

Article details: 2012-0039	
Title	Trends in utilization and costs of initial cancer treatment in Ontario
Authors	Claire de Oliveira, Karen Bremner, Reka Pataky, Nadia Gunraj, Mahbulul Haq, Kelvin Chan, Winson Cheung, Jeffrey Hoch, Stuart Peacock, Murray Krahn
Reviewer 1	Mattias Neyt
Institution	Belgian Health Care Knowledge Centre (KCE)
General comments	<p>I read with great interest the article "Trends in Utilization and Costs of Initial Cancer Treatment in Ontario". I consider the relevance, importance and quality of the work of a high level. Next to some minor changes, I would like to recommend publication of this article in CMAJ.</p> <p>I would also like to congratulate the authors for writing this very interesting manuscript.</p> <p>Major remarks: none Minor remarks: Abstract: - P4, l15: Methods: o "we selected patients": show how big the sample was (n=?) o Already mention in the methods that costs were adjusted to 2009 CAD</p> <p>- P4, l30: results: o "The greatest increases": in cost or in number of patients? The next sentence mentions mean costs. It is preferred to mention this already in the first sentence</p> <p>- P4, l48: conclusions: o "The statistically significant increase in costs of initial cancer treatment is primarily due to more patients". Increase in mean costs of...</p> <p>- P5, l3: conclusions: o "can help policy makers achieve a more accountable, high-performing health care system". Can help policy makers to take the necessary measures to achieve a more accountable, ...</p> <p>Text: - P6, l30: female breast: as in the abstract, immediately mention ("breast hereafter") when it is mentioned for the first time (now this is mentioned on page 7)</p> <p>- P7, l27: "(see Appendix, Table 1)" o I suggest to mention this after the sentence that refers to this table, i.e. two sentences higher.</p> <p>- P8, l17: "We employed validated costing methods used in previous work to obtain robust estimates of utilization and costs (10)." o Is it possible to mention the core of the applied technique in the methods section or in appendix?</p> <p>- P8, l8: "Details are provided in the appendix": mention the number of the appendix.</p> <p>- P13, l32: "Patterns of care and practice tend to be similar in other Canadian provinces and other developed countries" o Do you have references to support this. If so, please add these references. (on page 14, you already provide one reference)</p> <p>- P15, l25: "Our study included patients younger than 65" o Do you mean: we included patients of all ages, also those younger than 65? (and not only those younger than 65) If possible, rewrite the sentence to avoid possible confusion.</p> <p>- P15, l56: "In addition, the ODB only covers patients aged 65 and over and special cases." o What is the possible impact of this limitation?</p> <p>- P16, l4-8: "Finally, we did not look beyond the first year post-diagnosis and may have included (high) costs of the pre-death period for some patients. This is likely to be of concern for cancers with short survival (colorectal and lung cancers)."</p>

