

## Differences in the breast cancer diagnostic process across stage groups in Ontario, Canada

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### Objectives

Early diagnosis leads to better cancer survival and short diagnostic intervals reduce patient anxiety. We are studying factors that prolong the breast cancer diagnostic process in Ontario, Canada.

### Approach

This is a retrospective study of all patients diagnosed 2007-2011 (n=33,752). We linked data from Cancer Care Ontario and the Institute for Clinical Evaluative Sciences including: Ontario Cancer Registry, physician claims, ambulatory, ER visits, and hospital discharges. Detection method (screening versus symptomatic) was determined using Screening Program and claims data. The diagnostic interval is the time from first relevant health care encounter to the definitive diagnosis. Elements of the diagnostic interval include: use of imaging, biopsy, and the number of encounters and providers.

### Results

Overall, 30.6% were screen-diagnosed and the median diagnostic interval was 40 days (IQR 21-80). The median interval was shorter in the screened group at 32 days versus symptomatic at 45 days. The diagnostic interval was longer for stage I patients at 47 days compared to stage II (37 days), stage III (33 days) or stage IV (22 days). Stage IV patients were less likely to be diagnosed via biopsy (44% vs 61%) and the symptomatic stage IV subgroup less likely to have breast imaging (61% vs 96%). 26% of stage IV patients saw 0 or 1 providers while 8% of stage I patients saw 6 or more. 19% of stage I patients had 10 or

more encounters overall versus 15% and 28% had >1 mammogram versus 14%. Effects are largely similar in screened and symptomatic groups.

### Conclusion

Shorter diagnostic intervals in stage IV are associated with a more direct diagnostic path. We will present results quantifying the number of days attributable to the diagnostic elements. Understanding the impact of elements of the diagnostic process provide targets for improvement of its length.

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