Problems found in the over-75s by the annual health check

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SUMMARY

Background. *Research into the health of elderly people has found problems unknown to their general practitioners. It was anticipated that annual checks, as required by the 1990 general practitioner contract, would help to detect these problems, yet the value of these checks has been questioned.*

Aim. *To investigate the problems found by general practice contractual annual checks of the over-75s and the consequent actions taken; to identify patient, demographic or practice characteristics associated with the discovery of problems.*

Method. *In 40 practices, information was collected on patients over 75 years of age receiving a health check during a 3-month period. Practices used their normal methods of recruitment and assessment. Practice staff were interviewed to find how assessments were organized.*

Results. *Practices saw a mean of 12% of their over-75s during the study; 44% were found to have at least one problem. Action was taken to help resolve problems in 82% of patients with a problem. The most prevalent problems related to physical condition, and fewer functional problems than expected were found. There were large differences between practices in the proportions of elderly patients seen for a check and the proportion found to have problems; these were not attributable to practice size or demography. Multivariate analysis showed that practice or patient characteristics were poor predictors of finding problems.*

Conclusion. *The argument in favour of conducting annual checks is supported by the finding that nearly half the patients assessed were found to have problems for which some action was taken. Some practices could increase their rate of uptake by modifying the organization of invitations for checks. More problems may be found by adopting a more functionally based assessment.*

Keywords: health status; elderly; geriatric assessment.

Introduction

GENERAL practitioners (GPs) are required to offer an annual health check to all their patients aged 75 and over. It was hoped that these checks would help to meet an unreported need that has been found in this age group,[1,2] and to identify established problems when they can be improved sufficiently to prevent deterioration of function.

Research studies looking at the efficacy of health checks of the elderly have produced equivocal results. One early study suggested that screening and surveillance over 2 years[3] made no significant impact on the prevalence of functional, socioeconomic or medical disorders, and another concluded that preventive home visits were not beneficial for the elderly population in general, but should be restricted to patients with poor health.[4] However, a study of the effect of health visitors working with old people[5] demonstrated a reduction in mortality and an improvement in their perceived quality of life. A Danish study[6] showed a reduction in admission to hospital, an increase in patient confidence and an increase in the use of aids following routine assessment in the primary care setting. Another study demonstrated a fall in the number of problems found in a second assessment,[7] while a more recent study, looking at intervention following screening of the elderly by postal questionnaire, found significantly lower mortality in the intervention group over a two-year period.[8]

Brown *et al*,[9] investigating annual health checks in Nottinghamshire, found that new problems were discovered in 43% of patients seen. This demonstrated that there was an unreported need in this age group soon after the introduction of the annual checks. Chew *et al*[10] found that the majority of general practitioners and practice nurses felt that routine assessments of the elderly were worthwhile. They also found that elderly people themselves were very positive about them.[11] Despite these findings, the value of these checks has been questioned.[12]

No study has been published that details the problems detected by the contractual annual health checks. The problems detected may be very different from those that have been documented by research studies. This present study, therefore, aimed to investigate the prevalence and type of problems found by the annual health checks using data collected from nearly 2000 patients. It also aimed to document the actions taken to alleviate or to resolve the problems experienced by the elderly. It attempted to identify patient, demographic or practice characteristics that may be associated with the discovery of problems. This information should help to establish how useful the health checks for old people are.

Method

Forty practices were recruited to the study using stratified random sampling. They were equally distributed throughout the three main geographical areas of the county. Teaching and dispensing practices were proportionately represented as were practices in inner city, suburban, semirural and rural areas. If a practice declined to take part, a practice with similar characteristics was selected using the same stratified sampling technique. Sixty practices were contacted before the sample of 40 that were willing to take part was obtained.

Participating practices were visited by two of the authors to discuss the study. The person carrying out the health check was

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asked to complete a standard assessment form following the check for all consenting patients seen during a period of 3 months.

Standardized verbal and written instructions were given about completing the assessment forms to minimize differences in interpretation by different assessors. Practices were asked not to deviate from their normal method of giving health checks or from their usual method of recruiting and assessing their over-75s. The assessment form was structured so that as little extra information as possible about how to do a check was suggested beyond the information given in the general practitioner's contract.

