

E2. Screening in breast cancer – an update

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The screening campaigns in Europe have been constantly increasing since the Swedish two-county trial in the seventies had established the benefit of screening in the female population [1]. With an initial estimation of 30% in death rate reduction, this was later considered to be greater than 60% [2]. After 20 years, a benefit is still maintained for the population controlled in that time [1].

In Holland, United Kingdom, and some other western European countries, new breast cancer screening campaigns were designed and developed in the beginning of the eighties. In Spain, these campaigns needed ten more years to be developed by the local health service.

In Spain, the whole country is considered for screening for breast cancer. In 1990, the first region in promoting a breast cancer screening campaign was Navarra, and by the end of the nineties, all the regions in Spain had started their own programme [3]. The usual age range to include the female population has almost always been between 50 and 65 years. With a few exceptions, Navarra, Valencia, La Rioja and both Castillas, this has been the rule [4]. The overall number of women considered to be the target in the campaigns is far more than 3 600 000, 82.5% of the target population in Spain by the end of 2000. Some regions (both Castillas, Cantabria, Galicia, La Rioja, Murcia, Navarra and Pays Vasco) include 100% of the population, ranging to over 40% in other places such as Catalonia, Balears and Aragon. The main test is the mammogram, a double projection is usually done. A physical exam is included in only one of the regional programmes. All of the programmes have scheduled the regular screenings every two years.

There are several different Societies, groups and associations involved in promoting and financing the different programmes in the whole country. Not only the National Health Service is responsible for the breast cancer screening campaign, but the cancer associations, government independent organisations, and many other public and private institutions are also concerned and involved.

The basic units dedicated to mammography are 150, half of them are fixed units out of the hospital, 25% are mobile units and 25% are in hospitals. A double reading is considered in 8 regions, a single reading in only 6, and the remaining 3 have a mixture of single and double. In only 3 programmes are the number of mammograms per radiologist controlled and limited.

Quality controls for the mammographical units are systematically established in 15 programmes, for the technicians in 12 and for the physicists in 14. The standards used for them are the European Guidelines for Quality Control.

There are guiding protocols in 7 regions, and the remaining regions are actually working on them. The BI-RADS classification has been introduced in only 9 programmes, during the last 5 years.

The participation rate is approximately 70%, greater in country areas and reduced in the urban areas, mainly in the big cities. The cancer detection rate has been over 0.3% in all cases being for example 0.344% in Andalusia, 0.48% in Catalonia and 0.47% in Valencia, with similar figures for all of the regions.

The final data of the different campaigns developed in Spain is a work in progress to be collected in 5 or more years, as the last regions are still in the first round. But the global index for every item (cancer detection rate, non-invasive breast cancer rate, recall rate, ppv, npv, participation rate, number of interventional procedures, number of surgical biopsies, etc.) differs minimally from one programme to another.

In general, everybody agrees that a breast cancer screening campaign reduces cancer death by far more than 30% in the population included in this campaign. However, there is no agreement as to the exact age to start screening, the schedule for the mammograms, and the process in reading, reviewing and control of data.

The actual recommendations for breast cancer screening campaigns are described in detail in many articles and in the webpage of many different health organisations [5]. The general agreement concerning the population to be screened has not yet been achieved, for the recommendation by the American Medical Association (AMA), American College of Radiology (ACR), National Institute of Health (NIH), American Cancer Society (ACS), and some others is to consider a double projection mammogram yearly for women over 40 years of age [6–8]. On the other hand, in many countries, only women over 50 years of age are considered for regular screening. The interval between the mammograms is another point for debate, while the vast majority recommends a one year interval between controls, in some countries the screenings are delayed to two years, mainly due to economical

Table 1. Modified from Torres and Yankaskas [3,10]

Participation rate:	Over 70%
Detection rate:	4 to 6/1000
Recall rate:	4.9 to 5.5%
Hospital consulting rate:	below 10 to 12%
PPV in surgical biopsy:	over 50%
Time lapse for treatment:	below 30 days
Size tumour under 20 mm:	over 50%
Non-infiltrating carcinoma:	over 10%

restrictions. It has to be considered that less invasive and more effective conservative therapy leads to more economical campaigns [9].

It is recommended to establish the range of women to be screened and the schedule for the controls. A general planning is needed after considering demographics, the number of units and radiologists needed and their distribution in the different facilities, and screening is better carried out outside of the general hospitals. Quality control concerning the units and the workers in them, the results, and the patient's point of view is a substantial part of the screening campaign. It is recommended that some general objective rules are established before the initial implementation of the programme has started, as a way to control the final data (Table 1).

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