Survey and audit of diabetes care in general practice in south London

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SUMMARY. A survey was made of the diabetic care given by general practitioners in six family practitioner committee areas. Replies were received from 388 practices, representing 1034 principals (effective response rate 69%), serving over two million patients. Fourteen per cent of practices offered mini-clinic facilities for their diabetic patients, although a much greater proportion professed to give either full or shared care to patients in ordinary surgery time. One quarter of practices kept a diabetes register, but fewer had a system of recall for patients to ensure anticipatory care. The barriers which general practitioners most often perceived in the provision of adequate care for diabetics were: lack of time, absence of a recall system and deficiency in their own clinical skills.

Seventy seven of the doctors responding to the initial questionnaire participated in an audit of the level of supervision provided for 378 of their diabetic patients. Better levels of supervision of non-insulin dependent diabetics were shown in those practices where diabetes registers were kept, and where special arrangements were made for caring for diabetes. The levels of care provided by those doctors setting aside specific clinic times were not demonstrably superior to those who did not.

The findings suggest that provision of support services, particularly expertise in dietetics, would help to increase general practitioners' confidence and enable more of them to improve their care of diabetic patients.

Introduction

THE delivery of care to patients with diabetes is often haphazard, poorly organized and incomplete.[1,2] Although the general practitioner is ideally placed to supervise diabetic care, many leave this task completely to the hospital services. Even in shared care schemes, when participating general practitioners are enthusiastic, the level of supervision and care can be poor.[3]

General practitioners have tried to improve standards of care to diabetics in various ways. The importance of registers, recall systems and proper records for improving the organization of care has been highlighted before.[4-6]

In discussions with local general practitioner colleagues it appeared that many encounter problems in caring for diabetics, particularly in the setting up of arrangements within practices. In order to gain some insight into these problems we decided to study the care given to patients with diabetes in the south London area in two ways: first, by a questionnaire survey of the organization, facilities and problems which general practitioners have in caring for diabetic patients; and secondly, an audit from patients' records of the management of a sample of diabetic patients.

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Method

The study was undertaken during a four month period in 1988. All principals in the six family practitioner committee areas comprising the south London faculty of the Royal College of General Practitioners (Greenwich and Bexley; Bromley; Croydon; Lambeth, Southwark and Lewisham; Merton, Sutton and Wandsworth; and Kingston and Richmond) were sent a survey questionnaire, via the family practitioner committee mailing. A period of four weeks was allowed for return of questionnaires, and all those received were included in analysis. Non-responders were not contacted again. Although a questionnaire was sent to all principals, one member could opt to reply on behalf of a partnership. The respondents were assured of the confidentiality of individual replies.

The doctors were invited to provide details of the organization of diabetic care within their practices and the resources available locally, and they were asked via an open ended question for their perceptions of problems in providing diabetic care in general practice. Respondents were also asked to indicate whether they were interested in participating in the audit phase of the study.

Those doctors interested in the audit were sent five copies of an audit proforma. They were asked to complete the proformas from the first five sets of notes of patients with diabetes mellitus which they encountered, not necessarily in face to face consultation. The forms required the doctor to note which of the following 10 items had been recorded in the patients' notes in the previous two years: blood pressure, proteinuria, weight, peripheral sensation, peripheral pulses, visual acuity, fundoscopy, blood glucose, glycosylated haemoglobin, and urea and electrolytes. These criteria for good supervision were derived from a consensus of a research subcommittee of the faculty.

For each general practitioner participating in the audit, a score was calculated according to the number of items recorded for his or her non-insulin dependent and insulin dependent diabetic patients. This was achieved by dividing the total score for all the patients by the number of diabetics in that group. This mean score for each doctor was categorized into four levels of supervision: good (8–10); moderate (5–7); poor (3–4); or very poor (<3). Only patients who had been diagnosed for more than three years were included in this calculation. Owing to time constraints, it was not possible to follow up non-responders from the audit phase.

The coded data from both stages of the study were entered onto the University of London Amdahl computer, and analysed using the Statistical Package for Social Sciences (SPSS) software. Associations between variables were sought using standard non-parametric tests, chi-squared and Fisher's exact tests.

Results

Fifteen hundred general practitioners in the six family practitioner committee areas were sent questionnaires. Responses were received from 388 practices, representing 1034 principals, an

effective response rate of 69%. The combined list sizes of these practices were in excess of two million patients. Sixty five (17%) of the questionnaires were completed by single handed practitioners, 176 (45%) were answered by doctors on behalf of the entire practice list, and 147 (38%) doctors ran personal list practices, and answered accordingly.

