

Clinical governance for diabetes in primary care: use of practice guidelines and participation in multi-practice audit

K KHUNTI

R BAKER

S GANGULI

SUMMARY

Background. Diabetes is one of the most common chronic diseases managed in primary care but there are large variations in the quality of care. Reducing inequalities by improving clinical effectiveness when necessary is therefore a priority for the National Health Service. Implementation of guidelines and participation in multi-practice audit have been shown to improve the care of patients with diabetes, and guidelines and audit are key elements of the clinical governance framework.

Aim. To determine factors associated with use of guidelines and participation in audit of diabetes in primary care.

Method. A postal questionnaire sent to all general practitioners (GPs) in three health districts in England. The primary care audit groups provided data on all practices that had participated in a multi-practice audit of diabetes. The health authorities provided data about practice characteristics including list size, number of partners, fundholding status, Jarman score, Townsend score, training status, and number of nurses.

Results. Response rate was 81% (264 practices and 987 GPs). Two hundred and forty-three (92%) practices had a diabetes guideline or protocol and 169 (51.7%) practices had taken part in a multi-practice audit of diabetes. The source of the guideline/protocol included a practice-developed guideline in 168 (70.7%) practices and a nationally developed guideline in 48 (20.1%) practices. However, the guideline had been implemented more than three years ago by 73.9% (176/238) of practices. Multiple logistic regression showed that implementation of guidelines/protocols was independently associated with list size (per 1000) (OR = 1.2, 95% CI = 1 to 1.4, $P < 0.02$) and participation in audit was independently associated with the Townsend score (OR = 0.9, 95% CI = 0.8 to 1, $P < 0.05$).

Conclusion. Elements of clinical governance programmes are less likely to be implemented in smaller practices and in socioeconomically deprived areas. Recent studies have confirmed the existence of an inverse socioeconomic mortality gradient in people with diabetes. Our study shows that practices with the greatest need are less likely to be involved in clinical effectiveness programmes. The results will be important to those responsible for implementation of clinical governance within primary care.

Keywords: clinical governance; clinical audit; clinical guidelines; clinical effectiveness; primary care.

Introduction

IMPLEMENTATION of guidelines¹ and participation in multi-practice audit² have been shown to improve the care of people with diabetes. However, despite evidence about the effectiveness of treatment, care is variable and sometimes poor.³ Therefore, reducing inequalities by implementing clinical effectiveness programmes is a priority for the National Health Service (NHS).^{4,5} Key elements of clinical effectiveness programmes include evidence-based clinical guidelines and clinical audit. In *A First Class Service*, the National Institute for Clinical Excellence provides national guidelines, with clinical governance as the mechanism for local implementation.⁵ Clinical governance is described as 'a framework through which NHS organisations are accountable for continually improving the quality of their service and safeguarding high standards of care by creating an environment in which excellence in clinical care will flourish'.⁵ Audit will be a principal component of clinical governance, having a role in both implementation and monitoring of effectiveness.

General practitioners (GPs) are broadly positive about the effectiveness and benefits of guidelines and some already produce guidelines in their own practices.⁶ There has also been an increase in the number of practices taking part in multi-practice audits of diabetes.² Primary care audit groups (formally known as medical audit advisory groups or MAAGs)⁷ have been instrumental in encouraging practice participation in audit, with diabetes being the most common topic for a multi-practice audit.⁸ Despite these developments, many practices still do not have guidelines and do not participate in audit. This may account for some of the variations in care offered to people with diabetes.³ GPs' attitudes and behaviour relating to guidelines⁶ and practice barriers to audit have been described previously.^{9,10} However, these surveys were not concerned specifically with diabetes.

There may be many complex reasons why practices do not use guidelines or participate in audit. A better understanding of practice characteristics and organisational issues that influence use of diabetes guidelines and participation in diabetes audit would help to indicate where resources and effort should be targeted to encourage practices to undertake systematic clinical effectiveness programmes for diabetes. The opportunity to investigate the use of guidelines and participation in audit arose as part of a larger study investigating factors associated with quality of care of people with diabetes in primary care. The aim of this study was to determine the current level of use of guidelines and participation in audit of diabetes in primary care. A further aim was to identify practice factors associated with implementation of clinical effectiveness programmes in general practice.

Method

Identification of practices that had conducted a multi-practice audit

A list of audit groups that had conducted a multi-practice audit of

K Khunti, FRCGP, clinical lecturer; R Baker, MD, FRCGP, director; and S Ganguli, PhD, research associate, Clinical Governance Research and Development Unit, Department of General Practice and Primary Health Care, University of Leicester.
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diabetes care between 1994 and 1996 was available from a recent study.³ Three audit groups (Leicestershire, Durham, and Suffolk) were selected for the main study because they had conducted a systematic multi-practice audit of people with diabetes using evidence-based criteria.¹¹ These audit groups had supported their practices in developing a diabetes register using multiple sources and helped with standard data collection, analysis, and feedback.

