The role of medical technology in supported shared care

Chronic wounds have a long-term impact on people's lives, as well as creating considerable expense for global healthcare systems. Further, it is assumed that people with chronic lower limb wounds will require the same level of resources regardless of the care setting in which they are treated, and it is often cited that poor adherence to treatment is common. However, this may be because treatment methods are not guided by the individuals who are experiencing lower limb conditions and experts in living with a wound; each person should have the opportunity to choose treatment methods that suit them, their lifestyle and their desired outcomes. Hence, a person-centred approach gives individuals the confidence to contribute as a stakeholder in their care and promotes a sense of ownership and involvement from the outset.

Today's care delivery

Lower limb and leg ulcer management presents a number of challenges for global health in terms of nursing resources, wound care dressings and high recurrence rates. Medical technology and research relating to lower limb management have an important role to play in today's wound management. Globally, lower limb conditions present several challenges: the individual's suffering, clinical resource costs, protracted healing time, high recurrence rates and higher frequency because of an increased average life expectancy. Additionally, the persistence and recurrence of lower limb conditions can lead to physical and emotional distress for individuals and their families, contributing to depression, lack of self-esteem, self-neglect, social isolation and loss of income.

The global coronavirus crisis has had a transformative impact on how healthcare is delivered and, in an effort, to curb the spread of COVID-19, in March 2020, the Government in the UK imposed social distancing regulations on public venues. This drastically reduced the number of face-to-face consultations, and practices progressed towards greater use of telemedicine. An increase in the interconnected digital usage within healthcare, albeit challenging, has had a positive impact on operational care delivery. In addition, supported shared care, telehealth and remote monitoring have provided a great opportunity to embrace innovation, medical technology and new ways of working, enabling the delivery of a quality healthcare service that people expect and deserve.

Thus, health professionals are able to help individuals maintain a functional level of wellness within their normal social environment.

Change in practice in the COVID-19 era

The term 'medical technology' can invoke images of complex, expensive solutions, yet the reality is often very different. Several vascular technologies are vital, relatively inexpensive and have the potential to yield considerable cost savings. However, changing a wound care service from the traditional pattern of organised care delivery to the new philosophy and objectives is not an easy task, as practitioners must recognise the dynamic and changing nature of society (*Figure 1*).

From an education point of view, virtual technology has opened many doors and provided opportunities: for example, the Leg Club Industry Partners have been able to offer education virtually to both clinicians and patients. However, from a patient point of view, technology has probably divided opinions. Further, there will be a number of people requiring wound management who have embraced today's technology, but it is important to acknowledge that some individuals choose not to embrace knowledge in their care delivery and will need supported shared care. This has been highlighted for some Leg Club members, where contact with the outside world had been limited and for whom a visit to their Leg Club has been the only contact they would have had during this time.

Benefits of modern technology and collective proficiency

Advancement in providing person-centred care requires a collaborative multidisciplinary/multi-agency process, where people from many different parts of professional organisations contribute to the creation and implementation of new ideas. The vision of the Leg Club service has always been and still is to complement what is already in the NHS domain, such as complex wound clinics and conventional leg ulcer services (*Figure 2*). This is especially as a holistic assessment of a person's

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wound is possibly the single most important constituent of healing a wound and will guide rational decision-making and referral to appropriate specialist services as necessary. Wound technology is continuously evolving, and there are numerous products that enable an individual to undertake supported shared self-care. The term 'poor adherence' can leave those in our care feeling helpless, hopeless and cause them to abandon recommended treatment. An individual's vulnerability and lack of knowledge can make this challenging, but as professionals, we need to unite with them and work in partnership. One example of this is the challenge relating to compression management. Young et al (2021) reported that up to 80% of patients in some studies fail to be concordant with the sustained wearing of compression bandages and hosiery, due to the challenges of donning and doffing hosiery, pain, wound leakage, skin irritation and discomfort.

To focus on adherence to treatment, an example is the use of compression pump therapy garments, which have proven to be an excellent and effective therapy to apply at home successfully. There are numerous products available to facilitate this.

The section below describes the cases of two Leg Club members from different Clubs who benefited from the expertise of their local complex clinic and a vascular team. At both Leg Clubs, following a full assessment, the team referred their members to a hospital vascular consultant and a complex wound clinic clinical research specialist for their advice and expertise. Both specialist centres recommended WoundExpress, a therapy device clinically proven to assist in the healing of acute venous leg ulcers or hard-to-heal wounds. The therapy is delivered via a pump and garment, which operates by using low-pressure air to deliver compression therapy, sometimes referred to as intermittent pneumatic compression therapy. The gentle massaging effect of the three chambers in the leg garment draws venous blood from the wound site, encouraging arterial blood flow into the leg. The overall effect increases venous return and aids the healing process. A small case study of 21 participants with hard-to-heal venous or mixed leg ulcers involved use of WoundExpress for 2 hours a day for an 8-week period, with the patient also receiving standard wound care (hard-to-heal wounds were defined as those that failed to progress in the opinion of the treating clinician and those that had persisted for 8 or more weeks before recruitment) (Davies and Dunn, 2021). Findings from this case series demonstrated that the wounds of 95% of the participants progressed towards healing, and pain scores decreased in 83% (Davies and Dunn, 2021).

Application at the Leg Club

Anne first developed a small ulcer on her leg about 12 years ago and stated how it 'just grew and grew'. Instead of getting better, unfortunately, it got worse. When she was asked about her treatment history, she spoke of trying lots of things

'I've had everything, from iodine to honey, I've had stem cells which didn't work. Oh, it's been horrendous'.

