Cost saving and improved glycaemic control in an integrated diabetes service

Helen Hollern, David Simmons

Integrating services for people with diabetes in the East Cambridgeshire and Fenland area of Cambridgeshire Community Services NHS Trust was identified as important in 2007. By 2009, funding had been granted for a pilot project, and analysis of the service after 1 year has shown a total cost saving of £125 925. This article describes how different organisations in the local area are working together in an integrated way to provide the best possible diabetes care at the best possible time in the best possible place by the most appropriate healthcare professional.

The numbers of people with diabetes in East Cambridgeshire and Fenland (ECF) in 2008/09 was 7403, and with no major hospital within the area, referrals went to five secondary care units at Cambridge University Hospitals NHS Foundation Trust, (CUHFT: Addenbrookes) in Cambridge, Hinchingbrooke in Huntingdon, Peterborough District Hospital in Peterborough, Queen Elizabeth Hospital in Kings Lynn and to a lesser extent West Suffolk Hospital in Bury St Edmunds.

For many years, there were very busy teams of healthcare professionals working either in secondary care or primary care, all providing advice and care to people with diabetes in the area. ECF is a very rural area of Cambridgeshire with poor public transport links and there was little communication between the different teams other than at general conferences.

There was little continuity of care between these organisations or the primary care team. The ECF area had a small nurse-led specialist team in place. A new consultant diabetologist started working at CUHFT hospital in 2007 and was keen to forge links between the hospital and the community so a meeting was arranged with the specialist community team to discuss how to achieve this. From this initial meeting it was clear that everyone in the group shared the same expectations of care for people with diabetes and that an integrated model of care would, most importantly, improve outcomes but would also lead to the breaking down of barriers between staff from different organisations. That same afternoon, the practicalities of providing an ideal service were discussed as well as what outcomes could be expected.

Staff requirements were established and the cost of rolling out the service was estimated at

Article points

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2. The outcomes were looked at in detail and the authors were astonished at the results they had begun to achieve.
3. What has been key to this project is the inter-working within the different specialties of the integrated team and of the inter-working between the different organisations.

Key words
- Care closer to home
- Cost savings
- Pilot project

Authors' details can be found at the end of the article.

Page points

1. Before the initial meetings with the commissioners had started, a joint diabetes clinic was established in one of the local community hospitals.
2. Every person at this clinic is offered an evaluation form to complete following the clinic appointment.
3. This system received good feedback from people with diabetes particularly because, if they need follow-up appointments at home or in their GP practice, they are seen by the same nurse, dietitian or technician that they saw in the hospital clinic.
4. It was agreed that the new integrated team would be based together in one office to improve communications between the healthcare professionals.

£250 000. This figure was based on staff pay and £4000 per whole time equivalent (WTE) was included for travel expenses and mobile phone costs. The plan was also discussed with the commissioners at CUHFT, who offered to part fund (£150 000) the initiative as part of an admissions avoidance programme, and suggested to the PCT that they may wish to fund the rest of the £250 000. However, the total amount of £250 000 was provided by Cambridgeshire PCT to be used for a pilot project for 12 months.

Several meetings with the commissioners followed and an agreement was made to evaluate the service on a regular basis and produce an end of year report.

Local specialist clinics

Before the initial meetings with the commissioners had started, a joint diabetes clinic was established in one of the local community hospitals. This clinic was for ECF residents, usually seen in the diabetes clinic at CUHFT. The people were selected by the community consultant diabetologist, confirmed by the other diabetes consultants, and were approached to ask if they would prefer to see a diabetes specialist from CUHFT close to their home. People with diabetes had regularly reported that they were seen by a different doctor, nurse or dietitian at their hospital appointment and felt that there was no continuity of care. The advantage of the clinic now being run in the Princess of Wales Community Hospital in Ely is that the person always sees either the same consultant or specialist registrar, one of two diabetes specialist nurses (DSNs), one of two specialist dietitians and one of two care technicians.

This clinic was started in April 2008 with no funding agreed. Funding was then secured for the consultant from April 2009 but unfortunately there was no funding available for the registrar. The registrar has continued to support the two clinics per month but it is uncertain as to how long this will continue.