Survey of general practitioners' views

Table 1 shows the practice organization of the general practitioners, and the facilities used by them in providing diabetic care. Comparison of the doctors who used a recall system for diabetics with those who did not showed that more used a diabetic register (χ^2 = 108.3, 1 df, $P<0.001$); 'supervised' a majority of insulin dependent diabetics (χ^2 = 32.2, 1 df, $P<0.001$); and 'supervised' a majority of non-insulin dependent diabetics (χ^2 = 9.6; 1 df, $P<0.01$). More of the practices with one member who had a special interest in diabetes 'supervised' their insulin dependent diabetics than did practices without such a doctor (χ^2 = 15.7, 1 df, $P<0.001$), but this was not true for their non-insulin dependent patients (χ^2 = 3.2, 1 df, P = 0.07).

Table 1. Features of diabetic care offered by general practitioners.

	Percentage of respondents (n = 388)
Able to identify diabetics from records	76
Supervises a majority of:	
Insulin dependent patients	21
Non-insulin dependent patients	64
Uses a diabetes register	25
Uses a recall system	19
One doctor in practice has a special interest in diabetes	30
Sets aside special time, or runs mini-clinic for diabetes care	14
Aware of a local hospital scheme for diabetes supervision	18
Participates in a diabetes shared care scheme	12
Patients carry a diabetes record card	16
Direct access available to:	
Consultant diabetologist	75
Diabetes eye specialist	42
Dietitian	78
Chiropodist	51
Blood sugar measurement in surgery	45
Glycosylated haemoglobin	53
Specialist diabetes nurse	40

n = total number of respondents.

Table 2 shows responses to the open question requesting doctors to list the three most important problems preventing provision of good diabetic care. Associations were sought between these problems and access to services. No problems were associated with a lack of direct access to a diabetologist. However, general practitioners who had difficulty in getting ophthalmic advice were less likely to have direct access to an ophthalmologist specializing in diabetes than were general practitioners who had no such difficulty (χ^2 = 5.1, 1 df, $P<0.05$). General practitioners who perceived deficiencies in their own clinical skills were less likely to have access to a dietician than were general practitioners who did not perceive deficiencies in their skills. Of the 36 respondents who perceived 'poor patient compliance' as a problem, 64% had no access to blood sugar measurement in the surgery compared with 55% for the sample as a whole. Those with no access to glycosylated haemoglobin

Table 2. Problems perceived by general practitioners as a bar to good diabetes care.

	Percentage of respondents (n = 388)
Lack of time	44
Lack of recall facilities	15
Poor care at the hospital	14
Deficiencies in own clinical skills	13
Good care by hospital makes GP care superfluous	12
Lack of a diabetes register	11
No incentive to take on the care of diabetes	11
Lack of equipment/facilities in the practice	10
Poor patient compliance	9
Lack of staff	9
Difficulties in obtaining eye treatment	8
Lack of interest	7
No diabetes nurse available	6
Difficulties in treating the condition	5
Deficiencies in own ophthalmic skills	5
Other	26
No problems	3

NB: Each respondent could name up to three problems. n = total number of respondents.

measurement were more likely than those with access to perceive that hospital diabetic care was 'adequate' (χ^2 = 5.5, 1 df, $P<0.05$), that improved general practitioner care was unnecessary (χ^2 = 9, 1 df, $P<0.01$) and that facilities in the practice were poor (χ^2 = 13.6, 1 df, $P<0.001$).

Audit of care of diabetic patients

For the second stage of the study, 378 patient proformas were returned by 77 general practitioners, representing 24% of the doctors who had expressed an interest in further participation. A further 16 general practitioners returned audit data which could not be linked to the survey questionnaire responses, and which was not included in the results reported here. The characteristics of the 378 patients are summarized in Table 3.

Table 3. Characteristics of the diabetic patients studied.

	Percentage of patients (n = 378)
Age	
<40 years	14
40+ years	86
Sex	
Male	52
Female	48
Record in notes of:	
Alcohol consumption	40
Smoking status	56
Diabetes management	
Insulin	35
Oral hypoglycaemics + diet	46
Diet only	17
GP care	30
Shared care	38
Hospital care	30
Patient monitors blood glucose	25
Patient monitors urine glucose	73

n = number of diabetic patients.

Of the 378 patients, 293 (78%) had been diagnosed diabetic for more than three years, and were therefore included in the assessment of supervision levels. The levels of supervision of diabetes by the doctors were: for non-insulin dependent patients (n = 169) 57% good or moderate; for insulin dependent patients (n = 124) 76% good or moderate. Table 4 shows the proportions of patients having the 10 parameters of diabetes supervision recorded in their records within the 24 months preceding the audit. The differences between the proportions of non-insulin dependent or insulin dependent patients having any of these parameters recorded did not reach significance, although there was a trend towards more insulin dependent patients having a glycosylated haemoglobin level recorded (χ^2 = 3.6, 1 df, P>0.05<0.1).

Table 4. Levels of supervision in diabetic patients who had been diagnosed for more than three years.

