

South Bedfordshire ICDS: Improving attendance at a GP surgery outreach clinic

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Bedfordshire Integrated Community Diabetes Service (ICDS) has provided specialist community diabetes care across Bedfordshire since 2012. At a GP surgery in a deprived area of Bedfordshire where patient attendance at ICDS appointments was poor, patient records were reviewed to identify those with high HbA_{1c} (≥ 65 mmol/mol [8.1%]). This article describes the patient review process and the outcomes and strategies developed to increase engagement with the ICDS at this GP surgery.

Type 2 diabetes is a progressive long-term condition and is characterised by a deterioration in pancreatic beta-cell function and rising insulin resistance (Fonseca, 2009). Diabetes management includes pharmacological interventions, but there is also a focus on dietary and lifestyle modifications, which rely heavily on patient education.

Bedfordshire Integrated Community Diabetes Service (ICDS) has provided specialist community diabetes care since 2012. The ICDS is a specialist diabetes team working with and supporting primary care and community health care professionals to deliver diabetes care. Rather than being based at a hospital, the service works from health centres and GP surgeries in the community to provide patients with easier access to a specialist diabetes multi-disciplinary team. The ICDS offers group education sessions, as well as joint diabetes specialist nurse (DSN) and dietitian (DSD) appointments, and telephone, e-mail and face-to-face follow-up appointments. South Bedfordshire ICDS is led by a lead nurse and clinically supervised by the local hospital diabetes consultant, who triages all referrals, which are made by the primary care team.

Poor attendance to the ICDS

Since February 2012, a weekly ICDS clinic

has been held at one of the surgeries in south Bedfordshire. In the remainder of its first year, 84 people were referred to the ICDS. In the same 10 months of 2013, only 39 people were referred (total 49 in 2013). The fall in referrals was thought to be due to changes within the practice staff team, including a vacancy for the practice nurse with lead responsibility for diabetes care. Attendance of referred patients was also poor. The did-not-attend rate at the clinic in this surgery for first attendance was 29%, higher than at other ICDS clinics in south Bedfordshire, and when patients did not attend booked appointments, there was a waste of NHS resources and a direct cost to the ICDS.

Bedfordshire CCG has a diabetes prevalence of 6.4%. The surgery is in a deprived area of south Bedfordshire and has 13 580 registered patients. Approximately 50% of people with type 2 diabetes are from disadvantaged communities, who are less likely to access appropriate care (Nagi et al, 2012). In the surgery, 775 (5.7%) have a diabetes diagnosis, with a distribution that mirrors the national prevalence of 10% type 1 and 90% type 2 diabetes (Diabetes UK, 2015). The ethnic mix of the council ward where the surgery is located is 62% White, 14% South Asian and 12% Black (Public Health England, 2015).

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Article points

1. Attendance at a specialist diabetes clinic held in a GP surgery was improved by identifying those with high HbA_{1c} (≥ 65 mmol/mol [8.1%]) and the specialist diabetes team inviting them to the clinic, rather than via referral.
2. Regular review of patient records is a useful way to identify individuals who would benefit from attending a specialist clinic or who would benefit for receiving additional contact with a healthcare professional.
3. A specialist diabetes clinic based at a GP surgery fosters a good working relationship between primary and secondary care clinicians, and the potential to up-skill staff.

Key words

- Attendance
- HbA_{1c}
- Specialist diabetes care team
- Type 2 diabetes

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Page points

1. Review of the practice's type 2 diabetes patient list was initially undertaken to identify patients with poor glycaemic control.
2. During the review process, it was clear that there were a number of people with type 2 diabetes who were not on insulin analogues but who might benefit from ICDS input to improve their HbA_{1c}.

Reasons for the practice review

Review of the practice's type 2 diabetes patient list was initially undertaken to identify patients with poor glycaemic control for a Quality, Innovation, Productivity and Prevention (QIPP)* initiative. Medicines management requested all people with type 2 diabetes who had above target HbA_{1c} on analogue insulin to be reviewed by the ICDS. Current NICE (2015) guidelines, and those in use when the review was initiated (NICE, 2009), recommend considering NPH basal insulin for insulin initiation for people with type 2 diabetes, unless the patient experiences recurrent symptomatic hypoglycaemic episodes or needs assistance from a carer or healthcare professional to inject insulin. Long-acting insulin analogues are more expensive than NPH basal insulin (British National Formulary, 2016), and, if they are not being used correctly, or at all, they can be a drain on resources. During the review process, it became clear that there was a high number of people with type 2 diabetes who were not on insulin analogues but who might benefit from ICDS input to improve their HbA_{1c}.

