A survey of diabetes care in general practice in England and Wales

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SUMMARY

Background. *The focus of care for people with diabetes has shifted from hospital to general practice. Many practices now offer diabetes care via dedicated mini-clinics, shared care schemes or opportunistically. There has never been a national survey of the organisation of diabetes care in general practice.*

Aim. *To describe some key features of diabetes care in primary care in England and Wales.*

Method. *Descriptive postal questionnaire survey to one in five (1873) randomly sampled general practices.*

Results. *Seventy per cent (1320) of practices responded. Of these, 96% had diabetes registers identifying 1.9% of their population as having diabetes; 71% held clinics run by a general practitioner (GP) and a nurse (64%) or a nurse alone (34%); 80% felt adequately supported; and 54% shared patient management protocols with the local secondary care team. Overall, practices provided most of the routine diabetes care for 75% of their diabetic patients. The majority of GPs and practice nurses had received some recent, albeit brief, diabetes education.*

Conclusion. *A large proportion of diabetes care now takes place in the community, much of it delivered by practice nurses. The organisational infrastructure necessary for delivering good care is in place. Many practices have a special interest in diabetes with the majority feeling adequately supported by secondary care. However, there are concerns about the educational needs of those providing care. More work needs to be done to ensure seamless care across the primary–secondary care interface.*

Keywords: diabetes; practice nurses; primary care; secondary care.

Introduction

WE report the outcome of the first national survey of the organisation of diabetes care in general practice. Over the past decade the focus of care for people with diabetes has shifted from hospital clinics to general practice. Many practices now offer some diabetes care in the form of dedicated mini-clinics, shared care schemes[1] or opportunistic care in the course of routine general practice.

Systematic review of studies comparing standards of care delivered to patients with diabetes in primary and secondary care has shown that primary care can equal secondary care; but only where general practitioners (GPs) have a special interest in diabetes and the care is well-organised.[2] There have been many published reports of successful area-wide initiatives.[3-6] However, because these may give an over-optimistic impression of diabetes services in primary care there is a need for a national survey.

The aim of the current survey was to report the degree of involvement in diabetes care reported by general practice and to identify the prevalence of the following key features of GP service provision in England and Wales: protected time for diabetes care; disease registers; practice nurses with some knowledge of diabetes; and written management protocols agreed with local diabetologists. In 1997, these key features were recommended for effective general practice diabetes care by the British Diabetic Association (BDA) and Primary Care Diabetes (PCD) UK.[7]

Method

Developing the questionnaire

A questionnaire (developed via iterative consultations with members of the PCDUK Steering Committee) was piloted with a convenience sample of 104 practices. In a random sample of 50% of the pilot practices, the questionnaire was validated[8] by reference to the practice notes and by telephone interviews with each responder. Teleform© software produced the final questionnaire in an optically scannable format.

The questionnaire included:

- practice demographic information,
- organisation of care patients within the practice,
- educational experiences of the primary care team, and
- interaction with local secondary care.

A random sample of general practices in England and Wales, stratified by region, was computer generated from the Department of Health's (DoH's) national list. Twenty per cent of the practices per region (1873) were selected to ensure responses from 10% (based on the pilot study).

Questionnaires were posted in September 1997 to named GPs within practices. The covering letters specified that if the addressee was not involved in diabetes care it should be passed to a more appropriate partner. Non-responders were sent a reminder letter a fortnight later and a second reminder letter, questionnaire, and stamped addressed envelope after one month. Remaining non-responding practices were telephoned, sent a third questionnaire, and approached by PCDUK committee members from their localities. In December 1997, the questionnaire was sent to practice nurses of all non-responding practices.

Statistical methods

Questionnaires were scanned and, where necessary, data verified manually. Characteristics of non-responders were compared with responders using the DoH baseline data, such as number of GPs and fundholding status. Skewed data were compared using Mann–Whitney tests and results presented with medians and interquartile ranges (IQRs). Chi-squared tests were used for categorical data.

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Results

Responses

Seventy per cent (1320/1873) of the practices responded. Characteristics of responding practices are shown in Table 1. Responding practices had more whole time equivalent (WTE) principals per practice (median = 3, IQR = 1–3) than non-responding practices (median = 2, IQR = 1–4) ($P<0.001$); were more likely to be fundholding practices (44% versus 36%, $P = 0.002$); and had lower UPA scores (9, IQR = -3–22 versus 12, IQR = 1–27, $P = 0.003$).

Except for one question about diabetes clinics, there were no systematic differences between responses returned after the mailing to practice nurses compared with those returned after the mailing to the GPs.

Involvement of the practices in diabetes

Table 2 shows the involvement of the practices in diabetes care and key features of the organisation of diabetes care in the practices. The median prevalence of diabetes within the practice population was calculated as 1.9% (95% CI = 1.89%–1.96%, IQR = 1.6%–2.4 %).

