

Article details	
Title	Understanding the costs of cancer care before and after diagnosis for the 21 most common cancers in Ontario: a population-based descriptive study
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Reviewer 1	Brian Weirnerman
Institution	Vancouver Island Health Authority Administration, Vancouver BC
General comments	<p>While we might assume that living less than one year equated to advanced cancers for the most part (although not necessarily as some may have died from treatment), those cancer patients surviving more than one year will be a mixture of advanced disease, patients given adjuvant chemotherapy and other potentially curative treatments. In other words a hodge podge. However, some quite useful data could come out of this.</p> <p>What are the costs of treating the elderly and how long did the majority live? This would tell us a little about the wisdom of treating the elderly. Several 5 year groups over 65 could be used.</p> <p>What are the reasons esophageal cancers cost so much? Is this the result of stents, hyperalimentation, etc?</p> <p>What about the different costs for health care regions? The authors state that perhaps in the more northerly regions cancers are diagnosed later. They should look at the proportion of patients in those areas to see if the majority live less than a year or what the average survival of specific types of cancer are compared to the larger southern areas. If worse then this should be an area of concern and focus. This would be a extremely important finding.</p>
Reviewer 2	Chris Skedgel
Institution	Department of Medicine, Dalhousie University, Halifax NS
General comments	<p>The manuscript describes the costs of people with cancer in the 12 months prior to the diagnosis of cancer, and 12 months following their diagnosis of cancer, categorized by the type of cancer. They report substantial variations in cost by cancer type as well as by geographic location, and note that such data is not currently available in Canada.</p> <p>The manuscript is very well written, and the authors correctly note that such estimates will be of tremendous interest for economic evaluations and burden-of-illness studies. However, as they also acknowledge, these estimates represent the costs of persons with cancer, NOT the cost of cancer itself. As such, these results will be of only limited interest relative to the planned (and much more meaningful) case-control analysis that will be able to estimate the cost differential associated with a cancer diagnosis.</p> <p>Given the objectives of this study the methods appear entirely appropriate, and I have only a few minor critiques. First, I understand the rationale for assessing costs in the pre-diagnosis period, but how was the 12-month timeframe chosen? This seems to be at the long end of diagnostic relevance for many cancers and may risk diluting the costs of diagnosis with "non-utilization" earlier in the period. Second, how was the precise date of diagnosis assigned? The first appearance of any cancer code? The first appearance of an oncologist billing code? Third, and perhaps somewhat pedantically, I disagree with the premise expressed in the discussion, that relative cost should determine research priorities. Funding priorities are not and should not be based on a simple ranking, whether by cost, morbidity and mortality, or public support. Rather, prioritization must consider all these factors together, as well as the prospects of a research success. The paragraph as written suggests an over-simplification of research prioritization. Finally, should the "usual" in line 55 of page 11 read "unusual"?</p> <p>In summary, although the manuscript is well written and, given its objectives, methodologically appropriate, I feel its contribution will be minor relative to the planned and much more meaningful case-control analysis the authors note in the discussion.</p>
Author response	The major criticism is that our study is not a case-control analysis. Descriptive costing studies reflect actual burden of care and are very useful for understanding exactly what is paid by the health care system. These analyses help translate the adverse effects of diseases, for example, into dollars, an easy concept for policy makers to understand. Case-control studies answer a different question, namely what could be saved if cancer was eliminated; this is an

important question too, but not the only one. Our cost estimates can also be used to help justify intervention programs; assist in the allocation of research dollars on specific diseases; provide a basis for policy and planning relative to cancer prevention and control initiatives; and an important input for economic evaluations.

All other comments are minor and have been addressed in the attached revised manuscript. For example, Reviewer 1 suggested that the analysis include more information on the elderly, namely their survival time and the costs involved with treating them, to obtain a better understanding of this specific population. We have included these analyses in the current version of our manuscript. Reviewer 1 also requested that we explain in more detail why patients with esophageal cancer have such high costs; we have examined procedure and physician billing codes associated with this cancer and have provided some rationale for this result. Finally, Reviewer 1 suggested that we examine in more depth some of the underlying reasons behind the regional cost disparities we observed for Ontario; we have investigated this finding a bit further in the revised manuscript.

Reviewer 2 suggested that 12 months might be too long for the pre-diagnosis phase of some cancers. We explored the existing literature and our own data to determine a more optimal length for the pre-diagnosis phase and decided upon a length of 3 months; the pre-diagnosis cost estimates are now expressed as such. Reviewer 2 also requested information concerning the determination of the date of cancer diagnosis; we have included some text to explain this. Finally, the last comment was regarding our section on the ways to determine research priorities; in our manuscript we included a mere suggestion on how to do so.