Preventing unnecessary suffering: an audit of a leg ulcer clinic

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Leg ulceration is a chronic condition which, according to the last census, cost the National Health Service (NHS) £230–400 million in 1991, with recurrence reported between 26% and 69% (NHS Centre for Reviews and Dissemination (NHS CRD), 1997). Local prevalence rates have been reported between 1.08:1000 (Simon et al, 1996) and 1.48:1000 (Callam et al, 1985). The majority of sufferers are female and aged over 65 years (Callam et al, 1985), and studies show that 30% of patients have an ulcer history of more than 10 years (Moffatt and Dorman, 1995).

The NHS CRD (1997) has identified outcomes of unnecessary suffering, increased costs and wide variations in standards of care – these are not hallmarks of clinically effective practice. They conflict with quality, efficiency and performance measures which underpin the clinical governance agenda outlined in *The New NHS: Modern, Dependable* (Department of Health (DoH), 1997).

Recurrence of leg ulcers

The clinical course of chronic leg ulceration is characterized by periods of recurrence followed by healing (Callam et al, 1985). Factors reported to influence recurrence rates include the availability of community leg ulcer clinics, quality of life issues, and patient adherence to ongoing preventative treatment (Peters, 1998). Studies have shown that the recurrence rate over 3–5 years was lowest in patients wearing Class 3 (25–35 mmHg) hosiery, yet in practice some patients may find Class 3 hosiery difficult to apply, therefore compression hosiery is recommended to prevent recurrence (NHS CRD, 1997; Royal College of Nursing (RCN), 1998; Scottish Intercollegiate Guidelines Network (SIGN), 1998). Recurrence is higher among those not suitable for compression, e.g. patients with advancing arterial disease, and for patients who do not adhere to compression therapy (Moffatt and Dorman, 1995). It has been estimated that if the time between ulcer recurrence could be extended by one month, district nursing time spent on venous ulcer management could be reduced by 8%, with subsequent savings in cost (Peters, 1998).

Leg ulcer clinics

Common outcome measures of effectiveness of leg ulcer clinics are healing rates, costs (including nursing time) and quality of life. Simon et al (1996) showed that the implementation of community leg ulcer clinics resulted in improvement in healing rates and cost reduction. In East Gloucestershire, recurrence rates at 6 and 12 months fell after the inauguration of a specialized clinic (Ghauri et al, 2000), and patients in Morrell et al’s (1998) study had more ulcer-free weeks after being treated in a community leg ulcer clinic than those treated at home. Thorne’s (1998) review of leg ulcer clinic effectiveness appeared to highlight community leg ulcer clinics as the preferred model of care delivery, although it was noted that none of the reviewed studies achieved the stated objective of evaluating the effectiveness of the care provided, and that effectiveness was not necessarily due to the clinic setting but to the nurses’ expertise and the quality of patient assessment.

The frequency of visits, close supervision and counselling by specialist leg ulcer nurses, as well as instant access in the case of recurrence, are factors which benefit patients attending leg ulcer clinics (Ruckley, 1998). However, clinics are not always accessible in rural areas (Thorne, 1998), and so patients unable to access a clinic may be disadvantaged by not receiving the same quality of care. The

ABSTRACT

Unnecessary patient suffering and increased costs in leg ulcer care were reported in an *Effective Health Care* bulletin (NHS Centre for Reviews and Dissemination (NHSCRD), 1997). Follow-up assessment of patients with a history of venous ulceration has beneficial effects for patients’ quality of life, and for effective and efficient management of resources for community nurses. This article describes the process of implementing evidence-based practice in a leg ulcer clinic in South London within existing resources, which resulted in the successful prevention of leg ulcer recurrence.
organization of care for leg ulcer patients has also been criticized for failure to adopt a multidisciplinary approach (Husband, 1996). Nevertheless, clinics provide nurses with a centre of expertise and the opportunity for training and development of skills in leg ulcer management.

Ghauri et al (2000) have suggested that a comprehensive leg ulcer service features specialized assessment, appropriate management and follow-up care which includes access to vascular specialist services. Ruckley (1998) asserted that chronic leg ulceration is perfectly suited to multidisciplinary care, with follow-up recommended at 3–6-month intervals (Moffatt and Dorman, 1995; Jones and Nelson, 1998).

Recurrence risk factors
Little is known about the risk factors of recurrence, but the size of the ulcer is proportional to the recurrence risk; hypertension also appears to be a risk factor, but reasons for this are not understood (Moffatt and Dorman, 1995). In her literature review, Peters (1998) found no agreement in the study findings on factors contributing to the recurrence of leg ulcers.

Quality-of-life issues
Patient assessment should include not only the medical factors, but also broader issues (Moffatt, 1998), such as the effect of the ulcer on the patient’s quality of life. Control of pain, leakage, odour and social isolation have been shown to be significant elements of living with a leg ulcer (Tonge, 1995; Franks and Moffatt, 1998; Price and Harding, 2000). Changing dress and shoe styles, although perhaps of little importance to health professionals, were found to be important issues in older women with leg ulceration (Hyde et al, 1999; Harker, 2000).

