermore the GPN appointments are only for 10 minutes and it's impossible to do a full assessment in that time (she notes that the Doppler must be taken after 10 minutes rest). She knows following the training that the treatment of choice for venous leg ulcers is compression bandaging. However the GPN doesn't have a lot of experience in compression bandaging (she last did it at a course five years ago) and feels that she would need some updating to be able to deliver this safely. The session at the university makes it very clear that compression bandaging can only be delivered to people who have got adequate arterial supply, and must be delivered by people with training in this treatment. The consequences of getting this wrong include rapid ulcer and limb deterioration and pain and possibly amputation, so the GPN is glad that she is taking things slowly with Betty. Better safe than sorry.

> For people with leg ulcers the arterial supply to the leg should be assessed to support the safety of compression bandaging (8). This should occur at the first assessment (7). This includes an Ankle Brachial Pressure Index (ABPI) performed before treatment and appropriate training is required due to the complexity of interpretation of the results. Skills should be maintained. (8)
> The research identifies that there continues to be unwarranted variation in consistent ABPI assessment in people with leg ulcers (6) (10). There is evidence of people with a leg ulcer whose ABPI was not recorded but were receiving compression therapy. Assessment of ABPI is a recognised requirement for leg ulcer and diabetic foot management, yet only 16% of all cases with a leg or foot ulcer had an ABPI recorded in their records, of which 81% were treated with compression. Of the 84% that did not have their ABPI recorded, 46% were treated with compression (10). This research is not dissimilar to a study that suggested that 23.6% of the leg and foot wounds were not assessed using an ABPI. (3)

A month on and the wound is not improved (although to keep Betty's spirits up the GPN says that it's looking better). The nurse manages to take one or two tracings of the wound on a transparent grid and notes there has been little change. Following the education and training day the GPN is now rather frustrated that there may be options for Betty to have an assessment for a venous leg ulcer and get treatment, but does not know what is the best option. She discusses this with the GP and together they decide that Betty should be referred to the dermatology department. A referral to the vascular service was discussed; however the waiting list for this is longer than that for a dermatology appointment.

Dermatology

Eight weeks later Betty attends dermatology out-patients and her ABPI is confirmed by Doppler assessment that she has a venous leg ulcer. Unfortunately the ABPI result is not shared with the GP practice. As there are not any particular skin problems that require the dermatology team, she is referred back to the General Practice for a medicated paste bandage and compression bandaging.

The GPN isn't able to apply compression bandaging as she doesn't feel confident to apply it both safely and therapeutically.

In order to stop Betty's leg from swelling the GPN decides to apply the medicated paste bandage, padding and crepe bandages twice per week for five weeks, to little effect. Betty has now had a wound on her ankle for six months. In the meantime she's received her appointment through from the orthopaedic surgeon who has been asked to schedule her for knee replacement surgery. Unfortunately when the orthopaedic surgeon sees the wound on her ankle she declines to proceed with an operation date until the ulcer heals, because the infection risk is too high.

In the meantime Betty has become less mobile because of the increased pain in her knees, her swollen ankles and the wound. She feels that if she had her knee replacement she would be able to do a bit more and the GPN knows that it's important for Betty's general health that she is more mobile, and also knows that being active is good for venous return in her leg.

> Most people affected by wounds, and health professionals, viewed healing of the complex wound as the primary goal. Patients were concerned about the socially inhibiting consequences of their complex wound, but wound care services did not focus on the psychological or social impacts. The treatment model was geared to healing, not 'living with' a long-term condition with potentially negative consequences. (4)

Lack of time and equipment

Betty and the GPN are in a Catch-22 situation now. Her wound is getting worse as Betty is becoming less and less mobile with her arthritis. This leads to the ulcer getting larger and her leg more swollen. The GPN doesn't have the time, equipment, or expertise to provide the assessment and compression bandaging that would help Betty get her ulcer healed and thus allow her to have her knee replacement. The community nursing team are called upon to assess Betty as she is now finding it very difficult to get to the practice.

The community nurse

The community nursing team are stretched thinly due to workload and holidays across their patch. They struggle to see the same patients consecutively as different nurses allocate the work. They have developed their role as 'great generalists', rather than having people in the team focus on particular areas of activity. Due to time constraints the district nurses do not visit the GP practice very often. This has led to a loss of a close relationship with the GPs and community teams with the GPN not knowing who her community nurse colleagues are anymore.

The District Nurse (DN) team leader sees Betty at first as the team aren't sure if this is simply a wound that would require regular dressing or is really a leg ulcer (in the past the referrals to them have been a mixture of eczema and allergy as well as wounds and ulcers). Following assessment of Betty's wound the district nurse team leader knows this would benefit from a full arterial assessment by one of the two people in the team able to do a Doppler assessment to provide an accurate Ankle Brachial Pressure Index (ABPI). There is a delay in arranging the Doppler assessment, as one of the nurses with experience of completing a Doppler is on holiday and the procedure is always done with a health care assistant (as the nurses find it much easier to do in pairs).

Wound assessment

At the end of the month Betty has had a twice weekly dressing change by the community staff nurse with a padding bandage plus crêpe to accommodate the increasing leakage of fluid from a nasty green sticky wound. After the first visit, the dressing is delegated to the health care assistant. The wound seems to be getting more inflamed and when the community staff nurse arrives to do the assessment he thinks the wound looks rather 'angry'. The community staff nurse is unable to do the Doppler as Betty shouts in pain when the blood pressure cuff is inflated. She explains that the wound has been getting more painful over the last fortnight and she has felt rotten in herself. She doesn't like to take painkillers as she does not want to be dependent upon them so she is feeling rather exhausted with it all. The community staff nurse takes a wound swab suspecting the wound might be infected. In order to contain the wound exudate they again pad up the leg while waiting for the microbiology results, and apply a different dressing that has silver in that they have with them to see if this improves the outcome.

This padding, of course, means Betty cannot get

her shoes or slippers on and so she becomes more depressed with her situation. The smell from the wound means she now refuses visitors and becomes more isolated than ever. The new dressing, Betty thinks, helped a bit this week. Betty gets antibiotics for the wound and they upset her tummy again – with nausea and diarrhoea.

Her reduction in activity has led to some weight gain and this has meant that Betty has started to notice she has developed some stress incontinence. She is now buying incontinence pads to keep from leaking small amounts of urine down her legs and onto the dressing. She is too embarrassed to tell the nurse.

Finally – two weeks after the first attempt at Doppler assessment the two nurses try to reschedule the test with Betty. The Doppler ultrasound machine, unfortunately, isn't working when they get it out to use it (the cable between the machine and the probe is broken) and they ring around to see if there are neighbouring patches who could lend them one. They arrange to borrow one the following week.

Seven weeks after referral the Doppler assessment is done - the ABPI is 1.00 and there are signs of venous insufficiency with no signs of arterial disease. This means Betty can have compression on her leg. However as the compression requires a prescription the nurses are unable to commence the treatment immediately, additionally they do not feel confident in applying the compression to such a difficult shaped leg (with Betty's badly swollen knee); which has now become increasingly swollen with the delay - another week passes until the next visit.

Compression bandaging

Betty starts treatment in full compression bandages. Unfortunately the first time that the community staff nurse applies high compression (with a four layer system) Betty finds the bandages too tight and she removes them in the middle of the night as they are 'excruciating'.

When the community staff nurse visits two days later to assess Betty's leg she finds that Betty won't contemplate going back into 'those horrible bandages'. The nurses therefore apply compression using a two layer compression system, which needs replacing every four days or so (she now needs two visits a week) and which is keeping the leg from swelling too much (but doesn't get it back to pre-ulcer size and shape).

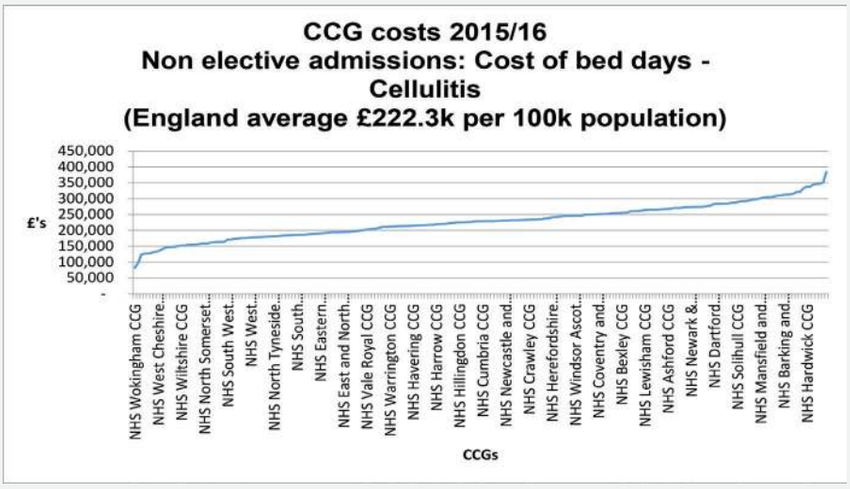
Cellulitis

Betty's leg starts to weep from lots of places in her leg and now requires additional padding and daily visits for two weeks. At the end of the second week the community staff nurse sees that Betty's leg is hot to the touch, swollen and still leaking fluid. Following a discussion with the GP Betty is admitted to hospital for five days in an ambulance for IV antibiotics for cellulitis in early January when there is limited bed capacity.

People living in the most deprived areas are least likely to receive Doppler aided assessment (18). Betty does not live in a deprived area, what might have happened if she did?

