

Screening the aged in general practice

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SUMMARY. We describe a comprehensive screening project in a general practice in which patients over the age of 65 were assessed both socially and medically. We conclude from our results that there was little treatable but previously undiagnosed illness within the community studied.

Introduction

LACK of knowledge about the prevalence of latent ill health among the elderly in our practice prompted us to seek further information. We were particularly worried that we were seeing our old people less often because of less home visiting (Figure 1). We were concerned not only with their physical and mental health but also with their social and environmental health.

We briefly describe a pilot survey and report the main survey, the clinical and social morbidity revealed, and some implications.

Method

The practice

Our practice is suburban with four partners and a vocational trainee operating from a single central surgery where all consultations are by appointment.

At the time of the survey the total practice list consisted of about 9,000 patients representing all social classes, with some bias towards classes 1 and 2 compared with the national average.

Bibliography

Geriatric screening programmes in general practice take many different forms according to the views of the programmers.

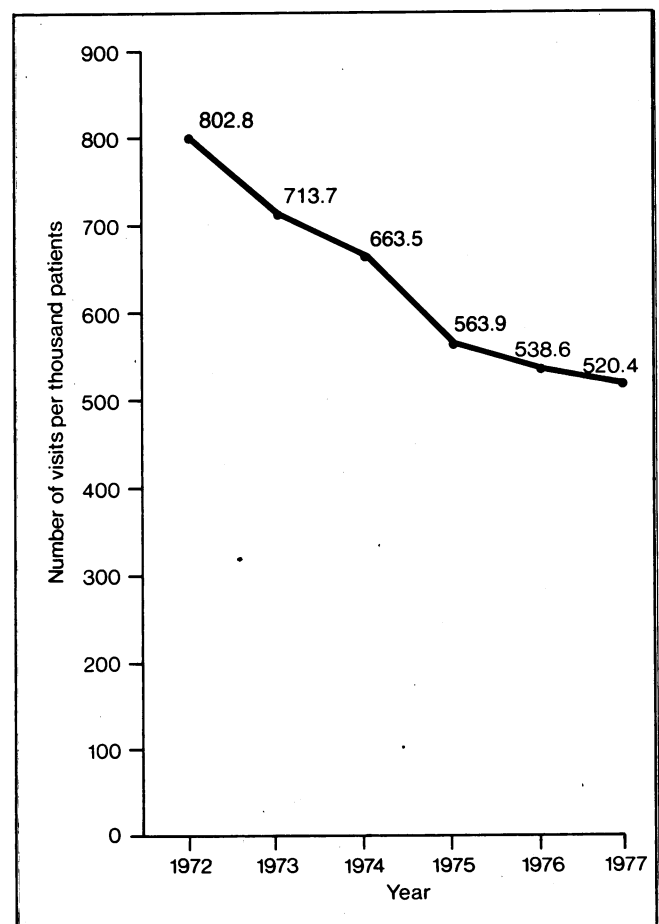
Pike (1969) sent letters to all his patients who were over 68 offering a series of tests to discover who was in

need of medical or social help. Thirty per cent of the women and 72 per cent of the men accepted the invitation.

Hodes (1971) offered all his patients who were 60 or over a programme of routine screening procedures all carried out by a nurse and followed up, where indicated, by the general practitioner.

How (1973) describes a practical method of comprehensive surveillance of the elderly at home by the practice nurse.

Figure 1. Annual number of visits per thousand practice population.



Williams and colleagues (1972) organized follow-up studies to assess function in patients who were 75 and over. This was carried out by a health visitor, an initial examination having been carried out by a doctor. At follow-up two years later in 1974 he concluded that general practice is probably the best place in which to undertake early diagnostic and preventive work among the elderly. In a further follow-up in 1975 on the basis that unreported illness is common in old people, he concluded that screening clinics are helpful. However, he admitted that supporting evidence for this is flimsy and insufficient.

Barber and Wallis (1976) describe the methods and value of establishing a data base of the medical and social health of their elderly patients.

Pilot scheme

A pilot scheme was started in which cohorts of patients at five-year intervals over the age of 65 were invited to attend the surgery for an examination by their own general practitioner, transport being provided if required. There were 282 of these patients and their response was as follows: acceptances, 113 (40.1 per cent); refusals, 93 (33.0 per cent); no reply, 76 (26.9 per cent).