Data relating to practices

The three health authorities provided data about practice characteristics relating to 1996 for all general practices, including list size, number of partners, fundholding status, Jarman score, Townsend score, training status, and the number of whole time equivalent (WTE) nurses. Data for two deprivation measures were collected because the Jarman score¹² is currently used for deprivation payments whereas the Townsend score¹³ is closely related to material deprivation. For two health authorities, the Jarman Score was calculated at electoral district level and for one it was calculated at ward level.

Questionnaire development

A self-administered questionnaire consisting of 20 questions was developed and piloted in eight practices. Following the pilot, a small number of minor alterations were made to the wording of the questionnaire. The questionnaire sought details of the organisation of care for patients with diabetes. Details were also obtained on the presence of a practice guideline or a protocol and their development. 'Practice guideline' and 'protocol' were not defined in the questionnaire and it was therefore left for the responders to decide. Most questions required closed-ended responses. The questionnaire was sent in 1997 to all practices in the three health authorities. It was addressed to the practice nurse or the practice manager with instructions that information for answering some of the questions should be obtained from the GP in the practice. Non-responders were sent a reminder letter after three weeks and then telephoned. Responders were assured of confidentiality. Ethical approval was granted from all three local research ethics committees.

Data collection and analysis

Data were analysed using SPSS for Windows version 8. All questionnaires were entered twice by SG and a 20% of data entry sample was validated by KK. Associations between variables were sought using chi-squared tests and unpaired *t*-tests for comparison of means. Odds ratios were calculated for univariate variables. Multiple logistic regression was employed to determine which factors were independently associated, in a multivariate analysis, with either having a practice diabetes guideline/protocol, taking part in audit or both as dependent variables. Variables were included if there was a significant association in univariate analysis at a significance level of 0.05 or if they were likely confounders. Explanatory variables were tested in a forward stepwise regression analysis.

Results

The three authorities were responsible for 327 practices (mean = 109, range = 87 to 152) with over 1150 GPs. The mean number of GPs per practice was 3.6 (range between health authorities = 3.4 to 4.1), proportion of patients over 65 years was 15.8% (range = 14.2% to 18%), Townsend score was 0.7 (range = 0.54 to 0.85), and the Jarman score was 3.8 (range = -0.1 to 5.3).

Questionnaire response

Two hundred and sixty-four practices comprising 987 GPs responded (mean practice response rate = 80.7%, range between health authorities = 70.1% to 90.8%). Two practices refused to participate and 61 failed to reply. The responding practices were significantly larger than non-responding practices (mean number of GPs = 3.7 versus 3.1, $P = 0.013$). Practices with three or more partners had a significantly higher response rate than those with one or two partners (84.4% versus 74.4%, $\chi^2 = 4.8$, $P < 0.05$). There was no significant difference in mean list size, fundholding status, average age of GPs, computerisation, WTE practice nurses, training status, Jarman score or Townsend score between responders and non-responders.

Practice guidelines or protocols

Of the responders, 243 (92%, range between health authorities = 88.3% to 96.9%) practices had a practice guideline or a protocol for the management of people with diabetes. Of the practices with a guideline or a protocol, 6.3% (15/238) had implemented the guideline within the past year, 19.7% (47/238) within one to three years ago, and 73.9% (176/238) more than three years ago. Table 1 shows the source of guideline or protocol used in practice. All 65 responding training practices had a guideline. Table 2 shows the individuals involved in development for practices that developed their own practice guideline/protocol. Table 3 shows the univariate analysis of factors associated with practices having a guideline or a protocol. Multiple logistic regression showed that presence of a practice guideline or protocol was independently associated with list size (per 1000) (OR = 1.2, 95% CI = 1.0 to 1.4, $P < 0.02$).

Participation in multi-practice audit

One hundred and sixty-nine (51.7%, range between health authorities = 44.1% to 64.4%) practices had taken part in a primary care audit group-led multi-practice audit of diabetes. Table 4 shows the univariate analysis of factors associated with participation in a multi-practice audit. Multiple logistic regression showed that participation in multi-practice audit was independently associated with the Townsend score (OR = 0.9, 95% CI =

Table 1. Source of diabetes guideline or protocol used in practice (n = 239).^a

Guideline	Number (%)
Practice-developed	168 (70.7)
Locally developed	60 (25.1)
Nationally developed	48 (20.1)
Primary care audit group-developed	40 (16.7)
Pharmaceutical	1 (0.4)

^aSome practices had multiple guideline/protocols. These categories were precoded with a space for free text.

