SOCIETY FOR SOCIAL MEDICINE

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Held in the Radcliffe Infirmary, Oxford

FIRST SESSION (*Chairman: DR. ALICE STEWART*)

Some Features of Screening Programmes. M. J. GARDNER (*Medical Research Council Social Medicine Unit, London School of Hygiene and Tropical Medicine*)

It is by now well understood that the evaluation of screening programmes in terms of comparing survival time with a control group needs to take into account the 'lead time' obtained. A model was presented showing how this is important. It was shown also that cases with a long duration in the preclinical spell will be detected at screening more often than those with a short period. The effect of non-attendance and insensitivity of the screening test on the lead time and probability of detection was considered.

The desirable interval for repeated screening was discussed in relation to the proportion of cases that may be missed by entering the preclinical state and presenting clinically in the interval between two successive screens. It was demonstrated that if the detected cases are those with more slowly progressive disease a simple correction for lead time is not sufficient; some knowledge of the joint distribution of preclinical and clinical periods is clearly needed.

Study of Screening Tests for Breast Cancer. JOCELYN CHAMBERLAIN and PAULINE SEDGWICK (*Department of Public Health, London School of Hygiene and Tropical Medicine*)

A large randomized controlled trial of screening for breast cancer has recently published results¹ which indicate that, in the short term, a reduction in mortality can be achieved by screening, using both clinical examination of the breasts and x-ray mammography. If this beneficial effect is confirmed by later follow-up then a decision will have to be taken on whether to introduce this form of screening in the National Health Service.

One of the areas requiring further investigation is the validity of the screening tests, and a study of this is now being planned by the Department of Public Health in the London School of Hygiene and Tropical Medicine in association with the London Borough of Ealing Health Department and Hammersmith Hospital. Ealing Health Department already runs well-woman clinics which offer

clinical breast examination as well as cervical cytology; mammography equipment is being installed in one of these clinics situated in Greenford. During the study women over the age of 40 attending the clinic will be x-rayed as well as having two independent clinical examinations, one by a doctor and one by a nurse. The x-ray films will subsequently be read independently by two radiologists, and finally, at a weekly review meeting, all the findings will be brought together and a decision made on action to be taken. All women in whom no malignancy has been found will be asked to return for rescreening after six months and then again at one year and two years.

The study aims to describe four attributes of screening tests defined as follows:

1. False negative rate = number of cancers missed by test as a proportion of all cancers found in six months
2. False positive rate = number of women without cancer referred to breast clinic as a proportion of all women without cancer
3. Predictive value = number of cancers detected by screening as a proportion of all women referred to the breast clinic
4. Cost

Information will be obtained on these attributes for both clinical examination and mammography combined and for each separately; and a comparison will be made in these terms, of one radiologists' interpretation of mammograms with another's, and of nurses' clinical findings with those of doctors.

This study is part of a co-ordinated research programme approved by the Standing Medical Advisory Committee's Working Group on Breast Cancer Screening, whose aim is to promote investigation of the many problems which would arise in providing a national service.

¹ Venet, L., Strax, P., Venet, W., and Shapiro, S. (1971). *Cancer*, **28**, 1546.

ESR in the Community. J. M. HARGREAVES, W. E. WATERS, and P. H. N. WOOD (*Medical Research Council*)