

A model to bring specialist diabetes services to primary care

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Article points

1. The practice team identified a need to improve the quality of diabetes care, focusing particularly on “hard-to-reach” individuals who had previously found it difficult to engage with conventional models of care delivered at the practice or in secondary care clinics.
2. A diabetes specialist nurse and specialist GP in diabetes joined the practice team to undertake a project to evaluate the effects of providing specialist diabetes care, traditionally seen in secondary care, within the practice.
3. All risk factors were significantly improved in the individuals with diabetes under the care of the specialist team; this model demonstrates that improved outcomes can be achieved in primary care.

Key words

- Care pathway redesign
- Improved outcomes
- Specialist diabetes teams

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

Risk reduction is not optimised in many people with diabetes; the current “one size fits all” approach to diabetes services frustrates both individuals with diabetes and healthcare professionals. This article outlines the integration of a specialist GP and diabetes specialist nurse into the practice team to intensively focus on risk factor management in a “hard-to-reach” cohort; its success has facilitated the redesign of the care pathway, enabling individuals with diabetes to receive the right care by an appropriately skilled named nurse and GP in a timely manner within the practice setting. This transferable, novel model for delivering high-quality, patient-centred care demonstrates that improved outcomes for individuals with complex needs can be achieved in primary care, and with considerable cost savings.

It is well recognised that cardiovascular risk management and good glycaemic control are central to diabetes care, and that improvements in HbA_{1c}, blood pressure and lipid levels significantly reduce the risk of long-term, diabetes-related complications and premature mortality (UK Prospective Diabetes Study [UKPDS] Group, 1998; Stratton et al, 2000; Gaede et al, 2003).

However, multifactorial risk reduction is frequently not optimised in many people with diabetes (NHS Information Centre, 2011) for a number of reasons, including clinical inertia and a tendency towards prioritising intensifying treatments for hyperglycaemia rather than for hypertension or hyperlipidaemia (Voorham et al, 2008; Zafar et al, 2010). With the drive to move diabetes care closer to home (Department of Health [DH], 2006), doubts have been expressed as to whether all primary healthcare teams have

the appropriate skills and knowledge to deliver a higher level of care traditionally provided by secondary care (James et al, 2011). This places demands on the specialist team to be more flexible and dynamic in how and where they support primary healthcare teams, ensuring that the right person provides the right care at the right time and in the right place (Goenka et al, 2011).

Poor understanding of and concordance with treatment plans on the part of the individual with diabetes also significantly impacts on optimising diabetes care (Osterberg and Blaschke, 2005). Education, involving individuals with diabetes in care planning and decision-making as an integral part of their care, has been shown to lead to better clinical outcomes and improved self-care (Silva, 2011); these are clearly identified as key objectives in the NHS White Paper, *Equity and Excellence: Liberating the NHS* (DH, 2010a).

Page points

1. An audit of the practice's diabetes population revealed that 10% of individuals with diabetes had three or more modifiable risk factors above currently recommended targets.
2. It was evident from individuals' stories that the "one size fits all" approach to conventional diabetes care often led to poor communication, unmet needs and poor compliance with treatments, frustrating both individuals with diabetes and healthcare professionals in the practice.
3. A diabetes specialist nurse and specialist GP in diabetes joined the practice team to undertake a project to evaluate the effects of providing specialist diabetes care, traditionally seen in secondary care, within the practice.

The advent of commissioning by GP consortia provides the opportunity to redesign high-quality services by looking at new ways of working that meet the needs of those with diabetes and improves the "patient experience" (DH, 2010b).

Identifying a need for change

The authors' practice population of 12 500 patients provides diabetes care for approximately 530 people in Cheadle Hulme, Stockport. With a prevalence of over 4%, on average there is one new diagnosis of diabetes each week. Despite already achieving full Quality and Outcomes Framework points for diabetes care, an audit of the practice's diabetes population revealed that 10% of individuals with diabetes had three or more modifiable risk factors above currently recommended targets (HbA_{1c}<7.5% (58 mmol/mol); blood pressure <130/80 mmHg; total cholesterol <4 mmol/L and LDL-cholesterol <2 mmol/L; NICE, 2009). Typically, these individuals had previously found it difficult to engage with conventional models of care delivered at the practice or in secondary care clinics.

