



National Diabetes Support Team



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Diabetic Foot Guide

April 2006

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Introduction

The Diabetes National Service Framework (NSF) states that the NHS should develop, implement and monitor agreed protocols and systems of care to ensure that all people who develop long-term complications of diabetes receive timely, appropriate and effective investigation and treatment to reduce their risk of disability. This, along with surveillance for complications, is very relevant when considering the diabetic foot.

Foot ulceration, foot infection, foot and limb amputation and some forms of deformity are major forms of disability arising from Types 1 and 2 diabetes. In the UK every year 5,000 people with diabetes have an amputation - that's 100 people every week. More than one in 10 foot ulcers result in an amputation, meaning people with diabetes are 15 per cent more likely to have an amputation than those without.

It is thought that worldwide around half of all foot ulcers and amputations in people with diabetes could be prevented. With this in mind this report aims to be a comprehensive guide to improving foot care for people with diabetes, looking at screening and prevention, care pathways, multidisciplinary working and workforce and skills.

Screening and Prevention

Due to the absence of reliable symptoms and the high prevalence of asymptomatic disease, foot screening is essential according to NICE (National Institute for Health and Clinical Excellence) guidelines.

NICE: Accurate and programmed surveillance for such risk factors is required if efficient use is to be made of education programmes and the services of those with special expertise in management of individuals with particularly high risk of foot ulceration. (Clinical Guideline 15 Type 1 diabetes in adults)

Full NICE guidelines on foot care are available at the end of this guide.

The Norwich Screening Programme

In Norwich and Central Norfolk a foot and cardiovascular screening programme has been developed alongside mobile retinal screening. The service, which has been running since 1997, visits 86 practices and is staffed by a retinal photographer/driver and Diabetes Screening Care Technicians (DCT).

The DCT is usually from a PAM (Profession Allied to Medicine) or Nurse A/B background, trained to undertake basic process measures of the diabetes annual review – particularly foot care, smoking, blood pressure and cardiovascular disease treatment.

The DCTs undertake a gold standard assessment of:

- foot disease – peripheral vascular disease and peripheral neuropathy
- blood pressure – standardised observation
- CVD – history of coronary artery disease
- CVD treatment – aspirin and statin
- smoking

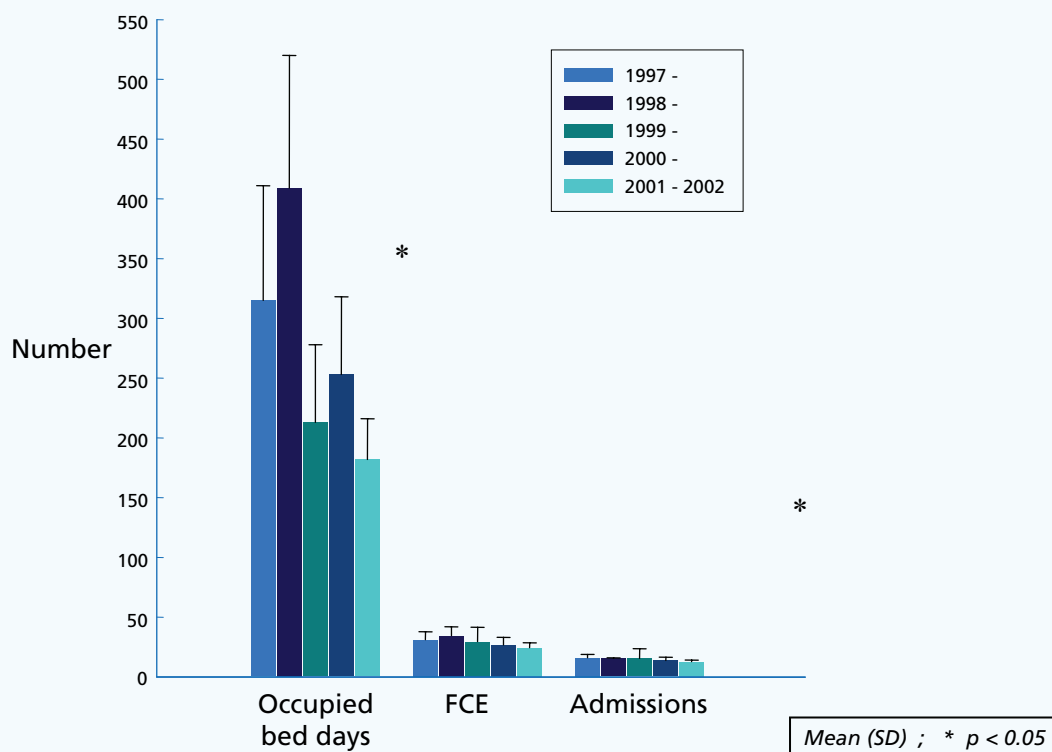
Patients have a one-stop complications assessment. The patients with highest risk neuro - ischaemic feet in primary care are triaged to a dedicated specialist foot clinic for foot care assessment and specialist foot wear, so the service is integrated with both the retinal screening programme and the specialist foot clinic.