The 'refusals' and 'no replies', who together constituted 59.9 per cent of the total, were all followed up by a personal visit from a health visitor. It became apparent that many of these patients, who for various reasons were not prepared to take part in a screening programme when approached by letter alone, were ready to accept the scheme when it was explained to them in person.

Encouraged by these findings we decided to mount a more comprehensive screening programme and invite all patients aged 65 and over to participate.

Main survey

At the beginning of the survey, 1,098 patients aged 65 years or over were in the care of this practice, of whom 282 were excluded having been involved in the pilot study. Of the remaining 816 patients, 13 were in a nursing home and ten were moribund, and these patients were excluded. Ninety of the remainder could not be traced at the beginning of the survey for administrative reasons, having changed their address without notifying their doctor or neighbours, and 21 died before an approach could be made to them. The true study population therefore comprised 682 patients.

All patients in the study were sent a letter informing them of the proposed screening survey and indicating that a social worker would be calling shortly to explain the details and to ask for their co-operation. These visits were made usually about two weeks after receipt of the letters of introduction. It was explained to the patients that a general medical examination was being offered to them and that this would not be done by their usual doctor, although he would be available if preferred. At this visit transport to the surgery was offered, and the

Table 1. Refusals.

Group 1 (known to be ill or fully examined recently)	11
Group 2 (seen within past 2 years)	42
Group 3 (not seen within past 2 years)	14
Total	67

21 in Group 2 and all in Group 3 were followed up by a doctor.

opportunity was taken to record some social and environmental details about the patient.

Patients who agreed to participate in the screening study were given a nine-page questionnaire when they attended for their medical examination. Two pages were completed by the secretary and contained social, environmental, and economic details. Two further pages concerned a self-rating medical questionnaire and these were completed by the doctor from the patients' responses on interview. A self-rating psychiatric questionnaire was completed in the same way. One page was devoted to details extracted from practice records of known illness in the past two years. This was to account for morbidity detected on screening but previously recorded. The doctor and a nurse completed two pages with physical findings. A final page, completed subsequently, listed haematological and biochemical results.

A small number of patients declined to take part in the study and they were considered in three groups (Table 1). First, there were those known to the doctors as having recently been investigated, or who were either currently ill or had recently been in hospital and these were not pursued further (Group 1). Secondly, there were those patients who had seen a doctor in the last two years but who were not known to be ill now (Group 2), and the third group comprised patients not seen within the last two years (Group 3). All patients in the third group, and a 50 per cent sample stratified for age, sex, and broad social grouping of the patients in the second group, were followed up personally by their practitioner. In order to establish whether there had been any bias introduced by those who refused to co-operate, a self-assessment of health was made by each of these patients and a separate assessment was made by the visiting doctor. No physical examination was performed unless the patient requested this.

Results

Acceptance rate

Of the 682 patients approached 605 accepted the offer of screening and were examined. The acceptance rate was 89 per cent.

Age, sex, and marital status

Of those screened, 379 were female, giving a male/

Table 2. Social circumstances.

	Percentage
Ground floor only	27
Upstairs flat	16
Two or more floors	57
Inside lavatory	87
Access to bathroom	97
Central heating	29
Living alone	30
Home ownership	50

female ratio of approximately 1:2. Predictably, the female population contained a higher proportion of the very old, 34 per cent being 75 years or older compared with only 21 per cent in the male population. Fifty per cent of the women and 21 per cent of the men were widowed.

Social circumstances

Nine per cent of males and 22 per cent of females were receiving supplementary state pension. Fifteen per cent had some form of private income, and only one per cent declined to divulge information relating to their income.

Table 2 shows details of patients' accommodation. Sixty-six per cent were able to do their own housework and slightly more did their own shopping. The extent to which various services were provided or desired is shown in Table 3; only chiropody appears to be particularly lacking.

Self-rating of physical condition

The self-rating questionnaire of physical condition enquired about 12 features. It was so designed as to indicate whether patients considered each of 12 functions or characteristics to be satisfactory or unsatisfactory. Unsatisfactory responses were noted and carefully considered in the course of the subsequent physical examination and by the patient's general

Table 3. Use of social services and the unmet desire for them.