Patient record review

In July 2014, October 2014 and May 2015, the practice manager produced a SystemOne report of all people with type 2 diabetes who had an HbA_{1c} ≥ 65 mmol/mol (8.1%). The criteria for inclusion included those with type 2 diabetes who had sub-optimal glycaemic control on analogue insulins and also non-engaged individuals on any other antidiabetic medication. People excluded from the project included those with type 1 diabetes and those with type 2 diabetes with recent medication changes and/or people who were being actively treated and making progress.

The surgery's GP diabetes lead approved the ICDS to contact patients directly for review, rather than through referral. Joint initial DSN and DSD appointments were offered by letter. A personalised cover letter from the lead nurse was also sent to explain that the patient's HbA_{1c} was higher than

*QIPP is "a national, regional and local level programme designed to support clinical teams and NHS organisations to improve the quality of care they deliver while making efficiency savings that can be reinvested into the NHS" (Royal Pharmaceutical Society, 2016).

recommended for long-term health and that the ICDS team would like to offer support to improve the patient's diabetes control.

People invited for an appointment were triaged by the hospital consultant who provided one or more suggested treatment plans, aligned with current guidelines, for the team's guidance. More recently, an experienced DSN has taken responsibility for triaging some of the referrals. The suggested plan or plans were then discussed with the patient taking into account their lifestyle, current health status, needs and preferences.

At the clinic, patients who needed to provide a blood glucose profile were given one of the two local formulary meters and testing commenced in most cases to inform appropriate medication changes. Diet and lifestyle advice, plus the opportunity to attend a DESMOND structured diabetes education course, were also offered. Patients were encouraged to attend the ICDS clinic until they reached their personal HbA_{1c} target, at which point they were discharged back to the care of their GP. They were also discharged if they failed to attend two consecutive appointments. The service's did-not-attend policy was drafted to encourage patients to phone and rearrange an appointment when an appointment was missed. Feedback forms were given to patients when they were discharged back to the care of their GP.

Project outcomes

Each time the patient list was reviewed, individuals unknown to the ICDS or secondary care were identified. The first review identified that 45% of the practice's patient list with type 2 diabetes and an HbA_{1c} >65 mmol/mol (8.1%) met our project referral criteria. Over time, most people had experienced a decline in diabetes control as a result of the progressive nature of diabetes or changes to medication (such as steroid treatment or ill health) where self-management was not a priority.

From July 2014 to May 2015, 44 patients who had not been referred by primary care to the ICDS were directly offered an appointment by the ICDS. A total of 91% of those invited attended their first appointment ($n=40$). This was higher than the clinic's first appointment attendance rate (71%) taking into account referrals from the primary care staff for the same year. Four patients declined

or did not attend a booked appointment. *Figure 1* shows how attendance at follow-up appointments improved after the first review in July 2014 with the exception of December 2014. The reasons reported by patients for low attendance in December included being busy or not wanting to address their diabetes during the Christmas season.

Of the 40 patients seen jointly by the DSN and DSD in this period, mean HbA_{1c} on referral was 84 mmol/mol ([9.8%] range 65–133 mmol/mol [8.1–14.3%]). Over the next 10 months from the patient's first appointment, the mean HbA_{1c} had reduced to 67 mmol/mol ([8.3%]; range 42–97 mmol/mol [6–11%]). The average number of follow-up appointments over this period was four. *Figure 2* demonstrates that most patients who attended the clinic between July 2014 and April 2015 showed an improvement in their HbA_{1c}. QOF data for DM008 indicate that in 2014–15, 64.8% of the surgery's patients achieved an HbA_{1c} ≤64 mmol/mol (8%), which improved to 66.98% in 2015–16 (NHS Digital, 2016). Taking into consideration the lag time of clinical impact on diabetes outcomes, increased interaction with the ICDS may have contributed to this improvement.

