

between being frank about the uncertainties of screening and the possibility that it may do more harm than good, and making unrealistic promises to patients in order to increase uptake.

It is sad that Maureen Roberts' wise counsel, made shortly before she died of breast cancer, is misrepresented and dismissed, among two other references, with the statement, 'Expositions deploring the inadequacies of service provision for symptomatic women have become confused with discussions concerning the efficacy of screening'. Far from being confused, Roberts, with her expertise as director of the Edinburgh Breast Screening Project, questioned the evangelism of screeners and pleaded for the provision of 'a truthful account of the facts [which] must be made available to the public and to the individual patient. It will not be what they want to hear'.¹

In their last paragraph, Drs Austoker and Sharp express their disagreement with the view that 'screening is invariably an infringement of the patient's personal liberty', which is inexplicably attributed to me and referenced by an article in which I say no such thing. As Drs Austoker and Sharp appear to be worried about the spate of articles confusing the public they should not add to the confusion by their muddled arguments.

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Reference

1. Roberts MM. Breast screening: time for a rethink? *BMJ* 1989; 299: 1153-1155.

Opportunistic screening

Sir,
Norman and Fitter apparently use the word 'screening' as a synonym for a well person consultation organized on an appointment basis (*May Journal*, p.188). Thus, they say 'These figures produce an attendance rate of 87% but a screening rate of only 26% for the target population', while I would say 'these figures produce a screening rate of 87% and an attendance rate at a subsequent clinic of only 26%'. Such a clinic cannot be termed 'screening', although mentioning factors such as smoking, alcohol and obesity during the course of an ordinary patient initiated consultation is legitimately called 'opportunistic screening'.

The debate about the value of preventive measures is important and must continue, but no light can be thrown on the subject until everyone writing about it agrees on their terminology. Norman and

Fitter are looking at process, and outcome is to be preferred. If, in a consultation initiated by the patient about something else, I bring up the question of smoking, and a month later that patient comes to me in an ordinary surgery and says that he or she has given up smoking, and six months later he or she comes again and repeats this, then does it matter that the patient did not attend a well person clinic arranged to suit the convenience of the doctor or nurse running it?

Not only is screening possible on an opportunistic, individual basis, but in fact, with properly developed software, it is possible to 'screen' the whole of the practice population in quite a short space of time if the software is organized so that the whole family or household appears on the screen every time an individual patient consults. Such a programme has been running in my practice for a year now, and in the near future we will be able to produce quarterly figures of the number of people in our practice who smoke for example. Further work on this is proceeding, but we should not be confused by simulations which bear little or no relationship to reality.

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The screening process

Sir,
Much confusion exists about the use of the term 'screening' to describe two similar activities, one which is population-based, and the other which is carried out on the individual.

Population-based screening describes the activities of community based professionals. They identify a population of people who are at risk of developing a certain condition and then invite them for examination to detect this disease or pre-disease condition. The results are then compiled based on the findings and outcomes of all those invited for screening, whether or not they attended.

Individual screening is carried out opportunistically and is a physical examination designed to screen for a number of diseases in an individual.

There are four factors which can influence the outcome in the majority of acute diseases: the aggression of the disease; the resistance of the host; the timing of the diagnosis; and the treatment offered to/accepted by the sufferer. A screening examination can affect just one of these: the timing of the diagnosis.

To have an effect on disease incidence

or outcome, population-based screening must recruit the majority of the at risk population. It must be carried out effectively and frequently enough to reduce the number of cases presenting in the interval between screening. If only 50% of the population accept an invitation for screening, then only 50% of the studied disease can be detected by this screening process. However, if there is a frequent interval in the screening programme, the number of cases detected by the screening process may be exactly the same as in a different situation where there is a higher percentage of the population accepting the invitation for screening but a longer interval between screenings.

Individual screening is concerned with applying appropriate screening procedures in a correct way and using an appropriate interval between screening examinations which will reduce to a minimum the individual's risk of developing the disease in the interval between screenings.

These simple models, of short screening interval/low patient compliance rate and long screening interval/high patient compliance rate which give similar detection rates, can be applied to any condition which has a known prevalence and incidence. One-off screening procedures, as for phenyl-ketonuria or for genetic disease, obviously carry no risk of interval diseases. There is only the possibility of cases being missed owing to inaccurate screening techniques.

The anguish of Maureen Roberts,¹ a greatly admired researcher in the breast cancer field, and the subsequent correspondence,² reflects the concern of professionals in the field of breast cancer screening. These are real concerns and are being properly addressed.

However, there must be no confusion between the advantages of population-based screening and the advantages of individual screening. Two axioms must be accepted: a screening examination can offer no benefit whatever to those who do not have it; and a screening examination is of no benefit to those who develop the disease in the interval between screenings. Once these axioms are understood by both professionals and the lay public, screening procedures and processes can be reviewed in their correct perspective.

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References

1. Roberts MM. Breast screening: time for a rethink. *BMJ* 1989; 299: 1153-1155.
2. Breast screening: a response to Maureen Roberts [letters]. *BMJ* 1989; 299: 1336-1338.