Patients not seen in three years: will invitations for health checks be of benefit?

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SUMMARY. An attempt has been made to evaluate the evidence for the likely benefit or otherwise, of the obligatory three-yearly checks as defined within the terms of service for doctors in general practice introduced to British general practitioners in April 1990. The content, interval, age groups, ethics, organizational cost, yield and outcome of the three-yearly checks are examined. No particular evidence is apparent which should deflect general practice from its present opportunistic approach to screening, and the already established national screening programmes.

Introduction

IN November 1987 the government published its programme for improving primary health care, *Promoting better health.*[1] A major theme of this white paper was the shift in emphasis from the treatment of illness to the promotion of health and prevention of disease. The white paper culminated in the new terms of service for doctors in general practice, introduced on 1 April 1990.[2] As expected, the new terms of service contained a thrust towards health promotion and disease prevention.

General practice is now presented with the reality of the terms of service. This article is concerned with paragraph 13C of the terms of service, covering patients not seen within three years. In summary, paragraph 13C states that 'A general practitioner is obliged to offer a consultation to every patient on his list who is aged 16–74 inclusive, and has neither in the preceding three years had a consultation with any doctor, or attended a clinic provided by any doctor, nor been offered a health check consultation in the preceding 12 months by any doctor.' The invitation must be made in writing and the date recorded in the patient's medical records. The patient's response to the invitation must also be recorded. If the patient accepts the invitation, the consultation should include the following:

Where appropriate, details of the patient's medical history (and if relevant, that of his or her consanguineous family) in relation to:

1. Illnesses, immunizations, allergies, hereditary diseases, medication and tests carried out for breast or cervical cancer.
2. Social factors (including employment, housing and family circumstances) which may affect the patient's health.
3. Lifestyle (including diet, exercise, use of tobacco, consumption of alcohol, and the use of drugs or solvents).
4 Current state of the patient's health.

An offer to undertake a physical examination, which should include:

1. Measurement of height, weight and blood pressure.
2. Taking and analysing a urine sample to identify the presence of albumin and glucose.

All findings should be recorded in the patient's notes, and, where appropriate, an offer made to discuss any findings and possible treatment.

It is accepted good practice that a medical history, family history and social history should be basic to a consultation taking place shortly after the patient's registration with a general practitioner. Examinations for the identification of risk factors (markers) for modifiable disease are also considered appropriate. In addition, encouraging patients to participate in illness prevention activities and giving health education information is accepted good practice, particularly so if risk factors have been identified.

The government has recognized some of this in the new terms of service by introducing a contractural obligation for general practitioners to invite newly registered patients to participate in a consultation. It has considered this to be important, and is offering a fee for this work. For general practitioners with a high patient turnover this assessment would rightly produce financial reward for basic quality care. Not all that has been stipulated would be considered essential, but for a first assessment it may be acceptable.

However, what might be considered acceptable and appropriate for a first assessment, becomes questionable when translated to an invited health check for all patients not seen within the past three years. While recognizing these obligations as an attempt to encourage screening and identification of risk factors, the value of such activity has to be backed up by scientific evidence. Benefits to patient and society should be known, and the organization of such a system should be workable. Given that 90% of patients visit their general practitioner on average once every three years,[3,4] this obligation is presumably targetted at the remaining 10%.

A large element of this health check reasonably looks to screening and the identification of risk factors. Risk factor identification is very similar to screening, but essentially it is searching for a patient's vulnerability to a disease. In 1968 Wilson and Jungner[5] formulated a set of principles for presymptomatic screening for the World Health Organization. These principles are as pertinent today as they were in 1968 and have been widely accepted by the medical profession. In essence they are:

1. The condition sought should pose an important health problem.
2. The natural history of the disease should be well understood.
3. There should be a recognizable early stage.
4. Treatment of the disease in the early stage should be of more benefit than treatment sought at a later stage.
5. There should be a suitable test.
6. The test should be acceptable to the population.
7. There should be adequate facilities for the diagnosis and treatment of abnormalities detected.
8. For diseases of insidious onset, screening should be repeated at intervals determined by the natural history of the disease.
9. The chance of physical or psychological harm to those screened should be less than the chance of benefit.
10. The cost of a screening programme should be balanced against the benefit it provides.

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Submitted: 11 February 1991; accepted: 28 May 1991.

The requirements of paragraph 13C of the general practitioner's terms and conditions of service can be assessed with reference to Wilson and Jungner's criteria under the following headings: content, time interval, age group, ethics, organizational cost, and yield and outcome.

