The debate over mass mammography in Britain

The case for

Ruth Warren

For the sake of British women doctors have a particular duty to take seriously the evidence of world trials on screening for breast cancer as Britain heads the world's league table for mortality from this disease. Epidemiological data in two major controlled trials, the Health Insurance Plan study from New York¹ and the two counties Swedish trial,² show that mortality from breast cancer may be reduced by mammographic screening, and the evidence is statistically firm in women aged 50-64. The results of the trials concentrate on mortality figures, but the benefits of screening to individual women are wider—namely, reduced morbidity and more modest surgery because of earlier diagnosis.

Recommendations for screening

After the Swedish trial was published a committee was set up under Professor Sir Patrick Forrest to make recommendations; its report appeared in February 1987³ and was immediately activated by the government on a slim budget, with the Griffiths management structure to enforce implementation throughout England and Wales by April 1990. Doctors might wonder whether this was wise and whether mortality may be reduced in this way. The public believes it can, but is it being deceived? Is more good being done than harm?

The Forrest report recommends performing mammography from only one view without clinical examination every three years from the age of 50 to 64.³ Screening with one view only and without clinical examination has been validated in two major trials: the two counties trial and the Nijmegen project.⁴ Testing every three years more closely mimics the Swedish trial. Therefore all that needs to be done is to match that work, which was performed in highly motivated research departments, in every district in Britain, and on a smaller budget.

The Swedish National Board of Health on the same evidence has recommended screening every 18 months with two views at the age of 40-55 and screening every two years with two views in dense breasts and one in fatty breasts up to the age of 74.⁵ The Netherlands National Council of Public Health recommends two yearly screening with two views from age 50-55 and thereafter two or one views as necessary up to the age of 69.⁶ There is a large difference in the amount of money needed for these two regimens and that required for the more limited British recommendations. The British trials, just published, tested every two years and included clinical examination.⁷

The degree of staffing in Britain is not the same as in Sweden. The budget, however, allows for a minimal increase above the recommended levels of staffing before the ceiling of £206 000 for each centre each year⁸ is reached. Cytology, essential to the Swedish method, receives little mention and no staffing.

An important feature of the Swedish study is the

high degree of compliance achieved. Reliable population lists from the Swedish tax office are used and yield an uptake of 90%. Data from the Swedish figures show that an increase in compliance from 60% to 80% may be as effective in reducing the proportion of advanced cancers (and therefore ultimately mortality)⁹ as in reducing the screening interval from three to two years (N E Day, personal communication). Attention to non-attenders is therefore critical to success. The task in Britain should, however, be easier than in Sweden as the mortality for breast cancer is higher (28.4 v 18.6 per 100 000 women³) and screening in Sweden reduced the rate by 30%.

Britain's tight budget means that scrupulous attention needs to be paid to good specificity and high predictive values to avoid unnecessary recalls and high rates of biopsy. Fortunately, this tunes in with the needs of women. The predictive value for the screening of prevalence in Nijmegen is 30% with processing at the time of screening and slightly less in Sweden with batch processing. The predictive value for the screening of incidence increases to 70%.

A woman who receives a recall letter experiences temporarily the diagnosis of cancer. Three recalls for every cancer are acceptable, but 10 or 20 are not. Such specificity is not, however, easily achieved, especially with one view at the initial screening. Attention to the timing of recall letters can minimise anxiety.

Invasive lobular carcinoma (14 mm) of left breast in screening films of woman aged 54

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Sclerosing ductal carcinoma (10 mm) of left breast in screening films of woman aged 53

Radiologists diagnosing early lesions is only one part of the process that reduces mortality. The performances of surgeons, pathologists, and radiotherapists are critical, and a special degree of cooperation within assessment teams is essential.

Reaping the benefits

Mass screening is the only current method by which breast cancer, an important cause of mortality, may be tackled, and it may be implemented by the means set out in the Forrest report, but with difficulty within the budget allocated. To fall below the best standards will be to invest and cause anxiety without achieving the expected result. Have the public and politicians understood this? Throwing money at this disease will not automatically gain years of life.

It is worth looking at the managerial process by which this programme has been put into place. Individual performance review is a powerful business tool for achieving results and ideal for producing caterpillar tractors or the sale of hamburgers in a fast food store. It has now been applied to breast cancer through doctors, who are aside from this direct managerial process. The service can be put in place by the target date. The technique is so critically dependant on quality that we may achieve the short term goal (women screened) without the long term result (life years gained).