Items recorded in patients' notes in past two years	Percentage of patients	
	Insulin dependent (n = 124)	Non-insulin dependent (n = 169)
Blood pressure	81	85
Blood glucose	78	79
Fundoscopy	65	64
Test for proteinuria	63	64
Visual acuity	60	59
Weight	59	64
Peripheral pulses	48	51
Glycosylated haemoglobin	44	32
Peripheral sensation	40	49
Urea and electrolytes	40	46

n = number of patients.

A secondary analysis showed that there were no significant differences in overall levels of supervision recorded by type of care received (whether general practitioner versus shared versus hospital care; or whether general practitioner only versus hospital only).

Analysis of the associations between level of supervision (as recorded by the audit) for these 77 doctors, and their care and organization (as recorded in the survey questionnaire) revealed the following. More of the 30 general practitioners maintaining a diabetes register had their non-insulin dependent patients under 'good' supervision than did general practitioners who had no register (68% versus 52%), but the difference did not reach significance (χ^2 = 7.5, 3 df, P = 0.058). Significantly more general practitioners who had made organizational changes in order to care for their non-insulin dependent patients had 'good' supervision levels in the audit than those who had not (23 (48%) versus four (24%); χ^2 = 10.7, 3 df, P<0.05). However, this was not the case for those general practitioners setting aside specific times for diabetic mini-clinics (seven (54%) versus 20 (39%); χ^2 = 2.6, 3 df, P = 0.45). Where general practitioners had direct access to a dietitian, there was a trend towards more non-insulin dependent patients have 'good' supervision (χ^2 = 6.2, 3 df, P = 0.10).

No significant differences were found between family practitioner committee areas, either in the provision of services in those areas or in the levels of supervision by general practitioners.

Discussion

This paper reports a survey of the organization of general practice care for diabetes in south London, combined with a smaller audit of levels of supervision among diabetic patients. There was a similar response rate across six family practitioner committee areas, and no significant local differences were found in any of the variables measured. We did not have detailed information on non-responders, but we believe that this survey provided a representative picture of diabetes care in general practice in this large area. Clearly, the evidence from the second part of the study must be viewed with greater caution. The response to this audit phase was poor and this means a likelihood of selection bias towards those doctors more interested in diabetic care. Furthermore, the retrospective data gathering process means that the patients selected may not have been representative.

It has been suggested that organizing the care in a more structured way assists in the maintenance of good levels of supervision for chronic diseases such as diabetes,[3,7] although other authors have disagreed with this view.[8] Nevertheless, the study reported here provides limited evidence that the possession of a diabetes register and recall system for patients is associated with a higher level of supervision. General practitioners may perceive this level of organization as time consuming or disruptive — the former view being the problem nominated most often in this study. We found that doctors with no access to blood sugar measurement in their surgery and no access to measurement of glycosylated haemoglobin were more likely to view poor patient compliance as a problem, and to report hospital diabetic care as superior. In addition to their obvious clinical value, availability of these tests would increase general practitioners' confidence in their own management of patients. These associations — together with the suggestion of a link between direct access to a dietitian and better supervision levels — suggest that it is the absence of such resources which compounds the general practitioner's lack of confidence in his or her own clinical skills. This may result in a reluctance or refusal to participate actively in the care of diabetes.

If progress is to be made in diabetic care in general practice, the problems highlighted by our survey, particularly those of lack of time and poor organization, must be addressed. The realization that much of the work involved in organizing diabetic care can be done by other members of the practice team, particularly nurses,[9,10] may reassure and encourage doctors. Registers and recall systems can be set up without too much difficulty from repeat prescriptions, patient contact, memory, and hospital letters over a period of months.[11] As an initial step, information on these simple methods of constructing registers should be widely publicized.

It has been suggested that the 'mini-clinic' is the most appropriate way for general practitioners to deliver care to diabetics.[12,13] While the new contract for general practitioners puts increasing pressure on dedicated time, through its requirement for screening the healthy, it also supports the principle of the diabetes mini-clinic by providing the incentive of a sessional fee for such clinics.[14] However, our limited audit revealed no evidence of better supervision in practices which set aside specific times for diabetic mini-clinics, and other more detailed studies have reached similar conclusions.[15,16]

The diabetes mellitus and general practice study group (south east Thames region) proposed 10 requirements for adequate general practice care of diabetes,[17] including possession of a diabetic register and recall system; access to blood sugar measurement in the surgery, and glycosylated haemoglobin locally; and access to specialist dietary advice. All of these can be fulfilled without the restrictions that a mini-clinic imposes on both doctors and patients.[4]

Our study suggests that lack of time is perceived by general practitioners as the main barrier to improved diabetes care. Other problems are lack of specific skills, for example, fundoscopy, or lack of space. Although many general practitioners may feel themselves to be lacking in the appropriate clinical skills, we feel their confidence might be improved by the provision of resources, particularly access to blood sugar measurement (including glycosylated haemoglobin), and dietetic expertise. Once these are available, lack of time may prove less of a barrier, particularly with the limited incentive provided by the 1990 contract.

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