Liew et al (2000) demonstrated an improvement in pain reduction, sleep and mobility for patients attending a leg ulcer clinic for treatment of active leg ulcers, and concluded that the observed changes could be attributed to the clinical effectiveness of the clinic. If this is an accurate conclusion, then it seems reasonable to assume that prevention of recurrence might also improve patients’ quality of life.

Patient adherence to treatment
Much of the literature on this subject refers to compliance. Hallett et al (2000) have suggested that this term is inappropriate when a nurse–patient partnership, rather than a paternalistic approach, is being promoted. Non-adherence to recommended treatment may be influenced by personal characteristics, the meaning of the illness to the patient, lack of family support, treatment regimes and the environment of care (Papadopoulos and Jukes, 1999). Adherence to treatment is, however, difficult to measure objectively as it is often dependent on accurate reporting by patients (Papadopoulos and Jukes, 1999; Harker, 2000) and their perception of their adherence.

Belief in the effectiveness of compression may be another influencing factor in patient adherence (Moffatt and Dorman, 1995). Individual health beliefs may lead to practices which adversely affect wound healing (Hallett et al, 2000), such as patients removing dressings. In view of this, it is essential that nurses have an understanding of the beliefs that underpin the patient’s behaviour in relation to his/her health care (Peters, 1998). Problems such as allergy or intolerance to a component of the hosiery or to a skin preparation will also limit patient adherence (Peters, 1998; SIGN 1998), thus it is important for nurses to maintain up-to-date, reliable knowledge of alternative products. This is particularly relevant now that patients may access the internet for sources of information about their condition, and there is nothing to filter inappropriate advice. Clear guidance and a rationale increase adherence (Peters, 1998).

Local care delivery
Local trust policy in south London stipulated that each leg ulcer clinic should be run by a practitioner holding the English National Board (ENB) N18 qualification concerning registered nurses’ professional development in leg ulcer management. Holders of the qualification who ran clinics also belonged to a forum lead by a senior clinical nurse with a specialist interest in leg ulceration. This forum reviewed clinical practice, including audit, and advised on local policy decisions, including the development of a leg ulcer assessment form.

A clinic was set up in a south London health centre in 1997 to meet the needs of local leg ulcer patients. It was run weekly by two district nurses (one of whom held the ENB N18 qualification) who were aided by various members of the community nursing team in rotation. An open referral system was operated; the clinic appointments were soon filled, and a waiting list drawn up. While waiting for an appointment, patients on the waiting list were cared for by district or practice nurses. The clinic mainly used multilayer bandaging, giving nurses the chance to practise and refine their skills in this technique under supervision. When the leg ulcers healed, patients were referred back to their practice or district nurses.
**Rationale for change**

Although the clinic provided safety and continuity of care, there was a significant lack of follow-up and monitoring of healed patients, the implications of which have already been discussed.

I joined the clinic team early in 1999 as liaison lecturer, and with the agreement of those associated with the project, offered care involvement on a regular basis as a means of maintaining clinical competence. This provided the necessary insight into current practice to develop the ENB N18 course at King’s College. The clinic was identified as one of the areas for the practical assessment component of the course. As the need for follow-up care in the prevention of leg ulcer recurrence was recognized, evidence-based care was implemented and routine follow-up of all healed patients commenced. The importance of a collaborative strategy and shared ownership of change has been highlighted in relation to developing a leg ulcer service (Galvin et al, 1999). The implementation of evidence-based care in following up healed leg ulcer patients was the outcome of collaboration between education and practice staff, and joint ownership of the change.

The implementation of follow-up care caused an overload of appointments, resulting in the active-ulcer clinic not having the capacity to cope. A solution that could be implemented using existing resources was needed: a new clinic for healed-ulcer patients was established with one of the ENB N18 qualified practitioners leaving the active-ulcer clinic and working in the healed clinic.

The healed-ulcer clinic required less staffing, since the main interventions carried out were reassessment, Doppler re-measurement and hosiery fitting. In this clinic, the practitioner was assisted by an experienced health-care assistant who had previously worked in the active clinic. Patients were referred to the new clinic as they healed; should it have been necessary, patients with a recurrent ulcer could easily have been transferred into the active-ulcer clinic. The documentation for both clinics was kept in a common file, enabling both clinics to be viewed as a comprehensive leg ulcer service.

The effect of this change was that the active-ulcer clinic had appointments available for new patients, patients had continuity of care by seeing familiar faces and no extra resources were needed except for the booking of an additional room.

Initially, the healed-ulcer clinic ran monthly but as patients are never discharged, more sessions were, and will continue to be, needed. Training is however running concurrently with this development, and more ENB N18 holders are being prepared locally to meet staffing requirements.

In Moffatt and Dorman’s (1995) study, 10% of ulcers recurred within 3 months and approximately 4% occurred every 3 months thereafter. To detect early signs of recurrence, patients are assessed in the first, second and third months after healing and every 3 months thereafter.

