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# Excellence. Every patient. Every time

**Jackie Stephen-Haynes**, Chair, Wound Care Alliance and Professor in Wound Healing,  
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**E**xcellence. Every patient. Every time. This is the theme of the National Wound Care Strategy Programme's (NWCSP) *National Wound Care Core Capabilities Framework for England* (2021). It consists of five domains: underpinning principles; assessment, investigation and diagnosis; wound care; personalised care and health promotion; and leadership and management, education and research. The framework provides a standard for all levels of multi-professional clinicians, educationalists, researchers and managers. There can be no doubt that this is a significant achievement in tissue viability and will be highly influential in the future of wound prevention and care. This as a 'must read'.

The delivery of excellent care to every patient every time really will make a difference. But how will we know what we are achieving? Using technology in tissue viability is the way to ensure high-quality care is provided to all and that it is monitored, evaluated and audited. The data clearly indicate it and patients will increasingly demand this. The latest evidence from Guest et al (2020) compares data from 2012–2013 to 2017–2018 and reports that there is an increase in the number of wounds and, significantly, an increase in the financial cost. Access to data is needed by clinicians, carers and patients. Wound management digital systems are now available for capturing, storing and analysis of images and patient information.

Education in tissue viability in the future may be vastly different to the past. The NWCSP will be recommending that those working at a senior level in tissue viability, such as tissue viability specialist nurses, will be educated to master's level.

Access to tissue viability education is, however, important at all levels and the future of high-quality care is dependent upon it. Whatever your opinion, I would be really grateful for your completion of the repeat Wound Care Alliance UK (WCAUK) survey on the provision of education. Over 1000 of you completed this last year at the beginning of the pandemic, so please do take the time. It will literally take 5 minutes and will enable us to compare the results to see what has changed 1 year on. The survey can be completed at <https://catt.ly/jnOFvYr>.

There is a great need for education nationally

and also internationally. The WCAUK has been pleased to support the provision of education in Uganda by supporting nurse Elizabeth Pearson, who has written about the innovative approach she has taken to improve care in this issue.

If the pandemic has made you reflect and consider contributing to tissue viability in a positive way then please look at our advert in this journal for the recruitment of a new WCAUK trustee. I am happy to discuss what the role entails.

On a personal note, I want to focus on the importance of personalised holistic care and the importance of thinking through the care you provide. My lovely father, who was 1.93 m (6 foot 4 in), died at the end of January at home. There was of course the challenge in getting him home and some health professionals being less helpful than others in achieving this. What really grates is that the NHS bed base was suitable for weight but not height. I was truly embarrassed that the bed was 20 cm (8 in) too short. His feet were literally hanging out of the end of the bed with the foot board removed. He used to say you can control your weight but not your height, and being tall certainly posed him many challenges, but this really was avoidable. The same thing happened to one of my professorial colleague's relatives. Please make sure that this does not happen to those in your care. It is said that the simple things make a difference. They truly do. Excellence. Every patient. Every time.

Finally, thank you to all those who have been supportive to the WCAUK during the pandemic. We look forward to seeing many of you again at the conference on 21 October 2021 in Cheltenham. Book via the website (<https://www.wcauk.org/>).

Please continue to stay safe. **BJN**

Guest JF, Fuller GW, Vowden P. Cohort study evaluating the burden of wounds to the UK's National Health Service in 2017/2018: update from 2012/2013. *BMJ Open*. 2020;10(12):e045253. <https://doi.org/10.1136/bmjopen-2020-045253>  
National Wound Care Strategy Programme. Excellence. Every patient. Every time. National wound care core capabilities framework for England. 2021. <https://tinyurl.com/cn6ksey8> (accessed 15 June 2021)





# The importance of language

**Leanne Atkin**, Lecturer Practitioner, Division of Podiatry and Clinical Sciences, University of Huddersfield, and Vascular Nurse Consultant, Pinderfields Hospital, Wakefield (L.atkin@hud.ac.uk)

Language plays a vital role in fundamental human connections. Although all species have their ways of communicating, humans are the only ones that have mastered cognitive communication. Language allows a form of release and understanding that nothing else can match, allowing thoughts to be translated into something tangible.

Language will forever grow organically. It changes with the times, our environment and social conscience, as it does within wound care. We need only look back a couple of decades to see how our language has changed. If you consider the terminology relating to pressure ulcers, we have gone from bed sores to pressure sores to pressure ulcers, and now even pressure injuries. The language has evolved, along with changes in customs and practices. But do the changes in language also change the direction of how we manage and treat patients? Does this have a wider influence on healthcare? Do the words we choose in our day-to-day practice and the terminology we assign have the potential to shape the care and services of the future?

When the word 'ulcer' is used, is it the best terminology or does this word actually cause barriers to care? To many medical staff an ulcer is still something that occurs in the stomach or the mouth. Intriguingly, we speak about 'pressure ulcers' even when referring to intact skin. Should a non-blanching area of intact skin even be called a pressure ulcer? How do you articulate the difference between a wound and an ulcer? How can a patient with diabetes have a foot ulcer from point of occurrence, while a wound on the leg is just a leg wound until an arbitrary amount of time (2 weeks) has passed and it can be referred to as a leg ulcer? The cellular structure of the wound does not alter from

day 13 (when it is still a wound) to day 14 when it is now officially classed as a leg ulcer.

Recently, the College of Podiatry reflected on its use of language in relation to patients who had previously had a diabetic foot ulcer, changing the terminology from 'healed diabetic foot ulcers', to a patient being in 'remission', focusing on ulcer-free days (College of Podiatry, 2021). This was done in an attempt to bring home to the patient and the health professional that even though the wound has healed, the risk of recurrence is substantial. This is due to the fact that the regenerated cutaneous tissue will not have the strength of the adjacent skin and therefore is vulnerable to mechanical forces, such as pressure and shear (Khan et al, 2020). The word 'remission' has a hugely different connotation to that of 'healed'. Healed indicates an ending point or conclusion, whereas remission identifies the possibility that the condition could come back, where a patient should be mindful, on guard and aware of the risk. Does this simple change in wording encourage the patient to engage in healthy behaviours and subsequently does this help prevent ulceration in the future?

Many of us talk about 'wound management'. We have all been involved in education sessions focused on assessment and management of wounds, but should we really be managing them when the real aim is actual wound healing? Management can be defined as 'achieving something despite difficult circumstances', so maybe this is appropriate? But how and where does wound closure align with wound management? From the patient's perspective, surely we should concentrate on healing/closure, not management. Does the current terminology of management allow us to become a little apathetic in our approach?

Additionally, is it time we also changed the

terminology of 'advanced wound dressings'? This term first originated in the late 1980s/early 1990s when alginate, foams and hydrocolloid dressings were first produced. But would you really ever consider anything developed in the 1980s as being advanced today? I certainly know my TV looks very different today to the one I owned in the 1980s—imagine the reaction of anyone in their 20s if they had to get up to physically change the channel and let's not talk about the balancing acts we did with the internal aerial! So should we still be referring to these dressings as advanced? Or should these now be referred to as traditional? Should the term advanced wound products only be used for dressings with the ability to heal/change the cellular form of the wound bed?

There are so many ways language impacts on patient care. The words we choose when speaking with patients is vitally important as it is the cornerstone of the patient-health professional relationship. Good communication plays a significant role in the building of trust and respect, both of which influences positive health outcomes. But is it time we reflected on the words used within wound care, fundamentally questioning whether advanced wound dressings really are advanced. Is the term wound management right when we ultimately seeking wound closure? Such changes in the language may seem insignificant, but the adoption of this seemingly simple change has the potential to reshape and reform the whole culture of wound care. **BJN**

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# Wound Care Alliance UK

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## Who we are:

- We are a charitable organisation providing training and education by experienced wound care professionals for the non-specialist which can be applied in any care setting
- The primary objective of the Wound Care Alliance UK is the development and promotion of multi-disciplinary best practice in the prevention, assessment, management and maintenance of wounds

## Alliance key objectives:

- Provide, publish and distribute educational materials
- Act as a significant voice for Tissue Viability
- Provide advice and guidance for members

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# Development and validation of a pocket guide for the prevention of diabetic foot ulcers

## ABSTRACT

**Objective:** Diabetic foot ulcers can have serious consequences, including amputation. This project aimed to develop and validate a diabetes care management model—a pocket guide on the prevention of foot ulceration to assist health professionals and scientific societies. **Methods:** An adaptation of the IOWA method of evidence-based practice to promote high-quality care was employed. After problems are identified, the IOWA method supports the development of an action plan for addressing them. An evidence-based protocol based on the five cornerstones of the 2015 guidance on the diabetic foot by the International Working Group on the Diabetic Foot was developed in two phases and validated using the Delphi technique. **Results:** A model was developed to promote these five cornerstones, which are the main recommendations for managing the diabetic foot. These are: foot examination; risk assessment for ulceration; education in diabetes; appropriate footwear; and treatment of pre-ulcerative lesions. To adapt this into a health information document, the management model was synthesised and designed as a pocket guide. The model's individual and global content validity indices surpass 0.78 and 0.90 respectively. **Conclusion:** A management model was created and validated, and produced as a pocket guide to deliver instructions on the care and prevention of diabetic foot problems in people with diabetes.

**Key words:** Diabetes ■ Diabetic foot ■ Patient care management ■ Clinical management ■ Evidence-based practice ■ Nursing

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The prevalence of diabetes has reached concerning levels worldwide, particularly in developing countries. According to the latest data released by the International Diabetes Federation (IDF) (2019), 463 million people across the globe are affected by diabetes, which corresponds to 9.3% of the global population.

About 26 million people with diabetes develop foot ulcers annually (Bakker et al, 2015; International Working Group on the Diabetic Foot (IWGDF), 2019). Medical expenses for people who have both diabetes and ulcers are five times higher than for those who have diabetes but no ulcer (IDF, 2017a). Moreover, ulcers may lead to amputation, an outcome 20 times more common in people with diabetes than in people without diabetes (IDF, 2017b). Among all amputations associated with foot ulcers, diabetic foot ulcers lead to up to 83% of major amputations and 96% of minor amputations (World Union of Wound Healing Societies, 2016). In addition, patients who have amputations related to diabetic foot ulcers have extremely high mortality rates, with up to 70% dying within 5 years (Bakker et al, 2015).

Another cause of concern is diabetic foot ulcer recurrence. Approximately 40% of patients have ulcer recurrence within 1 year of being cured, 60% within 3 years, and 65% within 5 years. This has led researchers in this area to opt for the concept of ulcer remission rather than cure (Armstrong and Mills, 2013; Armstrong et al, 2017).

Given this, there is an urgent need for structured services and up-to-date guidelines in the management of people with diabetes, which should include care for the lower extremities, as they are the site of complications that may lead to severe negative outcomes, such as ulceration and amputation (Frykberg et al, 2006; Wu et al, 2006).

Most ulcerations that could potentially lead to amputation result from factors such as pre-ulcerative lesions (also called non-ulcerative lesions), trauma from inappropriate footwear and minor traumas such as that resulting from walking barefoot (given the diabetic foot's lack of plantar sensitivity). Such factors can be avoided through educational and preventive programmes, as well as foot care and monitoring (Bakker et al, 2015). Foot care management by a structured, interdisciplinary team can reduce the number of amputations by up to 80% (IDF, 2019).

The Delphi technique allows for group consensus to be reached on a topic, through consultations with people who are considered experts in a field. This adds credibility to the validated content, as it has been filtered by renowned professionals. After agreeing to participate in the process, these



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**Box 1. Five cornerstones for the prevention of lower extremity ulceration used in the guide****Key elements of diabetic foot care**

1. Regular inspection and examination of the at-risk foot
2. Identification of the at-risk foot
3. Education of the patient, the family and healthcare providers
4. Appropriate footwear
5. Treatment of non-ulcerative pathology

Source: Bakker et al. 2015

experts are referred to as judges. Judges are consulted via questionnaires sent to each participant over the same period (Mancussi e Faro, 1997). Judges do not have access to each other's responses, which minimises the likelihood of them influencing each other. In general, a numerical value within a Likert-type scale is assigned to each question. Judges can also provide written opinions (Spínola 1984; Mancussi e Faro, 1997).

