

# Characteristics and pattern of care of a diabetic population in mid-Wales

R.L. GIBBINS

J. SAUNDERS

**SUMMARY.** *The pattern of care and demographic features of diabetes in a largely rural Welsh population were investigated before the introduction of measures to improve diabetic care. All data were obtained from general practice notes. Of the population studied 1.01% were identified as diabetic. There were no demographic differences from recently published English studies. Seventy per cent of the diabetic patients had not seen a consultant within the preceding year. The level of surveillance for biochemical control and complications of diabetes was better in those who had had recent consultant care. However, basic surveillance data was missing in many consultant letters to general practitioners. The prevalence of known serious diabetic eye disease (9%) in the study population was similar to that found in a recent study of a structured care system.*

*Proposed improvements in diabetic care must take into account the large number of patients not attending hospital clinics. Communication between consultant clinics and general practitioners must be improved.*

## Introduction

IMPROVING primary care for diabetic patients involves knowing who they are and their current level of care. These factors in turn may contribute to their pattern of care. The extent to which diabetic care is offered from general practice or the local diabetic clinic is likely to vary between urban and rural settings.

In this study the care of all identified diabetic patients in a contiguous geographical area was examined. The predominantly rural southern half of the county of Powys and an adjacent part of Gwent, an area of approximately 900 square miles, was covered by the study. The population is cared for by 29 general practitioners organized into six group practices of between three and eight principals. Only one principal (R.L.G.) had a special interest in diabetics.

Five of the six practices were training practices, and five practices (24 principals) had access to community hospital beds. Acute medical, surgical and obstetric services were offered in some of these beds. In the spectrum of general practice in England and Wales this is an area where lower than average reliance on consultant services might be anticipated.

## Method

All the participating practices were visited by R.L.G. and data collection discussed in the context of a package for improving diabetic care. Each general practitioner made a register of all diabetic patients from memory and from repeat prescriptions. The medical records for these diabetic patients, including correspondence from specialist clinics, were examined. Data were

R.L. Gibbins, MB, general practitioner, Builth Wells and clinical assistant, Nevill Hall Hospital, Abergavenny; and J. Saunders, MD, consultant physician, Nevill Hall Hospital, Abergavenny.

collected up to a date about three months before the discussion to ensure that the discussion itself did not alter the data collected. The data included sex, age, age at diagnosis and treatment received. Weight, blood pressure, results of eye examinations, laboratory variables and details of consultations for diabetes, were also recorded. Not all practices collected the complete data set.

Raw data were collated using a BBC microcomputer and a commercial data base (Datagem). Data that appeared suspect for any reason were checked with the practices concerned, and if they could not be validated were omitted.

The population of the study practices was 46 400 and the age-sex breakdown was assumed to be that of the mid-1981 census figures for Powys.

## Results

A total of 469 diabetic patients were identified (prevalence 1.01%), of whom 143 were insulin treated and 326 were treated by other means — 252 were taking oral hypoglycaemic agents and 74 were managed by dietary restriction alone. The prevalence varied between practices from 0.78% to 1.16%. The age specific prevalence of known diabetes is shown in Figure 1 together with the results for three areas in England.<sup>1-3</sup> The results are broadly similar for all four areas.

Overall 64% of the diabetic patients were 60 years of age or over — 36% of the insulin treated patients were in this age group and 76% of the non-insulin treated patients. Diabetes was found to be more common in men than women at all ages. The exception was the 60–69 year olds treated with insulin and the 80 plus