Seven individuals had an increase in HbA_{1c}: one individual started on oral steroids, and one was diagnosed with depression and stopped taking their medication. The reviews also identified patients in need of secondary care input (e.g. those who may have latent autoimmune diabetes of adulthood).

Many patients did not know what HbA_{1c} meant and they were often confused with the difference between their HbA_{1c} and their home blood glucose testing results. There was also confusion in understanding how the older DCCT-aligned units for HbA_{1c} translated to the newer IFCC-standardised concentrations. Poor numeracy skills were identified in some patients, which caused further difficulty in understanding what results were in range.

On four occasions, patients explained that a family member had diabetes and had difficulty managing the condition. With permission from the family member concerned, who was also at the appointment, and also the practice's GP lead for diabetes, they were invited to attend an appointment with the ICDS. Consecutive appointments were offered for the patient and their relative, and the

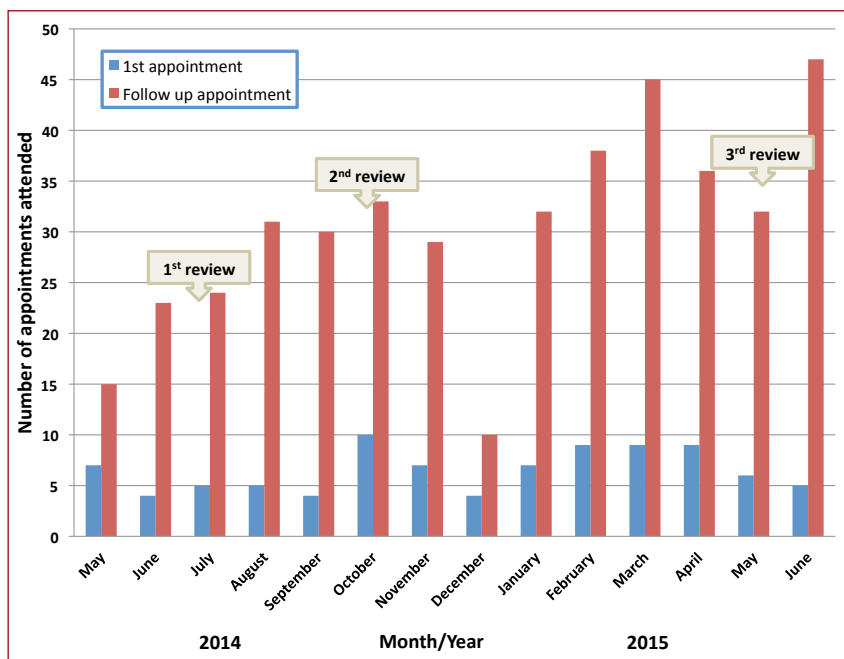


Figure 1. Attendance to the Integrated Community Diabetes Service clinic from May 2014 to June 2015.

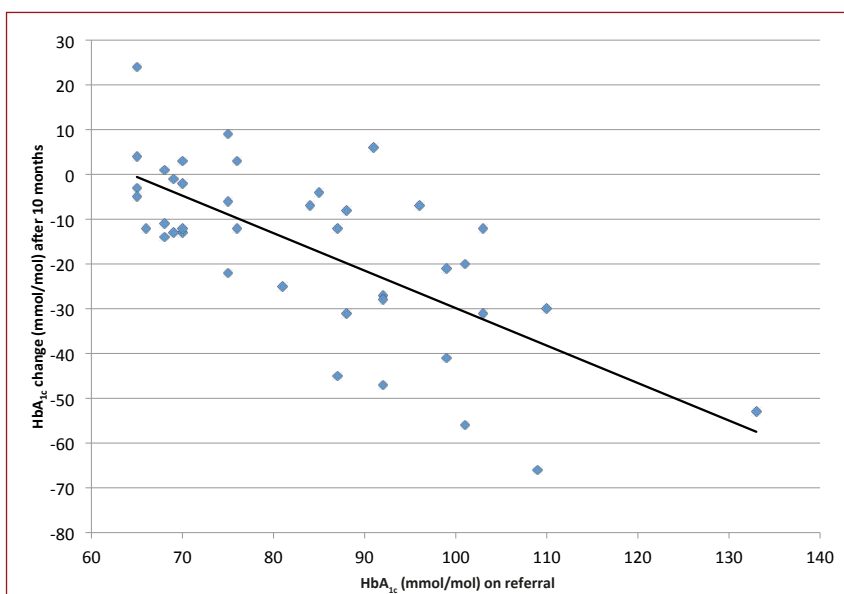


Figure 2. Change in HbA_{1c} of patients who attended the Integrated Community Diabetes Service following invitation from July 2014 to May 2015.

respective family members attended each other's appointments.