What factors may make this programme fail? Compulsion and excessive speed are two. High motivation is essential and compulsion may demotivate. The necessary quality may be sacrificed by speedy implementation. The training programme is critical to bring the skills of radiographers, radiologists, pathologists, and surgeons to the necessary standard and must not be rushed.

Mass screening can and, I believe, should be implemented but with some relaxation on the time course of implementation. Sufficient resources should be allocated for effective results. From Europe and the United States there are those who wait to see this programme fail after the well publicised shortcomings of cervical cytology screening in Britain. The critics

can be proved wrong if everyone respects the difficulty of the task. If we do not intend to succeed we should not start.

- 1 Shapiro S, Venet P, Strax P, Roeser R. Ten to fourteen year effect of breast cancer screening on mortality. *JNCI* 1982;69:349-55.
- 2 Tabar L, Fagerberg CJG, Gad A, *et al*. Reduction in mortality from breast cancer after mass screening with mammography. Randomised trial from the Breast Cancer Screening Group of the Swedish National Board of Health and Welfare. *Lancet* 1985;i:829-32.
- 3 Department of Health and Social Security. *Breast cancer screening. Report to the Health Ministers of England, Wales, Scotland and Northern Ireland*. London: HMSO, 1986. (Chairman Professor Sir Patrick Forrest.)
- 4 Verbeek ALM, Hendricks JHCL, Holland R, Mravunac M, Sturmans F, Day NE. Reduction of breast cancer mortality through mass screening with modern mammography. First results of the Nijmegen Project, 1975-1981. *Lancet* 1984;i:1222-4.
- 5 Allmänna Råd från Socialstyrelsen. *Mammografi screening. Hälsokontroll för tidig upptäckt av bröstcancer*. Stockholm: Socialstyrelsen, 1986:3.
- 6 Nationale Raad voor de Volksgezondheid. *Advies Organisatie bevolkingsonderzoek borstkanker*. Zoetermeer: Nationale Raad voor de Volksgezondheid, 1986.
- 7 UK Trial of Early Detection of Cancer Group. First results on mortality reduction in the UK trial of early detection of breast cancer. *Lancet* 1988;iii:411-6.
- 8 Department of Health and Social Security. *Breast cancer screening: draft health circular*. London: DHSS, 1987. (DA (87)14.)
- 9 Atkinson EN, Brown BW, Montague ED. Tumour volume nodal status. Metastasis on breast cancer in women. *JNCI* 1986;76:171-8.

ANY QUESTIONS

What advice should be given to help a man weighing 165 kg lose weight? Is intestinal resection a treatment worth considering?

A man of whatever age weighing 165 kg is at considerable risk of premature death and above average morbidity from cardiovascular disease, diabetes, osteoarthritis, spondylosis, and other well recognised hazards. Firstly, serious efforts should be made by conventional dieting as well as strenuous daily exercise. Organisations such as Weight Watchers achieve good short term results with their dietary programmes and the patient should be advised to join one of these.

When all else fails surgical treatment might be considered if reasonable motivation and intelligence are shown by past dietary effort and weight reduction, albeit of shortlived success. Alcoholism, endogenous depression, low intelligence, and a history of cardiovascular disease would be considered contraindications. Endocrine abnormalities, though rarely the cause, have to be excluded. Intestinal bypass was a popular procedure for morbid obesity in the 1960s and 1970s but because of an associated risk of side effects as well as a mortality of 3-4% this has been abandoned. The advent of stapling instruments has made possible much safer, less complicated gastric reduction procedures, of which vertical gastropasty is the most popular. The stomach is stapled from the fundus adjacent to the cardia to the lower lesser curvature creating a 50 ml proximal compartment draining into the remainder of the stomach through a stoma of less than 1.5 cm diameter, the stoma being supported by a band of Marlex or Silastic to prevent stretching. The mortality is less than 1%—nil in my experience of 125 gastropasty patients in the past six years. The aim of the operation is simply to reduce gastric capacity and induce early satiety, which with a strict dietary discipline has yielded weight reduction of some 65-70% of excess weight after three years. Gastropasty is certainly worth considering in a man weighing 165 kg.—MICHAEL BADDELEY, consultant surgeon, Birmingham

Correction

BACUP—the first two years: evaluation of a national cancer information service

An editorial error occurred in this article by Dr M L Slevin and others (10 September, p 669). In the last sentence of the second paragraph of the methods 60151 was substituted for 6015. The sentence should have read, "During the first two years 6015 user surveys were sent out."