There is no ideal number of participating judges. Expert selection depends on the object of interest and the comprehensiveness of a judge's knowledge in the target area.

In addition to having extensive knowledge on the subject matter, the expert should be willing to participate in all stages of the process. It is important that examination of the questionnaires by the judges and their return to the group's administrator should take place according to pre-established deadlines (Spínola, 1984).

There is no fixed number of rounds of consultation. Generally, two or three rounds are sufficient to get a group consensus on the topic. Too many rounds discourage expert participation, which makes it difficult to analyse the data and delays the study's conclusion (Castro and Rezende, 2009).

The Delphi method was used to validate the contents of the pocket guide, with the collaboration of Brazilian experts in the area of diabetes and the diabetic foot. This final product—an educational guide on the prevention of foot complications in people with diabetes—represents the opinion of several experts, not just one.

In this study, it was proposed to draw up, validate and design a pocket guide to disseminate a diabetes care management model. This model focuses on early screening, risk classification and the prevention of foot complications. These clinical activities are routinely provided at the Speciality Centre of Diabetes at the Federal University of São Paulo (Unifesp), and in other regional centres. The guide is also supported by the five cornerstones of the IWGDF (Bakker et al, 2015).

## Method

This study is based on evidence-based nursing practice and takes a methodological approach. The development and validation of the management model complies with the principles of the International Diabetic Foot Consensus, drawn up by the IWGDF, and has stages of construction according to the Iowa model, as adapted by Titler et al (2001). The Iowa method has several sequential, interdependent steps.

The elaboration and validation of the management model was performed according to the principles of the IWGDF.

This entailed several stages of construction, in line with the Iowa model (Polit and Beck, 2006). The Iowa method for the implementation of evidence-based practice comprises several sequential and interdependent steps.

The first step is the identification of a problem within an institution; the second examines whether the identified problem is relevant and should be considered a priority. If so, a team is formed and the available research on the subject is assembled. If the research base is sufficient, preparation for practice changes are started. Otherwise, the research work is extended or support from other types of evidence, such as case reports and expert opinions, is sought.

Next, evidence-based guidelines are developed and a pilot practice change with defined goals is implemented. The pilot's results are then evaluated and, if the change is considered appropriate, it is implemented definitively, with monitoring and analysis of data on its structure, process and results.

In this study, the quality-assessment method for the inclusion of care practices examined the accuracy of these practices as secondary care interventions, considering diabetes-related lower-extremity diseases.

The organisation of this management model was based on the IWGDF's five cornerstones (Box 1) (Bakker et al, 2015). These were formulated according to the best evidence and scientific recommendations.

The construction, pilot implementation and validation of the diabetes management model for the prevention of lower extremity ulcerations was carried out in two phases, which were divided into several sequential and interdependent steps.

Initially, a set of problems in the institution was selected as a target (late diagnosis, and a high number of ulcerations and amputations in people with diabetes). A search was then performed of the Descritores em Ciência da Saúde (Descriptors in Health Science; DeCS) online database to identify the relevant descriptors and their corresponding items in the Medical Subject Headings (MeSH) database. Finally, a search using the descriptors identified was carried out in the main medical databases.

The search for references did not provide strong enough evidence on which to base the protocol, so it was necessary to include publications with less strong evidence, such as case reports and expert opinions.

One of the steps in the Iowa method is to implement a pilot project. This pilot was carried out after formal authorisation by Unifesp's specialist diabetes centre and the university's ethics committee. The 77 patients included in the pilot were enrolled in the centre, having been referred to it by the diabetic neuropathy department. Patients with bilateral transtibial amputation were excluded from the study, as well as those unable to attend consultations (according to risk classification). Patients were informed about the nature of the research, as well as its purpose and relevance. After giving verbal agreement, they were invited to give written informed consent.

The patient-evaluation instrument used was developed by Pedrosa et al (2014). The clinic room was adapted, with structural and architectural adjustments and the installation of equipment that the project was expected to need.

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**Box 2. Criteria for selecting expert participants for the validation process**

Work in area of interest	Score
Thesis or dissertation	2 points per work
Graduation or specialist monograph	1 point per work
Participation in groups or projects	1 point
Teaching experience	0.5 point per year
Professional practice	0.5 point per year
Adviser on work	0.5 point per work
Authorship of two works, published in periodicals	0.25 point per work
Participant in examination boards	0.25 point per work

Source: Teles et al, 2014

**Table 1. Management model content validity index: total and individual item scores**

Item	Content validity index	Item	Content validity index
Final model	0.908	2.10	0.917
2.1	1.00	2.11	0.833
2.2	0.917	2.12	0.833
2.3	1.00	2.13	0.833
2.4	1.00	2.14	0.917
2.5	0.833	2.15	0.917
2.6	0.833	2.16	0.917
2.7	0.917	2.17	0.917
2.8	0.917	2.18	0.917
2.9	0.917	2.19	0.917

The pilot included the assessment and physical examination of the feet, classification of the risk of developing foot ulceration, education for self-care, guidance or referral regarding footwear, and treatment of pre-ulcerative signs and of ulcers. These were followed up depending on their ulcer risk score.

The Delphi technique and the content validity index (CVI) were chosen to validate the management model.

Validation of the information on foot care had three stages. In the first, feedback was gathered from the judges on content and layout. At this stage, all suggestions were carefully considered, and a number of these were deemed pertinent.

The incorporation of these suggestions gave rise to the first version of the pocket guide. This was then sent to the judges again with a return deadline. Once all the evaluations had been received, these were analysed. By this stage, the guide had been validated by the majority of experts.

A further round of adjustments gave rise to the second version of the pocket guide, which was, once again, sent to experts. Each expert said whether this second version was 'approved' or 'not approved' by them.

After the experts had reached a consensus, content validation was applied to the guide's contents. The scales

most commonly used in content validation are the Likert, Thurstone and Guttman (Castro and Rezende, 2009).

Likert scales allow participants to respond to a question or statement by allocating a score. For example, they can choose between five scores: strongly agree (5); agree (4); neither agree nor disagree (3); disagree (2); and strongly disagree (1). A Likert scale was adopted in this study. Besides allowing each expert's individual opinion on the subject to be measured, the Likert can also be used to assess the level of agreement among all judges. To measure the individual opinion of each expert, the following calculation was adopted (Alexandre and Coluci, 2011).

$$CVI = \frac{\text{Number of '4' or '5' responses}}{\text{Total number of questions}}$$

A 70% concordance between experts usually indicates a general consensus (Mancussi e Faro, 1997; de Almeida et al, 2009). However, in this study, a minimum agreement of 90% was established as a parameter for general consensus, with 78% for consensus on individual items (Polit and Beck, 2006).

To collect data on the first two steps of the validation process, a questionnaire with two parts, based on a previous piece of work (Sousa and Turrini, 2012), was designed.

The first part concerned the judges' demographic details, academic backgrounds and clinical experience. The second concerned the evaluation of the content regarding: graphic presentation; ease of reading and comprehension; logical sequence; vocabulary; topicality; specific physical examination of the lower limbs; risk classification; education for patients in self-care; education of health professionals (regarding the use of adequate footwear and pressure relief); and, finally, therapy adopted for the treatment of non-ulcerative pathologies.

The second part involved an the adaptation of the previous questionnaire, but without a Likert scale. The questionnaire content was divided into the five cornerstones. Accepted suggestions were added to each, and justifications made for those that were not accepted. A field with the choice to approve or not approve the guide's final version was also included, together with a justification field to be filled in case of a negative answer.

The judges were well-known diabetes experts who were invited and agreed to participate in the study. The snowball strategy was used to select these professionals. After a professional was appointed, the Lattes platform (a Brazilian government scientific information system that includes researchers and institutions) was consulted so the appointee's curriculum could be evaluated and approved. When the inclusion criteria (Box 2) had been met and a minimum of five points scored, the specialist was contacted through an invitation letter sent via email. Those who agreed to participate in the survey were invited to sign the informed consent term and access the online questionnaire in Google Docs.

Deadlines for completing the questionnaires were set. Two judges were excluded from the study: one did not participate in the second stage, and another did not participate in the third stage of the validation process. The final sample had 11 experts.



**Table 2. Specialists' agreement with the management model's cornerstones**

Model cornerstones	Specialist										
	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11
1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	0	1	1	1	1	1
3	1	1	1	1	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1	1	1	1	1
5	0	1	1	1	1	1	1	1	1	1	1

0: not approved; 1: approved

## Results

During the management model validation process, 11 specialists provided the data necessary to generate the individual and global CVIs.

Table 1 shows the calculation of the CVI for each item of the model and of the final document. This calculation was based on the methodology of Alexandre and Coluci (2011), who state that CVI is the total of 'agree' and 'strongly agree' answers divided by the number of judges giving those answers—ie the proportion of 'approved' answers within the total number of answers given by the judges.

The management model had satisfactory CVIs (Polit and Beck, 2006), with all individual items reaching values above 0.780 and the overall model surpassing 0.900 (Table 1).

While analysing the study's data, statistical tests were applied to the data generated by the 11 specialists' assessments of each of the five cornerstones of the IWGDF's diabetes care management model for the prevention of lower extremity ulceration (Box 1) (Bakker et al, 2015). Each specialist rated the cornerstones of the model by as 'approved' or 'not approved'. Five response sets from each of the 11 specialists were analysed, totalling 55 responses.

Table 2 shows the responses to each cornerstone of the model by each evaluator. The 'approved' and 'not approved' responses are coded as 1 and 0 respectively. This numerical coding was used to calculate the intraclass correlation coefficients, as explained below.

Table 3 presents the CVI calculation for each management model cornerstone and for the management model as a whole. This calculation was based on the methodology of Alexandre and Coluci (2011), who described the CVI as the proportion of 'approved' answers within the total number of answers given by the judges. The results in Table 3 demonstrate that the management model had satisfactory CVIs (Polit and Beck, 2006), with all individual items reaching values above 0.780 and the overall model surpassing 0.900. The second result refers to the improvement and adjustment of the initial protocol, which was formatted as a pocket guide (Figure 1).

## Discussion

A foot care management model based on topical evidence and the best scientific recommendations—in the format of a pocket guide—may support decision-making and health interventions targeting foot care in people with diabetes. Its

**Table 3. Content validity index of the management model as a whole and for each cornerstone**

Item	Content validity index
Full model	0.964
1	1.000
2	0.909
3	1.000
4	0.909
5	1.000

organisation according to cornerstones indicates actions that have to be carried out by health professionals to fulfil the assessments and interventions required.

The Delphi technique was used to validate the guide's content with the help of experts in the area of diabetes and the diabetic foot. This validated educational material clarifies the IWGDF five cornerstones, stimulating their application in order to prevent foot complications in people with diabetes.

The development of an evidence-based management model enables health professionals to guide diabetes care while emphasising that foot care is worthwhile. It is important to note a guide alone does not guarantee that actions to support health will be implemented. However, developed countries that use protocols and algorithms to improve risk assessment rates and results indicator scores recommend manuals, guides and algorithms as strategies for careful, systematic evaluation of procedures in specialist areas (Bakker et al, 2015; IDF, 2019; National Institute for Health and Care Excellence (NICE), 2019; Sociedade Brasileira de Diabetes (SBD), 2020).