Figure 1 shows how diabetes ulceration bed days were reduced between 1997 and 2002. This falling rate is even more striking when taken in context of increasing diabetes numbers and diabetes inpatient activity.



Figure 1

Admissions and bed occupancy with diabetes related foot ulceration by quarter between 1997 and 2002 at Norfolk and Norwich University Hospital



Care Pathways

NSF Standard 11: The NHS will develop, implement and monitor agreed protocols and systems of care to ensure that all people who develop long-term complications of diabetes receive timely, appropriate and effective investigation and treatment to reduce their risk of disability and premature death.

A referral pathway for people with diabetes who have an acute foot problem has been developed in Portsmouth. The pathway can be seen at Figure 2.

Six years ago staff at the Diabetes Centre at the Queen Alexandra Hospital identified that foot care for people with diabetes in the region could be improved. One of the major areas of focus was people with 'at risk' feet. There were concerns that the amputation level was too high and could be reduced if the right pathway was introduced. One of the major issues was that vascular consultants felt they were seeing patients too late.

Foot group

It was identified that patients in the hospital with foot ulcers were often referred to the wrong place, dermatology was one example. So a foot group was set up looking at how access to vascular surgeons could be speeded up and referrals made accurately.



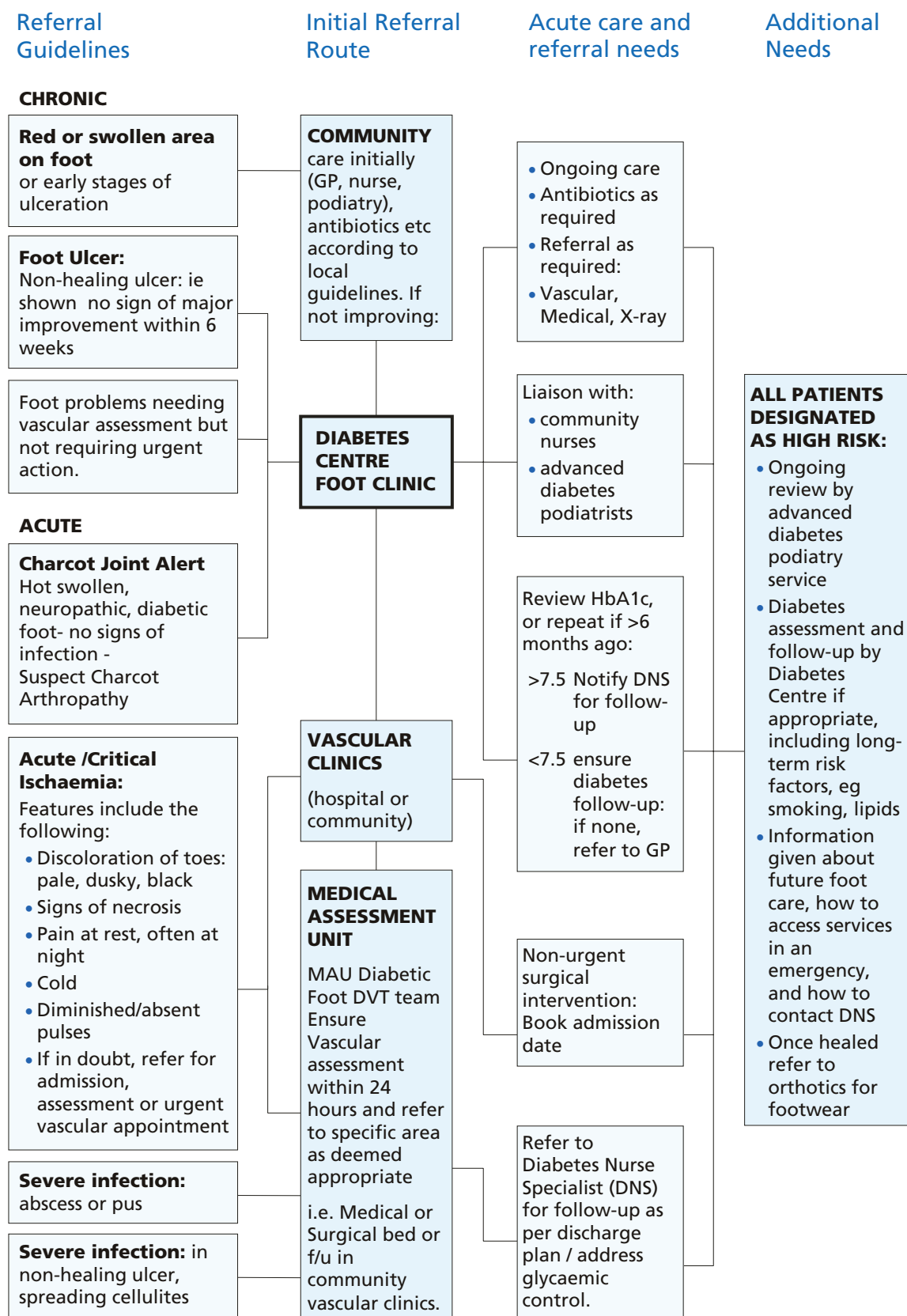