Cellulitis is an ambulatory care sensitive condition (ACSC). These are conditions for which effective management and treatment should prevent admission to hospital. They can be classified as: chronic conditions, where effective care can prevent flare-ups; acute conditions, where early intervention can prevent more serious progression. Consider looking at admissions to hospital for cellulitis and lower limb ulcers.

Chart 1:
Non elective admissions: Cost of bed days - Cellulitis

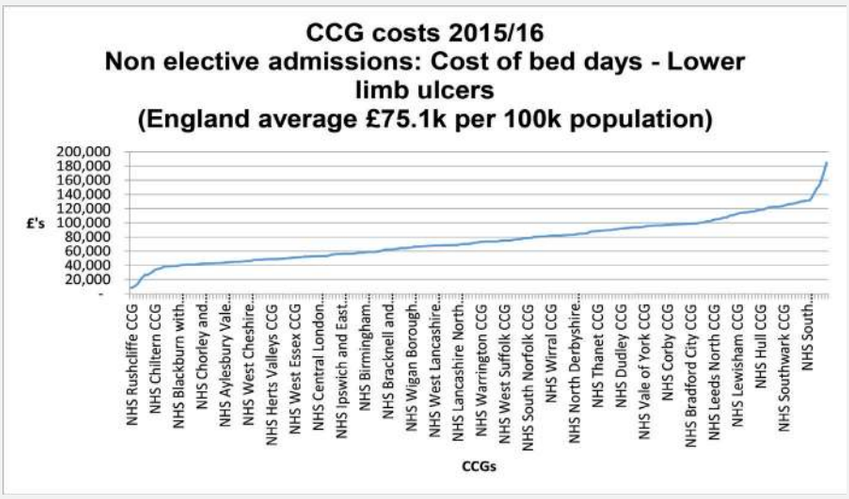


Please note the above table includes admissions L03.0 – Cellulitis of finger and toe, L03.1 - Cellulitis of other parts of limb, L03.8 - Cellulitis of other sites, L03.9 - Cellulitis, unspecified. Only some CCG names are shown due to space limitations. (SUS Data Queries 15/16 data)

Most interventions for the treatment and care of leg ulcers will occur in the community but there are large variations in the costs for non-elective admissions per CCG from £8k to £184K.

continued....

Chart 2:
Non elective admissions: Cost of bed days - limb ulcers



(SUS Data Queries 15/16 data)

On returning home Betty's leg is still sore and weeping and requiring daily visits.

Two years later

It takes two years to heal Betty's ulcer with a reduced compression system that she doesn't find uncomfortable.

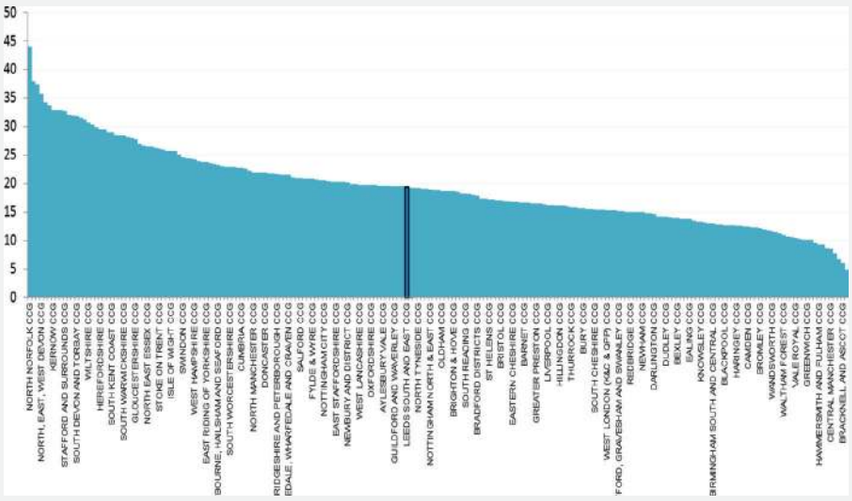
Over this time different nurses decide different dressings are better as each nurse has his/her own preference despite there being a wound formulary to follow. Sometimes the pharmacist doesn't have the dressings needed and Betty has to wait. This inevitably leads to a change in dressing type whilst she waits. In the meantime her arthritis is getting worse and the pain in her knee is increasing. She is almost housebound due to the arthritic pain in the year before she gets to her knee replacement.

Betty is lucky and does not have reoccurrence of her leg ulcer, despite not being prescribed compression hosiery to wear afterwards.

Compression hosiery is recommended to prevent reoccurrence of a venous leg ulcer once a leg ulcer has healed. (8)

See the chart on the next page to see the variation in spend on compression hosiery across CCGs.

Chart 3:
Spend on compression hosiery



Spend in £000s per 100,000 of the population on compression hosiery 2015/16 2

Leeds South and East CCG (highlighted) is the CCG that is closest to the average of all 209 CCGs spend, which is £19.3k.

2 Data relates to the 15/16 financial year from ePACT (Electronic Prescribing Analysis and Cost) . The patient list size field will show the list size as of the final quarter of 2015/2016 financial year. As Compression Bandages do not have their own BNF chapter in MDR, the Compression Bandages data has been compiled by running a report under BNF Section 20,02 and then filtering the results for the BNF name containing the word 'comp'. The data is based on what was prescribed in England and may include items prescribed in England which have been dispensed in England, Wales or Scotland. Please note this means that if a prescription was issued, but not presented for dispensing or was not submitted to NHS Prescription Services by the dispenser, then it is not included in the data provided.

The scale of the issues raised in this scenario

Sadly Betty's case is not unique. Research has shown a lack of evidence-based wound care (lack of differential diagnosis for all wounds), treatment on occasions not meeting approved guidelines (few Doppler tests being performed), lack of senior engagement in wound care delivery and a lack of continuity and consistency of wound care and treatment planning. (7)

Questions for commissioners, GPs, providers and nurses to consider

- Do you know how many venous leg ulcers there are for your population?
- What are the healing rates for venous leg ulcers in your locality?
- Do you know how many of these have had an ABPI measurement to support diagnosis and treatment?
- Who delivers care to people with leg ulcers?
- What is the cost of managing leg ulcers in your locality?
- Is there unwarranted variation in treatment and outcomes? How do you know?
- What are the barriers to seamless care for people with leg ulceration?
- Is investment needed or reorganisation of care needed?
- Has any engagement activity taken place with patients with regards to wound care?
- Do you already have valuable local data around patient experience and outcomes for wound care in your area?
- How could this local data be used to identify and drive improvements?

What are the implications for wound care generally?

- How is wound care commissioned? Is it via a block contract? How is quality demonstrated and reported and improved upon?
- What are the challenges preventing delivery of good evidence-based wound care?
- Do you have an agreed wound care formulary and is it evidence based?
- How are dressings procured and managed?
- How could the savings be reinvested to improve overall outcomes?
- When wounds do not heal in an expected timescale is there sufficient expert resource to refer people to or get advice?
- What other indicators are there that you could use to look at your local economy?
- Can you afford not to look at this to improve outcomes, experience and better use of resources?

Considering these questions will start to identify what needs to change to move towards optimal wound care locally.

CQUIN

The CQUIN scheme 2017/19 is intended to deliver clinical quality improvements and drive transformational change. With these objectives in mind the scheme is designed to support the ambitions of the Five Year Forward View and directly link to the NHS Mandate. One of the areas of focus is on clinical quality and transformational indicators.

13 indicators have been defined which aim to improve quality and outcomes for patients (including reducing health inequalities), encourage collaboration across different providers and improve the working lives of NHS staff. One of these indicators is indicator 10 - for community service to place a greater emphasis on wound care leading to better patient and system outcomes.

To achieve the ambitions both individual provider contributions and cross community collaborations have a part to play. By doing so the NHS will deliver better quality standards for patients.

NHS RightCare focus packs

The NHS RightCare focus packs for cardiovascular disease (CVD) enable CCGs to look in granular detail at the data collected from comparable CCGs for specific parts of the CVD pathway. There are three examples of comparable data that could be relevant to this scenario:

These are:

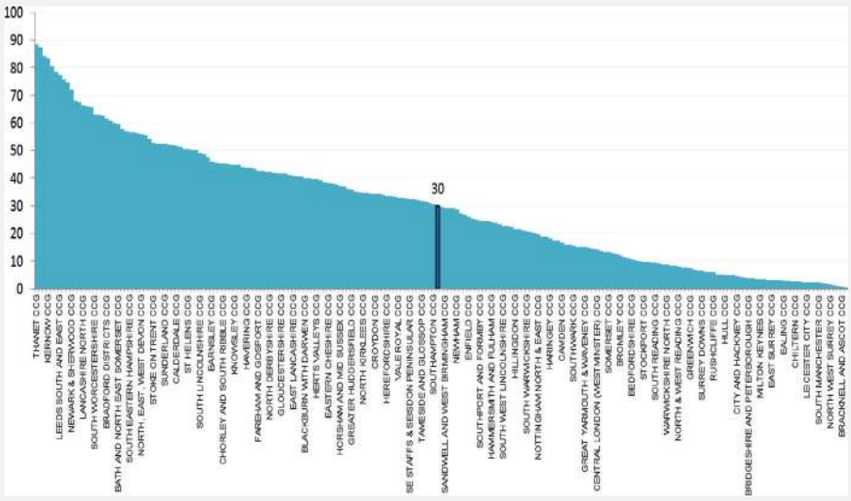
- Diabetes amputation
- Amputation above knee
- Amputation below knee

NHS Benchmarking

NHS Benchmarking (8) have reported that in the 2016 annual audit of district nursing activity, 39% of clinical time by the service is spent in wound care. The detail for leg ulcer care is not available. An estimate can be made using additional research which suggested that 20% of the wound care work was venous leg ulcers (6). Therefore approximately 8% of the whole district nursing workforce time is spent on venous leg ulcers and 2.1 million visits annually. (7)

There is also a variation in spend on compression bandaging and hosiery (Chart 3) from prescribing. Some of the spend variation may be due to some CCG areas procuring dressings centrally from a supplier, therefore the costs will not be included here. The highest spend in compression bandaging is £88,000 (Chart 4) and the highest spend in elastic hosiery is £44,000 (Chart 3).