According to the IWGDF, a programme for the prevention of foot complications must begin with a system to identify all people at risk of ulceration. This should be done through annual monitoring. Additionally, structured services should be established for the management of patients who require care for chronic rather than acute conditions. Screening people at risk of ulceration and classifying their risk is the most important aspect of a system to prevent foot complications and amputations in people with diabetes (Pham et al, 2000; Boulton et al, 2008; Miller et al, 2014;

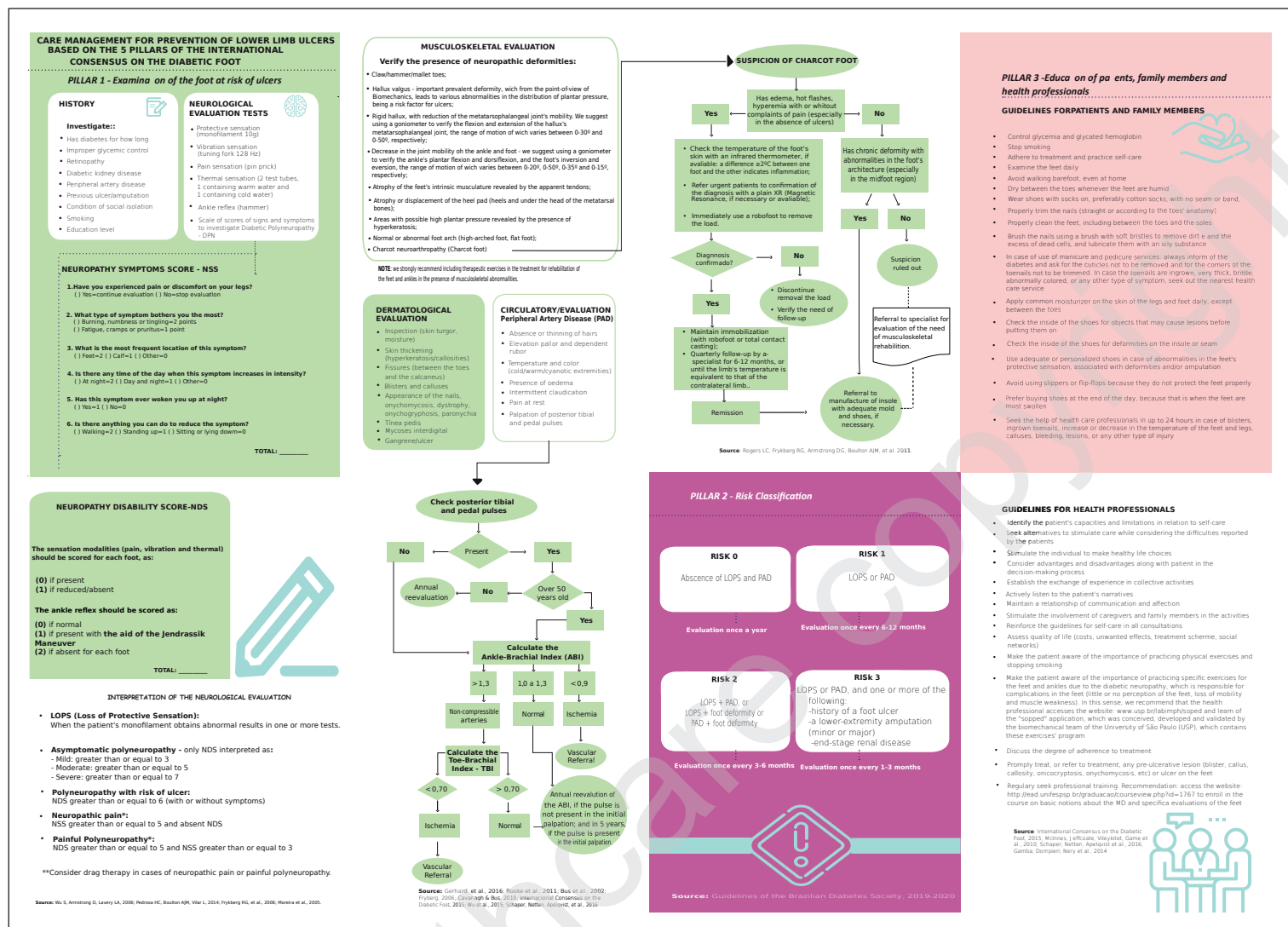


Figure 1a. The pocket guide, unfolded, side 1

Bakker et al, 2015; Boulton et al, 2018).

People with diabetes should have their feet examined annually to identify if they have a low, moderate or high risk of ulceration. Patients who already have some type of foot alteration should be screened more frequently (NICE, 2019). The first and second cornerstones concern identifying feet at risk, with a goal of classifying risk. Risk should be categorised by scores in a range of 0–3, where 0 is the lowest and 3 the highest risk of developing a foot ulcer (Bakker et al, 2015; NICE, 2019). Once classified, patients need to be followed up according to the intervals required so they receive interventions to prevent foot complications depending on the risk factors identified (SBD, 2020).

The third cornerstone concerns education for the person with diabetes, family members, caregivers and health professionals—an essential part of nursing care. The education of patients with diabetes and their families is fundamental to the prevention of foot complications, and includes self-monitoring glucose and the correct use of insulin and other medications, regular foot care and hygiene, wearing footwear that is appropriate, immediate notification of foot ulceration to the responsible health professional, and regular follow-up with a podiatrist for nail and skin hygiene (Frykberg et al, 2006).

Health education has several advantages and does not overlap with other clinical activity. Indeed, it strengthens clinical adherence and encourages self-care. It must be in accordance with the individual conditions of each person, and respect their individuality and reality. There should be a shared responsibility for healthcare and multidisciplinary solutions should be sought, such as self-monitoring, foot care, shoe adaptation and mobility. The integration of these principles can not only guide the use of dressings but also strengthen other therapeutic resources, such as patient-professional communication, enhancing the effects of health education and replacing care that is centred on the disease with person-centred care (Gamba et al, 2014).

People with diabetes need to make several changes to their lifestyle; only by acquiring knowledge of their condition will they be able to exert control over it. One of the main goals of education in the many aspects of diabetes is to improve outcomes by providing access to information and ensuring that patients understand it. Education in diabetes is not only part of its treatment but also a fundamental condition for the organisation and management of care (Gamba et al, 2014).

The fourth cornerstone concerns the use of footwear

### PILLAR 4 - Adequate shoes and relief of pressure

#### GENERAL GUIDELINES FOR ADEQUATE SHOES

- Shoes that have a wide anterior region, with sufficient length and width to accommodate the foot
- Sufficient length and width to accommodate the insole
- The internal width should be the same as that of the feet's metatarsophalangeal joints or largest region
- The inside of the shoe should be 1-2 cm larger than the feet's size
- The inside of the shoe should be soft, with no seam or folds, and adjustable with shoelaces or velcro
- Complacent upper, with sufficient height to accommodate the feet's backside

Sources: Diretrizes da Sociedade Brasileira de Diabetes 2013-2016; Schaper, Netten, Appleby et al., 2016.

**RISK 0**

Risk 0 patients may choose their own shoes, but they should be instructed to choose comfortable and flexible pairs.

**RISK 1**

Risk 1 patients should be instructed to wear soft shoes with no seam or folds, and that are adjustable with shoelaces or velcro. The internal width should be the same as that of the feet's metatarsophalangeal joints. Complacent upper, with sufficient height to accommodate the feet's backside.

### PILLAR 5 - Treatment of pre-ulcerative signs

#### FOOT BLISTERS

When to keep the blister intact?	When to drain the blister?	When to drain and debride the blister?
Intact blister, on a region without friction	Blister located on the plantar region or over a bony prominence	Presence of cellulitis
Superficial and small blister	Blister with large dimensions	Blister with purulent or sanguineous exudate
No clinical signs of infection (serous exudate)	Blister located on a region with friction or high pressure	Suspect of deep blister
Peripheral artery disease present		

**CONDUCT**

Perform antisepsis with 0.2% aqueous chlorhexidine. Drain the blister with standardized techniques. Do not remove the skin flap. Apply barrier-type dressing and offer guidelines on changing procedures. Observe daily.

**CONDUCT**

Perform antisepsis with 0.2% aqueous chlorhexidine. Mechanically debride the blister, removing the skin flap to observe its base. Apply the topical treatment according to the lesion's characteristics and relieve the local pressure.

#### CALLOSITY

- Antisepsis with 0.2% aqueous chlorhexidine
- Soften the callus's region with a gauze embedded in 2% degerming chlorhexidine or emollient and warm distilled water
- Shave it off using a scalpel
- Finish using a foot file and apply moisturizer
- Redistribute pressure with individualized insole and adequate shoes (reduces plantar pressure by 30%)

#### CALLUSES

- Antisepsis with 0.2% aqueous chlorhexidine
- Soften the region with a gauze embedded in 2% degerming chlorhexidine or emollient and warm distilled water
- Shave the callus off using a scalpel and enucleate it with a drill
- Finish using a foot file
- Relieve pressure

#### CALLOSITY WITH SUBCUTANEOUS HEMORRHAGE

- Antisepsis with 0.2% aqueous chlorhexidine
- Soften the region with a gauze embedded in 2% degerming chlorhexidine or emollient and warm distilled water
- Perform debridement
- Apply the topical treatment according to the ulcer's characteristics
- Relieve pressure (during catrization)
- Redistribute pressure (after catrization)

#### FISSURES

- Antisepsis with 0.2% aqueous chlorhexidine
- Soften the region with a gauze embedded in 2% degerming chlorhexidine or emollient and warm distilled water
- Flatten the fissures to the level of the skin when they are deep
- Finish using a foot file
- Apply moisturizer and applying them with transparent plastic film
- Redistribute pressure

### POCKET GUIDE

for prevention of ulcers on the lower limbs of people with Diabetes Mellitus

The way to healthy feet... because keeping them healthy is possible and fundamental!

Maria do Livramento Saraiva Lucoveis

Diabetes Mellitus (DM) is a severe public health problem in Brazil and in the world. People with DM are at risk of chronic complications on the lower limbs, for instance, lesions and amputations resulted from the lack of adherence to self-care and of the provision of adequate care by health professionals, or also, due to the clinical inertia associated with the slowness of decision-making processes. Unfortunately, the practice of prevention of complications is still the big challenge when it comes to the care of people with DM, especially of their feet. Given this scenario, the prevention of complication becomes primordial, and this pocket guide addresses the five pillars to be applied for the management of the care of the feet recommended by the International Consensus on the Diabetic Foot. Each pillar includes actions for the prevention of ulcers and amputations.

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Figure 1b. The pocket guide, unfolded, side 2

designed to redistribute plantar pressure. Inappropriate footwear is one of the main problems leading to foot ulceration in people with diabetes (Bakker, 2014). The prescription of comfortable or customised footwear is widely indicated to aid in pressure redistribution and the prevention of ulcerations (Bus et al, 2011). However, this type of prescription is little known in healthcare practice, and a guide recommending this measure may be of great importance in the context of primary health care (van Netten et al, 2018).

It is important to note that such recommendations should consider each patient's specific needs, as there is no one-size-fits-all shoe for diabetic patients. The shoe recommendation has to be directly related to neurological, circulatory and musculoskeletal changes identified. Regular, specialist or customized footwear should be recommended depending on the risks identified (Schaper et al, 2016). People with diabetes who are at a low risk of ulceration may use regular footwear that fits their foot correctly to minimise the risk of injury; those at moderate risk should use footwear with features designed to meet the needs of people with diabetes; and those at high risk should wear customised shoes and insoles (Bergin et al, 2013). Therefore, it is essential for health professionals to understand the importance of inspecting the patient's footwear.

Practitioners must evaluate their patients' feet and, if a high risk of ulceration is identified, should advise the patient of the most appropriate footwear, which can be readymade or customised.

The fifth cornerstone concerns the treatment of non-ulcerative lesions. These are generally associated with calluses, fissures, onychocryptosis, mycosis affecting the skin and nails, onychogryphosis and blisters. Pre-ulcerative lesions in the feet of people with diabetes are predictive of more severe complications such as ulcerations, infections and even amputation.

Several authors have discussed the importance of the prevention and early treatment of these lesions. Most studies and guidelines (Frykberg et al, 2006; Bakker et al, 2015; SBD, 2020) recommend including a podiatrist in the multidisciplinary care team. This already happens in the USA and Europe. In countries where this professional is not part of the team, such as Brazil (which does not yet have public policies that include the involvement of this practitioner), it is advisable for a nurse to be trained to assume this role (Secretaria de Estado de Saúde do Distrito Federal, 2001). Here in Brazil, the SBD recommends that nurses trained or who specialise in clinical podiatry care for the feet of people with diabetes (SBD, 2020).



