Automated recall in general practice

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IN general practice the situation is structured much more by the patient than it is in hospital. The stage of an illness at which he seeks an interview is his own decision and is based on such factors as his pain threshold, his personality, his education and his home background. Also, he is able to opt out of the treatment situation at any time, and this freedom of choice may, unless accompanied by a follow-up procedure, result in incomplete diagnosis or treatment, allowing serious disease to develop undetected.

Some patients with diseases requiring long-term treatment, may feel so well that treatment is abandoned, e.g. myxoedema and pernicious anaemia, and it is now apparent that some forms of treatment, e.g. radioactive iodine and thyrotoxicosis, may cause changes that need to be searched for over many years, if serious impairment of health is to be avoided.

It not infrequently happens that a consultation for an acute illness arouses suspicion of more serious underlying pathology, and though the doctor may record this, and instruct the patient to return, for a variety of reasons he may not. Simple tickler files are adequate if only one doctor is seeing the patient, but in group practice this is inadequate as a means of communicating danger signals to the other partners, and to the ancillary staff (health visitors, district nurse).

The appointment book gives a warning of patients not returning in the short term, but does not cover patients being reviewed at long intervals, when they may prefer to make their appointment nearer the time.

Automated recall procedures have been used in Aberdeen and Birmingham (Barker and Bishop 1969) to detect iatrogenic thyroid disease. Both schemes are based on computers serving large hospitals. In Aberdeen the computer, an ICL 4/50, assesses the results of a protein bound iodine estimation and a questionnaire, both produced by the family doctor. In Birmingham the patient completes a questionnaire and this is assessed on the IBM 1440 computer in the medical school. The patient attends the hospital for estimation of the protein bound iodine at an interval dependent on the results of the questionnaire. In both cases the cumulative results are stored on a magnetic tape file.

Hedley et al. (1970) have explained that follow-up so often fails because the division of responsibilities for follow-up between consultant and general practitioner is not clearly defined. They state their acceptance of the principle that the responsibility for primary patient care lies with the general practitioner, and that it is the responsibility of the hospital to give him the facilities which he cannot provide for himself to perform this function.

Ockenden and Bodenham (1970) state that it may be convenient to keep records of follow-up and evaluate the consultation at a hospital or university medical faculty, while the actual consultation is with the patient's own general practitioner.

The Aberdeen application is sufficiently generalized to be adaptable. Hedley

suggested that the programme might be applied to more diseases in the general-practitioner hospital context. We took this suggestion and modified the system at Birmingham to receive data about selected groups of patients who needed life-long surveillance in general practice. We chose the groups shown in table I.

TABLE I

Peptic ulcer	Treated surgically
Hiatus hernia	
Ulcerative colitis	
IUCD	Because of reported anaemia as a side effect of continued use
Pernicious anaemia	
Treated malignant disease	
Myxoedema	
Thyrotoxicosis	Treated by antithyroid drugs Surgery Radioactive iodine
Hypertension	
Chronic pyelonephritis	
Diabetes	
Psychiatric disorders (depression)	
Chronic central nervous disease	Epilepsy Multiple sclerosis Parkinsonism
K.I.V.—"Keep in view"	Serious disease suspected Transferred to appropriate group after diagnosis

Methods

The practice already had a basic age-sex register on punch card, and we decided to see if this could be adapted as the basis of the recall procedure.

At the same time we set out to produce lists of certain groups of patients to see what value they could be to the practice.

These were:

(1) A list of women by year of birth. This is now being used by our practice nurse as a check list for those who have had a cervical smear and to call in those who have not. We hope that an attached midwife will soon be able to visit and test those who fail to respond.

(2) A list of all the children under one year of age. This is used as an accurate check register by which our two health visitors can pick up defaulters in the immunization programme.

(3) Lists of people over 65, by year of birth, which are being used by our health visitors to check the needs of geriatric patients.

(4) A monthly list of all patients joining and leaving the practice. This has already enabled our health visitor to detect several children entering the practice who have not been screened for phenylketonuria.

