Article details: 2019-0114	
Title	**Health system costs for cancer medications and radiation treatment in the four most common cancers**
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Reviewer 1	Dr. Waseem Sharieff
Institution	BC Cancer Agency Abbostford Centre, Radiation Oncology
General comments (author response in bold)	The authors use administrative databases to estimate the cost of treatment for breast, colorectal, lung and prostate cancers with medications and radiotherapy. They used two algorithms (unpublished) to estimate the costs related to medications and radiotherapy in the first year since diagnosis from provider's perspective. They found that advanced stages of cancer were associated with higher costs compared to earlier stages. The authors address an important issue. There is increasing strain on the health system from the rising costs of the treatment and it may help decision makers to identify the main components where costs could be contained or reduced. I have the following comments that may help in improving the manuscript: 1. The authors may consider to explicitly describe their costing methods rather than to refer to one of their papers that is unpublished. They kindly provided the manuscript upon request for my review. It appears that they used an ingredient approach to costing such that cost = unit price x resource volume. This method is helpful for extrapolating results across different settings. However, they described cost items in aggregate form and it was difficult to identify specific cost components. 2. The authors may also consider to emphasize how their results could be used for decision making. Decision makers often rely on total costs, cost effectiveness, and budget impact. While cost effectiveness analysis could be out of the scope of this work, but a budget impact analysis could be added. Comment 1: Explanation of algorithm **We had provided the authors with the accepted pre-published manuscript. We have provided more information on the costing algorithm as requested.** **The manuscript has been updated to reflect this addition.** Comment 2: Uses of data **Costing information is important for access and affordability.** **In the age of shrinking health care dollars and expensive treatments, there is a need to understand the resources and costs associated with treatments. Decision makers need this type of data when conducting health technology assessments, budget impact analyses and economic analyses.** **The authors agree with the reviewer and had added budget impact analyses to the uses of this costing work.** **We have also added health technology to the list of uses of this costing work.**
Reviewer 2	Mr. Thomas G. Poder,
Institution	CHUS, Unité d'évaluation des technologies et des modes d'intervention en santé, Sherbrooke, Quebec
General comments (author response in bold)	The article is interesting and the title is clear. 1. However, what does it add to know these costs? Should be more clear why the study was conducted and what is the value added. Why it is important to measure these costs. What will be changed after we know these costs? It is important to know it but you need to explain why. 2. Why only the cost for 365 days after diagnosis? It is more interesting to know the cost for the entire process (i.e. cost of care). 3. In the Interpretation section of the abstract you refer to stage III and IV, but this was not in the result. This is inappropriate here. 4. Strobe statement: item 9 you indicate NA: very surprising! No bias in data source… 5. Please specify what costs include? Only drugs, or also wages… 6. December 31 2014 or 2015? Top of page 8 it is 2014… 7. The word "year" is missing at page 11, third line in Lung cancer section. 8. If patients already had a cancer prior to diagnosis, was it considered in the cost analysis? Comment 1: Importance of Costing Data and Work **Please refer to the interpretation section.** Comment 2: 365 days

Updated sentence:

The costing algorithms can be used for any time period investigated and based on data availability and time horizon. In this study, we used a 365 day time horizon because the last members of the cohort included in the analysis had only one year of follow-up in the datasets available.

Comment 3: Interpretation of Stage III and IV

See above- removed since stage-specific results not included in abstract.

Comment 4: STROBE Statement

The reviewer was surprised that we indicated no bias in the data source.

Since this was a cohort based on the entire population, there is no selection bias. Everyone in the province of Ontario was included in the analysis

Moreover, exclusion criteria to generate the cohort were minimal, allowing for a representative population of ALL provincial residents with index cancers with appropriate diagnostic codes.

There could be a potential bias in the fact that not all costs are included in the analysis, namely non-health system costs, because they are not available from the provincial databases. But the perspective of the analysis is clearly stated.

We have added the following statement into the discussion section.

The costs are based on only health system costs and thus do not include any non-publicly funded health system costs.

Comment 5: Included costs

We have added the following statement into the discussion section. The costs are based on only health system costs and thus do not include any non-publicly funded health system costs.

Please refer to the response above with the description of the algorithm.

All cost variables are presented in the updated description and in the tables.

Comment 6: Date clarification

Dec 31, 2015 (fixed)

Comment 7: word addition

Added year

Comment 8: Prior cancer

The inclusion criteria for the cohort included only index cancers. Individuals with previous cancers were excluded from the analysis.

The rationale for this was to ensure that costs were attributable to the cancer diagnosis. If more than one cancer, attribution to which cancer would be complicated.

The manuscript was not updated as the inclusion criteria are clearly stated.