## KEY POINTS

- Foot ulceration in people with diabetes can lead to amputation and high health costs
- Regular inspection and examination of at-risk feet can prevent secondary complications of diabetes
- Health education is an essential part of diabetes care
- Ensuring the diabetic person has the type of footwear best suited to their needs is crucial
- Treatment of pre-ulcerative lesions on the feet is a can prevent severe complications in people with diabetes
- A validated pocket guide can be a useful tool to improve how health professionals prevent and manage foot ulcers

*Declaration of interest: none*

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## CPD reflective questions

- How could health professionals be encouraged to examine the feet of people with diabetes and assess their risk of foot ulceration?
- How could patients be encouraged to care for their feet?
- What should be considered for a simple pocket guide to provide an algorithm for diabetes healthcare?

This pocket guide will be distributed to nurses through a partnership with the Brazilian Society of Nursing in Stomatherapy (whose members are wound, ostomy and continence nurses), through which nurses can access the website and download the a copy of it.

Regarding nurse training, it is planned that diabetes, stomatherapy and dermatology societies will contribute to public and private undergraduate education. The pocket guide can provide a great support to these professionals to encourage the care of feet in the management of people with diabetes.

The authors hope that people with diabetes, health professionals, patient associations, and scientific and civil societies will benefit from this guide, using it as a source of health information to improve the care and quality of life of thousands of people with the condition. It is hoped it will contribute to a reduction in diabetes-related amputations, as envisioned by determined researchers and experts in the area.

## Conclusion

A diabetes foot care management model based on evidence and the best scientific recommendations was developed and validated. The model is based around five cornerstones on the management of pre-ulcerative lesions.

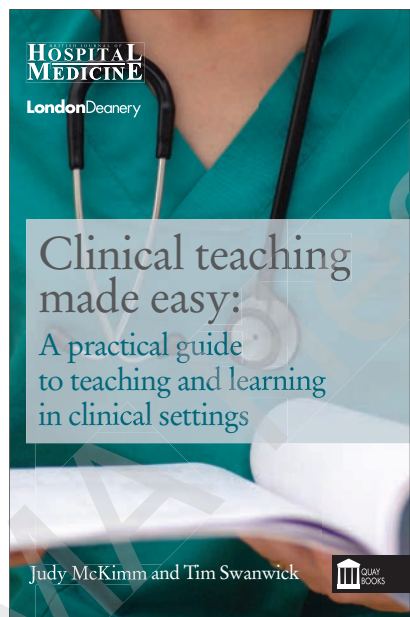
Although guidelines on this subject are widely disseminated, it is still necessary to improve the skills of the professionals who provide this care.

The pocket guide model was validated by Brazilian experts in the area of diabetes and the diabetic foot, reaching a global content validity index above 90% which means a high standard of score. **BJN**

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By Judy McKimm and Tim Swanwick

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# Self-harm wounds: assessment and management

## ABSTRACT

The management of self-harm (SH) wounds requires a non-judgemental holistic approach on the part of the health professional. It is important that SH wounds are assessed, and that interventions are agreed between the health professional and the patient. This article looks at definitions of SH and provides guidance on how health professionals can make an accurate assessment of the wound and, in addition to agreement treatment with the patient, provide patient education and guidance on self-care.

**Key words:** Self-harm ■ Wounds ■ Self-inflicted wounds ■ Self-inflicted injury

Self-harm (SH) is the collective term for self-poisoning, self-inflicted injury or self-mutilation irrespective of the apparent purpose of the act (National Institute for Health and Care Excellence (NICE), 2013). The act of SH tends to be without suicidal intent and is followed by a sense of relief and relaxation. It can be a coping mechanism, often as a result of trauma, psychological illness, abuse, a deep-seated sense of powerlessness or negative feelings, such as anger, guilt, frustration, hopelessness and self-hatred (MIND, 2021). These overwhelming emotional feelings are converted into a visible, physical wound, which the individual can find easier to deal with (Sutton, 2007).

The UK has the highest recorded SH rate of all European countries (Mental Health Foundation, 2017). In 2019, the prevalence of non-suicidal SH nearly tripled in England compared with the previous 10 years (Mayor, 2019). Early figures from the COVID-19 pandemic demonstrated a 38% decrease in rates in reported SH in April 2020 (Kapur et al, 2021) with 2-4% of people in the UK indicating that they had self-harmed in the previous week (Kapur et al, 2021). News reports have suggested that the pandemic has had a deep impact on the younger generation, with greater numbers of children presenting in emergency departments after self-harming or taking overdoses. Although females have a higher prevalence rate of SH, males may display behaviours not generally categorised as SH, such as punching walls (MIND, 2021). Other high risk groups include those aged under 25 years old who have experienced some form of trauma, sexual abuse, drug and alcohol dependency or

those with poor self-efficacy and coping skills (National Collaborating Centre for Mental Health, 2020).

A wide range of implements can be used to cause SH (Box 1) and often common areas for injury and preferable for concealment include the thighs, stomach, and lower and upper arms are (Sutton, 2007; MIND, 2021).

SH can be defined in both compulsive and impulsive behaviours. Compulsive SH involves a strong urge or craving to inflict injury. This form of SH involves detailed planning of the injury and following aftercare. Initial relief is obtained from injury but often compulsion reoccurs, resulting in reopening of the soft tissue and disruption in healing (Hunt, 2017). Impulsive SH is spontaneous with little planning or aftercare. This can be associated with alcohol, drug taking and psychological issues. Presentation of these wounds often includes infection, deep skin damage which require suturing or surgical intervention (Kilroy-Findley, 2015).

## The skin

The skin is the largest organ in the body and there are two main divisions; the outer epidermis and deeper dermis. The epidermis is made up of five layers of cells. The dermis is divided into two main layers (Figure 1). The functions of the skin are as follows (Blows, 2018):

- Barrier and immune defence
- Touch and sense
- Excretion
- Thermoregulation
- Nutrient store
- Synthesis of vitamins
- Physical protection for organs and underlying structure
- Water-resistant barrier.

A break in the skin caused by a wound means that these functions and barriers are temporarily lost resulting in a disruption of homeostasis. SH can increase the risk of: complications to the skin, soft tissue damage, scarring, non-healing wounds and infection (Hunt, 2017).

## Assessment

A holistic wound assessment is essential to identify the causative and contributory factors of wounding (Mitchell, 2020). Accurate and timely wound assessment underpins of effective clinical decision-making, and agreeing on appropriate patient-centred goals and referral to a mental health team, social worker or appropriate allied worker is essential for holistic support (Hunt, 2017; Mitchell, 2020). Self-inflicted wounds are often 'bizarre looking' (Benbow, 2011). They may present in a variety of forms such as blisters,

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### Box 1. Commonly used self-harm implements

- Razor blades
- Knives
- Shards of glass
- Needles
- Scissors
- Lighted cigarettes
- Cigarette lighter
- Finger nails
- Boiling water
- Carpentry nails
- Hammer
- Iron
- Safety pins
- Baseball bat
- Hotplate/oven

Source: Sutton (2007)

purpura, oedema, erythema or nodules and can often be misleading, which can lead to misdiagnosis (Benbow, 2011).

### Assess the patient

Assessment involves gathering and interpreting information about the patient. A holistic assessment should include specific questions relating to the patient's health and wellbeing. This will provide the clinician with a strong foundation to manage the patient's skin and wound, identifying biological, psychological and sociological factors that may delay wound healing (Mitchell, 2020). It is essential to develop a positive therapeutic relationship with any individual who has self-harmed to gain trust, encourage adherence to wound treatment and management strategies and establish the underlying reason for SH (Wright, 2010). Initially, patients traditionally tend to care for their own SH wounds with household materials such as towels, flannels and basic first-aid kits (Kilroy-Findley, 2015).

The following checklist provides a guide for the nurse when assessing a patient:

### Personal and medical background

- Ask the patient's age: the highest rate of SH is reported in women aged 16–24 years (Mental Health Foundation, 2016)
- Assess risk: individuals who SH should be assessed for risk of further injurious behaviour, as well as potential suicide (Ousey and Ousey, 2012). Assessment should identify the patient's mental capacity and willingness to undergo a further psychological assessment. Refer to the local mental health service
- Assess for contributing factors to the act of SH, for example alcohol or drug misuse. It may be necessary to refer to local alcohol and drugs services
- Past medical history including any previous wounds: this is particularly relevant for recurrent SH wounds
- Medical and family background. Include questions about any potential stressors in the patient's family dynamics or personal relationships. This may warrant referral to the psychological therapy team
- Ask the patient about any allergies, previous investigations or surgical procedures
- Ask the patient if they have any chronic medical conditions
- Obtain a list of medications
- Assess the patient's nutritional status and any supportive therapies or dietary supplements. The Malnutrition Universal Screening Tool (MUST) (BAPEN, 2011; NICE, 2017) is useful for nutritional screening
- Lifestyle choices, current activities, smoking
- Socioeconomic circumstances, employment, occupation.

### Management of the wound

- Confirm the patient's identity, explain and discuss the full procedure and obtain consent
- Ask the patient if they have any allergies
- Wash hands and put on aprons and gloves
- If the patient presents after initial wounding, immediate action may be required to control the bleeding, address shock from hypovolaemia (Hill and Mitchell, 2020), and restore blood perfusion by removing ligatures or stabilising a puncture wound (Ousey and Ousey, 2012)
- Review the history and duration of the wound. This should include how the wound was caused, for example any instruments used and type of wound. Repeated injury and inflammation can result in elevated, thick or nodular hypertrophic scars (Benbow, 2011)
- Review the level of tissue injury: does the wound involve the epidermis, dermis, fat, fascia, muscle, tendon and/or bone? Document findings
- Wound site: document the location of the wound on a body map and the care plan
- Wound size: wound size should be measured and documented in the patient's notes on each dressing change
- Wound depth: if necessary, take a measurement of the wound depth using a sterile swab. This procedure should be carried out by qualified practitioners only who are familiar with the anatomy and structures in close proximity of the wound

Peter Lamb

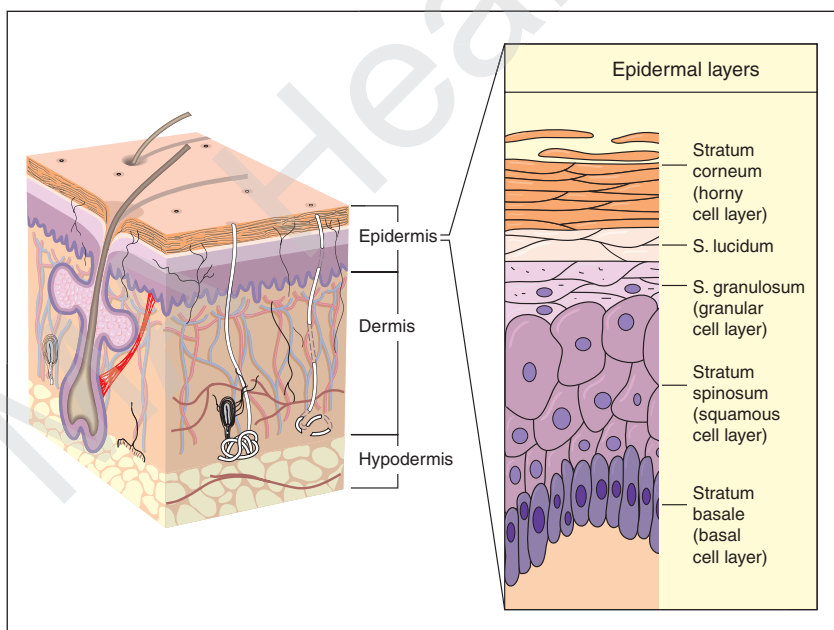


Figure 1. Layers of the skin

**Table 1. Rescue pack**

Product	Purpose
Sterile dressing pack with gloves and tray	Used for a clean procedure, skin and wound cleansing
Gauze	Used to clean and mop up body fluids
Antiseptic antimicrobial product (eg irrigator, gel, wash or wipe)	Used to clean hands prior to the procedure and clean the wound to reduce infection
Topical secondary dressing. This should be an atraumatic dressing that is absorbent for low to moderate exudate or blood	Non-adhesive dressing to keep the wound clean and dry, and to prevent infection
Antimicrobial skin wash (eg, Octenisan wash lotion, Dermal lotion or over-the-counter products)	Suitable for superficial scratches, subdermal lacerations, cuts and abrasions
Barrier product (eg, Cutimed PROTECT cream, Cavilon barrier creams or other barrier products)	Protection for the surrounding skin and soft tissue, especially if there is bleeding or moisture damage
Microbial binding dressing (eg, Leukomed and Cutimed Sorbact dressings)	Suitable for infected wounds, deep infected tissue following debridement, or deep subcutaneous fat or muscle injury post suturing
Soft silicone dressing (eg, Cuticell Contact)	Suitable for first- and second-degree burns
A silicone foam dressing (eg, Cutimed Siltec) or super absorbent dressing (eg, Cutimed Sorbion)	Suitable for heavily exuding wounds
Patient information leaflets	The product information lists the 'red flags' (eg increased pain or temperature, discharge) that patients should monitor and seek advice, when necessary