Table 2. Method of practice-developed guideline (n = 168).

Method	Number (%)
Consultation with practice doctors	148 (88.1)
Consultation with local diabetes specialists	49 (29.2)
Consultation with practice nurses	14 (8.3)
Consultation with other local GPs	8 (4.8)
Consultation with patients	6 (3.6)
Consultation with the health authority	2 (1.2)

Table 3. Univariate analysis of factors associated with having a practice guideline for diabetes.

	Yes (n = 243)	No (n = 21)	Odds ratio (95% CI)
Mean list size in 1000s (SD)	7.1 (4.5)	4.6 (3.3)	1.2 (1–1.4) ^{a,c}
Mean number of partners (SD)	3.8 (2.3)	3 (1.9)	1.2 (1–1.5) ^b
Mean whole time equivalent nurse (SD)	1.9 (2)	1.8 (2.2)	1 (0.8–1.3) ^b
Mean Jarman score (SD)	3.2 (3.5)	9.1 (20.2)	1 (0.9–1) ^b
Mean Townsend index (SD)	0.6 (2.9)	1.9 (4.4)	0.9 (0.8–1) ^b
Fundholding practice (%)	89 (36.6)	4 (19)	2.5 (0.8–7.5)
Partner with an interest in diabetes (%)	167/238 (70.2)	8/20 (40)	3.5 (1.4–9) ^d
Partner attended diabetes course (%)	153/210 (72.9)	9/18 (50)	2.4 (0.9–6.4)
Nurse with an interest in diabetes (%)	211 (86.8)	15 (71.4)	2.6 (1–7.3)
Nurse attended diabetes course (%)	210 (86.4)	15 (71.4)	2.7 (1–7.5)

^aOdds ratio for an additional 1000 patients; ^bodds ratio for unit increase; ^cP<0.05; ^dP<0.01.

Table 4. Univariate analysis of factors associated with taking part in multi-practice audit of diabetes.

	Yes (n = 169)	No (n = 158)	Odds ratio (95% CI)
Mean list size in 1000s (SD)	7 (4.6)	6.3 (3.9)	1 (1–1.1) ^a
Mean number of partners (SD)	3.8 (2.3)	3.4 (2.1)	1.1 (1–1.2) ^b
Mean whole time equivalent nurse (SD)	1.8 (2.2)	1.7 (1.3)	1 (0.9–1.2) ^b
Mean Jarman score (SD)	2.4 (13.3)	5.4 (14.7)	1 (1–1) ^b
Mean Townsend index (SD)	0.4 (2.9)	1.1 (3.2)	0.9 (0.9–1) ^{b,c}
Fundholding status (%)	59 (34.9)	51 (32.3)	1 (0.7–1.5)
Training practice (%)	44 (26)	35 (22.2)	1.2 (0.7–2)
Practice with a diabetes register present (%)	141/142 (99.3)	110/122 (90.2)	15.4 (2–120.8) ^d
Partner with an interest in diabetes (%)	104/141 (75.2)	69/117 (59)	2.1 (1.2–3.6)
Partner attended diabetes course (%)	97/128 (75.8)	65/106 (61.3)	2 (1.1–3.5) ^c
Nurse with an interest in diabetes (%)	123/142 (86.6)	103/122 (84.4)	1.2 (0.6–2.4)
Nurse attended diabetes course (%)	121/141 (85.8)	104/121 (86)	1 (0.5–2)

^aOdds ratio for an additional 1000 patients; ^bodds ratio for unit increase; ^cP<0.05; ^dP<0.01.

0.8 to 1.0, $P<0.05$).

Use of guidelines/protocols and participation in multi-practice audit

One hundred and thirty-six (51.5%) practices had both a diabetes guideline/protocol and had participated in a multi-practice audit of diabetes. Fifteen (4.6%) practices neither possessed a diabetes guideline/protocol nor participated in a multi-practice audit. Multiple regression showed that both participation in audit and having a guideline protocol in practice were independently associated with having a partner with an interest in diabetes (OR = 1.9, 95% CI = 1.1 to 3.3, $P<0.02$) and the Townsend score (OR = 0.9, 95% CI = 0.8 to 1.0, $P<0.02$).

Discussion

Delivery of care to people with diabetes is complex and many GPs encounter problems in caring for people with diabetes.¹⁴ An integrated diabetes annual review is suitable for the long-term care of large numbers of diabetic patients.¹⁵ Guidelines for conducting this annual review^{16,17} and evidence-based audit protocols^{11,18} for assessing the level of compliance with the guidelines are available. Clinical governance is a recent concept for improving quality of care of patients in primary care. To our knowledge, this is the largest study to investigate the key components of clinical governance for diabetes in three geographically different health authorities. This survey shows that most practices have a practice guideline or protocol for management of patients with diabetes and just over half have taken part in multi-practice audits. There are clear differences between those practices that participate in clinical effectiveness programmes or activities and those that do not.

