The Burden of Chronic Wounds in the UK

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This article discusses the costs of chronic wound management and the impact on patients and the healthcare system.

In the UK, chronic wounds represent a significant burden to patients and the NHS. Some 200,000 patients in the UK have a chronic wound. The impact on their quality of life is well documented (Franks and Morgan, 2003). Common symptoms of ulceration include pain, exudate and odour, and these symptoms are frequently associated with poor sleep, loss of mobility and social isolation. The healthcare cost of caring for patients with a chronic wound is conservatively estimated at £2.3bn–3.1bn per year (Table 1).

Pressure ulcers
A pressure ulcer is an area of damage to the skin and underlying tissue that is caused by unrelieved pressure, friction and/or shear forces. A severe ulcer is susceptible to infection and may be life-threatening.

It is estimated that one in five hospital inpatients has a pressure ulcer (Clark et al, 2004) – this represents at least 20,000 hospital patients in the UK at any time. Many more individuals with an ulcer are cared for at home or in residential and nursing homes but the prevalence of ulceration in these settings is not well-documented in the UK (Bennett et al, 2004). In the UK, around 400,000 individuals develop a new pressure ulcer annually. The cost to the NHS is high, primarily because prolonged hospital treatment is needed in serious cases and those at risk must be protected. The annual cost is in the range of £1.8–2.6bn (Table 1).

Foot ulcers
Foot ulceration is a common complication of diabetes. Gradual loss of sensation renders the foot susceptible to even minor trauma. Susceptibility to

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<th><strong>TABLE 1. CHRONIC-WOUND TREATMENT COSTS TO THE NHS</strong></th>
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<td><strong>Annual incidence</strong></td>
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<tr>
<td>Venous leg ulcers</td>
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<td>Foot ulcers</td>
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<td>Pressure ulcers</td>
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<td>TOTAL</td>
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Source: Posnett and Franks (2007)
Infection and peripheral vascular disease inhibit healing once injury has occurred and may lead to gangrene and amputation. The age-adjusted rate of lower-limb amputation is estimated to be 15 times higher in individuals with diabetes than in the general population (Armstrong et al, 1997). In the UK it is conservatively estimated that there are around 64,000 individuals with active foot ulceration at any time and 2,600 amputations annually in patients with a foot ulcer (Gordois et al, 2003). The cost to the NHS is around £300m per year (Table 1).

**Future trends**

Trends in the structure of the UK population over the next 20 years are likely to lead to a significant increase in the number of patients with chronic wounds. The population of the UK is forecast to increase between 2005 and 2025 by 3.4 million (5.6%) from 60.4 million to 63.8 million. In the same period, the UK population aged 65 and older is forecast to increase by 3.5 million (36%) from 9.5 million to 13.0 million (US Census Bureau).

The prevalence of chronic ulceration is higher in the population aged over 65. In one UK prevalence study, 68% of patients with a leg ulcer were aged 65 or more (Gottrup et al, 2001). In a similar study in Australia, 90% of patients with a venous leg ulcer were aged over 60 and the median age of these patients was 75 years (Kumar et al, 1994). In the US, 72% of hospital stays in which pressure ulcers were noted occurred in patients aged 65 or above (Russo and Elikhauser, 2003).

The prevalence of type two diabetes is also strongly correlated with age. One estimate claims the number of individuals in the UK with type two diabetes will increase between 2000 and 2010 by more than one million (55%) (Amos et al, 1997). The expected increase in the number of people with diabetes alone could increase the number of new cases of foot ulceration by 25,000 a year.

**Reducing the chronic-wound burden**

A wound audit was carried out in a population of around 590,000 in the UK in mid-2005, covering both acute and community health services (Drew et al, 2007). It highlighted some of the practical issues of chronic wound care in the NHS.

One audit feature was the fairly high incidence of non-healing wounds. One in three chronic wounds had been unhealed for at least six months and one in five for a year or more. Almost 42% of leg/foot ulcers had not healed in the previous six months and 28% had been unhealed for a year or longer. In an audit at the Mid-Western Health Board in Ireland, the median duration of ulceration was eight months and 27% of patients had had continuous ulceration for two years or more (O’Brien et al, 2003). In a similar Canadian audit (Lorimer et al, 2003), the median duration of leg ulceration was six months (mean duration was 15 months). One-third (33%) of patients had had an ulcer for over a year and 19% had had one for over two years.

The problem of delayed healing highlights the importance of effective diagnosis and appropriate treatment. Drew et al’s (2007) UK audit showed that 26% of wounds classified as leg or foot ulcers had no definite diagnosis. Of the 432 leg ulcers classified as venous, 24% had not had a Doppler assessment, and 46% of patients with a venous leg ulcer did not receive multilayer high compression. This is not unique to the UK: a review of wound treatment in a primary-care setting in Copenhagen found that only 51% of patients with a chronic wound had had a significant diagnostic examination; 40% of patients with suspected venous leg ulcers had not been treated with compression and 34% of those with a foot ulcer were not investigated for diabetes (Gottrup et al, 2001). In the Irish audit (O’Brien et al, 2002), only one-half of patients with a leg ulcer had had its cause properly investigated.

Nurse time is an important component of cost. The estimate in the UK audit suggests nurse time accounts for 33–41% of the total cost (Drew et al, 2007). This is probably too low as it does not account for the time nurses spend assessing and monitoring wounds or repositioning patients at risk of pressure damage. On the basis of the UK audit, dressing changes alone might have required the equivalent of 88.5 full-time nursing staff annually across acute and community sectors.

**Conclusion**

UK cost estimates are subject to a wide margin of error, but are sufficiently accurate to indicate that wound care has a significant impact on NHS resources. Results from local audits of wound-care practice in the UK and elsewhere highlight that a relatively high proportion of chronic wounds remain unhealed for long periods — almost certainly longer than necessary. Likely reasons for this include just treating the ulcer itself, rather than diagnosing and treating its underlying cause.

**REFERENCES**

- US Census Bureau International Data Base. www.census.gov/ipc/www/idb/