

A clinical audit of a paediatric diabetes service

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ARTICLE POINTS

1 Clinical audit can change the practice of healthcare professionals and the quality of healthcare services.

2 National guidelines encourage the use of service-user evaluation to guide service development.

3 Both national and local standards can be used as benchmarks.

4 Using qualitative and quantitative methods of audit can result in a more comprehensive analysis of service performance.

5 Feedback to service users is useful in illustrating how they have contributed to service change.

KEY WORDS

- Audit
- Paediatric diabetes
- Service users
- Quality
- Changing practice

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Introduction

This article demonstrates how clinical audit was used in a local paediatric diabetes service to monitor the impact of the formation of a specialist paediatric diabetes team in 2000. As part of the audit cycle the changes introduced in 2000 were evaluated in 2001, which led to further changes and further evaluation in 2002. Both qualitative and quantitative methods were used.

The use of clinical audit in the NHS is becoming increasingly important as is highlighted in the NHS white paper *The new NHS: modern and dependable* (Department of Health, 1997). In order to improve quality and meet national requirements, health systems will need to participate in comparative local and national clinical audit (Department of Health, 2002).

The Commission for Health Improvement states that clinical audit, consultation and service-user involvement cover two of the seven key standards used to judge performance (Day and Klein, 2002). In addition, the NSF for Diabetes (Department of Health, 2002) provides standards of care which all professionals working within the service are responsible for implementing. Clinical audit can be used to assess whether these standards of care are being met.

The audit cycle we used is based on a simple model outlined by Firth-Cozens (1995). The audit cycle is ongoing and should be seen as a continuous process where data is collected and areas of change to the service identified and implemented. Going back through the audit process then monitors these areas of change (see *Figure 1*).

The role of service users

The involvement of service users has become a widely accepted form of service evaluation. The white paper

issued in 1997 also stated that there should be a:

'...rebuilding of public confidence in the NHS, accountable to patients, open to the public and shaped by their views.'
(DoH, 1997)

The standards of paediatric diabetes care received by children and their families has a direct impact on the likelihood of development of long-term complications. Financial implications for the NHS are one consequence of this (Baum, 1990). It is essential that the services offered are linked directly to the standards of the NSF for Diabetes and tailored to the demands of service users. People who have chronic medical conditions such as diabetes should have a good understanding of their condition.

Tozer (2000) suggests that patients may be in a better position to suggest how care can be improved than clinicians. Pope et al (2002) suggest that the views of service users need to be included when examining healthcare quality, as evaluation should assess the 'experience' of the healthcare service, and not simply waiting times. Additionally, it is important for service users to play a part in shaping the future of their own service, rather than only feeding back about what they think of previous changes (Sykes, 2003).

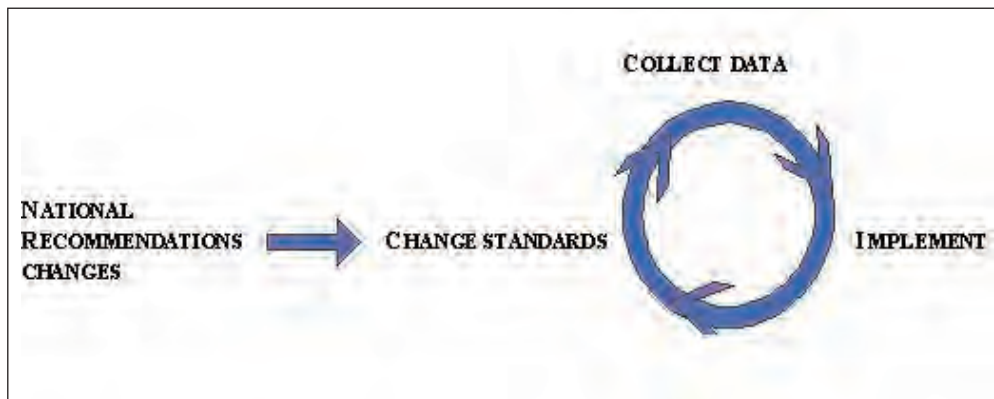


Figure 1. Simple audit cycle - based on a model by Frith-Cozens, 1995

Qualitative or quantitative method?

