# Barriers to integration of footcare services

Mary Burden


## Introduction

**Integration is important in the delivery of diabetes services. It is usually taken to mean integration between primary and secondary care, to allow the patient to move 'seamlessly' between these two providers of care, as need dictates. However, when one considers management of the complications of diabetes, such as the diabetic foot, the situation becomes complex, because many different health professionals, working in many different settings under different management systems, are involved. This can create barriers to the provision of an integrated service.**


The footcare team is usually considered to mean 'the multidisciplinary specialist team', which includes one or two individuals from the different disciplines who meet regularly to plan and provide a service, usually within a hospital setting. It is easy to forget the many other professionals involved in identifying problems and providing treatments, etc., who should also be considered part of the team. Knight (1991) acknowledged the complicated interrelationships of members of the team, and he was only looking at the hospital team.

The term *integrate* may be defined in three ways: 'to combine elements into a whole'; 'to render complete'; and 'to complete what is imperfect by the addition of the necessary parts'. Depending on the circumstances in which health professionals find themselves working, one or two, or indeed all three, of these activities need to be undertaken. Certainly in Leicestershire, which has a long history of a foot service (since the 1950s) that has been allowed to grow and develop without the benefit of formal planning, perhaps the most appropriate definition is the third one.

In this article, the author draws on her experience of working within Leicestershire footcare services to illustrate some of the current barriers to providing an integrated service. Readers will have different experiences and different problems and solutions, but by discussing the Leicestershire experience the author aims to help readers identify barriers in their own service.

Audit and measurement of outcomes should be an integral part of the service. The St Vincent targets concern amputation rates (Department of Health/BDA, 1995), but other aspects are important to patients and their families, e.g. whether people can continue to work, continue their hobbies, or go on holiday. Amputation rates provide useful information as a proxy for these 'softer' targets.

It is rather like using mortality to measure coronary heart disease — it does not tell the whole story. It is impossible to have different opinions about whether a person is dead, but people may have differing views about the amount of disability suffered.

## Measuring outcomes: what is available?

It is not always easy to obtain information about the outcomes of a particular foot service. Hospitals sometimes audit their clinic, but this can give a biased picture. What is needed is a population-based audit to ensure that everyone is counted. This is the only way to obtain a true picture of what is happening.

For example, only selected patients may attend the hospital clinic, referral patterns of GPs may vary from area to area, and patients may die before they attend the clinic. We therefore need to know the number of people in the relevant population, the number of those with diabetes, as well as the numbers of people with and without diabetes undergoing amputation.

### ARTICLE POINTS

1 Integration of diabetic footcare services is crucial to the provision of 'seamless' diabetes care.

2 A large number of different health professionals are involved in managing the diabetic foot.

3 This creates barriers to the provision of integrated care.

4 Audit of the service will identify barriers and suggest areas where improvements could be made.

5 Sharing information obtained from audit could help footcare teams achieve the St Vincent targets.


### KEY WORDS

- **Integration**
- **Footcare services**
- **Audit**


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1 Government figures show that there are marked differences in amputation rates throughout the country.

2 The Global Lower Exrtremity Amputation (GLEA) Study (1995) is collecting information on amputations in people with diabetes and those without.

3 This will provide accurate data relating to outcomes and reasons for amputation.

4 Comparison of these data between different areas will enable good practice to be identified.

The reason for amputation is more difficult to establish, although records are available in some services. There are local, national and research figures relating to amputation.

### Local figures

Leicestershire Health Authority covers the same area as the county boundary (i.e. it is co-terminus), which makes it relatively easy to obtain accurate figures. These enable us to compare local services with local outcomes on a population basis.

The figures from the health authority are a primary source of data and can be checked against local sources, such as the disablement services, vascular study units, theatre lists, admissions, foot clinics, chiropodists and GPs. This allows ascertainment to be calculated. For example, are people dying in nursing homes, having refused an amputation? It is important to be certain that the diabetic and non-diabetic populations have been identified, and to accurately estimate how much 'unknown' diabetes there is.

### National figures

Some government figures are available for the UK. The latest figures relate to 1996 and are available from the Common Data Set 1996 (published 1997) (*Figure 1*). As can be seen, there are marked differences throughout the country in the rates of amputation in people with diabetes.

The Department of Health uses these figures to determine what services are needed and the level of service provision. While these figures may not reflect the current situation, they do provide us with information about service delivery in areas with low amputation rates.

