Practice Research

Completeness of chronic disease registration in general practice

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Abstract

The completeness of chronic disease registration in four general practices was assessed by referring to the Hospital Activity Analysis. Overall, just over half (56%) of the 695 patients who had been discharged from hospital with a diagnosis of diabetes, cancer, myocardial infarction, epilepsy, hypertension, or thyroid disease were identified on the practice disease registers. Patients with diabetes were most likely to be identified (72%), and those who had had a myocardial infarct least likely (43%). If the standard of registration is to be improved general practitioners must be convinced of its value. The Hospital Activity Analysis might be used widely to audit and improve practice registers.

Introduction

Registering patients with chronic medical disorders is a means of identifying those whose long term management can be improved by organising clinical review to meet their particular needs.¹ How complete the registration of chronic disease is may be assessed by using Hospital Activity Analysis data, which are produced by health authorities. These data include information on the diagnosis and the general practitioner for each patient discharged from hospital. Thus a list of patients with specific diseases who were discharged from hospital during a given period can be produced and their names checked against the practice disease register.

Four general practices in Oxford had established a chronic disease register by the beginning of 1982, using the computing facilities of the Oxford Community Health Project. Standard definitions had been agreed for the registration of diseases, which included malignancy, diabetes, epilepsy, hypertension, myocardial infarction, and thyroid disease. A list of patients with these diseases, specified by International Classification of Diseases (ICD 9) code, could therefore be produced for each practice from Hospital Activity Analysis data collected by the regional health authority, and the chronic disease registers could be validated against this list.

Method

The definitions of registrable disease that had been adopted by the four practices were as follows: (a) cancer: malignant disease of any site; (b) hypertension: diastolic blood pressure >105 mm Hg (or >100 mm Hg if

aged under 50) or systolic pressure >180 mm Hg (or >160 mm Hg if aged under 50), or both; (c) diabetes: random blood glucose concentration >11 mmol/l or fasting blood glucose concentration >8 mmol/l; (d) thyroid disease: past or current thyroid disease, including thyrotoxicosis, myxoedema, and thyroiditis, but excluding malignancy; (e) epilepsy: patients taking anticonvulsant drugs; (f) myocardial infarction: supported by electrocardiograph or serial enzyme change, or both, or, in their absence, a firm clinical diagnosis.

The disease registers were compiled either by weekly batch processing of registration forms on the community health project's mainframe computer (two practices) or by interactive data entry at the practice using a microcomputer (two practices). Patients who were on the disease register and who left the practice or died were retained on an archive file and data were therefore available for analysis.

The Hospital Activity Analysis listing was obtained by specifying the names of principals in each practice (patients who named trainees and locums would therefore be excluded) and the following ICD9 groups: malignancy (ICD 140-208), diabetes (ICD 250), myocardial infarction (ICD 410), and other (epilepsy ICD 345, hypertension ICD 401-5, and thyroid disease ICD 240-6). Data on day cases were not available, and patients who had died in hospital were excluded. Both principal and secondary diagnoses were included.

Matching of names generated by the hospital data against the practice disease registers was done manually by the staff of the community health project. Although the names in the hospital data were classified by year of discharge, any subsequent appearance on the practice register before the audit date (November 1985) was accepted. Patients were counted only once irrespective of the number of admissions thereafter.

Results

Table I shows the completeness of chronic disease registration in the four practices for different disease categories. Rates of registration were disappointingly low, although there is no evidence of enthusiasm decreasing over time, and rates for 1983 and 1984 are higher than for 1982. Patients with diabetes had the highest registration rates, and those with myocardial infarction the lowest. Numbers in the "other" group were too small to give data by year, but overall the registration rate for epilepsy was 44% (n=32), hypertension 69% (n=13), and thyroid disease 48% (n=23).

Table II shows the differences between practices. With the exception of practice 2, patients with diabetes were more likely to be registered than patients with malignant disease, who in turn fared better than patients who were discharged from hospital after myocardial infarct. There was no important difference in the completeness of registration of chronic disease between the two practices using batch processing on the mainframe computer (59%, n=353) and the two using direct entry of information into a microcomputer (52%, n=342).

Discussion

This study was possible because Hospital Activity Analysis in the Oxford region contains the names of patients. This is not the case in all regions, although the implementation of the Korner report, and in particular the introduction of patient administration systems, will mean that more and more district health authorities will hold patient names on hospital computers.