Diabetes Consultant Darryl Meeking: “We decided to set up a foot group to involve all the clinical areas – elderly services, vascular surgery, podiatry, specialist nurses, orthotists and physiotherapists. The vascular surgeon and diabetes team have met regularly ever since - every two to three months.”

The group’s aim was to develop foot care by producing a pathway to manage the condition. Communication was improved between the different specialist teams and a multidisciplinary clinic was created.

The team believes the foot group has fostered awareness in hospital staff and enhanced the priority level for diabetic feet.



Figure 2



Communication and access

Access to the right services has been improved, as has continuity.

Dr Meeking: “Things have improved dramatically. There are much better lines of communication. We identify problems in the meetings.”



Diabetes Clinical Lead Podiatrist Sharon Tuck: “We have access to the surgeons now. We couldn’t get to them before.”

Another important development identified by the team was having a DVT (deep vein thrombosis) nurse specialist working in the Medical Admissions Unit. The nurse is able to identify people with acute ulcerations and refer them correctly.

The pathway



Diabetes specialist nurse Kate Robinson: “People are going through a system which is streamlined. Everybody’s receiving the same treatment and care.

“Practice nurses are more confident about making referrals because they know the system and it’s easier for them. They only have to make one call.”

When it was first introduced the team was amazed at how many patients with foot ulcers were being admitted.

Patient with an infected foot ulcer: “I was surprised at how quickly I was admitted into the hospital and seen by the surgeons.”