***Publisher's note: This image is not available in the online version.***

***Figure 1. Operation rates for lower limb amputation in diabetes patients (all ages) by health authority boundaries, for the year ending 31 March 1995.***

### Research figures

Leicestershire is taking part in the Global Lower Extremity Amputation (GLEA) Study (1995), which is collecting information on amputations in both people with diabetes and those without. This will provide accurate information on outcomes to enable measurement of St Vincent targets, as well as data on the reasons for amputation. These data will enable comparison between different areas and identification of good practice.

The national, local and GLEA figures show that Leicestershire has a low amputation rate and it is important to identify why this is.

## Background to Leicestershire footcare services

To understand the barriers to integration of services it is necessary to understand the existing service from the perspective of the many professionals involved. Leicestershire has a population of 960,000 and is defined as 'mixed urban and rural' (Common Data Set England and Wales, 1996).

There are three acute hospital trusts, one mental health trust and a community trust. Two of the acute hospital trusts have a foot clinic. The community trust runs six community hospitals, which are situated in the surrounding market towns, and also employs the district nurses, chiropodists and dietitians. The diabetes teams are centred in the two acute hospital trusts, but visit the six community hospitals to run diabetes clinics and provide follow-up care. The teams usually go out once or twice a fortnight, depending on the population size.

The reason why Leicestershire has a low rate of amputation may be that it has had a specialist diabetes and foot clinic since the 1950s. Dr Joan Walker, a Leicester physician, set up this service. She published many articles in medical and nursing journals describing her work. In many ways she is a forgotten pioneer in the field of diabetes; her innovations included the first development

of community-based diabetes specialist nurses (DSNs) in the UK.

All areas are bound by the St Vincent target of a '50% reduction in amputation'. In areas with a low amputation rate, this may seem a difficult target to achieve. A good reason for examining the integration of services in Leicestershire is that the facilities for provision of footcare to people with diabetes is poor in this area, and we should be aiming to improve these.

At present, the service is overwhelmed — very often because it is difficult to discharge patients to appropriate follow-up care. The ward manager of one of the diabetes wards reports getting patients when they have developed foot ulcers, resulting in more emergency admissions. Our audit figures indicate that the number of people with active foot ulceration is increasing.

Leicestershire has a large, multidisciplinary footcare team. If all those *involved* in foot care are included, it includes over 400 GPs, four diabetologists, 10 DSNs, 48 chiropodists and 10 chiropody assistants, three orthotists, 377 whole-time equivalents (WTE) district nurses and 173 WTE practice nurses, as well as the many nurses involved in caring for people in residential and nursing homes.

## Local barriers to integration

Before the formation of trusts and the competitive service philosophy, the different agencies (*Table 1*) involved in footcare planned and worked together. This fell apart with competing management systems, and consequently, over time, the footcare service has suffered.

## Effect of trusts on integration of services

The various members of the footcare team are employed by different trusts. For example, the hospital-based chiropodist and podiatrist are employed and managed by the community and have little influence on the provision of facilities within the hospital trust. Other members of the team are managed through the external contracting process (e.g. orthotist and appliances).

Even within the hospital trust, members of the team are managed by different directorates: outpatients, medicine, and surgery. The orthopaedic and vascular surgeons play an important part in footcare, but their involvement is not structured or built into their work patterns. They become involved in response to referrals and interpersonal networks, but are not involved in planning or structuring the multidisciplinary team, although they do, of course, plan and care for individual patients. It is therefore very difficult to move things forward as a team, in terms of sorting out funding and organising the provision of services.

Within the community trust that employs the chiropodists, podiatrists and district nurses, there are several different frameworks of delivery of care. The chiropodists are divided into three divisions, each with a manager. These divisions, however, do not correspond to the organisation of district nurses, who work in 'clusters' around a health centre. This creates difficulty in working together as a team, especially

### PAGE POINTS

1 All areas are bound by the St Vincent target of a 50% reduction in amputation rates.

2 Areas with a low amputation rate, such as Leicestershire, may find this difficult to achieve.

3 Leicestershire's footcare service is currently overwhelmed, and audit indicates that the number of people with active foot ulcers is increasing.

*Publisher's note: This image is not available in the online version.*

***Facilities for provision of footcare in Leicestershire are poor and need improving.***

**Table 1. The Leicestershire footcare team**

| | |
|---|---|
| Total county population | 960,000 |
| City dwellers | 250,000 |
| **Number in team:** | |
| GPs | >400 |
| Diabetologists | 4 |
| Diabetes specialist nurses | 10 |
| Chiropodists | 48 (+10 assistants) |
| Orthotists | 3 |
| District nurses | 377 WTE |
| Practice nurses | 173 WTE |

WTE = whole-time equivalents

**PAGE POINTS**

1 Communication and liaison between hospital and community have become difficult since the formation of trusts.

2 Members of Leicestershire's footcare team were surveyed to investigate their perceptions of the barriers to full integration of the service.

