

Article details: 2020-0285	
Title	Adherence to guidance for prioritizing higher risk groups for breast cancer screening during the COVID-19 pandemic in the Ontario Breast Screening Program: a descriptive study
Authors	Anna M. Chiarelli PhD, Meghan J. Walker PhD, Gabriela Espino-Hernandez MSc, Natasha Gray MPH, Ayesha Salleh MSc, Chamila Adhietty MPH PhD, Julia Gao MSc, Samantha Fienberg MD, Michelle A. Rey MSc PhD, Linda Rabeneck MD MPH
Reviewer 1	Robert Olsen
Institution	BC Cancer Agency, Centre for the North, Radiation Oncology
General comments (author response in bold)	<p>This is a well written, easy to understand paper, that is important, timely, and well suited for this journal. My comments are optional edits:</p> <p>1) I think presenting the backlog in absolute numbers has some downsides when comparing to other jurisdictions (500,000 is a huge number for small provinces to comprehend, and small number for US states such as California). Presenting the backlog as a proportion of population (perhaps in addition to absolute number) or some other relative measure could help for non-Ontario audiences</p> <p>Response 1: The authors updated the backlog analysis according to the editors' recommendation; the most recent available data and actual rather than projected screening numbers under the screening framework are now presented. The authors thank the reviewer for their recommendation and have added the following sentence to the interpretation describing the size of the screen-eligible population relative to the backlog size in Ontario (page 13): <i>"As of March 2021, an estimated 340,876 screening mammograms have accumulated in the backlog, representing almost a third of the 1.1 million screen-eligible people."</i></p> <p>2) The statement that REB was not required is not how my province would interpret the role of REB (I believe). I do not doubt the qualifications of the authors so this is likely correct, but I was just surprised as in my province I believe REB would have still reviewed the proposal.</p> <p>Response 2: We contacted the University of Toronto Research Ethics Board and confirmed that review was not required as the study fell into the category of "program evaluation." We have updated the sentence in the methods section (page 11) accordingly <i>"Research ethics approval was not required, because this study complied with privacy regulations and fell into the category of program evaluation as specified by the University of Toronto Research Ethics Office."</i></p> <p>3) If data is available, the results of the mammograms before and after COVID would be useful. Part of the calculation of how a system can catch up with backlog is the result of the mammogram, as some positive or indeterminate results require more resources to work up than a negative screen. A discussion on how the riskbased approach will lead to downstream increased workload for certain groups is important, but may be outside the scope of this work.</p> <p>Response 3: The authors have included a new Figure 3 that plots the abnormal screening volumes by risk group. This analysis showed how abnormal screening volumes show a similar pattern to total volumes and an observed increase in higher risk groups.</p>

	<p>Please see updates to methods (page 10): <i>“Abnormal screening volumes were also plotted by risk group prior to (January 2019 to February 2020) and during the pandemic (March 2020 to March 2021)”</i> and to results (pages 12-13): <i>“Abnormal mammogram volumes showed a similar pattern to screening volumes, with a decline to 2,690 (-48.7%) in March 2020 compared to 5246 in March 2019 (Figure 3). The volumes have steadily increased by 11.0% to 5,896 in March 2021, with a greater proportion for higher risk groups (3,503; 59.4%)”</i>.</p> <p>There is also interpretation on the potential effect of increase abnormal screening mammograms (page 14). <i>“Abnormal mammogram volumes began to reach or exceed pre-pandemic levels in mid- to late-2020 while total volumes were still well below pre-pandemic volumes. This may be partially due to the greater volume of higher risk screens but could also reflect the effects of participants being overdue for screening.”</i></p>
Reviewer 2	Waseem Sharieff
Institution	BC Cancer Agency Abbotsford Centre, Radiation Oncology
General comments (author response in bold)	<p>The authors addressed an important question. They looked at Ontario breast screening program before and after the pandemic to assess the impact on services and potential patient outcomes.</p> <p>a. The paper could be improved by clearly stating objectives and relevant methods. The graphs need more explanation and adding control limits or error bars may be useful.</p> <p>Response a: The authors have refocused this study as suggested by the editors to compare actual pandemic screening volumes (March 2020 to March 2021) to pre-pandemic 2019 volumes in all analyses. The objectives and relevant methods have been clarified and updated. As the new Figures 2 and 3 do not include predicted values and capture all OBSP screening volumes rather than a sample, the authors have not included control limits or error bars.</p> <p>b. I am not clear on the importance of the results. Also, I don't understand how prioritizing high-risk patients would increase diagnostic yield. Diagnostic yield will always be higher in high risk patients.</p> <p>Response b: Please see response 3 to reviewer 1. The authors have included a new Figure 3 that plots the abnormal screening volumes by risk group. This analysis showed how abnormal screening volumes had a similar pattern to total volumes with an observed increase in higher risk groups.</p> <p>The potential effect of increase abnormal screening mammograms was added to the interpretation section (page14). <i>“Abnormal mammogram volumes began to reach or exceed pre-pandemic levels in mid- to late-2020 while total volumes were still well below pre-pandemic volumes. This may be partially due to the greater volume of higher risk screens but could also reflect the effects of participants being overdue for screening.”</i></p> <p>We have also updated the conclusion (page 15) to explain this further <i>“Even though a substantial total backlog persists, prioritization can shift the backlog from higher to average risk groups with corresponding increases in abnormal mammograms. This may ultimately improve diagnostic yield and redirect resources where capacity is constrained to minimize potential long-term harms due to the pandemic.”</i></p>

c. One point to be noted is even after resumption of services, many patients are reluctant to show up to their appointments. This is also a factor in reduction of exams.

Response c: The authors agree with the reviewer, however, did not collect patient information as part of this study. This has been clarified in the limitation section (page 15). *“However, using a pre-/post-design has limitations including not accounting for other events that may have occurred at the same time as the pandemic or factors such as barriers to increasing resource capacity and participant decisions about undergoing screening.”*

I hope that we have satisfactorily addressed all the Editors’ and Reviewers’ concerns and that you will find the paper suitable for publication. Please contact me if you have any further comments or questions. Thank you in advance for your consideration. I look forward to your reply at your earliest convenience.