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Organisation of Screening

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The 'Europe against Cancer' programme aims to introduce systematic screening for breast cancer for women aged 50–69 and for cervical cancer for women aged 25–69. The programme initiated pilot projects on breast cancer screening in several European countries in 1989–1990. This initiative was followed by training for radiologists. European guidelines for quality assurance in breast cancer screening became available in 1992, and a working party on treatment of small breast lesions was formed. The 'Europe against Cancer' programme also launched pilot projects in cervical cancer screening and a cervical cancer screening surveillance programme in 1992.

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INTRODUCTION

THE AIM proposed for the 'Europe against Cancer' programme in 1986, and adopted by the Council of Health Ministers in 1988, was to introduce systematic screening for breast cancer among women aged 50–69 and for cervical cancer among women aged 25–69 in all Member States of the Community. This very ambitious goal can be achieved only progressively and will rely on voluntary screening. The emphasis will be placed on breast cancer, since the cervical cancer programme is still being finalised.

EUROPEAN LEVEL

Since 1988, 'Europe against Cancer' has introduced a number of measures relating to breast cancer screening. Pilot projects have been launched in a number of Member States in order to test the feasibility and effectiveness of the screening programme. The aim was to determine the best methods within each country's health care system for ensuring:

- an adequate participation rate among women (60% or over). The cooperation of general practitioners and a constant flow of public information for women proved essential; however, the methods used to encourage women to participate must take account of the national mentality in each country;
- high quality mammographies, including interpretation;
- rapid diagnosis for patients with suspect mammographies;
- appropriate and immediate treatment.

These pilot projects are also to be used to evaluate the quality control applied and to measure cost-effectiveness. This will be much easier in regions in which there is a breast cancer register but will still be possible in those where there is not.

In 1989–1990, government-financed local initiatives, supported by the European Community, led to the launching of pilot projects in a number of Member States, in particular Spain, Ireland, Belgium, Greece, Portugal and France. Projects were launched in Italy, Luxembourg and Denmark in 1992 with financial support from the 'Europe against Cancer' programme, once the projects had been approved by the subcommittee on screening. A national screening programme is already under way in the United Kingdom.

The pilot operations were set up as a network, and project leaders meet each year to give progress reports and to share their experiences. An independent expert supervises the programme and passes on recommendations during visits to the pilot centres.

It soon became clear that screening staff involved in most of the projects required extra training. Training needs to be improved for both radiologists and technicians, and exchanges should be arranged or encouraged between member states. In particular, a 2-week intensive training course in reading mammographs would be desirable for experienced radiologists. Such training could be provided in The Netherlands, the United Kingdom and other countries, with support from the European Community.

At a meeting in Coimbra, Portugal, in 1990, it was noted that there appeared to be inadequate quality assurance in many pilot projects. The subcommittee on screening asked Dr Kirkpatrick (U.K.) and Dr Törnberg (Sweden) to prepare recommendations on this subject. Issues such as participation rate, quality of mammography, accuracy of interpretation, frequency of screening, follow-up system, cost, safety and detrimental effects, incidence of interval cancers must be closely monitored. Quality control of mammographic equipment is also of great importance. A European guideline for quality assurance in mammographic screening, covering both quality control and quality assurance, has been established and will be available at the beginning of 1992.

Women who have suspect breast lesions are sent to specialised treatment centres. Diagnosis involves:

- Further mammographies to identify the nature of the lesions observed and to locate them accurately;
- a fine needle aspiration for cytology and/or a biopsy;
- a cytological or histological interpretation of the tumour specimen.

Experience has shown that the latter tests present a number of problems, in addition to the risk of subjecting the patient to unnecessarily traumatic examinations. For example, locating the lesions (micro-calcification or other), taking biopsy samples, deciding the indications for and limitations of cytological diagnosis and true cut biopsy, and post-biopsy control mammographies all present difficulties, which are dealt with in different ways in different centres. The ratio between benign and malignant lesion on the biopsy natural varies widely from region to region.

