HARD-TO-HEAL LEG ULCERS
– when to invest resources

- Hard-to-heal ulcers: patients’ views on negotiating care
- Hard-to-heal ulcers: Integrating adjunctive therapy into practice
- Future trends in leg ulcer care
- Anti-microbial silver dressings for venous leg ulcers
- Service delivery and changes
- Conference reports
- Glasgow 2007 and the European Wound Management Association
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Issue 20 of the Leg Ulcer Forum journal focuses on hard-to-heal leg ulcers, looking at both the impact of delayed or non-healing on both the patient and the service itself. Patricia Price and Elizabeth Mudge provide a fascinating insight into patients’ views on care, treatment and competency while Peter Vowden and I have looked at the importance of early observation of treatment response in selecting patients for advances or alternative treatments. The article from Palfreyman et al describing the VULCAN trial highlights the difficulties of recruiting patients to clinical studies, and comments on referral pathways for non-healing ulcers. I, like many, await the results of this study on antimicrobials with interest. Given these papers, it is particularly pertinent that hard-to-heal ulcers are one area we intend to cover in our conference in Bradford this September.

Clearly if we are to address the issues raised in these two papers it is necessary to look at both the way we provide a service and how education underpins the delivery of that service. Aspects of service development are covered in three papers in this issue of the journal, and this focus shows the importance that the Leg Ulcer Forum gives to this aspect of care provision. Jacqui Fletcher’s step-by-step guide to choosing an appropriate educational course will be helpful to many nurses who are wrestling with the intricacies of the University system, and includes a list of some of the available leg ulcer courses.

As always, the Forum has been actively involved in delivering education through a series of conferences and study days, and reports from three of these events are included in the journal. Next year sees the European Wound Management Association conference move to Glasgow and we have, as a partner organization, been actively involved in planning for this event. Peter Franks, the current President of EWMA, highlights the important relationship between the two organisations.

Finally, may I thank the authors on your behalf for their time and efforts? The success of the journal and the Forum is dependent on their work, the generosity of our sponsors and the dedication of those on the Committee. I and the other members of the Committee look forward to seeing many of you in Glasgow.

Very best wishes

Kathryn Vowden
Editor
In the first few months of 2006, both as chair elect, and then as Chair of the Leg Ulcer Forum I have had the opportunity to attend all the educational events run by the LUF for the benefit of its members.

These events were held at Ashford in Middlesex, Glasgow in Scotland, and Portadown in Northern Ireland. All three had a unique ‘flavour’ but also had a common theme that was of a bond which reached across all the delegates, executive, and commercial organisations. That common bond is the desire to improve the care of patients with leg ulcers and associated conditions. Some LUF members are extremely experienced and expert in their practice, others are just at the beginning of their careers but already have a feel for the impact of living with leg ulceration. There are comprehensive reports from the three events but from my perspective the speakers were knowledgeable and passionate about their subject and at break times the air was electric with discussion and common purpose.

Another common theme across the conferences was the implication of changing demographics and how important it is to be developing services to meet the needs of the increasingly elderly population. As well as increasing age we need to consider the increasing complexity of co-morbidities and the additional education that practitioners need in order to be appropriately skilled in treating those conditions. For instance Lilian Bradley at the Portadown event considered the changing population and highlighted some issues arising from pharmaceutical agents, which may have a direct impact on delaying wound healing and causing unwanted side effects; an increasingly complex clinical challenge when trying to deal with competing conditions.

Margaret Armitage, in Glasgow, highlighted the new draft SIGN guidelines on peripheral arterial disease, a timely consideration in light of the ageing population. Interestingly the draft considers ABPI assessment for anyone suspected to have peripheral arterial disease, highlighting the need for resources to match the needs of the patients.

In Ashford, Christine Moffatt discussed the Lymphoedema Framework and the findings from the considerable work being carried out in this under researched area. It became clear from this presentation and others, as well as the questions and discussion which arose from it, that leg ulcer and lymphoedema management share many features in common and it is becoming clear that the boundaries between the specialties are beginning to blur. This is an exciting prospect because we have much to learn from each other, and patients can only benefit from this collaboration.

I am very proud and humbled to be the Chair of the Leg Ulcer Forum – the enthusiasm of the members, the commitment of the Executive and the support of the commercial organisations ensure that the care of patients is kept at the forefront of the work that we do. I look forward to meeting you all at educational events, and hearing your views and concerns about issues concerned with leg ulceration and related conditions.
On the 24th of March, Ashford Hospital Education Centre again hosted the Leg Ulcer Forum Conference. This year the programme centred on the new Lymphoedema Framework, and aspects of care for patients suffering from lymphoedema and related skin problems.

The day, which attracted 70 delegates opened with Professor Christine Moffatt, fresh from receiving a CBE from the Queen, lecturing on the major Kings Fund Lymphoedema Project. The project has identified that the incidence of lymphoedema is not dissimilar from leg ulceration, at around 1.2% of the population. As with leg ulcers in the past, patients often struggle on for years self-caring without proper assessment or treatment. Very few Trusts fund lymphoedema services.

One highlight of the day was a live patient workshop held in the Leg Ulcer Clinic at Ashford Hospital. They recruited their own lymphoedema patients as guinea pigs. Delegates were invited to interview the patients and their carers on living with lymphoedema. Expert patient assessment was conducted by Christine Moffatt, with members of the LUF executive. The patient’s thoroughly enjoyed taking part and gained a lot from the expert opinions they received.

At the end of a very successful day the delegates and executive board presented Mark Collier with a Liverpool rose bush, as he hands the chairmanship over to Irene Anderson, and bouquets were presented to Penny Musson and Lynfa Edwards who are standing down from the executive after many years of service.

“One highlight of the day was a live patient workshop held in the Leg Ulcer Clinic at Ashford Hospital”
Developing Leg Ulcer Services: Who, Where, When, Why?

The Seagoe Hotel Portadown again proved a popular venue for the 7th Irish Leg Ulcer Forum Conference on 26th April, 2006 when 158 delegates from all over Ireland met to explore how delivery of care to people with lower limb ulceration and associated conditions could be enhanced. We were privileged to have with us Professor Christine Moffatt, CBE. Norma Brennan, Irish Chairman of the Forum congratulated Christine on this wonderful honour and also on her recent award of Fellow of the Royal College of Nursing.

Professor Moffatt set the scene for the day by outlining epidemiology and challenging us to become involved in updating what are now old data by conducting an epidemiology study in Ireland to determine the extent of the problem. One of the reasons why the data are now outdated is that over the last 10 years delivery of care has changed practice – more people are having an accurate differential diagnosis of the aetiology of the ulcer through a more informed nursing workforce. Professor Moffatt also outlined the advantages and disadvantages of nurse-led clinics, acknowledging that not all patients can attend clinics, and the need for a multi-disciplinary approach to care.

Lilian Bradley, Tissue Viability Nurse Specialist and developer and former module leader of the Tissue Viability Courses at the School of Nursing & Midwifery, Queen’s University, Belfast followed this by outlining the educational standards and competencies required by nurses working at different levels of delivery of care. The Irish Leg Ulcer Forum Executive in Ireland has, over the past year, been developing standards and competencies which they hope will guide managers and nurses who have responsibility for delivery of care. The document has been shared with the national executive who have provided useful feedback and helpful comments. For example the lead nurse who may or may not be a tissue viability nurse should have, as a minimum requirement, an accredited course in tissue viability to include a module dedicated to leg ulcer assessment and management (Table 1). Such courses and modules are available in most areas.

Lucy Carroll, Tissue Viability Nurse in St Jame’s Hospital, Dublin underpinned the need for adequate education and training by outlining the assessment process for patients with lower limb ulceration reminding the audience that an accurate differential diagnosis was essential prior to the development of a treatment plan.

Ms Sylvie Hampton, Tissue Viability Consultant, Eastbourne reminded the delegates of the ethical and legal responsibilities that we have towards clients, ourselves and the employing organisation, emphasising that the non-provision of appropriate care as well as provision of poor quality care can be grounds for negligence. This provides a challenge to employing bodies in the light of dwindling resources and an ever-ageing population.

A highlight of the morning session was Mr Billy Dixon, Image Consultant who, in a light hearted manner, encouraged us to think about the image we present in interviews and presentations. Mode...
of dress is important, and he illustrated this with images of how colour balance and hairstyle can transform a harassed mum into an impressive business woman! The art of appearing confident can also be finely tuned through the way we walk, the angle of the head, all of these essential elements when we present our business case to management hoping for a successful outcome!

The morning session closed with a presentation and tribute to Pauline Diamond, Tissue Viability Advisor, North Western Area Health Board marking her retirement after many years of pioneering service to leg ulcer patients and nurses across Ireland. This was followed with the AGM and election of Leg Ulcer Forum officers for the year 2006/7.

Following an excellent lunch, efficiently served, the afternoon workshops further reflected the very practical nature of the conference when delegates had opportunity to attend 2 out of 5 workshops (Table 2).

Delegate evaluations were very positive with speakers and workshops mostly described as “excellent” or “good in relation to interest and content” and “very or extremely relevant”.

The organisers wish to thank the delegates, speakers, workshop facilitators, the conference administrator and the many companies who supported this very successful conference, either through exhibiting or making a donation towards delegate fees.

Table 2 Afternoon Workshops

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<td>Setting up a Clinic</td>
<td>Pauline Diamond, Tissue Viability Advisor, North Western Area Health Board</td>
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<td>Heather Ogle, Tissue Viability Nurse, Sperrin Lakeland Trust</td>
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<td>Practical Bandaging</td>
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Scottish
Conference report
Margaret Armitage

This year’s Spring conference and AGM was held in Glasgow at the Campanile Hotel in March.

The organisers felt sure that we would enjoy clement weather – however, our colleagues from Dundee and further North braved blizzards on their drive South and are to be applauded for arriving on time. The numbers of delegates increased by 40% in the 8 days prior to the conference and we thank our treasurer, May Loney, for coping with this last minute rush. The final delegate number was an excellent 92.

There was a slight hiccup with the sound system at the beginning of the morning but this was rectified by two technical wizards, and the day got off to a slightly delayed start.

Margaret Armitage opened the conference with a presentation on the soon to be published SIGN Guideline for Peripheral Arterial Disease. This guideline could have implications for leg ulcer nurses as it suggests that standard referring data from primary care to vascular units should include ABPI. As it is usually nurses who do leg ulcer assessment who have the skills to perform this investigation, there is implication for resource of time and impact on clinic waiting times.

Susan McGeachie shared the results of a small study looking at follow up care for people who have had DVT. The study identified that there is no recognised pathway that identifies who is responsible for providing follow up assessment and care.

There followed two very interesting presentations on lymphoedema. Christine Moffat discussed the progress of the lymphoedema framework and Anne Williams described a practical approach through use of case studies.

Following lunch, Celia Muir gave an illuminating talk on common skin problems associated with leg ulcers.

The final session of the afternoon was a re-visit of the debate held in London for the LUF 10th anniversary conference. This gave Scottish members the opportunity to debate whether health care assistants should apply compression bandaging. The motion for health care assistants having a role was very ably presented by Judy Harker, and the motion against convincingly argued by Irene Anderson. The Scottish members voted in the majority against health care assistants applying compression bandaging.

At the AGM, two new members were voted onto the committee: Anne Wilson from Dunfermline and Anne Ritchie from Dundee.

The EWMA conference will be in Glasgow 2-4 May 2007; therefore next year’s LUFS conference and AGM will be in February and provisionally in Edinburgh.

““The Scottish members voted in the majority against health care assistants applying compression bandaging””
The EWMA was founded in 1991 at a conference in Cardiff. Its objectives are to promote advancement of education and research into native epidemiology, pathology, diagnosis, prevention and management of wounds of all aetiologies. This article reviews the current EWMA activities and future initiatives.

