

Contemporary Themes

Promoting prevention in primary care: controlled trial of low technology, low cost approach

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Abstract

A study is described in which three general practices were provided with low cost, low technology support from a "facilitator" and were compared with control practices in the ascertainment of major risk factors for cardiovascular disease in middle aged patients. Patients who were attending for a consultation with their general practitioners were recruited to make an appointment with a practice nurse for a health check, and this was compared with ordinary consultations in the control practices. Practices were helped by the facilitator to develop the nurse's role.

During the study the increase between intervention and control practices in blood pressure recording was doubled and in the recording of smoking habit it was quadrupled, and there was a fivefold increase in the recording of weight. This model can be applied to other aspects of prevention and general practice care.

Introduction

In 1981 the Royal College of General Practitioners published *Prevention of Arterial Disease in General Practice*,¹ which was one of a series of reports on health and prevention in primary care.¹⁻⁶ In reviewing the evidence this report concluded that "about half of all strokes and a quarter of deaths from coronary heart disease in people under 70 are probably preventable by the application of existing knowledge."

Among the report's recommendations was that major risk factors for arterial disease should be ascertained in general practice in patients under 65 years as they consulted by: (i) measuring the blood pressure at least once every five years; (ii) recording smoking behaviour; and (iii) measuring patients' weight and height (especially of those who looked fat). Though it recognised that obesity has little independent effect on the risks of arterial disease, the report regarded it as being a useful and visible indicator of increased lipid concentration. These measures were thought to be the first step towards "prevention of arterial disease in general practice."

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In the United Kingdom almost everyone consults a general practitioner at least once every five years, and almost one million people consult each day. Many of these contacts offer opportunities for anticipatory care as well as for the management of the presenting problems.⁷ But there is a wide gap between this potential and the achievement of it.⁸ For example, only about half of patients' records contain a blood pressure measurement, less than a quarter contain information about smoking habit, and only about a tenth have a record of weight.⁹ This is despite the interest that patients take when their doctors inquire about such matters.¹⁰

The main obstacles that inhibit practices from carrying out preventive activities are: (i) the demand oriented philosophy of general practice, which leads to a "symptom swatting" approach; (ii) the brevity of general practice consultations; (iii) the lack of a coordinated, systematic approach in daily work; and (iv) the failure to use the resources offered by the primary health care team fully, especially those of the practice nurse.

A year after the report on prevention of arterial disease was published a research project was set up in Oxford to test whether its recommendations could be implemented.¹¹ Our research had three aims: (a) to test the feasibility of implementing the recommendations giving priority to the age group 35-64 years; (b) to investigate the role of a "facilitator"; and (c) to encourage collaboration between a local health authority, the family practitioner committee, and general practitioners, which others might consider as a model.

Method

The design of the project was a controlled trial with intervention and control practices. Three practices agreed to participate in the study and three matched practices were identified as controls. The practices were selected from knowledge of socioeconomic profiles of practice areas and of practice personnel and their approaches to medical care. The intervention practices were chosen because they were different from each other, but typical of other practices, and did not have a systematic approach to screening. There was a practice of two doctors who worked in a semidetached house, a practice of five doctors who worked alone in a purpose built health centre, and a group practice that shared a health centre with two other practices. The control practices were carefully matched for size, structure, facilities, and location in a case-control manner. The socioeconomic profiles of all six practices were similar; no practice was in a predominantly working class, middle class, or wealthy area.

The intervention consisted of three elements:

(1) A research funded facilitator who introduced the screening package to the practices provided training for practice staff (particularly receptionists and practice nurses) and offered continuing advice and support. The facilitator had worked in general practice as a health visitor and had then been a health education officer. She was a temporary guest in the intervention practices, helping to set up and supervise screening and audit of records.

(2) A practice prevention nurse was either employed by the practice to carry out screening or was already working as a nurse in the practice and extended her role to include screening. She carried out the health checks and was trained in blood pressure measurement, in how to elicit information about smoking and dietary habits, and in giving advice.

(3) A brief health check (subsequently nicknamed "human MOT") was carried out by the nurse. Recruitment of patients for health checks was opportunistic—that is, patients in the target age group of 35-64 years who were attending the practice for a consultation with the doctor were invited by the receptionist to make an appointment to see the nurse for a health check.

HEALTH CHECKS

Health checks took about 20 minutes and were either organised into special sessions by the nurse or interspersed with other work. The nurse asked about relevant family history and diabetes, recorded blood pressure, measured weight and height, inquired about diet, alcohol consumption, and (where appropriate) oral contraception, and recorded smoking habits. Blood pressure measurement and the course of action followed a protocol (fig 1), and advice about smoking and diet was given in accordance with guidelines.

Patients who had a sustained blood pressure at or above 180/100 mm Hg were referred to the doctor for consideration of treatment. Those whose blood pressure was below 160/90 mm Hg were told that another check within five years was adequate, and those whose blood pressures were between these two measurements were advised that their blood pressure should be checked once a year and were included in a recall system. The decision to refer for consideration of treatment or for yearly review was based on the mean of three readings. Health education materials and a weight chart were used when patients were given advice about smoking, diet, and weight. Blood lipid concentrations were measured only in patients who had a personal or family history of coronary heart disease at age 55 or under, and blood sugar concentrations were measured only in those who were seriously obese (more than 30% overweight) or had a family history of diabetes.