Davis (2001) states that the choice of qualitative or quantitative method depends on the nature of the question to be answered. Coates also suggests that both methodologies play a part in developing a valid evidence base to inform our practice (2004). Our aim was to evaluate how effective prior changes to the service had been and how satisfied service users were. We also wanted to evaluate the performance of the service in relation to national audit figures.

Using either qualitative or quantitative methods would have yielded only partial answers, so we used both. Service-user evaluations lent themselves primarily to being investigated using qualitative methods, whilst the comparison of findings with national figures was most satisfactorily answered using quantitative methods.

The service

There are currently 48 children with diabetes in South Tyneside. The service provision for these children and their families is via a specialised paediatric multidisciplinary team approach. Prior to the formation of this team the service primarily consisted of a paediatrician, an adult DSN and a dietitian at the clinic. The paediatrician varied from clinic to clinic and the DSN time was limited to the monthly clinic and one session a week for home visits. The dietetic time also focused mainly around the monthly clinics.

The new team was created in October

2000, and consisted of a consultant paediatrician with a specialist interest in diabetes, a paediatric diabetes specialist nurse (PDSN) who worked 18.5 h per week, a senior dietitian (5 h per week) and a child clinical psychologist (3.5 h per week). The creation of the new team resulted in a number of changes:

- A holistic, child-focused team approach was adopted.
- An increase in the amount of available DSN time.
- An annual review for each child was introduced and the clinics consequently became twice monthly.
- Specified child clinical psychology time was introduced.
- Monthly team meetings were introduced

As these changes involved an overhaul of the diabetes service offered to children and adolescents, the team felt that it was essential that service users were consulted to see how they felt the new service had worked during its first year and whether further changes were needed. This was achieved through the 2001 audit.

The 2001 audit

Children and families who used the service were asked to evaluate how the new multidisciplinary team had altered their experience of the diabetes service through a series of focus groups within the hospital. It was hoped that people would feel more able to express themselves in a group setting rather than through individual interviews (Tozer, 2000). The planned groups included separate sessions for parents and children; both groups were led by a

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2 Using either qualitative or quantitative methods would have yielded only partial answers, so we used both.

3 The new team consisted of a consultant paediatrician with a specialist interest in diabetes, a paediatric diabetes specialist nurse, a senior dietitian and a child clinical psychologist.

4 The team felt it was essential that service users were consulted to see how they felt the new service had worked during its first year and whether further changes were needed.

5 Children and families who used the service were asked to evaluate how the new multidisciplinary team had altered their experience of the diabetes service through a series of focus groups.

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1 Service users were unhappy about the amount of time they had to spend waiting at the clinic.

2 Service users requested that groups could be set up for children and families outside the clinics for support and education.

3 The team introduced a 24 h telephone service, which is covered by the PDSN until 2100 h.

4 Due to the poor attendance at the focus groups, the team decided that semi-structured interviews should be held during clinic time.

different clinical psychologist from the one involved in the diabetes team.

Unfortunately, participation numbers were low (n=9). This may have been because no payment was offered for participation and the sessions were held out of clinic hours. As a consequence only the parent groups actually went ahead. The questions were decided in consultation with a focus group trainer and included:

- What are the most helpful aspects of the diabetes service?
- What is the most frustrating thing about the diabetes service?
- What would you change about the diabetes clinic?
- Describe your ideal diabetes service.
- What other services could we provide to help children with diabetes who are over and under 11 years?

Despite the limited numbers of participants, a great deal of detailed information was obtained. Specifically, people who were involved in the focus group reported that the service had improved in a number of ways. They felt that the team provided a more seamless and holistic approach, and that there had been a decrease in repetition and an increase in consistency in the information that they received. The group cited the availability of a named contact as particularly beneficial (the PDSN). They reported that the team members were helpful and approachable and the involvement of a clinical psychologist in the team was helpful.