Content

If there is to be an obligation to invite non-attenders for an interview, then a medical history is indicated as reasonable. The identification of adverse lifestyle factors such as smoking, high alcohol consumption and drug abuse must be endorsed. Sufficient evidence[6-8] exists to support benefits from reducing these risk factors. It is generally accepted that promoting a healthy diet and regular exercise is also of proven benefit.

Measuring blood pressure and acting appropriately if raised is of some, but limited, value. In the Australian national blood pressure study,[9] treatment of 1721 patients prevented 14 strokes while in the Medical Research Council trial,[10] it was estimated that 850 patients had to be treated for one year to prevent one stroke. A reduction in the incidence of heart disease from the lowering of blood pressure has been disappointing. Only in the European trial[11] which looked at a total of 940 people over the age of 60 years was there any significant reduction. Some of the subsets of the trials would indicate that smoking is a more important risk factor in cardiovascular disease than a modest increase of blood pressure. In the Medical Research Council trial, there was a greater difference in the instances of stroke and all cardiovascular events between smokers and non-smokers than the groups given active antihypertensive therapy or placebo therapy. In addition, smoking appears to modify treatment response. Both the international prospective primary prevention study[12] and the Medical Research Council trial showed a beta-blocker to benefit non-smokers but not smokers. The conclusion from the reduction of blood pressure trials indicates that there is a reduction of overall mortality, but the results need to be interpreted with caution.

No scientific evidence exists for the routine testing of urine; to the contrary, evidence exists for its negative effect.[13,14] Neither does the routine measurement of height, used to calculate body mass index, have any documented scientific value.

The national cervical and breast screening programmes should be supported as both programmes have some scientific evidence to back their case.[15,16] However, as we do not yet fully know the natural history of these diseases, complete scientific confidence in these screening procedures cannot be accorded. Immunization programmes can be supported as they are widely accepted to be of proven benefit.

Checking blood cholesterol levels is omitted from the proposed three-yearly check. While not advocating its inclusion, its exclusion is curious since raised blood cholesterol has now been established as an important risk factor in cardiovascular disease. A study of 361 662 men aged 35–57 years followed over six years showed the risk of coronary heart disease mortality to be four times greater in patients with the upper 15% of cholesterol measurements.[17] Over the range of blood cholesterol levels in the UK, a 10% reduction in blood cholesterol was associated with a 20% reduction in the incidence of coronary heart disease.[18] Solid proof is still lacking though as in some of the trials the treatment group showed an excess of non-cardiac deaths, and the control group showed an unexplained low number of coronary heart disease deaths.[19] However, a case can now be made for measuring cholesterol in subjects shown to have more than one risk factor for coronary heart disease found on an opportunistic basis.[20]

Interval

The national cervical screening programme has five-yearly intervals for screening and the national breast screening programme three-yearly intervals. Thus, there is already a conflict of intervals for women. The intervals for cervical and breast screening have been established according to what scientific evidence there is available of the natural histories of the diseases.[15,16] However, these intervals remain open for debate.

There appears to be no solid scientific evidence to support three-yearly testing for raised blood pressure or other risk factors, and certainly none for urine testing every three years. The long development of cardiovascular disease and certain cancers means a precise interval cannot be decided upon on the basis of any scientific evidence. It is therefore important to identify risk factors to coincide with effective intervention. The profession has so far chosen to do this on an opportunistic basis until scientific evidence persuades it otherwise.

Age group

The value of urine testing in pregnant mothers is well established.[14] However, no scientific evidence exists to support the routine testing of subjects of all ages. If late onset diabetes is being considered, then it is unlikely to yield any benefits in patients under the age of 60 years.[21]

Only individuals over the age of 30 years have been included in the major research trials of the reduction of blood pressure. Therefore one can only support blood pressure screening for those aged 30 years and over as there is no scientific basis for knowing the intervention outcome for people below this age.

Conversely, through scientific evidence, the adjustment downwards for the age of cervical smears can now be supported. More logically it should start at the commencement of sexual activity.[22] However, breast screening by mammography, so far, can only be supported within the 50–64 years age group.[16,23]

Detection of lifestyle risk factors can be supported at a young age since it is probably then that lifestyle patterns are established. As mentioned earlier, with a long developmental period for certain important diseases, an early change to a healthier lifestyle is more likely to provide benfit.

