

The use of tomosynthesis in women who have been recalled from breast screening

Why are some women recalled from breast screening for further tests?

Currently in Scotland, women aged between 50 and 70 are invited to participate in breast screening every 3 years. Women over 70 years are encouraged to arrange an appointment.

Breast screening is done at special clinics, or at mobile screening units. During screening, a woman's breasts are X-rayed, one at a time. The type of X-ray used for breast screening is called a mammogram. If any abnormalities are seen on a woman's mammogram, she will be sent a letter asking her to attend for further tests. Most women who are 'recalled' for further tests do not have cancer.

Women who have been recalled from breast screening will receive a clinical exam, and further images will be taken of her breast. These images may include an ultrasound scan, and special types of mammograms which focus in on, or magnify, certain areas of the breast ('supplementary mammographic views', or SMVs).

Based on the information from these additional examinations and images, a decision will be made on whether or not a woman needs a biopsy. A biopsy involves removing tissue from the breast, and looking at the tissue under the microscope. A biopsy tells medical professionals whether or not the suspicious area of the breast is cancerous.

Approximately 4% of women aged between 53 and 70 years will be recalled from routine breast screening. Of these women, about 30% will need a biopsy. Of the women who have a biopsy, about 50% will receive a diagnosis of cancer.

What is tomosynthesis?

Tomosynthesis is an advanced type of mammogram, which takes a 3D image of the breast. Tomosynthesis images allow experts to have a closer look at the tissue in the breast, as compared to a standard mammogram.

This advice relates to the use of tomosynthesis, instead of SMVs, in women who have been recalled after routine breast screening for further tests.

Most of the machines used for taking mammograms in Scotland can also be used for tomosynthesis, but they would need to be upgraded first. This would cost £50,000 per machine. If tomosynthesis was used in all women who were recalled after routine breast screening, instead of SMVs, there would be other costs to consider. These include staff

training, costs associated with storing the images, and increased staff time spent examining tomosynthesis images.

What we did

We looked for research studies which helped to answer the following questions.

In women who have been recalled from breast screening, does using tomosynthesis instead of SMVs:

- Result in the same number of cancers, or more cancers, being detected?
- Result in fewer women having biopsies unnecessarily?
- Represent good value for money?

What we found

Most of the studies we found told us that tomosynthesis was as good as SMVs in detecting cancer in women who had been recalled from breast screening for further assessment. A couple of studies suggested that tomosynthesis was better than SMVs in detecting cancer.

The studies tell us that the comparable/improved performance of tomosynthesis only applies to soft-tissue abnormalities, not to 'microcalcifications'. Microcalcifications are small deposits of calcium in the breast. Most of the time they are harmless, and not associated with cancer. However, a group of microcalcifications found in one area can sometimes be a sign of pre-cancerous changes or early breast cancer.

We did not find any studies which told us whether or not tomosynthesis represents good value for money.

Based on the existing studies, guidance from Public Health England lists tomosynthesis as an option in women who have been recalled from routine breast screening for assessment.

What is our advice to NHSScotland?

On balance, the Scottish Breast Screening Programme should consider enabling the tomosynthesis capability on the machines in screening centres in NHSScotland, for use in women who have been recalled from breast screening for further assessment.

Future work

There are still some gaps in our knowledge. For example, we do not know whether the use of tomosynthesis in women recalled from routine breast screening represents good value for money.

This plain language summary has been produced based on SHTG Advice Statement 004/18 April 2018