	o idem, what is the possible impact. Possibly the relative impact is limited since the same approach is applied to all years, and thus probably will have a small impact on the general trend of increasing treatment costs.
Reviewer 2	Devidas Menon
Institution	Institute of Health Economics, Public Health Sciences
General comments	<p>GENERAL COMMENTS: This manuscript presents results of analyses of 10 years of Ontario administrative data relating to utilization and costs of the care of cancer patients during the year after diagnosis. The data sources and analysis methods are clearly described. Detailed results on trends in utilization and costs by cancer type are presented clearly. Statistically meaningful changes over the 10 years are well documented. There is new information presented in this manuscript. However, it is unclear to this reviewer as to what the target audience for this manuscript is. If this is to have a major impact in Ontario and elsewhere, it would be important to understand the cause of some of these trends, which the authors attempt to do, but do not completely succeed.</p> <p>SPECIFIC COMMENTS: Page 6, lines 20-25 – I agree completely with this sentence, but the paper does not really speak directly to “prices” at all, and merely suggests they have an impact. Page 6, line 48 – The promise of this last sentence is not really kept by the manuscript. It would be useful to have a commentary on how these findings actually could inform future cancer care planning. Page 7, lines 20- 25 – There is no discussion later in the manuscript as to what extent the review of the histology codes demonstrated that the cohort was representative of clinical practice. Page 13, lines 10 – 22 – This is a repetition of results already presented, and is not “Interpretation” Page 13, lines 27-38 – It would appear that the increased use of therapeutic services for cancer is not unique to Ontario, since the authors cite 2 studies from the US. However, is it unique to cancer? Some comment on cancer vs. other conditions and the use of high-tech interventions would have been helpful to put some context into the findings. Page 13, lines 43-53 – The authors seem to attribute the increased use of chemotherapy to evidence of clinical improvement with the use of adjuvant chemotherapy. But the link between evidence and utilization is not always obvious. Page 14, lines 38-45 – Home care is clearly a priority across Canada. I agree with the authors that their finding of increased use of home care is “interesting”, but what does this mean for health care in the future? Is there a message here that there should be more home care funded by the government? And how does increase compare with the increase in all home care? Is this really about cancer specifically? The authors probably have the answers to this, and the paper would be much more impactful if they were provided.</p>
Reviewer 3	Nicola Liberato
Institution	Azienda Ospedaliera della provincia di Pavia, Internal Medicine, Italy
General comments	<p>The study deals with and gives important information on the trend of costs of initial cancer treatment.</p> <p>Minor comments</p> <ol style="list-style-type: none"> chemotherapy use increased 7% in younger and 16% in older, its cost around \$9000 in younger and \$5000 in older: the use of high-cost drugs is therefore the main reason of chemotherapy cost increase, and this should be clearly discussed and stressed can the observed changes in breast surgery expenditures in the 1997-2001 and 2003-2007 periods be considered significant? the reasons why mean colon surgery cost increased significantly and progressively from 2000 to 2007 should be discussed page 13, line 13: figure 2 (not 2A)
Author response	<p>Reviewer: 1</p> <p>Abstract:</p> <ol style="list-style-type: none"> P4, I15: Methods: <ol style="list-style-type: none"> “we selected patients”: show how big the sample was (n=?) Already mention in the methods that costs were adjusted to 2009 CAD We have included the sample size in the abstract; we have also mentioned that costs were adjusted to 2009 CAD. P4, I30: results: <p>“The greatest increases”: in cost or in number of patients? The next sentence mentions mean costs. It is preferred to mention this already in the first sentence</p>

These increases refer to costs and have been mentioned in the first sentence, as requested.

3. P4, I48: conclusions:

"The statistically significant increase in costs of initial cancer treatment is primarily due to more patients". Increase in mean costs of...

This sentence has been changed as suggested by the reviewer.

4. P5, I3: conclusions:

"can help policy makers achieve a more accountable, high-performing health care system". Can help policy makers to take the necessary measures to achieve a more accountable, ...

This sentence has been changed, as suggested by the reviewer.

Text:

5. P6, I30: female breast: as in the abstract, immediately mention ("breast hereafter") when it is mentioned for the first time (now this is mentioned on page 7)

Female breast has been spelled out the first time mentioned.

6. P7, I27: "(see Appendix, Table 1)"

I suggest to mention this after the sentence that refers to this table, i.e. two sentences higher.

We have mentioned this sentence earlier on, as suggested by the reviewer.

7. P8, I17: "We employed validated costing methods used in previous work to obtain robust estimates of utilization and costs (10)."

Is it possible to mention the core of the applied technique in the methods section or in appendix?

The core of the applied technique is mentioned in the Appendix. The main aspects of the methodology are discussed in the paper.

8. P8, I8: "Details are provided in the appendix": mention the number of the appendix.

We have mentioned the number of the appendix, as suggested by the reviewer.

9. P13, I32: "Patterns of care and practice tend to be similar in other Canadian provinces and other developed countries"

Do you have references to support this? If so, please add these references. (on page 14, you already provide one reference)

We have included the reference mentioned on page 14.

10. P15, I25: "Our study included patients younger than 65"

Do you mean: we included patients of all ages, also those younger than 65? (and not only those younger than 65) If possible, rewrite the sentence to avoid possible confusion.