EWMA Conference 2006
The 2006 conference took place in Prague, Czech Republic on 18th to 20th May. This was an important development for EWMA as it was the first time that a conference had been held within the old ‘Eastern’ European states. As with all EWMA conferences this was undertaken in collaboration with the local national organization, the Czech Wound Management Association (CSLR). We are very please to report that we had in excess of 1800 participants, of whom 300 were from the Czech Republic. Importantly we also had large numbers from Germany, Hungary and Italy, countries that previously had not taken part in large numbers. The title of the meeting was Innovation, Education & Implementation and reflected the need to develop systems of care that incorporate all three concepts into clinical practice. Key plenary sessions were offered by over fifty invited international speakers.

European Collaboration
EWMA has developed a close relationship with national wound healing associations, and we have formal links with 33 organizations from 25 countries of Europe. The most recent organization to be formed and become affiliated to EWMA is the Romanian Wound Management Association (CSLR). We are very please to report that we had in excess of 1800 participants, of whom 300 were from the Czech Republic. Importantly we also had large numbers from Germany, Hungary and Italy, countries that previously had not taken part in large numbers. The title of the meeting was Innovation, Education & Implementation and reflected the need to develop systems of care that incorporate all three concepts into clinical practice. Key plenary sessions were offered by over fifty invited international speakers.

Publications
EWMA has published the EWMA Journal twice yearly in English for the past five years, under the editorial leadership of Carol Dealey. The latest EWMA Journal has just been published (Spring 2006), and is available for download (www.EWMA.org). Original articles are included that address the issue of silver in dressings, understanding the reasons for bandage changes and a method for grafting human skin cells. Also included are updates on the various EWMA panels and articles from national organizations, emphasizing our commitment to national wound care organizations. We are pleased to report that the EWMA journal has recently been accepted for listing in CINAHL (Cumulative Index to Nursing and Allied Health Literature).

The latest EWMA Position paper is entitled The management of wound infection. Papers include a number of articles relevant to dealing with wound infection, including the use of silver, issues around the use of topical antimicrobials and integrated approaches to wound infection. These describe the ‘state of the art’ in certain aspects of wound care. The position paper is translated into five languages (English, German, French, Italian and Spanish), and distributed to all co-operating groups. It can also be downloaded free from the EWMA website (www.EWMA.org).

The EWMA Educational Panel
The panel’s aim is to produce a flexible framework for the delivery of education within wound management, under the current leadership of Zena Moore and Finn Gottrup. The focus of this is to define the content of specific wound management modules to facilitate the development of education and training in countries or areas that currently do not benefit from structured wound healing initiatives. It is anticipated that this structured approach will ultimately support a range of practice development initiatives across Europe in order to raise awareness of wound care best practice. At
present the project has developed the following specific modules:

- **leg ulcer management**
- **diabetic foot ulcer**
- **pressure ulcer prevention/management**
- **oncology wounds**
- **acute traumatic wounds and chronic wound management**

Planned modules are

- **burns**
- **clinical research**
- **lymphoedema**

These modules set a benchmark standard for quality wound-related education. They can be requested when developing new courses or used to evaluate the quality of existing wound management courses. Once approval has been granted, details of the course and links to the host institution will be included on the EWMA website in the form of a directory of approved courses/programmes.

**Eastern European Initiative**

Chronic leg ulceration is largely a problem of the elderly. Studies indicate that there may be 650,000 patients with chronic leg ulceration in Europe at any one time. The aim of this project will be to assist three countries of Central and Eastern Europe (Slovenia, Czech Republic and Poland) to develop a rational approach to leg ulcer management that will be available to all patients, irrespective of their ability to pay. The experience and evidence from these projects will be used to justify the wider adoption on a national basis.

We are pleased to announce that ConvaTec have agreed to sponsor the development work for this project, but we hope that other companies will join this project to help evaluate quality services in these countries. We expect this to be the first in a number of initiatives in the healing and management of wounds across Europe. It is anticipated that the experience gained in these countries will be transposed to other countries where expertise is lacking, and modern wound materials are severely restricted.

**EWMA Conference 2007**

Work is also well underway for the 2007 conference which will be in Glasgow on 2-4th May. We are very pleased to announce that this will be undertaken in collaboration with the Leg Ulcer Forum together with the Tissue Viability Society, Tissue Viability Nurses Association and the National Association of Tissue Viability Nurse Specialists (Scotland). The theme will be *Evidence, Consensus and Driving the Agenda Forward*. Again this is an important development for EWMA as it is the first time it has returned to the UK since 2000. As with all EWMA conferences it will give an opportunity to hear presentations and debates from some of the world’s leading wound care experts.

**Conclusion**

EWMA has developed strong links within Europe and acts as an umbrella organization for national wound management organizations. It continues to assist these organizations both in their establishment and future development. We hope that LUF members will continue to support EWMA and its activities.
The Leg Ulcer Forum is delighted to be a co-operating organisation for the EWMA conference in Glasgow 2007. The UK Leg Ulcer Forum, along with its affiliations in Scotland and Ireland, is fully committed to making the conference a huge success. In order to achieve this we are participating in the work of the scientific committee and the local organisation of this event.

The LUF has had links with EWMA over several years and this enables the Forum to highlight the needs of people with leg ulcers across international boundaries, and also for our members to benefit from new findings and research presented at conferences at home and abroad. It is possible to be truly co-operative with other organisations and societies in order to improve care for patients, as well as retaining a discrete and unique identity. The Leg Ulcer Forum is fully committed to advancing the education and support of all its members involved in leg ulcer management. We have offered advice and support to any member who may wish to submit an abstract for the EWMA Glasgow conference.

We wish EWMA well with their ongoing work, particularly in their support of wound organisations from countries that lack resources and are in the early stages of developing wound care services and education. The Leg Ulcer Forum wishes them well with the conference and look forward to seeing as many of our members there as possible.

Irene Anderson
Leg Ulcer Forum (Chair)
17TH CONFERENCE OF THE EUROPEAN WOUND MANAGEMENT ASSOCIATION

Evidence, Consensus and Driving the Agenda forward

EWMA2007 · GLASGOW

2-4 MAY · 2007

WWW.EWMA.ORG/EWMA2007
Clinicians working with patients with chronic wounds are well aware that those who take a considerable amount of time to heal pose ongoing challenges for healthcare professionals and informal carers: cycles of breakdown, recurrent infections, pain management and adherence to treatment all require regular reassessment, renegotiation of care goals and review of care plans. Those patients with ulcers for many years are clearly hard-to-heal and often reach a state where the wound is ‘static’ – not always with any apparent reason. Whilst such scenarios lead professionals to feel exasperated by lack of progress, how often do we fully consider what this must be like from the patient’s point of view?

The field of health-related quality of life and chronic wounds has exploded over the past few years, exemplified by a recent systematic review (Persoon, Heinen et al 2004). This review allows us to look at the main themes from qualitative and quantitative work to consider issues such as living with the symptoms of a chronic wound, pain and its management, mobility and frustration with the process of healing.

More recent qualitative studies on the experience of pain (Flanagan et al 2006) and the ongoing experience of living with a wound (Hopkins 2004) paint illuminating pictures of the difficulties associated with living with chronic wounds, where the symptoms may dominate your everyday life. This article has a slightly different focus, and outlines some of the key messages that patients express (when we have the luxury of enough time to ask) about their frustrations with service provision when living with hard-to-heal ulcers over extended periods of time, following focus group discussions on the topic.

**Method**

The Focus Group is a method that allows participants with similar characteristics (in this case, living with leg ulcers over extended periods of time) to discuss topics that allow them to express their thoughts, feelings and beliefs in a safe and supportive environment. The use of Focus Groups is on the increase as it allows researchers to collect a large amount of information in a relatively short period of time: the interaction between the participants and the language that they use further highlight their values and beliefs of a situation. This interaction also encourages the participants to ask each other, and provides an opportunity for the individual to re-evaluate and reconsider their own understanding of their specific experiences (Kitzinger 1994).

A semi structured format was adopted which allowed free flowing conversation so that the participants could discuss issues that were important to them, although a series of prompt were available to stimulate the discussion when a particular topic had been exhausted.

**Sample**

Following full ethical approval, a purposeful sample of 6 participants (4 female & 2 male) with confirmed diagnosis of venous leg ulceration, requiring compression as part of their treatment for greater than one month duration and who expressed an interest in taking part, were approached for inclusion in the focus group. The age range of the participants was 64 to 86 years. The participants had experienced many previous episodes of leg ulceration over periods of between 8 to 34 years, making them ‘experienced’ leg ulcers patients.

**Data Collection and Analysis**

The focus group discussion, which was taped recorded, lasted for over an hour. The substance of the tape was confirmed by a second researcher and verified by the participants. The resulting text provides a detailed narrative of the experiences and frustrations of the participants.
was evaluated by means of content analysis which enabled systematic identification of a number of emergent themes representing the participant’s responses (Stemler 2001). These themes were coded following additional analysis of the frequency and emphasis of reference during the discussion.

**Results**

Although the analysis revealed other major themes related to limitations on everyday living, the focus for this paper is the theme that dominated discussion, namely their frustration with the healthcare system which highlighted a misunderstanding of their condition and its treatment.

It was clear from the narrative that the participants were not able to offer an explanation of venous leg ulceration. Only one of the participants was able to give a detailed account of the cause of his/her ulcers and although the participants agreed that they had been given an explanation by medical and nursing staff for why compression bandaging was used for treating their leg ulcers only two had any understanding of this concept. However when the discussion focused their involvement in keeping to their suggested treatment plan, it was clear that the term ‘adherence’ was generally understood to mean ‘continuing’ or ‘seeing treatment through’. Interestingly the participants suggested that if asked by a health professional whether they had adhered to their treatment, they all suggested they would respond with yes even though they admitted to not actually understanding what the question implied.

A repeated dissatisfaction was voiced about local health services and there was overriding agreement that their wounds would not have healed had they not had the opportunity to be treated in a specialist centre. They felt that in the community there was a lack of understanding amongst the staff towards them and that over the years they had been treated by generalists without specific specialist skills or knowledge. This opinion had lead to mistrust and dissatisfaction of the treatment offered at the local surgery:

**Participant C**

*I’ve got no faith in my doctors or my nurses (at the GP surgery).*

**Participant E**

*why haven’t they trained the nurses in the clinic? (to bandage, with 4 layer in this case).*

**Participant B**

*And if they (the nurses at the surgery) are not sure, why don’t they ask?*

Most of the participants seemed to have made their own minds up as to why they felt that the nurses at their local clinic did not bandage their legs ‘properly’:

**Participant A**

*Very often they don’t have the patience*

**Participant F**

*They (nurses at GP surgery) specialise in one thing only and it may not be bandaging of the ulcers; they generalise.*

**Participant E**

*I got to the stage where I was doing it myself. I couldn’t be bothered to go there, I’m sorry.*

This disparity between treatment expectation and mistrust of the Health Care Professional (HCP) led to a sense that the HCP was responsible for any deterioration of their leg ulcer:

**Participant E**

*This ulcer on this leg was caused by bandages from the doctor (GP) really. Well, not from the doctor, from the nurse, because it wasn’t done tidy. And another thing, if they had given me the ointment that **** (wound healing consultant) had said in February instead of May, then this one may not have broken out.*

A large proportion of their time was taken up with clinical appointments which impacted heavily on their social lives and led to frustration about the amount of time spent waiting to see a HCP or not being given an appointment time for the district nurse:

**Participant C**

*I’ve got no faith in them (district nurses) now, very often they’ll say we’ll be here tomorrow, or here so and so and they come at about half past 3 or 4 o’clock in the afternoon. Well you don’t know where you are….. But, by a quarter past four, I mean they should be there*
or let you know whether they are coming or whether they are not coming. They could ring and say they are not coming…..They’ve all got mobile phones and I mean most people are on the phone, they can always ring and say……..

