Foot Care in Diabetes:
The Human and Financial Cost

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The Scale of the Problem

• Approx. 7,000 leg, foot or toe amputations in people with diabetes in England each year

• Diabetes ➔ 23-fold increase in risk of lower extremity amputation

• Estimated 2-2.5% of the diabetes population has foot ulcers at any given time: 68,000 people in England, 10,700 in London
Amputations: England

2014-15 HES – 7,407 amputation admissions

1 for every 390 people with diabetes

3,016 major amputation admissions,
4,015 minor amputation admissions
Ulceration admissions

2014-15 HES – 89,085 diabetes admissions with ulceration

1 for every 33 people with diabetes

Ulceration associated with 8.26 day increase in length of stay
NHS Expenditure: Inpatient care

Cost of inpatient care = £322 million in 2014-15

86% of inpatient costs are for ulcer admissions
NHS Expenditure: Primary, Community and Outpatient Care

Estimated 68,000 people in England have foot ulcers at any given time

Annual cost estimated at £629-£786 million

46% of patients with severe ulcers account for 80% of costs
The Financial Cost of Ulceration and Amputation

Estimated NHS cost in England = £972m.-£1.13 bn. in 2014-15

£1 in every £140 the NHS spends
Costs in context

Estimated NHS cost is higher than the combined annual cost of three of the four most common cancers
(Source for cancer costs: NHS Programme Budgeting 2012-13, inflation-adjusted)
The Human Cost of Ulceration and Amputation

Health-related quality of life for people with a diabetic foot ulcer is lower than that for people with COPD or on haemodialysis


* MVC: Macrovascular complications
Survival

Relative 5-year survival after diabetic foot ulcer and the most common cancers

(Sources: Cancer - ONS, Foot ulcer - estimate derived from Moulik et al. 2003)

Foot ulcers are associated with high mortality, but deaths are not necessarily attributable to ulceration.
Major amputations

The major lower extremity amputation rate varies 10-fold across CCGs, from 2.0 to 21.0 per 10,000 person years.
In London the range is 2.0 to 8.6.

Amputations, annual, per 10,000 people with diabetes, 2012-2015, by CCG
Foot checks

QOF data indicate that around 81% of people with diabetes receive a foot check every 12 months.

However, there is little correlation between foot review and amputation incidence at CCG-level.

It is not known what percentage of patients receive appropriate follow-on care (London CCGs shown in yellow).
Are appropriate referral pathways in place?

The National Diabetes Foot Care Audit (NDFA) in 2016 asked commissioners of care in England and Wales whether NICE-recommended structures of care were in place in their areas.

Almost half of commissioners did not answer the question

Of those that did respond,
- 62.1% said they provided training for routine diabetic foot examinations
- 83.0% said there was a foot protection service pathway
- 73.6% said there was a pathway for assessment within 24 hours.
Interval between first presentation and specialist assessment

NICE guidance recommends that those with an active foot problem should be referred to a MDT or foot protection service within one working day and triaged within one further working day.

NDFA found that fewer than 1 in 5 of 9,137 patients followed was seen in this time-frame (excluding self-presenters).
Ulcer severity and time to healing

Those who waited longer for specialist care tended to have more severe ulcers, and their ulcers were less likely to have healed at 12 weeks.
The National Diabetes Inpatient Audit (NaDIA) found in 2016 that only 3 in 10 inpatients with diabetes had a documented foot risk assessment within 24 hours of admission.

- 1 in 10 had active foot disease on admission

- 24% of sites had no MDFT
Potential for Better Outcomes

• Clinical evidence suggests that:

  – Diagnostic tests and risk stratification can predict the risk of diabetic foot ulceration and amputation

  – Early referral to specialist care reduces amputation rates and times to healing

  – Multidisciplinary teams (inpatient and community-based/outpatient) can reduce amputation rates

  – Cardiovascular screening and interventions for patients with ulcers can reduce mortality
Ipswich Hospital NHS Trust

Inpatient improvement programme to promote foot checks and reduce ulcers:

• Promotional videos for Touch the Toes test shown in all wards by a podiatrist and a DSN
• Monthly random audits to check on the % of inpatients with diabetes having foot checks
• Ward-level results published on hospital intranet.
• Data on foot ulcer prevalence collected for all patients
Estimates of the Impact of Improved Care on Outcomes and NHS Costs

Ipswich Hospital NHS Trust 2010-13

Staff (Input per year):
Band 6 DSN (72 hours, audit)
Band 5 DSN (136 hours, foot checks)

Annual Cost: £8,060

Plus set-up costs: £4,924

Estimated reduction in foot ulcers = 19 per year
Estimated reduction in diabetic foot bed days = 571 per year

Annual saving = £246,000
Somerset CCG and partners

County-wide integrated diabetes foot pathway:

• Emergency clinics in eight locations, offering appointments within 24 hours for people with active foot disease, and direct referral to the hospital MDT where necessary.

• Community podiatrists received specialist training and became members of the foot MDT, with regular rotation into hospital-based specialist services.

• Patient notes shared electronically.

• Training for practice nurses and GPs
The potential for net savings and benefits will vary according to local costs and baseline standards of care.

Somerset CCG, 2011-15

- **Annual Cost**: £148,000
- **Plus set-up costs**: £30,000

- **Estimated reduction in amputations**: 19 per year
- **Estimated reduction in diabetic foot bed days**: 1,626 per year

- **Annual NHS saving**: £926,000
Brent CCG and North West London Hospitals NHS Trust

- Foot MDT operating two consultant-led clinics a week and an emergency service five days a week.
- Close links with community podiatry services, which can refer patients directly to the specialist service.
- Patients with recurring ulcers can self-refer to the service.
- The MDT also works closely with intermediate care services, which provide home care to avert admissions and support rapid discharge.

Staff inputs (WTE)
- Consultant endocrinologist (0.4)
- Podiatrist (0.4)
- Band 6 DSN (0.05)
- Consultant vascular surgeon (0.05)
- Plaster technician (0.05)

Annual Cost: £93,000

Plus intermediate care annual cost: £4,000

Estimated averted amputations = 27 per year

Estimated averted diabetic foot bed days = 760 per year

Annual NHS saving = £474,000
Summary

• £1 in every £140 the NHS spends is for diabetic foot problems
• MDTs with strong community links can deliver improved patient outcomes and savings which exceed the cost of the team
• No savings were estimated for reductions in ulcer duration as data were not available
• The potential for net savings and benefits will vary according to local costs and baseline standards of care
• Unless there is a significant increase in the quality and efficiency of services, the cost of diabetic foot care is likely to rise substantially in the coming years