Middle Articles

HOSPITAL TOPICS

Evaluation of Early Diagnostic Services for the Elderly

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Summary: Medical examination was offered to a group of "high risk" old people who were not necessarily patients or known to their family doctors, but with the agreement of these family doctors. Two clinics set up for this purpose have been running for several years, and the results of examination and follow-up of 300 consecutive patients are reported.

Major conditions were found in two-thirds of patients producing functional impairment in most of these.

Recommendations as to therapy and management were carried out in 161 of 194 patients but not in the remainder.

Clear evidence of improvement was found in half of the patients who carried out recommendations, and this improvement was attributable to earlier diagnosis than would have been achieved without these clinics in 42% of cases.

Including all patients examined, the proportion helped by early diagnosis at 18 to 30 months' follow-up was 23%.

It is concluded that the offer of a routine examination to high risk groups is of benefit to old people and a form of medical practice which should be widely adopted.

Introduction

Many older patients and their doctors believe that almost any decline in health after the age of 60 years is an inevitable and irreversible result of "old age." This leads to hopelessness and therapeutic nihilism when doctors face the elderly sick and also to the apparently logical corollary that diagnostic exertions are at best in vain and at worst callous meddling. Williamson *et al.* (1964) confirmed widespread non-reporting of disabling disease in a group of patients taken at random from the lists of general practitioners. We therefore sought a method of contacting these mute potential patients and of persuading them to undergo medical examination. We also wished to find out whether the "yield" from such activity justified the time spent on it and the reversal of the traditional pattern of patient-initiated service.

To further these ends two "early diagnosis" clinics were set up in addition to our usual outpatient clinics in Edinburgh, and a routine for tracing and examining patients has been operating smoothly for several years. This paper describes the method of running such a clinic, the results of examination of 300 consecutive patients, and an evaluation one and a half to two and a half years after initial examination.

Method

The co-operation of several local general practitioners was obtained after the aims of the scheme had been explained. A health visitor attached to our unit was introduced to each practice and was provided with the names and addresses of patients either randomly from the doctors' records or direct from the doctors themselves. The doctors and health visitor were asked to provide particulars of patients whose only qualification for attendance at the clinic was an age of over 65 years. To reduce the group to manageable proportions we concentrated on "high risk" groups of patients, such as those who were living alone, had been recently bereaved, or had recently been discharged from hospital.

The health visitor then visited the household and offered examination with a full explanation of what was involved. If the prospective patient agreed the health visitor completed a home visit form recording information about the household, the house and its facilities, the patient's family, with particular reference to the amount of help given, the attendance of home helps and district nurses, and other supportive services. Any drugs being taken were identified on the spot. Patients were examined within a week of the health visitor's first contact. Transport arrangements were made where required.

At the clinic the patient's history was recorded on a printed standardized case sheet, as were the results of a full physical examination and a short psychiatric assessment, the latter being designed to detect early dementia and depression in particular. One-third of the patients were fully interviewed by a psychiatrist (Dr. Sallie Gray) at the same clinic session. A chest *x*-ray examination was carried out routinely, as well as any other *x*-ray examinations which were indicated. The patient was weighed. A specimen of urine was examined for the usual abnormalities, a specimen of blood was estimated routinely for haemoglobin, M.C.H.C., E.S.R., and blood urea, and any other estimations specifically indicated were made. Finally the patient was told that a full report would be sent to the family doctor.

A follow-up of 300 patients seen in this way was carried out some 18 to 30 months after the initial clinic examination and a further form was completed. The aim of this follow-up was to discover whether the advice and recommendations had been carried out, and if not, why not? We also wished to find out specifically whether the fact of earlier diagnosis of the patients' disabilities had led to more satisfactory treatment or management.

Results

Eighty-three per cent. of those offered examination agreed to participate. Few complaints were made about the procedure. All family doctors contacted agreed to participate, but a few appeared to forget about the idea after a short time and clearly had difficulty in changing from the usual patient-initiated approach.