Limitations of the study

The response rate of over 80% is excellent for a general practice questionnaire survey, however there are some limitations to this study. The practices that responded were generally representative except that the response rate was higher for larger practices. Larger practices tend to be more developed¹⁹ in terms of practice organisation and staffing. The results may therefore overestimate the use of guidelines and audit in primary care. Furthermore, some of the responses to the questionnaire were self-reported; for example, interest in diabetes. A further reservation is that the primary care audit groups that are responsible for these three regions are proactive and have close working links with the local health authorities and GPs. These practices were therefore already involved in clinical effectiveness programmes.

Development and use of guidelines or protocols

Recent studies have confirmed that clinical guidelines, if appropriately implemented, can bring about improvements in both process and outcome of care including diabetes care.^{1,20} In agreement with a previous study of Lincolnshire GPs,⁶ nearly three-quarters of practices in our study had been involved in developing their own ('in-house') practice guidelines for diabetes. However, guidelines are more likely to be valid if developed by a multi-disciplinary group with representatives of all key disciplines.²⁰ Practice nurses, for example, play a key role in systematic care of people with diabetes but our survey shows that very few guidelines were developed in consultation with practice nurses.

Even though the development of valid guidelines requires high levels of expertise and resources,^{20,21} many practices are developing their own practice guidelines or protocols. These practices

are unlikely to have the expertise or resources required and should be encouraged to use well developed local or national guidelines or be offered training to adapt nationally developed guidelines or protocols.²² Furthermore, most guidelines (73.9%) were implemented more than three years previously. Guidelines must be updated regularly or in the light of significant new evidence. The use of guidelines does not automatically bring about improvements in care since their effectiveness depends on the strategies chosen to implement them.²⁰ We did not evaluate the recommendations of the guidelines or the specific implementation strategies used in individual practices.

Participation in audit

In primary care, clinical audit is not compulsory, although medical audit advisory groups were set up to support practices participating in audit.⁷ Despite audit being promoted in general practice for the past eight years, our survey shows that only half of all practices are taking part in multi-practice audit of diabetes. Surveys of audits in primary care have shown wide variation in the quality and quantity of audit performed by GPs.^{8,9} Concerns about audit include uncertainty about its nature or relevance, concern about failures or mistakes being disclosed through the audit process, resistance to change, limitations of resources, limitations of time, and problems of implementation due to poor organisation and communication within practices.¹⁰ Single-topic audits organised by medical audit advisory groups can encourage large numbers of GPs to participate and successfully bring about change in behaviour with resulting improvements in standards of care.^{2,23} Our survey confirms that larger and more developed practices are more likely to participate in audit.^{19,24} In addition, our survey shows that participation is dependent upon having a GP interested in the clinical topic being audited and in less socioeconomically deprived areas.

Efforts are required to encourage GPs to conduct audit and to convince them of the value of multi-practice audit, including diabetes care.^{2,24} Those involved in implementation of clinical effectiveness programmes will need to work with primary care groups to continue to encourage active participation and to seek ways of encouraging involvement in audit of current non-participants.

Conclusions

The recent Department of Health White Paper sets out ambitious proposals aimed at delivering clinically effective care to patients.⁵ Having a guideline and undertaking audit are activities that form part of a clinical effectiveness programme, such as clinical governance. Furthermore, guidelines and audit should be used systematically and together.²⁵ This survey shows that many practices are involved in clinical effectiveness programmes for diabetes in primary care. However, practices from more socioeconomically deprived areas are less likely to have clinical effectiveness programmes. Recent studies^{26,27} have confirmed the existence of an inverse socioeconomic mortality gradient in diabetic people. Our study shows that practices with disadvantaged patient populations, and therefore the greatest need, are less likely to have fully implemented clinical effectiveness programmes. This presents a challenge to the implementation of clinical governance within primary care groups. Resources may need to be targeted at smaller practices and practices in socioeconomically deprived areas. The success of clinical governance will depend on the development of effective implementation programmes by health authorities and primary care groups that are intended for all practices rather than only those that are already well developed.

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Address for correspondence

Dr Kamlesh Khunti, Clinical Governance Research and Development Unit, Department of General Practice and Primary Health Care, University of Leicester, Leicester General Hospital, Gwendolen Road, Leicester LE5 4PW. E-mail: kk2@le.ac.uk