Blood pressure measurement

- Patient sitting
- Note fear / anxiety / anger / cold, if present
- ? Empty bladder
- ? Adequate cuff to encircle arm
- Rate of fall of pressure 2 mm Hg per second
- Record to nearest 2 mm Hg
- Diastolic blood pressure phase V (complete absence of sound) unless this = zero then use phase IV (muffling) and record "IV" after recording in medical notes

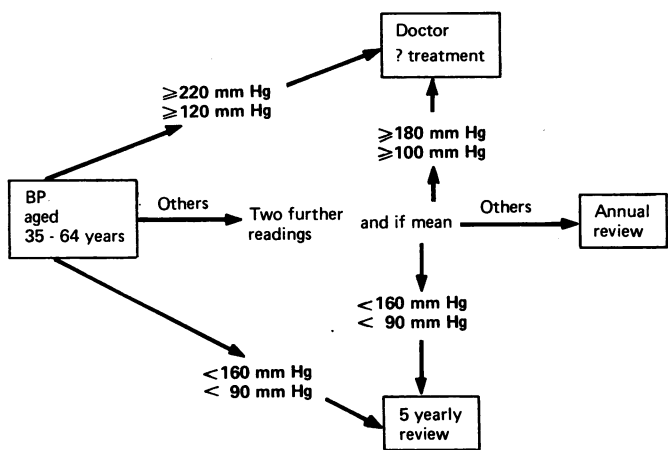


FIG 1—Nurse's protocol for measuring blood pressure (BP) and action to be taken.

All information was recorded in the notes on a summary card (fig 2), and the outside of the patient's records was labelled with the date for the next review. The doctor's role was to endorse what the nurse was doing, but, although extra work was generated by detecting patients with hypertension that warranted medication, the general practitioners concerned did not notice that their workload had increased.

AUDIT

A record audit showed changes in the recording of risk factors in patients' notes. The audit was carried out by trained audit clerks, and the notes of all practice patients in the target age group were searched for a recording of blood pressure, weight or indication of obesity, or a note of smoking habit in

FEMALE

Name D O B

SMWD No.

Own occupation
partner's occupation

Date Date Date Notes
1st B/P 2nd B/P 3rd B/P Mean if applicable

Height Weight Ideal weight

Nutritional advice Exercise

Smoker Cigarettes Pipe Since 19
Non-smoker Never Stopped 19

Family history of CVA or MI

Diabetes Yes Insulin OHD Diet
No

Oral contraception Years of use Current Past Never

Last cervical smear Date Result

Rubella Immune Yes No Date
Vaccination Yes No Date

Date of tetanus 1st 2nd 3rd Booster

Urine Date Protein Sugar

Alcohol

Notes / Advice given / Further action

CONTINUATION

Date	B/P	Smoking	Weight	Contraceptive change	Rubella	Tetanus	Cervical smear

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FIG 2—Health summary card used in health checks. SMWD=single, married, widowed, divorced; BP=blood pressure; CVA=cerebrovascular accident; MI=myocardial infarction; OHD=oral hypoglycaemic drug therapy.

the previous five years. The initial audit covered the five years up to 1 April 1982, the date of the first contact that the facilitator had with the intervention practices, and the second audit covered the five years ending 30 September 1984. Control practices were not told that they were part of a controlled trial until the intervention was completed (to avoid the possible effect of such knowledge on behaviour), and the collection of data in control practices was therefore necessarily retrospective.

The outcome of measurement chosen was the recording of risk factors in patients' records, this being a measure of professional behaviour. This was considered to be the initial step in ascertaining risk factors and management: changes in the prevalence and levels of risk factors will be reported later.

Results

The aggregate target populations whose records were audited comprised 7946 patients in the three intervention practices and 7459 patients in the three control practices. Both audits showed evidence of at least one consultation within the preceding five years in about 90% of records. The initial audit, however, showed low levels of recordings in all practices with only small differences among practices, whether intervention or control. Initially, blood pressure was recorded in 35% of the notes in intervention practices (compared with 37% in control practices), smoking habit in 11% in intervention practices (compared with 12%), and weight or an indication of obesity in 12% (compared with 13%). These differences between the intervention and control practices were not significant, indicating that the practices were well matched.

The final audit, however, showed that, although there were substantial increases in the recording of blood pressure, smoking habit, and weight in all practices, this was much greater in the intervention practices than in the control practices (fig 3). After the two and a half year interval 59% of records in intervention practices had a blood pressure recorded (compared with 49% in control practices), 49% mentioned smoking habit (compared with 21%), and in 45% weight was recorded (compared with 19%). These differences are highly significant (p<0.001). Altogether, 1033 extra people had their blood

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pressure recorded, an extra 2327 their smoking habits recorded, and an extra 2158 their weight (or an indication of obesity) in the three intervention practices compared with the three control practices. Furthermore, in 80 patients hypertension was newly detected (with sustained blood pressure readings at or above 180/100 mm Hg); this included three patients with sustained measurements greater than 220/120 mm Hg.

