EDITORIAL

# NHS breast screening: the progression from one to two views

The NHS Breast Screening Programme (NHSBSP) began operations in 1988. The blueprint for the programme was set out in the Forrest report of 1986.[1] The model on which the NHSBSP was to be based was the Swedish Two-Counties Trial. This had had an average screening interval of 33 months and had used a single medio-lateral oblique view across the breast. With these protocols, the Two-Counties trial reported a 40% reduction in mortality amongst women screened.[2]

The Forrest report considered mammography, clinical examination, breast self-examination and combinations of these techniques as potential screening modalities. It noted that the Two-Counties Trial had shown a higher sensitivity with its single-view technique than some other European studies had demonstrated, even when using two views. The emphasis was therefore placed on achieving high-quality mammography with a single view, rather than on taking two views. However, it noted that 'neither the relative sensitivities nor relative specificities of single versus two-view mammography in screening have been adequately studied'.[1]

The report also noted that in Sweden itself, even though the single-view technique had been so successfully applied, two views were recommended for the prevalent screening round. The second view was the cranio-caudal view. In the UK, half the breast screening units followed this practice, despite there being no specific funding for the second view. In practice, the second view slowed down the screening rate from six women per hour to five women per hour. It did not seem to slow down the reporting rate, with some radiologists arguing it speeded them up when they had a second view for comparison. Almost all units dropped the second view once the prevalent round was complete and previous films were available for comparison. Furthermore, demographic growth would shortly be increasing the size of the population to be screened and finally, the radiologists, perhaps, had more confidence since they now had three years' of experience in breast screening to draw on.

In order to address the outstanding issue of the relative sensitivity and specificity of one or two views, the United Kingdom Coordinating Committee on Cancer Research (UKCCCR) sponsored a randomised controlled trial of single- versus double-view screening. This trial had a design to blind the film reader as to whether a second view existed or not (see Figure 1). Over 40,000 women were randomised, fewer than the 100,000 originally planned, but sufficient to achieve a statistically significant result. The trial reported in November 1995.[3] It showed that the second view increased the detection of breast cancer by 24% and reduced the recall rate by 15%; thus it was both more sensitive and more specific. The cost was obviously higher than with single-view mammography, but, owing to the improved screening performance, the introduction of two views was found to be cost-effective.

The Department of Health was aware of these findings before their publication and acted on them promptly. In January 1995, it issued an Executive Letter (EL) requiring all

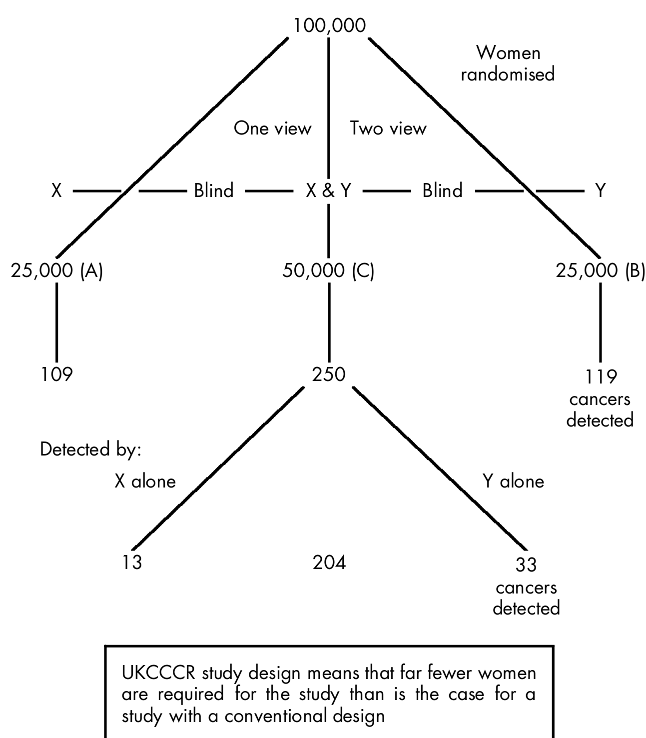


**Figure 1** UKCCCR study: expected number of cancers detected. Figure 1 was kindly provided by Chris Frost.

breast screening units to move to two views for the first screening attendance 'as quickly as possible, and certainly no later than 1 August 1995'.[4] The trial had been carried out during the prevalent round of the programme, and while there was no reason not to apply the conclusion to all rounds, it was felt at this stage that its findings should only be applied to women attending for the first time. There was some scepticism about whether the full benefit of two views could be realised in practice. This attitude encouraged a 'suck it and see' approach before the policy might be extended to all rounds of the programme. In addition, the NHSBSP was beginning to feel workload pressures. Making the complete change to two views on every occasion could have been too drastic a development at this time, especially for those 50% of units that had never done two views. Nevertheless, with regard to two views in the incident round, the EL contained a commitment from the Department of Health to 'seek further information on this point'.

The NHSBSP undertook a series of evaluations of one and two views. Blanks, Moss and Wallis compared the cancer detection rates in the incident round of those programmes that had continued to employ two views at every attendance with the majority of programmes that used single view for the incident round. They found the two-view programmes detected 42% more small invasive cancers (<15mm).[5] This was at least as good as the prediction of the randomised

trial.[3] It was also argued that the effectiveness and cost-effectiveness were, to some extent, linked to single or double reading and to the method of double reading.[6,7]

By the time of the publication of the Blanks *et al.*[5] paper on the influence of two views in the incident round, the full effect of the increasing numbers of women in the target age group for screening was being felt. There was no available capacity or funding to absorb the additional workload that two views at each round would entail.

The increasing workload of the NHSBSP, together with the desires to expand the service to women up to and including the age of 70 and to carry out two views at each attendance, meant that new ways of working had to be developed. Pilot projects led to the introduction of the four-tier workforce. This introduced assistant practitioners who were able to undertake basic mammography and thus could free up state-registered radiographers to undertake more advanced tasks previously reserved to medical staff. These included reading mammograms and taking core biopsies.[8]

In September 2000, the publication of *The Cancer Plan* announced the intention to introduce two views into every attendance at the NHSBSP by December 2003.[9] In practice, by this date 90% of the programmes had achieved the target, with the rest projected to do so shortly afterwards.

The move from single view at every round to two views at every round has been an evidence-based, cost-effective quality improvement. It has contributed to the high-quality NHSBSP operating currently. Standardised detection rates in the incident round, however, are not yet as high as those in the prevalent round.[8] Evaluation of the full effect of the two views in the incident round will, hopefully, demonstrate that the gap in performance between prevalent and incident rounds has at least become smaller, if not disappeared entirely.

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