Systematic care of diabetic patients in one general practice: how much does it cost?

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SUMMARY. This study examines the costs of running a method of systematic care for diabetic patients in one general practice — the monthly 'diabetic day'. Doctor, nurse, chiropodist, dietitian, clerical officer, building and stationery costs were included in the evaluation. The study took place in an inner city practice of seven partners based in a health centre. The cost per year of running the diabetic days was £1854.53 to the practice and £4465.69 to the National Health Service (1989 prices). The cost to the practice included family health services authority reimbursements and excluded the cost of the chiropodist and dietitian. The cost per attendance was £38.17 to the NHS and £15.85 to the practice while the cost per patient per year was £58.00 to the NHS and £24.08 to the practice. The practice suffered a net loss after taking into account health promotion clinic payments received from the family health services authority. The cost to the NHS of each attendance at the practice was considerably greater than estimates of the cost of attendance at the outpatients department of a local trust hospital. However, it is argued that general practice has an essential role in the improvement of diabetic surveillance, and that an adequate remuneration package could transform the care of many patients with diabetes.

Keywords: diabetes mellitus; consultation costs; practice finance; workload; GP clinics; health service costs.

Introduction

DIABETES is a major cause of mortality and morbidity, much of which is preventable.[1-3] It is likely that as the proportion of elderly people in the population rises diabetes will become increasingly prevalent. Screening could increase the known prevalence of diabetes by 40%,[4] and general practice is being asked to take a larger share of the care of diabetic patients.[5-7] Current standards of care for diabetic patients in general practice have been criticized[8-10] and general practitioners have been exhorted to organize systematic diabetic care.[5,6,11,12] However, there is a lack of information about the workload and financial costs of such care. Laing and Williams[7] have pointed out that there is no satisfactory information on which to base the calculation of the cost of care for patients with diabetes. They estimate that the 1.2% of British people with diabetes consume between 4% and 5% of all health care resources.

There is a widespread assumption within general practice that good quality care can be provided cheaply in this setting but there is no evidence for this. This study examines the costs of running a general practice diabetic care system — the monthly 'diabetic day'.[13]

Method

The study was carried out in one general practice, which has seven partners, two trainees and two practice nurses. It is based in a purpose built health centre in inner London. Approximately 80% of the practice's 13 500 patients are designated a deprivation allowance.

The diabetic day occurs on one day each month. On that day all members of the practice team and especially the practice nurse, are oriented towards seeing patients with diabetes. In an annual check the practice nurse spends 40 minutes with each patient and 20 minutes in a regular check. She takes a history of smoking, exercise, diet and alcohol consumption; assesses the patient's urine testing technique; provides health education; and carries out all process measures, except fundoscopy, and records them on a flow sheet in the patient's notes. All the general practitioners run a normal surgery during the day but include two or three of their diabetic patients — these patients are allocated a double appointment (20 minutes) for an annual diabetic check and a standard 10 minute appointment for a regular diabetic check. This system promotes personal and continuing care. A dietitian and a chiropodist see the patients regularly. A clerical officer updates and maintains the recall register, compiles the appointment list and sends out invitations.

To calculate the cost of doctor time the number of diabetic consultations on the diabetic days in an index year (1987) was multiplied by the length of a consultation (booked not actual), and then divided by the surgery hours booked for a full time general practitioner in one year. This figure was multiplied by the average net remuneration as set by the Doctors and Dentists Review Body from 1 April 1989 (£31 105.00).[14] Consultations with diabetic patients in ordinary surgeries were not included in this calculation. Average net remuneration was used rather than gross remuneration because it allowed separate costing of premises, nurse and clerical officer, the disadvantage being that expenses such as secretarial and telephone costs were not included. Average net remuneration includes a component for continuing administration. It is assumed that diabetic clinic appointments overrun to the same extent as other practice appointments, and generate the same amount of other work for the general practitioner in the form of referrals, administration, telephone calls and so on.

The costs of the practice nurse and clerical officer were calculated similarly by dividing the number of hours worked on the diabetic days by the total number of hours worked in one year and multiplying by the annual salaries (plus employer's contributions) with and without family health services authority reimbursement (within specified criteria general practitioners are reimbursed 70% of their staff salaries and all employer's contributions by their family health services authority) — practice nurse £4743.90 and £17 464.56, respectively; clerical officer £2606.40 and £9597.12, respectively. Details of the costs of the chiropodist and dietitian (including employer's contributions) were supplied by Bloomsbury Health Authority, as were details of the cost of the part of the building used by the nurse on the diabetic days. Only the area used by the nurse was included because an accurate estimate of the use of the waiting area and the general practitioners' consulting rooms was not possible. The cost for the building included rental, heating, lighting, cleaning and portering. The stationery costs included the actual cost of recall letters, diabetic flow sheets, checklists and computer paper. All figures were based on 1989 prices.

The following data were also collected: consultation rates for the two years either side of the patient's entry into the diabetic

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day scheme (included all consultations except those which resulted from patients being invited to attend the diabetic days), the capital cost of equipment, the doctors' time involved in setting up the scheme and the doctors' time involved in continuing administration of the scheme. The doctors' time involved in setting up the scheme was estimated from diary records of appointments, minutes of meetings and other records.