The Hospital Activity Analysis list was used in our study to

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TABLE I—Completeness of disease registration: comparing numbers of patients recorded in the Hospital Activity Analysis (HAA) and in the practice register in four practices, 1982-4

Disease	1982			1983			1984			Total		
	HAA No	Practice No	%	HAA No	Practice No	%	HAA No	Practice No	%	HAA No	Practice No	%
Malignant	134	67	50	132	70	53	118	62	53	384	199	52
Diabetes	60	38	63	53	42	79	56	42	75	169	122	72
Myocardial infarct	25	9	36	24	11	46	25	12	48	74	32	43
Other*	22	11	50	22	11	50	24	12	50	68	34	50
All	241	125	52	231	134	58	223	128	57	695	387	56

Note: Percentage given = (practice/HAA) × 100.

*Epilepsy, hypertension, and thyroid disease.

TABLE II—Completeness of disease registration: comparing numbers of patients recorded in the Hospital Activity Analysis (HAA) and the practice register for all years by practice

Disease	Practice								
	1			2			3		
	HAA No	Practice No	%	HAA No	Practice No	%	HAA No	Practice No	%
Malignant	93	53	57	136	74	54	97	46	47
Diabetes	28	25	89	64	34	53	57	47	82
Myocardial infarct	13	6	46	26	12	46	27	11	41
Other*	14	7	50	24	12	50	24	13	54
All	148	91	61	250	132	53	205	117	57

Notes: Percentage given = (practice/HAA) × 100.

Practices 1 and 3 use microcomputers; practices 2 and 4 use batch processing on a mainframe computer.

*Epilepsy, hypertension, and thyroid disease.

identify patients who should be registered, so the completeness of this list is not important as long as the name of the general practitioner and the diagnosis are recorded accurately. In Oxford diagnostic coding errors are uncommon except for confusion between primary or secondary diagnoses and for certain problem codes. The fact that a registration rate of 89% for diabetes was achieved in one practice also suggests that the error in the Hospital Activity Analysis list is small.

Registration rates for all other diseases fell far short of that for diabetes, and, as hospital admissions are likely to reflect the serious cases of a disease in the practice, this is disappointing. The malignancy group included ICD codes which practitioners may think should not be included on the register—for example, skin cancer—but most of these patients would be treated as day cases and are excluded from the present analysis. Some of these patients, and some with myocardial infarct, may also have died shortly after discharge and before they could be entered onto the disease register—but the total numbers will be small.

The potential advantages of chronic disease registration include analysis of trainee workload,² drug monitoring,³ identification of disability⁴ and facilitation of transfer of responsibility within group practices,⁵ as well as improvement in the management of chronic disease⁶ and providing a sampling frame for research.⁷ Less easily quantified, but equally important, is the change in attitude that may occur in a general practice from participating in an activity like this.

The failure to achieve complete registration may reflect poor motivation and inadequate organisation. The difference in the rates for different diseases may reflect the perceived clinical value of notification—hence the higher rate for patients with diabetes and hypertension. Furthermore, notification of a myocardial infarction may be overlooked during an emergency consultation. General practice, however, is still heavily demand led, and general practitioners may be less than meticulous in registering patients if they are not convinced of the value of disease registers and do not use them in daily practice. Too much data is collected on the basis of good intention rather than usefulness. The quality of data collection might also be improved if the registers were checked against hospital discharge summaries before they were filed in the patients' notes. In the longer term it would be both desirable and technologically feasible for Hospital Activity Analysis data on discharges to

be transmitted directly to general practices by computer so that patient records and registers could be accurately updated.

We thank Mrs B Martin, administrator, Oxford Community Health Project, and Mr A R Peeke, administrator, Oxford Record Linkage Study, for their help with the data collection, and the general practitioners from the health centres in Berinsfield, Bicester, Sonning Common, and Beaumont Street, Oxford, for their participation.

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(Accepted 1 December 1986)

100 YEARS AGO

We have never ceased to protest against the impropriety of gratifying the morbid curiosity of a crowd of sightseers by performances involving serious risk to life and limb on the part of the performer or performers. The risks incidental to the occupation of a lion tamer have been made painfully evident by several more or less serious accidents during the last month or two, and now a well-known tamer has paid the penalty of his rashness by being killed outright before any assistance could be brought to bear. The unfortunate man was in the employ of the Redenbach Menagerie, stationed for the time being at Bourges, and during a rehearsal he was attacked by one of the lions, and such serious injuries were inflicted on his head and spine that he was dead when removed from the cage. This lamentable occurrence ought to lead our own authorities to suppress exhibitions as opposed to good taste as they are to common sense. (*British Medical Journal* 1887;ii:78.)