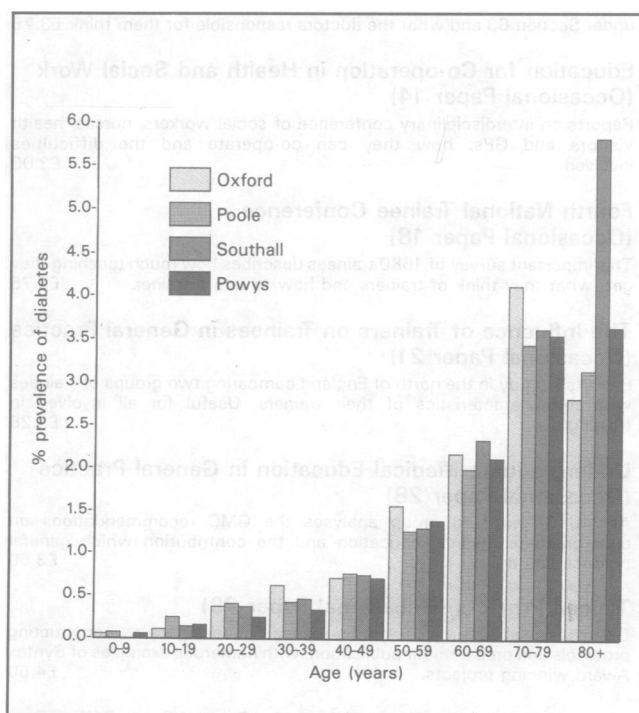


Figure 1. Age specific prevalence of known diabetes in Oxford,<sup>3</sup> Poole,<sup>2</sup> Southall<sup>1</sup> and this study.

year olds not treated with insulin, where it was more common in women.

Data on the age at diagnosis were only available for five practices and were based on 124 diabetics who were treated with insulin and 262 who were not. Of the insulin treated diabetics 60% were diagnosed before the age of 40 years. However, most non-insulin treated diabetics (83%) were diagnosed when they were aged 50 years or older.

On examining the pattern of consultant care it was found that only 30% of patients (55% of insulin treated diabetics, 20% of non-insulin treated) had been seen in a consultant clinic for diabetes within the preceding year and 45% (13% of insulin treated, 59% of non-insulin treated) had never been seen in a consultant clinic. Of the 143 patients who had been seen within the preceding year, 123 (86%) had seen their general practitioner within the preceding six months and 136 (95%) within the preceding year.

Of the 67 insulin treated diabetics under 50 years old, 65 (97%) had been seen by a consultant at some time, 48 (72%) within the preceding year. Of the 76 insulin treated diabetics aged 50 years or over, 41 (54%) had been seen within the preceding year and 16 (21%) had never been seen. Only 19 non-insulin treated diabetics were under 50 years old — 10 had never been seen in a consultant clinic, four had been seen within the preceding year and the remaining five at some time. Of the 307 non-insulin treated diabetics who were aged 50 years or over, 183 (60%) had never been seen by a consultant and 59 (19%) had been seen within the preceding year.

Consultations for diabetes with the general practitioner were examined. More insulin treated diabetics (19%) than non-insulin treated diabetics (13%) had last been seen more than a year ago, but this was not a significant difference (chi-square test). Similar proportions of insulin treated diabetics (70%) and non-insulin treated diabetics (73%) had been seen within the preceding six months.

The quality of care in terms of tests performed was assessed in two groups — those seen in a consultant clinic within one year (recent consultant care) and the rest (general practitioner care). Data recorded in general practice notes, including correspondence from consultant clinics, were analysed. For each parameter the mean interval since the last test was performed and the number and percentage of patients falling within the given time intervals were calculated. The amount of surveillance data recorded varied from practice to practice. Table 1 gives the data for the group receiving recent consultant care. Data were available on up to 143 diabetics, of whom 79 (55%) were insulin treated and 64 (45%) non-insulin treated. Their mean age was 52 years. The age at diagnosis was recorded for 119 patients with a mean of 39 years and a mean duration of diabetes of 11 years. Table 1 also gives the data for the general practitioner care group. Data were available on up to 231 diabetics, of whom 55 (24%) were insulin treated and 176 (76%) non-insulin treated. Their mean age was 65 years. The age at diagnosis was recorded for 178 patients with a mean of 55 years and a mean duration of diabetes of nine years. It can be seen that the level of surveillance for biochemical control and complications of diabetes was better for the group who had received recent consultant care.

The results for eye examinations were collected by all practices and are given in Table 2. Many patients, especially non-insulin treated diabetics, had no recorded examination. Both background and serious retinopathy (maculopathy and/or proliferative retinopathy) were more frequently recorded for insulin-treated diabetics.

