A new and unified approach to diabetic foot assessments

Alison Whiteing and Sally Clarke

Introduction

All people with diabetes should have their feet checked regularly to prevent the development of long-term foot pathologies. Although North Derbyshire Community Trust has been providing annual foot assessments for all patients with diabetes registered with the chiropody clinic for some time, shortfalls in the service did not become apparent until audit of the system in 1996. This article, which was one of the runners-up in the 1998 *Innovation Through Collaboration Award*, run by *The Diabetic Foot*, describes how improvements in the recall and assessment system have led to major enhancements in diabetic foot care in North Derbyshire.

North Derbyshire Community NHS Trust Chiropody Department has in place a system for providing annual diabetic foot assessments for all its registered clinic patients. Although this system has been running for some time, it had never been properly audited and its provision was patchy. In 1996 it was decided that the system needed reviewing.

The trust is divided into five localities, and a special interest group was formed with representation from each locality. The inaugural meeting was held in May 1996 and objectives were set.

The special interest group worked with the recommendations of the British Diabetic Association Working Party (1990), the St Vincent Declaration, Edmonds et al (1986) and Boulton and Connor (1988) in mind. All of these emphasised the need for people with diabetes to have their feet checked regularly to prevent the development of long-term foot pathologies, including ulceration and amputation.

Aims of the review

The primary aim of the review was to ensure that the maximum number of people registered with diabetes were seen for annual foot assessment. In order to achieve this, the following objectives were set:

- To determine the total number of people known to have diabetes in North Derbyshire
- To determine the number of people with diabetes registered with the North Derbyshire Chiropody Department
- To close the gap between these two groups.

A further aim was to establish a quality system for annual review which would lead to a consistently high level of assessment.

Results of the review

Numbers of registered patients

The number of patients with diabetes registered on the North Derbyshire Chiropody Department computer system on 16 February 1996 was 3720. However, the Family Health Services Authority did not have any such register of the total number of patients with diabetes in the area. All the local GP practices were therefore contacted and asked whether they would provide a list of all patients with diabetes on their list.

The feedback from this was very good, with 69% of practices responding, but incomplete feedback meant that it was not possible to determine total numbers.

In four localities, over 70% of people with diabetes known to the practices were being seen in the chiropody department. In one locality, however, less than 55% were being seen. Further investigation revealed that the incidence of diabetes in this area was 50% higher than in some of the other localities. This led to a bid for extra funding to meet this need.

The recall system

The existing aim of the chiropody department was to carry out an annual foot assessment for all people with diabetes registered with

ARTICLE POINTS

1 Regular foot checks for people with diabetes are essential if long-term foot pathologies are to be prevented.

2 Audit of a system for providing annual diabetic foot assessment in North Derbyshire highlighted shortfalls in service provision.

3 A special interest group was formed to establish a quality annual review system that would lead to a consistently high level of assessment.

4 Improvements in recall and assessment led to an increase in diabetic referrals to the department.

5 There is now greater equity of services across the localities and a greater proportion of the diabetic population is being accessed.

KEY WORDS

- **Diabetic foot**
- **Annual assessment**
- **Service provision**
- **Audit**

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DEPARTMENT OF FOOT HEALTH ANNUAL DIABETIC ASSESSMENT

Date:

Surname: First name:

DoB: GP:

New patient/follow-up

GENERAL DIABETIC CONDITION

Method of control: Insulin / Oral / Diet Patient states control is: Good / Unstable / Poor

Year of diagnosis:

CHIROPODY CARE

Regular chiropody care: Yes / No

History of infection or ulceration in last 12 months: Yes / No

Site:..... Current status: Healed / Healing / No change / Deteriorating / Amputation

Duration ..... Type: Ischaemic / Neuropathic / Neuro-ischaemic / Other

VASCULAR ASSESSMENT

PULSE	(palp) RIGHT	(Doppler)	(palp) LEFT	(Doppler)	
Posterior tibial					
Dorsalis pedis					
Digital					

Key: Palpable Doppler

✓ present ++ strong & biphasic

- absent + weak & biphasic

+/- monophasic

- absent

Skin: Normal / Cyanotic / Atrophic / Oedematous / Other

Skin temperature: Normal / Cold / Warm

Ischaemic pain: No / Yes, on walking / Yes, rest pain at night

Smoker: Yes/ No Number per day:

Further investigation required: Yes / No

Ischaemic index: Yes / No .....

Referral to vascular consultant: .....

NEUROLOGICAL ASSESSMENT

TEST	RIGHT	LEFT
Vibration		
Pain		
Touch (monofilaments)		
Proprioception		
Other		

Key

A = absent

D = diminished

N = normal

Recent change in sensation: No / Pain / Burning / Tingling / Numbness

Describe .....

Alcohol consumption: None / No. of units per week .....

ORTHOPAEDIC ASSESSMENT

DEFORMITY	RIGHT	LEFT
Hallux valgus		
Hallux limitus/rigidus		
Lesser digital deformity		
Prominent met. heads		
Pes planus		
Pes cavus		
Part foot amputation		
BKA/AKA		
Charcot joint		
Other		
Comment		

Corns and callus: Yes / No Site .....

Nail pathology: Yes / No Describe .....

Special footwear required: Yes / No

EDUCATION

Basic footcare: Yes / No

Footwear: Yes / No

Special precautions for the at-risk foot: Yes / No

Leaflets given: Yes / No

RISK CLASSIFICATION (please circle)

1 = Normal sensation (no deformity)

2 = Normal sensation with deformity

3 = Neuropathy/Ischaemia (without deformity)

4 = Complicated – Neuropathy/Ischaemia with deformity

PLAN OF ACTION

Next diabetic assessment .....months

Next chiropody treatment .....weeks / .....months

For: nail care / corns and callus / ulceration / other .....