NB Dressing choice may be dependent on local wound formulary  
Adapted from Hunt (2017)

- Colour and type of wound bed tissue: document the colour of the wound bed and percentage of types of tissue. Colour of tissue is used to distinguish between viable and non-viable tissue (Atkin et al, 2019)
- Assess for infection. Identification of how the wound was caused and how long the wound has been present will give an indication of the risk of infection. This would be a good opportunity to explain infection risks to the patient, and the classical signs and symptoms of infection. Advise the patient that localised heat or pain and changes in body temperature may be a sign of infection
- Assess the presence or absence of pain. Ask the patient if they are experiencing any pain and does the pain affect quality of life? Use a valid pain tool for assessment (Mitchell, 2020)
- Assess the periwound for the presence of conditions such as eczema, excoriation, maceration and moisture-associated skin damage (Mitchell and Hill, 2020)
- Clean the wound: in most cases tap water can be used for wound irrigation (Peate and Stephens, 2020). If the presence of infection is suspected or the patient's general health is compromised sterile, the use of saline is advised (Peate and Stephens, 2020). Avoid using gauze swabs for irrigation, because these cause trauma and pain on wound contact; they will also help spread the bacteria around the wound if they are not removed. Irrigating fluid should simply be poured over the wound (Peate and Stephens, 2020)
- For superficial uncomplicated injuries of 5 cm or less in length consider using tissue adhesive or skin closure strips
- Assess the patient's knowledge of health and level of health literacy. The educational needs of the patient must be evaluated on an individual basis (Mitchell, 2020)
- Discuss the use of a 'rescue pack'. In general practice, rescue packs are used to improve a patient's ability to manage their wounds pre- and post-injury. The contents of the pack are simple and easy for patients to understand. The pack should include guidance on how to use and replace the products/dressings and a list of 'red flags' highlighting when to seek clinical advice. Table 1 provides an example of the contents of a rescue pack
- Provide guidance and information about scarring, for example on the oils, lotions and creams to moisturise healed skin and scar tissue. Pressure to the skin surface can flatten and soften scar tissue (this should be avoided if this causes discomfort), massage therapy and static or dynamic splints (Benbow, 2011; Monstrey et al, 2014). Medical invasive procedures may be suggested by the health professionals, if indicated
- Discuss self-care and provide education. Give the patient reassurance, confidence and encourage ownership with their self-care pathway. Provide contact information for relevant services and ensure that replacement rescue pack processes are in place (Hunt, 2017).

## Conclusion

The management of patients who SH and SH wounds requires time, patience, good communication and listening skills and a non-judgemental holistic approach. It is important that SH wounds are appropriately assessed and treatments and interventions are agreed between the health professional and the patient. Health practitioners



must empower patients take ownership and responsibility, and provide patients with education to reduce serious injury, infection, scarring and the need to attend urgent services. **BJN**

*Declaration of interest: none*

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## LEARNING POINTS

This article has sought to provide:

- Clinical guidance on self-harm (SH) wound assessment
- An awareness of the complications of wound healing in SH wounds
- Guidance on the management of SH wounds

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# The Red Legs RATED tool to improve diagnosis of lower limb cellulitis in the emergency department

## ABSTRACT

**Background:** Lower limb cellulitis poses a significant burden for the Irish healthcare system. Accurate diagnosis is difficult, with a lack of validated evidence-based tools and treatment guidelines, and difficulties distinguishing cellulitis from its imitators. It has been suggested that around 30% of suspected lower limb cellulitis is misdiagnosed. An audit of 132 patients between May 2017 and May 2018 identified a pattern of misdiagnosis in approximately 34% of this cohort. **Objective:** The aim of this pilot project was to develop a streamlined service for those presenting to the emergency department with red legs/suspected cellulitis, through introduction of the 'Red Leg RATED' tool for clinicians. **Method:** The tool was developed and introduced to emergency department clinicians. Individuals (n=24) presenting with suspected cellulitis over 4 weeks in 2018 were invited to participate in data gathering. Finally, clinician questionnaire feedback regarding the tool was evaluated. **Results:** Fourteen participants consented, 6 female and 8 male with mean age of 65 years. The tool identified 50% (n=7) as having cellulitis, of those 57% (n=4) required admission, 43% (n=3) were discharged. The remainder who did not have cellulitis (n=7) were discharged. Before introduction of the tool, all would typically have been admitted to hospital for further assessment and management of suspected lower limb cellulitis. Overall, 72% (n=10) of patients who initially presented with suspected cellulitis were discharged, suggesting positive impact of the tool. Clinician feedback suggested all were satisfied with the tool and contents. **Conclusion:** The Red Leg RATED tool is user friendly and impacts positively on diagnosis treatment and discharge. Further evaluation is warranted.

**Key words:** Lower limb cellulitis ■ Red leg ■ Cellulitis mimics  
■ Diagnostic aids

Cellulitis is a common medical condition that presents as an acute inflammation of the skin and subcutaneous tissue, usually as a result of bacterial infection, and cellulitis of the lower limb is often referred to as a 'red leg'. It can be a difficult diagnosis to make because it has many differential diagnoses that result in similar presentations of red, warm, painful swollen limbs. There are no definitive diagnostic tests to confirm cellulitis; diagnosis is made based on clinical evaluation with evaluation of inflammatory marker

results (Quirke et al, 2017; Santer et al, 2018; Sullivan and de Barra, 2018; Patel et al, 2019a; Patel et al, 2019b; Teasdale et al, 2019). Cochrane reviews (Kilburn et al, 2010; Dalal et al, 2017) have indicated a dearth of evidence-based guidelines with few reported clinical trials addressing the difficulties encountered by clinicians in making an accurate diagnosis, preventing recurrence and the impact on patients who suffer from red leg syndromes.

It is estimated that 30% of patients presenting with red legs are often inappropriately admitted to hospital (Levell et al, 2011; Wingfield, 2012; Yarbrough et al, 2015; Jain et al, 2017; Weng et al, 2017; Patel et al, 2019b; Edwards et al, 2020). This results in inappropriate use of antibiotics and delays in diagnosis, which are costly for both the patient and service provider (Raff and Kroshinsky, 2016; Weng et al, 2017). Often the risk factors for cellulitis such as chronic oedema or tinea pedis/athlete's foot are not recognised or treated, exposing the patient to recurrent episodes of cellulitis. Inappropriate or untreated cellulitis can lead to severe complications ranging from sepsis to tissue necrosis and even death (Stevens et al, 2014).

Although international guidelines pertaining to cellulitis exist (Clinical Resource Efficiency Support Team (CREST), 2005; Stevens et al, 2014; National Institute for Health and Care Excellence (NICE), 2019) there are no national guidelines in the Irish Healthcare service. Thus, clinicians are faced with a dearth of updated clinical evidence and diagnostic strategies or tools to guide clinical decisions to accurately identify, admit and treat patients presenting with cellulitis. This poses a challenge in differentiating cellulitis from other conditions (Wingfield, 2012; Elwell, 2015; Patel et al, 2019b). The potential misdiagnosis is due to presenting symptoms such as red, warm, tender or painful skin, which can also be symptoms of other inflammatory skin conditions such as stasis dermatitis or lipodermatosclerosis, or of acute venous issues such as deep venous thrombosis, oedema, irritant contact dermatitis or vasculitis (Hirschmann and Raugi, 2012a; 2012b).

This presents problems in clinical practice. For example, patients with chronic lower limb oedema are often admitted with a diagnosis of bilateral cellulitis and prescribed antibiotics. The redness and swelling frequently resolves with bed rest, resulting in early discharge with the assumption that the cellulitis has responded to the antibiotics. However, this cohort of patients are frequently readmitted with recurrence of symptoms, which is then assumed to be failure to respond to treatment and they are recommenced on stronger antibiotics (Quirke et al, 2017). Often these patients had improved during the initial admission due to bed rest and elevation as they have underlying conditions such as chronic venous insufficiency or congestive heart failure, which cause lower limb swelling leading to redness and pain.

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Once they go home this swelling often reoccurs as the patients either are not resting or do not elevate their limbs. These underlying chronic conditions require appropriate management in order to prevent inappropriate hospital admission. Failure to recognise, address and educate both clinicians and patients about these chronic complex conditions will result in future multiple, potentially avoidable admissions (Quirke et al, 2017). Following a systematic review and meta-analysis considering risk factors for non-purulent cellulitis, Quirke et al (2017) recommended that clinicians should address modifiable risk factors, such as wounds, ulcers, lower limb oedema and toe-web intertrigo.

Quirke et al (2017) examined the challenges and facilitators in diagnosing lower limb cellulitis, reporting a lack of good-quality tools or criteria for diagnosing lower limb cellulitis. They also recommended that future research should examine from a qualitative perspective the challenges faced by both clinicians and patients when presented with diagnostic dilemmas pertaining to cellulitis and its mimickers. As no exact diagnostic test for cellulitis exist, clinicians rely on their clinical experience and interpretation of results such as inflammatory blood markers. This, coupled with the absence of clear national guidelines, can potentially lead to misdiagnosis or over diagnosis of severity of infection (Hirschmann and Raugi, 2012b) resulting in:

- Inappropriate antibiotic use in an era of rising antibiotic resistance
- Prolonged length of hospital stay
- Recurrence due to mismanagement
- Failure to manage the true diagnosis
- Poor patient outcomes
- Misuse of finite resources.

Strategies are needed to reduce unwarranted variation in care with a focus on resourcing care that benefits the patient in line with Ireland's Health Service Executive (HSE) ethos of right care by the right person, in the right place at the right time. An Irish study audited antibiotic use in patients admitted with skin and soft tissue infections in an Irish hospital setting (Kiely et al, 2020), and the authors suggested that adherence to international guidelines would significantly reduce unnecessary admission, avoid over consumption of unnecessary antibiotics and improve antimicrobial stewardship. UK research has reported similar findings (Elwell, 2015; Weng et al, 2017; Patel et al, 2019b). A UK alliance was established including both patients and practitioners to establish research priorities pertaining to cellulitis with particular focus on the qualitative aspects associated with clinicians and diagnosing appropriately and patient experience (Thomas et al, 2017).

#### Box 1. Key stakeholders in the Red Leg expert group

- Advanced nurse practitioner tissue viability/dermatology x 1
- Dermatology consultant x 2
- Emergency medicine consultant x 2
- Vascular consultant x 1
- General surgeon x 1
- Microbiologist x 1
- Antimicrobial stewardship pharmacist x 1
- Research support provided by a post-doctoral researcher and an academic from a partnering university

## Improving management of patients presenting with 'red leg'

The first author is employed as a Registered Advanced Nurse Practitioner (RANP) in tissue viability and dermatology in an acute hospital setting in Ireland. This article describes a recent RANP-led pilot project that involved the introduction of a 'Red Leg RATED' tool streamlining the process for patients presenting to an emergency department with suspected lower limb cellulitis, by showing information on differential diagnosis or imitators of cellulitis.

