Book Reviews

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This book is written by a working group convened by The International Agency for Research on Cancer. The agency tasked the group to ascertain that all appropriate data had been retrieved; to select the data relevant for evaluation on the basis of scientific merit; to prepare accurate reviews of data to allow the reader to follow the reasoning of the working group; to evaluate the efficacy and effectiveness of the screening procedure; to summarize the potential adverse consequences of screening; to prepare recommendations for research and for public health action; and to prepare an overall evaluation of the screening procedure at the population level.

By and large, the authors have lived up to their objectives and have discussed carefully the basis for their reasoning, backed up by relevant references. The book is comprehensive, very well written, and highly relevant for everyone with an interest in cancer screening. The authors make the important point on p. 91 that ‘observational studies based on individual screening history, no matter how well designed and conducted, should not be regarded as providing evidence of an effect of screening.’ There is no index in the book that allows the readers to find quickly what they are looking for.

My book review could have ended here were it not for some essential issues and data that the authors have left out.

The authors note that overdiagnosis and overtreatment is an inevitable consequence of screening, but they omit to mention the data in a recent systematic review of the randomized trials of screening that documented a considerably increased use of radiotherapy, tumourexcision, and mastectomy. It is strange that the authors discuss the level of overdiagnosis but not the level of overtreatment, which is more interesting. I also missed a reference to the recent systematic review by the Early Breast Cancer Trialists’ Collaborative Group that showed that radiotherapy in women who have their cancers identified by screening is likely to increase overall mortality, but since these women die from heart problems, they are not counted as breast cancer deaths.

There are other mechanisms for misclassification of cause of death that could bias the results in the screening trials in favour of screening. The authors acknowledge this problem, but do not mention or discuss the finding that overall cancer mortality—is the same in the screened groups as in the control groups in the screening trials, contrary to what one would expect, given the claimed mortality reductions in breast cancer.

There are also important omissions in the working group’s presentation of the screening trials. Curiously, for example, the authors state that there were no differences at baseline for four prognostic factors in the New York study, but fail to mention that three other baseline characteristics were reported, and that there were significant differences for those (which would not be expected if the randomization had been adequate and post-randomization exclusions were unbiased). The working group concludes that the New York trial is valid and argues that prior breast cancers (existing before the randomization date) were adequately excluded from both the study group and the control group. However, the primary investigator of the New York study admitted in a published conference proceeding more than 20 years after the study started that some prior breast cancer cases among the controls were unknown to the investigators and should have been excluded. This fact, together with the poor mammographic technique in this old trial, explains why the number of cancers identified, contrary to what one would expect, was very similar in the screened group and in the control group.

What I miss most in this book is a discussion of ethical issues. Nowhere have the authors dealt with ethics, although such issues are very important for cancer screening. There is a difference between what we can do (science) and what we should do (ethics). And what information should be presented to women who contemplate whether or not to attend a screening programme, and how? Should the women be told that, most optimistically, invitation to screening reduces breast cancer mortality by 30%, or saves the life of one woman out of 1000 after 10 years, or prolongs life by an average of 2 days among those invited? These are all scientifically equivalent statements, but studies have shown that they will lead to very different perceptions of the benefit of screening. Or should women be told that the survival benefit is questionable and has not been proved, whereas overdiagnosis and overtreatment have? At present, the attitude is paternalistic and women are not given a fair chance of balancing possible benefits and harms before deciding what they wish to do. This lack of truly informed consent is perhaps the biggest problem of all with breast cancer screening.

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When I was a left-wing medical student in the 1970s, Thomas McKeown’s thesis that increasing life expectancy over the previous century owed more to improved social conditions than to medical intervention was a key theme in the radical critique of the contemporary medical profession. The social class gradient in mortality and other health indicators, exposed by Richard Wilkinson, Peter Townsend, and others, was another issue eagerly taken up by radical students. At a time when the medical profession was inclined towards a conservative approach, both in terms of biomedical theory and practice, and in its wider political outlook, these subversive views were generally ignored or marginalized.