3 It was hoped that . this would identify problems and gaps and point the way to developing a truly integrated team.

identifying who does what and when. Communication and liaison between hospital and community is difficult.

There is little integration of the different disciplines in the community (nursing, chiropody and tissue viability) into the diabetic footcare team. This means, in effect, that the community trust does not involve the hospital teams in the planning and delivery of care and, similarly, the hospital trusts do not involve the community trust.

A study was therefore undertaken among the multidisciplinary team members to investigate their perceptions of the barriers to full integration of the footcare service.

## The study

### Rationale

It would be useful to collect the different team members' experiences of the foot care service and draw on these experiences to identify problems and gaps, with a view to developing an integrated team.

### Methods

Members of the multidisciplinary team were asked if they were willing to participate, and 15 were selected to take part in the study to ensure that all disciplines were represented. A semi-structured questionnaire ensured that the same topics were covered with all participants. The type of questions and the topics covered are summarized below:

- Time spent by team members on diabetes care
- Whether participants considered existing services to be integrated
- Whether services delivered an equitable quality of care
- How patients accessed care
- Whether priority was given to prevention of diabetic foot disease
- Perceptions of barriers to integration, with suggestions of possible solutions.

### Results

Fifteen team members took part in the study. Their professions are listed in *Table 2,* together with their own estimated involvement in diabetes care (shown in brackets). This varied from occasional meetings to full time. When asked if they considered services to be integrated, 11 of the 15 said No, 1 said Yes, 3 didn't know

**Table 2. Study participants (n = 15) and their own estimated involvement in diabetes care**

| Nurses | | Chiropodist | | Medical | |
|---|---|---|---|---|---|
| Plaster nurse | 1 (50%) | Hospital based | 1 (50%) | Diabetologist | 2 (50–60%) |
| Ward manager | 1 (75%) | Community | | GPs | 2 (1day/week) |
| Practice nurse | 1 (4 h/week) | manager | 1 (1/3) | Public health | |
| District nurse | 2 (10–20%) | Orthotist | 1 (2/3 footwear, 1/3 diabetes) | consultant | 1 (Secretary, Local Diabetes Service Advisory Group) |
| DSN | 1 (full time) | | | | |
| Tissue viability nurse | 1 (<1h/week) | | | | |

**Table 3. Responses to question: Are existing services integrated?**

| Yes | No | Don't know |
|---|---|---|
| GP | *Plaster nurse | Tissue viability nurse |
| | Ward manager | District nurses |
| | Practice nurse | |
| | Diabetologists | |
| | GP | |
| | Public health consultant | |
| | Chiropodists | |
| | *Orthotist | |
| | Diabetes specialist nurses | |
| **Total 1** | **Total 11** | **Total 3** |

* Yes, within the hospital team

(*Table 3*). Some reasons given for poor integration included:

- No clear idea how the present system works
- A community/hospital split
- A large service
- Services are only geared up to 'fire-fighting,' i.e. when ulcers present
- A lack of communication between key members of the team, e.g. district nurses say they have no information about where and when chiropody clinics are held.

When asked whether they felt that existing services delivered an equitable quality of care, there was a more mixed response (*Table 4*). When reasons for the answers were explored, these included:

- Some were aware of missing patients
- Geographical problems, with a rural/urban divide
- The service was overloaded
- The service needed to be more structured
- Not everyone knew about the service or how to access it
- One had no personal experience so did not know
- Patients do well when 'in the system'.

When the team were asked what priority was given to prevention, eight said insufficient, but seven thought sufficient priority was given (*Table 5*). Comments included the following:

- There is no single agreed footcare guideline regarding prevention: several are in operation
- Conflicting information is given to both patients and other health professionals
- There is a lack of communication between the health professionals
- An agreed definition of the 'foot at risk' is needed so that appropriate targeting can be given to patients at different levels of risk
- A lack of time limits prevention advice being given; specifically, not enough patient education material is available in nursing and residential homes; some patients get too many preventive measures where others get none
- There is a lack of communication about which prevention activities other health professionals are undertaking.