Patients from that clinic who returned completed feedback forms during the financial year 2014–15 rated the service 8.9/10 for helping them to manage their diabetes and 9.8/10 on how likely they were to recommend the service to others.

In the most recent review of the type 2 diabetes

Quick reference QOF indicator
DM008=The percentage of patients with diabetes, on the register, in whom the last IFCC-HbA_{1c} is 64 mmol/mol or less in the preceding 12 months.

HOW DOES HbA1c RELATE TO DAILY BLOOD GLUCOSE LEVELS?

The HbA1c test measures the amount of glucose that is being carried by the red blood cells in the body. This test gives an indication of your “average” blood glucose levels and overall blood glucose control for the previous two to three months. It is particularly useful for identifying periods of poor glucose control that you may not have spotted through your routine daily blood glucose testing.

Average Daily Glucose mmol/L*	HbA1c		This table shows how your HbA1c relates to your daily average blood glucose levels.
	mmol/mol [#]	% [‡]	
5.4	31	5.0	
6.2	37	5.5	
7.0	42	6.0	
7.8	48	6.5	
8.6	53	7.0	
9.4	58	7.5	
10.2	64	8.0	
11.0	69	8.5	
11.8	75	9.0	
12.6	80	9.5	
13.3	86	10.0	
14.1	91	10.5	
14.9	97	11.0	
16.5	108	12.0	
18.1	119	13.0	
19.7	130	14.0	

Reduction in HbA1c levels (and therefore improved control), will have beneficial effects on your general health and help prevent the onset and progression of complications.

* daily finger prick tests
 # HbA1c units since 2009
 ‡ Laboratories stopped reporting HbA1c as a percentage (%) in 2011.

For most adults with medication-treated diabetes, the HbA1c target is below 53 mmol/mol. Evidence shows that this target can reduce the risk of developing complications, such as nerve or eye damage and kidney or heart disease while reducing complications that can arise from frequent hypos eg cardiac problems.

HbA1c targets in older people can be slightly higher. Whatever your age, your ideal target should be agreed in partnership with your doctor or specialist diabetes nurse.

South Bedfordshire ICDS Team
 March 2015

Luton and Dunstable Hospital
 NHS Foundation Trust



Figure 3. Leaflet explaining how capillary blood glucose measurements equate to HbA_{1c} levels.

patient list in 2016, 7% of patients met the criteria for direct referral to the ICDS (down from 45%), which suggests that patients are engaged and making progress in lowering their HbA_{1c}.

Changes to resources and literature

The review process and direct referral to the ICDS have led to the development of a range of resources by the ICDS. A display board in the practice about the ICDS is now maintained, and other visual educational resources, such as plates, bowls and

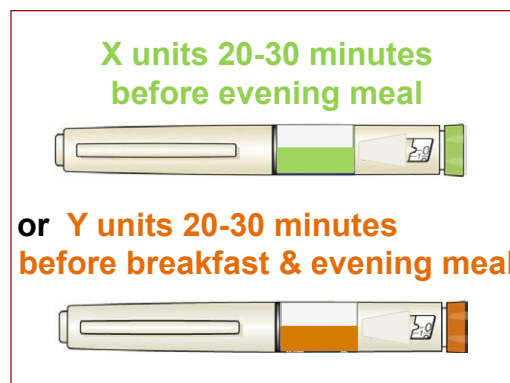


Figure 4. Diagram explaining personalised regimens in the font colour related to different insulin pens.

food models to illustrate dietetic points were found to better convey messages than written leaflets. Coloured leaflets explaining how capillary blood glucose measurements relate to HbA_{1c} levels for those with lower numeracy skills were developed (Figure 3) using the formula described by Nathan et al (2008). It is appreciated that the formula provides only an estimation of the relationship between capillary blood glucose measurements and HbA_{1c}, but Figure 3 has been a useful tool to help patients make sense of their test results, especially as HbA_{1c} is presented as both the older DCCT percentage and current IFCC mmol/mol. Teft (2015) identified that poor numeracy skills contribute to poorer outcomes in many long-term conditions, including diabetes, so providing information that is easy to understand and visual can help to improve health outcomes. We also developed personalised regimens in the font colour related to different insulin pens (Figure 4). These appear to aid compliance, especially for individuals on complex insulin regimens.