There was a strong desire among the practice team to improve the quality of diabetes care provided for all individuals with diabetes, focusing particularly on this "hard-to-reach" cohort of individuals. It was evident from individuals' stories that the "one size fits all" approach to conventional diabetes care often led to poor communication, unmet needs and poor compliance with treatments, frustrating both individuals with diabetes and healthcare professionals in the practice. The practice team was eager to address this by developing innovative ways of working to provide high-quality specialist care closer to home.

This provided the practice team with the opportunity to review the current provision of diabetes care within the practice, including the care pathway and structure of the diabetes team. At the time, individuals with diabetes were offered both a comprehensive annual review and a 6-month follow-up review, which was predominantly task-oriented and focused on the healthcare professionals' agenda.

Annual reviews were conducted by the practice nurses with the exception of individuals on insulin treatment, who saw a dedicated nurse practitioner; individuals were seen by either nurse for subsequent reviews.

Redesigning the service

In February 2009 a diabetes specialist nurse (DSN) who is able to prescribe independently, and a specialist GP in diabetes joined the practice team to undertake a project to evaluate the effects of providing specialist diabetes care, traditionally seen in secondary care, within the practice.

Individuals with diabetes were stratified into cohorts according to their level of risk for developing diabetes-related complications, determined by the number of risk factors outside agreed targets and the complexity of their treatment. Each cohort was then assigned a named nurse whose skills, competency and expertise matched the level of care required to manage that cohort of patients. The named nurse was then responsible for providing the cohort's annual review and continuing care, with support from the individuals' usual GP.

Integrating specialist care into the practice care pathway

Individuals with complex diabetes at high risk of developing diabetes-related complications, who had previously been unable to engage with current systems of care or achieve satisfactory risk factor modification, were allocated to the specialist team.

This initial cohort of 50 individuals was identified as having the highest level of risk according to the following criteria:

- Suboptimal glycaemic control (HbA_{1c}>7.5% [58 mmol/mol]) and any two or more of the following:
- Blood pressure >130/80 mm/Hg.
- Total cholesterol >4 mmol/L and LDL cholesterol >2 mmol/L.
- Established cardiovascular disease (angina, myocardial infarction, peripheral vascular disease or cerebrovascular disease).

- Established microvascular complications (retinopathy, nephropathy or neuropathy).

These individuals attended a 40-minute joint appointment with the DSN and specialist GP, providing a forum to build collaborative relationships and sufficient time for effective communication. Adopting a person-centred approach gave individuals the opportunity to set the agenda for the consultation and promoted joint decision-making, putting them in the driving seat. Partnership-working engaged individuals in developing and negotiating their own personal care plan and setting realistic goals and targets. The use of motivational interviewing strategies facilitated behaviour modification that promoted lifestyle changes and concordance with existing and new treatments. Education was tailored to each person's needs and delivered in a variety of ways to ensure that key messages were understood and provided practical, relevant advice to make informed choices and facilitate self-management. Evidence-based pharmacological interventions were used in accordance with local and national guidelines. Consultations and changes in therapy were documented directly in the individuals' electronic records, and prescriptions issued immediately to ensure that all aspects of the care plan were communicated effectively and implemented promptly.

Follow-up appointments were planned according to the individual's needs and care plan, with the DSN alone or with the DSN and specialist GP together for those with more complex management plans. The use of telephone consultations ensured that those who did not attend for follow-up appointments remained engaged with the service and treatment plans were continued. On average, an individual attended two joint and two single appointments before stepping down to regular care with his or her named nurse.

Participants were offered and encouraged to use services outside the practice that enhanced their treatment, self-management and confidence; these included podiatrists, dietitians, physical exercise schemes, weight management services and "X-PERT" diabetes programmes. Those

individuals requiring expertise outside the scope of the specialist team (e.g. pump therapy, pregnancy, children and adolescents) were referred to the diabetes team in secondary care.