Finally, the study group were asked how patients access care (*Table 6*). A summary of the difficulties as perceived by the team are as follows:

- Lines of communication are difficult
- There is no joint planning
- The orthotic contract needs to cover the whole district
- Liaison is difficult with such a large team
- The size of the whole team is a problem
- The management structure, with different sections of the team in different trusts and directorates, makes it difficult to move things forward
- Lack of an agreed wound dressing policy for the diabetic foot, and the use of inappropriate tissue viability policies.

### Possible solutions

Possible solutions to some of the barriers to integration were suggested, including:

- Advertise the service more, especially to GPs
- Have an agreed structure with uniform policies
- Implement common documentation between the different disciplines
- Improve liaison and communication between disciplines

### PAGE POINTS

1 Only one of 15 team members studied considered existing services to be integrated.

2 Reasons given for poor integration included 'no clear idea' of how the system worked and a community/hospital split.

3 Just over half of the participants thought that existing services delivered equitable care.

4 Just over half thought that insufficient priority was given to prevention of diabetic foot disease.

**Table 4. Responses to question: Do existing services deliver an equitable quality of care?**

| Yes | No | Don't know |
|---|---|---|
| Orthotist | Plaster nurse | GP |
| Chiropodists — not totally | Diabetologist | Public health consultant |
| Diabetologist | Ward manager | |
| GP | District nurse | |
| Practice nurse | Diabetes specialist nurse | |
| District nurse | | |
| Tissue viability nurse | | |
| **Total 8** | **Total 5** | **Total 2** |

**Table 5. Responses to question: Is prevention given sufficient priority?**

| Yes | No |
|---|---|
| Orthotist | Chiropodists (2) |
| GP (2) | Plaster nurse |
| Diabetologists | Public health consultant |
| District nurse (2) | Diabetologist |
| Practice nurse | Ward manager |
| | Tissue viability nurse |
| | Diabetes specialist nurse |
| **Total 7** | **Total 8** |

**Table 6. Responses to question: How do you think patients access foot care?**

| Orthotists and chiropodists | Medical | Nurses |
|---|---|---|
| GP and consultant referral | Self-referral | Chiropodist form |
| Hospital chiropody service | Chiropody service | GP |
| Foot review clinic | District nurse | District nurses |
| | Vascular surgeons | Phoning ward or foot clinic |
| | GP | Self-referral |
| | Plaster nurse (for established patients) | |

- The new diabetes register should help with communication and common documentation
- Provide structured team training that acknowledges the fast staff turnover rate of a large team.

### Conclusions of the study

One limitation of this study was that only a small proportion of the team was represented in the study group. Participants were not randomised, but were selected to ensure that the views of the various disciplines were represented. Participants were encouraged to discuss the service with colleagues before taking part in the study. This helped to identify as many barriers to integration as possible.

The results presented here are a summary of the responses of the study group. The time spent on diabetes care varied widely between the disciplines, but overall it represented a large cost in terms of team members' time. Some services seemed to be duplicated with overlap of services. The participants identified several problems with the existing service and felt that it would be possible to move towards a more integrated service.

There was concern that the use of a more structured framework would result in the service losing its flexibility, which all agreed was its strength. This flexibility included the ability to contact any member of the specialist hospital team and arrange for a patient to be seen urgently. Another strength was the self-referral mechanism. It was felt that the clinical diabetes register would make audit easier.

The study group felt that the main barriers to integration of footcare services, which should be tackled first, were lack of common documentation and communication.

## Discussion

Integration of diabetic footcare services is known to be important, and the education of patients and healthcare professionals has been shown to reduce the rate of major amputations (Edmonds et al, 1986). However, in some areas it is difficult to achieve integration of all the services focusing on the diabetic foot. We need to identify and examine local barriers to providing integrated care and, when changes are made, to audit the service to determine whether improvements have occurred.

At present, the only reliable outcome measurement is amputation rate. By auditing our service we should be able to ascertain whether the St Vincent target of a 50% reduction in lower limb amputations is being achieved in our own area. Furthermore, by sharing information we are able to learn from each other as we move closer to these targets.

This study shows that, even in areas with low amputation rates, it is possible to make improvements that are likely to reduce amputation rates further, with consequent benefits for people with diabetes, their families and society in general. ■

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### PAGE POINTS

1 Overall, the team spent a considerable amount of time on diabetes care, although the time spent by different disciplines varied widely.

2 There was evidence of duplication and overlap of services.

3 Participants thought that a more structured framework might result in loss of flexibility.

4 The ability to contact any member of the hospital team to arrange for a patient to be seen urgently was felt to be the service's strength.

5 The main barriers to integration were felt to be lack of common documentation and lack of communication.