

14 Cost-effectiveness of shifting breast cancer surveillance from a hospital setting to a community-based national screening programme setting

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Oral Abstracts

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Background: In the Netherlands, breast cancer surveillance after breast conserving surgery (BCS) takes place in a hospital setting for at least five years to detect possible recurrences in early stage. As breast cancer incidence rises and mortality decreases, surveillance expenses increase. This study explores the effectiveness and cost-effectiveness of BCS surveillance as delivered in a hospital setting versus providing BCS surveillance as part of the community-based National Breast Cancer Screening Program (NBCSP). We hypothesise that the NBCSP-based strategy leads to lower costs and a lower proportion of true test results (TTR) compared to the hospital-based strategy and determine to what extent potential lower effectiveness may be balanced with expected cost savings.

Materials and Methods: Both strategies are compared on effectiveness and cost-effectiveness in a decision tree from a healthcare perspective over a 5-year time horizon. Women aged 50–75 without distant metastases that underwent BCS in the years 2003–2006 with complete 5 year follow-up were selected from the Netherlands Cancer Registry (n = 14,093). Key input variables were mammography sensitivity and specificity, risk of loco regional recurrence (LRR), and direct healthcare costs. The primary outcome measure was the overall predictive value (measured in true test results). Secondary effectiveness measures were the positive predictive value (PPV) (LRRs detected or true positive test results) and the negative predictive value (NPV) (true negative test results) detected within five years post-treatment. Results are presented for low and high risk patients separately and expressed in incremental cost-effectiveness ratios (ICERs).

Results: For low risk patients (with grade 1 tumours, no node involvement, and hormonal treatment), the PPV and NPV for the NBCSP strategy were 3.31% and 99.88%, and 2.74% and 99.95% for the hospital strategy respectively. For high risk patients (grade 3 tumours, over three nodes involved, without hormonal treatment), the PPV and NPV for the NBCSP strategy were 64.1% and 98.9%; and 51.0% and 99.7% for the hospital strategy respectively. For low risk patients the NBCSP saves €202 per patient leading to an ICER of €109/accurate test result. For high risk patients the cost savings are €72 per patient, leading to an ICER of €43/accurate test result.

Conclusion: Although the NBCSP-based strategy is cheaper, it cannot replace the hospital-based strategy, since it leads to only half of the accurate test results compared to hospital-based strategy. This contradicts the goal of early detection of LRRs and improving outcomes.

No conflicts of interest