	Percentage provided	Percentage desired
Chiropodist	14.0	9.9
Health visitor	6.0	0.8
Home help	5.8	2.8
District nurse	5.3	0.3
Meals on wheels	1.7	1.7
Social worker	1.3	0.5
Bath attendant	1.2	0.7
Luncheon club	1.2	0.3
Laundry	0.3	0.0

Table 4. Response to self-rating physical symptom questionnaire.

Feature	Unsatisfactory response	
	Number	Percentage
Activity restricted—by dyspnoea, chest, or joint pain	298	49
Dizziness—including vertigo and syncope	155	26
Swelling of feet/ankles	150	25
Bowel movement	142	23
Vision—able to read newsprint with or without spectacles	137	23
Persistent cough	119	20
Hearing—able to hear conversation without a hearing aid	111	18
Abdominal discomfort	93	15
Falls	64	11
Micturition	60	10
Production of blood— from any orifice	38	6
Changes in spots, lumps	37	6

practitioner in his general assessment of that patient. The results are shown in Table 4.

Self-rating psychiatric questionnaire

A modified version of the Tavistock Questionnaire was used for the purpose of uncovering abnormality of mental or emotional state. However, in virtually every case in which abnormality was revealed the doctor was already familiar with the mental state of the patient. For example, only two (0.3 per cent) cases of depression were discovered on analysing the replies.

Results of clinical examination

The findings relating to a series of clinical signs are shown in Table 5. In addition to these individual findings, the examining doctor felt that 16.5 per cent of patients needed more social care, in contrast to the rather smaller amount which the patients themselves desired (Table 3); that 122 patients (20.3 per cent) needed to be referred to their general practitioner for further investigation, or, in some cases, for further treatment of conditions already diagnosed; and that 17 patients (2.8 per cent) warranted referral to hospital.

Illness revealed by screening

Clinical abnormalities noted by the examining doctor and abnormal laboratory results were considered by the patient's own general practitioner, particularly to see whether these findings were already known to him, and,

Table 5. Positive clinical signs noted.

	Number	Percentage
Wax in ears	290	47.9
Varicose veins	206	34.1
Obesity (subjective)	158	26.1
Limb deformities	140	23.1
Cataract	93	15.4
Teeth unsatisfactory	60	9.9
<i>Chest</i>		
Adventitious sounds	42	6.9
<i>Breasts</i>		
Localized abnormality	21	3.5
Leg ulcers	15	2.5
Cervical cytology	1	0.2
<i>Heart</i>		
Diastolic BP above 110 mm Hg	94	15.5
Dysrhythmia	23	3.8
Raised JVP	21	3.5
Oedema	15	2.5
<i>Abdomen</i>		
Hernia	53	8.8
Hepatomegaly	9	1.5
Other mass	7	1.2
<i>Urine</i>		
Albumin +ve	19	3.1
Sugar +ve	13	2.1
Blood +ve	4	0.7

if not, whether they were suggestive of important and potentially treatable disease.

A few of the positive findings from screening were not confirmed: of the 94 patients with a diastolic blood pressure of 110 mm Hg or over at the time of screening, only 15 (16 per cent) were found to have a diastolic pressure at or above this level at follow-up.

Some illness was revealed which was treated either at the time of screening (e.g. acute bronchitis, phlebitis) or on a subsequent occasion (e.g. iron deficiency anaemia, skin conditions, wax in ears).

Some problems were not pursued because of the age and general condition of the patient, or because they were relatively untroublesome (e.g. a high proportion of varicose veins, herniae, and uterovaginal prolapse).

The degree of serious illness revealed was very small indeed (Table 6). Seventeen patients (2.8 per cent) were referred to hospital and ten patients subsequently underwent surgery. Of the 21 cases of abnormal breasts detected four were found to be malignant and all were referred for treatment.

Screening costs

Allowing for the cost of the survey doctor and social

Table 6. Referrals to hospital.

Conditions	Number of patients
Carcinoma of breast	4
Varicose veins	2
Uterine carcinoma	1
Diabetes mellitus	1
Anaemia	1
Cataract	1
Choroid degeneration	1
Deafness	1
Myocardial ischaemia	1
Chronic bronchitis and TB	1
Inguinal hernia	1
Uterovaginal prolapse	1
Raised alkaline phosphatase	1

workers but assuming a fully equipped surgery and practice organization for handling appointments, it is estimated that the total cost of the screening project was £2,800 in 1972 (£4.63p per patient). This figure does not include laboratory expenses, which were estimated to be £14.35 per patient.