Results

All risk factors were significantly improved in the cohort of 50 patients under the care of the specialist team (Figure 1a, b, c). Additional benefits were noted, including weight loss and a reduction in microalbuminuria.

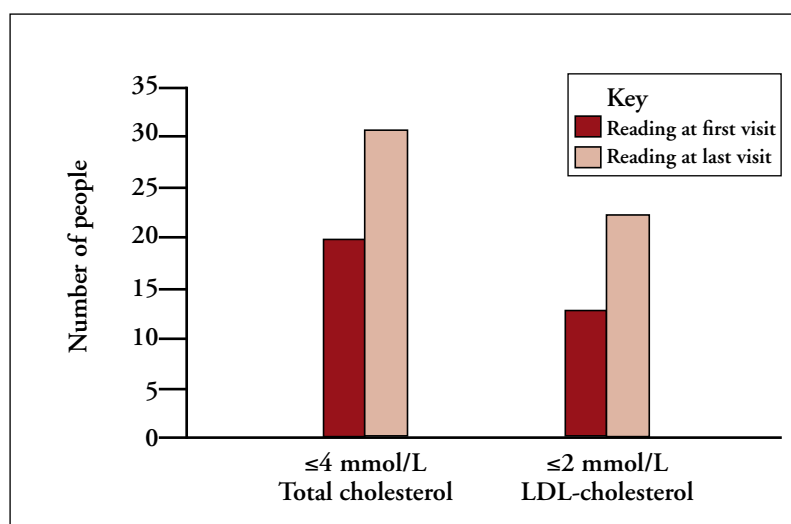


Figure 1a. Improvements in cholesterol seen in the 50 people with diabetes under the care of the specialist team.

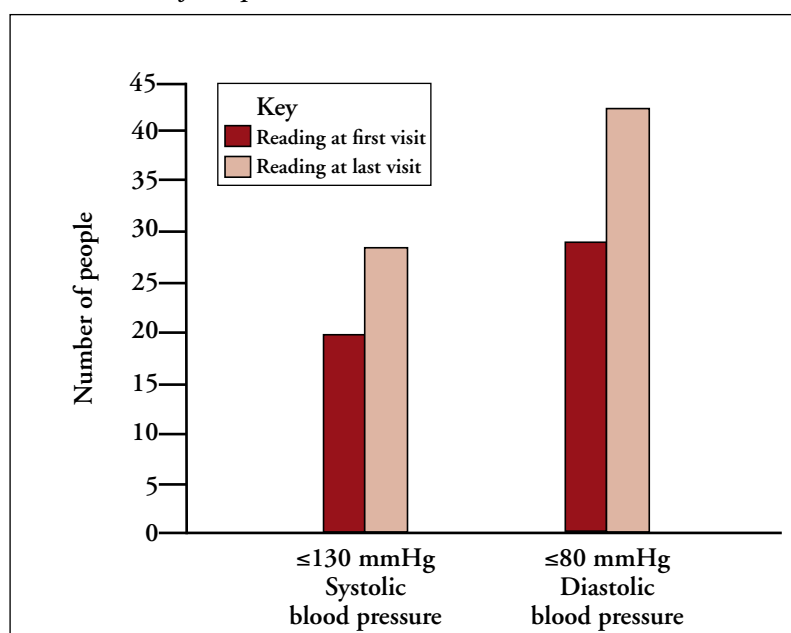


Figure 1b. Improvements in blood pressure seen in the 50 people with diabetes under the care of the specialist team.

The project demonstrated that a higher level of care can be delivered in primary care, meeting the needs of individuals at higher risk of diabetes-related

complications, avoiding inappropriate referrals into secondary care and facilitating discharge from secondary care back to primary care. As a result, all individuals with diabetes in the practice now have easy, prompt access to specialist advice and care that is closer to home.

