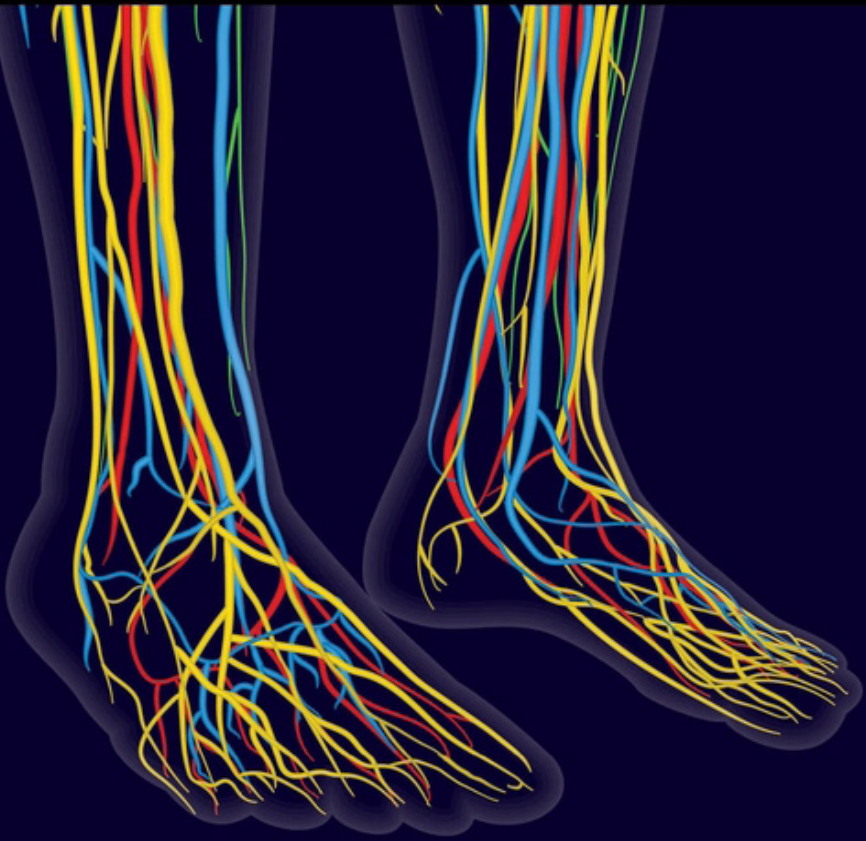

Lower Limb and Leg Ulcer Assessment and Management

Edited by
Aby Mitchell · Georgina Ritchie · Alison Hopkins

WILEY Blackwell

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In remembrance of Hugo

Professor Hugo Partsch, 1938–2023
Doctor, researcher, scientist
A humble and generous mentor
Founder of the International Compression Club
Who ignited for many a lifelong fascination with compression therapy
Thank you

Contents

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Foreword

Wound care is predominantly a nursing issue. It is a vital and highly skilled field of nursing practice that is routinely delivered in the community, every day of the year, to hundreds of thousands of individuals in homes and clinics, where it is unseen and rarely celebrated.

This book lifts the veil on the management of leg ulcers, with evidence-informed approaches to providing excellent care. It is written by a team of experts for nurses, principally for the district nursing service, but it will also be highly beneficial to all nurses working in general practice, in care homes and in domiciliary care where they are also responsible for leg ulcer care.

Nurses ensure that care is personalised to the individual they are caring for and this book provides a framework for practice that recognises the holistic, person-centred nature of nursing assessments and nursing work. It brings together a guide to practice along with the supporting evidence, to enable learning and critical thinking on assessment techniques, diagnosis, selection of the most appropriate intervention, evaluation, potential referral and review.

Nurses providing care for people in a home environment know that it is not only expert skills that are needed to provide the most appropriate care for the leg ulcer, but also seeing the person in the context of the environment in which they live. In addition to undertaking a physical assessment of the wound and surrounding skin condition to ensure that the most appropriate therapeutic intervention is prescribed, nurses observe mobility, continence, hydration, nutritional status, levels of self-care and the warmth and living conditions of the home, including the potential for personal care and elevation of legs as required.

With highly developed skills in communication and personalised care, nurses provide the most appropriate therapeutic intervention as part of a shared decision-making process, considering the

person's lifestyle, employment status and psychological and social situation. This is complex work – and nurses make it look easy, all the while utilising skills of critical thinking and holistic assessment to determine the best approach for leg ulcer care to propose to the individual. They also know when to refer to the multidisciplinary team for additional assessment, with an understanding of the benefits of working in a wider team of clinical professionals.

