Foot care for people with diabetes in the NHS in England: The economic case for change

Around 6,000 people with diabetes have leg, foot or toe amputations each year in England. Many of these are avoidable. The risk of amputation in diabetes is 23 times that of people without diabetes. Around 61,000 people with diabetes are thought to have foot ulcers at any given time.

Ulceration and amputation substantially reduce quality of life, and are associated with high mortality. Studies suggest that only 50% of patients with diabetes who have had an amputation survive for a further 2 years. Even without amputation, the prognosis is poor. Only around 56% of patients with diabetes who have had ulcers survive for 5 years.

The cost of diabetic foot ulcers and amputations to the NHS in England in 2010-11 is estimated at £639 million–£662 million. Approximately £1 in every £150 the NHS spent was for diabetic foot ulceration and amputation.

There is evidence that rapid access to multidisciplinary foot care teams (MDTs) can lead to faster healing, fewer amputations and improved survival. Savings to the NHS can substantially exceed the cost of the team.

### The Cost of Ulceration and Amputation in Diabetes

- It is estimated that almost half of foot care expenditure in diabetes is for primary, community and outpatient care. Much of this care is not recognised by commissioners as attributable to the diabetic foot.
- In 2010–11, 8.8% of all hospital admissions (with at least one overnight stay) for patients with diabetes involved a foot problem. There were 5,917 non-traumatic lower extremity amputation admissions, and more than 66,000 other admissions involving foot complications.
- Length of hospital stay for people with diabetic foot problems is 13 days longer than for people with diabetes who do not have foot problems, after adjusting for age, sex, ethnicity, deprivation, elective or emergency admission, and surgical or non-surgical specialty.
- Total NHS spending on ulceration and amputation in people with diabetes in England in 2010–11 is estimated at £639 million–£662 million, equivalent to 0.6–0.7% of NHS expenditure.

<table>
<thead>
<tr>
<th>Costs</th>
<th>Lower estimate</th>
<th>Upper estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary, community and outpatient care</td>
<td>£306,508,970</td>
<td>£323,062,601</td>
</tr>
<tr>
<td>Accident and emergency</td>
<td>£849,278</td>
<td></td>
</tr>
<tr>
<td>Inpatient care – ulceration</td>
<td>£213,151,916</td>
<td>£213,151,916</td>
</tr>
<tr>
<td>Inpatient care – amputation</td>
<td>£43,546,901</td>
<td>£48,896,735</td>
</tr>
<tr>
<td>Post-amputation care</td>
<td>£75,807,423</td>
<td>£75,807,423</td>
</tr>
<tr>
<td>Total</td>
<td>£639,015,210</td>
<td>£661,767,953</td>
</tr>
</tbody>
</table>

Estimated cost of ulceration and amputation in people with diabetes, England, 2010–11
The Quality of Care

- Quality and Outcomes Framework (QOF) data indicate that in 2010–11, approximately 86% of diagnosed diabetes patients had their feet checked. However, it is not known what proportion of patients received appropriate follow-on care in keeping with their level of foot risk.
- The National Diabetes Inpatient Audit 2010 showed that almost three quarters of inpatients with diabetes had no record in their case notes of a foot examination during their hospital stay. 2.2% of inpatients with diabetes developed a new foot complication whilst in hospital. Almost half of these patients had no input from an MDT. One fifth of hospital sites providing inpatient care had no MDT.
- Around 20 in 10,000 people with diabetes undergo leg, foot or toe amputation each year. The rate of amputation (major and minor) in diabetes has been estimated at 23 times the rate in people without diabetes. The Incidence of major amputation varies tenfold across PCTs.

Improving Care

- Clinical evidence suggests that there is considerable potential to improve the quality of foot care for people with diabetes. Targeted preventive services can identify those at risk of ulceration and improve outcomes, and rapid access to multidisciplinary foot care can lead to faster healing, fewer amputations and improved survival.
- As well as improving patient outcomes, MDTs with strong links to community podiatry services can generate savings for the NHS that exceed the cost of the team.

Case Study – Southampton University Hospitals NHS Trust, 2004–07

- An MDT operated across primary and secondary care, providing a telephone advice and emergency access line for patients and clinical staff, weekly podiatry clinics at eight primary care locations, outpatient clinics in secondary care and multidisciplinary inpatient care.

Conclusions

- Ulceration and amputation substantially reduce quality of life for many people with diabetes, and are associated with high mortality.
- The financial cost is also large. It is estimated that the NHS in England spent 0.6–0.7% of its annual budget on the diabetic foot in 2010–11.
- Rapid access to multidisciplinary foot care can lead to faster healing, fewer amputations and improved survival. It can also reduce NHS expenditure on diabetic foot problems.
- Estimated savings from an MDT at Southampton University Hospitals NHS Trust were almost five times the cost of the team.
- The potential for improvement in outcomes and for financial savings will depend on local factors including costs, baseline standards of care and the model of care adopted.