DVT nurse specialist Kim Carter: “Patients used to be in medical wards for ages and not seen soon enough. They are referred straight up now, there’s a very clear pathway.”

Multidisciplinary clinic

Dr Meeking: “We knew that it was considered the gold standard to have a multidisciplinary foot clinic.”

Initially the foot group was created because the team didn’t think it could set up a multidisciplinary clinic, but now patients with acute foot problems are seen in a multidisciplinary setting.

The multidisciplinary foot care team that was set up as a result consisted of:

- vascular surgeons
- diabetologists
- a diabetes specialist nurse
- a vascular nurse specialist
- podiatrists
- a diabetes foot health technician
- an orthotist
- a tissue viability nurse

Ms Tuck: “At that level the patients have been through the mill. It’s the heart-sink patients. We just get everyone together and say ‘can we do anything?’ It’s as simple as getting everyone working in the same clinic for half a day.”

A patient who had a toe amputated: “I am happy that everybody has done their bit and discussed everything and been honest with me about things.”

Statistics

When the service was audited after the new pathway had been developed it found that amputation levels had actually increased. However this was because more people were seeing the vascular surgeons sooner and were more likely to be losing toes than losing a foot or a leg further down the line.

Minor amputations, although best avoided, are considered to be a protective measure in order to save the lower limb, maintain patient quality of life and minimise the strain on future community services that a major amputation brings.

Other Projects

A similar project has been successful in Wakefield District and North Kirklees Diabetes Network. More information is available in an Infopoint at http://www.diabetes.nhs.uk/infopoints/foot_care.asp

Multidisciplinary Teams

Multidisciplinary working is endorsed by both Diabetes UK and NICE. This means that all services are promptly available to a patient with a foot problem in a co-ordinated way.

NICE: Effective care involves a partnership between patients and professionals, and all decision making should be shared. (Type 2 diabetes NICE Guidance)

Leicestershire foot services

A multidisciplinary working approach has been adopted in Leicestershire, leading to a more streamlined system of care for people with diabetic foot problems.

Key priorities of timely detection, treatment and education were identified and it was decided a partnership between patients and professionals should be established alongside professionals working together on a multidisciplinary level.

The process:

- The first stage was to introduce a training package to train all staff involved with care of diabetic feet to establish some equity
- A new assessment form was created to compare all data from examinations making it auditable and quantifiable, making it easier to monitor the condition
- A foot care pathway was developed following NICE guidelines.
- Flowcharts for patient care were produced according to risk categories
- PCTs have created their own local access flow charts

Results

A lot of care is now being carried out in primary care, although specialists still have a major role to play.

South Leicestershire chief podiatrist Amin Pabani: "From my point of view I've noticed quite a drop in the number of patients we are seeing. The referrals to us are now much more appropriate. We are discharging patients back to GP care so that enables us to concentrate on ulcer care.

"It's helped us free up time. The referrals have been phenomenal since the training. They are doing in primary care what we trained them to do in foot assessment."

People with diabetes are getting care more appropriate to their needs and the system is now able to be much more responsive to clinical need.

More information on this project can be found on the Reading room page at http://www.diabetes.nhs.uk/Reading_room/other_resources.asp

Workforce and staff skills

NICE: As part of annual review, trained personnel should examine patients' feet to detect risk factors for ulceration. (Type 2 diabetes NICE Guidance)

Several PCTs in England have taken this on board to enhance their services.

Northampton PCT

In Northampton PCT roles of foot care (FCA) and health care assistants (HCA) have been redesigned to improve diabetic foot screening for patients.

FCAs and HCAs completed a training programme and built up a database of patients that have been screened for diabetic foot complications.

The process:

- The chief podiatrist reviewed the Diabetes Competence Framework
- Competences that would be required for staff screening patients for diabetic foot complications were identified
- Two FCAs and one HCA reviewed the performance criteria and completed a skills matrix
- The chief podiatrist used the information provided to produce a needs analysis for each person

- This was used by each member of staff to inform their individual development and performance review
- Training was provided as identified and new skills were implemented as part of clinical practice

As a result of this, FCAs and HCAs were introduced to the skill of foot screening as part of their training. Previously they had not done screening.