Chart 4:
Spend on compression bandages 15/16



Spend in £000s per 100,000 of the population on compression bandages 2015/16 3

Harrow CCG (highlighted) is the CCG that is closest to the average of all 209 CCGs spend, which is £30.1k.

3 Note: Data relates to the 15/16 financial year from ePACT (Electronic Prescribing Analysis and Cost). The patient list size field will show the list size as of the final quarter of 2015/2016 financial year. As Compression Bandages do not have their own BNF chapter in MDR, the Compression Bandages data has been compiled by running a report under BNF Section 20,02 and then filtering the results for the BNF name containing the word 'comp'. The data is based on what was prescribed in England and may include items prescribed in England which have been dispensed in England, Wales or Scotland. Please note this means that if a prescription was issued, but not presented for dispensing or was not submitted to NHS Prescription Services by the dispenser, then it is not included in the data provided.

What could have happened differently? Betty's optimal care pathway

> The framework for nursing, midwifery and care staff: Leading Change, Adding Value (1) has highlighted unwarranted variation in wound care. Nurses, midwives and care staff have an opportunity to decrease variation and to reduce the health and wellbeing gap, the care and quality gap and the funding and efficiency gap to deliver better outcomes, experience and use of resources through improved wound care.

Betty's journey starts at the same time, but her experience is very different.

NHS health check

When Betty is 70 she is invited by her GP practice to have an NHS health check, where she sees the healthcare assistant (HCA) who asks her questions about her lifestyle and family medical history, the results of which enable her risk of heart disease, stroke, kidney disease and type 2 diabetes to be calculated. She is also told about the signs and symptoms of dementia and made aware of memory services nearby. The HCA then offers Betty a personalised care and support plan, that explains how Betty could maintain a healthy weight, remain physically active and eat a healthy and well balanced diet to help reduce the risk in the future for her developing cardio vascular disease. The HCA also arranges for Betty to be referred to her local leisure centre as part of an 'Exercise on prescription' programme, to offer some additional physical activity on top of her rambling activity.

> There is evidence that there is an increased risk of developing chronic venous insufficiency in those with a higher BMI. (12)

Betty is keen to make sure she sticks to this plan as she is keen to stay both well and independent. Small changes to her diet result in a small weight loss which gives her the confidence to continue with the plan. The HCA is however concerned about Betty's tired and heavy legs, she therefore requests her GPN mentor to review Betty. The request is sent electronically to the GPN and as such Betty is seen immediately. The GPN, who is an independent prescriber, assesses for arterial risk factors.

The GPN prescribes compression hosiery for Betty and arranges for a review every six months for two visits then yearly after that.

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The graze

At the start of March when Betty is 74, she grazes the inside of her ankle during a walk; she thinks it might have been going over a stile. She first notices it when her tights stick to the skin a few days later and as she is a self-reliant type of person she manages it herself from her first-aid kit. To keep her compression hosiery from sticking to the graze she puts on a little adhesive plaster and changes it every couple of days, but then decides to take off the hose, as she isn't sure if it could be rubbing the wound and stopping it healing, which she then finds more comfortable despite the oedema in her legs. Betty calls at her local pharmacy for advice and the pharmacist refers to the lower leg wound pathway which has been developed by the Clinical Commissioning Group (CCG), advises her to put her compression hose on and to see her GPN. Betty declines to wear the hose due to the pain in her leg from the wound and being anxious about damaging her wound when putting the hose on and off.

GPN assessment

She makes an appointment to see her GPN the following day who works closely with the district nursing (DN) team.

The GPN dresses Betty's wound with a simple foam dressing and prescribes emollients to be used twice a day to both legs and encourages her to use it as a soap substitute to both lower legs when showering.

They discuss the hose and decide to leave it off whilst they work on taking the edge off the pain. The GPN carries out a full assessment of the wound and as she has an excellent relationship with the local district nursing team, they have a discussion about this case as part of their joint clinical supervision. It is agreed that Betty should attend the leg ulcer clinic four days later led by the DN leg ulcer service which is part of the locally commissioned leg ulcer pathway, for a full holistic and leg ulcer assessment. There are specific clinics for full assessments, which include a vascular assessment using a handheld Doppler, to record the ankle brachial pressure index. They assess Betty's pain and advise monitoring and managing this. The analgesia plan is implemented and Betty is reassured to know that she is taking painkillers as part of a clear plan of care and that she won't become dependent on these.

Leg ulcer pathway

Within two days of the referral Betty is commenced on the leg ulcer pathway.

> A research study in Canada suggests that despite the shift from home based leg ulcer care to clinic based care to improve healing rates the evidence base is not robust. They demonstrate in their study that it is the organisation of the care that is important. This is with a system supporting evidence based care by trained nurses that enables improved healing rates not the setting. (14)

Doppler

A full assessment is completed at the initial visit to the leg ulcer clinic, including an arterial Doppler and due to the findings of venous flare, varicose veins, good arterial supply (the ABPI is 1.00), varicose eczema around the shallow wound, the appearance and position of the wound on the ankle and a lack of other causative conditions such as diabetes, they conclude that this is a venous leg ulcer, which would be best treated using high compression. A photograph of the wound is taken with the patient's consent and the wound dimensions are recorded. There are no clinical signs or symptoms of infection therefore a wound swab is not taken.

They discuss Betty's treatment goals with her and she states she just wants to get rid of the wound so that she can get back to wearing her walking boots without fear of them rubbing it. She says she would love to have a bath; however the nurse suggests that rather than a bath she has a shower. The district nurse prescribes Betty a waterproof appliance, to protect her leg to enable Betty to have a daily shower.

Betty is advised not to attend the Aqua-fit classes at the swimming pool whilst she has the open wound. She is encouraged to remain as active as possible so replaces Aqua-fit and lunch with a walk to the shops before lunch with friends.

At the leg ulcer clinic, the nurse also explains to Betty that the wound will heal quickly if they start compression early. Betty starts treatment and has a multi layered compression bandaging system applied, giving 40mmHg at the ankle, with a simple non-adherent dressing as the wound contact layer. The nurse has chosen a simple dressing because she wants to avoid having any risk of sensitivity or allergic reactions underneath the compression system. She explains to Betty that evidence indicates that it's the compression therapy which is more important than the choice of dressing.

> Simple non adherent dressings are recommended for the management of leg ulcers and compression therapy increases wound healing rates. (10)

Compression

The nurse applies full compression to Betty's leg at the first visit, ensuring that it is comfortable, she also gives her an information leaflet with advice on venous leg ulcer treatment and wearing compression bandages. The information leaflet is discussed and Betty is advised to take her painkillers regularly, and to remove the top layer of bandages if she experiences any undue pain or discolouration of her toes. Betty has capacity to understand, good eyesight and dexterity as well as full sensation in her legs to be able to do this.

> After initiation of compression patients should be assessed for complications within 24 – 48 hours. A person's concordance with treatment is likely to improve if they are properly informed about the disease and its management. (10)

The following day, Betty returns to clinic for a follow up appointment. She has had a comfortable night and has had no problems with the bandages, she says her leg has felt really comfortable and supported.

Betty attends the clinic the following week.

The nurse asks Betty not to remove her bandages for the first couple of weeks so that she can assess if the bandages are slipping, the level of exudate and leaking through the bandages. At each visit the nurse assesses the ulcer and records its dimensions on a wound assessment chart. Betty can see the wound reducing in size at each visit. The two weeks in compression bandages has improved Betty's leg shape and Betty feels happier to wear a dress with opaque tights now, having taken to wearing trousers over her bandages and swollen leg.

After two weeks in compression bandages the nurse measures Betty's legs for compression hosiery and issues a prescription for two pairs of class 2, below knee compression hosiery. The nurse demonstrates the technique for applying compression hosiery then supervises Betty in putting them on and advises Betty to put cream on her leg to keep it moisturised. Betty is advised that she could have a shower using her emollient as a soap substitute.

A further three weeks later with the compression hosiery and a simple dressing, the ulcer is completely healed. At this visit the skin is still intact, the scar being pink in colour.

> People with a history of VLUs may be unwilling to continue using compression stockings after healing (15) (13). This may be related to a belief that wearing compression stockings to prevent VLU recurrence is not worthwhile. (15)

The nurse discusses skin care and the continued use of emollients. An information leaflet is given regarding compression hosiery, care and use, this is discussed and Betty is given an opportunity to ask any questions.

The nurse discusses prevention in the future and advises Betty that she will have to wear compression stockings all the time to prevent lower leg oedema and further risk of leg ulcers, but also discusses with Betty the option of 'having her veins done' to reduce the risk of developing a new ulcer. The nurse explains that treating veins can now be done with smaller incisions in the leg, but that the surgical team would be able to advise whether Betty's veins would be able to be treated in this way.