The ages of the 300 patients (78 men and 222 women) are shown in Table I. A total of 120 (40%) patients lived alone; most of these were women, of whom only 18% were still married and living with their husbands. Half of those living alone had no supporting relatives.

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TABLE I.—*Age Range of* 300 *Patients Examined at "Early Diagnosis" Clinics*

<64	65–69	70–74	75–79	80–84	85–89	>90
1%	15%	28%	31%	20%	3%	2%

Many complaints came to light when patients were afforded the opportunity to mention them (Table II). Only one major presenting complaint was recorded for each patient for the purpose of this analysis, but many had several complaints. Not more than four diagnoses were recorded for each patient, and over the whole group the average was 2·3.

Some complaints, though indicating major potential hazards, nevertheless produced little or no actual functional impairment at the time of examination. A major diagnosis, defined as a condition resulting in a potential or actual health hazard, was made in 65% of the cases. Fifty-nine per cent. of the patients also showed some degree of functional impairment, and this was mild to moderate in 50% and severe in 9%. The kinds of conditions existing either singly or in combination which gave rise to the classification of severe impairment were gangrene, cardiac failure, carcinoma, blindness, deafness, Parkinsonism, dementia, hemiplegia, depression, and osteoarthritis.

TABLE II.—*Presenting Complaints of* 300 *Patients Examined at "Early Diagnosis" Clinics*

Nil	25%	Central nervous	8%
Locomotor	17%	Gastrointestinal	5%
Cardiovascular	10%	Urological	4%
Psychiatric	10%	Miscellaneous	12%
Respiratory	9%		

A large number and variety of diagnoses were made. The more frequent conditions found are given in Table III. Only 11 patients had no abnormality. The diagnosis of ischaemic heart disease rested on the presence of angina pectoris, atrial fibrillation, or unexplained congestive cardiac failure. The diagnosis of osteoarthritis was never made on radiological grounds alone. The diagnosis of dyspepsia is not further defined, as not all cases merited barium examination. "Blindness" was separated from "cataract," as it was most commonly due to glaucoma or macular degeneration. "Prostatic enlargement" means that the patient had presenting complaints suggesting this diagnosis, as routine rectal examination was not carried out. "Anaemia" indicated a haemoglobin level of less than 75% (14·8 g./100 ml. = 100%). The most impressive figure is certainly the very high percentage (14%) of depression in this non-hospital group. The less frequent diagnoses made are shown in Table IV.

TABLE III.—*Most Frequent Diagnoses Made in* 300 *Patients Examined at "Early Diagnosis" Clinics*

>16% (62 cases)	Obesity
14–16% (43 cases)	Depression, cataract
10–13% (29–40 cases)	Hypertension (110 mm. Hg), ischaemic heart disease, deafness
7–9% (20–28 cases)	Chronic bronchitis, osteoarthritis, dyspepsia, foot defects
4–6% (11–19 cases)	Blindness, peripheral vascular disease, cerebrovascular accident, varicose veins, prostatic enlargement, anaemia, dementia, anxiety state

TABLE IV.—*Less Frequent Diagnoses Made in* 300 *Patients Examined at "Early Diagnosis" Clinics*

1–3% (2–10 cases)	Cervical spondylosis, Parkinsonism, vertebral basilar ischaemia, postural hypotension, rheumatic heart disease, rheumatoid arthritis, gout, osteomalacia, osteoporosis, Paget's disease, diabetes mellitus, myxoedema, uterine prolapse, carcinoma, pernicious anaemia, hernia, skin diseases, delusional psychosis
<1% (1 case)	Tabes dorsalis, trigeminal neuralgia, diverticulitis, leukaemia, colitis, scurvy, disseminated sclerosis, aortic aneurysm

While a number of the conditions shown in Tables III and IV are insensitive to therapy, it is clear that for a considerable proportion much can be done. Thus in 100 patients in a group selected as in this series there will be 14 cases of depression, 5 of anaemia, 3 of cardiac failure, and 1 case each of diabetes mellitus, osteomalacia, faecal impaction, and hypothyroidism, all remediable. It should also be possible at least to alleviate the condition in some of the 9 cases of chronic bronchitis, 5 of anxiety state, 5 of blindness, 10 of deafness, 8 of foot defects, and 7 of hip disease. It is also essential to know of the existence of the five cases of dementia in order to improve supervision and management.

