Medical Xpress

Computer-aided detection could help breast cancer screening

September 26 2006

A novel approach to reading mammograms with the help of a computer could free up hundreds of medical man-hours, as well as speeding-up the breast screening process.

Scientists at The Universities of Manchester and Aberdeen and Cancer Research UK have found that the workload of radiologists could potentially be halved by using a new computer-aided system to help read breast x-rays and detect cancer.

With the computer-aided detection (CAD) system, only one expert is needed to look at each mammogram, rather than the usual two. Use of the system could free up the experts' time, enabling more face-to-face consultations and all women to be screened as often as recommended.

The CAD programme searches mammograms for suspicious features or irregularities that could be caused by cancer. When the computer finds anything unusual it indicates it on a screen for the radiologist to look at.

Study results published today* show that mammogram readings by a single expert plus the CAD system may be as good as those read by two expert radiologists, and in some cases the new combination could be even more successful.

The researchers took more than 10 000 mammograms that had previously each been read by two radiologists. These were then read again by a single radiologist, who was prompted by the computer to

double-check suspicious areas for any abnormalities.

The results showed that the cancer detection rate by a single reader using CAD was at least as good as that when the films were originally read by two readers.

The mammograms studied were from 1996, so that all cancers that developed subsequently in the group of women could be included, and no action was taken as a result of the radiologists' decisions.

Dr Caroline Boggis, Consultant Radiologist at the Nightingale Breast Centre in Manchester said: "The results of this first trial are very encouraging, and we have just started a new study to confirm that the results of using CAD are still as good when used in real decision-making in the breast screening programme."

This new trial will involve 30,000 women in Manchester, Coventry and Nottingham. Most of the women will have the single reading with CAD in addition to their routine double-reading. Radiographers and radiologists have been fully trained to use the CAD system, and a second opinion will always be available if they are any uncertainties.

Dr Boggis added, "Women in Greater Manchester** currently being invited for their regular breast screening are being asked to participate in the new study, CADET (Computer-Aided Detection Evaluation Trial) 2, and we really hope that they will take part."

Dr Sue Astley of Manchester University Medical School continued: "This is an opportunity for women across the region to have their mammograms read using the latest CAD technology, which is already available in America and some European countries.

"The workload associated with mammography is extremely high, with

double-reading taking place on around 1000 mammograms each week in Manchester. If we are able to confirm the promising results of the first study, using CAD could significantly help manpower problems in the breast screening service."

Source: University of Manchester