

RSNA Press Release

Digital Mammography Reduces Recall and Biopsy Rates

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OAK BROOK, Ill. – Population-based screening with full-field digital mammography (FFDM) is associated with lower recall and biopsy rates than screen film mammography (SFM), suggesting that FFDM may reduce the number of diagnostic workups and biopsies that do not lead to diagnosis of breast cancer, according to a new study published online in the journal *Radiology*.

Previous population-based studies comparing the accuracy of SFM versus FFDM have reported conflicting results, and reported recall rates—or the rate at which women are called back for additional tests—have varied widely. In addition, past performance evaluations of breast imaging screening technologies do not account for the transition phase of adoption.

For this study, data collected from the Norwegian Breast Cancer Screening Program (NBCSP) was used to compare performance measures and outcomes before, during and after the transition from SFM to FFDM.

"The program invites women age 50 to 69 years to mammographic screening every two years," said Solveig Hofvind, Ph.D., from the Cancer Registry of Norway and Oslo University College, in Oslo, Norway. "We analyzed performance measures in the program as run in a usual setting."

To examine the effect of transition from SFM to FFDM, researchers analyzed the rate of cases, the recall rate, the rate of screen-detected cancer, and the rate of interval cancers.

At A Glance

- Replacing screen film mammography with digital mammography was associated with lower recall and biopsy rates in a large mammography screening program.
- The research team analyzed 1,837,360 screening exams during the transition from screen film to digital mammography during a 14-year period.
- The study found that digital mammography implementation led to a significant decrease in the rate of false positive screening exams.



Solveig Hofvind, Ph.D.

"The study includes results from women screened with SFM only, with both SFM and FFDM, and with FFDM only. These combinations make us able to compare early performance measures achieved when using digital mammography in a routine setting, in a proper way," Dr. Hofvind said.

A total of 1,837,360 NBCSP screening exams were performed from 1996 through 2010, with 58.8 years being the average age at the time of screening. The overall recall rate was 3.4 percent for SFM and 2.9 percent for FFDM. The biopsy rate was 1.4 percent for SFM and 1.1 percent for FFDM.

Both the rate of invasive screening-detected and interval breast cancer remained stable during the transition from SFM to FFDM and after FFDM was firmly established. The positive predictive value of recalled examinations and of biopsy procedures increased from 19.3 percent and 48.3 percent to 22.7 percent and 57.5 percent, respectively, after adoption of FFDM.

By studying the transition phase of screening modality, researchers discovered FFDM implementation led to lower rates of false positive screening exams and fewer biopsies with benign outcome.

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"Mammographic Performance in a Population-based Screening Program: Before, during, and after the Transition from Screen-Film to Full-Field Digital Mammography." Collaborating with Dr. Hofvind were Per Skaane, M.D., Ph.D., Joann G. Elmore, M.D., Ph.D., Sofie Sebuødegård, B.Sc., Solveig Roth Hoff, M.D., Ph.D., and Christoph I. Lee, M.D., MSHS.

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