On the basis of the results of examination recommendations could be made to family doctors in 200 cases (Table V). Drug therapy was recommended in one-third, comprising treatment for depression, cardiac failure, anaemia, endocrine and metabolic diseases, Parkinsonism, etc., as well as symptomatic remedies. Recommendations for improved management included supervision by health visitors or at the day hospital or outpatient department. Other patients were referred for physiotherapy, chiropody, speech therapy, or for social services such as home helps, day centre attendance, etc. A small number of patients required admission to geriatric assessment wards (3%) and a rather larger number (6%) required admission to other departments for orthopaedic or gynaecological procedures as well as for psychiatric care.

As noted above a follow-up of this group of patients was carried out 18 to 30 months after the initial examination. Only nine patients (3%) were untraced, and the survivors were all interviewed. One hundred patients were followed up for two and a half years, 113 for two years, and 87 for one and a half years. In 33 (17%) of the 200 cases the recommendations were not carried out. The reasons for these failures were refusal on the part of the patient in 13 cases, failure of patient/family doctor contact in 10, loss of contact owing to removal of the patient in 6, and failure of our own geriatric services in 4 cases. Six patients were not traced.

TABLE V.—*Recommendations Made after Examination of* 300 *Patients at "Early Diagnosis" Clinics*

Nil	33%	Dietary advice	3%
Drugs	36%	Day hospital	3%
Outpatient follow-up	29%	Chiropody	2%
Health visitor follow-up	18%	Geriatric admission	3%
Outpatient referral	6%	Other admission	6%
Social services	6%		

Follow-up of the whole group of 300 patients showed that 12% had died, 15% were worse, and 70% were either improved or unchanged; 3% were untraced. Any assessment of the value of our early diagnosis activity, however, can come only from close examination of the group for whom recommendations were made (200 cases), who were traced (194 cases), and in whom the recommendations were carried out (161 cases). Applying strict criteria, we could satisfy ourselves that only 85 (53%) had been improved. We then applied the even more strict criterion of considering only those in whom it was clear that *early diagnosis* had resulted in their improvement, and this brought the figure down to 67 (42%).

Of the total number of patients seen and traced—that is, 291—85 (29%) improved. The end result of all our early diagnostic activity has thus been an improvement in 67 patients—that is, 23% of the whole group. This conclusion is based on the assumption that the patients continued to be affected throughout the follow-up period only by the conditions discovered at the first examination. This is not so, however, as at the follow-up 10% of the patients were found to be suffering from additional conditions which had appeared and had produced functional impairment. In all 14% of those followed up required further action. The appearance of these addi-

tional conditions certainly reduced the number of patients graded as "improved by recommendations made," but the extent to which this is so cannot be assessed and, as we are making a conservative estimate of the value of our activities, we have left this factor out of our calculations. Of all the patients originally examined 17% required regular follow-up by health visitors or at day hospital or outpatient departments, and this also indicates a clear level of unmet need.

Discussion

The prototype of our early diagnosis clinic was that set up by Anderson and Cowan (1955) in Rutherglen, who showed that there is a large well of undiagnosed and remediable disease among old people still living at home, a finding confirmed by Thomas (1968) and also by the present study. Thomas also concluded that, from routine examination, by the age of 65 one could detect the pattern of future morbidity and disability. Many patients in our study presented their symptoms when given the opportunity to do so, and the situation is therefore quite different from that of presymptomatic screening. Hence we do not feel that the arguments commonly advanced against screening apply to this activity.

