

of disease processes. These diagrams were popular with doctors as they could make them personal and adapt them to each patient's needs. Doctors often commented that blank sheets of paper were their most useful aid for health education. They often used notepads containing paper endorsed with a drug advertisement.

Most (78%) of the general practitioners interviewed had provided patients with prepared leaflets on specific topics during consultations, but half of them expressed reservations about their value. Most general practitioners value the one to one relationship with their patients; they therefore view with suspicion anything that might alter their consulting pattern and disturb this relationship. The general impression, expressed by doctors in this study, that patients adopt an attitude of passive acceptance when being given a leaflet caused many doctors to doubt whether publications were appreciated by patients. Most of the doctors studied did not record in their notes when patients had been given a leaflet.

Written materials used by general practitioners were obtained from various sources but most commonly pharmaceutical companies. Although doctors preferred the style and impartiality of leaflets produced by non-commercial organisations, the advantages of these publications were outweighed by the greater effort needed to obtain them. Availability of supplies was probably the most

important criterion influencing their use by general practitioners. Representatives of pharmaceutical companies visit practices regularly and promote and then deliver supplies personally, often arranging to replenish stocks. This servicing of practices by pharmaceutical companies was an important factor in the selection of materials by doctors: health education units existed in the area studied, but doctors knew little about them.

Most leaflets used by the general practitioners explained diseases rather than advising on modifying lifestyle to improve general health. This may suggest that many general practitioners think that they primarily provide curative rather than preventive care for their patients.

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For Debate . . .

A licence for breast cancer screening?

J B WITCOMBE

Abstract

It is unrealistic to expect that the best results which have been reported from some research programmes will be equalled after the introduction of a nationwide breast screening service in Britain. Stringent methods of quality control will be needed or potential benefits will not be realised. Despite the disadvantages an effective method of accreditation may be the only way to contain the cost to both healthy women and the National Health Service.

Introduction

The critical question about breast cancer screening is no longer whether early detection and treatment can prolong life. This has been answered. Two new questions now arise. How far can the quality of the screening process that has already been achieved in some research programmes be maintained in community hospitals, and what will be the cost to normal healthy women? Results from Sweden have shown that the mortality from breast cancer can be reduced by screening women over 50 years of age with single view

mammography alone.¹ These results, however, were achieved in specialist centres by staff who have been dedicated to screening for many years and in a country where the population is renowned for its compliance and the health service for its staffing levels. Over 90% of Swedes take part in elections, and there are 4.5 times as many radiologists per person in Sweden than in the United Kingdom. No country yet has a nationwide screening service for breast cancer, but we can learn from others about what happens when mammography screening is carried out widely. From West Germany, where over 2.5 million mammograms are performed yearly using 10 times as many mammographic installations as are available in the National Health Service, it can be learnt that results from specialist centres are not reproduced. The number of breast cancers that are diagnosed in West Germany is increasing,² but mammography has had no detectable effect on mortality from breast cancer.^{3,4} From the United States it can be learnt that when screening became widespread between 1970 and 1975 no discernible benefit resulted, but the mastectomy rate increased to double that in UK. More women were diagnosed and treated for cancer because the pathological criteria for making a diagnosis became more relaxed.⁵ Without careful control mammographic screening is detrimental. From France, where twice as many radiographs are exposed per person than in Britain, and from other Western countries which spend more on health care and have more advanced infrastructures of conventional mammography than Britain it can be learnt that a nationwide screening programme is not yet justified. An expansion of mammographic facilities is indicated, but planning a nationwide screening programme is overambitious at this time. Starting a nationwide screening programme within three years, as the government plans to do, could contain the seeds of disaster unless the skill, application, and interest of specialist centres can be matched.