Feedback from patients led to the appointment letters being redesigned to be more positive and to encourage attendance at follow-up appointments. Originally, the letter included “if you do not attend, another appointment may not be sent”, which, on reflection, was felt to be an “easy way out” for those who were not keen to attend. The review also raised awareness of the service within the surgery and fostered a good working relationship between the ICDS team and practice staff. One GP and two practice nurses from this surgery have since attended the Bedfordshire ICDS 3-day diabetes course for registered nurses and GPs. Teaching

delivered by the ICDS to other clinicians focuses on injectable therapies, with the aim of increasing the confidence of primary care staff when initiating and managing insulin or glucagon-like peptide-1 receptor agonists.

In addition to the changes made following the review, the ICDS now offers a 2-hour diabetes and food education session for patients at all surgeries in South Bedfordshire who decline, or are unable, to attend the full-day DESMOND course.

Future work

The aim is to continue to periodically review the surgery's records to identify patients who have suboptimal HbA_{1c} and who are not engaged with a GP or practice nurse to lower their HbA_{1c}. We plan to extend the project to review people with low HbA_{1c} (such as older people), who may be unaware that they are at risk of hypoglycaemia and may require a drug review.

NHS Bedfordshire Clinical Commissioning Group has invested in the Eclipse programme, which will allow review of all patients and medications with greater ease and at all practices in the future. Eclipse is a web-based prescribing system linked with the NHS Drug Tariff for England and Wales, and ePACT*, NICE, Quality Outcomes Framework and SUS[†] data (Eclipse Solutions, 2016). The system should help identify patients at high risk of diabetes complications through the analysis and tracking of key indicators, including HbA_{1c}. The system itself is designed to optimise prescribing efficiency by identifying inappropriate prescribing and identifying more cost-effective or safer alternatives. The aim is that this will help prevent unnecessary hospital admissions, and identify those who fail to attend appointments or who are not collecting appropriate medication.

Summary

Review of patients' HbA_{1c} and direct referral by the specialist community-based diabetes clinics is one way to engage, or re-engage, individuals with HbA_{1c} results above target. In the surgery in south Bedfordshire where this took place, patient attendance at initial and follow-up appointments has improved, and most individuals have lowered

*Electronic Prescribing Analysis and Cost

†Secondary Uses Service

Practical applications and take-home messages.

- The Integrated Community Diabetes Service (ICDS) team provided intensive, individualised support over several clinic visits, which could initially seem difficult for practice teams to achieve while also delivering care to their whole diabetes population. Choosing to target a few motivated people with poor control with more frequent appointments and more intensive practice input could be achievable for all of us.
- Even without access to an ICDS, regularly identifying those with poor control allows us to offer more intensive management or to refer into, or back to, secondary care for therapy intensification; we will all have poorly controlled non-attenders, lacking follow-up despite our best efforts.
- Taking into account age, duration of diabetes and comorbidities, and individualising the HbA_{1c} threshold for referral to specialist services could help ensure those most likely to benefit from receiving intensive support.
- Identifying factors that predict good response and persistent improvements, for example HbA_{1c} at the lower or higher end of the range, or symptomatic people, might also allow targeting of resources for optimal impact.
- Exploring how this model could be scaled up, for example using algorithms, online resources and further up-skilling practice staff, would allow more people to benefit.

their HbA_{1c}.

Offering a specialist diabetes clinic within a GP surgery, rather than in a hospital setting, provides specialist staff access to appropriate medical records and blood test results, and also facilitates changes to prescriptions. It can foster a closer working relationship between specialist and primary care staff and has the potential to up-skill staff. ■

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