At follow-up after 18 to 30 months we have shown that, at a conservative estimate, to help 3 patients we must examine 12, find nothing to do in 4, and be unable with certainty to help the remaining 5. Failure to help the remaining five may be due to the fact that their conditions are irremediable, that the recommendations made are not carried out, that we have inadequate standards by which to gauge improvement, or that new disabilities have appeared. Whether it is worth while carrying on routine examinations to produce detectable benefit in only 25% of patients can be answered only empirically and in the light of available resources. We believe, however, that early detection is more humane in that it reduces the periods of suffering in many conditions and avoids hospital admission for long periods, as has been shown in Rutherglen (Anderson and Cowan, 1955). Thus available resources may be more usefully deployed.

Though we have insisted on the clear demonstration of clinical improvement attributable only to our early diagnosis activity, some merit lies in the mere identification of disease. Unless the diagnosis is made there cannot be any rational therapy and the question of prevention can never arise. Unless the numbers of sufferers are at least recorded resources are never likely to be made available to them, whether in terms of services, therapy, or research.

Clearly early diagnostic examinations can be carried out by doctors in general practice, especially if they are able to work from properly equipped hospital or health centres with easy and rapid access to physicians trained in geriatric medicine. Already many general practitioners conduct their own specialized clinics, and we suggest that geriatric clinics of the type we have outlined should be the subject of experimental trial in practice. Because of their present work-load it is unlikely that many general practitioners will be able to accept this further burden in the near future. We suggest, therefore, that geriatricians should carry it out on a limited basis among high risk groups of old people rather than that it should not be done at all. Early diagnosis clinics are a useful and satisfying addition to mere hospital geriatric medicine, which we regard as a limited and limiting activity for those working in this field.

We wish to thank Dr. Sallie Gray, who carried out psychiatric examinations in many of these patients; all those general practitioners who accepted this scheme; our health visitor, Miss A. McCafferty, who kept us fully occupied, and Mrs. A. B. Hogg, our long-suffering secretary.

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Towards a Unified Filing System

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The general population is becoming less static and, with the development of regional centres and the closure of some departments in large hospitals, transfers from one hospital to another are more frequent. It is suggested that it would be helpful if a uniform system of forming a patient's reference number were agreed on. This could then be applied to all hospitals in the National Health Service.

At the moment each hospital management committee, and often each hospital, has its own system. This is often irrational, and within a hospital a patient may have (1) registration number, theoretically constant, not so in practice; (2) *x*-ray number which usually changes with each examination; (3) report number for the pathology department—this may be a different number for each examination; (4) E.C.G. number; (5) photographic department number; and (6) necropsy number.

Some of these numbers are of interest (and meaning) only to the department concerned, and their usage varies with the complexities of the filing system. Furthermore, the registration numbers are all of a prescribed number of digits. When the numbers become exhausted, it is usual to start again from 000001.

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It is suggested that the following scheme has certain advantages over the present chaotic multiplicity of numbers.

Proposed Scheme

The blank (Fig. 1) would appear on each official form. It is divided into five sections. Section 1 would be used by clinicians on the notes and on filling in request forms for examinations in other departments. It is composed of the day, month, and year of the patient's birth as, for example, 24 09 48. Such a scheme is essential if the number is to be readily ascertained without reference to a regional centre for providing numbers. With a conscious patient or relative it means that the registration number is fixed from birth and is known at once, without the day or so delay wherein laboratory forms are completed as "Registration Number: N.Y.K."† Further classification is made in the records department by storing notes under this number, alphabetically. In the rare instances where two patients of the same name were born on the same day, a prefix could be added. Another advantage is that this system is infinite in capacity. The numbers never run out.

†In most dictionaries N.Y.K. refers only to the Japanese Mail Steamship Company (Nippon Yusen Kaisha). There is a belief current in medical circles it means "not yet known."