Ongoing review

> Guidelines indicate the role of radio frequency ablation in the management of varicose veins - ablation/surgery is appropriate in some patients with venous ulceration. Use the NHS RightCare CVD focus packs to look at your CCG area.

Betty is advised to request a repeat prescription for two pairs of compression hosiery in six months which she can request from her GP. She is also advised to contact the nurses to have an annual Doppler test to confirm that the ABPI remains within the normal limits.

When the district nurse sees Betty for her final visit they both reflect on the success of treatment. The district nurse documents the visit in the care records and discharges Betty from her caseload.

As Betty has been struggling with arthritis she is able to have a knee replacement six months later without a delay in treatment due to her wound. Betty now is able to re-join the rambling club and is back to her old self.

The 'bills' and how they compare

What is the cost of Betty's journey to the NHS and the wider social and economic impacts?

For the financial evaluation we performed detailed analysis through mapping the lifecycle of the pathways. Through this process we were able to identify the cost drivers that would be incurred in primary, community and hospital care, using NHS reference costs and, where there is a hospital stay, average cost per bed day4. We have included the wider social impacts and economic impacts but we have not attempted to cost financially outside of the health remit or the social, emotional, physical and financial costs to Betty herself.

This scenario is using a fictional patient. It is intended to help commissioners and providers understand the implications (both in terms of quality of life and financial costs) of changing the lower leg wound care pathway. The financial costs are indicative and calculated on a cost per patient basis. Local decisions to transform care pathways would need to take a population view of costs and improvement.

[4] An overnight stay in hospital varies according to location and the type of services needed. Data on NHS costs is not collected by bed day but according to the treatment required. However a hospital stay is estimated to cost £400 per day Data.Gov.uk https://data.gov.uk/data-request/nhs-hospital-stay. The excel spreadsheet designed to cost these scenarios includes full details of cost data sources and is available upon request.

Table 1:
Summary of financial costs for both pathways by provider

Analysis by Provider	Sub-optimal	Optimal
Acute	£1,703	£0
Ambulance Service	£466	£0
Community teams	£2,167	£12
Primary Care	£1,334	£346
Pharmacist	£3	£3
Leg Ulcer pathway	£0	£144
Grand total	£5,673	£505

Note: Primary Care and Leg Ulcer Pathway costs are made up of dressings & medication and clinical time.

In the sub-optimal scenario:
- Dressings represent £1,353 (24%) of the total costs versus £88 in the optimal pathway.
- Clinical time represents £2,139 (38%) of the total costs versus £195 in the optimal pathway.

Table 2:
Summary of financial costs for both pathways by cost category

Analysis by cost category	Sub-optimal	Optimal
Primary care management	£1,337	£349
Community care	£2,167	£156
Non-elective admissions	£2,169	£0
Grand total	£5,673	£505

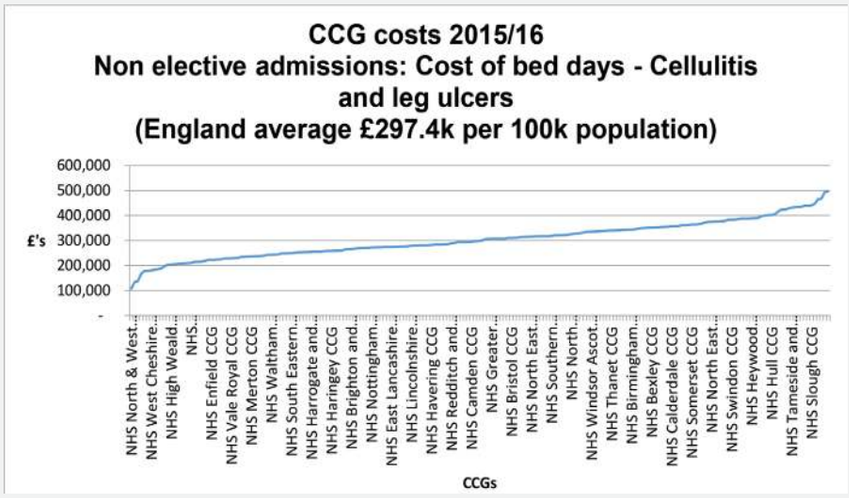
	Sub Optimal Clinical Time	Optimal Clinical Time	Sub Optimal Prevention	Optimal Prevention	Sub Optimal Dressings	Optimal Dressings	Sub Optimal Other
Primary care	£935	£93	£11	£222	£390	£34	£0
Community care	£1,204	£102	£0	£0	£964	£54	£0
Non-elective admissions	£0	£0	£0	£0	£0	£0	£2,169
Total	£2,139	£195	£11	£222	£1,354	£88	£2,169

Note: The sub-analysis (Clinical time, Dressings and Prevention) table splits have been estimated by NHS England Community Nurse Lead based on clinical experience and typical scenarios.

Betty's health and quality of life is much better in the optimal scenario and the costs to the health economy are reduced 10 fold. Not only this, but the difference in treatment times, range from just under two years to just a few months in the optimal scenario.

The national data would also suggest unwarranted variation too as there is a large overall variation (between £107,000 to £500,000) in CCGs for the cost of non-elective admissions for leg ulcers and cellulitis combined.

Chart 5:
Non elective admissions: Cost of bed days - cellulitis and leg ulcers



This is a story that clearly highlights that proactive planning and correct signposting to well trained (and equipped) teams is incredibly important; there is a significant impact on outcomes, quality and finance.

Care can be improved by investigating the root cause of sub-optimal care and working with clinicians to design an improved evidence-based pathway that is appropriately resourced.

NB: References to arthritis related treatments have not been costed as the focus is on wound treatment and the arthritis happens anyway in both scenarios. However, it is included within the case to reflect the human costs associated with the delays caused by the wound delays within the sub optimal pathway.

Think change, Think NHS RightCare

This optimal pathway was understood, tested and created using the proven NHS RightCare approach. NHS RightCare is a methodology that focuses relentlessly on increasing value in healthcare and tackling unwarranted variation. It is underpinned by intelligence and robust evidence, showing commissioners and local health economies 'Where to Look' i.e. where variation and low value exists. The approach then goes on to support health economies through 'what to change' and 'how to change'. The diagram showing all three key phases is shown below.

NHS RightCare offers facilitation and support to all CCGs and their health economies in implementing the RightCare approach and the developmental thinking, tools and data that enhance population healthcare improvement.

NHS RightCare is a proven approach that delivers better outcomes and frees up funds for further innovation. Please explore our latest Commissioning for Value publications and for more details about our programme visit www.england.nhs.uk/rightcare You can also contact the NHS RightCare team via email at rightcare@nhs.net

For more information about the Long Term Conditions work at NHS England please contact england.longtermconditions@nhs.net

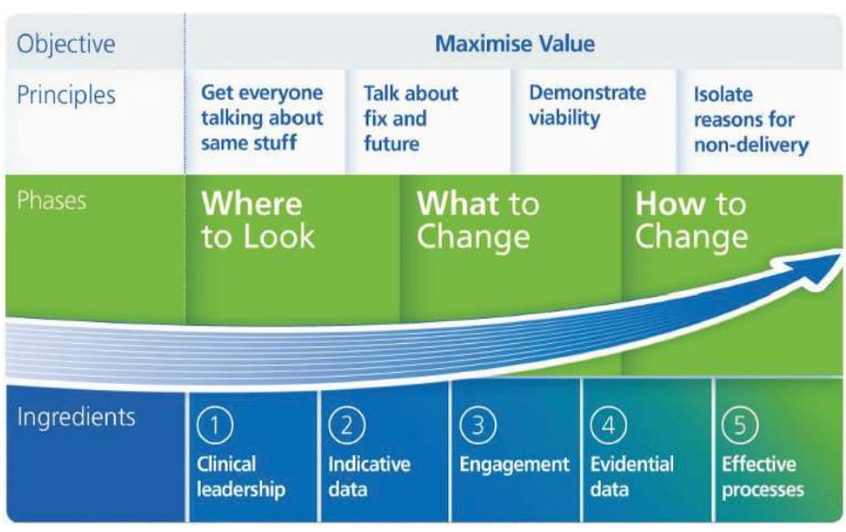
Leading Change, Adding Value

Leading Change, Adding Value (1) is a framework for all nursing, midwifery and care staff. It can be used by everyone, wherever they work and whatever their role. It has been developed with a wide range of national organisations, staff representatives, people we care for, carers and the public.

Nursing, midwifery and care staff have a crucial role to play in closing the three gaps identified in the Five Year Forward View – the health and wellbeing gap, the care and quality gap, and the funding and efficiency gap, by making sure the activities we do are of high value. The 6Cs remain the value base in all that they do.

The framework highlights the need to focus on unwarranted variation – variations in health and care outcomes, patients' experience and use of resources that cannot be justified by reasons of geography, demography, or infrastructure.

Nursing, midwifery and care staff form the largest proportion of the health and care workforce, they have a key, leadership role in delivering a positive impact on outcomes, experience and better use of resources – the triple aim outcome measures.



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Dermatology and the lower leg

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Introduction:
There is significant overlap between the specialities of dermatology and tissue viability. However in practice the specialities are often not co-located and it can be a challenge to get advice in a timely manner from the correct professional.