How the service was changed after the audit

Suggestions were made about how the quality of care could be improved further.

Appointment times

Service users were unhappy about the amount of time they had to spend waiting at the clinic. They felt that the children did not necessarily need to see the paediatrician, PDSN and dietitian every time that they attended the clinic. As a consequence it was decided that children would be

given individual appointment times (as opposed to one larger time slot for a number of people) and that they would see the PDSN and the dietitian as required (which would be decided by the diabetes team). They continued to see the paediatrician at each visit and all three professionals at their annual review.

Groups

Service users requested that groups could be set up for children and families outside the clinics for support and education. Steps have been taken by the team to try and secure funding for these groups.

Injection pens

It was apparent that service users wanted access to injection pens as soon as possible after diagnosis (as opposed to having to initially use a hypodermic needle while waiting for the pen to be available). This change was consequently implemented.

Telephone service

The team introduced a 24 h telephone service, which is covered by the PDSN until 2100 h. After this time the line goes through to the children's unit who put it through to the consultant or the staff grade paediatrician on call.

Protocol

A protocol for all children with a HbA_{1c} level above 10% was introduced. This involves a PDSN home visit 2 weeks after the clinic appointment, a 4 week follow-up telephone call and a 6 week (as opposed to 3 monthly) clinic visit. If the HbA_{1c} level is still above 10% at the 3 month clinic then this procedure is repeated.

Changes to the 2002 audit process

Due to the poor attendance at the focus groups, the team decided that semi-structured interviews should be held during clinic time. It was decided not to use a postal questionnaire because research suggests that on average these yield response rates of

only 30–40% (Breakwell, 1998).

The questions were based on those used in the focus groups in order to maintain continuity. An additional question regarding the changes made to the clinics following the previous audit was added. Children and their families were invited to take part in the interview. When the service users were older than 11 years, questions were directed to them. If they were under 11 years, the questions were directed to the parents (although the children were always asked if there was anything they would like to add). A total of 21 families participated in the interviews. The interviews were carried out by an assistant psychologist, independent of the diabetes team, in order to reduce possible bias. A more detailed quantitative audit was also introduced.

Findings from the interviews

The findings were very similar to those from the previous audit.

Standard of care

Participants said they found that the service offered regular support and close contact with team members, especially the DSN. The comments made suggested that the standard of care offered by the team remained good and had been maintained over the year.

Waiting times

In terms of the changes to the service, waiting times remained an issue. However, 33% of participants said that they felt that not seeing all of the team members at clinic was an improvement, and that this and the introduction of individual appointment times had resulted in a reduction in waiting times. The level of support was again mentioned as a positive feature of the team and the introduction of the 24h telephone service was specifically mentioned. This indicates that by implementation of the suggestions of the service users, the quality of the service provided had increased, although there was still need for further improvement.

Educational/support group

A suggestion that repeatedly came from the second audit was that both parents and children wanted an educational/support group to be set up. This was used to strengthen the business case that had been put together in order to access funds.

Structure of the service

Findings from the audit are similar to findings of Hiscock et al (2001) who suggested that service users sought improvements to the structure of the service with, for example, appointment systems in clinics and telephone advice lines. Results from Hiscock et al (2001) also suggested that service users greatly valued support from the specialist PDSN, as was found in the audit of our service. This shows that while the audit focused on the locality, some of the issues raised reflect nationwide concerns.