This perfectly formed reference, provided as a very practical pocketbook to accompany the nurse in practice, challenges the reader to think differently about leg ulcer care. The text changes the narrative about leg ulcer healing and prevention, with references to causing harm to the very people being cared for through inappropriate interventions or sub-therapeutic 'doses' of compression therapy. It places the person being cared for at the centre and provides an accessible and supportive reference for all nurses in clinical practice delivering leg ulcer care for the communities they serve.

The development of this book by United Kingdom experts in the field of leg ulcer management is timely, with the National Wound Care Strategy Programme (NWCSP) in England having been published in 2018 and the learning from this continuing to be rolled out. The book brings into sharp focus a world in which leg ulcer management can be rapidly and radically improved through education and the application of best practice.

My congratulations to every member of the Accelerate CIC team, the Welsh Wounds Innovation Centre, King's College London and the nurses working in the National Health Service who have contributed their expertise to this book. I very much look forward to seeing the tangible impact flowing through the nurses working in the community setting, and most importantly to the individuals they care for.

Dr Crystal Oldman CBE RN RHV EdD MSc MA FRCN
Chief Executive of The Queens Nursing Institute

Preface

Often people peruse a book with the question 'Is this for me?' So what is your purpose in picking up this book? What are you hoping to gain or change? You certainly must have an interest in leg ulcers, otherwise you would not have sought out or reached for this book.

Simply because of that interest, the authors are interested in you, in your ambition and in what changes you want to be part of. This book has been written with you in mind. You are likely a community nurse or therapist who wants to manage people with lower limb conditions more effectively, and perhaps you would like to place a greater emphasis on partnership working with your patients and colleagues. With our collaborative experience and clinical expertise, gained in the classroom and in the mentoring of specialists, our aim is to help you increase your knowledge and skill set so that you can improve the lives of your patients and bring about the change the healthcare system and our citizens deserve.

Lower limb management is not just for nurses; it needs to involve multidisciplinary teams. There is certainly a groundswell of change being advocated in the world of leg ulcer management and the authors are keen to support this. Improving understanding and developing specialist skills require teamwork, so Accelerate CIC has partnered with key allies in the NHS, King's College London and the Welsh Wounds Innovation Centre to write this book. This has been an exciting collaboration to be part of.

As I write this preface, I am reminded that this is my 35th year of a focus on improving the lives of people with leg ulcers. It is exciting to see recent developments and the establishment of the National Wound Care Strategy. There is a growing body of evidence about the costs of wound care for both people and the health economy; there is a recognition of the drain that unhealed leg ulcers are on our

resources and lives. I do believe we are making national progress. Yet the story underpinning leg ulcer management can sometimes feel as if nothing has changed since I started my journey in 1989. The health system continues to perpetuate avoidable patient harm through system paralysis and a lack of understanding of the extent of the damage to patients and clinicians.

And this harm is avoidable. The system must focus on developing skilled practitioners, optimising compression therapy, safeguarding escalation to specialist practitioners and ensuring that access for biomechanical assessment is addressed. If not, then our patients may well continue to suffer life-changing events, potentially leading to sepsis and even death. This is completely unnecessary, and we do not need more research to tell us what to do to prevent this or how to improve the lives of our citizens. The resources used to prop up a poor system are costly to all.

Unfortunately we have a narrative that reinforces a negative view of people with leg ulcers. I have witnessed 35 years of a damaging story, a powerful and influential narrative that has led to an acceptance of chronicity and to delays in treatment, allowing non-healing wounds to hit crisis point with inadequate resources to manage them. This false narrative says that leg ulcers are inevitably 'chronic', that it is the non-compliance of patients that hinders healing and that nurses should be afraid of doing harm by using compression. Products have been adapted to reflect this false narrative; there has been a growth in sub-optimal compression devices alongside hundreds of unnecessary wound dressings designed to promote the healing that has so far eluded us.

Meanwhile the prevalence of non-healing persists and grows, using up 50% of community nursing workload. This all-pervasive story hinders the healing of lower limb wounds and is the reason behind the writing of this book. The book aims to bring together the multidisciplinary knowledge and insight required to effectively manage lower limb conditions, and it aims to support you, the practitioner, in developing the courage you need to counter this pervasive narrative. Together we can indeed improve lower limb management by simply using our skills and knowledge.

This level of understanding is necessary to create confidence in your growing expertise. It will enable you to have good conversations with your patients and to consider the next steps in partnership with

them. The language this book promotes should give you clarity, confidence and courage alongside professional humility – recognising that we have much to learn from our patients. This book will hopefully assist in growing your resolution to deliver the expert compassionate care required alongside confidence to challenge the system. Your expanding knowledge will enable you to act as an advocate for your patients and your colleagues, and to champion an improved health system.