(5) A full alphabetical list of the practice. This produced the first upset of our plans, when, following a time-consuming check by our receptionists, it was found to have an inaccuracy of about 14 per cent. As far as we can ascertain this error was due to the method of production of our basic age-sex register, from lists typed by the executive council from their card index files, and later, transferred to punch cards by the staff of the laboratory. The files were then maintained by the practice secretary and this proved more than she could manage. It was not until we were able to employ a research

secretary that we were able to correct the register. We would strongly advise any practice contemplating the preparation of an age-sex register, to do it from their own files in the first place and check it with the executive council lists subsequently.

Mechanics

When a patient suffering from one of the named diseases presents (not necessarily for the same complaint) a special marker is placed in the record, stating in code, the diagnosis, the name of the doctor and the interval after which he wishes to see the patient. This record is then passed to the research secretary who prepares a punched card. This card contains the identification, the diagnosis, the recall interval and the doctor initiating the request.

At the beginning of each month the file is scanned for patients who are due to be seen. They are then sorted alphabetically and into diagnostic groups and each doctor or health visitor is given a list of the patients he should see that month. All patients were told that they should report after a specified interval but were not told that they would be notified if they did not.

As patients attend, the various investigations are recorded on a report form which includes spaces for the date they were seen and the interval to the next contact. The name of any patient for whom no report form was returned automatically appears in the list for the following month. Those not attending were sent a reminder or, if necessary, visited by the doctor or health visitor.

Transfer to computer

Having established the various registers on punch card it became apparent that the one main register was inadequate because of the time taken sorting cards and restoring it to order after each search, e.g. 32 hours to list the total practice (9,000). A separate Risk Register had to be produced.

After it had been in operation for some months we were offered computing facilities to run the recall programme. More details were needed for identification and more cards were needed to convey the relevant information to the file. We were then, however, able to store much more data and from our point of view the list preparation became very much easier. The computer also produces address labels which can be used to send for patients who do not attend. The experience of having access to a computer has been most valuable to us, not least because of the high degree of accuracy needed in our recording.

Results

The present state of the Risk Register with numbers of patients in the different groups is shown in the print-out, table II.

Discussions and conclusions

We have all found that the recall system has given us a sense of added security, knowing that we shall be automatically reminded about patients who ought to be seen but the system has been used very unevenly by the different partners, depending on their own enthusiasm or their inclination to cope with the unintentionally large volume of paper that was needed.

After some experience the partners decided that we were wrongly using the system, and that it should be used to follow up special cases only i.e., smaller groups, at longer intervals. It was also decided that the label output by the computer, used for case note headings and appointment letters was an extravagance in that it was not being used

TABLE II

Results of recall	Doctors					Total
	1	2	3	4	5	
High risk children	0	0	0	0	0	0
Treated peptic ulcer	0	7	53	9	6	75
Hiatus hernia	0	9	6	5	1	21
IUCD	0	0	161	1	0	162
Ulcerative colitis	0	0	1	4	0	5
Pernicious anaemia	0	3	1	3	0	7
Treated malignant disease	0	9	11	0	1	21
Thyroid disease ..	0	13	9	2	0	24
Hypertension and renal disease	2	13	26	6	5	52
Diabetes	0	38	12	6	2	58
Psychiatric/CNS ..	1	19	19	35	1	75
	3	111	299	71	16	500

fully. Input should ideally be from the appointments sheet already in use by the doctor' and output should be a list of patients to be seen by the doctor each month with the diagnosis written clearly.

The computer organized recall system produced too much output for the clinicians to deal with. One reason for this was that recall was often asked for at too short an interval. The other was the complexity of the results we wished to record for each group of diseases, and which led to clinicians not completing them. Non-completion led to re-issue of the recall reminder and the cumulative growth of that clinician's list.

The system will be pruned down so that it is made much simpler but will, we hope, remain automatic.

Summary

Automatic recall, initially by a punch card index and later by computer, has been used to follow up patients in a group practice. A hospital computer scheme was modified for this purpose, and found to be too sophisticated for the small area of a practice.

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