

# Implementation of breast tomosynthesis in a routine screening practice: an observational study

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## Objective

To assess the changes in performance measures after the introduction of tomosynthesis into clinical practice.

## Materials and Methods

Prior to the introduction of 3D Mammography, the screening images were obtained with a Hologic Selenia® digital mammography system. After the introduction of 3D Mammography, both the 2D digital mammogram and 3D mammogram images were obtained under one compression using the Hologic Selenia® Dimensions®.

## Results

The introduction of tomosynthesis systems in the clinical practice resulted in the following changes in performance measures.

- A significant 37% drop in recall rates – from 8.7% to 5.5% ( $p < 0.001$ )
- A 35% increase in cancer detection rates - from 4.0 to 5.4 per 1,000 screenings ( $p = 0.18$ )
- A 53% increase in invasive cancer detection rates - from 2.8 to 4.3 per 1,000 screening examinations ( $p = 0.07$ )
- A 115% increase in the positive predictive value for recalls - from 4.7% to 10.1% ( $p < 0.001$ )
- An 11% drop in biopsy rates - from 15.2 to 13.5 per 1,000 screenings ( $p = 0.59$ )

## Conclusion

The study results demonstrated a significant reduction in recall rates (~37%) along with an increase in the cancer detection rate (35% overall, 54% for invasive cancers) after the introduction of tomosynthesis in the clinical practice.

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