I want to give my heartfelt thanks to all the contributors for their time freely given. I feel privileged and blessed to have been part of this book. A very special thanks need to be offered to my fellow editors, Georgina Ritchie and Aby Mitchell; the book simply would not have been published without their tireless support, energy and enthusiasm.

Alison Hopkins MBE RN FQNI MSc

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Thank you to Accelerate CIC members and patients.

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A special thank you to the Accelerate CIC patients who were brave and kind enough to allow us to photograph and share pictures of their wounds and lower limbs. Without their contribution, learning and understanding lower limb management would not be possible.

The editors of this book wish to thank the contributors for their input into the writing of this book.

Juliet Herbert
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Gabriela Korn
Heidi Sandoz
Deborah Chester-Bessell

Introduction

ALISON HOPKINS AND JOSEPH MONTGOMERY

In order to understand the placement of and need for this textbook, it is critical that practitioners understand the resources being used in the management of the lower limb. In order to improve outcomes for patients, we need to critically appraise the resources being used, the waste in the health system and where to focus our attention. Resource management is also part of excellent system management. Unfortunately the collection and analysis of system and patient data concerning those with wounds are not routinely accessible and providers often have to rely on the data of others or studies to make conclusions about their local provision. This has created much paralysis in our commissioning landscape. However, there is some local data that can be accessed and this introduction sets the scene and clarifies the role the insights can play in improving care delivery. Dressing spend will reduce when best practice is utilised and wound chronicity avoided. Thus clinical improvements as a result of increasing readers' knowledge and skills in leg ulcer management will create a profound and positive impact on the health economy.

THE WOUND CARE BURDEN

During 2017 and 2018 it was estimated that more than one million people in the United Kingdom had an active ulcer on the lower limb (Guest et al. 2020). This equates to 2% of the population and is a 37% increase from the prevalence data recorded in 2012 (Guest et al. 2020). More than 50% of these patients were recorded as having venous leg ulceration and approximately 36% of all lower limb wounds did not

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have a documented diagnosis. This lack of accurate diagnosis indicates that a significant proportion of the population is likely to experience delayed wound healing associated with the absence of effective treatment. The cost of lower limb ulceration cannot be underestimated, as experiencing a leg ulcer is known to be associated with a negative effect on the biopsychological, spiritual and socioeconomic aspects of patients' health, well-being and quality of life.

Treatment and management of leg ulcers are expensive, and the financial costs of wounds overall are well documented. Approximately £8.3 billion per year are spent on wound management, of which £2.7 billion is associated with managing healed wounds and £5.6 billion is associated with managing unhealed wounds (Guest et al. 2020). In terms of practitioner time, this equates to 54.4 million district or community nurse visits per year, 28.1 million practice nurse appointments and 53.6 million healthcare support worker visits (Guest et al. 2020). It is estimated that 50% of community nursing caseloads is attributed to lower limb wounds (Hopkins and Samuriwo 2022). Missing from the picture is health economics data about the amount of money and time spent by patients, their families and support networks in managing their wounds.

For practitioners this so-called 'big data' can feel disconnected from day-to-day practice, but effective resource management is an area that practitioners can influence, through learning about local needs and patterns, choosing the right management plan, analysing and understanding available data and working effectively to be aware of sustainability. Front-line healthcare practitioners are well positioned to make a difference in resource management and environmental sustainability (Ritchie 2019) for the benefit of the local health economy.

Effective management of resources, whether that is clinical consumables, human time or a commitment to environmental sustainability, has the potential to underpin effective leg ulcer management. When managing resources for the population of citizens who have wounds, it is necessary to be cognisant of the resources being used, those that are obvious and measurable, as well as where we are data poor. This is an important area for practitioners to appreciate and lead on, whatever level of change they are attempting to create, from developing a basic business case to those who wish to promote system-level change. Table I.1 highlights areas of data that could support a strategy to improve resource management.

TABLE I.1 Data for insight into the use of healthcare resources.

Understanding the burden on the local workforce such as frequency of dressing and nursing activity per week.
The dressing spend per resident for the borough and comparing to others.
Identifying unwarranted variation such as use of compression therapy or antimicrobials across teams.
Identifying the types of wounds on the caseload and proportion of bilateral leg ulcers.
Obtaining data on urgent admissions for cellulitis and the impact of unmanaged oedema.