Data extracted from the hospital inpatient enquiry system reported 132 inpatient admissions with a diagnosis of lower limb cellulitis between May 2017 and May 2018. Associated length of stay exceeded 1200 days with a mean length of stay reported as 9.16 days at a cost of €1 038 531, excluding associated costs of consumables or antibiotics. Per patient admitted it costs approximately €10 000 per stay. A retrospective chart review suggested that approximately 34% of those were misdiagnosed with cellulitis and potentially could have been discharged with outpatient management and RANP follow-up care. Recognising these data, the potential misdiagnosis of cellulitis and issues in clinical practice, the RANP in collaboration with an expert group proposed the development of a tool to assist clinicians in the diagnosis and subsequent management of cellulitis, or in forming a differential diagnosis. Further, a pilot project would seek to evaluate the use of a tool in identifying cellulitis versus a differential diagnosis and appropriately managing cellulitis in a cohort of patients presenting to the emergency department. Additionally, clinician feedback of the tool in clinical practice would be evaluated.

The overarching aim of the proposed pilot project was to develop a streamlined service facilitated through use of the tool that fulfils the 'right person, right place, right time, and right team' ethos underpinning the Irish healthcare service in diagnosing and appropriately treating suspected cellulitis in an emergency department.

## Methods

### Ethical approval

Ethical approval was granted from the hospital ethics committee to undertake a 4-week pilot study in August 2018. All identified potential participants ( $n=24$ ) were informed of the study through a gatekeeper and 14 (58%) consented.

### Expert group

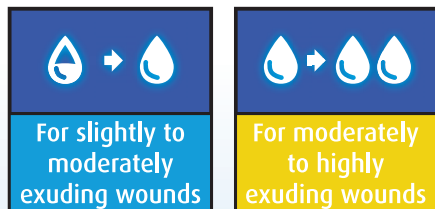
An expert group was formed in June 2018 (Box 1). The premise of the expert group was to develop a tool to improve diagnostic accuracy of lower limb cellulitis, identify possible differential diagnosis and put in place a plan of care to manage the conditions diagnosed. An exhaustive list of potential differential diagnoses was considered inappropriate; the top differential diagnoses as identified in literature as imitators of cellulitis were chosen to be included in the tool.

Collaboratively, a management care pathway was included for each potential differential diagnosis with provision for RANP outpatient follow-up for patients whom were discharged home to ensure re-evaluation of their condition. Guidance was also included in the tool pertaining to criteria





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for admission, suitability for outpatient services and alerts for serious conditions such as necrotising fasciitis, with links to local prescribing guidelines for skin and soft tissue infections (*Figure 1*).

## Red Legs RATED tool development

The development of the Red Legs RATED tool occurred using a Plan Do Study Act (PDSA) cycle, incorporating expert feedback, staff education, a pilot phase and evaluation of ease of use of the tool with user feedback. The Red Leg RATED tool included descriptive criteria and images for the identification of cellulitis with recommendations for management and follow-up.

## Education

Prior to use of the Red Leg RATED tool education sessions were planned with all emergency department staff over a 4-week period beginning in July 2018. Clinicians, specifically non-consultant hospital doctors, consultants, RANPs and nursing staff were provided with interactive face-to-face education sessions with support from the RANP in tissue viability and the emergency department consultants. A folder was made available for all emergency department staff with educational support in use of the tool.

### Retrospective chart review

A medical chart review of those who presented with red legs


and suspected cellulitis over the 4 weeks was undertaken to ascertain diagnosis, management and follow-on care.

## Post-pilot questionnaire

A brief questionnaire assessed user-friendliness of the tool as an aid to diagnosis following a 4-week pilot use of the newly developed and implemented Red Leg RATED tool.

## Results

Fourteen (58%) of those patients presenting with red legs agreed for their data to be included. Of those, 43% ( $n=6$ ) were female and 57% ( $n=8$ ) were male with an overall mean age of 65 years. The Red Leg RATED tool identified 50% ( $n=7$ ) true diagnosis of cellulitis, of those 57% ( $n=4$ ) required hospital admission, 43% ( $n=3$ ) were discharged. This discharge cohort is typically admitted to hospital for further assessment and management of suspected lower limb cellulitis. The remaining 50% ( $n=7$ ) were found not to have cellulitis and discharged to expert RANP follow-up. The referral was warranted in all cases. Overall, 72% ( $n=10$ ) of patients (consenting to inclusion) who presented with suspected cellulitis and would typically have been admitted to hospital were discharged. Of the completed clinician questionnaire ( $n=13$ ), 100% of users were satisfied with the tool and contents, found it easy to use and felt it helped them make a more accurate diagnosis of cellulitis versus a differential diagnosis. All users agreed the education prior to using the tool was appropriate and the tool

<h2 style="text-align: center;">If Not Cellulitis Consider the Following Differential Diagnoses</h2> <p style="text-align: center;">(Tick (v) the Applicable Diagnosis)</p>	
<p><b>Acute Lipodermatosclerosis</b></p> <div style="display: flex; align-items: center;">  <div style="margin-left: 20px;"> <input type="checkbox"/> </div> </div>	<p><b>Descriptor:</b></p> <p>Acute Lipodermatosclerosis presents like cellulitis. It is an inflammatory condition not infective. The name is given to the skin changes that occur in venous insufficiency. It comes in an acute and chronic form. The acute presentation is an inflamed, warm and tender lower leg. It can be unilateral but is often bilateral. Compression therapy will assist in relieving the symptoms.</p>
<p style="text-align: center;"><b>Care Pathway for Acute Lipodermatosclerosis</b></p> <ul style="list-style-type: none"> <li>• Refer to ANP Tissue Viability for ABPIs +/- compression hosiery &amp; reassessment of response</li> <li>• Consider topical steroids twice daily Dermovate™ in the acute phase</li> <li>• Analgesia is <b>vital</b> to address pain</li> <li>• Elevate as tolerated when resting to reduce inflammation</li> <li>• Provide patient information leaflet</li> </ul>	

**Figure 1. Sample of differential diagnosis of suspected cellulitis**



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## Box 2. Clinician feedback comments

- Photos of relevant differentials were great and taught me a lot I didn't know about Red Leg
- Education prior to using the tool was very comprehensive and helpful; much appreciated
- Really good training initially. Maybe a follow-up would be helpful
- Very helpful with really clear advice/criteria for admission
- Good to have guideline on who to admit and who not requiring admission
- Photos of relevant differentials were great and taught me a lot I didn't know about Red Leg
- Good guidance with clear pictures. Tick box criteria for cellulitis very helpful feels like, coupled with my experience I now have a fool-proof guide to managing the presentation, thank you!

useful and of clinical benefit; 92% (12/13) reported that the tool contained the right amount of information while one respondent stated that there was too much information.

Qualitative analysis suggests all ( $n=13$ ) of the non-consultant hospital doctors and RANPs who used the tool reported that the education they received was clear, comprehensive and helpful. The tool was described as 'an extremely sophisticated tool which offers a clear pathway for diagnosing patients'. It was described by one clinician as 'a fool-proof guide to managing (red leg) presentations'. Its value in avoiding unnecessary admissions was also noted. Box 2 reflects some of the feedback comments.

Between May 2017 and May 2018, 132 patients were admitted to hospital with suspected cellulitis with 34% possible misdiagnosis. After the pilot project, which demonstrated the benefits of the tool, it became widely used within the emergency department setting—research is underway into the impact of this. A retrospective chart review and early data analysis suggests that within a 1-year timeframe, September 2018 to September 2019, the admission rate for cellulitis has decreased considerably. In that 1 year the tool was used with 177 patients who presented with red leg-suspected cellulitis, only 37% ( $n=66$ ) patients were admitted to hospital, all were appropriately admitted. Of those discharged, only 29% ( $n=51$ ) required referral to the RANP outpatient clinic for follow up regarding a differential diagnosis. The remaining 34% ( $n=60$ ) were discharged to general practitioner follow-up.

## Discussion

The Red Leg RATED tool seems to have benefits for both clinicians and the organisation with aid to diagnosis and potentially avoiding inpatient admissions and the associated costs with appropriate management and follow-up of care. Over a 4-week timeframe the pilot project demonstrated a potential cost saving of €100 000 with no requirement for hospital admission. The tool is user-friendly and has impacted positively on the diagnosis and treatment of cellulitis. Further research and evaluation of the tool is ongoing to determine diagnostic validity in a larger cohort and over a longer timeframe. Future research is planned with the aim of understanding the challenges patients face when presenting with red leg symptoms (red, warm, painful legs) and what effects these, and the various conditions that can cause them, have on the patient.

## Limitations

The pilot study has limitations as it was undertaken in an acute

adult ED of a general hospital that may not be representative of the wider population. The tool is only available in hard copy format. Data collection was also in hard copy format and was dependent on clinicians entering the data. Therefore, the full population of potential participants may not have been captured. This was particularly applicable for patients not admitted to hospital as these are not captured on the hospital inpatient enquiry system data system.

## Future steps

The pilot study has provided impetus to explore the full potential impact of the tool. Subsequently, an alert system was added to the emergency department information technology system to use the tool if patients were presenting with red legs and suspected cellulitis. It is anticipated that this future research will be reported as a follow up to this pilot study.

## Conclusion

Cellulitis can be difficult to diagnose but the application of the Red Legs RATED Tool in emergency care and supportive education can benefit patients, clinicians and the organisation. Improved management and prescribing practices particularly with regard to antimicrobial stewardship in an era of rising global antibiotic resistance is pivotal. Improved use of finite healthcare resources and improved patient outcomes all underpin the impetus to further explore this area of research and the reported results supports the impetus to validate the tool at a wider level. **BJN**

*Declaration of interest: none*

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## KEY POINTS

- The introduction of a Red Leg RATED Tool in the emergency department assists clinicians in accurately diagnosing and treating lower limb cellulitis versus a differential diagnosis
- It assists clinicians in diagnosis and management through its ease of use
- It facilitates accurate diagnosis and management thereby reducing hospital admissions and associated costs
- Also facilitates follow up by an Registered Advanced Nurse Practitioner in tissue viability through a specific referral process contained in the tool

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## CPD reflective questions

- How would you ensure accurate diagnosis and correct management of lower limb cellulitis?
- What do you think are the potential differential diagnoses and appropriate investigations when patients present with red legs to the emergency department?
- How could you empower patients to recognise symptoms sooner in order to avoid hospital admission?



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# A nurse-led tissue viability service in Malta

**Corinne Scicluna Ward**, Lecturer, Faculty of Health Sciences (Nursing), University of Malta (mascmalta@gmail.com)

**T**his article discusses the key issues I personally faced in setting up and running a nurse-led tissue viability service in Malta. I will highlight relevant areas that helped in the process: gaining knowledge and experience, developing an accessible service, working with professionals who are interested in working with you, creating a national and international network of support, being politically astute and taking hold of any opportunity to increase awareness of the service. I thought it is important to write about this experience because often these vital nurse initiatives are not documented and nothing is available for new nurses to go back to in order to learn about their predecessors' journey. My hope is that this will not only shed light on some important elements that helped me in the development of a national service on Malta, but also will encourage other nurses who might be thinking about pursuing a similar journey.

In recent years, both locally and internationally there has been a marked increase in the number of nurse-led clinics in a variety of specialties. Across Europe this has been brought about by, among other factors, a shortage of doctors (or the changes to working hours), advancing and expanding nursing skills and filling the gaps in the healthcare service. However, the development of specialist nursing positions seems to be related to the culture and advancement of nursing in the specific country. For example, in Malta there is no shortage of doctors, nurses do not have prescribing powers and the role of the advanced nurse practitioner or physician's assistant is still not realised. Therefore, the roles of nurses in Malta seem to expand and develop in areas that are considered to be the nurse's domain such as wound, stoma and incontinence care.

## From a dream to reality

In 1994–1995 during my follow-on degree course, I worked for a few months as a community nurse in our capital city of Valletta. It was like a baptism of fire. I think 50% of my time was dealing with wounds of all sorts including diabetic foot ulcers, venous leg ulcers, pressure ulcers, fungating wounds, and

dehiscence surgical wounds. I immediately knew this was the area I needed to specialise in, but had no idea from where I had to start. As a junior nurse and just having qualified with the first 4-year diploma course at the University of Malta, I grasped that I had no understanding of wound care. Although we were taught that hydrogen peroxide and EUSOL, the two most and only used products in wound healing at the time, were considered to be outdated and not to be used, I had little knowledge of what products I should use. I also became aware that GPs were in a similar boat to me and could not suggest anything better.