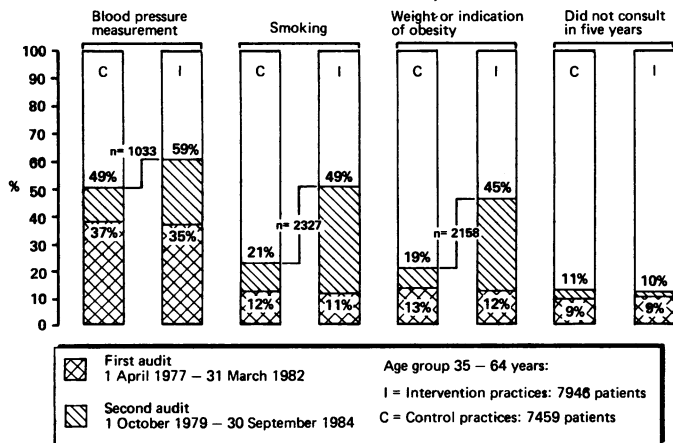


FIG 3—Audit of improvements in recording blood pressure measurements, smoking habits, and weight (or an indication of obesity). The differences between control and intervention practices are highly significant ($p < 0.001$) for all three items.

Discussion

Evidence from the control practices shows that improvements in recording blood pressure, smoking habit, and weight occurred spontaneously during this study without any special effort. But with the introduction into intervention practices of a systematic case finding approach, in which practice nurses conducted health checks and were helped by a facilitator, the improvement was enhanced. The increase in blood pressure recording was doubled, the increase in the recording of smoking habit quadrupled, and recording of weight increased more than fivefold in the intervention practices compared with the control practices.

For the public this model offers free, acceptable health checks and advice. Within a five year period about 90% of the population could be offered screening with such an opportunistic approach, which therefore combines both "mass" and "high risk" strategies. Only about 5% of patients declined the health check, and many, as has been reported,¹⁰ were enthusiastic.

General practitioners incurred some extra costs, but these were modest. In a typical group practice of about 10 000 patients (about one third of whom will be in the age group 35-64 years) about 10 hours of nursing time a week is necessary to carry out the programme. Assuming that the practice has not reached the ceiling for reimbursement of staff, the net weekly cost is less than £10, which is recouped by fee for service payments that the nurse incidentally generates.¹¹ Some extra work for doctors is created when patients with hypertension are detected who need treatment, but few would deny the importance of this. This is a low cost, low technology scheme. No computer or age-sex register is necessary, and it is therefore widely acceptable and applicable. An example of another approach in which each practice was given a computer has been recently reported.¹² It is also highly compatible with a "risk score" strategy.¹³

For the practice nurse this new and extended role is challenging and satisfying: she becomes a full professional partner in the primary care team. Although health visitors can do the job, in many cases they are too busy to take on such additional work. Receptionists found that their role is enhanced by their participation in the preventive programme, and they enjoyed initiating the offer of appointments instead of merely responding to patients' requests for them. Health education officers found that their links with primary care improved; their skills were valuable in training primary care

team members, and their health education resources were used in this approach to individuals.

The results of this study have special implications for family practitioner committees and health authorities. In Oxfordshire 44 group practices with a population of about 350 000 patients have now adopted this screening programme. The original facilitator (EF) has been appointed by the Oxfordshire Health Authority as director of a primary care prevention centre. Twenty five other health authorities have appointed facilitators on the same model in England, Wales, Scotland, and Northern Ireland, and at least two facilitators will be employed by family practitioner committees.

The results of this study show that ascertaining the major risk factors for cardiovascular disease in primary care may be substantially improved by an opportunistic, systematic approach using practice nurses. A facilitator can initiate and maintain such a programme in several practices more quickly and effectively than the practices could do alone without such support. This model could be applied to other aspects of prevention and care in general practice.

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What is the effectiveness of treating cancer with regional hyperthermia?

Hyperthermia was first used in 3500 BC and the procedure was known to Hippocrates. Its use in cancer is based on the hypothesis that tumour cells are more sensitive to increasing temperatures than normal cells. Responses to hyperthermia have been seen in malignant cells in tissue culture and in animals bearing tumours. These responses are usually of short duration. Efforts have been made to combine both radiotherapy and chemotherapy in order to enhance and increase the durability of responses. There are many thousands of anecdotal records of responses to hyperthermia. In the case of hyperthermia and radiotherapy there has been at least one randomised trial where benefit was claimed for the group having hyperthermia and definitive radiotherapy.¹ By contrast, the use of drugs is more equivocal. Some drugs, such as melphalan, do appear to have their effect enhanced, but others are rendered less effective. There is little information on the use of lasers and hyperthermia. Although the methods of producing hyperthermia and monitoring body temperatures are improving, it is still a dangerous and highly experimental procedure.—J S MALPAS, professor of medical oncology, London.

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