Ethics

To screen for a disease or for a risk factor to a disease is only ethical if patient benefit can be shown. Furthermore, unless the expertise and resources are available to address adequately the problems found, it is probably unethical to carry this out. Unless expert advice is available to help people stop smoking, cope with alcohol and drug problems, improve their diet and increase their level of exercise, information about these factors is of little value. Unless some beneficial change can be implemented, enquiring about social and environmental problems which doctors cannot change only provides interesting commentary data.

Evidence is now available that screening can produce anxiety.[24-26] High levels of anxiety and increased sickness have been shown in people found to have raised blood pressure at screening. False positive results have been known to cause anxiety, even if reassurance is subsequently given. Negative results can themselves reinforce an unhealthy lifestyle.

Patients must be given an adequate explanation of what screening means. All staff involved in this activity should understand the principles of screening, should be suitably trained and follow agreed protocols. Failure to do this can lead to psychological harm and false expectations among patients.

Organizational cost

This new requirement will impose a considerable amount of extra work on the already hard pressed ancillary staff who will be in-

volved in identifying and writing to patients, recording results and then handling the flow of work which ensues. Time and expertise has to be allocated from practice resources for the notification of results and adequate follow up since it is essential that appropriate help be made available for people found to have a problem. This could have considerable cost implications.

Thompson[27] carried out a screening exercise similar to that proposed in the new terms of service, inviting all non-attenders in the last three years to a surgery consultation. From the very low figure of 18% who responded, he concluded that the cost to the practice to screen all those in the 16–74 years age group would be approximately £2740 for a list size of 11 625 patients. No mention was made in the white paper of the costs incurred for follow up of the likely false positive results requiring investigation, particularly from urine testing. Screening people below the age of 30 years for high blood pressure may reveal hypertensive patients. It may well be thought necessary to investigate and treat people below this age but outcome benefit for this group is not known, and costs could be considerable.

The perception and behaviour of the patient must also be considered. As Kleinman and colleagues pointed out,[28] 90% of episodes of illness are dealt with without resort to the doctor. If the new screening programme alters this rate by just 10%, the proportion of people presenting to general practitioners could double the practice workload.

Already many practices have introduced organizational systems specifically designed to operate on an opportunistic basis. The new terms of contract could undermine this activity.

Yield and outcome

Will people attend and will they be the right people? What of the yield and outcome? From a sample of 12.8% of patients from his practice, Thompson[27] found that only 18% of patients who had not been seen within the last three years attended clinics when invited. In the group of patients that did attend, Thompson found that smoking and alcohol consumption were low and that a considerable proportion were unwilling to accept advice on health matters and did not take up certain tests when these were offered. In another study, Pill and colleagues[3] compared a group of attenders and non-attenders following an invitation for a health check. Those who attended the health check were more likely to be known to their general practitioner, were well motivated and were not necessarily those at high risk of diseases which merited screening, or which were associated with inappropriate lifestyles.

As approximately 65% of people see their general practitioner once every year,[3,29] and 90% every three years,[3,4] it is concluded that offering cohorts of people additional screening services is unlikely to be either efficient or effective. People at low risk are more likely to respond to a specific screening invitation,[25] yet high risk people seem to consult more.[3,27,30]

A study which has been widely quoted as demonstrating outcome benefit was the North Karalia study, carried out in Finland between 1972 and 1977.[31] This studied the impact of reducing a number of well established risk factors of cardiovascular disease within a community: smoking, raised blood pressure and raised blood cholesterol level. Systematic treatment, rehabilitation and secondary prevention for patients with cardiovascular disease were implemented. North Karalia was then compared with areas of Finland not employing this approach. A level of decline in mortality from coronary heart disease was noted over the whole of Finland from 1969 to 1979.[32] However, the level had declined significantly more within North Karalia, thus indicating a benefit from the intervention programme. Writing in 1987, one of the authors[33] questioned the assumptions made, feeling other factors contributed in part to this decline. This was a community programme so the results should therefore be interpreted with caution when applied to general practice.

Only one large study on screening has been carried out in general practice. This was done by D'Souza between 1967 and 1976.[30] The study involved 7229 persons aged 40–64 years divided into study and control groups; the invited study group underwent a basic physical examination and a series of screening tests (multiphasic screening). The screening process uncovered some new morbidity, but 95% of this was minor, being neither disabling nor life threatening. After approximately nine years, there were no significant differences in death rates, hospital admission rates, general practitioner consultation rates and absence through sickness rates between the study and control population. The study concluded that there was no justification for mass multiphasic screening for middle-aged patients as part of the National Health Service.

Discussion

It would seem important before embarking on any health promotion or health examination activity to be clear about the aims of the task and judge whether a particular lifestyle problem, disease or condition should be targeted. Furthermore, the interventions to be used need to be looked at from various standpoints including time interval, age group, ethics, cost and outcomes. The conditions need to be chosen with care.