**Table 1.** Timing of tests performed by consultants and general practitioners.

	Number (%) of patients tested			Mean interval between tests (months) <sup>a</sup>
	Within last year	More than one year ago	No record	
<i>Consultant care</i>				
Weight ( <i>n</i> = 119)	44 (37)	22 (18)	53 (45)	15.2
Blood glucose ( <i>n</i> = 142)	112 (79)	22 (15)	8 (6)	9.2
Blood pressure ( <i>n</i> = 106)	70 (66)	18 (17)	18 (17)	10.0
Glycosylated haemoglobin ( <i>n</i> = 143)	75 (52)	13 (9)	55 (38)	7.5
Blood urea or creatinine <sup>b</sup> ( <i>n</i> = 118)	65 (55)	5 (4)	48 (41)	21.3
Eye examination ( <i>n</i> = 143)	88 (62)	30 (21)	25 (17)	11.4
<i>General practitioner care</i>				
Weight <sup>c</sup> ( <i>n</i> = 181)	34 (19)	43 (24)	104 (57)	20.3
Blood glucose <sup>c</sup> ( <i>n</i> = 231)	81 (35)	109 (47)	41 (18)	16.4
Blood pressure ( <i>n</i> = 139)	58 (42)	35 (25)	46 (33)	20.8
Glycosylated haemoglobin <sup>d</sup> ( <i>n</i> = 231)	42 (18)	3 (1)	186 (81)	9.1
Blood urea or creatinine <sup>b</sup> ( <i>n</i> = 181)	77 (43)	15 (8)	89 (49)	27.5
Eye examination ( <i>n</i> = 231)	40 (17)	81 (35)	110 (48)	27.5

*n* = number of patients for whom data available. <sup>a</sup>Excluding patients with no record of a test performed. <sup>b</sup>Within five years and > five years ago. <sup>c</sup>Within six months and > six months ago. <sup>d</sup>Glycosylated haemoglobin assay was not available routinely to two practices.

**Table 2.** Results of eye examinations of diabetic patients.

	Percentage of diabetics		
	Insulin treated ( <i>n</i> = 143)	Non-insulin treated ( <i>n</i> = 326)	Total ( <i>n</i> = 469)
Background retinopathy	18	6	10
Serious retinopathy <sup>a</sup>	13	7	9
Other eye disease	5	13	10
Normal	44	31	35
No record of eye examination	21	43	36

*n* = number of patients. <sup>a</sup>Maculopathy and/or proliferative retinopathy.

## Discussion

The data presented here suggest that the population studied is similar to other populations in the United Kingdom for prevalence and demographic characteristics of diabetes.<sup>1-3</sup> It therefore seems unlikely that Wales has a higher prevalence of known diabetes than England, as has been suggested.<sup>4</sup> The derived age specific prevalence was also similar to that found in other studies,<sup>1-3</sup> and age at diagnosis showed a similar pattern to that found in Poole.<sup>5</sup>

Over two thirds of all diabetic patients identified in this study had not received recent consultant care. This includes the great majority of non-insulin treated diabetics and nearly half of the insulin treated diabetics. Although most insulin treated diabetics had been seen in a consultant clinic at some time, a small proportion had never received consultant care while the majority of non-insulin treated diabetics had never seen a consultant. The British Diabetic Association recommend frequent contact with the specialist diabetic team for all adults with diabetes and an annual review by a 'senior' doctor.<sup>6</sup> Most of the diabetics to whom this was directed will assume this means hospital based services. Even if desirable, fulfilling these criteria in a hospital setting would produce an unmanageable increase in workload, exacerbated by the increasing prevalence of diabetes in an ageing society. Thus, most of the care of diabetics should be undertaken in general practice, with specialist support.<sup>7,8</sup> One of the principal roles of diabetic clinics or centres should be to provide support and educational facilities for primary care workers. Cooperative arrangements of this sort can produce metabolic control that is as good as that attained in hospital clinics.<sup>8,9</sup>

Unlike the patients in other studies<sup>10,11</sup> most of the patients in this study had recently seen their general practitioner, though the content of the consultation was inadequate. Simple protocols for diabetic care and suitably trained attached nursing staff may remedy this without a great increase in general practice workload.