THE COST OF SUB-OPTIMAL WOUND CARE

Dressing prescription costs are a known resource within community services alongside the awareness that waste is prevalent and there is a chronic lack of adherence to formularies. This brings an opportunity for cost control and reduction often led by medicines management teams. Less known or understood is the extent of time spent on delivering wound care; this has been reviewed in some studies (Guest et al. 2020; Hopkins and Samuriwo 2022) but it is rare for an area to know accurately how many hours of practitioner time are spent on care delivery. This prevents the development of a comprehensive workforce strategy that will utilise an effective skill mix for the successful management of patient need.

The successful management of lower leg wounds and lymphoedema is very dependent on the skillful use of dressings, compression bandages and compression garments. When evidence based care is utilised for people with leg ulcers, this has a positive effect on spend and patient outcomes, as well as practitioner time. Hopkins and Samuwiro (2022) found that more nursing time was spent on lower limb management when compression was not used; non-use of compression increased nursing activity by 37%. Analysis of the usage and costs of dressings, compression bandages and compression garments bring insights to direct care delivery at the front line, as well as improving the system-wide population health management. Yet the insightful management of dressings and bandages as a critical resource remains a rarity in resource management.

TABLE I.2 Tips on how practitioners can develop good resource management practices.

Identify a person with sub-optimal management of leg ulcers; explore the resources used in time and dressings, the number and costs of infections and admission. Describe an alternative journey for this person and identify the impact on cost reduction.
Use the insights developed through dressing analysis with terminology that targets the commissioners' understanding and focuses on population health, such as 'unwarranted variation', 'inequity', 'sub-optimal care', 'unplanned admission'.
Highlight the need for budget holders to invest in robust, high-quality education, rejecting a 'see one, do one' approach to lower limb management that perpetuates the cycle of sub-optimal care and ineffective resource management.
Look at your caseload of all those with lower leg wounds of all types. Establish how many are using compression therapy and whether this is optimal.

Collecting local data on practitioner time, dressing and bandage usage and unplanned admissions remains a difficult task but can provide profound insights into the evidence of sub-optimal care and unwarranted variation. Persuading commissioners of the worth of investment remains problematic and hence the need for the National Wound Care Strategy to provide a framework for evidence production and business cases. While data may be lacking, enthusiastic local leaders can help commissioners or nursing leaders make system-changing decisions. Table I.2 offers some tips for how practitioners can develop good resource management practices.

CLASSIFICATION OF DRESSING PRODUCTS

Dressings are classified according to their primary purpose, with the exception of some antimicrobial products. Categorising products, as in Table I.3, is beneficial when reviewing the use of dressings and

TABLE I.3 Product classification.

Classification	Generic examples
Absorbent	Hydrofibre, supra-absorbents
Antimicrobial	Products with Ag (silver) layer or specific antimicrobial properties
Bandage	Crepe or retention bandage
Compression bandage systems	Individual bandages, multicomponent kits, hosiery kits
Debridement	Skin or wound cleansing wipes or pads, often with microfibres
Dressing packs	Including gloves and aprons to aid good infection control practices
Film	Film only
Foam	Adhesive or non-adhesive hydrophilic polyurethane foams
Gauze	Packs of simple gauze
Hydrocolloid	Hydrocolloid of various thicknesses
Hydrogel	Debriding gel
Irrigation	Saline and other wound cleansers
Non-adherent	Wound contact layers
Negative pressure wound therapy	Various manufacturers
Other (consumables)	Forceps, scissors, probes
Paste bandage	Impregnated bandages or tubular bandages
Pressure-offloading devices	Footwear
Simple dressings	Non-adherent pads with adhesive tape or film
Tubular bandage	Used under bandages
Wadding	Sub-bandage wadding
Hosiery/wraps	Hosiery, split into garments and wraps and by compression class

spending attributed to them. This method provides a quick overview of the most-used or highest-spending products and brings insight at a glance, while highlighting where further analysis is needed.

Displaying spend and usage in this manner to those using the scheme can stimulate conversation and debate about what this means for them and how their clinical decisions are shaping their dressing and bandage spend.

DRESSING PRODUCT ANALYSIS

Top 10 Dressing Products

An example of a typical annual spend in dressings across the classifications can be seen in Figure I.1.

Foam, absorbent and antimicrobial dressings will normally feature within the first five highest-spending classifications.

In areas where a dressings optimisation scheme is actively managed, the insights from the analysis should create a change in usage. A strategy for optimising dressings is linked to delivering evidence based care; effective management of oedema will see an increase in compression products and a reduction in use of bandages (crepe and retention). Monitoring product use across teams will also establish other areas of unwarranted variation.