This article is based on a presentation given at the Leg Ulcer Forum study day in April 2017. The aims for this article are the same as the study day which are for the reader to:

- Understand the structure of the epidermis and relate this to use of emollients and washing of the skin
- Support patients in the choice and use of emollients
- Be confident in the safe and effective use of topical corticosteroids
- Be aware of reasons to refer to dermatology

The structure of the skin:
Figure 1 shows the structure of the skin. Of particular relevance is the epidermis. The epidermis is the outer layer of the skin and it is this layer which forms the skin's barrier against the external environment. (Penzer and Ersser, 2010)

Figure 2 shows the structure of the top layer of the skin, the epidermis. Cell division in the epidermis is at the stratum basale (the base layer). The epidermal cells then move up the epidermis and by the point of reaching the stratum corneum they have lost their nuclei and have flattened out forming an effective barrier prior to shedding off in the normal desquamation process, as shown in figure 2.

Different areas of the body have different thicknesses of epidermis, the thickest is on the palms and soles and the thinnest the face (especially eyelids) and genital skin (Graham-Brown, Harman and Johnston, 2017).

Dry Skin:
In dry skin the cells in the stratum corneum form a less effective barrier. Skin can be dry for a number of reasons including an underlying skin disease such as eczema or psoriasis, side effects from topical or systemic treatments or associated with ageing (Lawton, 2007). Intrinsic factors such as a reduction in cell turnover, changes to collagen fibres and decrease in sebum and sweat production as well as extrinsic factors such as environmental factors, alteration to physical and mental functioning and co-morbidities can affect skin as people age (Finch, 2003).

The cells in the stratum corneum become dehydrated in dry skin forming a less regular structure and a dysfunctional barrier. This can cause itching and increases the penetration of allergens and irritants to the dermis leading to inflammation (Penzer and Ersser, 2010).

Emollients:
Emollients are a substance which smooths and softens the skin, whose main action is to occlude the skin surface and to encourage build-up of water within the stratum corneum (BDNG, 2012). This then supports the stratum corneum to function more effectively as a barrier.

Emollients available on prescription in the UK have petrolatum as the oil base. This is generally well tolerated and is rarely an allergen or irritant (Zhai, Willard and Maibach, 1999). Formulations of emollients range from ointments, creams, gels and lotions with the highest oil content in ointments and the lowest in lotions. Creams, gels and lotions are a combination of oil and water in differing concentrations and require stabilisers and preservatives. Some preparations have added ingredients to enhance penetration such as urea and lactic acid. Any of these ingredients can be potential irritants or allergens (BDNG 2012). It is important to remember that many products will

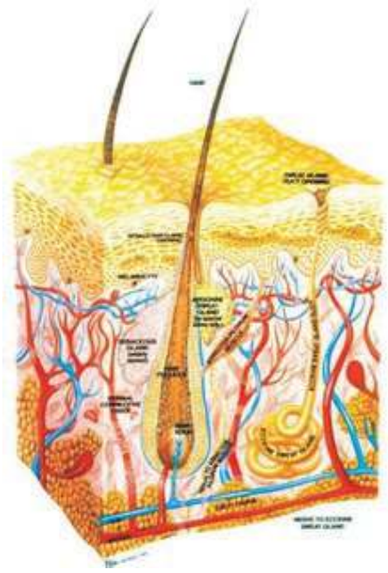

Figure 1: The structure of the skin

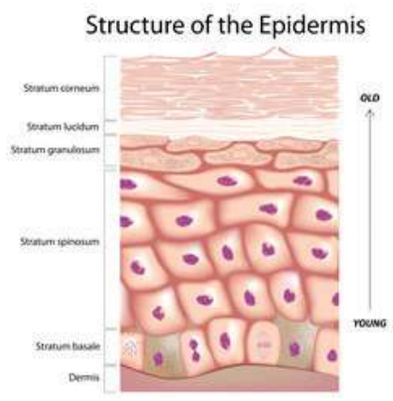

Figure 2: The epidermis

cause transient stinging when applied to dry skin, but this should pass relatively quickly. Persistent stinging or soreness may indicate irritation so changing products may help, or an allergy which may need referral to dermatology for diagnosis (see Contact Dermatitis section below).

The emollient of choice is very individual. In practice an ointment will give longer hydration but this may be too greasy under hosiery.

Emollients cannot be over-used and should be used frequently on dry skin. They should be smoothed on in the direction of hair growth to minimise the risk of folliculitis. They should not be rubbed in but allowed to absorb over time (NICE, 2007). Once emollients are applied clothes, pyjamas or dressings can be put on.

As petrolatum is potentially flammable, users should be warned not to smoke or be close to a naked flame especially with ointments, after application until absorbed. Emollients soaked into clothing or bandages are a particular fire hazard but it is not the use of emollients themselves that are the fire risk, but behaviours such as smoking which will cause the risk. The British Thoracic Society (2015) give guidance on use of home oxygen and emollients by smokers.

Products which have been used extensively in the past which have particular irritant properties and should not be used as leave-on emollients are aqueous cream which contains sodium lauryl sulphate (SLS) (Cork and Danby, 2011) and olive oil which has a high oleic acid content (Danby, et al, 2013).

Soap-based products will dry out the skin. This is evident in people without dry skin if they are exposed to soap regularly enough (as many nurses will be aware). Therefore people with dry skin or a predisposition for dry skin should consider washing using an alternative i.e. a soap substitute. Regular use of emollients without washing the skin can lead to a build-up of the product and can also affect the natural shedding of the stratum corneum cells so washing the skin is important. A practical soap substitute is a cream-based emollient in a pump dispenser which can be used in the bath or shower or on smaller areas of the body using a soft flannel to apply and rinse. It is important to remember they will make surfaces slippery so safety should be considered. After washing the area(s) should be patted dry and leave- on emollients applied (BDNG, 2012, NICE, 2007).

Topical corticosteroids:

Topical corticosteroids are indicated for inflammatory skin conditions, which includes eczema associated with venous hypertension. They are contraindicated in untreated bacterial, viral or fungal infection, rosacea, acne or a sensitivity to an ingredient. In the UK there are four classifications of strength from mild through to very potent (see table 1).

Table 1: Potency of topical steroids

Strength	Examples
Mild	Hydrocortisone 0.1-2.5%
Moderate	Clobetasone butyrate 0.05% (Eumovate) Betamethasone valerate 0.025% (Betnovate –RD (ready diluted))
Potent	Betamethasone valerate 0.1% (Betnovate) Mometasone furoate 0.1% (Elocon) Fluocinolone acetonide 0.025% (Synalar)
Very potent	Clobetasol propionate 0.05% (Dermovate)

The amount of systemic absorption is unclear but systemic side-effects are extremely rare from use of topical corticosteroids. Local side effects include an increased risk of worsening or spreading of local infection (hence an untreated infection is a contraindication), worsening of acne or rosacea and allergy or irritation to an ingredient. With prolonged use there is a risk of irreversible skin thinning manifesting as striae and telangectasia (BNF, 2015). The risk of skin thinning can be minimised by using an appropriate potency for body area which is related to the thickness of epidermis and potential for absorption, and by using intermittently to enable the skin to recover. Generally continued daily use should be for up to two weeks then stopped for a similar period prior to recommencing (NICE, 2007). A different regimen may be advised by a dermatology specialist. Occlusion will enhance absorption so a lower potency preparation should be considered although if the area is bandaged and not changed daily there would be less frequent application of steroid and lower risk of side effects.

The finger-tip unit was devised to identify safe daily amounts of topical corticosteroid application (Long and Finlay, 1991) and this can be helpful for clinicians or patients to identify the appropriate amount to apply. In practice this is enough to cover the inflamed area with a thin but glistening layer.

There is currently no strong evidence to support the order of application of topical corticosteroid or emollient (Smoker and Voegeli , 2014) although they should not be applied together to avoid diluting the topical corticosteroid or inadvertently transferring to unaffected areas.

When to refer:
It is difficult to give concrete guidance on when to refer but a few flags are highlighted below.

Contact dermatitis:
Contact dermatitis can be irritant or allergic. With irritant contact dermatitis minimising contact with the irritant can alleviate symptoms. Allergic contact dermatitis is a cell-medicated delayed allergic reaction and can be diagnosed by patch testing. It can be difficult to tell between these and suspected contact dermatitis is a reason to refer to dermatology services. The SIGN guidelines (2010) identify failure to respond to a moderately potent steroid is an indication for patch testing. Barbaud, et al (2009) note polysensitisation is frequent with patients with chronic leg ulcers and increasing with the duration of the ulcer. They showed out of 423 patients in the study, 73% had positive patch test to at least one allergen with the most common being myroxylon pereirae (Balsam of Peru), fragrance mix, antiseptics and corticosteroids (8%).

Pyoderma gangrenosum:
Pyoderma gangrenosum may occur on any site but lower limb most common. It is an autoimmune disease and may be associated with ulcerative colitis or Crohn's disease. Typical presentation is of annular (ring-shaped) lesions, often very painful especially at dressing change with purple edges which are often undermined. Treatment is required systemically and a recent randomised controlled trial (Stop Gap), a five year RCT to test the hypothesis that ciclosporin (4 mg/kg/day) is more effective than prednisolone (0.75 mg/kg/day) for oral therapy of pyoderma gangrenosum. The study found no significant difference between the treatments but increased safety with ciclosporin. (Ormerod, et al, 2015).

Malignancy (non-melanoma and melanoma):
Squamous cell carcinoma (a non-melanoma skin cancer) is an invasive carcinoma often appearing as a fast growing lesion or non- healing wound on area of skin already showing sun damage and may metastasise if untreated. They are usually associated with chronic sun exposure and treatment is wide local excision with careful follow up to observe for metastases (Graham-Brown, Harman and Johnson, 2017).