Department of Radiology, Gloucestershire Royal Hospital, Gloucester GL1 3NN

J B WITCOMBE, MB, FRCR, consultant radiologist

Screening results

Many published results⁶ are worse than the results from the respected and much quoted Swedish study in which the radiographs were reported by two expert radiologists. Also, bad results tend not to get published, and most screening units do not audit their results. Even in the Swedish study, which is the only controlled trial in which mammography alone was used as the screening method, the reduction in mortality must be balanced against the cost in terms of the numbers of false positive results and biopsies carried out on healthy women. The mortality for breast cancer in a group of 78 085 women who were offered a single view mammogram every three years in the Swedish study was 0.11% at seven years compared with a mortality of 0.15% in the control group of 56 782 women. Although this represents a reduction in cumulative mortality from breast cancer at seven years of about 30%, as expected this was not enough to have a discernible effect on overall cumulative mortality, which was just over 6%.^{7,8} The results of a research study cannot be directly transposed to widespread population screening. Moreover, the overall statistical validity of the Swedish study was based on a high mortality in one third of the control group (Kopparberg county), which raised concern about how representative the findings were. Nevertheless, studies with a computer model suggest that when women in Britain are offered screening every three years between the ages of 50 and 65 years about 8% of all deaths from breast cancer may be prevented,⁹ but only if the quality of the Swedish trial can be equaled.

The table compares the mortality results in the Swedish study with the estimates of a government working party for positive results from screening and biopsies for an initial round of screening in Britain.¹⁰ The table therefore shows the best reported results at

Mortality shown in the Swedish trial of mammography screening and estimates made by a government working party in Britain

	Total No	%	No per 2000 women offered screening
Swedish results at seven years in women aged 40-75 years ^{1*} :			
Cancers detected in 78 085 women offered screening†	1068	1.37	27
Mortality from breast cancer in these women	87	0.111	2
Mortality from breast cancer in a control group of 56 782 women	86	0.151	3
Total overall mortality for both groups (134 867 women) from all causes	8266	6.13	123
Estimates for the effect of an initial screening programme on women aged 50-65 years ¹⁰ :			
Positive result on screening	10		200
Biopsies	1.5		30
Detected cancers	0.55		11

*Results followed two rounds of screening with a compliance rate of 89% in the first round and of 83.3% in the second round three years later.

†Including cancers detected at screening and interval cancers.

seven years, where one woman in 2000 who were offered screening benefited with prolonged survival. These are compared with estimates for the proportion of women who will suffer physical and psychological harm from false positive results of screening and from biopsy. These estimates are for the initial screening round only and the number of biopsies, which is lower than in many screening programmes,^{11,13} may well be exceeded in practice.

The highest quality must therefore be maintained not only to optimise benefit but also to minimise harm.

Training

Enormous problems will have to be overcome to establish a nationwide screening service—for example, providing finance, equipment, accommodation, counselling services, pathology facili-

ties, surgical time, computers, and call and recall systems. There will also be problems in training radiographers and “breast physicians,” with compliance, and in standardising treatment methods and pathological diagnosis. Most important, however, will be developing radiological skills and methods of quality control. The European Group for Breast Cancer Screening believes that radiologists need to be seconded to an active screening centre for several months and that they must be able to rapidly scan large numbers of mammograms.¹⁴ Bengt Lundgren, the radiologist who devised the single oblique view, believes that even after training for several months many radiologists are unsuitable for screening work because of a temperamental inability to make a rapid decision from a glance at a mammogram. Experience at Guildford has shown that radiologists who have considerable experience of conventional mammography diagnose most cancers that are picked up by screening experts only at the cost of a high number of false positives. Thus even radiologists who have experience in conventional mammography need to be trained. If they are not women will suffer unnecessary anxiety and unnecessary biopsies, the surgical, pathological, and radiological workload will increase, the cost of the service will increase, and the likelihood that lesions of dubious importance are regarded as cancer will increase.

Quality control

Who will staff the 100 or more units that are planned? A large proportion of the 1223 consultant radiologists in the UK will need training, for every unit will require a committed radiologist to devote much of his or her working week to mammography and at least one other radiologist to provide support during absences. In many centres radiologists will seek a new colleague to do this work. It is not known how many of the 263 senior radiological registrars in training will wish to devote their careers to this narrow field of practice. General radiologists will face temptation from the private sector, but the activities of screening units funded by commercial and charitable sources are often not modified by clinical feedback nor do these units have to manage many of the patients they screen. None of this bodes well for maintaining excellence, and yet excellence is essential. Excellence will not be guaranteed by training alone. It will require reliable centralised methods of quality control. The integration of screening units and assessment teams must be assured, and the diagnostic teams and the clinicians who are concerned in treatment must work closely. The structure of units and methods used must be uniform so that comparisons may be made. Special methods of data collection and analysis will be needed, for the reduction in mortality in individual districts will be scarcely measurable in the short and medium term.⁹ Quality control means monitoring the performance of individual radiologists as well as individual units.