Redefining the care pathway and practice team has enabled individuals with diabetes to move across levels of care within the practice, appropriate to each individual's needs. For example, should a person's risk factors fall out of target, requiring treatment intensification beyond that provided by the current level of care, that individual steps up to the next level on the care pathway to receive the right care from the right person at the right time. It may be possible for the individual to step down again once personal targets are achieved, if the individual and nurse or doctor agree that it is appropriate.

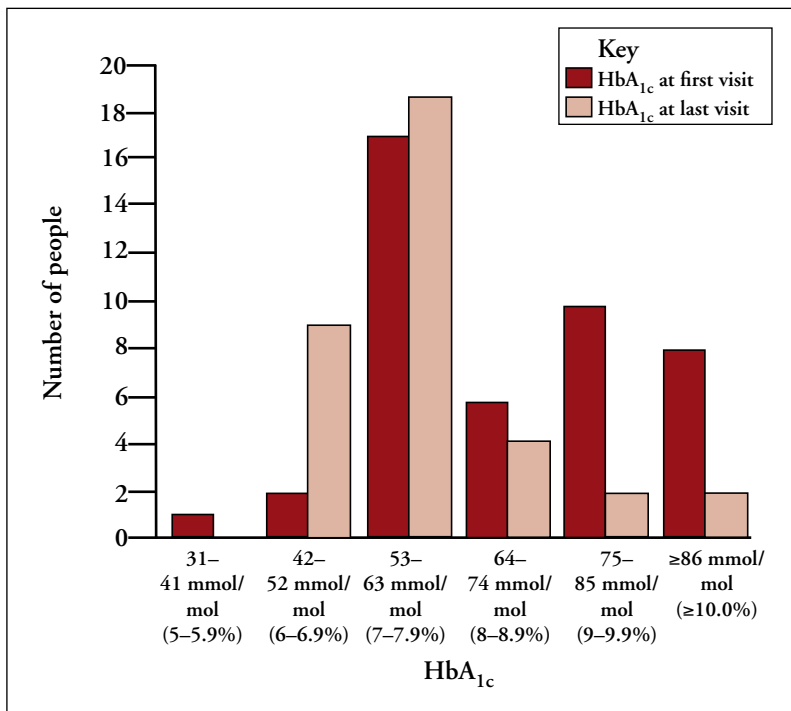


Figure 1c. Improvements in HbA_{1c} seen in the 50 people with diabetes under the care of the specialist team.

Results of feedback

Structured feedback was sought using the services of an independent company (Feedback Matters) to evaluate the project from the perspective of the individuals with diabetes. This revealed high levels of

