Journal of Medical
Screening

Editorials

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Medical screening offers great potential for preventing premature death and disability and improving the quality of life. Many patients with serious illness can only be offered palliative treatment; their poor prognosis makes the search for preventive remedies a priority. Medical screening can lay claim to an enormous range of disorders and it encompasses many disciplines, including biochemistry, economics, epidemiology, medicine, radiology, and physics. Marshalling the evidence, developing the right strategies to identify worthwhile screening programmes, and implementing them effectively is no easy task.

This is the challenge which the *Journal of Medical Screening* has been launched to meet. The journal aims to provide a focus for the advancement and development of screening as a scientific discipline. Screening can be of great benefit, but there is perhaps as much potential for doing harm as for doing good. Principles need to be laid down, and several authors have done so.[1–4]

Of overriding importance is that medical screening is intended to benefit the individuals being screened. To avoid confusion the term screening is best not used for other forms of mass testing, particularly the application of tests that pose a threat to those who are tested, such as examinations to determine suitability for employment. The implicit "policing" function is contrary to this concept of screening. Surveys to determine the prevalence of a condition (such as HIV infection) and which do not need to be directly linked to the identity of the person tested are better described as surveillance. It is important that health professionals are careful about their choice of terms to avoid confusion and suspicion of screening.

A definition of medical screening that attempts to encapsulate the central features of the activity is proposed elsewhere in this issue (p 76). The journal aims to promote two axioms.

1 *The early detection of disease should not be an end in itself.* The identification of either trivial or untreatable conditions can cause anxiety and waste resources with no useful practical results. Screening should be concerned only with the detection of preventable diseases or disorders that would otherwise cause significant suffering, disability, or death.

2 *The value of a screening test needs to be determined before it is introduced into practice.* It is important to determine quantitatively the avoidance of disability or premature death that screening will achieve. The benefits can then be set against both the financial costs and the "medical" costs (anxiety, discomfort, adverse effects of investigations, and treatment) so that a dispassionate judgment can be reached.

In addition to scientific papers, the journal will publish features such as a "Noticeboard" of meetings and reports relating to screening activity throughout the world; submission of brief notes on these is invited. There will also be a "Screening Brief" setting out the basic facts on screening for different diseases with a simple assessment of its value. The first, on breast cancer, appears on page 73. This is designed for use by people who may not be closely involved in screening for the disease in question but would like a rapid briefing. It will be prepared by small teams coordinated by members of the editorial board, and will be necessarily didactic. Discussion and correspondence is encouraged. The journal will contain book reviews, which can be used as a peg on which the reviewer can hang an idea or point of view relating to the subject of the book.

Screening often requires the preparation of "Information Leaflets" to help people decide whether they wish to be screened. These are often more difficult to prepare than may at first be apparent. Such leaflets may be published in the journal if they are thought to be of significant value to others and contain new material or employ a novel approach. Protocols may also be published in the journal if they are of special importance. Sometimes it is useful for specialists in screening to have details from a particular study of the estimates of the parameters of screening variables (such as their means and standard deviations and the correlation coefficients between them). These can be considered for publication, either as an appendix to the main article or on their own (appropriately cross referenced) if the main article has been published in a general medical journal.

The launching of a journal devoted to screening is opportune. In Britain the recent report on Medical Research and Health from the United Kingdom Advisory Council on Science and Technology (ACOST) pointed out that potentially effective screening tests have been poorly implemented, while other tests have been introduced into practice without adequate evidence of benefit. Prostate cancer screening is one such example; its efficacy in reducing mortality has not been proved, yet there is pressure to introduce it and it is actively pursued in some countries. The practice of screening has often been fragmented and the subject has not been seen, as it should have been, as an important public service. The report concluded that there had been a lack of direction and overall management responsibility and that the public interest had not always been served by existing screening arrangements. Similar problems are apparent in other countries.

It is our intention that the *Journal of Medical Screening* will improve the present position. The journal will select papers on the basis of how well they advance the subject in terms of practical outcomes. Balancing benefits against costs will be a central issue. It will aim to increase professional and public understanding of the concept of screening, the choices screening offers, the ethical issues, and how screening programmes should be carried out in practice. The editorial stance is that screening procedures of unknown effectiveness and safety should not be introduced as service activity, the overriding philosophy being that screening should be about the prevention of disability

and disease and improving the quality of life, and that the early detection of disease is only a means to this end.