Table 1. Characteristics of the responding practices.

	Median (range)	n
Practice list size	5655 (3100–8716)	1292
Number of WTE principals	3 (1.5–4)	1299
Mean (SD)	3 (2.2)[a]	-
List size per principal	2027 (1791–2394)[b]	1292
Number of training practices	324 (25%)[c]	1303

[a]Mean number of principals per practice in the UK is three.[10] [b]Average list size per principal for England was 1878 and for Wales 1706 (DoH General and Personal Medical Services [GMS] statistics for England and Wales 1997). [c]24% of practices in England and Wales are training practices. (DoH GMS statistics. Approved trainers in England and Wales as of 1 October 1998.)

Education and training

Table 3 details recent GP and nurse diabetes education. In response to 'In what ways could Primary Care Diabetes (with BDA support) best help your practice?', 890 practices (67%) suggested information for staff and 845 (64%) suggested training for staff. Problems with keeping up-to-date were identified as the third most important barrier to practices providing care for their patients with diabetes (after lack of time and under-funding).[9]

Relationships with secondary care

These are detailed in Table 4.

Discussion

Generalisability of the results

The responding practices had one more principal per practice than non-responders and appear to have more patients per principal than practices in England and Wales.[10] This may be because we calculated patients per WTE principal and the DoH gives data per principal (so the figures are not exactly comparable). Responding practices were in slightly less deprived areas, and a higher proportion were fundholding, but the proportion of training practices reflected national figures (Table 1). Although these differences were small, slightly larger practices in slightly less deprived areas may be over-represented in the sample and practices with greater interest in diabetes might have preferentially responded to the questionnaire. However, the response rate and the random nature of the sample temper these biases.

Table 2. Organisation of diabetes care in the practices.

Question	Yes (%)	*n*
Would you describe your practice as having a special interest in diabetes?	874 (68)	1292
What is the total number of people with diabetes in the whole practice?	median = 110 interquartile range = 63–170	1179
What percentage of these patients are having most or all of their routine diabetes care in general practice?[a]	median 75 interquartile range = 60–90	1144
Do you have an active register of people with diabetes in your practice?	1261 (96)	1307
Is it used for call/recall?	1069 (87)	1228
Is it fully computerised?	955 (77)	1234
Do you have dedicated time for diabetes-only clinics in the practice?	933 (71)	1314
How frequently are these held?		
Weekly	422 (48)	881
Fortnightly	199 (23)	
Monthly	187 (21)	
Other	73 (8)	
Who runs the clinic?		
GP and nurse	586 (64)	922
Nurse alone[b]	315 (34)	
GP alone	21 (2)	
Median number of patients seen per clinic	6 (interquartile range = 5–9)	797

[a]This question was designed to avoid ambiguity related to patients attending specialist clinics for diabetes complications but receiving most of their routine diabetes care in general practice. [b]In the 465 questionnaires returned after the mailing to the practice nurses significantly more clinics were said to be run by the practice nurses alone than in those 1408 questionnaires returned after the mailings to the GPs (45% versus 29%, $P<0.001$).

Table 3. GPs' and practice nurses' attendance at courses/meetings on diabetes.[a]

	GPs (n = 1241)	Practice nurses (n = 1287)
Attendance at course[b] within the past three years (%)	1034 (83)	1137 (88)
Course duration half a day (%)	432 (49)	154 (14)
Course duration one day (%)	236 (27)	287 (25)
Course duration more than one day (%)	160 (18)	570 (54)
Duration not known (%)	56 (6)	54 (5)

[a]As this was a questionnaire survey the denominator for different questions varied depending on the response for that particular question. Absolute numbers have been reported. [b]GPs were asked about attendance at PGEA-approved courses/meetings on diabetes and whether any of their nurses

Table 4. Relationships with secondary care.

Statement	Yes (%)	n
The practice receives adequate support from the local diabetes specialist team	1012 (79)	1273
The practice operates a formal shared care protocol with a local diabetes specialist team	703 (54)	1298
The GP or the nurse meet regularly with members of a local diabetes specialist team	768 (59)	1310

Diabetes-related activity

An important result is the amount of diabetes-related activity that practices have reported. The typical practice has 110 registered patients with diabetes (representing 1.9% of their practice population). This lies well within the range of prevalence estimates of known diabetes available from recent studies of area-wide diabetes registers (1.5%–2.08%[5,6,11,12]), suggesting that practice registers across England and Wales are successful in recording known diabetes. However, there is no room for complacency, as the ratio of undiagnosed to diagnosed diabetes is greater than 1:1 and the prevalence of diabetes is increasing.[13,14] The United Kingdom diabetic population will double from around 1.4 million to 3 million by 2010.[15]