**Participant F**
You can spend all day waiting.

The participants accepted that the staff in the local surgery had a large workload but they still felt strongly that the manner in which they were treated was unacceptable:

**Participant E**
*When I go to my doctors I’m there sometimes 2 hours and I’m still in the waiting room. It’s absolutely ridiculous.*

The approach was in complete contrast to their experience of a specialist centre:

**Participant E**
*when they (nurses at specialist wound clinic) come in they don’t treat you as a patient do they, you know what I mean, they treat you as a friend*

**Participant D**
*they always say would you like a drink or something?*

In order to deal with what was perceived as a complacent attitude from the HCPs in parts of the primary care setting two of the participants described extreme measures they had gone to in order to get the treatment that they felt they needed. One had threatened their GP with legal action, after waiting for 3 months for the GP to write a referral letter and another admitted to bullying the staff in the GP surgery out of pure frustration with the referral system. One participant summed this up as:

**Participant A**
*(it’s the)…..’we’ll get it done sometime’ attitude. I think that attitude is wrong*

One participant described frequent occasions when the nurses did not have the correct dressings so put something else on the wound even though they had been given a week’s advanced notice of what dressing would be required. Another participant described a time when she had to get dressed midway through her appointment, leave the surgery and go to a chemist to buy the correct bandages because the nurse had none in stock. A further participant described an instance when s/he was told:

**Participant A**
*wash your leg yourself, put the grease on and then make an appointment to come and see me… (nurse at GP surgery) which s/he felt would be detrimental to treatment; …they’ll get infected in the mean time, so what’s the point in that?*

Instances such as these left the participants with a sense that the staff at their GP surgery were not organised and this lead them to mistrust their capabilities.

**Discussion**

In order for patients to make informed decisions about their treatment patients must possess a reliable knowledge of their condition and a basic understanding of the terminology used by healthcare providers involved in their care (Edwards, Moffatt et al 2002). However research consistently demonstrates that a large proportion of patients do not recall the cause of their leg ulcer (Hamer, Cullum et al 1994). The participants in this study displayed a lack of knowledge about all aspects of their condition even though they had experienced long episodes of treatment both at a local level and in a specialist unit.

In chronic venous leg ulceration, elimination or cure of the underlying disease is not always attainable and the treatment is often longer than first anticipated. Although the physical and psychological effects of leg ulceration featured predominantly in the participant’s lives, these were heavily influenced by their experience of the healthcare system. Motivation is fundamental to adherence and the key to develop individual motivation is personal self awareness and knowledge (Wilkinson 1997).

There were repeated comments suggesting the patients ‘blame’ generalist health care professionals, largely because they are perceived as disorganised or inconsistent and this led to a
general feeling of mistrust. The skill of the nurse has been shown to have an impact on patient outcome but the literature suggests that formal clinical assessments are not always conducted in general practice (White 1999). Furthermore nurses own beliefs and attitudes can often be transferred to the patient, especially if a nurse doesn’t value a particular treatment (Moffatt 1995). The participants also voiced concerns regarding the wound care knowledge of general nurses and studies indeed suggest that patients do not always receive evidence-based management (Periton 1998). Individuals who consider their health to be in the hands of others, yet mistrust these others, are possibly more likely to display poor adherence (Papadopoulos and Jukes 1999). These participants had experienced long periods of treatment without healing and yet once treatment was initiated by a specialist centre the ulcers improved: although the ‘Hawthorn effect’ cannot be ruled out, there are obvious differences in the nature of the experience that the participants described. Their experiences of primary care were expressed with a sense of despondency, frustration and a lack of confidence which was in direct contrast to their experiences in a specialist unit. Optimism is an important aspect of experience and a positive coping strategy, based on anticipation that the future will be better and this has been shown to change a persons perception of their condition (Charles 1995).

A potential criticism of these data relate to the collection of the data at a specialist centre, so there is always the possibility that patients say ‘what they think you want to hear’ (known as social desirability set) and thus the comments in support of specialist services may be inflated. However, by using a Focus Group, facilitated by someone who was not directly involved with their wound care, some of this concern is alleviated. In addition, by using a group discussion rather than questioning patients individually, there was less focus on individual responses – which may have allowed patients to be more open about their feelings. Alternatively, group discussions can be dominated by individuals, so the opportunity was given at the end of the session for each person to add views not previously discussed. Participants were also given the opportunity at the verification of text stage of the process, to confirm if the discussion reflected their views and if there was anything else they wished to add. This rigorous approach gave patients several opportunities to express their views in a range of formats.

There is considerable controversy surrounding the debate on specialist versus generalist healthcare, particularly within the current emphasis on financial constraints within the National Health Service. Wound care specialists must provide critical evidence of their impact on quality of care, as well as economic data to ensure that purchasers are fully aware of the benefits to patients and the service as a whole. Many patients with hard-to-heal ulcers face a life time of care across many sectors within the health service. We must not forget that their everyday life experiences are not only affected by the presence of the ulcer but on how, as a service, we respond to their needs.

References
Kitzinger, J. (1994). The methodology of focus groups: the importance of interaction between research participants. Sociology of Health 16(1): 103-121.
Integrating adjunctive therapy into practice: the importance of recognising ‘hard-to-heal’ leg ulcers

Peter Vowden and Kathryn Vowden

A ‘hard-to-heal’ wound can be defined as: one that fails to heal with ‘standard therapy’ in an orderly and timely manner.

Recently interest has been directed towards the early identification of hard-to-heal venous leg ulcers as possible candidates for the application of adjunctive therapy and a development of algorithms to support their use (Vowden et al, 2006, Carvorsi et al, 2006).

Characteristics associated with delayed healing

A number of wound and patient characteristics that identify potential delayed healing, and influence ulcer recurrence, have already been defined. Some are general criteria that apply to all wound types (Table 1) and others relate to specific ulcer types such as venous ulceration (Table 2). Margolis et al (1999), in a retrospective cohort study of 260 patients, identified that a large wound area, measured in square centimeters, the duration of the wound in months, a history of venous ligation or stripping, a history of hip or knee replacement surgery, an ankle brachial index of less than 0.80, and the presence of fibrin on more than 50% of the wound surface were significantly associated with delayed wound healing at 24 weeks. Others have commented on additional factors such as patient and/or ankle mobility, age, sex, concordance and psycho-social factors (Marston and Vowden, 2003).

High compression bandaging is now recognised as the main element in the treatment of venous leg ulceration yet the majority of published clinical data indicates that only some 65% of ulcers are likely to be healed within 24 weeks, some 20% of ulcers remaining unhealed after more than 50 weeks of appropriate compression therapy (Barwell et al, 2004). Predicting healing potential in individual patients is an essential part of the overall care process if both cost-

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**Table 1: General factors for delayed healing**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Details</th>
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<tbody>
<tr>
<td>Age</td>
<td>Oedema</td>
</tr>
<tr>
<td>Anaemia</td>
<td>Foreign body</td>
</tr>
<tr>
<td>Diabetes</td>
<td>Necrotic tissue</td>
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<tr>
<td>Medication</td>
<td>Microbes</td>
</tr>
<tr>
<td>Immunosuppression</td>
<td>Decreased perfusion</td>
</tr>
<tr>
<td>Nutrition (vitamins, minerals)</td>
<td>Decreased oxygen</td>
</tr>
<tr>
<td>Radiation</td>
<td>Dehydration</td>
</tr>
<tr>
<td>Smoking</td>
<td>Other wound related factors</td>
</tr>
<tr>
<td>Uraemia</td>
<td></td>
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</tbody>
</table>

**Table 2: Factors identified to impact on venous leg ulcer healing**

- Large wound area (> 10cm²)
- Long duration (> 6 months)
- History of venous ligation or stripping
- History of hip or knee replacement
- Ankle brachial pressure index (ABPI) < 0.8
- Fibrin on > 50% of the wound surface

Margolis et al, 1999

Other factors include patient and ankle mobility, age, sex, concordance and psycho-social factors

Marston and Vowden, 2003
effective and clinically effective care is to be given. This need not be a complex process. A specific relationship between ulcer size and ulcer duration and the likelihood of ulcer healing over 24 weeks of treatment has been defined. Margolis et al (2004) was able to demonstrate, using very simple criteria, namely the size and duration of the ulcer, that large longstanding ulcers had only a 22% chance of healing at 24 weeks whereas small recent ulcers had a 71% chance of healing. Margolis et al (2000) also demonstrated that a simple scoring system related to ulcer size (> 5cm² = 1 point) and ulcer duration (> 6 months = 1 point) gave a good indication of likely outcome with 93% of ulcers with score 0 healing at 24 weeks as compared to only 37% of those with a score of 2.

**Impact on quality of life**
Venous leg ulceration has been demonstrated to have a significant impact on a patient’s quality of life and clearly delayed or non-healing will exacerbate these issues where the challenge of living with a chronic illness that is frequently associated with pain, disturbed sleep and odour can result in the development of depression (Franks et al, 2003, Hareendran et al, 2005, Hopkins, 2004). Patricia Price and Elizabeth Mudge discuss these topics, and the effect of care and non-healing on patients with venous leg ulceration elsewhere in this journal. Delayed healing also impacts on health care professions and the health system in which they work. Protracted treatment times, professional disillusionment, delayed recognition of failure to progress and a lack of knowledge of alternative treatment options are specific issues which all health care professionals must be aware of within their own patient workload and field of practice.

**Cost implications of delayed healing**
Tennvall and colleagues (Tennvall et al, 2004, Tennvall and Hjelmgren, 2005) have reviewed the specific cost implications of non-healing leg ulcers. They found that non-healing wounds required dressing more frequently than healing wounds, that wound care products used on hard-to-heal wounds were approximately 100% more expensive than those used on healing wounds and that between 33-44% more time was need to dress hard-to-heal ulcers resulting in an overall 100% increase in staff costs. These are important considerations and need to be considered when applying modelling situations, such as the Markov model (Carr et al, 1999, Scanlon et al, 2005, Iglesias and Claxton, 2006), to the introduction of alternative treatment regimens for leg ulceration.

**Response to treatment as a predictor of healing**
Steed et al (2006) has demonstrated the differing, and early separation, of the healing trajectories of ulcer that subsequently heal and those that remain unhealed after up to 20 weeks of care. Prince and Dodds (2006) have shown that venous ulcers that respond to treatment do so at a near constant rate and that the initial response to treatment can be a reliable predictor of estimated healing time. These observations support the earlier findings of Phillips et al (2000) and van Rijswijk (1993) who found that the early response of a venous leg ulcer to appropriate care was highly suggestive of subsequent healing times. These systems, which are based on Gilman’s formula (Figure 1), which attempts to compensate for variations in ulcer size and shape at onset, appear to give a good prediction of healing based on early response to treatment (Gilman, 2004). Margolis et al (1993), Tallman et al (1997) have demonstrated that planimetric healing rates over the first 3 to 4 weeks of treatment helped to predict likely outcomes. Phillips et al (2000) looking at percentage reduction in ulcer area found that approximately 77% of outcomes could be predicted based on a > 44% healing at 3 weeks. van Rijswijk (1993) suggested that > 30% reduction in ulcer area as early as 2 weeks was predictive of outcome. All these observations indicate that, with careful assessment and repeated accurate wound measurement, it should

**Gilman’s formula**

\[ D = \frac{\Delta A}{P} \]

\[ D = \text{Linear advance of the wound margin towards the wound centre} \]
\[ \Delta A = \text{Change in wound area (over the study time period)} \]
\[ P = \text{Average of wound perimeter} \]
be possible to identify a sub-population of patients with hard-to-heal venous ulcers as early as the 3rd or 4th week of care Flanagan (2003a, Flanagan, 2003b) discusses the need for accuracy in these measurements if they are to be used to predict healing. Gelfand et al (2002) confirmed, in an analysis of 29,189 patients, that log healing rate, log wound area ratio and percentage change in wound area were valid surrogate markers of healing at 12 or 24 weeks, supporting the use of these markers as predictors for hard-to-heal wounds.