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Editor

1 Wilson JMG, Jungner G. *Principles and practice of screening for disease.* Geneva: World Health Organisation, 1968.
2 Thomer RM, Remien QR. Principles and procedures in the evaluation of screening for disease. *Public Health Monograph*, No 67. US Department of Health, Education and Welfare, 1961. (Public Health Service Publication No 846.)
3 McKeown T. Validation of screening procedures. In: *Screening in medical care: reviewing the evidence.* Oxford: Oxford University Press for The Nuffield Provincial Hospital Trust, 1968.
4 Wald N, Cuckle H. Reporting the assessment of screening and diagnostic tests. *Br J Obstet Gynaecol* 1989;**96**:389–96.

Journal of Medical Screening 1994;1:2

Screening for malignant melanoma

Marked increases in the incidence of and mortality from malignant melanoma have occurred in white populations throughout the world during the past few decades. For example, in England and Wales the age standardised mortality from malignant melanoma has increased by over 80% in men and 50% in women in the 15 years from 1975 to 1990 (fig 1). In 1987 over 3000 new cases of malignant melanoma were registered in England and Wales. It ranked as the 17th commonest cancer in women and the 18th in men, with an overall incidence of 46 new cases per million per year in men and 78 new cases per million per year in women.

Malignant melanoma is a suitable candidate for screening evaluation because survival is much greater if the disease is detected at an early stage of its development, before it has metastasised (table). There is an important relation between survival and the depth of the tumour when first diagnosed: survival is 81% at four years for tumours over 3 mm thick and 100% for those less than 0·75 mm thick.[2]

Over 30% of deaths in adults aged 15–75 in England and Wales occur in those under 50 years of age (fig 2). The potential years of life saved by screening might thus be considerable. Figure 2 also gives an indication of suggested lower age limits for screening programmes. Screening people above age 40 allows the possibility of detecting most cases.

Early detection and potential benefits are, however, not enough. There is no evidence that screening for malignant melanoma saves lives; improved survival may be due to detecting tumours at an early stage in their natural history

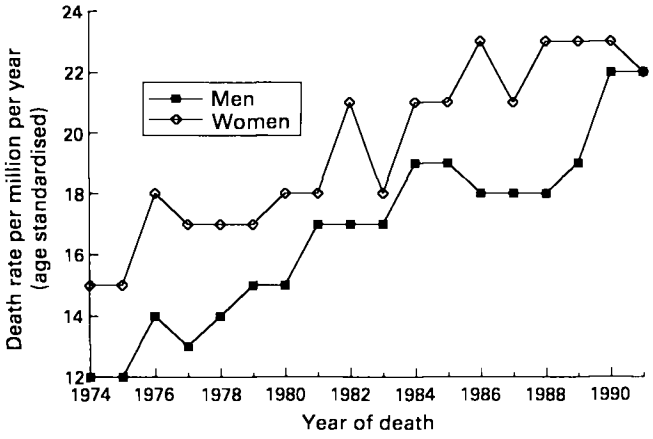

Figure 1 Age standardised death rates due to malignant melanoma in England and Wales 1974–91. Source: Office of Population Censuses and Surveys mortality statistics.

Five year survival by sex and stage at diagnosis[1]

Stage	*Five year survival rate (%)*	
	Men	*Women*
Localised	62	80
Regional	29	32
Distant	10	28

Figure 2 Number of deaths due to malignant melanoma in England and Wales (1991). Source: Office of Population Censuses and Surveys mortality statistics.

and potentially identifying those with a less malignant course without having an effect on death rates from this disease.

There is a major problem of skin cancer screening; screening for malignant melanoma leads to the detection of other skin conditions, many of which have a benign outcome, such as squamous cell carcinoma, basal cell carcinoma, dysplastic naevus, congenital naevus, actinic keratoses. The potential benefits of earlier detection are small and the cost in terms of extra procedures and anxiety might be great; in one study over 30% of subjects screened were referred for follow up, with only 3% being referred for suspected melanoma.[3]

Professor Elwood, in his paper "Screening for melanoma and options for its evaluation" on page 22, details the potential benefits and hazards of screening for melanoma. This paper establishes that there are insufficient data on whether screening for malignant melanoma is worthwhile and that ideally a large scale randomised trial is needed before screening for melanoma is introduced. This is an important conclusion which should open a discussion on the design of such a trial, including the specification of a target group, the method of examination, and the interval between examinations. It represents a major research challenge.

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1 Cancer Registry of Norway. *Survival of cancer patients. Cases diagnosed in Norway 1968–1975.* Norway: The Cancer Registry, 1980.
2 Bonett A, Roder D, Esterman A. Melanoma case survival rates in South Australia by histological type, thickness and level of tumour at diagnosis. *Med J Aust* 1986;**144**:680–1.
3 Koh HK, Caruso A, Gage I, *et al.* Evaluation of melanoma/skin cancer screening in Massachusetts. *Cancer* 1990;**65**:375–9.