Data collected by the assessment form included details of a patient's age, sex, type of housing, living companions, whether the patient had or was a carer, how long it took to carry out the health check, who conducted it and where it took place. The presence of problems was noted and the type of problem was categorized. Actions taken as a result of each problem were also recorded. Practices entered the study at different times of the year to minimize seasonal effects.

At the end of each practice's 3-month study period, the assessment forms were collected and a relevant member of the practice team was asked about the organization of the checks. This was to establish the size of their elderly population, their criteria for deciding whom to invite for checks and when, their method of invitation and any system they used for following up patients who did not respond to the initial invitation. Their replies were recorded using a standard interview questionnaire together with the numbers who had been invited, those who did not respond and those who positively refused a health check. Data were also collected on the numbers of old people seen, the numbers invited, the numbers not replying to an invitation and the numbers refusing a check over a full year.

The data were analysed using SPSS for Windows. The relationships between organizational and patient factors (explanatory variables) and whether or not patients had problems recorded at the check (dependent variable) were explored. Univariate analyses were conducted using the logistic regression procedure. Separate multivariate analyses for organizational factors (model 1) and patient factors (model 2) were performed using logistic regression. All *P* values are two-tailed and the significance level for inclusion of variables was 0.05.

Results

Patients having a health check

A total of 17 139 patients aged 75 years and over were registered with the 40 practices, and 2024 (11.8%) received a health check within the 3-month study period. Of these, 1962 people (11.4% of eligible patients) agreed to take part in the study. Some practices had adopted a policy of not inviting all their over-75s for a check. Thirteen practices did not offer checks to nursing home residents and nine of these did not offer checks to residential home residents either. One practice invited its elderly people only once every 2 years. Every practice recorded data obtained about patients who were given an annual check, but fewer recorded the reason for a check not taking place. Practices varied in their follow up of patients who did not reply. Of 37 practices who invited by letter, only 19 followed up non-responders.

Table 1 shows data on health checks during a 1-year period.

Problems and actions

A problem was found in 856 (44%) of those assessed. The total number of problems found was 1615. A total of 476 (24%) of the people assessed had a problem that the assessor felt was not previously known to their practice; 714 of these problems were found (44% of all problems). Table 2 shows details of the problems and the numbers of actions that were taken for each main category of problem.

Altogether, 699 old people had some kind of action taken to help resolve the problems found by the check. This was 36% of all those assessed and 82% of patients with a problem. Overall, 1165 actions were taken (see Table 3).

Patient and health check organization variables

Table 4 gives the results of the univariate and multivariate analyses.

The usefulness of the multivariate models can be estimated by comparing predictions based on them with the proportion of patients found to have a problem. If, for each patient, one predicts that the patient will have no problems, this prediction would be correct in 56.5% of cases. Using the multivariate model with organizational variables, a correct prediction would be made in 57.5% of cases. Using the multivariate model with patient variables, a correct prediction would be made in 58.8% of cases.

Differences between practices

There were large differences between practices in the proportion of old people that were seen in the 3-month study period, ranging from 0.4% to 46% of their elderly population. There were also large differences between practices in the proportion of old people found to have problems. The proportion of people assessed who were found to have a problem ranged from 0% to 96% with a mean of 42%.

There were no statistically significant associations between any of the following practice variables and the proportion of people with problems recorded at the check: the number of GPs, the number of elderly patients on the practice list, the number of elderly patients per GP principal, the number of patients invited for an elderly person's health check in the study period, the num-

Table 1. Practices' records of patients over 75 who were invited for a health check over 12 months.

	A n* patients	B n patients eligible for a check†	A÷B (%)	n (%) practices unable to supply information
Patients invited for a health check over 12 months	11051**	14 195	78	6 (15)
Patients who had a check over 12 months	7638	15 773	48	2 (5)
Patients who did not reply to invitation over 12 months	2302	9 135	25	16 (40)
Patients who refused a check over 12 months	454	11 677	4	10 (25)

*Practices that were able to supply this information. †Practices that were able to supply information in column A. **In practices in which the GP undertook opportunistic checks, this may be an underestimate of patients actually offered a health check.

Table 2. Problems found at the check and resulting actions.