Clinician ..... **GP / Practice nurse / Consultant – copy sent Yes / No**

Figure 1. The diabetic assessment card.

the department, recording sensation, circulation and any pathologies. Audit of this service, however, showed there were large variations between localities in meeting this goal.

One locality was meeting the standard and seeing all its patients with diabetes within 12 months of their previous appointment. It did this by booking patients for their next assessment one year hence as part of their assessment. However, it had a 20% non-attendance (DNA) rate, compared with 5% in other areas. In another locality the system for recalling patients had failed almost completely. The average interval between assessments in the other localities was 15 months.

Record keeping and communication

The quality of assessments and the standard of record keeping varied greatly. Staff used different methods of recording results and a variety of assessment tools. A need to review and standardise the system was identified.

We also wanted to improve our communication with other professionals, especially GPs, consultants, patients and their carers/families with regard to the recall system and assessment outcomes.

The first task was to revise our record keeping. After much discussion the diabetic assessment card (*Figure 1*) was developed. This was designed to be filled in yearly and a copy sent to the patient's GP, consultant or practice nurse (or any combination of these), updating all relevant health professionals with information concerning the patient's current foot status.

To ensure that every person with diabetes received an annual screening, improvements were made to our recall system. We decided to give all patients an appointment card stating the month and year when their next screening was due. Should they fail to attend during this month, a further appointment would be sent to them.

The early warning signs of problems that the patient had been told to check for and an emergency contact number (*Table 1*) are given on the reverse of the appointment card. Should treatment be necessary, an appointment is made and the details recorded on the same appointment card.

Risk classification

Patients are given a risk classification depending on the results of the screening (see Risk classification in *Figure 1*). Risk classification is a tool used to determine those most at risk of developing serious foot pathologies, such as ulceration and Charcot deformity. The care provided is dependent on the level of risk (*Table 2*).

All patients receive full education on the care of their feet and are given a diabetic footcare advice leaflet.

Diagnostic tools

Foot assessments are carried out using portable Dopplers, calibrated tuning forks, 10g monofilaments and neurotips. All members of the chiropody team are given regular training updates on the use of these pieces of equipment.

Assessment appointments

Through discussion at our meetings, we decided to aim to provide every patient with diabetes with a full half-hour appointment dedicated to the assessment and education of each individual on the relevance of the

Table 1. Warning signs which indicate that the patient should be seen by the chiropodist or GP within 24 hours

- Swelling
- Redness
- Colour change
- Sign of infection
- Heat
- Anything that is unusual for your feet

Table 2. Risk classification and care provided

Risk score 1 and 2	Low risk	Open self-referral access and annual assessment
Risk score 3	Medium risk	Self-referral or pre-booked clinics if treatment is required, and annual assessment
Risk score 4	High risk	Pre-booked clinics and annual assessment (maximum 3-month return)

PAGE POINTS

1 Localities varied widely in their ability to meet the goal of annual foot assessment for all people with diabetes on the register in their area.

2 The quality of assessments and the standard of record keeping varied greatly between localities.

3 Staff used different methods of recording results and a variety of assessment tools.

4 Communication with other professionals and patients and carers regarding recall and assessment outcomes also needed improvement.

PAGE POINTS

1 The new system has been well received by patients, carers, fellow chiropodists, GPs and consultants.

2 Some GPs have purchased additional time from the department specifically for this service.

3 There are plans to extend the service to domiciliary patients.

4 Dedicated community ulcer management clinics, using as many modalities as possible, are being set up.

5 The quest for excellence in diabetic footcare continues.

tests, the significance of the findings and the importance of good foot health and diabetic control.

Current status

The new system has been well received by all who are involved in it — patients, carers, fellow chiropodists, GPs and consultants —and the increase in referral rates for foot assessment bears testimony to this. Some GPs have purchased additional time from the department specifically for this service.

The new system has now been running for a year and an audit review is due to be undertaken. We are confident that we will be able to show a vast improvement in the effectiveness and promptness of our recall system.

Conclusion

Our new recall and assessment system has greatly improved the standard and quality of care provided to our patients, resulting in an increase in the number of diabetic referrals to the department. This demonstrates that we are accessing a greater proportion of the overall diabetic population than before.

There is now a greater equity of service provision across the localities. This has led to a major enhancement in the diabetic foot care provided by North Derbyshire Community Trust, which will hopefully reduce ulcer and amputation rates.

If all people with diabetes had access to a similar type of service to that provided in North Derbyshire, and we continue to increase the degree of preventive medicine and health education available, then hopefully we will have been instrumental in helping to achieve the targets set in the St Vincent Declaration.

The future

The work in North Derbyshire is far from over and we are constantly striving to improve our services. We are currently looking into expanding our assessment clinics to encompass all domiciliary patients and are striving to ensure that the same emergency access to community services is available to all patients.

We are in the process of setting up a dedicated community ulcer management clinic, using as many modalities as possible, including Scotchcast boots, total contact casting, as recommended by Coleman et al (1984) and Boulton et al (1986), and Aircasts.

The current diabetic footcare advice leaflet is under review and we are seeking expert help in its presentation and content from North Derbyshire Health Authority Health Promotion Unit and from the Centre for Health Information Quality.

The quest for excellence in diabetic footcare continues. ■

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