Malignant melanoma often appears as new or changing mole. It is the most dangerous skin cancer metastasising through lymph & circulatory system. The most cost common site on men is the back, and for women the lower leg (Cancer Research UK, 2016). Prognosis is related to tumour depth and malignant melanoma is associated with short intermittent intense sun exposure & sunburn with the highest risk for those with fairer skin. Clinical signs are associated with changes in shape, size, colour, inflammation, crusting/bleeding, itch, diameter greater than 0.7mm. Suspected melanoma requires urgent referral (Graham-Brown, Harman and Johnson, 2017).

This short article has addressed issues regarding skin care particularly around the safe use of emollients and topical corticosteroids The principles are relevant to all areas of skin but this has addressed issues around the use of these products on the lower limb, including use around areas of leg ulceration. It has also highlighted a few 'red flag' conditions where urgent dermatological advice should be sought.

Further information:
Further information can be found for both clinicians and patients on the following websites:

- British Dermatological Nursing Group (BDNG) www.bdng.org.uk
- British Association of Dermatologists (BAD) www.bad.org.uk patient information leaflets, clinical guidelines
- Patient support groups – there are a number of skin-related patient support groups listed here: http://www.bad.org.uk/for-the-public/patient-support-groups

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The Lower Leg Project
Physiotherapy Review

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Introduction

This report will discuss the role of the Integrated Care Team Therapy (ICT-T) within the Lower Leg Project (LLP). This project was based in Sheffield, where the ICT-T is part of the Combined Acute and Community Care group. The report will review supporting evidence, explore the role of the Physiotherapists within the LLP, look at the outcomes from the therapy input and the recommendations for the future.

The Lower Leg Project

Background

An audit examining the assessment and management of leg ulcers in the community care setting was carried out by the Sheffield Tissue Viability Service (TVS). This reviewed the skillset and management standards of the community nurses (King, 2016). As a result of this audit funding was secured to deliver the LLP.

The purpose of the LLP was to upskill the Integrated Community Care Team (ICCT) nurses in their management of patients with lower leg ulcers (LLUs) in the community. This was led by the TVS who provided training and continuous support. The aim was to improve the evidence-based assessment and treatment of patients with LLUs to meet national standards (King, 2016). It was anticipated that the benefit of early assessment, diagnosis and appropriate treatment would reduce ulcer chronicity and improve healing rates and patients' quality of life. It also aimed to free up valuable resources, allowing the TVS to focus on specialist or more complex cases.

Within each of the twenty seven nursing localities, two staff members were selected for the role of lower leg champion (LLC). They completed training delivered by the TVS, which consisted of assessment, treatment and care planning of patients with LLUs. The champions then cascaded their learning to members of their team and provided support as needed.

Evidence to support physiotherapy input

Chronic leg ulcers are wounds of the lower limb which have a tendency to heal slowly, even with appropriate treatment. The incidence of leg ulcers increases with age. Other risk factors include smoking, obesity and diabetes, which could increase the potential for occlusion of the veins due to atherosclerosis. Leg ulcers have a major impact on daily life due to the pain they cause and the effect on mobility, sleep, general function, mood and quality of life (Agale, 2013).

The most common type of leg ulcers are venous ulcers. These account for approximately 70% of all cases. Venous insufficiency is the most common cause of venous ulcers. This is caused by a malfunction of the venous system, which is then associated with venous hypertension (Agale, 2013). Obstructions in the veins or injury to the vein walls, as well as damage to the valves can lead to venous insufficiency (Ripley 2008 ; Agale 2013). As a result the valves do not close effectively, which can cause retrograde blood flow and venous hypertension. The development of venous hypertension can then result in congestion in the capillary bed, affecting capillary dynamics and reduce the effective exchange of nutrients essential to maintain tissue health (Ripley, 2008). This causes leakage of fluid out of veins and into the tissues, which can cause venous ulceration (Agale, 2013; Ripley, 2008).

The veins can also be damaged by surgery, trauma, or deep vein thrombosis, which can then cause a backflow of blood in the venous system leading to insufficiency and hypertension.

Another important factor to consider in the development of venous leg ulcers is the reduced effectiveness or failure of the calf muscle pump. This can occur due to immobility, ankle injuries and osteoarthritis (Ripley 2008; Agale 2013). Leg oedema can also be a contributing factor to reduced calf muscle pump as it can restrict ankle movement. Oedema can occur from prolonged sitting or sleeping in a chair with legs in a downward position. The failure of the calf muscle to aid blood flow back to the heart causes stasis of the blood, increasing the venous pressure (Agale, 2013).

Heinen et al. (2007) found physical activity, such as leg exercises and walking stimulates the calf muscle pump. Walking was particularly beneficial as it improves the effectiveness of the calf muscle pump supporting venous circulation. A literature review completed by Heinen et al. (2004), focussed on lifestyle and pain related interventions with venous leg ulcer patients. They found evidence that leg exercises improved calf muscle pump function, endurance, efficacy and power. This then had a positive effect on wound healing. The review also discussed that patients would benefit from therapy input to provide and teach individualised exercises. An experimental study completed by Meagher et al (2012) focussed on the benefits of prescribed walking in the management of venous leg ulcers. They found that those who took more steps per day and increased their steps over a four-week treatment period showed faster venous ulcer healing compared to those who took fewer steps.

Yim et al. (2014) completed a systematic review of the current literature looking at the effect of physiotherapy on healing and quality of life in patients with venous leg ulcers. They found evidence that exercise strengthens the calf muscle pump and improves ankle range of movement (ROM).

A pilot study by Davies (2007) assessed the efficiency of a home-based exercise programme in patients with venous ulcers, focussing on increasing ankle ROM, strength and endurance of the calf muscle. They also assessed the capability of the patients to maintain an exercise programme. They found significant improvements in ankle ROM, pain scores and participation levels. There were also good levels of adherence to the exercise programme; however there is a need for further research to determine if patients can independently adhere to a long term exercise programme.

Physiotherapy Project Overview

In 2015 the ICT-T team received a total of 6106 referrals, of those only 292 were from ICCT nurses, equating to less than 5% of referrals. The nurses reported as many as 40% of their caseload were patients with LLUs. As previously discussed, the evidence demonstrates the positive effects of exercise on improving ankle ROM and calf muscle pump and as a result contributing to ulcer healing. This highlighted the potential for physiotherapists to become involved in the management of patients with LLUs. Funding was therefore secured for two physiotherapists from the ICT-T team to join the LLP.

Aims

[1] To increase the mobility and activity levels of patients with LLUs to contribute to improving ulcer healing.

[2] To improve integration between therapy and nursing teams; improving communication and facilitating appropriate referrals from the ICCT nurses to ICT-T.

Method

The physiotherapists worked with the LLCs to identify appropriate LLU patients who would benefit from therapy input. They met with the champions and reviewed their caseloads to identify suitable patients for therapy.

The initial meeting consisted of; discussion about therapy involvement in the LLP, identification of suitable patients from the LLCs caseload and the therapy referral process. Joint visits were then arranged with LLCs to improve the therapists' understanding of nursing assessment and management techniques. Patients that were appropriate for therapy were identified during these visits through discussion with the LLCs and patients. The LLCs then referred the patients to ICT-T for therapy input.

An initial assessment was completed for all referred patients by the project physiotherapists. It consisted of a subjective assessment in the form of the core patient record. At the time of completing this project, the core patient record was the standard holistic framework used on initial visits by therapy team. It consisted of drug history, social history, activities of daily living, housing, nutrition, pressure care, continence, mobility, transfers, falls, pain and communication needs. An objective assessment was also completed, which assessed ROM, muscle strength, mobility and transfers.

Outcome measures

The primary outcome measures used were the EQ-5D-5L, Timed Up and Go (TUAG) and Turn 180.

The EQ-5D-5L is a health questionnaire that is commonly used across different health care settings. It is concise and is used in the measurement and comparison of patients' perceived health status across 5 different health related areas (Devlin et al., 2017).

The TUAG is defined as a reliable test used to measure strength and balance; it measures the time it takes for a participant to stand from a chair walk three metres, turn and walk back to the chair and sit down again (Dobson, 2015).

The Turn 180 outcome measure has been designed to assess different aspects of turning. Turning is reported as an increasingly difficult activity for those with declining mobility, increase in age and reduced confidence in balance. This measure asks the participant to turn though 180 degrees, while the assessor counts the steps, records the time, looks at strategies used and whether any staggering occurs. (Cohen, 2015)

These outcome measures were used on the initial and final treatment sessions, where appropriate, to measure change during the intervention period. The patients were provided with an individualised management programme, which varied depending on their ability and what they consented to complete. Some patients were provided with exercises and mobility practise, while others had mobility practise and / or equipment and onward referrals.

Where appropriate, the patients were transferred to senior therapy assistants (STAs) for continued support with the exercises and mobility practise. The STAs were provided with additional training by the physiotherapists on venous leg ulcers and their management to increase their understanding and ability to manage these patients. On their final visit, the STAs completed the relevant outcome measures and then debriefed the physiotherapists.