Prince and Dodds (2006) suggest that careful assessment of an ulcers response to treatment can, as well as identifying ulcer likely to be hard-to-heal, have other advantages as it should allow healthcare professionals to give patients responding to care a reliable indication of likely treatment times. Tracking of healing may also allow practitioners to identify complications, such as infection, at an earlier stage.

Conclusion
Increasing understanding of the wound environment is providing opportunities to manipulate the wound bed in such a way as to favour more rapid and potentially improved quality of healing for patients with ‘hard-to-heal’ wounds. Such therapeutic options are however likely to be significantly more expensive than conventional dressings. For these products the key to their widespread adoption will be the identification of specific target populations in whom cost-effectiveness can be demonstrated due to a reduction in healing time and/or a reduction in health care professional time utilised to deliver care. The introduction of such adjunctive therapy should not however be seen as an alternative to standard care as defined by national and international venous leg ulcer management guidelines, appropriate holistic care or the application of wound bed preparation.

Using both the data derived from the initial assessment and the subsequent response to treatment it is possible to develop an algorithm for the introduction of adjunctive or advanced therapy into the management of patients with predicted hard-to-heal venous leg ulceration (Figure 2, over). The algorithm, which was initially developed to support the introduction of amelogenins into clinical practice can be used effectively to support the introduction of any adjunctive therapy.

“it is possible to develop an algorithm for the introduction of adjunctive or advanced therapy into the management of patients with predicted hard-to-heal venous leg ulceration

Adjunctive therapy may include:

• Physical therapy such as Intermittent Pneumatic Compression (Vowden, 2001) or Topical Negative Pressure Therapy (Venturi et al, 2005).

• Surgical intervention such as grafting (Jones and Nelson, 2000) or venous surgery (Barwell et al, 2004)

• Use of advanced wound care products such as an extracellular matrix equivalent Xelma® (Vowden et al, 2006), a metaloprotease inhibitor (Promogram) (Barrett and Moore, 2004) or the use of a bioengineered skin product (Omar et al, 2004, Carvorsi et al, 2006).

• Pharmacological intervention e.g. Oxpentifylline (Iglesias and Claxton, 2006, Scanlon, 2002) or Horse chestnut extract (Leach et al, 2006, Suter et al, 2006) PV/KV
Diagnosed venous leg ulcer

Has the wound a high proportion of necrotic tissue or slough? Does the wound appear clinically infected or have high exudation levels?

- No: Does the wound appear generally clean and non-infected?

- Yes: Does the further assessment indicate probable poor healing potential? E.g.: large ulcer > 10cm² or long ulcer duration > 6 months or history of delayed ulcer healing or multiple factors for delayed healing.
  - Yes: Consider if early introduction of adjunctive therapy appropriate.
  - No: Standard compression therapy.

- No: Review progress.

FURTHER ASSESSMENT

Does the wound appear generally clean and non-infected?

- Yes: Does the further assessment indicate probable poor healing potential? E.g.: large ulcer > 10cm² or long ulcer duration > 6 months or history of delayed ulcer healing or multiple factors for delayed healing.
  - Yes: Consider if early introduction of adjunctive therapy appropriate.
  - No: Standard compression therapy.

- No: Review progress at 4 weeks.

ADJUNCTIVE TREATMENT

Consider if early introduction of adjunctive therapy appropriate.

- Yes: Add additional adjunctive treatment to standard compression therapy.
- No: Standard compression therapy.

Review progress at 4 weeks.

Satisfactory healing response: continue adjunctive treatment (until no longer needed) with standard compression therapy.

Poor healing response: consider alternative treatment options.

Satisfactory healing response: continue standard compression therapy.

Poor healing response: Continue standard compression therapy adding active treatment.

If response deteriorates: Monitor progress and review treatment weekly until healing.

STANDARD TREATMENT

Assess response. Poor response at 3 weeks? [less than 40% reduction over first 3 weeks of compression].

- Yes: Satisfactory healing response: Continue standard compression therapy.
- No: Satisfactory healing response: Continue standard compression therapy.

Figure 2: an algorithm for the introduction of adjunctive or advanced therapy into the management of patients with predicted hard-to-heal wounds.
Integrating adjunctive therapy into practice: the importance of recognising ‘hard-to-heal’ leg ulcers (continued)

References


Flanagan, M. B. (2003b) Wound measurement: can it help us to monitor progression to healing? J Wound Care, 12, 189-94.


A number of current preoccupations in healthcare will influence venous ulcer management in the coming years. These include the increasing involvement of patients in managing chronic health problems, the search for greater efficiency in the way we deliver care, the changing role of nurses and the demand for evidence of effectiveness and cost-effectiveness of new and existing technologies. These pressures will change all aspects of healthcare, and therefore will not be discussed in detail here. Instead, I look into the future using a rather cloudy crystal ball, and on the basis of recent findings predict particular trends and areas for further study that will affect the leg ulcer management of tomorrow.

**Etiology of venous ulceration**

A greater understanding of the etiology of venous disease will develop, particularly with research into the interaction between genetics, environment and lifestyle. The UK BioBank project (1) (a national database of the medical, lifestyle and genetic details of 500 000 people over the age of 45) may well contribute to this over the longer term. In the medium term, however, we can look forward to an answer as to why 10% of people with venous disease go on to develop a venous ulcer while the rest do not. The Edinburgh Vein Study is examining the progression of venous disease in a cohort of 1566 patients followed up regularly over several years to determine factors that predispose to symptoms and progression of venous disease, including frank ulceration.(2)

**Diagnosis**

In clinical practice, a diagnosis of venous ulceration is based on the presence of the signs of chronic venous insufficiency and the absence of arterial disease and diabetes. Significant arterial disease should be excluded by use of a hand-held Doppler ultrasound probe to measure the systolic blood pressure in the foot and arm arteries and calculate the ABPI, as palpation of pulses is inaccurate. Clinicians use a cut-off ABPI of 0.8–0.9 to decide whether compression therapy is safe, so future research may investigate the relationship between ABPI and the benefit or damage from various forms of compression bandaging.

It is not currently clear whether diagnostic algorithms increase the accuracy of diagnosis, so research is needed on the topic. Furthermore, people with venous disease can develop concurrent arterial disease and therefore need to be screened regularly to determine whether compression is still safe; it is not yet known how often a full diagnostic screen should be repeated, and whether a single policy is appropriate for all patients regardless of their risk of developing arterial disease.

A number of centres have developed comprehensive venous assessment protocols, and the impact of these on leg-ulcer outcomes and costs must be more thoroughly evaluated in different settings.

**Margolis and colleagues have undertaken the best investigation so far of the prognosis of people with venous ulcers treated with high compression.(3) They found that ulcers of less than 6 months duration and smaller than 5 cm were likely (> 90%) to heal with 6 months of high-compression bandaging, in contrast to larger and older ulcers, which were unlikely to heal within 6 months. This means that we can provide patients with more information at the start of treatment about their likely outcome. In future we may be able more confidently to target patients for whom additional therapies (such as drug treatments) might be necessary.**
Therapeutic approaches

Compression therapy

More than two dozen trials have been published comparing types of compression bandage regimens; these have concluded that high-compression therapy is more effective at healing ulcers than low-compression systems, but there is insufficient evidence to determine whether layered systems with Lycra or rubber-based bandages that deliver high compression (e.g. Charing Cross four-layer) were better than layered systems using pure cotton, or ‘short-stretch’ systems such as Comprilan or Rosidal K. (4) Meta-analysis of five trials comparing multilayered high-compression elastomeric systems (such as four-layer) against short-stretch systems found no difference in healing rates (5). There are a number of trials in the pipeline that may inform the discussion of the relative benefits and harms of these compression systems. One feature lacking in many of the trials, however, is adequate reporting of methods of bandage application and of adverse events, and we hope that future trials will report these in detail to allow clinicians and patients to make an informed choice of compression system.

Several new bandages have been developed, including one with performance characteristics said to make it easier to apply at the correct compression level. (6) This bandage may be useful, as previous studies of bandaging technique have shown that the majority of bandages are applied with ankle pressure that is too low or too high, or more pressure at the calf than the ankle. Further studies evaluating the effect of these new bandages are needed to determine whether they offer similar healing rates to the four-layer, short-stretch, compression hose or Unna’s boot systems.

Local dressings

A systematic review of dressings for venous ulcers found that there was no additional benefit for hydrocolloid dressings over simple low-adherent dressings under compression, and there were insufficient trials making other comparisons to show whether any of them are efficacious (7).

Vasoactive drugs

A number of these show promise and may be more widely adopted in future: at present there is a dissemination gap as some are thought to be effective but are not yet incorporated into clinical practice guidelines or standard therapy.

Oral pentoxifylline. 1200 mg daily, was found by one systematic review to enhance significantly the chances of ulcer healing in compression therapy (5 trials; 8–24 week healing rate in control group 47%, in pentoxifylline group 64%) compared with placebo. (8) In the systematic review, pentoxifylline increased healing in both the presence and the absence of compression, and therefore it may become a particularly useful addition to a treatment protocol when compression is not tolerated. However, it is not in common use at present, and its position in leg-ulcer treatment is unclear.

Oral flavonoids. 1000 mg daily, have been found in two trials to augment the chance of healing versus placebo (for example 28% healing with placebo, 48% healing with flavonoids). (9, 10)
Sulodexide used in conjunction with compression yielded a higher healing rate than compression alone in three trials (374 people) when given for 60–90 days (intramuscular injection for 20–30 days, then oral). (11,12,13)

Systemic mesoglycan, daily intramuscular injection for 21 days, then orally for 21 weeks, has been evaluated against placebo in a trial in which everyone received compression. More ulcers had healed at 24 weeks in the mesoglycan group than the placebo group (89% versus 76%). (14)

Thromboxane _-2 antagonists have been evaluated in one trial (165 people), which found no significant difference in the number of ulcers healing (54% vs 55%) versus placebo. (15)

Oral zinc was not found to be beneficial by a systematic review of the evidence from five trials. (16)

Aspirin has been evaluated in one small trial. There were more ulcers healed in the aspirin group than in the placebo group (30% vs 0%), but methodological weaknesses cast doubt on the results, so this trial should be replicated in future. (17)

Rutosides have been evaluated against placebo in two trials for ulcer healing, which found no evidence of a difference in healing rates, but the trials were small (119 people in total), and therefore one cannot rule out a clinical benefit. (18)

Local active therapy

Growth factors. The initial research into growth factors has been disappointing, as the small number of patients involved meant that clinically important improvements in healing could not have been detected as statistically significant. (19-22) Researchers have started to look at cells derived from bone marrow, but no controlled trials have yet been reported.

Skin replacement. A systematic review of skin grafting for venous ulcers identified one trial of a tissue-engineered skin replacement. More ulcers healed under compression when treated with the skin replacement. (23) Another trial, published since the systematic review, compared three different regimens of a different tissue-engineered skin product, Dermagraft, with control. There was no significant difference in the healing rate, but the trial was too small (53 patients) to identify clinically worthwhile differences as statistically significant. (24) It is likely that future trials of tissue-engineered skin products will incorporate economic analyses, or will target recalcitrant ulcers, as the high cost of these products means that they are unlikely to be used for standard care.