In 1979 the Canadian periodic health examination task force attempted this in a report to the Canadian government.[34] The group looked at ways of developing criteria for assessing what conditions should be targeted and the criteria for assessing the effectiveness of preventive procedures for those conditions, balancing benefit against risk. The group published guidelines for preventive practices based on the best available scientific evidence for their efficacy, effectiveness, efficiency and safety. The lack of strong scientific evidence found in their extensive survey prompted them to state that much more research was needed in this field. The guidelines were presented not as a rigid programme but as a resource for practising physicians. It could be argued that only when such guidelines have been produced and accepted should any form of strategy, national or otherwise, be implemented. This would seem to be particularly important if one is targeting a small group of non-attenders where only marginal benefit may occur for the expenditure of a lot of effort and resources.

The task force believed that their plan should encompass counselling for primary prevention and case finding for secondary prevention.[34,35] Furthermore, it should be based on the assumption that any doctor–patient encounter is an opportunity for prevention. This opportunistic approach has been generally supported by general practitioners in this country. However, the daily practice schedule may now be too crowded to cope adequately with health promotion, and the new terms of service have not improved this. More consultation time needs to be created in some way. Delegation in some part may help.

Identifying the health promotion component from within the generality of the consultation as a means of rewarding doctors is fraught with difficulty. Yet general practitioners still believe in the importance of opportunistic health promotion as part of a consultation.

Conclusion

There appears to be an increased public appetite for screening. Firms and individuals are seeking private screening, often of a complex nature. Some pharmacists and others are offering blood pressure and cholesterol testing. However, those performing these tests rarely accept the responsibility for follow up. Outcome does

not appear on their agenda.

It is assumed that the government's insistence on health checks is based on good intention and perhaps a feeling of public demand. However, in the main, these health checks cannot be supported by scientific evidence.

A considerable amount of scientific evidence is available to support screening and the identification of risk factors for a number of specific conditions. Cervical cytology and breast screening are now national programmes and evidence is available to indicate lives can be saved. Evidence exists that stopping smoking, reducing cholesterol levels and lowering raised blood pressure can reduce coronary heart disease and stroke. Stopping smoking is known to reduce major respiratory diseases. Alcohol abuse is known to produce medical and major social problems: reduction is known to produce benefits. Beyond this, no scientific evidence exists to support the remaining content within the obligations specified in the new terms of service for general practitioners. Furthermore, the intervals and age group identified do not have scientific evidence to support their inclusion. The population approach to screening, although attractive, has not been supported by scientific evidence. Population screening has costs both financial and in terms of harm, and, at times, could be unethical.

General practitioners have based their approach to screening and identification of risk factors on an opportunistic basis. Screening for smoking and effective help in cessation should be a priority within this approach. With a significant absence of scientific evidence to suggest an approach to the contrary, there seems no good reason for general practitioners to change their current operational policy. However, this will have to be balanced against competing workloads.[2] In addition to the opportunistic approach to health promotion within the surgery consultation, recent evidence suggests that offering patients free access to well persons clinics can also be beneficial.[36]

Individual general practitioners should not be deterred from having a population approach to screening if they wish. Indeed, it could be a useful scientific exercise in view of the lack of evidence available. Patient attendance, uptake of screening and help, change of lifestyle, new and significant morbidity discovered and costs could all be monitored. However, it should not be obligatory as it is not proven, and the organizational costs are likely to be high. The reality is that there will have to be an organization set up for infrequent attenders as this is part of the terms of service for doctors in general practice. The final judgement on the whole exercise will be whether morbidity and mortality can be reduced. This will take a long time to determine. The evidence so far is that it will be a time consuming and costly exercise for minimal reward. Opportunity should be taken by the profession to monitor and audit what is requested within paragraph 13C of the terms of service for doctors in general practice while recognizing the resource implications. However, further research is needed into the whole field of health promotion as suggested by the Canadian task force on periodic health examination.[34]

The main thrust for primary health care should be to continue to develop screening and the identification of risk factors on an opportunistic basis, within the criteria laid out by Wilson and Junger, to take appropriate action on problems identified, and to promote healthier lifestyles. However, if primary health care is to promote healthier lifestyles in relation to smoking, diet and drinking, this should be matched in equal or greater prominence by central government.

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Acknowledgements

To the Leicester Faculty of the Royal College of General Practitioners, and in particular to Dr M H Drucquer for his help.

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