Results

The 77 patients attending diabetic days in the index year (1987) did so 117 times. Seventy seven attendances were for annual diabetic checks and 40 were regular diabetic checks. During the year the time spent by general practitioners on the diabetic days was 32.3 hours (not including administration), while practice nurses were allocated to spend 120 hours (including administration) and clerical officers 60 hours. Full time general practitioners were booked for a mean of 750 surgery hours in the year while full time practice nurses worked 1725 hours and full time clerical officers 1610 hours. The total cost of the diabetic days to the NHS was £4465.69 (Table 1). Reimbursement from the family health services authority reduced the cost to £1854.53. The cost per patient per year was thus £58.00 to the NHS and £24.08 to the practice. The cost per attendance was £38.17 to the NHS and £15.85 to the practice.

There was no decrease in the diabetic patients' consultation rate in ordinary surgeries as a result of entry into the diabetic day scheme — the mean consultation rate in the two years before entry to the scheme was 5.1 per patient per year and in the two years after entry 5.5 per patient per year. The capital cost of equipment totalled £425.60 and included weighing scales (mechanical sliding), height gauge, blood glucose meter, tuning fork, a pin hole device, a Snellen chart and an ideal body weight chart. Setting up the scheme was estimated to take 61 hours of the doctors' time. Continuing administration of the scheme involves the doctor in a minimum of one 30 minute monthly meeting with the practice nurse and clerical officer, totalling six hours each year.

Discussion

Each patient attendance at a diabetic day cost the practice £15.85 and the NHS £38.17. Reductions in the general practice cost of each attendance could be achieved, possibly at the expense of quality, by cutting nurse–patient contact time, employing a nurse on a lower grade, not allowing general practitioners double appointments for annual checks and having the nurse carry out all the general practitioners' functions.

The charge to general practitioner fundholders for each diabetic outpatient attendance at the Royal Free Hospital, London (the local trust hospital) was £15.00 in 1991–92 (this tariff rate is based on diabetic specialty costs), considerably less than the cost to the NHS of attendance at diabetic days (£38.17). Possible reasons for this difference are that general practitioners are paid more than junior hospital doctors, that patients spend longer with a practice nurse than they would with a nurse in hospital and that hospitals have the advantage of the economies of scale.

Hospital costings are in their infancy and their development is being hindered by inadequate resources. Thus, their accuracy is questionable. However, even with more accurate data, comparisons will be unsatisfactory unless methods are standardized. In an increasingly cost conscious NHS general practitioners are more likely to include a financial element in their audits. There is therefore a compelling need for standardization. The criteria used in this analysis were chosen for easy reproducibility, and involved mainly reorganization of existing data rather than collection of new data.

Table 1. Cost of the diabetic days for one year.

Item	Annual cost (£)	
	With FHSA reimbursement	Without FHSA reimbursement
General practitioner	1340.97	1340.97
Practice nurse	330.01	1214.93
Clerical officer	97.13	357.66
Building (16.8 m^2)	41.32	41.32
Stationery costs	45.10	45.10
Dietitian and chiropodist	—	1465.68
Total	1854.53	4465.66

FHSA = family health services authority.

This study has focused on the contribution of general practice to diabetic care and this limits the value of the estimate of cost to the NHS. The considerable cost to patients and society incurred by travelling and time lost from work are not included. The cost of investigations and any increase in the number of referrals to specialists are also not included, but neither are any savings to the NHS from the prevention of blindness and other complications.

The unit cost to the practice of running the diabetic days was £24.08 per patient per year (£58.00 per patient per year to the NHS). This figure does not include the cost of continuing care provided to diabetic patients in ordinary surgeries. The figure may be higher in smaller practices which would have proportionately greater administrative costs, and lower in practices outside London where staff and buildings costs are lower. The diabetic days also incur an opportunity cost as both practice nurses and doctors are giving time to the diabetic patients at the expense of other patients and projects.

The running cost of the diabetic days was £1854.53 per annum to the practice and £4465.69 to the NHS. The practice nurse and the recall system are the two most essential aspects of the diabetic days, yet the cost of the practice nurse (after reimbursement from the family health services) was £330.01 and of the clerical officer £97.13. These are small sums considering the return. From April 1990 general practitioners have been able to claim a payment for health promotion clinics, but there is no payment for setting up these clinics and this is a serious omission. The diabetic days are classified as two health promotion sessions earning the practice £1080.00 per year (1991 prices),[15] far short of the 1989 running costs of £1854.53. The diabetic days could become financially profitable by reducing the services provided to the bare minimum required to obtain the health promotion payment. This illustrates a serious defect in the present system which encourages low quality 'budget' care. If general practitioners were reimbursed for all the costs of such work, within an upper limit and provided that it met with the approval of the family health services authority and peer review, innovation might be stimulated and excellent care provided.

The present state of diabetic surveillance is inadequate,[8-10,12] and an expansion of general practice care is essential. Systematic care in general practice offers a satisfactory alternative to hospital care for most diabetic patients,[5,6] and would allow diabetologists more time to fulfil their specialist functions. Many diabetic patients receive no care at all,[12] many expensive hospital admissions are avoidable,[8,16] and hospital outpatient clinics are frequently overburdened.[5] Hospital care is not acceptable to all patients and the majority of patients want general practitioners to be involved in their future care.[17] The cost to patients of attending hospital is likely to be greater than attending general practice and the list system allows general practitioners to keep more accurate diabetic registers than hospitals.

Financial benefit is only one consideration and other benefits are as important, such as the provision of personal whole-person care, improvements in the skills of general practitioners and practice nurses in managing diabetes, more appropriate referrals to specialists, increased job satisfaction for general practice staff, improvements in surveillance and increased patient convenience.

The negotiations between the Department of Health and the General Medical Services Committee concerning payments for diabetes and asthma clinics in general practice are extremely important. The rapid adaptation of general practitioners to the new contract[17,18] indicates that an adequate remuneration package could transform the care of many patients with diabetes.

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