Topical physical therapies

A series of systematic reviews has summarized the evidence (or, more commonly, the lack of it) for physical therapies such as laser, ultrasound, vacuum therapy and electrical stimulation. (4) In general, the reviews find there is insufficient evidence from trials to be able to conclude whether the physical therapies aid healing or not. Large randomized controlled trials are needed to determine the clinical effect and cost-effectiveness of these therapies.

Reviews are needed of the effect of light, heating, cooling, irrigation and vibration on healing. Initial studies of some therapies appear promising; for example, cycloid vibration can help shift edema from the upper dermis, which may aid healing. Wilson et al (25) undertook an uncontrolled study of cycloid vibration 3 times a week (in addition to compression bandaging) in 19 people, with a 57% complete healing rate at 12 weeks. Their healing rate with vibration is comparable to that achieved with high-compression bandaging. Again, prospective, comparative trials against standard therapy are needed before these therapies can be adopted in clinical practice.

Conclusion

The future promises many developments in the management of venous ulceration. Some of these are technologically driven, such as the development of new diagnostic techniques and interventions, while others are driven by changes in the way we deliver care, such as the types of clinics we offer, and the role of the patient in managing their condition. This means we need to continually balance the need to keep up to date with knowledge about what interventions have been made available (and which of these have robust evidence that they clearly benefit the patient), as well as best practice around care delivery and patient involvement in care. Meanwhile, managing leg ulcer continues to be a usually rewarding, occasionally frustrating, but always challenging and interesting area of clinical practice.
References


Leg ulcers are often heavily colonised by micro-organisms (Halbert, Stacey, & Rohr 1992). The presence of bacteria and other micro-organisms can have an adverse effect on the patient and slow wound healing (Eriksson & Eklund 1984; Halbert, Stacey, & Rohr 1992). However, clinical signs of infection in venous ulcers can be masked by the presence of staining caused by haemosiderin (Cutting & White 2004). Infection can be detected by the presence of dull brick red and blue/green discolouration, delayed healing, increased exudate, cellulitis, and a change in the nature of a patient’s pain (Cutting & White 2004).

There is currently no strong evidence to support the use of any of the antimicrobial dressings and agents used to treat infection for leg ulcers (Bradley et al 1999; Briggs & Nelson 2002; Nelson, Bradley, & Cullum 2002; Palfreyman et al 2006). However, dressing manufacturers have been marketing an increasing range of anti-microbial dressings (Lansdown 2005). These dressings have been recommended for both the
prevention and treatment of infection in wounds (Alcaraz & Kelly 2002; Alcaraz & Kelly 2003; Ballard & McGregor 2002; Dowsett 2003; Dowsett 2004; Lansdown, Jensen, & Jensen 2003; Vanscheidt, Lazareth, & Routkovsky 2003). The evidence cited by the manufacturers to support the use of these dressings can be misleading. Citations used in marketing literature as evidence of effectiveness can consist of non-randomised studies, review articles, and studies presented at conferences and not yet published in peer reviewed journals.

Silver donating dressings

One group of anti-microbial dressings are silver donating dressings. These dressings donate silver to the wound and are based on the ability of silver to kill or limit the growth of a wide variety of anti-microbial organisms (Thomas & McCubbin 2003). There are currently six on the Drug Tariff:

- Acticoat (Smith and Nephew)
- Acticoat 7 (Smith and Nephew)
- Urgotul SSD (Urgo)
- Aquacel Ag (Convatec)
- Contreet Foam (Coloplast)
- Silvercel (Johnson and Johnson)

However, the literature examining the area of silver donating dressings has been criticised for perpetuating “factual inaccuracies and misinterpretations” (Lansdown 2004).

The VULCAN trial

The VULCAN trial was commissioned in 2004 by the NHS Health Technology Assessment Programme (NHS HTAP) to examine the cost-effectiveness of antimicrobial dressings for venous ulcers. The NHS HTAP is part of the National Health Service and funds research to answer questions that are of clinical relevance to the UK NHS.

The trial started in 2004 and is due to be completed in 2008. The trial is currently in the recruitment phase.

Methods

The primary aim of the trial is to assess the cost and effectiveness of silver donating anti-microbial dressings for venous leg ulcers. The trial will create a computer model that will examine the costs, both in terms of money and complications, and the effectiveness of silver donating dressings compared to standard low adherent dressings beneath compression bandages (and compression hosiery where appropriate).

Data to be included in the computer model will be obtained from a randomised controlled trial (RCT) and an observational group of patients. Figure 1 shows the recruitment algorithm for the VULCAN trial.

![Figure 1: Recruitment Algorithm for VULCAN trial](image)
The RCT will allocate participants to either silver donating dressing or standard low adherent dressing. The clinician will be able to use their clinical judgement of which dressing to be applied within the silver and low adherent groups. Another group of observational patients will be included. This group will consist of those patients who do not wish the dressing type to be decided at random and those who are unsuitable for the randomised controlled trial.

Although the computer modelling will be based on data about silver donating dressing the model will also be able to be used to examine other antimicrobial dressings used in the treatment of venous leg ulcers.

**Participants**

The aim will be to recruit a sample size of 300 patients to the randomised controlled trial. All patients with active venous ulceration of the lower leg that has been present for a period of greater than six weeks are eligible for inclusion in the randomised control trial. Patients who refuse to give informed consent, have an ABPI (Ankle Brachial Pressure Index) < 0.8, diabetics controlled on medication, are pregnant, have atypical ulcers, or have sensitivity to silver will be excluded.

**Outcomes**

The main outcome measure will be complete ulcer healing at 12 weeks. Other secondary outcome measures will include healing at six months and one year, recurrence at six months and one year. In addition, the SF-36 and Euroqol quality of life questionnaires will be completed by the patients. A full economic costing for the treatments will be undertaken from the NHS perspective. *Figure 2* shows the timeline of the data collected from the participants in the trial.

**Progress of the VULCAN trial**

The trial started in August 2004. The first six months of the trial were concerned with the establishment of the administrative framework and the validation of the data collection processes. The trial steering, management, data monitoring and ethics committees were formed. The members were drawn from the trial researchers, and academics and consumers independent of the research team.

Before any patients could be recruited to the trial ethical and research governance approvals were needed. This process was started early in 2004. The necessary approvals from the Local Research Ethics Committees (LREC) were obtained by July 2004. However, the new research governance arrangements meant that approvals were needed for all of the sites and areas that were taking part in the research. This meant that research governance approval was need from two primary and six secondary care trusts. There were a number of delays in receiving these approvals and it was not until February 2005 that research governance approval for the project to start was finalised.

The data collection forms were based on both the Royal College of Nursing (RCN) (Royal College of Nursing 1998) and local guidelines regarding venous leg ulcers. In order not to add to the

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**Figure 2. Timeline for VULCAN trial participants**
workload of community nurses, the VULCAN researchers were keen to ensure that the data collected matched that which the clinicians would normally collect as part of their clinical assessment.

Recruitment to the trial began in March 2005 and it was initially anticipated that a period of a year would be sufficient to recruit the target of 300 participants. However, recruitment has not been as easy as anticipated and the trial has had to increase the number of centres from two to five and extend the recruitment period by an additional year.

Once the recruitment period has been completed the next focus of the trial is concerned with collecting data on the costs for both the silver donating and low-adherent dressings. The costs will be incorporated with data from the research trials into the computer model.

Discussion

The progress of the trial so far has highlighted a number of issues.

Identification of patients

One of the main problems has been regarding the identification of patients suitable for the trial. A large pool of potential patients were identified on the basis of referrals from GPs for Doppler assessment. However, many of these referrals did not currently have an ulcer or the ulcer was found to be due to mixed arterial and venous disease.

A further problem has been that the ulcer services in the research centres are very different in how leg ulcer patients are managed. Some of the centres have dedicated leg ulcer clinics and access to funding to provide transport for patients to the clinics. Other centres have few, if any, clinics and the care is based in the patients own home. Where leg ulcer clinics are established identification and recruitment to the trial has been much easier and more straightforward. The challenge in the other areas has been to maintain contacts with large numbers of community nurses and visit a considerable number of patients homes.

In some of the areas nurses have reported a tendency for colleagues working in GP practices to ‘hold onto’ patients with non-healing lower leg wounds for much longer than recommended by local and national guidelines before referring them to be assessed by tissue viability specialists. This could be due to a lack of knowledge or awareness of the local and national guidelines.

Demographics

The logistics in covering a large population and a wide area can be daunting. One of the research areas consists of 28 leg ulcer clinics spread over 685sq miles. Many of the clinics run on the same day making visiting all the clinics by the research nurses impossible. The amount of time available to the research nurses to recruit patients for the trial can be significantly reduced by extended travel times.

The Marketing of dressings

Dressings can have multi-million pound marketing campaigns promoting their use. This can potentially blind clinicians to any lack of high quality evidence. Clinicians in the wound care area can be bombarded with information.
regarding “new and improved” dressings. There have been concerns expressed regarding the lack of data about how nurses deal with such pressure and the potential conflict of interest caused by industry promotions and decisions regarding best care (Brody 2002; Crigger 2005; Moynihan 2003).

**Conclusion**

There is a clear need for high quality evidence for the use of anti-microbial dressings for venous leg ulcers. The VULCAN trial aims to provide information about the cost-effectiveness of the new silver donating dressings that are increasingly being used on venous leg ulcers. Such information will allow clinicians caring for venous ulcer patients to make an informed choice regarding the best dressing to use to give the patients ulcer the best chance of healing.

**References**


The cost of leg ulcer management in the UK exceeds £400m (Bosanquet, 1992). The cost to patients in terms of the impact on their lives is immense (Douglas, 2001). National (and local) guidelines aim to facilitate the delivery of care based on the most robust evidence possible (RCN, SIGN, CREST, 1998).

Although leg ulcer service delivery has to be flexible enough to meet the needs of all patients, it is clear that a constructed service delivery framework helps to ensure that resources including equipment and appropriately skilled staff are utilised in a cost effective and efficient way. A purpose-designed leg ulcer service also helps to ensure that staff in training receive the best possible support to develop their skills in assessment and management of people with leg ulcers.

There is no single way of delivering leg ulcer services. It depends on the needs of the population and the finances and other resources available. The setting in which the service is situated is an additional determining factor. The following three articles present examples of service development in response to clinical need. They give a brief overview of the rationale and planning entailed in a project. The specialist nurses were asked to present their work in order to encourage others to evaluate their service and to see if it would benefit from change or development.

The authors highlight the steps they took and the supporting and restraining factors involved. Although different in setting and objectives there are common themes: the need to involve stakeholders, the need for audit data on which to base the change, and the need for flexibility and compromise in the current financial climate with the NHS.

The Leg Ulcer Forum is committed to improving leg ulcer management and is always willing to support and advise practitioners where possible.

A large part of this is through networking and dissemination of good practice. These articles are concerned with setting up a leg ulcer clinic in a PCT, developing existing services post healing and setting up a service within an acute trust.

References

Irene Anderson
Senior Lecturer, Tissue Viability, University of Hertfordshire
Development of a nurse-led community complex wound clinic

Liz Ovens

The effectiveness of community leg ulcer clinics is well documented, several authors (Moffatt and Oldroyd 1994, Lieu et al 2000, Ellison et al 2002) stating that such services are cost-effective, improve healing rates and improve concordance and quality of life. However, financial constraints within the NHS often provide the practitioner with challenges in attempting to provide high quality, evidence based care that is cost-effective (Gunnewicht and Dunford 2004). The National Service Framework (NSF) for Older People (United Kingdom Department Of Health UK DOH 2001) has failed to include improvements in leg ulcer services as one of its recommendations, which would give practitioners the authority to improve services where appropriate (Douglas 2002).