Changes introduced in 2002

As the team had been established for 2 years following the audit, attention was turned to specific areas that could be improved. The first of these was that families wanted to have greater access to information about diabetes and about new technology available. In response, the team developed and distributed

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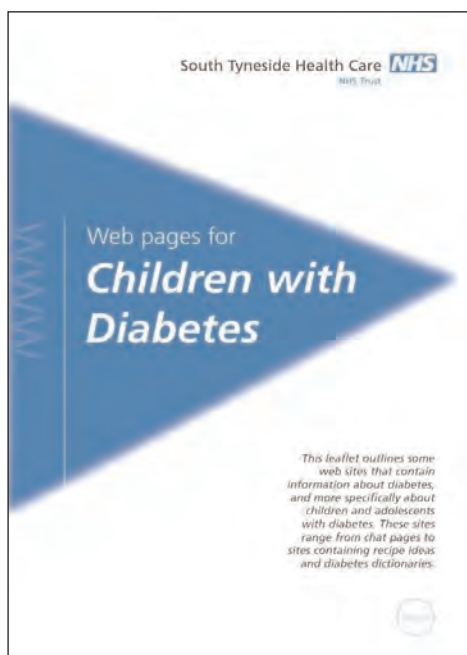


Figure 2. Cover of web page leaflet given to families.

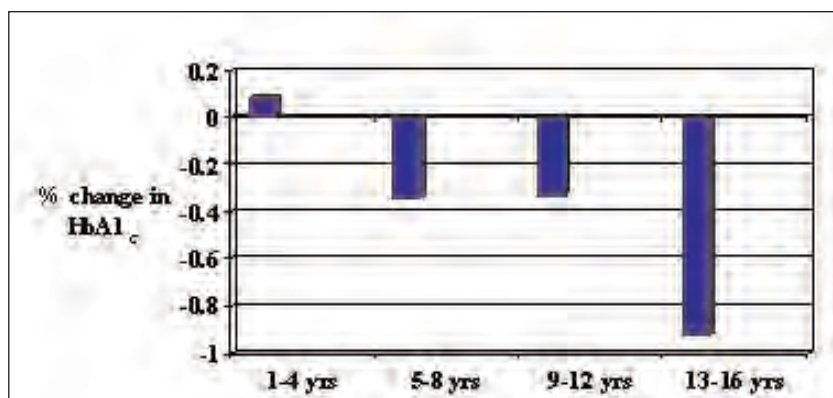


Figure 3. Changes in HbA_{1c} across age groups

PAGE POINTS

1 Suggestions offered by service users helped the team to improve the waiting areas in clinics, making it more suitable for children and families

2 The quantitative results enabled us to look at how well the service was doing in contrast to the previous year, and in line with national averages.

3 Examination of the data suggested that the majority of the improvement had been within the 13–16 year old age group.

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leaflets containing information about websites, diabetes and developments in technology (Figure 2).

The audit suggested that as well as the diabetes team, the clinic environment was important to service users. Suggestions offered by service users helped the team to improve the waiting areas in clinics, making it more suitable for children and families, with, for example, access to more sugar free snacks and a games console.

Quantitative findings and outcomes

The quantitative results enabled us to look at how well the service was doing in contrast to the previous year, and in line with national averages (when compared with the National Paediatric Diabetes Audit [Smith, 2001]). The national England and Wales average HbA_{1c} level in 2001 was 9.07%. Our service had an average of 9.08% so was ranked 54 out of 97 centres. The 2002 figures collected as part of the audit showed that the average levels within our locality had dropped to 8.73%. When based on the 2001 national average, this put our centre at 22 out of 97.

Further examination of our local data suggested that the majority of the improvement had been within the 13–16 year old age group, which is typically an age of poor control (Parkin, 2003) as is illustrated in Figure 3. The increase was attributed to the introduction of a protocol for all children and adolescents with a HbA_{1c} level above 10%. Given that adolescents aged 13–16 years often have

difficulties with control of their blood glucose levels, this approach was used most frequently in this age group.

Conclusion

Service users have been involved in the improvement of the paediatric diabetes service using the audit cycle. The process has enabled our service to objectively examine changes in the quality of service provided, and has enabled service users to be more central in directing changes. Issues raised through the audit process can be practically implemented and assessed, changing the practice of healthcare professionals and the type of service offered.

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