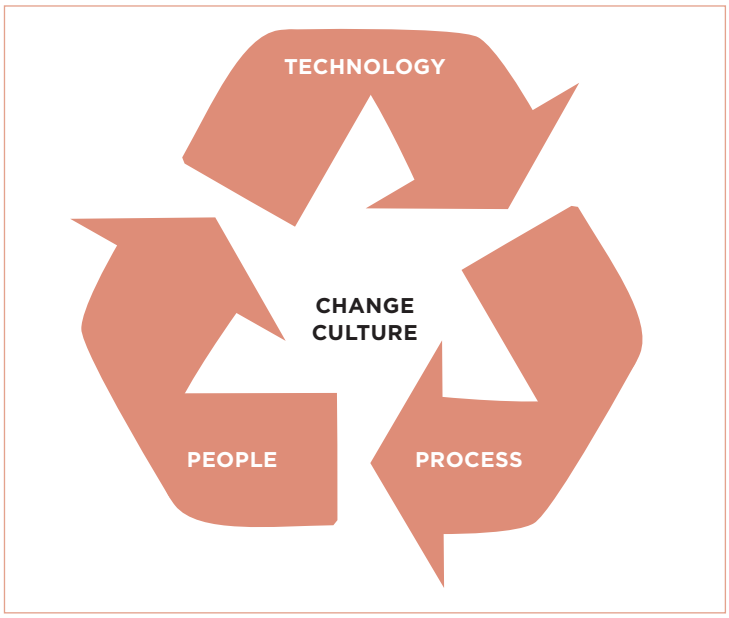

Figure 1. Agents of change

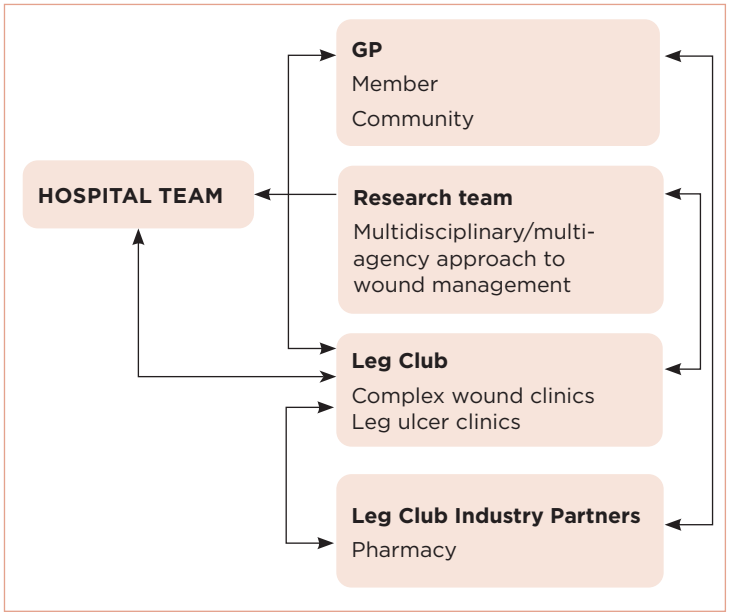

Figure 2. Collaboration in care

On attending her local Leg Club and following an assessment, she was referred to a complex wound clinic. The Leg Club team has an excellent relationship with the complex wound clinic and sought their support by working collaboratively with the Welsh Wound Innovation Centre to manage Anne's care. Over time, Anne struggled with tolerating the levels of compression, which became a challenge. Following a comprehensive assessment and to ensure that Anne could maintain her independence in undertaking recommended treatment within her own home, the team elected to use WoundExpress. The design of the treatment meant that the therapy was able to squeeze the thigh a little bit more to reduce

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the oedema in Anne's leg. This also allowed an increase in blood flow. After just 8 weeks of treatment for 2 hours a day, Anne's wounds were visibly improved. As Ann has described the therapy in her own words:

'It blows up tight then goes down again, and, down in my lower leg, something is going on …'

Prior to receiving treatment, Anne frequently had to take Oramorph prior to dressing changes as the pain was intolerable. She now has no pain and does not need to take any analgesia and stated:

'Best thing since sliced bread for me. 'I've been looking for answers for years.'

In another case, a Leg Club member in collaboration with a hospital vascular consultant and his specialist team liaised with the clinical Leg Club team in a demonstration of productive multidiscipline team working. The 77-year-old Leg Club member had a history of an ankle ulcer for 5 years, resulting in reduced mobility. His dressing changes were performed at the local Leg Club once a week using wound contact dressing, zinc bandaging and light compression. Treatment with WoundExpress has been commenced as part of the therapy. The member was encouraged to undertake supported shared care and record the treatment in his journal. He commented:

'This is easy to use with simple operating processes, is very good, easy to use and comfortable to wear. I used it for 2 hours a day regularly, mainly in the evening. My long-term ulcer, which has proved difficult to heal, appears to have now closed effectively. I await consultants' comments to support my view of the effectiveness of the system.'

Conclusion

With advancements in clinical research, innovative technology and a focus on social wellbeing, individuals requiring care can remain part of their communities, bringing meaning and quality to their lives, while also providing cost savings. Individuals who trust their treatment, and see sustained improvements in their condition, will be motivated to take an active interest in their health and take steps to ensure they get better quickly. A person-centred partnership would further foster patients' confidence to contribute to their care from the outset, promoting a sense of ownership and involvement and allowing them to enjoy life and limit their dependence on health services. The examples of collaborative multidisciplinary working outlined in this article expound the productiveness of combining both the non-medical social approach and conventional complex wound service. Cost effectiveness was also demonstrated, particularly with regard to nursing time, in addition to good healing rates taking into account Leg Club members' demographics, high levels of satisfaction and, most importantly, improved wellbeing and quality of life. CWC

Declaration of interest: The author has no financial interests or relationships regarding the subject matter of this overview and case studies.

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