Refusals

Seventy-seven patients refused the examination. These patients were not exceptional in terms of age and sex compared with the rest of the study population, and such patients as a group were considered retrospectively. Ten died or moved during the course of the study, and the distribution of the remainder between the three groups considered earlier is shown in Table 1.

A sample of 21 patients from Group 2 and ten patients in Group 3 were visited. Of these 31 patients, 13 refused because they considered that for them an examination was unnecessary. They stated that they felt well or were already seeing their doctor at intervals. Another eight objected to screening examinations in principle and five declined because of anxiety over the possible findings. Confusional states existed in three patients and accounted for their reluctance to take part, and the remaining two, who were in full-time employment, alleged that the screening appointments offered were inconvenient for them.

Discussion

It is often suggested that there is a high prevalence of important illness in the community of which doctors are unaware and that as a result many people suffer unnecessarily. The elderly population is usually considered to be most vulnerable to these risks of unrecognized disease.

In line with the national trend, in recent years there has been a steady fall in the number of home visits made in this practice. We felt that this decline in home visiting might have led to the development of a reservoir of

undetected illness amongst our elderly patients. Our survey, in which a high proportion of these patients were assessed both from a medical and a social standpoint, indicates that these fears were without foundation.

After the poor initial response to the pilot survey (40 per cent acceptance) a change to a more personal approach resulted in an acceptance rate of 89 per cent in the main screening programme. This figure compares favourably with that of other surveys, including those in which investigation into the health of elderly patients consisted solely of a postal enquiry.

Although many positive symptoms and physical signs were recorded, analysis revealed that the vast majority of these were either already known to the patient's general practitioner or were of no real significance to the health and well-being of the patient.

Similarly, the psychiatric questionnaire failed to bring to light significant numbers of patients with previously undiagnosed mental and emotional illness.

Some patients (20.3 per cent) examined were referred back to their general practitioner for further consideration, but very few of these subsequently required alterations in their medical management or referral to hospital.

Even in the few instances where screening demonstrated the presence of previously unknown pathology it is doubtful whether routine visiting would have been an effective way of uncovering it.

Of the refusals, sampling by personal approach on the part of the patient's general practitioner did not indicate that these people constituted a separate group in regard to age, sex, social class, social need, or general health.

The social services were shown to be largely satisfying demand, and only the chiropody service was markedly inadequate for the large number who required treatment. To a lesser extent meals on wheels were also scarce.

We concluded from these findings that there was little treatable but previously undiagnosed illness within the community studied.

The relatively small returns from the very considerable expenditure of effort, time and money convinced us that routine screening of this nature is not justified.

It is our conviction that the change in the domiciliary visiting habits of doctors within this practice has not resulted in an increase in unrecognized morbidity among the elderly; for although doctor/patient domiciliary contact has decreased, this has been counterbalanced by an increase in visiting of the elderly both by the attached nurse and health visitor, and by a 20 per cent increase in surgery attendances during the past six years, of which it seems reasonable to assume that the elderly were a part.

There is no evidence to suggest that the wider use of mass screening programmes such as that which we undertook here in Newcastle would significantly

improve the health of the population at large.

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Detection of prostatic cancer by solid-phase radioimmunoassay of serum prostatic acid phosphatase

We compared our radioimmunoassay with the standard enzyme assay for prostatic acid phosphatase in the diagnosis of prostatic cancer. Serum samples from 50 controls, 113 patients with prostatic cancer, 36 with benign prostatic hyperplasia, 83 with other cancers, 20 with gastrointestinal disorders, and 28 with total prostatectomies were randomized and studied by radioimmunoassay and enzyme assay. When the upper limit was set at 8.0 ng per ml (mean+4 SD) the radioimmunoassay diagnosed prostatic cancer in 33, 79, 71, and 92 per cent of the patients with Stage 1, 2, 3 and 4 disease. In contrast, the enzyme assay detected elevations of enzyme in the serum of 12, 15, 29, and 60 per cent respectively. No false positive results were detected by either assay in normal controls but the radioimmunoassay test was positive in two patients with benign prostatic hyperplasia, in one patient after total prostatectomy, in nine with other cancers and in one of the group with gastrointestinal disorders. In contrast to the enzyme assay, the radioimmunoassay distinguished over half the cases of intracapsular prostatic cancer.

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