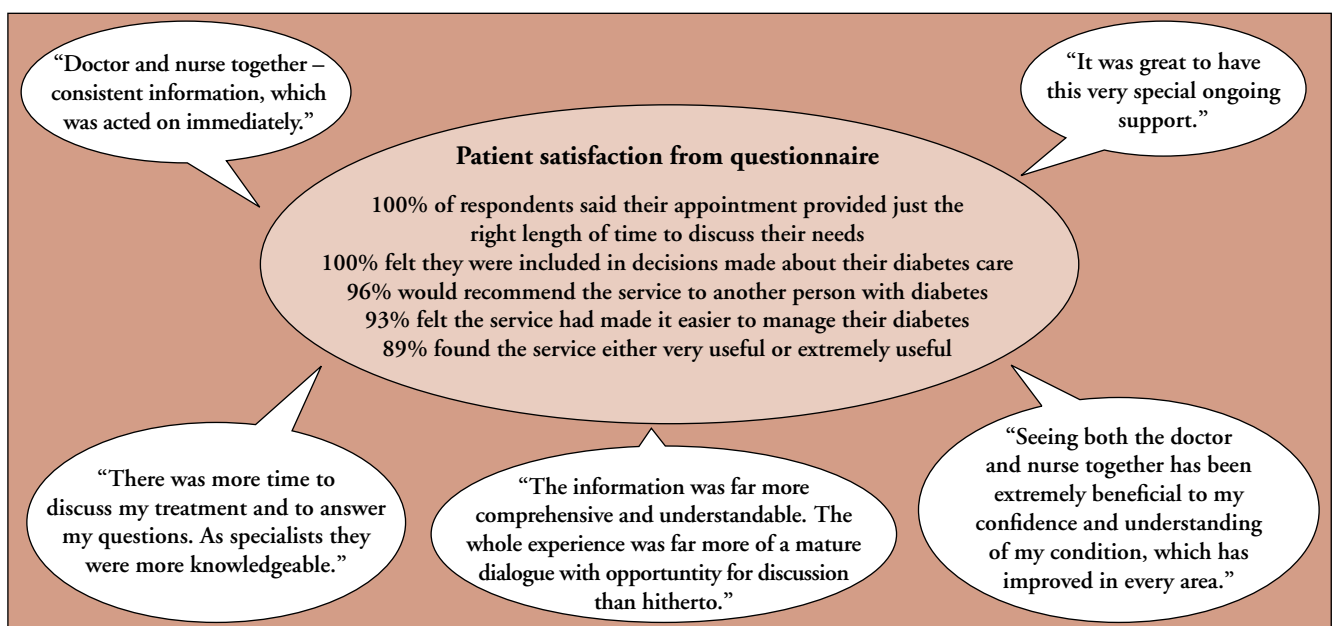


Figure 2. Examples of feedback from individuals with diabetes attending the specialist team.

satisfaction, particularly with consultation time, care close to home and joint consultations (*Figure 2*). Individuals also found the information given was easily understood and they felt included in the decisions made about their care.

As a result of redefining the practice care pathway, even individuals who had not experienced specialist care expressed greater satisfaction for continuity of care and a patient-centred approach.

Frustrations of the pre-existing diabetes service and benefits of the new care pathway are compared in *Table 1*.

Cost-effectiveness

On average an episode of care delivered by the specialist team cost less than half that of equivalent secondary care attendances based on the average of two joint and two single appointments per person.

Re-configuring the pre-existing clinical service to provide each person with a named nurse, individualised care plan and a patient-centred approach resulted in no extra cost over and above that of the previous model of care.

Managing the change

Implementation of the project took place in stages to facilitate the process of change and the success of the project. Leadership was provided by the lead GP, specialist GP and DSN. The plans to introduce a specialist team into the practice were discussed with the local secondary care diabetes team before starting the project in order to gain their support and avoid potential conflict. Regular team meetings took place with clinical and administrative staff to ensure good communication, sharing of ideas and concerns, and collaborative working.

Teaching and mentorship has allowed the practice nurses to develop their skills and knowledge in the management of diabetes, effective consultations and joint care planning. As a result, they feel more confident in moving towards a patient-centred approach to consultations and greater satisfaction with the care they provide for their patients. Easy access to the specialist team means that the practice team are able to discuss problems

Table 1. Comparisons of models of care.

Frustrations of the pre-existing diabetes service	Benefits of the new care pathway
<ul style="list-style-type: none"> ● Lack of knowledge, skills and expertise to manage individuals with complex needs necessitating referral to secondary care 	Multi-risk factor management by the diabetes specialist team within the GP practice
<ul style="list-style-type: none"> ● Task-orientated, healthcare professional-driven care 	Patient-centred care, joint care planning and decision-making
<ul style="list-style-type: none"> ● Poor access for specialist advice. Inconsistency in doctor and DSN seen, and in advice given at secondary care clinics 	Easy access to dedicated diabetes specialist team; 40-minute joint appointment with same specialist GP and DSN
<ul style="list-style-type: none"> ● Duplication of blood and screening tests. Lack of relevant patient information and current medication in clinic 	Use of the GP practice’s computer system by the specialist team means that most current patient information, test results and medication are readily available
<ul style="list-style-type: none"> ● Up to 4-week delay in receiving communication, including prescription changes, from secondary care after consultation 	Patient records are updated at the time of the consultation and prescriptions issued during consultation
<ul style="list-style-type: none"> ● Frequent “do not attends” at secondary care clinics and individuals lost to follow-up. Long waiting times for new and follow-up appointments 	Flexible, proactive follow up of non-attendees. Individuals with diabetes are seen in their own GP practice within 1 week
<ul style="list-style-type: none"> ● Individuals with diabetes rarely discharged from secondary care 	Care provided closer to home. Individuals with diabetes move across levels of care, depending on current needs