Every person at this clinic is offered an evaluation form to complete following the clinic appointment. The evaluations have been very positive with good feedback regarding the local venue, free car park, and the fact that they see the same small team every time they come for an appointment. This system received good feedback from people with diabetes particularly because, if they need follow-up appointments at home or in their GP practice, they are seen by the same nurse, dietitian or technician that they saw in the hospital clinic. This is then useful for their next clinic appointment, as the team is able to give feedback on their progress to date. Rarely, some people need to be referred to CUHFT for renal, obesity, antenatal or lipid clinics or for off-licence use of medications.

The new budget and contract started from April 2009 so new members of the team were immediately interviewed and appointed. The starting dates of these appointments were mostly throughout the summer of 2009 with the last post being filled in October 2009.

The multidisciplinary integrated care team

The new team is as follows: 3.4 WTE DSNs, 1.0 WTE specialist podiatrist, 1.0 WTE specialist dietitian, 2.0 WTE care technicians, 0.3 WTE consultant diabetologist, 0.72 WTE PA/admin support.

It was agreed that the new integrated team would be based together in one office to improve communications between the healthcare professionals. The DSN team leader would be the day-to-day manager, with the specialist dietitian and specialist podiatrist getting their own clinical governance from their individual professional leads at both Cambridgeshire Community Services NHS Trust (CCSNHST) and CUHFT.

There was some anxiety about the fact that the dietitian or podiatrist may miss out on education or information from their own specialties, however a process has been set up to ensure that clinical governance is being managed. The podiatrist works in the specialist foot clinic at CUHFT every month and also attends the team leaders meetings with the CCSNHST podiatry department. She has also been included in any training days that they have. The dietitian attends the CUHFT diabetes dietetic team meetings every month, and also meets with the CCSNHST dietetic team on a regular basis. The specialist nurse team leader of CCSNHST and CUHFT now meet every 6 weeks to ensure that the there is continuity for

patient discharges and to develop the integrated way of working between the teams.

Virtual clinics

A virtual clinic consists of the GP practice staff and specialist team meeting to discuss individuals and make suggestions to possible changes in treatment or lifestyle. It enables the team to advise on many people without actually seeing them. Virtual clinics were started in the GP practices which provided an opportunity to discuss patient notes and suggest treatment changes. These were as part of the locally enhanced service (LES), which incentivised practices to engage with the team.

One or more members of the specialist team attended each virtual clinic. The attendance from the surgeries included GPs, practice nurses and district nurses, although rarely it may have been just one member of GP staff attending. The people with diabetes who were discussed were primarily those with HbA_{1c} levels >9% (>75 mmol/mol), but since the service has been successful in greatly reducing the number of people with an HbA_{1c} >9% (>75 mmol/mol) this will soon be changed to HbA_{1c} levels >8% (>64 mmol/mol). One of the benefits of these meetings is that they provide an opportunity for teaching and learning and the staff have reported increased confidence and a positive impact on their practice.

In the past, referrals of people newly diagnosed with type 2 diabetes to education sessions had been sporadic, but these referrals and attendance has dramatically increased since regular meetings between the specialist community team and staff within the GP surgeries were initiated.

Education

Specialist podiatrist

The specialist podiatrist has been delivering teaching sessions in the GP practices, ensuring that the foot checks conducted at the practice annual review are all up to the same standard, and that the staff have a better understanding of when to make specialist referrals. Part of the work includes a podiatry clinic within many of the practices, home visiting, and the operation of a step-down/step-up service from hospital clinics, a service that allows faster access to the community team after discharge from hospital and vice versa. This often allows for earlier discharge or less frequent hospital visits. Earlier referral and earlier review by a diabetes specialist podiatrist has meant that acute admission to hospital has been reduced and the number of major foot complications has been reduced considerably. The links developed between the specialist foot clinics in each of the local hospitals and with the CCSNHST podiatry department has meant that the people receive seamless care. Preventing amputations and hospital admissions for diabetes foot-related problems is a major cost saving.

Specialist dietitian

The specialist dietitian supports the people with type 1 or type 2 diabetes either in the community hospitals, the GP surgeries or in the individuals' homes. She is a DAFNE advisor. For the people with type 2 diabetes on insulin, she has started doing carbohydrate counting workshops, which helps to promote self-care. These sessions are also offered to other healthcare professionals either for any member of the multidisciplinary teams involved or for the practice nurses and GPs and are adapted to cover what those attending want to know.