Efficient information transfer between those involved in diabetic care is essential if cooperative schemes are to work.<sup>8</sup> In this study basic information was found to be missing in letters from consultant clinics. More data were probably recorded in hospital notes than were communicated, but even this may not be adequate.<sup>8</sup>

Surprisingly there are more published audits of diabetic care in general practice than in hospital clinics. Criticism of standards of care in general practice by specialists is unlikely to be accepted unless accompanied by self audit. Letters to general practitioners can have an important educative role by showing what data should be recorded, and important information such as eye examination results must be shared. In this study the results of eye examinations revealed a similar percentage (9%) of patients with known serious diabetic eye disease to that in a structured care system in Poole.<sup>5</sup> This suggests that improving the delivery of diabetic care does not increase the detection rate for diabetic eye disease, and this should be studied further.

## References

- Mather HM, Keen H. The Southall diabetes survey: prevalence of known diabetes in Asians and Europeans. *Br Med J* 1985; **291**: 1081-1084.
- Gatling W, Houston AC, Hill RD. An epidemiological survey: the prevalence of diabetes mellitus in a typical English community. *J R Coll Physicians Lond* 1985; **4**: 248-250.
- Neil HAW, Gatling W, Mather HW, *et al*. The Oxford community diabetes study: evidence for an increase in the prevalence of known diabetes in Great Britain. *Diabetic Medicine* 1987; **4**: 539-543.
- Ashley DJB. Diabetes in Wales. *J Med Genet* 1967; **4**: 274-276.
- Gatling W, Mullee M, Hill R. General characteristics of a community-based diabetic population. *Practical Diabetes* 1988; **5**: 104-107.
- Anonymous. What professional supervision adults with diabetes should expect. *Balance (Journal of the British Diabetic Association)* 1988; June/July: 5.
- Day JL, Johnson P, Rayman G, Walker R. The feasibility of a potentially 'ideal' system of integrated diabetes care and education based on a day centre. *Diabetic Medicine* 1988; **5**: 70-75.
- Boucher BJ, Claff HR, Edmonson M, *et al*. A pilot diabetic support service based on family practice attenders: comparison with diabetic clinics in east London. *Diabetic Medicine* 1987; **4**: 480-484.

- Singh BM, Holland MR, Thorn PA. Metabolic control of diabetes in general practice clinics: comparison with a hospital clinic. *Br Med J* 1984; **289**: 726-728.
- Hayes TM, Harries J. Randomised controlled trial of routine hospital care versus routine general practice care for type II diabetics. *Br Med J* 1984; **289**: 728-730.
- Wilkes E, Lawton EE. The diabetic, the hospital and primary care. *J R Coll Gen Pract* 1980; **30**: 199-206.

## Acknowledgements

This work was supported by grants from the Claire Wand Fund and the Nevill Hall Thrombosis and General Research Fund, and would not have been possible without the full cooperation of the medical practices concerned.

## Address for correspondence

Dr R.L. Gibbins, Maes-y-Coed, Builth Wells, Powys.

## College Publications — Teamwork

### Education for Co-operation in Health and Social Work (Occasional Paper 14)

Reports an interdisciplinary conference of social workers, nurses, health visitors and GPs: how they can co-operate and the difficulties involved. £3.00

### Working Together — Learning Together (Occasional Paper 33)

This reports the successes and failures of courses run over several years to promote teamwork in general practice. £3.00

### Preventive Care of the Elderly (Occasional Paper 35)

Based on papers given at a national workshop, this document describes case-finding and screening programmes for the elderly, with special emphasis on team care. £5.00

### The Work of Counsellors in General Practice (Occasional Paper 37)

This study, based on interviews with 17 counsellors, shows that although there are problems involved in counselling attachments, there are advantages for doctors, patients and counsellors. £3.50

### Prevention and the Primary Care Team

The report of a multidisciplinary working party looks at some of the difficulties and delicate issues in prevention and makes practical recommendations. £3.00

### Healthier Children — Thinking Prevention (Report 22)

Covers many principles involved in childcare: examinations, doctor-patient relationship, teamwork, remuneration, monitoring and training. '... a forward looking report. I have not read anything in recent years so heartening' Archives of Disease in Childhood. £5.50

All the above can be obtained from the Central Sales Office, Royal College of General Practitioners, 14 Princes Gate, London SW7 1PU. Prices include postage. Payment should be made with order. Access and Visa welcome (Tel: 01-225 3048).