The objectives for this trust in line with government targets (UK DOH 2005) include developing new and innovative ways of delivering services and alternative models of care, particularly for those with long term conditions. With these targets in mind, and following a baseline audit establishing current service provision for patients with leg ulcers within the trust, (Hillingdon Primary Care Trust HPCT 2004) the need for a nurse-led community complex wound clinic was identified.

The Plan

The plan was in 2 stages. Stage 1 is considered in this article, focusing on the development of a clinic in the south of the PCT for leg ulcer service provision, and utilised Douglass’s (1992) elements of planning, organizing, directing and controlling through human and physical resources for goal realization (Table 1).

A good working partnerships with multi-disciplinary team members including podiatry, diabetes and the vascular consultant who were all committed to providing a multi-disciplinary

<table>
<thead>
<tr>
<th>Human Resources</th>
<th>Physical and Technical Resources</th>
<th>Realization of Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Medical (Vascular)</td>
<td>• Building (new development)</td>
<td>• Delivery of Specialist Nursing Care,</td>
</tr>
<tr>
<td>• Nursing (Specialist Nurses)</td>
<td>• Grounds (PCT Site)</td>
<td>• Multi-disciplinary approach</td>
</tr>
<tr>
<td>• Allied Health (Podiatry, Diabetic, Dietetic)</td>
<td>• Supplies (FP10, NHS stores)</td>
<td>• Prevention of secondary care episodes</td>
</tr>
<tr>
<td>• Patients/clients</td>
<td>• Equipment</td>
<td>• Evaluation/audit service</td>
</tr>
<tr>
<td>• Significant others eg Transport drivers</td>
<td>• Transport Services</td>
<td>• Involvement in Research</td>
</tr>
</tbody>
</table>

Table 1: The Plan
A site was available five days/week but funding was required for staff, equipment and transport. The clinic would offer evidence-based, specialist nursing care to patients with leg ulcers and related conditions near to their homes/work, and provide transport when appropriate.

A working party was developed including the locality nurse manager, tissue viability link nurses and members of the public users group, to take the proposal forward. Presentations were undertaken to the Professional Network Group, Nursing Planning and Priorities and the management team. These included:

- Evidence of the financial burden (Bosanquet 1992) of leg ulcers and expenditure of dressing products locally
- Extent of workload for community services (Cornwall et al 1986, HPCT 2005a)
- Future impact of an increasing population and people with diabetes (UK Audit Commission 2000)
- Service provision in primary and secondary care for leg ulcers in the locality.

These were illustrated with real case studies so that the patients were kept central to the plan.
• Training issues
  A wound management audit (HPCT 2004) found
  • 62% of wounds were leg ulcers
  • 44% of those had venous aetiology
  • 39% of patients had not received Doppler ultrasound as part of their initial assessment

Management of leg ulcers involves a comprehensive assessment and, unless the correct diagnoses are made, treatment is at best likely to be unsuccessful but could be harmful (Moffat and Dickson 1993). Safe practice requires theoretical knowledge but equally important supervised practice in the clinical area (Brereton et al 1998) through competency frameworks (Anderson 2003).

• Handling risks (UK Committee for Health and Safety at Work 1974, 1992) can be reduced by provision of couches and a leg wash facility.

• Concordance to treatment: Healing in venous leg ulcers relies not only on innovations in treatment regimes and compression therapy, but also and equally important on the concordance of the patient (Lindsay 2001), which is a particular problem in these patients (Moffat and Dorman 1995).

• SWOT analysis (see table 2)
• Cost benefit analysis/ cost of the service (HPCT 2005b).

Funding was agreed as an ‘invest to save’ initiative with expected savings on:
• Secondary care referrals and admissions
• Cost of dressings and nursing time.

The allocated budget would fund:
• provision of specialist community nursing services for patients
• training programmes for health professionals
• recruitment of three trained full time specialist nurses
• a part-time health care assistant
• personal assistant
• diagnostic equipment including Doppler, Pulse Oximeter, camera, wound-measuring grids
• a special leg wash facility to allow immersion of both legs in water to prevent lifting of buckets
• transport twice weekly, supplies of dressings to reduce cost of prescribing and stationery.

Outcome

The team was recruited and a management pathway, referral criteria and referral form was established. The clinic opened in November 2005, and operates five days/week. The aims of the clinic are to prevent secondary care referrals and admissions when appropriate. The clinic triages the patients, undertakes holistic assessment, outlines a treatment regime together with the patient and General Practitioner, and then depending on progress, provides the care/treatment for the patient for four weeks. Close supervision in the initiation of treatment greatly improves concordance to treatment (Charles 1996, Taylor 1996, House 1996).

A training pathway (see table 3) was also established and this four week period allows the referring practitioner to attend the clinic to obtain training in compression therapy in order to facilitate shared care for their patient. Appropriate referrals are made to the diabetes team and podiatry and care coordinated to provide...
a one-stop clinic. The vascular consultant attends monthly to assess patients with mixed and arterial ulcers and those with venous ulcers who would benefit and consent to varicose vein surgery. Patients are reviewed at regular intervals and also return for well leg assessment.

From November 2005 – May 2006, 126 referrals have been made with a total of 808 episodes of care. Outcomes are extremely encouraging and an audit will be undertaken in mid 2006. A satisfaction audit is currently under way.

All staff are delighted with the outcome of the plan such as having a full tissue viability team to manage the clinic and provide evidence based care to patients with leg ulcers, support training for student nurses and trained staff in the management of leg ulcers. Evidence has been provided to the PCT showing reduction of inappropriate secondary care referrals and admissions.

Unfortunately the site could not provide office space for the team who have had to use multi-use shared clinical rooms for administration, phone calls etc or a very busy reception area. A further proposal to obtain office facilities has been made. Our bid has proved successful and we will be moving to a self-contained suite with it’s own reception, waiting room, four clinical areas and office.

Although presentations were given to the General Practitioner’s Forums across the PCT, explaining the aims of the clinic, a few practices have been unhappy about releasing their practice nurses for training and providing shared care. This results in the clinic providing total case management for these patients, which we do not have the capacity to do. It is now agreed that information should have been provided to the Local Medical Committee and agreed criteria for referral established. This is due to be undertaken and it is hoped to be able to work together with all the practices in the very near future.

The budget allocated was insufficient to recruit a full-time health care assistant, more transport and an IT system for making appointments and auditing the service. These will be addressed in stage II.

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**Table 3: Pathway for training programme – management of patients with leg ulcers**

1. Practitioners referring patients to Complex Wound Treatment Centre or OR practitioners identify need for training
2. Practitioner to attend 3 x half-day training sessions in management of patients with leg ulcers
3. Practitioner to attend complex wound clinic for 2-4 weeks with their patient to obtain skills in management to facilitate on-going shared care

**Competency framework for compression therapy. Close supervision, support and competence undertaken by:**

- Tissue Viability Link Nurse
- Tissue Viability Team
Conclusion

Stage II of the plan will be developed in the very near future, which includes providing a similar facility in the north of the trust, establishing a telemedicine network with the vascular consultant and accessing a mobile duplex scan to provide a one-stop facility for vascular patients increasing the efficiency of the service. Patient volunteers have offered to run a coffee club and a donated television/video will demonstrate health promotion programmes which will also be facilitated by the team in the new suite.

Changes in delivery of care for patients with leg ulcers need to be addressed in light of increasing patient numbers and reduced staffing levels. The provision of a community wound clinic in the PCT is the opportunity to provide services and care in a high street location as an alternative to hospital care when appropriate.

References

Douglas V. (2002) Let’s work together to create an integrated leg ulcer service. Journal of Wound Care 11 (2) 45
Hillingdon Primary Care Trust (2005a) District Nurse Caseload Audit. Clinical Governance Office.
Hillingdon Primary Care Trust (2005b) Proposal and Cost Benefit Analysis of Nurse-Led Community Complex Wound Clinic. Stage I & II
Moffatt C. and Oldroyd M (1994). A pioneering service to the community. The Riverside community leg ulcer project. Professional Nurse. 9 (7) 486-495
Taylor P. (1996) Assisting patients to comply with leg ulcer treatments. British Journal of Nursing. 5 ( 22) 1355 – 1358
United Kingdom Department of Health (2005) Supporting people in long-term conditions. London. HMSO.
This report is written from the perspective of a Tissue Viability Clinical Nurse Specialist (CNS) working at the East and North Herts NHS Acute Trust. This is a two site Trust with two Tissue Viability Nurses. Together they are responsible for overseeing the care of patients with leg ulcers whilst they remain inpatients. This document focuses on the development of leg ulcer services on one site as the support from colleagues has, historically, been different between the two sites and therefore the problems are more complex at one site.

Time constraints on the CNS, one of only three nurses who can assess and apply compression bandages within the hospital, are such that maintaining patient’s current leg ulcer treatment or instigating new treatments has proved difficult. At present it is not always possible to initiate investigations to determine the aetiology of the ulceration and to commence compression therapy where appropriate. National and local guidelines state that this is the correct management of venous leg ulcers (RCN, 1998 and Local County Guidelines, 1998). Best practice would argue that these patients, if in hospital long enough, should receive compression therapy where appropriate.

This is not an isolated phenomenon. Difficulties in managing leg ulcers in hospital have been described by Dealey (1999) and Gruen (1996).

The time constraints within the CNS role were demonstrated in a skill mix review conducted within the Trust on all specialist nursing services (Trust report, 2003).

The service consists of two whole time equivalent nurses and yet the study showed that they were working to the level of 2.33 whole time equivalence. It also demonstrated that during the study period of one week the Tissue Viability Service spent thirty hours in direct patient care but eight and half hours in walking between wards and a further six hours was wasted, for example, in waiting for others. It can be seen from this that 14 hours at least was spent in unproductive activity. This means that 18% of the total working time of the two TVN’s was spent in unproductive activity. If this unproductive time was reduced then there would be more opportunities to review patients and to initiate appropriate investigations.

**Action Plan**

It was proposed that a dedicated leg ulcer clinic for inpatients would benefit patient care and enhance productive time within the Tissue Viability Service.

This clinic would provide the following resources:

- A dedicated area to see patients
- Dedicated time for the management of patients with leg ulcer
- Have supplies such as wound products and bandages within one area thereby reducing time spent in locating these in each clinical area
- Be seen as a teaching resource for colleagues and for student nurses
- Be able to allocate clinical time with colleagues within Tissue Viability Service
- Audit the type and number of leg ulcers within the hospital
- Benchmark standards.

It was envisaged that with the creation of a leg ulcer clinic, patients would be given appointment times and would be transported to the clinic where appropriate diagnosis and care of their leg ulcers would occur. This would improve the care of this group of patients and might ultimately improve healing rates.

In addition the time of the CNS would be better utilised as there would be less time wasted in...
finding the patients and looking for resources as the patients would be booked into previously arranged appointment slots and the appropriate resources would be immediately available.

The potential of this clinic to increase the education of staff across the Trust would be invaluable. Those members of staff who have attended leg ulcer courses and who therefore have the theoretical knowledge of leg ulcer management could attend the clinic to maintain their skills and, with time, would be able to care for some patients in the ward area. This would bring added benefits to the Tissue Viability Service as it has the potential to reduce its workload in the future.

In addition further members of staff could benefit from attending the clinic by learning aspects of care related to any tissue damage including bandaging and dressing techniques.

At present members of staff who wish to attend the leg ulcer course at the local university have difficulties in finding a mentor and in gaining enough practical experience to complete the course. The clinic would be a useful area to gain the necessary learning and experience. This would increase the numbers of members of staff who could offer this service thereby having the potential to reduce the workload of the CNS further.

The clinic setting would also foster the use of audit to improve the information recorded by the Tissue Viability Service on this aspect of care. Such information as numbers of patients, ulcer aetiology and care given would enhance the information available to the Trust.