Care, nursing or residential homes

The whole team has been involved in educating staff from the care homes locally. This education involves an overview of diabetes management including information for the cooks who prepare the residents' meals. At these education sessions each individual's medications and glucose results are reviewed and, where appropriate, any changes are discussed with them.

Barriers

One of the specialist nurses has been working with the practices, educating and supporting them, using a barriers tools framework developed by the diabetes consultant (Simmons et al, 1998). A questionnaire, given to people either before or at the time of their annual review, enables the healthcare professionals to understand more about why the person with diabetes is not achieving the best possible outcomes for their health in relation to their condition. An information folder has

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been put together, with an array of information and pathways, to help all involved to understand what barriers there are, and how to remove these barriers to facilitate better outcomes. This folder is also provided electronically to the practice nurses involved in diabetes care within the GP practices. A newsletter is sent every month with updates and information on diabetes-related issues locally.

Information technology (IT)

An IT working party has been set up between organisations to try to develop an IT system that would work for both secondary and primary care. This is to enable all healthcare professionals, from whichever organisation they work for, to have access to patient-related diabetes information, which will eventually allow seamless diabetes care and safe pathways, with multiprofessional involvement. This is a work in progress.

Outcomes of the pilot

The commissioners wanted an evaluation completed early in 2010. This meant that, realistically, the team only had 6 months worth of data to look at as the new team members needed training on starting and this takes time. Also following training was a period of meeting and engaging with the GP surgeries. Outcomes following changes in diabetes care are rarely instant and much greater improvements were anticipated after a second year. The authors hoped that the outcomes after 6 months would further secure funding for a second year with an eventual sign-off of a permanent service. The outcomes were looked at in detail and the authors were astonished at the results they had begun to achieve (*Box 1*).

Box 1. Clinical outcomes (Simmons and Hollern, 2010).

- 521 people were seen by the service.
- 1362 home visits were done (for people who could not attend the surgery for various reasons).
- 648 clinic appointments took place either in GP surgeries or community hospitals.
- Mean weight changed from 95.6 to 90.6 kg (a decrease of 5 kg).
- Mean HbA_{1c} level changed from 9.7 to 8.4% (83 to 68 mmol/mol), a decrease of 1.3% (15 mmol/mol).
- 42 people had changes of medications resulting in a saving of £47 352.91.
- 17 people were thought to have avoided admission due to hypoglycaemia because of improvements in medication and management of diabetes.
- Four people were taught to self-manage insulin, saving the cost of district nurse visits (a cost saving of £9392 plus mileage costs per year, based on the cost of a 30-minute twice-daily visit).
- Specialist podiatry intervention was estimated to have saved £64 500 over the 6-month period.
- Across the 59 people with diabetes, it is estimated that at least £125 925 has been saved from changes in medication and savings on admission costs.

Inpatient tariff paid per month for the cohort

Following this, the commissioners decided to conduct their own evaluation of the team. The secondary care costs of each of the patients seen by the team for the 2 years prior to the pilot project and for the year of the project were evaluated. A downward trend in costs to secondary care was apparent. As this may have been a spurious result, data were also compared with people with diabetes who were not seen by the integrated team in the ECF area and across the rest of Cambridgeshire. A second year of the pilot project from April 2010 to March 2011 has been signed off.

Conclusion

After much discussion with the involved organisations, it was agreed by the project management office (a group of senior staff from all organisations tasked with looking at ways of improving cost-effectiveness in many long-term conditions, of which diabetes was one), that they fully supported the pilot project and agreed to grant the ECF team a permanent contract. This group of people also agreed to the model being replicated across the rest of the CCSNHST area. However, a very late intervention has recommended that the pilot project model should now be discussed with the emerging GP cluster groups in the area, to ensure the benefits are available county-wide. The financial outcomes are continuing to show larger savings than initially anticipated.

What has been key to this project is the inter-working within the different specialties of the integrated team and of the inter-working between the different organisations. This has been down largely to the personalities of the teams involved and their absolute commitment to the improvement of care to people with diabetes living in the Cambridgeshire area. ■