**Audit**

As part of clinical governance, the clinic team recognized the need to review and improve the quality of care provided at the clinics. Monitoring, evaluating, maintaining and reinforcing change are essential components of any systematic approach to changing professional practice (NHS CRD, 1999).

In February 2000 an audit running from the time of implementation in 1997 was carried out in the clinic, covering documentation, referral, follow-up and number of Doppler studies per patient, healing rates, and the type of compression used. As numbers were small, generalizations cannot be made; nevertheless, this study indicates improvements that may be achievable.

**Documentation**

Incomplete notes were common in the early stages of setting up the clinic. This lack of sequential notes was a common problem which hampered the audit. The documentation under review was revisited in light of this and steps were taken to facilitate the dating and storing of notes.

**Referral, follow-up and Doppler studies**

The percentages of recurrence fell from 50% in 1997 to 16% in 1999, following the setting up of the healed-ulcer clinic. In 1997, no patient was followed up in the clinic. In 1998, 42% had one follow-up Doppler assessment (Figure 1), and in 1999, 66% had at least two follow-up Doppler assessments (Figure 2), thus demonstrating an improvement in safety and quality of care. The progressive nature of arterial disease associated with ageing (Moffatt and O’Hare, 1995) implies that a one-off Doppler reading is insufficient when continuing to treat patients in compression hosiery.

**Healing rates**

Leg ulcer healing rates of this study’s participants are shown in Figure 3, and because of the considerable range of healing times, the median figure is given as well as the mean. The apparent better results of 1997 may be attributed to small numbers, therefore inferences of performance may be inaccurate. Longer healing times in 1998 may be due to more chronic and complex wounds being referred to the clinic as it became more established.

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Recurrence rates reduced with the implementation of the healed-ulcer clinic.

**Type of compression**

The use of different types of compression is highlighted in Figure 4. The data indicate a move away from only one form of bandaging over time. A systematic review (NHS CRD, 1997) demonstrated that elastic bandages were associated with higher healing rates than non-elastic bandages, which is reflected in the clinic practice. However, as the review found that there are several, rather than just one, effective treatment methods, it is important to consider patient factors such as lifestyle and choice when selecting the appropriate form of compression for patients.

Changes have been implemented on the basis of the findings of this audit, and re-audit will take place one year after the initial audit, in February 2001. These findings were shared with all clinic staff, as well as management and the local primary care group clinical governance lead. In addition, a poster presentation on these developments was given at a nursing conference within the trust.

Much work still needs to be done to create a comprehensive leg ulcer service. Vascular referral from the clinic is still initiated by general practitioners (GPs), albeit at the nurse’s request. Referral back to the leg ulcer clinic following vascular intervention is almost non-existent, suggesting that the expertise of those working in the clinic is perhaps not recognized by hospital-based staff. Changes to improve this will need to involve other stakeholders in leg ulcer management, such as vascular surgeons.

**Potential for research**

According to Ruckley (1997) the most important end-points of leg ulcer management are freedom from ulceration and long-term prevention of recurrence and further research is needed into the organization of care. Research into compliance with treatment (Moffatt and Dorman, 1995; Tonge, 1995; Jones and Nelson, 1998; Harker, 2000) has focused on the wearing of hosiery as the main preventative strategy to leg ulcer recurrence. However, daily skin care is also an important part of maintaining skin integrity as is patient involvement in looking for early signs of recurrence. Their skin condition was noted to be good and the majority of patients could name the cream which they applied to their legs indicating that patients are taking an active part in their treatment and prevention of leg ulcer recurrence. This study showed high adherence to treatment with compression hosiery. This could be attributed to the use of Activa stockings which, in the clinic nurses’ experience, patients find easier to apply, and report higher rates of comfort and aesthetic acceptance.

Non-attendance at the clinic is a very rare problem. A potential area for research has therefore arisen – namely an exploration of the reasons why patients adhere to the treatment through attendance, skin care and the wearing of hosiery, which Papadopoulos and Jukes (1999) have highlighted.

**Conclusion and recommendations**

Implementation of national clinical guidelines was facilitated in the clinic with practitioners and the liaison lecturer working together. The NHS CRD (1999) recognized that knowledge of clinical guidelines and research is insufficient to change practice and that collaboration is also needed. The success of this venture may indicate that through collaboration liaison lecturers could become involved in making meaningful theory–practice links. The importance of education to promote the necessary knowledge...
Leg ulcer clinics can deliver cost-effective care to patients, and provide a centre for nurses, in collaboration with educators, to develop skills in leg ulcer management and spread good practice.

Prevention of unnecessary suffering caused by leg ulcer recurrence would improve patient outcomes and could demonstrate clinically-effective, cost-effective practice.


Ruckley CV (1997) Evidence-based management of patients with leg ulcers. J Wound Care 6(9): 442–4

Figure 3. Healing rates.

Figure 4. Types of compression used in clinic.