Consultant Podiatrist Maria Mousley: "For podiatrists instead of having to re-screen foot care patients they can concentrate on those classed as 'at risk'. The level of care is more appropriate now."

Guildford and Waverley PCT

In 2004 Guildford and Waverley PCT established a plan to improve equity of podiatry services for all patients.

At the time the allocation of podiatrists' time to General Practice diabetes clinics was variable, with some having a podiatrist every week and others not having any at all. There were also concerns that podiatrists were spending valuable time in GP practices assessing 'normal' feet, as they were not able to treat feet there.

So the practice nurses and GPs were taught how to undertake a diabetic foot assessment using a monofilament. Referral criteria were agreed and a podiatry referral form devised.

However, it was felt that it was important to maintain a podiatrist's presence in GP practices to ensure good clinical contact and maintain communication. So the podiatry resource was divided equally between all 29 practices which means that each practice has a podiatrist attend their surgery, even if it is only every three months.

While in the surgery the podiatrist:

- Sees all newly diagnosed patients one to one – an invaluable opportunity to teach them about looking after their feet and give footwear guidance
- Is available to advise on basic foot examination – this was required by some practice staff while the system was getting underway
- See any patients that the practice nurse or GP are unsure whether to refer for treatment

As a result of this reorganisation about six hours were 'put back' into foot treatment that takes place in community podiatry clinics and the acute hospital, leading to reduced waiting times.

NICE Guidance

Links:

<http://www.nice.org.uk/pdf/CG010quickrefguide.pdf>

http://www.nice.org.uk/pdf/CG015_fullguideline_adults_main_section.pdf

Type 2 diabetes

Prevention and management of foot problems

Also to be used for people with Type 1 Diabetes

General management approach

- Effective care involves a partnership between patients and professionals, and all decision making should be shared
- Arrange recall and annual review as part of ongoing care
- As part of annual review, trained personnel should examine patients' feet to detect risk factors for ulceration
- Examination of patients' feet should include:
 - testing of foot sensation using a 10 g monofilament or vibration
 - palpation of foot pulses
 - inspection of any foot deformity and footwear
- Classify foot risk as:
 - at low current risk
 - at increased risk
 - at high risk
 - ulcerated foot

Care of people at low current risk of foot ulcers (normal sensation, palpable pulses)

- Agree a management plan including foot care education with each person

Care of people at increased risk of foot ulcers (neuropathy or absent pulses or other risk factor)

- Arrange regular review, 3–6 monthly, by foot protection team
- At each review:

- inspect patient's feet
- consider need for vascular assessment
- evaluate footwear
- enhance foot care education

NB If patient has had previous foot ulcer or deformity or skin changes manage as high risk (see below).

Care of people at high risk of foot ulcers (neuropathy or absent pulses plus deformity or skin changes or previous ulcer)

- Arrange frequent review (1–3 monthly) by foot protection team
- At each review:
 - inspect patient's feet
 - consider need for vascular assessment
 - evaluate and ensure the appropriate provision of
- intensified foot care education
- specialist footwear and insoles
- skin and nail care
- Ensure special arrangements for those people with disabilities or immobility

Care of people with foot care emergencies and foot ulcers

- Foot care emergency (new ulceration, swelling, discolouration)
 - Refer to multidisciplinary foot care team within 24 hours
- Expect that team, as a minimum, to:
 - investigate and treat vascular insufficiency
 - initiate and supervise wound management
- use dressings and debridement as indicated
- use systemic antibiotic therapy for cellulitis or bone infection as indicated
 - ensure an effective means of distributing foot pressures, including specialist footwear, orthotics and casts
 - try to achieve optimal glucose levels and control of risk factors for cardiovascular disease