Accreditation

A system of accreditation will have to be considered for British radiologists. Many radiologists will be reluctant to accept such a system, thinking, on the one hand, that skills will develop in the long term anyway and that accreditation will limit professional freedom and reduce flexibility in working and, on the other hand, that any method of accreditation will be either ineffective or unworkable and may lead to accreditation for other subspecialties. Others will feel that the logistical problems of introducing an effective breast screening programme throughout the whole health service are insuperable.

It will be argued that many aspects of mammographic screening are not unique. For example, obstetric ultrasonography and cervical cytology may give false positive and false negative diagnoses and have medicolegal repercussions. These procedures also require great skill and are carried out on normal women who implicitly accept that the investigations are beneficial. Moreover, in cervical cytology there is also variation in the pathological definition of early

"cancer." Notwithstanding, the peculiarity of mammographic screening is the combination of a precarious cost-benefit and harm-benefit balance, which is so dependent on skill and commitment and the public, political, and commercial pressure to develop a service in haste.

Accreditation may not be acceptable, but there is one further reason why it should be seriously considered. Accreditation will enable the profession to set satisfactory standards and help ensure that high quality screening can be developed steadily and not be steamrollered by public or political pressure. Since the government has made the premature decision to introduce a nationwide screening service stringent methods of control are needed. Without this, screening will be demanded when skills are not available, and great cost will be incurred for little benefit. More importantly, healthy women will be put at serious risk. The government may change its plan to introduce a nationwide screening service in under half the time recommended by the Royal College of Radiologists. If it does not the only way to avoid disaster may be to introduce a licence for breast cancer screening.

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Letter from . . . Chicago

Nurse shortages

GEORGE DUNEA

The women of America seem to have decided that nursing is no longer a suitable occupation for a college educated person. By voting with their feet they have plunged nursing into yet another crisis. Hospitals are advertising for nurses, offering incentive bonuses and finders' fees, and there is even talk of recruitment safaris to Dublin and Manila. News about the shortage is splashed across the front page of the newspapers¹; administrators are advised to interview departing nurses to find out what ails them; and nurse advocates are in their glory. They complain that nurses are overworked, underpaid, and underrespected.^{1,3} They want to look again at the very nature of the nursing profession. And they remind the doctors that without nurses the hospitals cannot function.

This is of course not the first time that we have had a nurse shortage—we had one in 1968 and then again in 1980.¹ But this one could be more serious and conclusive because the ingress into nursing is being choked off. Since 1974 the number of nurse training programmes has decreased by 50% and since 1983 by 20%.² Within the next ten years the number of nurse graduates is projected to fall from 82 000 a year to 69 000 or even lower. The little girls who

once dreamt of becoming nurses have made other plans; the nursing schools are closing right and left; the old pictures of dear matron surrounded by her pupils are coming down; and a tradition born in the camps of Scutari and the fields of Balaclava is passing into memory.

For some reason this crisis struck quite suddenly. Within two years the national hospital vacancy rate for budgeted nursing positions, an indicator of the shortage, doubled from 6.5% to 13.6%. It is 10% in Illinois; higher in Boston, New York, and the north east; most marked in the inner city and in public hospitals. The Veterans Administration says that it needs 4000 to 8000 more nurses to operate its programmes; the Health and Human Services Department foresees a shortfall of 1.2 million nurses by the year 2000. Throughout the nation hospitals are closing wards or intensive care beds; the shortages are especially apparent in unpopular or stressful working conditions; and many hospitals have had to upgrade their nursing aids and hire expensive temporary nurses from agencies.

Yet paradoxically more nurses are working than ever. Between 1977 and 1984 the number of employed licensed nurses rose by 55%.² At present somewhere between 1.5 to 2 million nurses are working—two thirds in hospitals. At a time of declining hospital occupancies, when almost 60 000 beds have been eliminated and over 400 hospitals have closed, this has given rise to considerable controversy whether the shortage is true or contrived. Yet it seems that relatively few nurses have transferred to ambulatory and administrative settings. In fact, the hospitals have been hiring more