A set day for the clinic would be beneficial as it would add structure to the working week and would allow staff within the Tissue Viability Service to work together, a situation that rarely occurs at present due to work load.

Resources

The following resources will be required to allow this clinic to function;

- Premises
- Facilities for storage of equipment
- Financial considerations concerning the provision of wound products and bandages
- An agreement with pharmacy for the supply of emollients and ointments
- Portering staff to ensure that the patients are transported to and from the clinic in a timely manner
- Protocol for the organisation of the clinic

It was necessary, as part of developing a business case, to review any restraining factors which might affect the implementation of change such as premises and resources. It was also necessary to gain an indication of potential support within the organisation, as it would be difficult to progress the proposal without this.

A presentation was given outlining the idea and the rationale behind starting a clinic. The discussion following this suggested that support would be available and that it was a good concept. However, a cautionary note was raised relating to the financial status of the Trust. It was felt that any new initiatives should be supported by an identified income stream if the initiative was to achieve longevity and that therefore the clinic should be viewed as a pilot as a way of assessing its impact and costs of this change in practice. In addition the clinic may become a victim of its own success, drawing in additional patients. This could cause problems for the Tissue Viability Service by increasing time pressures rather than by reducing the inefficient use of time shown by the skill mix review.

There is now general agreement that the premises will be made available to the service
and that it reflected an efficient use of existing resources. However the discussion following the presentation has raised some additional points, which now have to be investigated before the clinic can be instigated. The clinic will be audited to ensure that the defined aims are achievable, workable and improve the service offered to patients. Future developments may arise if the pilot is successful as this model of care could be transferred to the care of inpatients with other wounds thereby increasing the efficiency of the service offered to the inpatients and to the Trust still further.

There have been delays in starting the pilot clinic due to other changes within the Trust. Whilst this could be considered frustrating it has given time for reflection. A new action plan is to be written which presents more details on potential numbers of patients and estimates of costs. This will be re-presented to senior personnel within the Trust to gain continuing support to ensure that the clinic has a chance to succeed.

References


Audit revealed recurrence issues & service changes required

Helen Tilbe

The clinical nurse specialist (CNS) for a PCT-based leg ulcer service which has been running for over ten years undertook a review of the current recurrence prevention programme for patients with healed venous leg ulcers. This was in response to staff perceptions of high recurrence rates amongst our patients. Closer investigation confirmed that levels were higher than expected for a well-established service. The subsequent review of the recurrence prevention programme identified two possible causal factors – patient discharge from the service, and the form of follow-up activity. Out of this investigation, a plan has been developed to look at whether recurrence rates could be reduced by never discharging patients from the service and, additionally, by our well ulcer clinics evolving into leg care groups, providing greater emphasis on long-term client-centred support and education.

Rationale

The PCT has had a nurse-led leg ulcer service since 1994. It has been successful in reducing healing times, improving quality of life for patients and achieving cost-savings for the PCT by providing effective, evidence-based care in community leg ulcer clinics (Rotchell, 1999). These clinics are located in four premises throughout the PCT and staffed by district nurses (trained in leg ulcer management) and by the leg ulcer team. However, achieving a healed leg ulcer status is unfortunately not the end of the story for patients or health care professionals. This is because the underlying venous disease still remains. Surgical intervention may be available if the cause of the venous hypertension is traced to the superficial veins or there is a small degree of deep vein reflux (Barwell et al, 2004). Several studies, including the ESCHAR study (Barwell et al, 2004), have shown the benefit of corrective superficial venous surgery for these patients by significantly reducing the risk of recurrent ulceration. However, for other patients surgery is not an option: there is significant deep vein reflux; the patient is in general poor health; the patient may refuse the offer of surgery.

For these patients, venous hypertension is a life-long condition (Nelson, 1997) and they are continually at risk of ulcer recurrence. The clinical course of venous leg ulceration may be considered to be a “period of healing followed by an episode of recurrence” (Vowden et al, 2000). Therefore for these patients in particular an ongoing programme of recurrence prevention is an essential part of any leg ulcer service. As Dowsett (2004) points out “time and effort spent on healing venous leg ulcers will be wasted unless a prevention programme is in place”. Patients need to be supported in taking measures to reduce venous hypertension in order to lower the chance of the ulcer returning. These include:

- wearing compression hosiery (Moffatt and Dorman, 1995; Peters, 1998)
- leg elevation (Xia et al, 2004)
- exercise (Brooks et al, 2004)
- skin care (Dowsett, 2004)
- diet (Dowsett, 2004)

In our PCT, well ulcer clinics have been established in three of the four leg ulcer clinic localities, and patients transfer into these once healing is achieved. Patients in the fourth locality currently receive their follow-up in the leg ulcer clinic itself. Well ulcer clinics are staffed by two nurses with leg ulcer management training (one to former ENB N18 level). Due to financial constraints when the service was established, patients with healed leg ulcers are only monitored in well ulcer clinics for one year and are then...
discharged from the service back into the care of
the district nurse.

A reduction in recurrence rates was anticipated
with the introduction of the well ulcer clinics. However, staff have observed that high numbers
of patients continue to experience recurrent
ulceration and constantly transfer in and out
of the service. Clearly this has significant cost
implications for both patients (quality of life
issues) and the PCT (financial).

As a result of this, it was decided to look at the
situation more closely. This was not without its
problems (see table 1)! When recurrence rates
for the four localities were compared to national
figures it was found that they were similar to
national reported levels from 20 years ago
(Callum et al, 1985). It was therefore necessary to
find out why this was the case.

The figures suggested that the current recurrence
prevention programme was flawed and reasons
for this were sought. The first issue was to
question the logic of providing follow-up for
healed patients for just one year. After all, risk of
an ulcer returning is a very real issue for patients,
so discharging them after one year gives out the
wrong signal to both patients and primary health
care team. It may suggest that recurrence is not
an issue to be taken seriously. How can the leg
ulcer service support the idea of recurrence being
a problem for life, and then not offer life-long
support to these patients? Surely we must offer
long-term provision of after-care, meaning that
patients are never discharged from the service.
This idea can be supported by various studies that
demonstrate the benefits of on-going clinic-based
care by experienced practitioners (Morrell et al,

The second issue is the format of our well ulcer
clinics themselves. They are very much nurse-
led, with a focus on practical aspects. However,
concordance with treatment is also known to be
affected by patient attitude, motivation levels,
ownership of the problem (Williams, 2000), and
by their understanding (Harker, 2000). Therefore
a shift of emphasis from the structured medical
model that our well ulcer clinics are currently
based on (Flanagan, 2001), towards a more
communicative and motivational patient-centred
approach was proposed. Out of this, the following
development was suggested:

- Well ulcer clinics evolve into leg care groups
- Patients are never discharged
- Patients encouraged to drop-in on an on-
go ing basis
- Client interaction fostered by staff creating
a more relaxed environment
- Specific appointments only for those whose
arterial status needs to be monitored, or
other clinical issues
- Staff working to new local Doppler
assessment guidelines (Bowskill (2001)
and Pankhurst (2004) have questioned
the rationale for the frequency with which
Doppler assessments are performed) to
accommodate larger numbers of patients
remaining within the service
- Increase to three staff members to allow
two nurses to perform the Doppler tests
and the third to facilitate the group

<table>
<thead>
<tr>
<th>Location</th>
<th>Recurrence rates (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>National</td>
<td>67</td>
</tr>
<tr>
<td>PCT</td>
<td>65</td>
</tr>
<tr>
<td>Location 1</td>
<td>60</td>
</tr>
<tr>
<td>Location 2</td>
<td>65</td>
</tr>
<tr>
<td>Location 3</td>
<td>71</td>
</tr>
<tr>
<td>Location 4</td>
<td>68</td>
</tr>
</tbody>
</table>

Table 1: Comparison of recover rates between local and national figures
In order to work towards this, an action plan has been produced:

- Agree a clear definition of recurrence
- More detailed and accurate baseline audit of current recurrence rates
- Formulate questionnaire to assess the level of patient interest in a leg care group
- Review local guidance on frequency of Doppler reassessment, in line with national guidance
- Carry out leg care group pilot scheme in fourth locality, which does not currently have a well ulcer clinic
- Third staff member to come from leg ulcer team for pilot scheme
- Sensitive change management necessary (Branch, 2002)

Factors involved
A number of restraining and supporting factors have been identified.

Restraining factors
- Careful time management will be needed to free up staff from the leg ulcer and district nurse teams to carry out the pilot
- Short-term financial implications – increased patient concordance would lead to higher prescribing costs for hosiery and emollients
- Increased staffing levels in leg care groups, if introduced, will require a cash injection, and since leg ulcer management is currently not a government priority, it may be difficult for the PCT to justify this, particularly with current financial pressures

Supporting factors
- No additional location or equipment costs as using same PCT premises
- Significant prescribing cost-savings result from preventing recurrence – it costs between £5 and £9 for a multi-layer bandaging system to be applied to one leg for one week. Conversely, the cost of one pair of Class 2 below-knee compression hosiery, sufficient for at least three months’ wear on the same leg, costs only £9.37, meaning that bandaging costs are saved by the second week
- Reducing infection rates by extending a patient’s healed status lead to savings on costs of expensive antimicrobial wound care dressing, antibiotics and hospital admission
- Time-savings for district nurses, as patients would no longer be discharged from the well ulcer clinic into their care after a year
- Reduced recurrence rates would reduce demand for leg ulcer clinic places
- Extending the time between ulcer recurrence by one month results in an 8% reduction in district nursing time spent on venous leg ulcer management (Peters, 1998)
- Health and well-being of the population is currently an issue of high importance nationally. Ongoing support in leg care groups would provide a focus of prevention and thus support the healthy status of those individuals attending
- Venous hypertension is a long-term chronic condition. The leg care group philosophy would promote the notion of self-care, another initiative the PCT is keen to promote in response to government directives. The group would offer the opportunity to support and encourage self-care
- Patient/user experience is key to PCT developments. Support or user groups could develop from leg care groups in the future
- Waiting times are continually being monitored throughout the health service.

There was general enthusiasm and a broad agreement on the need for this potential development to the service.
The leg ulcer service will be able to prove that reduced recurrence rates, as a result of introduction of leg care groups, will lead to reduced waiting times for new patients with leg ulcers.

The service review, action plan, and restraining and supporting factors, have been presented to key people within the PCT with an interest in leg ulcer management to obtain initial feedback. There was general enthusiasm and a broad agreement on the need for this potential development to the service. If favourable results are obtained from the pilot scheme, showing benefits for patients, staff and the PCT, then a proposal will be put to senior management for extra funding to stop patient-discharge from the leg ulcer service and to transform the well ulcer clinics into leg care groups throughout the PCT. From this point there is also then the potential for leg care groups to be extended to pre-ulcer patients, thereby offering a comprehensive service to patients at all stages on the leg ulcer continuum.

References


So you want to do a leg ulcer course?

Jacqui Fletcher

Why do you want to do it?
Are you:
• Generally interested in the subject area and wish to increase your knowledge, but don’t want to do an assignment/achieve credits
• Undertaking a larger academic award such as a degree, and need academic credits
• Needing to do this as a requirement of your role, in that you have achieved clinical competencies in leg ulcer assessment and management.

Be clear about your reason – it will help you pick the right course (it may be that you are studying for more than one of these reasons).