Page points

1. Specialist diabetes care can be integrated into primary care, providing high-quality and cost-effective treatment, with a high level of patient satisfaction.
2. Streamlining the journey for the individual with diabetes results in higher efficiency and lower costs to the individual, the practice, and the NHS.

and possible solutions promptly and in a supportive learning environment. Improved communication, joint working and sharing of care among the practice team have strengthened relationships and teamwork. Job satisfaction has increased, and many of the frustrations previously experienced have been reduced.

Conclusions

The use of an appropriate skill mix within the primary care diabetes team provides high-quality, cost-effective treatment, with consistency of care for individuals with diabetes; this facilitates team building, improving job satisfaction for the staff involved. Specialist diabetes care can be integrated into primary care, avoiding unnecessary secondary care clinic attendances, fragmentation of care and inconsistency in advice given. Furthermore, it appears that “hard-to-reach” individuals, who have previously failed to engage in the care of their diabetes, are more likely to do so if the specialist service is provided within their own GP practice. Joint consultations, care planning and decision-making are highly desirable elements of delivering diabetes care for the individual with diabetes and healthcare professional alike.

This transferable, novel model for delivering personalised, complex care demonstrates that improved outcomes can be achieved in primary care. Streamlining the journey for the individual with diabetes results in higher efficiency and lower costs to the individual, the practice and the NHS. ■

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Department of Health (2006) *Our Health, Our Care, Our Say: A New Direction for Community Services*. DH, London

Department of Health (2010a) *Equity and Excellence: Liberating the NHS*. DH, London

Department of Health (2010b) *Liberating the NHS: Commissioning for Patients*. DH, London

Gaede P, Vedel P, Larsen N et al (2003) Multifactorial intervention and cardiovascular disease in patients with type 2 diabetes. *N Engl J Med* **348**: 383–93

Goenka N, Turnert B, Vohra J on behalf of the Diabetes UK Task and Finish Group (2011) Commissioning specialist diabetes services for adults with diabetes: summary of a Diabetes UK Task and Finish Group report. *Diabetic Med* **28**: 1494–500

James J, Vanterpool G, Hicks D et al (2011) NHS reforms: White Paper response from national diabetes nursing groups. *Journal of Diabetes Nursing* **15**: 15–9

NHS Information Centre (2011) *National Diabetes Audit Executive Summary 2009–2010*. NHS Information Centre, Leeds

NICE (2009) *Type 2 Diabetes – Newer Agents (partial update of CG66) (CG87)*. NICE, London. Available at: www.nice.org.uk/cg87 (accessed 09.08.12)

Osterberg L, Blaschke T (2005) Adherence to medication. *N Engl J Med* **353**: 487–97

Silva S (2011) Year of care reports. *Diabetes Update* Summer 2011, 42–3

Stratton IM, Adler AL, Neil HA et al (2000) Association of glycaemia with macrovascular and microvascular complications of Type 2 diabetes (UKPDS 35). *BMJ* **321**: 405–12

UK Prospective Diabetes Study (UKPDS) Group (1998) Tight blood pressure control and risk of microvascular and macrovascular complications in type 2 diabetes. (UKPDS 38). *BMJ* **317**: 703–13

Voorham J, Haaijer-Ruskamp FM, Stolk RP et al (2008) Influence of elevated cardiometabolic risk factor levels on treatment changes in type 2 diabetes. *Diabetes Care* **31**: 501–3

Zafar A, Cavies M, Azhar A, Khunti K (2010) Clinical inertia in the management of T2DM. *Primary Care Diabetes* **4**: 203–7

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