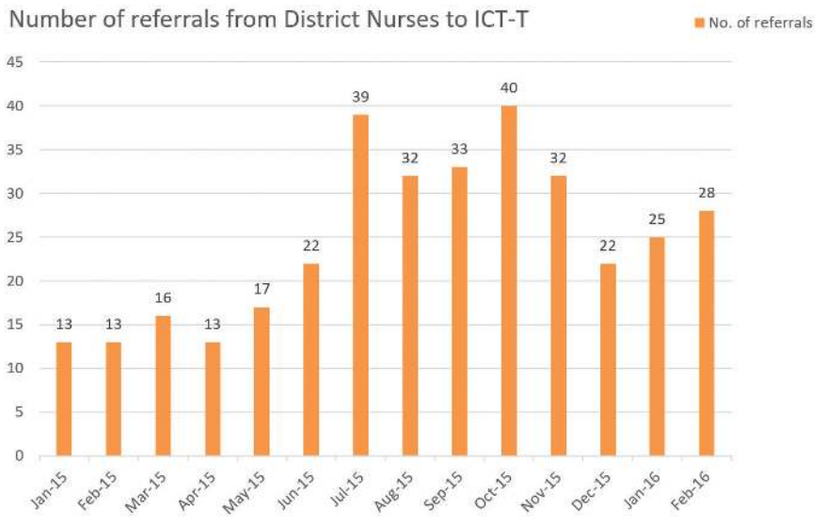
Results

Aim 1: improve the mobility and activity levels of patients with LLUs

Of the twenty two referrals received from the LLCs, two patients did not want to participate in any form of therapy and did not need equipment. A further three required equipment but did not wish to participate in therapy. Two patients struggled to participate due to low motivation. One patient became too unwell to participate and two were admitted to hospital. This left eleven participants who were fully motivated and received individualised exercise programmes and other support where appropriate.

Of these eleven, six completed initial and final EQ5D5L outcome measure. Of those two improved, two remained the same and two declined. Three completed the Turn 180 and two improved while one declined. Finally six completed the TUAG, three improved while three declined. Though improvements were shown in health outcomes, balance and mobility, there was not enough complete data to draw any definitive results.

Some limitations and suggested improvements associated with these results are outlined later in this report



Graph 1: **Number of referrals from ICCT nurses to ICT-T in 2015 and early 2016**

Aim 2: improve the integration between therapy and nursing

By increasing time spent with the nursing teams, the physiotherapists were more visible. This resulted in improved information sharing, increased understanding of each other's roles and discussion of nursing and therapy input and advice. It was a valuable experience and an opportunity to increase awareness of ICT-T and encourage integration. As a result, there was an increase in referrals from the nurses for LLU patients and also other types of patients who would benefit from therapy input.

Graph 1 shows the number of referrals, by month, received by ICT-T from the ICCT nurses in 2015 and the start of 2016. It can be clearly seen that during the months the physiotherapists were involved (July – November) there was an increase in referrals from the nurses. The number of referrals reduced when there was less involvement and increased again in February when work started again with an additional team.

Discussion

There were twenty-two patients referred by the LLCs and of these, eleven consented and were able to complete the exercise programme and mobility practice. For those who declined or were unable to perform active therapy, value was added in other ways which will be discussed.

Mobility

The mobility practise led to various functional improvements. It enabled some patients to mobilise outdoors with the appropriate walking aid, others were able to mobilise longer distances within their own home and as a result, increased their independence. Some also began to mobilise with their family and their motivation and confidence improved.

Exercise

Initially some of the patients found it difficult to complete the exercises due to pain, poor technique and lack of motivation. However, with practise and encouragement, most improved and progressed.
The majority of patients were completing the seated exercises daily, particularly the ankle exercises and a few could complete the standing exercises, with progression to using an exercise band and weights.

Provision of equipment

Equipment was provided to those requiring assistance with their mobility. For example, provision of perching stools, bed levers and rails. The equipment helped to improve patient function, for example improving ability to complete bed transfers, which facilitated better positioning to reduce lower limb oedema. Also, provision of rails to enabled safe access in and out of the house, which could help reduced social isolation.

Onward referrals

There were patients who declined therapy input but they accepted an onward referral to other services, for example to community support workers and wheelchair services. This could help to reduce social isolation and have a positive impact on physical and mental health.

Education

The patients were provided with continuous education on the benefits that mobilising and exercise could have on their lower limb ulcers and oedema. As a result, they were more willing to participate in the weekly sessions and adhere to the advice.

Patient motivation

Some patients lacked motivation, which meant they did not complete the exercises or mobility practise. This may have been due to pain, general deconditioning, low confidence and also reluctance to accept help or change. These patients need to be continually encouraged by the different professions who see them regularly to improve their level of activity.

Recommendations

1. Closer links between therapy and nursing teams for better integration

On-going integrated working practices and exposure between the two teams is recommended. This will enable improved information sharing and understanding of each other's roles, with goals of reducing duplication and increasing cohesiveness and quality of care. A further study is recommended to consider the best methods of integrating the nursing and therapy teams.

2. An ongoing plan to communicate with the remaining nursing localities.

It is recommended that an implementation plan is agreed to ensure the remaining localities receive the same information and visits. This would standardise the dissemination of project information across the city.

3. Ensure all staff has an increased awareness of the importance of exercise and physical activity for ulcer healing.

Continue to inform and educate nursing and therapy staff by developing a staff hand-out highlighting evidence, advice and exercises for LLU patients.

4. Increase patient self-management.

Education plays an important role in adherence to exercise programmes and mobility practise, especially on a long-term basis (O'Brien et al., 2014). Time should be allocated to inform LLU patients about the importance of exercise and physical activity. To support staff in doing this, a patient leaflet has been produced to inform patients and encourage self-management.

It is also recommended that the use of "Florence" telehealth is explored within the ICT-T service. This is a text messaging service that would enable the therapist to prompt patients, via their mobile device, to complete their exercises.

5. Referral to ICT-T for functional assessment

Where needed, it is recommended that ICCT nurses refer patients to ICT-T to assess their functional needs and provide other interventions such as transfer practise or provision of more complex equipment.

Limitations

The main outcome measures used were EQ-5D-5L, TUAG and Turn 180. It was not possible to complete these outcome measures with every patient due to various limitations.

The lack of space in some of the patient's homes made it difficult to either complete or measure out distance required for the TUAG test. There were some patients who did not understand the instructions particularly for the EQ-5D-5L and TUAG. This either led to patients being unable to complete it or the results being skewed. There was poor inter-tester reliability as different therapists or STAs completed the pre and post outcome measures; this reduced the validity of the results particularly with the TUAG measure. Some patients did not consent; others had balance and pain issues which made it unsafe or difficult to complete the outcome measures.

There was a small sample size and lack of rigour in the methodology, limiting any formal conclusions on the impact of exercise and mobilising on ulcer healing. However, where patients showed functional improvements and increased activity levels and, considering the evidence that has already been discussed, it can be assumed that those patients could have positively affected their LLU management.

Improvements

If this project was to be undertaken again it is recommended that:

- More specific criteria would be needed to accurately measure the impact of exercise on ulcer healing.
- The same therapist would perform the initial and final outcome measures.
- Outcome measures that are appropriate for all patients should be chosen. This would increase the completion rate of initial and final outcome measures, resulting in more rigorous results.
- A diary sheet could be used to record the activity levels of the patients. This would give a more realistic measure of the amount of exercise the patient is completing and would also work as a motivational tool.
- The therapists would have access to the nursing team's lower leg assessment template and wound assessment template in the electronic records to access the most current information about their ulcer, risk factors and current nursing management.

Conclusion

The evidence reviewed in support of this project has shown that exercise and mobility are important elements in the management of venous leg ulcers.

The ICCT nurses are making great efforts to improve and standardise their assessment and management techniques of LLUs. Within this, encouraging patients to complete exercises and to mobilise should be considered a key part of their management of these patients or, where needed, a referral to ICT-T.

Through completing joint visits and continued communication, this project has started taking strides towards improved integration between the two teams which has shown to improve quality of care. However a further roll-out plan is required to ensure continued success in this area.

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Case study
Compression therapy in the management of complex cases

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It is well documented that lymphoedema is a chronic debilitating condition (Lymphoedema Support Network 2015, Moffat 2003, LayFlurrie 2011, Partsch and Mortimer 2015) affecting 120 million people worldwide (Lymphoedema Framework 2006) and if left untreated will deteriorate. Other conditions may co-exist which may not have been recognised, such as lipoedema, and if compounded by lymphoedema, may make the combination of symptoms difficult to manage. Lipoedema, although first described in 1940 by Allen and Hines, is still poorly recognised or not acknowledged by health care professionals at all (Langendoen et al 2009, Forner-Cordero et al 2012, Williams and MacEwan 2016). Much has been done to redress the balance of educating health care practitioners with the publication of the best practice document "The Management of Lipoedema" (Wounds UK 2017) and support groups such as Lipoedema UK and Talk Lipoedema (https://www.lipoedema.co.uk), but early recognition to prevent the chronicity seen today in primary care is still of paramount importance.

What is lipoedema?

Lipoedema is an abnormal accumulation of fat in the body tissues affecting women almost exclusively. If ever seen in men, it is extremely rare and then only as a result of severe liver damage (Foldi and Foldi 2006). Exact incidence and prevalence worldwide is not known (Bertsch 2018, Lipoedema UK 2018). Lipoedema can present at various phases in a woman's life with the exact cause still unknown, but it is thought to be linked to hormonal fluctuations, that cause the tissues of the body to change, during specific times of a woman's life - puberty, pregnancy and the menopause (Fonder et al 2007). It can affect the hips, buttocks, legs and arms (Dudek et al 2015). It is sadly often misdiagnosed as obesity, compounded by chronic oedema (lymphoedema) or not diagnosed at all (Todd 2010). Figure 1 shows the differences between lipoedema and lymphoedema.