Practices claim to have a significant input into the diabetes care of three-quarters of their diabetic patients. In the pilot study this was validated by reference to practice records but validation of this figure was not possible in the study proper, so this figure represents what general practice *believes* it is doing. Other localised studies have addressed the percentage of patients who are fully managed, i.e. have their annual diabetes review in general practice (40%–50%[6,16]). We did not ask about annual reviews because it is difficult to obtain this data reliably. Many practices do not systematically record the annual review, especially where they do not collect all the elements of an annual review on a single occasion. Moreover, where services are less well developed it is likely that many patients do not have an annual review anywhere and whatever care they do receive comes from general practice.

The term 'routine diabetes care' might have been interpreted by some practices to mean diabetes care received in general practice in addition to a hospital-based annual review (although this was not the case in the pilot practices). Nevertheless, the possibility of ambiguity means that this result can only be interpreted as meaning that the primary care teams have a considerable role in the diabetes care of 75% of their patients with diabetes, not that 75% of the patients with diabetes are looked after entirely by primary care.

Organisation of care

Unsurprisingly, registers of patients with diabetes were almost universal. More than 90% of practices in England and Wales take part in the chronic disease management scheme, which requires that practices keep a disease register. Except where call and recall are organised centrally,[3] or all diabetes care is delivered via outpatients or diabetes centres,[17] practices should use registers for call and recall of patients for review. Our results suggest that few GPs keep inactive registers for purely administrative reasons.

In three-quarters of practices the register was fully computerised, indicating the potential for recording continuous, population-based data if GPs can agree on a set of definitions for conditions, collect a common data set, the various software packages can be made compatible, and the ethical problems related to confidentiality can be overcome.[18]

Clinics

The study showed that diabetes clinics are the most common method of providing diabetes care in general practice. Most of the literature on 'best practice' assumes a clinic-based model.[19] This model has potential problems. It may lead to those not involved in the clinic becoming deskilled and disruption of doctor–patient relationships unless avoidance strategies are employed, e.g. coordination favouring attendance by patients' personal GPs.[20] Moreover, the clinic-based model may be inappropriate for some practices. Indeed, 29% of the practices in the study did not have diabetes clinics. Further study of these practices may produce alternative ways of delivering care. Typically, the clinics in the study were small (six patients) and run by a GP and a nurse.

Role of the practice nurse

The study emphasised the significance of practice nurses to the delivery of diabetes care in general practice. They were involved in running almost all the clinics and they ran one-third alone, emphasising the importance of providing adequate support for practice nurses.

Education

Despite the high percentage of doctors and nurses actively engaged in further training in diabetes care, most practices said they needed help with further training and put education high on their agenda. The value of the educational experiences of the doctors and nurses is unknown. However, the brevity of the educational experiences (particularly for the GPs) was striking. It is difficult to keep abreast of even the most important developments in diabetes care with only half a day of PGEA-approved

activity in three years. Yet this is the situation with one-half of the GPs.

Courses attended by the nurses were rather longer than those attended by the GPs. However, these are practice nurses who may have had no previous experience of diabetes at all. Ross[21] has noted that practice nurses' training leaves them ill-prepared educationally for many of the tasks they have to carry out.

Further detailed work on educational requirements of primary care, and how best to deliver them, is clearly needed. The BDA keeps a register of primary care diabetes courses and to date are only aware of four, all of which are multidisciplinary.

Relationships with secondary care

Nearly 80% of practices receive adequate support from their local secondary teams and almost 60% have regular contact with them. Although these figures are encouraging for relationships between primary and secondary care, some practices that do not have much contact with their hospital colleagues still feel adequately supported. Either they manage well without support or they have low expectations of the support secondary care can offer.

Diabetes is an inexorably deteriorating chronic disorder[22] and no matter how well primary care delivers secondary prevention some patients will require expert help from specialist centres. If seamless care is to be provided for our patients then all practices should share a patient management protocol with our secondary care colleagues.[7] However, only half of the study's practices shared a protocol with their local secondary care team. The existence of such a protocol does not mean that the GP agrees with it or uses it. If there is no protocol then it is impossible for patients to have consistent care across the primary–secondary interface.

Limitations of the study

Being a postal survey, this study could only examine a limited number of aspects of diabetes care in general practice. Moreover, it did not address the issue of standards of care in general practice. Further studies are planned looking at existing diabetes care in more detail and developing and evaluating new strategies for coping with the long-term care of patients with diabetes. These will be necessary to meet the challenge presented by the UKPDS[23] results and the extra work that will result from the proposal to change the diagnostic criteria in the face of the rising tide of diabetes.[24]

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