Reviewer’s report

Title: How many people will need palliative care in 2040? Past trends, future projections and implications for services.

Version: 1 Date: 22 Feb 2017

Reviewer: Martin O’Flaherty

Reviewer’s report:

Thanks to the authors for addressing thoroughly my previous comments. The paper has improved considerably since last version. However, I do consider there is still room for improvement.

1. The authors claimed that around ¾ of all deaths may benefit from some type of palliative care before death. This implies a broader definition of what palliative care is and make us believe that the range of options for palliative care is wider from what we traditionally know. I suggest to briefly describe in the introduction examples of the types and range of options of palliative care available in the UK.

2. The methods section is very confusing. I suggest the following structure and headlines:

Methods

(with a brief summary of what we will read in this section, see point 3 of this review)

• Data sources

• Baseline estimates of palliative care need (describing method 1 and 2 for the period 2006-2014)

• Projections of palliative care needs (describing the rest of the methods, see point 4 and 10)
  o Projections by age group
  o Projections by disease group
  o Incorporating pain prevalence

• Sensitivity analysis (all the bits of sensitivity analysis that are mentioned through the text can go here) This section can also go to the appendix.

3. In the methods section, page 5 line 12: We projected two palliative care need estimates…. I thought there were actually main three methods, plus analysis by age group,
disease group and pain prevalence. An introduction of all type of analyses to be conducted at the beginning of the methodology is a very good idea, but this needs to be completed. Please address first points 2 and 10 before modifying this summary.

4. Page 5, lines 45-14. These sections again talk only about two methods. The authors need to make clear that two methods were used to calculated palliative care needs at baseline (2006-2014) ONLY. Then there are other methods for the projections of palliative care needs. Perhaps it would be useful to only have two methods (1 and 2) and rename the methods in the projection methodology as:

- Method 1 assuming proportion of palliative care needs constant
- Method 2 assuming proportion of palliative care needs constant
- Method 2 assuming an annual change (previously method 3a. Since it is also based in ICD codes, I don’t see why it need to be renamed differently)

5. Page 5, lines 25-42. This section would be more appropriate for the introduction as it is part of the definition of palliative care.

6. Page 5, line 45: Most population estimates of palliative care need produce broadly similar results,[5, 19, 21, 22] What type of results? Similar between them or with this study? This perhaps should be mentioned in the Introduction and Conclusion. In the introduction, what already has been done on estimating palliative care needs in the past, in the UK, in the world? What are the limitations of these studies? These all serve as supporting evidence for why this paper is novel and very much needed. In the Conclusion, the authors can compare their results against these studies and discuss why the differences/similarities.

7. Why reference [23] is not part of the other studies mentioned in Page 5, line 45?

8. The paragraph in Page 6, lines 17-25 seems out of place. It would read better under the “Design” subtitle.

9. The paragraph in Page 7, lines 28-45 contains technicalities that are not particular relevant to the main message of the paper. The authors are already presenting a range on different methods and sensitivities analysis, no need to give this level of detail to the reader. I would suggest to create a technical appendix and move this section there.

10. The projection methodology still is confusing to read. I would suggest to re arrange it as in point 2 and 4 of this review. The distinction between Methods 3a and 3b should go to the appendix, especially because their results are very similar. The analysis is interesting from a technical point of view but not particularly relevant for the main message of this paper. The authors are presenting many different estimates of palliative care need using different methodologies, no need to overload the readers.
11. Method 3 needs to be justified. Why the authors felt method 2 was insufficient and decided to go for Method 3?

12. Page 8, line 52. Which is the width of the age-bands?

13. Page 9, line 12, is there any references that supports some codes of other groups were recoded as Dementia?

14. I would suggest to breakdown the result section in the same way and order as I suggested for the methods (see point 2)

15. Page 10, line 7. Deaths in those aged over 85 years increased from 33.4% of deaths to 38.8% of deaths. I don’t think this is relevant here. We are not interested in mortality trends from 2006-2014 in the very old

16. Page 10, Line 9 In this time period, population palliative care need has also risen from 364,283 (72.5 % of deaths) to 375,398 (74.9%; mean annual change of 0.30%) Is this method 2? Please clarify

17. The effect of change of coding for Dementia is not very relevant. Send it to the appendix perhaps?

18. Table 2 contains data that is not a result from this study but ONS data. I think its inclusion on the result section is unnecessary

19. Page 14, line 39. Do we have a references for : It takes over 10 years to train a community geriatrician, and so workforce planners need to act now?

Are the methods appropriate and well described?  
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?  
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?  
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
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I am able to assess the statistics

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