## Knowledge and experience

I started seeking courses to pursue in the UK or around the globe but could only find undergraduate certificate courses of a few weeks' duration, although I was told that the School of Medicine at Cardiff University was planning a postgraduate course leading to a master's degree in wound healing. However, my journey in wound healing had begun.

As part of the undergraduate course in nursing I had to undertake a small study and I chose leg ulcer care—this project led me to the dermatology department at the hospital where my study population was found, who were only too pleased to help me and who became my second home for the next decade. The need was evident there too but my colleagues were eager to teach, learn and support the idea of a specialist wound care clinic. Within the dermatology department there was a leg ulcer clinic that soon became a clinic dealing with more wounds of different aetiologies. This further re-enforced the need for more in-depth knowledge for me to be able to argue and make the necessary changes.

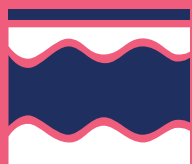
Following my degree, I worked at the dermatology department for over 8 years until I started the first nurse-led tissue viability (TV) service in Malta but I attended at least two international conferences a year and also participated in short courses. Together with a couple of colleagues, I had also organised the first educational event on wound care in Malta and we had our first international guest speaker. In 1999 I started the master's degree

in Cardiff and also started building a network of international colleagues, who gave me an opportunity to visit their clinics and start shaping the service in my head. Knowledge is power and the more I learnt the more I had the chance to make the necessary changes needed. Having a good foundation in skin care and now pursuing a master's degree I needed to start lobbying for the future service. I had convinced my director of nursing to support me to go to the UK and The Netherlands to visit and work in clinics for a few weeks and to my surprise the hospital had also supported me financially to undertake the degree in Cardiff. This was not common in those times and I was breaking new ground as a nurse.

## Setting up the service

Although many articles describe the role of various nurse-led clinics, few address the key issues underpinning setting up a clinic and achieving a sustainable service. Beginning with a broad definition of the nurse-led TV service was paramount. This was the first service of its kind on the island and it couldn't be so specific, we didn't have a role model to follow or a mentor to rely on, we just had our instincts, knowledge and determination. Although this might be frowned upon, it was the way we developed. We started working with people who wanted our service. Although I started out alone, after a couple of months another nurse arrived and we were joined by another nurse a year later. Nothing was clear and we took each day as a win and the more we started receiving referrals we knew we were on the right track.

We were aware that we might be perceived as a threat by some healthcare staff because the service represented a change to the usual pattern of working. Nurses were not used to being consulted by patients, we were not allowed to refer to other health professionals and request investigations such as a simple wound swab. Making sure all staff were kept informed, valuing their opinions, and incorporating suggested ideas did smooth the way for change. We feared doctors initially since we thought they would be the ones who would oppose this service but to our



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surprise it was other nurses who initially shunned us. It was apparent that nurses did not understand our role so our first task was to increase our visibility and provide information.

Memos and walkarounds were the norm of the day—the office was in the general hospital and the outpatient clinic was on another site in a tertiary hospital. Our first clinic was on a Sunday as there were no other available slots for us. Although this meant we did not have any support stuff we accepted the slot and never looked back. The physiotherapy department was the next department to welcome our services and we used to spend a day in their outpatient clinic following up with patients who had amputations.

From there on we planned to meet with managers and directors of other hospitals and also had meetings with GPs since we started offering a domiciliary service. The aim of our nurse-led service was to allow the same nurse to see the patient over a prolonged period of time and in this way a highly therapeutic relationship was offered, but we still needed a team. The concept of a nurse-led clinic suggests increased autonomy, but staff should not work in isolation. Liaison with, and support and advice from, other nursing and multidisciplinary colleagues will assist in developing an effective service.

Having worked in the dermatology department I had my roots and connections, but we started seeing more patients with diabetic foot problems and thus needed a podiatrist. Finding allies was key and the team started on a volunteer basis for a couple of hours on a Sunday. After lobbying, a podiatrist was sent to work with us full time and the team started building. Our next vital team member was a vascular surgeon who had just arrived from Scotland and who understood and valued specialist nurses. The next step was having multidisciplinary ward rounds and clinics and this was the first arrangement of its kind in the acute general hospital.

### Being politically astute

Good publicity was essential so whenever we were asked to see patients, we did this even on our day off. We had an open-door policy also for patients and this took off within a few weeks. In the first year and following the introduction of larval therapy and negative pressure wound therapy, I was on call 24/7. I knew that this was not going to last forever but I needed to prove that the need was there and that we were offering a much-needed service.

The first couple of years were tough but we had to prove ourselves before we could ask for more staff and help.

A lot of lobbying took place and meetings were held and we developed a strategy to meet all health professionals including pharmacists, physicians, hospital management and heads of departments, including podiatry and the laboratory, GPs and community nurses. This process was replicated for our neighbouring island of Gozo, but that involved a direct meeting with the Minister of Gozo since everything was channelled through the Ministry. I devoted at least one session a week to bringing others on board, whether it was via meetings, media appearances on the radio or television, or through educational events I was invited to. We then decided to organise conferences and strategically invite members of parliament and the health minister to open the conference—we also invited key international people and invited the media for coverage and quickly noticed that when state-level politicians are invited, more media representatives show up.

The TV service started from a makeshift office that was converted from a veranda, we had no pagers, no phone, practically nothing but we started going around the hospital and meeting nurses and other health professionals. It quickly became obvious that we needed to invest in equipment such as pressure-relieving mattresses and moving and handling aids such as lifters and slide sheets. Trying to convince managers that these were needed was going to need numbers so we organised a point-prevalence study on pressure ulcers and also while going around the hospital we took an inventory of what was available. This was the beginning of the biannual pressure ulcer audit and it was also a way of sending the facts to the authorities.

We then needed to invest in equipment such as a hand-held doppler and dressings. Procurement was a new area for me and this meant understanding the lengthy process of opening files, getting people to support your application and writing a business plan or a cost:benefit proposal. Again, this meant looking for people who were ready to help us and these were found in the engineering department and in theatres. It was valuable to create a business case and this came after 1 year of operation. Following the first year the annual report was rigorous—this included a detailed outline of all the patients we visited or cared for, what was needed in terms of resources (clinics, admin support, a car or a transport service) and something as basic as

being recognised for the position we held, because at this time I had no official position or title. This came a few years down the line when in 2003 a handful of specialist nurses were officially appointed.

The aim was to produce a professional and detailed report and to send it to top administrators and managers. This was not only sent to the nursing hierarchy but also to the medical one. Moreover, I did not just send it to them but asked for a meeting with them in order for me to explain what was in the document. The same was done with the medical superintendent of the hospital and the Director General for Nursing and Doctors at the Ministry of Health. We needed them all to understand what we were doing and what our vision was—and we also knew that these professionals are often too busy to read detailed reports so we presented the document but also discussed our priorities. This seemed to have worked. This was also important since Malta was in the process of building a new state-of-the-art hospital and we were in time to get our voice heard. In fact, when we moved to the new hospital in 2007, we had one of the best outpatient clinics with a large office and secretarial support. We were also given the opportunity to train and employ interested nurses to work with us on an overtime basis—so a pool of around 15 nurses were chosen and trained to help us. Today most of them run their own TV clinic or service.

### Conclusion

Nurse-led services can be highly challenging, but also very rewarding. I think one of the most important things is to self-reflect in assessing and achieving competence. Although this may be gained through certification from a university, it is important to remember that professional development is an ongoing process. The creation of clear aims and objectives, a business case and discussion with those who will use the service and those who can offer support, will highlight potential difficulties at an early stage, but it will also allow time to problem solve. Performing reviews and evaluations can help to identify factors that are promoting or hampering progress of the service. Although this was never done officially, we used to have regular meetings with colleagues and service users to listen to how we could improve. Notwithstanding this, following nearly two decades of the TV service in Malta a clinical audit is well overdue to seek to improve the quality and outcomes of patient care. **BJN**

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# Developing multidisciplinary education programmes in Uganda

Elizabeth Pearson, Jemimah Mutabaazi and Winifred Mbabazi

**T**his article describes the context for and development of a tissue viability training programme in a low-to-middle income country setting: Uganda. The impetus for the project was the personal experience of the first author, a tissue viability nurse in the UK with family connections to Uganda.

## Elizabeth's story

When I learnt that my grandmother was weak and was bedbound, I thought I ought to utilize my 18 years of knowledge and skills in pressure area care obtained from my studies here in the UK.

I took it upon myself to invest in preventive measures for tissue breakdown, including incontinence pads, barrier creams, guidance on nutrition, assessment tools etc, and shipped these over to my grandmother in Uganda. I thought I had played my part, but eventually, when I was able to travel and visit my grandmother, I realised that my local colleagues in Uganda were not trained in these assessment skills because her skin had broken down. When I arrived, they informed me that 'she has a "ekiwoundu!"', which meant she had a chronic wound. They were preventing me from looking at it, but I insisted. I wanted to assess this 'chronic wound' personally to determine the appropriate management.

I knew my grandmother was not mobile and from my colleagues' feedback that her nutritional intake was deficient and had gradually deteriorated, but they had not accurately communicated this information.

On assessment, I was heartbroken. My professional instincts kicked in and, as a nurse who has seen many of these stage 4 pressure ulcers, I know that management and treatment of such wounds have to be robust.

Having assessed the environment in which my grandmother was being nursed and, given her overall condition and comorbidities, the prognosis for managing the ulcer was not very good. She was frail, had problems with movement (immobile, requiring two people for transfers), had a low and inadequate diet and fluid intake, moist skin due to incontinence and suffered from early onset dementia. She was also living in a rural area with limited accessible health facilities.

But breaking bad news is an integral part of our job, so we hang on to hope, and away I went to search countrywide for the appropriate resources to treat this ulcer and create a care plan. I had an idea of what would be appropriate, if it were available. To my disappointment, I could not find any appropriate pressure ulcer dressing, nor any pressure-relieving device. I knew what would work but the only option was to source it from abroad, however, this would take many days to get to Uganda. I knew then that it would be too late.

My grandmother, like thousands of other vulnerable adults, continued to suffer as a result of inadequate skin assessments. I was her granddaughter who, in theory, could help alleviate her suffering, but, alas, I had no means to do this.

The experience challenged me to embark on a journey to find ways to share knowledge with my colleagues. It is a journey that involves equipping my colleagues with the skills, competencies and tools to appropriately manage their patients who develop pressure ulcers and those who present with complex wounds.

## The workshop project

After meeting with the Chair of Wound Care Alliance UK (WCAUK), Professor Jackie Stephen-Haynes, at one of the wound

care conferences in London, a sponsored tissue viability training workshop under the Alliance's remit of developing and promoting multidisciplinary education programmes was agreed. This was held on 17 October 2019 at Hoima Regional Referral Hospital in Uganda with the aim of enhancing tissue viability (TV) assessments. It was offered free to all nurses and midwives and held on-site in the hospital training room.

Although TV and wound care management is an area of health care that has synergy with many medical specialties (especially general surgery, vascular surgery, dermatology, care of older people, paediatrics, orthopaedics, lymphoedema, podiatry and diabetology), nearly all healthcare facilities in Uganda do not have wound care assessment tools in use. The tools required to assess and manage TV are not accessible, there is a lack of training, and there is not the comprehensive follow-up by a dedicated team of specialist TV nurses as would be the case in the UK.

It seems to be the case that many patients live with undiagnosed and untreated pressure ulcers in Uganda, but there are no hard data on the scale of the problem. High-quality care should involve TV training on best practice, and staff in every care establishment/care setting working within a robust prevention policy, with a commitment to ongoing education. However, this does not happen in Uganda, and this is due to various factors.

The main aim of the training was to address the nursing and midwifery curricula gap and limit practice for TV assessments and nurse-led interventions. The ultimate goal was to promote the role of a link nurse/champion for TV in each department, whose functions would include co-ordinating the patients' assessments in their area and taking the lead in evaluating TV.