Besides diagnostic methology another problem which emerged at European level is the need to decide on appropriate treatment for small lesions detected by mammography in asymptomatic breasts (screening or early detection). There is general agreement on treatment for breast tumours between 1.5 and 4 cm, although there is still some question about the indications for adjuvant treatment. On the other hand, experi-

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ence from the pilot breast cancer screening programmes shows that discussion and information are needed regarding the treatment of small tumours (<1.5 cm) detected by mammography. In particular, care must be taken that women do not undergo unnecessary mutilating surgery, but it is also necessary to ensure that these nascent lesions and the axilliary nodes receive adequate treatment. The indications for adjuvant treatment are particularly difficult to define for small tumours. The main criterion used for tumours of a diameter of 2 cm or more and axilliary nodes involvement is no longer relevant, since a non-negligible proportion of such small tumours give rise to distant metastases without invasion of the nodes. Other criteria must therefore be used for prognosis.

NATIONAL LEVEL

The 'Europe against Cancer' programme is not in a position to finance pilot projects entirely on its own. Thus, each Member State must participate to the cost of the projects and should therefore contribute in the evaluation of the results. Furthermore, since the European programme can at present afford to support only a small number of projects, it is likely that the national authorities in most Member States will have to finance future projects themselves.

Before launching a pilot programme, national authorities will probably find it useful to obtain information on the other pilot projects currently under way in the Community, and they will want to implement the recommendations of the screening subcommittee on quality control. In most Member States, national guidelines on quality assurance will be prepared on the basis of the European recommendations.

If appropriate, meetings similar to that held in Copenhagen could be organised every second year, so that the leaders of screening projects and national authorities can learn form the work being done. In any event, it would be desirable for the leaders of current projects in each country to meet at least once a year.

REGIONAL LEVEL

In every region in which a pilot project is being carried out, an annual report should be written, giving basic figures: the percentage of women in the population who responded to the call for screening, the percentage of women referred for diagnosis after screening, the percentage who underwent a biopsy, the number of cases of cancer detected, the number treated and the treatment methods used and the intervals between screening, and diagnosis and, where appropriate, treatment. In regions where there is a cancer register, the number of cancers detected should be compared with the number of cancers registered, supplying valid figures for interval cancers. In other regions interval cancers should be registered. An annual report should also be produced on quality control (double and, possibly, triple readings, dose delivered to the breast, etc.). These reports should be sent to the national authorities and to the 'Europe against Cancer' committee on screening.

It is also up to each region to consider where women should be sent who require further tests, depending on how the local medical services are organised.

CERVICAL CANCER

Pilot projects will be launched in 1993, and a quality control programme has been drafted. At the request of the Committee of Cancer Experts and as for the guidelines for breast cancer screening, this document on the European Community Cervical Cancer Screening Surveillance Programme, was drawn up by E. Lynge, J. Philip and co-authors, which sets out quality assurance criteria for this type of screening. The draft has been circulated, and the final version should be available by June 1992.

RESEARCH

Upstream and downstream research is required for a number of aspects of the cancer screening process. (1) Psycho-sociological research to find out why some women are reluctant to undergo screening and how to encourage more women to agree to screening, particularly older women and those from underprivileged sections of society. (2) Methodological research aimed at making both screening examinations and quality control more effective. For example:

- improve the equipment used (e.g. mammographic equipment in the case of breast cancer);
- introduce digitalised X-ray images and the automatic or semi-automatic reading of plates;
- introduce the automatic or semi-automatic reading of cytological smears;
- develop phantoms to measure the dose received by the breast during a mammography and to monitor the quality of the examination.

(3) Research into the possibility of introducing new screening methods and into evaluating existing methods for cancers other than of the breast and cervix.

Systematic screening for colorectal cancer using the faecal occult blood test is currently the subject of a few research projects, which are expected to produce useful data. There are also screening projects for other cancers, particularly of the ovary, prostate glands, mouth and throat, the feasibility of which would be worth testing on a large population using very strictly controlled methods.

It would also be useful to organise joint projects with experts in cytogenetics or molecular biology to investigate screening for cancers that involve a hereditary factor or genetic predisposition. (4) Studies of cost-effectiveness with assistance from health economists.

The 'Europe against Cancer' programme would be able to fund certain projects selected by the committee, but it could not afford to finance research centres.

TRAINING

A training programme is to be introduced in all regions in which a screening programme is being carried out. Training will be provided on three levels:

- for the medical staff carrying out the screening, particularly radiologists and cytologists;
- for specialists who treat patients referred after screening, such as gynaecologists, surgeons, oncologists and histopathologists;
- for general practitioners, who will be called on to provide guidance and advice for women. It is therefore vital for training in prevention and screening to be included in the curriculum of medical students and in continuing medical education.

Training is basically a national responsibility, but the European programme could help by organising meetings to discuss requirements and to provide ideas for national training programmes.