We have clarified this sentence – we have included all patients 18+, including those younger than 65.

11. P15, I56: "In addition, the ODB only covers patients aged 65 and over and special cases."

What is the possible impact of this limitation?

The fact that the ODB program only includes data on patients ages 65 and over and special cases and therefore our cost estimates may be an underestimate; this has been clarified in the revised version of the manuscript.

12. P16, I4-8: "Finally, we did not look beyond the first year post-diagnosis and may have included (high) costs of the pre-death period for some patients. This is likely to be of concern for cancers with short survival (colorectal and lung cancers)."

What is the possible impact? Possibly the relative impact is limited since the same approach is applied to all years, and thus probably will have a small impact on the general trend of increasing treatment costs.

We may have included (high) costs of the pre-death period for some patients; this will have likely biased our results upwards. We have clarified this in the revised version of the manuscript.

Reviewer: 2

SPECIFIC COMMENTS:

1. Page 6, lines 20-25 – I agree completely with this sentence, but the paper does not really speak directly to “prices” at all, and merely suggests they have an impact. We disagree with this sentence. The impact of prices on expenditures is mentioned in the interpretation section when discussing the observed increase in the costs with cancer-related surgery.
2. Page 6, line 48 – The promise of this last sentence is not really kept by the manuscript. It would be useful to have a commentary on how these findings actually could inform future cancer care planning. We have addressed this concern and highlighted how our estimates can be used to predict future utilization and expenditures.
3. Page 7, lines 20- 25 – There is no discussion later in the manuscript as to what extent the review of the histology codes demonstrated that the cohort was representative of clinical practice. We have changed this sentence; there is no longer any need to discuss this point.
4. Page 13, lines 10 – 22 – This is a repetition of results already presented, and is not “Interpretation” We have summarised the findings as suggested by the CMAJ Open journal structure.
5. Page 13, lines 27-38 – It would appear that the increased use of therapeutic services for cancer is not unique to Ontario, since the authors cite 2 studies from the US. However, is it unique to cancer? Some comment on cancer vs. other conditions and the use of high-tech interventions would have been helpful to put some context into the findings. The increase in the use of high-tech interventions is not unique to cancer; we have clarified this. However, we highlighted that why it is common to most diseases, the observed increase with cancer-related care is important given its economic burden.
6. Page 13, lines 43-53 – The authors seem to attribute the increased use of chemotherapy to evidence of clinical improvement with the use of adjuvant chemotherapy. But the link between evidence and utilization is not always obvious. We did not state this; this is merely a conjecture on our part.
7. Page 14, lines 38-45 – Home care is clearly a priority across Canada. I agree with the authors that their finding of increased use of home care is “interesting”, but what does this mean for health care in the future? Is there a message here that there should be more home care funded by the government? And how does increase compare with the increase in all home care? Is this really about cancer specifically? The authors probably have the answers to this, and the paper would be much more impactful if they were provided. The increase in home care is not unique to cancer; we have clarified this. The discussion around whether home care should be funded by the government or not is not within the scope of this analysis; however, there have been recent calls to expand home care coverage in Canada.

Reviewer: 3

Minor comments

1. chemotherapy use increased 7% in younger and 16% in older, its cost around \$9000 in younger and \$5000 in older: the use of high-cost drugs is therefore the main reason of chemotherapy cost increase, and this should be clearly discussed and stressed. We have indicated this reason in our manuscript.

2. can the observed changes in breast surgery expenditures in the 1997-2001 and 2003-2007 periods be considered significant? Yes, the observed changes can be considered significant; we have included the level of statistical significance for clarity.

3. the reasons why mean colon surgery cost increased significantly and progressively from 2000 to 2007 should be discussed. We provide some speculation as to why this occurred; in particular, we have suggested that this is likely due to the use of more advanced and expensive surgical techniques, such as laparoscopic and robotic surgeries.

4. page 13, line 13: figure 2 (not 2A) We have corrected this; it should read Figure 2 and not Figure 2A.

