Author's response to reviews

Title: Who pays and who benefits: How different models of shared responsibilities between formal and informal carers influence projections of costs of dementia management in Australia.

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Who pays and who benefits: How different models of shared responsibilities between formal and informal carers influence projections of costs of dementia management in Australia.

Referee 3:
Minor edits:
1. Abstract methods – insert options (as underlined) “Data from a variety of sources was recalculated to distribute this prevalence according to the location (home/institution), care requirements (informal/formal), and dementia severity.”

   Changes made to manuscript.

Associate Editor's Comments:

Further revisions necessary.

1. The abstracts conclusion states that ?dynamic systems modelling allows for future trends to be accurately calculated.? But accuracy has not been tested in the study and the limitations section repeatedly mentions that there is not sufficient data to accurately estimate these costs.

   Changes made to manuscript.

2. As previous reviewers discussed there is a need for a complete sensitivity analysis. The authors suggest that they have not undertaken the sensitivity analysis since they 'do not aim to provide definitive statistical results'. The goal of a sensitivity analysis is to quantify the uncertainty in the estimates. As the authors mention numerous times, the estimates are very uncertain. Stating that it is uncertain is not sufficient, a calculation of this uncertainty should be provided. This should be done by presenting the possible ranges of all input parameters (cost and prevalence parameters) and testing the results of these ranges on outcomes. Ideally, as with all such mathematical models, this should be done using a probabilistic sensitivity analysis. Estimates become even more uncertain over time. This uncertainty should also be quantified rather than simply discussed in the discussion, "In future these assumptions may change significantly and so will the projected outcomes."

   As the sensitivity analysis pertains to the dementia prevalence model, the authors are of the opinion that the sensitivity analysis that was conducted in the paper assessing this model should be sufficient if referenced in text. The article citation is below.


   If in the opinion of the Editor this is not sufficient then new sensitivity analysis will need to be performed with very broad range of parameters. Results of such analysis will be presented in the appendix of the manuscript. However we believe that it may be in the end counterproductive as the model has already been extensively tested with a 'typical' range of parameters.

3. As mentioned by the reviewers a cost of the hypothetical treatment should be included even if only as a scenario analysis. Conclusions that only include the benefits of the
hypothetical treatment and no costs are very misleading. Recommend using the cost of current biologics.

The authors did not feel it was appropriate to predict the cost of future treatments as there was no reliable estimates available to how much these might cost. The cost of a hypothetical example has been included which uses the current cost of Aricept as an example of a potential intervention. It has been made explicit at the end of the results section that costs would be involved in an intervention and that the cost selected of Aricept is purely for the sake of an example.

4. Need to compare results with previously cited studies and justify differences as per point 15 in the reviewers comments. It can be mentioned that results are not expected to be similar, but the magnitude of the differences are important and an explanation as to why they are different or not.

Differences have been made explicit and compared to previous literature. The expected inconsistency between studies of prevalence and cost has also been described. Changes exist in discussion of manuscript.

5. Remove double negative p6 line 4 'nor cannot

Completed

Editorial Requirements:

*Competing interests: Please include a 'Competing interests' section after the Conclusions. If there are none to declare, please write 'The authors declare that they have no competing interests'. Please check the instructions for authors on the journal website for a full list of questions to consider when writing your competing interests statement.

Changes made to manuscript

*Box: Unfortunately we cannot incorporate boxes. Please either change the box to a table and update any references to within the text, or include the information within the manuscript text. You can use indentation to highlight the text

Changes have been made to manuscript

*Tables: Please ensure that the order in which your tables are cited is the same as the order in which they are provided. Every table must be cited in the text, using Arabic numerals. Please do not use ranges when listing tables. Tables must not be subdivided, or contain tables within tables. Please note that we are unable to display vertical lines or text within tables, no display merged cells: please re-layout your table without these elements. Tables should be formatted using the Table tool in your word processor. Please ensure the table title is above the table and the legend is below the table. For more information, see the instructions for authors on the journal website.

Changes made to manuscript (removal of horizontal lines)

*Tables as additional files: We notice that you have included tables as additional files. If you want the tables to be visible within the final published manuscript please include them in the manuscript in a tables section following the references. Alternatively, please cite the files as Additional file 1 etc., and include an additional files section in the manuscript.
All tables are now included in the manuscript

*Figure titles:* All figures must have a figure title listed after the references in the manuscript file. The figure file should not include the title or number (e.g. Figure 1... etc.). The figures are numbered automatically in the order in which they are uploaded. For more information, see the instructions for authors: http://www.biomedcentral.com/info/ifora/figures.

*Figure cropping:* It is important for the final layout of the manuscript that the figures are cropped as closely as possible to minimise white space around the image. For more information, see the instructions for authors: http://www.biomedcentral.com/info/ifora/figures. This is fine

Other changes:

*Minor grammatical changes have been conducted.*

*TM has been added as an author on the paper.*