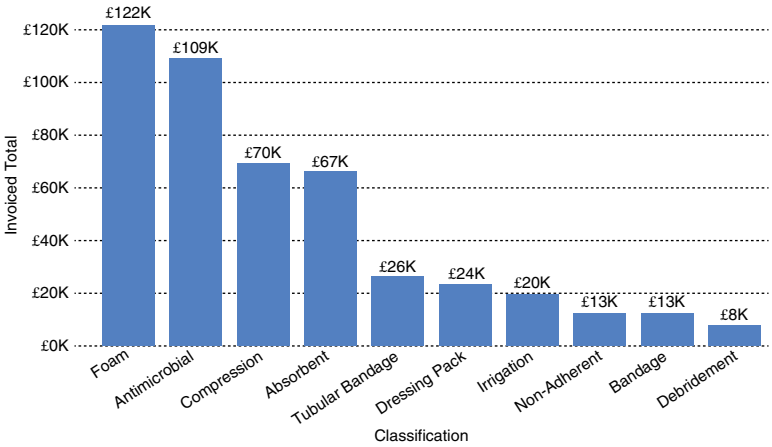

FIGURE I.1 Typical annual spend across wound management classifications.

Foam dressings combined with an online dressing optimisation system are often considered the first choice for even simple wounds as they are easy to use and comfortable. While they are essential for pressure ulcers, they are not always required for simple surgical or traumatic wounds. Encouraging a suitable switch to simple dressings such as non-adherent pads with film or tape adhesive is cost effective.

Antimicrobial spending is excessive in the example in Figure I.1 and needs to be understood and reduced through a coordinated action plan that combines effective management of wounds with a local anti-microbial strategy.

The use of absorbent dressing often benefits from greater exploration; excessive use, and certainly of the large sizes can point to inadequate lower limb management. Large absorbent dressings or pads are primarily used for lymphorrhoea or large bilateral leg ulcers; excessive use can suggest that oedema is not being addressed properly, especially if the analysis also demonstrates a high use of crepe in proportion to compression.

ONLINE NON PRESCRIPTION SERVICES

Prescribing is an essential component of effective clinical management in many areas of healthcare and non-medical prescribing in particular has been demonstrated to have many positive outcomes for practitioners and patients (Nuttall and Rutt-Howard 2019). The last 15 years have seen a number of online non prescription services developed by dressing manufacturers. Accelerate CIC has developed an independent online system that supports effective dressing optimisation through analysis and insight development; as an agnostic system there are no industry requirements for particular dressings to be present on the formulary allowing greater choice and control. Within leg ulcer management a dressing optimisation scheme (DOS) can be an effective way to deliver the insights required in order to manage resources successfully ensuring good prescribing practices that are not adversely affected by patient or colleague expectations, the organisational culture, as well as external influences such as pharmaceutical companies and the media (Ritchie 2019). While a dressing optimisation scheme does not eliminate the influences entirely, it can support their minimisation or regulation.

An online dressing optimisation system reduces waste. As the dressing or product is procured off prescription it is no longer the property of the patient but of the healthcare organisation. Therefore, a box could be opened and distributed across multiple patients or places of treatment. Additionally, as these items are owned by the local health organisation and fall under one budget for all services, if a dressing is no longer required or is likely to expire without being used, it can be utilised within the same organisation, infection control issues permitting. Orders made under the dressing optimisation scheme can also be returned to the supplier if they have not been opened and the account is credited. The system prevents people from continuing to collect or receive dressings direct to their homes without oversight. Regular reviews by a practitioner are completed to ensure that the patient's needs have not changed and that what they are using is still appropriate thereby preventing a wasteful build up of products in the home.

Access to dressings is managed through the agreed wound formulary, which is easily visible and accessible in the online system. Due to the ease of access it is critical that product sizes are restricted and products kept to a minimum; unusual products or sizes are restricted to a clinical lead or specialist nurse for authorisation and monitoring.

A benefit of an online non prescription service is that people with wounds do not pay for their dressings or compression garments via this system. This is significant for working adults and to those suffering due to the cost of living crisis. If the person is in supported self-management, products are given to them as required.

Traditional prescriptions can create waste and delays in getting the right product to the right patient on time; delays in this system are common but rarely captured or monitored. An online system has far greater transparency allowing for monitoring and improvement processes. For practice nurses, leg ulcer clinics and nursing homes, delivery direct to the team is simple and easy to manage, although a storage area is required. For community nurses visiting people with wounds in their own homes, it is more difficult (Kilborn and Hopkins 2017); community nurses are required to provide dressings from the store or nursing base. The advantage is that nurses have what they need when they need it but they are required to be the provider