The tools used for the training included presentation slides, scenarios and some pressure-relieving devices. A local chemist in London donated various dressing kits to simulate TV care and presented them to the

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hospital. Incontinence care and prevention of skin breakdown was identified as a particular issue to be addressed, so the kits included stoma/ostomy bags and flanges—to demonstrate ways of dealing with problems of leakage from the stoma and reducing damage to the skin—incontinence pads, hydrocolloids, and urology catheters.

There was relatively good representation as most departments from the hospital had a member of staff to attend. The training was not mandatory and a total of 65 nurses and some midwives attended. At the end of the training, a lead/champion for each department was identified for co-ordinating TV assessments and for capacity building.

We evaluated the training using printed questionnaire forms. Comments from the questionnaire evaluation included:

*'It was beneficial information and a reminder to give holistic care and skin assessments.'*

*'More time for the training is needed.'*

### Conclusion

The diversity of nursing has evolved significantly over the past 20 years, with the development of many specialist nursing fields. The professional knowledge and expertise of modern nurses has expanded greatly, leading in some cases to advanced practice roles.

There is a great need to create and strengthen the champions to support pressure area care by offering them collaborative training, especially in low-to-middle income countries such as Uganda. With the appropriate training, skills, competencies

and tools available for healthcare providers, Elizabeth's grandmother and many other vulnerable patients would not have to suffer in pain and die from pressure ulcers. These can be mitigated and improved.

Thank you to Wound Care Alliance UK for making this first training possible. On-site training to build the capacity of nurses in these settings is fundamental to enhancing care delivery in low-to-middle income countries. A further follow-up and evaluation workshop is required to monitor progress and promote the lead champions in TV assessments. We are requesting further support from WCAUK and other partners. **BJN**

*Acknowledgement: The authors would like to thank Jackie Stephen-Haynes, Chair of WCAUK, for her support with the project and this article*

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# Developing online training in wound care

**Lesley Newport**, Tissue Viability Clinical Lead Nurse, Tissue Viability Skin Team (lesley.newport@merseycare.nhs.uk), and **Danny Roberts**, Quality Improvement Lead, Centre for Perfect Care, Mersey Care NHS Foundation Trust (danny.roberts@merseycare.nhs.uk), runners-up in the Tissue Viability Nurse of the Year category in the BJN Awards 2021

At the beginning of the COVID-19 pandemic all training at Mersey Care NHS Foundation Trust had to be cancelled because the sessions were all run face to face. Consequently, the Tissue Viability Skin Team had to review the role-specific training they were offering to staff to ensure the provision of education of the community workforce.

The Tissue Viability Skin Team training schedule is one of the areas where training has been affected by COVID-19. Before the pandemic the service offered a range of training on all aspects of tissue viability.

Pressure ulcer and leg ulcer care are core competencies across the Trust's community division, as well as being Care Quality Commission (CQC) stretch targets, with pressure ulcers acknowledged by the Tissue Viability Skin Team as posing the greatest risk to the skin integrity of patients in the community. The team therefore recognised that, during the pandemic, a different approach to delivering training was necessary.

We began with a discussion about potential alternatives that could be used to deliver training because we were unsure when face-to-face sessions would be resumed. It was agreed that we needed to plan for, and adopt, a new method of delivering training, especially for newly qualified nurses and for new starters within services across the community division of the Trust. It was agreed that an online method of providing training would be the best way forward. Pressure ulcer training took priority due to the risk this type of wound poses in the community.

## Leg ulcers

The leg ulcer training plan was also priority, with plans to develop and implement this from September 2020, because leg ulcers are a Commissioning for Quality and Innovation (CQUIN) target for the Trust. Leg ulcers are also recognised nationally as incurring the greatest cost to the NHS within wound care. A variety of nursing staff, such as district nurses, treatment room nurses and those in

the Integrated Community Reablement Assessment Service, within the Trust will be required to complete this training.

## Compliance with CQC domains Safe

- Completion of the training and completion of a OSCE competence test overseen by the Tissue Viability Skin Team in line with national and local guidance ensures the application of theory to practice in relation to leg ulcers
- Supporting staff by providing training to equip them with underpinning knowledge in the field of expertise and the opportunity to test their acquired knowledge and skills in a controlled environment
- Ensuring the workforce has the knowledge and skills in the key competencies will ensure the prevention of harm to patients.

## Effective

- A model that combines online delivery with some elements of face-to-face delivery (module 4 includes a clinical workshop and the OSCE competence test is face to face) has allowed the clinical hours saved to be put back into clinical practice
- Reduction in mileage costs
- Less impact on service delivery due to time frame of training delivery in the afternoon.

## Caring

- Ensuring the workforce is equipped with the right skills and knowledge to deliver key interventions will enable care to be delivered effectively and efficiently.

## Responsive

- Proposals presented online can be delivered to all staff, regardless of individual shift patterns or their clinical base
- The digital training platform can be in place in time for winter pressures/subsequent waves of COVID-19
- Flexible approach to training, because the

module is spread over a period of 3–4 weeks, depending on the training required.

## Well led

- It will increase educational opportunities for community nursing staff, enabling them to enhance their knowledge and skills and empower them to deliver care at the first point of contact, particularly in assessment and care co-ordination
- It will support the continuing education of staff to enable them to empower patients to self-manage their health and care needs.

## Measured against STEEP Safe

By providing training to staff we are minimising the risks and harms to patients, including avoiding preventable injuries.

## Timely

Training improves skill mix, which will reduce any delays in providing care.

## Equitable

Training will be delivered to all qualified nurses within all services in the community division, regardless of geographical area, gender, ethnicity and religion.

## Effective

Training is delivered in accordance with evidence-based guidelines such as those of the National Institute for Health and Care Excellence (NICE) and the European Pressure Ulcer Advisory Panel.

## Efficient

Training is efficient: due to the COVID-19 pandemic, a virtual method of delivery is the only one that can currently be delivered. It is also a more flexible approach to education and internal Trust data show that it has saved clinical hours.

## Patient-centred care

Providing training to our staff ensures that they are equipped with the right skills and



knowledge to deliver high-quality care and enables them to have conversations with patients about treatment choices.

## Wound and pressure ulcer management training

### Why continuing training is important to staff

Switching to a virtual method of delivering training ensures that our staff continue to work within best practice guidelines and in line with national and local guidance to optimise patient care and safety. Ongoing education ensures that staff have the appropriate level of competence in conjunction with the right clinical skills and knowledge about all aspects of wound care, helping to improve patients' quality of life. Training also ensures that staff continue to work towards the Trust's harm-free care agenda and the CQC stretch targets for core competencies.

### Changes that will bring Improvements

- Develop a Tissue Viability Skin Team digital training package
- Facilitate staff acquisition of knowledge, competence and skills in wound care and pressure management, and leg ulcer management
- Develop and implement a process for escalation and access to specialist advice

### Benefits of the implemented changes

- Ensure that the clinical hours saved are put back into clinical practice
- Ensure more appropriate time for service delivery
- Financial saving on mileage costs.

### Who is involved

A multidisciplinary approach was taken to complete the project to develop digital delivery of staff education on wounds, pressure ulcers and leg ulcers. The working group was drawn from the Tissue Viability Skin Team, integrated community nursing operational managers, the Trust's Centre for Perfect Care, governance, the learning and development team, dietitians, the wheelchair service, podiatry service, equipment nurse specialists and the communications team.

### Benchmarks to evaluate the changes

The following targets aim to evaluate the benefits of equipping staff with knowledge and skills using a digital platform:

- Delivery of training: ensure that 75% of staff who access digital wound and pressure

ulcer management and leg ulcer training between the second and fourth quarter attain overall scores of good and above

- Pressure ulcers: maintain reduction in preventable category 3 and 4 pressure ulcers that developed while patients were on the community caseload in 2020–2021
- Leg ulcers: audit to be carried out to ensure that 50% of patients with lower leg wounds have received appropriate assessment, diagnosis and treatment within 28 days of referral or the patient has already been receiving care from the service within 28 days of identifying and recording a non-healing leg wound. This is to be achieved by quarter 4 in 2021 (a CQUIN target for 2021)
- Achieve and maintain 95% wound and pressure ulcer management sign-off on competencies (community division), to be achieved by quarter 4, 2021.

### Pilot phase

All modules on wound, pressure ulcer and leg ulcer management were delivered at 1-week intervals via Skype, with the first module starting on 4 August 2020. Seven people took part in the pressure ulcer training, who all completed the three modules. Online delivery was a new method of presentation for specialist nurses leading the sessions, as well as a new way for nurses to participate in training.

After module 1 was completed, the specialist nurses thought that it was a flexible and accessible way to deliver education sessions. Although there were some unexpected issues, the virtual leg ulcer modules had gone sufficiently well for the pressure ulcer and wound management training pilot to be launched a month earlier than planned.

In addition, some of the problems were rectified, where possible, for subsequent leg ulcer management training. The greatest unanticipated problem was the need to for two staff members to deliver the training rather than one due to the software requirements. It highlighted the need to explore alternative software options for the delivery of the Trust's virtual training in future.

### Pilot highlights

The pilot saved each of the seven staff members who participated in the pilot 3 days of clinical practice, which was then freed for patient care. Compared with the previous face-to-face training, which took each nurse 11 hours, the virtual approach required 7.5

hours, freeing 3.5 hours per nurse, or a total of 24.5 nurse hours.

In the case of the 11 staff who attended the leg ulcer management online pilot, a total of 7.3 days of clinical practice were saved, which were then available for patient care. The previous face-to-face training took each nurse 15 hours, compared with the 10 hours for digital training, freeing up a total of 55 hours for patient care.

The combined savings added up to 79.5 hours or 10.6 days of clinical practice.

### Staff evaluation

Digital training was evaluated by 94.45% of nurses as good to excellent, with many positive comments from participants:

- Really enjoyed the training in this manner, would like further training developing skills more
- Really informative and well delivered over the three modules
- Really approachable, professional. The connection between training and how to improve practice was present throughout the module
- Brilliant informative sessions that had good delivery, despite challenges of online learning
- Explained, demonstrated and presented well despite challenges of online learning
- Thank you, this has given me a greater understanding and overview as a non-general trained nurse, which will enable me to support my teams more effectively
- Excellent presentation and cascading of knowledge. No question was a stupid question. Explained clearly.

### Conclusion

The introduction of this innovative approach has changed how we will deliver and approach staff education in future. The outcomes and staff testimonials are evidence that learning and delivering education via a digital platform has created more clinical capacity for our staff and services, increasing face-to-face patient assessments. This was very welcome, particularly in the uncertain times of the COVID-19 pandemic, which has seen our services continuously in high demand.

Following the success of the Tissue Viability Skin Team's virtual delivery of training—as evidenced by the outcomes—and the use of quality improvement methodology to evaluate the pilots, various specialist teams within the Trust have adopted the online approach to training. **BJN**

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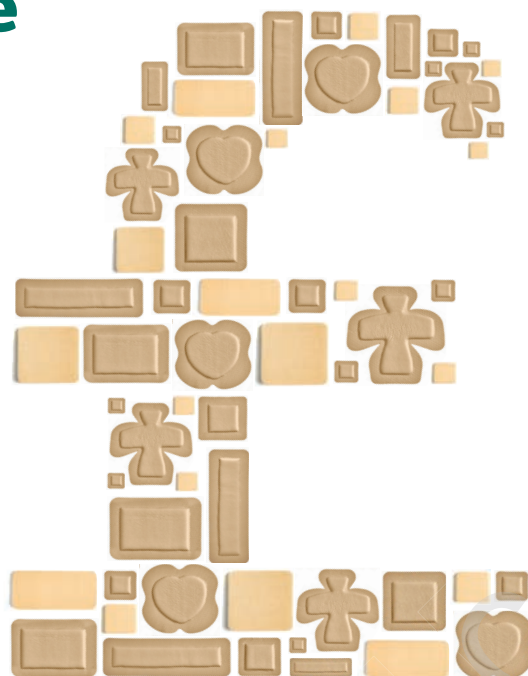


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