Lipoedema is characterised by bilateral and symmetrical deposition of fatty tissue ending abruptly at the ankles or wrists, so feet and hands are often left unaffected. Severe shape distortion can become apparent if the condition progresses, giving rise to skin folds, difficulty in finding clothes to fit and altered gait leading to reduced or poor mobility. The condition is often characterised by tenderness and pain in the affected areas upon the slightest palpation. All these factors may then impact on the psychosocial well-being of the person affected (Symvoulakis et al 2010).

Figure 1: Differences between lymphoedema (chronic oedema) and lipoedema

Lymphoedema (chronic oedema)	Lipoedema
Male or female	Female
Positive Stemmer's sign	Negative Stemmer's sign
Oedema to feet / hands	Spongy soft-fatty feel to tissues
Pitting oedema in early stages	Bilateral arms or legs affected
Fibrosis in later stages	Symmetry in affected limbs
Unilateral or bilateral limbs	Bruising (capillaries become fragile)
Any bodily area affected	Pain upon slightest touch
Little or no symmetry	
Skin changes (eg hyperkeratosis)	
Pain (subjective)	

If lipoedema remains untreated it often affects the lymphatic system's ability to drain, which in turn impacts on the venous system and the three conditions merge (potentially with a leg ulcer and large distorted swollen legs), often referred to as lipolymphovenous oedema. The severity and progression of lipoedema is described by a staging system (see figure 2).

Figure 2: Lipoedema staging system

Type	Anatomical area
1	Buttocks and hips
2	Buttocks, extending to knees, fat lobes develop on the inside of the knees
3	Buttocks extending to ankles
4	Arms (sparing hands)
5	Lower leg (sparing feet)
Stage	**Description**
1	Smooth appearance of skin, upon palpation feels like the texture of a bean bag
2	Coarse nodular feel to the tissues, firmer feel, peau d'orange (orange peel skin)
3	Indurated tissues, fibrosis, limb distortion occurs with pronounced lobes developing on the medial aspect of the thighs and below knee.
4	Appearance of lymphoedema (chronic oedema). Known as lipolymphoedema

Community staff, as a result, are seeing an increase in these complex lipolymphovenous oedema cases in the domiciliary setting (RCN 2015, Queen's Nursing Institute 2015). Assessment and management requires skill, knowledge and above all – that precious commodity – time. Compression bandaging has been the mainstay of treatment for venous leg ulcers, lipoedema and lymphoedema (Hunter 2017, Moffat 1995), but application requires skill and a level of competence to be sustained. Dealing with patients who have complex issues requires a dynamic team approach, consistency, innovation, and dedication.

After venous ulcers have healed and chronic oedema reduced, maintenance therapy is required to prevent recurrence or rebound of lymphovenous-oedema. However, the lipoedema component is different in that the abnormal accumulation of fat does not respond to compression although applying compression therapy will reduce the risk of oedema forming and does assist in streamlining the limb shape. Anecdotal evidence suggests that getting compression therapy right is often the most complex element to address to ensure the garment fits well and is easy to apply and remove and comfortable to wear.

The following case study demonstrates that a panoramic approach is needed to explore all avenues of treatment.

This case study is centred around a very determined, open minded, and concordant lady who, for the purposes of confidentiality, will be referred to as 'Joy'.

Although housebound, but mobile with a Zimmer frame, 61-year-old Joy lived independently. Her main problem was increasing bilateral leg oedema with repeated episodes of cellulitis and non-healing venous leg ulcers which she never had any expectation of healing because she had endured them for many years. Dressings to the ulcer beds were kept simple with super absorbent pads changed twice weekly by community staff, and applied under below-knee made to measure flat knit class 2, compression hosiery which was ill-fitting and tended to slip.

Garments should cover the extent of the problem in the limbs, so compressing to the knee when the condition extends beyond the lower leg is ineffective (Lymphoedema Framework 2006). Therefore a multidisciplinary approach incorporating services from tissue viability and community nursing was necessary to assess how to achieve the goal of well fitting, well tolerated made to measure compression hosiery to Joy's thighs.

The skin and underlying tissue condition was firm and fibrosed, resulting in it being non-pitting, indicating chronic changes and associated shape distortion with large lobes present to the medial / posterior aspects of her thighs (see figure 3). The tissue of the hips was soft and fatty, consistent with lipoedema. Compression had been tolerated well (people with lymphoedema feel much more comfortable in compression whereas those with pure lipoedema may only tolerate compression for a short time during the day). Therefore, knowing Joy was comfortable in compression allowed the decision to find a system that would treat the whole limb effectively.

Figure 3: Joy, at initial assessment showing severe limb distortion to both legs with firm non-pitting lobes of skin around the knee and posterior/ medial thighs.

Multi-layer compression bandaging had previously been the system of choice, but community staff found it time consuming to apply and it constantly slipped due to the shape distortion. An adjustable Velcro compression device (AVCD) in this case juxtafit® (medi UK), below knee and thigh piece, was applied initially to the left leg only to start reduction of limb oedema. Joy felt it would be easier to maintain her mobility if one leg could be treated at a time.

juxtafit® is an inelastic, breathable, latex-free device which offers measurable compression, with unique built in pressure monitoring system (Innovative Medical Technology Overview 2018). This allowed all members of the community nursing team, regardless of skill level, to apply specific levels of compression at every application. Applied by interlocking straps, its Velcro fastenings prevent slippage. It can be self-adjusted throughout the day without removing the whole device and conforms to the limb, despite shape distortion. AVCDs are more effective in reducing chronic oedema than inelastic compression bandages (Mosti et al 2015) and the devices were well tolerated by Joy.

Figure 4: This photo shows the big reduction in the size of left thigh and particularly the improved shape at the knee.

After 2 weeks of using juxtafit® on her left leg, figure 4 shows that the oedema had significantly reduced. juxtafit® treatment was then started on Joy's right leg (see figure 5).

Figure 5: juxtafit® in situ on Joy's right leg. Foot is not compressed as it was not affected by the lipoedema.

Going forward, once the juxtafit® had achieved an improved leg shape, application of an alternative full leg form of compression therapy was required continuously to prevent rebound of oedema. Joy's goal was to wear compression hosiery to the whole of both her legs. As stated before, Joy had previously worn closed toe, below knee, flat knit Class 2 made to measure compression hosiery, so this was renewed with the mediven mondi ® version of this hosiery. Joy had no swelling to her feet (a characteristic of lipoedema) she was prescribed further made to measure mediven mondi ® (medi UK) class 2 compression hosiery, extending from her ankles to her thighs. Two layers of compression garments were chosen to make donning easier (Innovative Medical Technology Overview 2018).

It is easier to apply a below knee garment (toe to knee) and then from ankle to thigh – this is known as layering or combining garments. This offered more support over the gaiter region to help with venous return and healing of the ulcers – but also addressed and maintained the reduction of oedema to the lateral thighs. The garments had waist attachments to support the lateral oedema and distortion of her hips. mediven mondi ® compression hosiery, incorporates high levels of polyamide and controls oedema formation due to inelasticity of the fabric (Partsch 2008). Whilst the mediven mondi ®produces high tensile strength, it is durable, soft to touch and conforms well to the shape of her limbs.

Figure 6: mediven mondi ®combination garments on both legs once the reduction had been achieved (First garment: closed toe below knee and second garment ankle to thigh).

The collaboration between various disciplines of health services improved Joy's life considerably. Reducing her oedema with juxtafit® and then maintaining the reduction with 2 layers of mediven mondi ®had the following results in 6 months:

- The ulcers, which had been present for many years, healed on her right leg within 6 months and almost healed on her left.
- Her oedema reduced to her thighs
- Her leg shaped was regained, and
- Her mobility improved.

From past personal experience and current anecdotal evidence practitioners find it difficult to apply multilayers of compression bandaging to complex oedema and distorted limb shapes. By using juxtafit® with its unique built in pressure system, guaranteeing accurate compression levels, to reduce the oedema and by manufacturing the mediven mondi ®compression hosiery garments in 2 separate pieces, donning and doffing is made quicker and easier for practitioners, whilst it also assists in maintaining the patient's independence.

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Coffee Time

A) Hypergranulation
B) Squamous Cell carcinoma
C) Pyogenic Granuloma

A) Allergic Contact Dermatitis
B) Cellulits
C) Irritant response from Exudate damage

A) Varicose Eczema
B) Steroid induced skin atrophy and bruising
C) Haemosiderin Staining

A) Basal Cell Carcinoma
B) Fungal Infection
C) Necrobiosis Lipiodica

A) Hyperkeratosis
B) Fungal Infection
C) Varicose Eczema

A) Deep Tissue Injury
B) Maceration
C) Malignant Melanoma

Answers

Question	Correct Answer	Recommended Signpost / resources
1	B) Squamous Cell Carcinoma	http://www.bad.org.uk/ PILS Squamous Cell Carcinoma (SCC)
2	C) Exudate damage – Irritant Dermatitis	http://www.dermis.net DermIS – image collection
3	B) Steroid Induced Atrophy and Bruising	http://www.dermis.net DermIS – image collection
4	A) Basal cell Carcinoma	http://www.bad.org.uk/ PILS Basal cell carcinoma (BCC)
5	B) Fungal infection- Trichophyton Rubrum	https://www.dermnetnz.org/
6	C) Acral Malignant Melanoma (Heel)	http://www.bad.org.uk/ PILS Melanoma

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