What level will I study at?
What have you got already? You usually study at the same or higher level than previously (you move up, as there is little point in having 2 diplomas or 2 degrees, although some people do do this)

If you qualified within the last 10 years or so you will already have either a degree or a diploma.
If you have a diploma it is usual to study any further courses at degree level at least (in some Universities this is called level 3 but others use a different numbering system, so do check).
If you have a degree you may wish to study at postgraduate or masters level. There are fewer courses available at this level.
If you qualified more than 10 years ago and don’t have either a degree or diploma from other additional study then you will study at diploma level (again this may be called level 2). Some Universities do not offer diploma level courses any more, so you may have to study at level 3. This is OK, it just means that if you want to build your academic credits into a longer award such as a diploma or degree all the study will be at degree level rather than some at diploma level.

What is the difference in levels?
At degree level an assignment should demonstrate a greater level of critical analysis and the ability to synthesise findings from the literature with clinical application. If you are unsure ask to see the marking criteria for the assignment, and look at what they are asking for.

I’m already a qualified nurse – does that mean I will do postgraduate study?
Only if you qualified with a degree – ‘graduate’ in this case means graduation with a first degree, so you will already hold for example a BSc or BA. Being qualified means you will usually study in a school or department of Post Registration or Post Qualification Nursing, so if you do not have your first degree you will be studying at Undergraduate level.

What will the assessment be?
Assignments vary considerably between institutions, so do ask what is required of you. Depending on the reason you are doing the course for, you may need to choose a University that offers practical competency as well as a theoretical assignment.
The theoretical assignment will vary. Find out what you will be asked to do – it may be, for example, a patient care study, a report on local leg ulcer services or a literature review around a particular area of leg ulcer care and management, or you may have to undertake an exam. If you know what you are good (or bad) at, it may help to chose a course that reflects this. Remember though, assignments are always ‘hard’ – that’s the point, they are there to help you learn!

Competency assessment can be achieved in a variety of ways, most commonly you will be asked to find a practice assessor who will observe you in the real life situation and deem you competent to practice Doppler and bandaging. Sometimes you may be assessed in a classroom/lab type setting. Practical assessment should be done against set
criteria (competencies) so that both you as the learner and also the person who is assessing you are clear what you need to achieve. They are also useful to show your manager exactly what you did and didn’t achieve. Mostly practice is assessed on a pass/fail basis, but sometimes it will be assessed against an academic level.

What if I don’t want to do an assignment?
Many people choose to study without assessment. This may be because they have already got all the academic awards they need, they are just not ‘academic’ but still want to learn, because at this moment in their life they haven’t got space to do an assignment or sometimes they are close to retirement and feel they will not benefit from having academic credits. This is perfectly OK, some universities allow you to study without taking the assignment, although you will usually be asked to obtain the permission of the person who is paying for your course and you will not be granted the academic credits but will receive a certificate of attendance. You will still learn lots.

What are credits and how many will I get?
Credits are a sort of currency; they are the building blocks of academic awards such as degrees. Unfortunately universities haven’t agreed what to call them, or what size chunks to offer them in so it’s up to you to know what you have got and what they are (or might be) worth. An example is given below of how credits build at the University of Hertfordshire; this will NOT be the same everywhere else but should give you an idea of how it works.

At University of Hertfordshire;
To obtain a degree (BSc Hons) you need 360 credits, of which at least 120 must be at level 3 (degree level).

Registration as a nurse counts for 120 at level 1 (certificate)

Having a Diploma counts as 120 at level 2

So then you need to study whatever you still need.
The ‘at least 120 at level 3’ means that if all you have is your registration as a nurse (120 credits) you can study 120 at level 2 (which would be equivalent to a diploma) and then 120 at level 3 to achieve the BSC (Hons); however should you wish you could study the whole extra 240 at level 3.

Can I use my credits anywhere?
This is a difficult question. First of all it depends on what level you studied – most people accept diploma level credits without problem, but degree level credits are trickier. It may be that there are specific requirements within the programme you are entering that only allow them to take credits from a limited range of modules. Also if you move degree level credits, although they accept you have passed the University may not accept your mark so this may affect their ability to classify your degree ie award you a first or 2:1 etc. Always check with the tutor. Often credits are in different numbers so you may have studied a course that gave you 10 credits but if the place you are studying at now works in 15 credit chunks your 10 won’t fit.

Will I need computer skills?
Yes, you will most certainly need to be able to use a computer, both to access the literature and also it is usual to present assignments in type – very few Universities will now accept handwritten work. If your computer skills are shaky most Universities offer support and guidance.

Why can’t I do the N18 any more?
Leg ulcer courses always used to be called the N18. This referred to accreditation from the old English National Board who awarded courses numbers. As the ENB no longer exists, the titles don’t exist either. Sometimes people refer to their course as ‘formerly ENB N18’, but practically the title does not mean anything any more.

Who will teach me?
It is worth finding this out; it is always better to be taught by someone who is interested in the subject. The person responsible for the course is usually called a module or course leader. This however does not always mean they will be teaching you – ask to see a timetable and look at the speakers’ names. If you don’t know who they are, ask or look them up, put their name into a database and see if they have published, Google them and see if they are well-known in leg ulcer care, or just ask around and see what their reputation is! In many cases a university person is allocated as course leader to deal with the administrative side, and they then draw on the expertise of local clinicians for the teaching.
Can I do a course via Distance Learning?

Why do you want to study in this way? If attendance is a problem, look at the attendance patterns – some are once a week for a semester (term), and some are delivered in a block and so may be for 4 or 5 days together. Some universities (eg Stirling) offer a web-based package.

Think about how much you learn from working with colleagues, and bouncing ideas off each other.

How do I find out all this information?

All universities have web sites, although they vary in how good they are and how much information they give. If you don’t even know where courses are available a Google search will generate a huge amount of information (55,200 hits for ‘leg ulcer course’ and if you change the term to ‘leg ulcer module’, 895 hits).

Other useful places to try are organisations such as Wounds UK, who have a Courses page: http://www.woundsuk.com/courses.shtml that contains details of several courses available across the UK.

Once you have the basic information it is always worth telephoning and talking through any queries. If you simply want a pack of information it is usually an administrator you speak to; if you want more detail about the course or your eligibility it may be more useful to speak to the module leader.

What do I do next?

Once you have all the information you can decide which course best suits your needs. It may be that despite all this your Trust has a contract with the local university, and therefore that is the only place they will fund. Funding arrangements are changing this year however, so if you really want to study somewhere else put a case together and go and discuss it with your manager.

It may be that cost is a particular issue – leg ulcer course vary in price considerably from around £300 to almost £1000 so it is worth shopping around and thinking about what you get for the money (but remember the most expensive isn’t always best!). Remember to add in travelling costs if you plan to go somewhere that is not local.

Below is some information about leg ulcer courses. This has been taken from the web, so do check with each institution for accuracy! Where details are not completed they were not available on the web page.

<table>
<thead>
<tr>
<th>University</th>
<th>Course Title</th>
<th>Level of Study</th>
<th>No. of Credits</th>
<th>Assessment Method</th>
<th>Module Leader/contact details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hertfordshire</td>
<td>Leg Ulcers Theory and Practice</td>
<td>2 / 3</td>
<td>15</td>
<td>Written report, competency based assessment in practice</td>
<td>Irene Anderson 01707 285266 <a href="mailto:i.1.anderson@herts.ac.uk">i.1.anderson@herts.ac.uk</a></td>
</tr>
<tr>
<td></td>
<td>Complexities in Leg Ulcer Management</td>
<td>3/M</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bradford</td>
<td>Interventions in Leg Ulcer Management</td>
<td>3 (developing M)</td>
<td>20</td>
<td>Theory and practice</td>
<td>Kath Vowden and Jackie Lisle 01274 236082 <a href="mailto:J.Lisle1@bradford.ac.uk">J.Lisle1@bradford.ac.uk</a></td>
</tr>
<tr>
<td>Cardiff</td>
<td>Foundations in Leg Ulcer Management</td>
<td>3</td>
<td>30</td>
<td></td>
<td>Vanessa Jones 029 20682179 <a href="mailto:admin@whru.co.uk">admin@whru.co.uk</a></td>
</tr>
<tr>
<td>Stirling</td>
<td>Nursing Assessment and Management of Leg Ulcers (web based)</td>
<td>SCQF 9</td>
<td>44</td>
<td></td>
<td>Lorraine Reid <a href="mailto:l.a.reid@stir.ac.uk">l.a.reid@stir.ac.uk</a></td>
</tr>
<tr>
<td>Plymouth</td>
<td>Tissue Viability and Leg Ulcer Management</td>
<td>3</td>
<td>20</td>
<td>Theory and practice</td>
<td>Jacqueline Padmore <a href="mailto:jacqueline.padmore@plymouth.ac.uk">jacqueline.padmore@plymouth.ac.uk</a> <a href="http://www.plymouth.ac.uk/courses/IHS_module.asp?code=HEAB321">www.plymouth.ac.uk/courses/IHS_module.asp?code=HEAB321</a></td>
</tr>
<tr>
<td>Belfast</td>
<td>Lower Limb Ulceration &amp; Associated Conditions</td>
<td>3</td>
<td>20</td>
<td>Theory and practice (assignment and OSCE)</td>
<td>Lilian Bradley 028 9027 2381 <a href="mailto:lilian.bradley@qub.ac.uk">lilian.bradley@qub.ac.uk</a></td>
</tr>
<tr>
<td>Wrexham/Bangor</td>
<td>Leg Ulcers</td>
<td>2</td>
<td>30</td>
<td>Written short answer examination and critique of research</td>
<td>Trudie Young 01745 534380 or Claire Byastt 01248 <a href="mailto:383149t.young@bangor.ac.uk">383149t.young@bangor.ac.uk</a></td>
</tr>
</tbody>
</table>

JF
Once you have decided to write an article for the Leg Ulcer Forum Journal, make sure the content is appropriate for the readers. The following gives guidelines for authors.

**Format**

- **Front page**
  Title of article
  State author’s name/s, qualifications, position, and place of work. Name, address and contact telephone number of the author responsible for correspondence.

- **Introduction**
  This should be approximately 30 words in length. It should introduce the reader to the areas covered in the article.

- **Headings**
  Headings are useful to break up the text; they also help to organize the main points of the article.

- **Conclusion**
  Should summarize the article, identify gaps in knowledge and suggest recommendations for future practice.

Please send a hard copy printed on one-side only on A4 paper, double-spaced with wide margins. Please type in upper and lower case – don’t use ‘all capitals’ anywhere. Don’t forget to keep a spare copy. Also, a copy of the article should be sent on a floppy disc or CD-Rom, saved in ‘Text Only’ format. Please send any charts or diagrams as separate files. Clearly state on the disc label the file name and format saved.

The journal welcomes articles of interest. This could include a literature review, research project that you have been a part of, any innovations you feel would benefit our readers. Care studies are an invaluable source to practitioners, particularly when complex situations have successfully been addressed, colour photographs and tables can be included to complement the text (the client must give written permission before publication of photographs).

All manuscripts should be between 1,000 to 2,000 words. However if you wish to submit a short report then 500 words would be acceptable.

**References**

Please reference the manuscripts using the Harvard system. If you need further details of this, contact the editors.

**Articles should be sent to:**

Kathryn Vowden (Editor)  
c/o Department of Vascular Surgery and Wound Healing  
The Penthouse  
Bradford Royal Infirmary  
Duckworth Lane  
Bradford, BD9 6RJ

*Care studies are an invaluable source to practitioners, particularly when complex situations have successfully been addressed.*
Supporting the professionals

Providing a forum for nurses working within the field of leg ulcer management and wound care

• Facilitating discussion, debate and reflective practice in which all members are encouraged to participate

• Disseminating new research and identifying and supporting areas of good practice

• Providing support to specialist nurses involved in establishing leg ulcer services

• Encouraging continuous professional development

THE LEG ULCER FORUM
PO Box 337 Huntingdon PE28 2WH
Tel: 01480 494842 email: legulcer.forum@btopenworld.com
web: www.legulcerforum.org