Description of problem	Problems (n)	%	Actions* (n)	Actions† (%)
Physical condition	657	41	623	52
Urinary incontinence	55	3		
Routine urine test abnormal	52	3		
Problems with feet/legs	42	3		
Raised blood pressure	42	3		
Other urinary problems	39	2		
Need for chiropody	38	2		
Shortness of breath	32	2		
Problems with joints	28	2		
Oedema	26	2		
Falls	24	1		
Haematuria	23	1		
Other or unspecified physical problem	256	16		
Use of medicines	56	3	58	5
Inappropriate self-administration of medicine	22	1		
Difficulty with taking medicine	21	1		
Other or unspecified medication problem	13	1		
Mobility	254	16	104	9
Difficulty getting around the house	30	2		
Restricted mobility outdoors	29	2		
Other or unspecified mobility problem	195	12		
Hearing and vision	283	18	199	17
Impaired hearing/deaf	104	6		
Wax	81	5		
Poor vision	65	4		
Other or unspecified hearing or vision problem	33	2		
Self-care	160	10	83	7
Bathing or showering problems	45	3		
Problems with domestic tasks	27	2		
Problems with dressing	15	1		
Other or unspecified self-care problem	73	5		
Mental condition	148	9	79	7
Memory loss/confusion	71	4		
Depression	35	2		
Anxiety	15	1		
Other or unspecified mental problem	27	2		
Social	55	3	43	4
Isolation	20	1		
Problems with caring for someone else	10	1		
Housing	8	<0.5		
Other or unspecified social problem	17	1		
Total	1615	100	1165	

†Percentages of all problems. *Numbers do not add up to 1165 since some actions were taken that were a response to problems in more than one category of problem.

ber having an elderly person's check in the study period, whether the practice was a teaching practice, the type of geographical area, or whether the practice received any deprivation payments.

Discussion

How many patients had a health check.

The numbers of elderly people seen for an assessment during the study period and over a whole year were unexpectedly low, even though the study practices were likely to have been more enthusiastic than others. The variation between practices in the proportion of their elderly people who received a check was extensive. In total, about one-fifth of old people were not being invited for a check. In some practices, this was a selective process (for example, the exclusion of nursing home residents), but in many cases it was not. Some practices could not supply information about whom they had invited and many did not know which patients had not replied to the invitation. Changes in organizing the follow up of invitations might considerably improve their uptake.

Problems

It is important to point out that the problems discussed are those that have been detected, and are likely to underestimate the real number of problems that elderly people have. The numbers of problems found were much smaller than those uncovered in some other studies.[1,2] Perhaps normal general practice checks are carried out differently or less rigorously. There was a marked difference between practices in the proportion of old people that were found to have any problems. These differences were not attributable to practice size, geographical area or deprivation, and in several cases these discrepancies occurred between practices covering the same area.

Actions taken

Actions were taken on behalf of 82% of patients with a problem,

Table 3. Actions directly resulting from the health check.

Type of action*	n	%
Advice only	288	25
Referral to GP	176	15
Further investigation	134	12
Drug treatment	70	6
Plan to monitor	74	6
Ear syringing	62	5
Action offered – patient declined	53	5
Discussion of problem with GP	45	4
Referral to social services	40	3
Referral to chiropody	38	3
Discussion with family	24	2
Referral to district nurse	22	2
Treatment plan	17	1
Referral to occupational therapy service	15	1
Referral to domiciliary services	11	1
Referral to voluntary services	11	1
Referral for appliances	9	1
Referral to hospital outpatient department	9	1
Referral for assessment for hearing aid	8	1
Referral to optician	8	1
Immunization	7	1
Referral to hospital for admission	4	<1
Other	40	3
Total actions	1165	100

*All actions taken by the person undertaking the assessment.

Table 4. Logistic regression analysis of health check organization variables, patient variables and detection of patients with problems.

	Patients		Patients with a problem		Univariate analyses	Multivariate analyses
	n	%*	n	%**	Exp(B) P value (95% CI)	Exp(B) P value (95% CI)
Organization variables						Model 1
Where the check took place					0.84 0.0005	0.83 0.0002
Patient's home	1263	65	587	46		
Surgery	693	35	265	38	(0.77–0.93)	(0.76–0.92)
Who undertook the check?					1.39 0.0008	1.34 0.007
Doctor	114	6	67	59		
Nurse	1848	94	786	43	(1.15–1.68)	(1.08–1.66)
Was the check the main reason for the contact?					1.14 0.029	1.08 0.25
Yes	1620	83	686	42		
No	338	17	165	49	(1.01–1.28)	(0.95–1.23)
Patient variables						Model 2
Sex					1.13 0.010	1.11 0.048
Men	674	34	266	40		
Women	1288	66	587	46	(1.03–1.25)	(1.00–1.23)
Did the patient live alone?†					0.96 0.35	0.95 0.36
Yes	928	47	400	43		
No	896	46	367	41	(0.87–1.05)	(0.86–1.06)
Did the patient have a carer?					1.38 <0.0001	1.34 <0.0001
Yes	559	28	307	55		
No	1388	71	540	39	(1.25–1.53)	(1.20–1.49)
Age	–		–		–0.023‡ 0.012 (–0.042–0.005)	–0.0009‡ 0.93 (–0.021–0.020)

†Patients not in residential/rest/nursing homes. *Percentage of all patients. **Percentage of number in 'Patients' column. ‡The value of B is given instead of Exp(B) since age is a continuous variable.

which suggests that most problems were worthwhile finding. Fifteen per cent of all actions were referrals to general practitioners and 12% were to community agencies. These figures may underestimate the need for services as several general practitioners and nurses were critical of the availability of chiropody, occupational therapy and social services for the elderly, and they often did not refer patients to these agencies despite perception of need.

Only one per cent of assessments were recorded as resulting directly in referral for admission to hospital or to outpatient departments. This figure underestimates the referral pattern to hospital because nurses often do not have direct access to hospital services, and so refer such problems to general practitioners.

Types of problems and actions

The commonest types of problem recorded were physical. This could either be a true reflection of the types of difficulties old people have or may reflect that the assessors were usually practice nurses or doctors. Previous studies[1,2] have suggested that unmet needs in old people involve functional disabilities and sensory difficulties. These problems are being found by the check but in smaller numbers than might have been expected.

Some specific problems may have been under-reported in our results. It is not a contractual requirement to check blood pressure or urine and so some practices may not be doing so. Practices did not find very many dental problems in old people or problems with carers despite evidence from other studies[13,14] that had suggested these are common. Very few social problems were found. It is likely that most practices were not looking specifically for these problems. The fact that problems recorded are largely physical ones suggests that practices could usefully also give more attention to functional, mental and social problems.

Organizational variables associated with problems

Practices reassessing the way they organize their health checks may find it useful to consider which methods are most likely to result in the detection of problems. Univariate analysis found the detection of problems was more likely in checks undertaken by a doctor, checks taking place at the patient's home, and checks that were not the main reason for the contact. However, only the first two of these factors were significant in the multivariate model derived from logistic regression; the reason for the contact was not a significant factor.

The relationship between organizational factors is a complicated one. It is likely that many checks undertaken by doctors are done opportunistically on patients who are known to have problems. Moreover, the number of checks performed by doctors is only a very small proportion of total checks. It would, therefore, be unwise and unrealistic to advocate that GPs perform all checks.

Patient variables associated with problems

It has been suggested that, in elderly patients, those who live alone and those in older age groups are more at risk[15] and therefore more likely to benefit from a health check. From univariate analysis, we found that older patients, but not those living alone,

were more likely to have a problem detected. However, neither variable was significant in the multivariate model derived from logistic regression; it would appear that whether or not the patient has a carer and the patient's sex are better predictors of problems. It might be tempting, therefore, to reduce the workload to general practice by excluding groups of patients found to be at less risk. However, this would exclude substantial numbers of elderly people who have problems.

Differences between practices

There were large discrepancies between practices in the number of patients seen, the proportion of people found to have problems and the number of actions taken. These differences were not attributable to practice size, geographical area or the degree of deprivation of patients, and in several cases these discrepancies occurred between practices covering the same area. This raises the possibility that other practice characteristics may be associated with these differences. We feel that the enthusiasm of practice staff, their level of training, their perception of the value of the checks and the effectiveness of their organization and invitation system may have a considerable effect on the success of the health checks.

Conclusion

The argument in favour of conducting annual checks is supported by the finding that practices detected a problem in 44% of the old people that they checked and that 82% of these people had some kind of action to alleviate their problems. It is of some concern that there is a very large difference between practices in the proportions of old people receiving a check and the proportions of old people found to have problems. Some practices could increase their rate of uptake by modifying the organization of the invitation for checks. Practices may find more problems by doing a more functionally based assessment.

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