Reviewer's report

Title: Paediatric Palliative Care improves patient outcomes and reduces healthcare costs: Evaluation of a home-based program

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Reviewer: David N. Korones

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This is a well done assessment of the impact of pediatric palliative care services on the quality of life of children and families and the cost of such services. It is very thoughtful and thorough. My main general criticisms are that there are significant differences between the palliative care and control groups that need to be explained and further explored. The reader needs to be convinced that the differences between these 2 groups is largely accounted for by the palliative care services and not some inherent difference between the groups. My other general criticism is regarding the prospective study. This really seems like a different study and it might be better for the authors to take that out of this report and submit it (with more details) as a separate study. Specific criticisms are outlined below:

ABSTRACT

1. If possible, if more specific numbers and P values for the most important findings could be included, that would make the "results" section more compelling.

BACKGROUND

2. Page 3, lines 4-7. This is sentence is a little long and awkward. Also it ends with "an alternative approach is warranted", which leaves the reader thinking, "alternative to what"

3. Page 3, lines 17-20. The authors mention that there is a dearth in evidence but it is not clear what there is a dearth of evidence of? Perhaps it would be better to say there is a "dearth of evidence of its impact on care" (or something like that). Also, it seems to me that another reason we lag behind the adult world is that (fortunately) there are not nearly as many kids who die as adults so from a practical standpoint, it is harder to study with fewer subjects.
4. **OBJECTIVES:** I really like the way the authors have very specifically listed the objectives of the study and how organized their subsequent approach in answering them is.

**METHODS**

5. Table 1. I don't think a table is necessary for this sort of information. It can be listed in a sentence.

6. Page 6, lines 8-14. There is no explanation here of what determined whether a child received palliative care services. This is part of the problem pertaining to comparing these groups and needs to be fleshed out here, in the results, and in the discussion.

7. Table 2. I don't think this table is needed as well.

8. Page 8, lines 1-16. The authors have done a nice job detailing the specifics of cost, but it is a challenge for the reader (at least this reader!) to keep it all straight. Is that much detail needed? For example, is it important to describe both health care resource utilization and medical charges? Are all the details of fixed + variable costs for Star PAL necessary? I defer to the authors on this - but just to know, it is hard to follow.

**RESULTS**

9. Page 9, line 24. The authors note that 260 patients were excluded. That is a lot - almost 80% of the potentially eligible cohort. The authors should list why these 260 patients were excluded so the reader can get a sense of whether the remaining 67 are representative of the entire cohort vs a biased sample.

10. Table 3. This table highlights the general concern about differences between the PPC and control groups. There are significant differences in age, ethnicity, residency and referral source that could conceivably have an impact on differences between the groups. Maybe not, but regardless, the authors need to explain and explore this.
11. Page 11, lines 7-11. It would be nice to have more specific numbers on ED visits (e.g., include in Table 4). It would be good to also include numbers, percentages of patients with ACP discussions, not just "5 x" and the p value.

12. Page 12, Lines 6-9 and Table 5. This is hard to understand. Is this just the same thing as Figure 1 but stated in a different way? If so, I don't think it adds much more than Figure 1, which very nicely and dramatically illustrates the differences in cost.

13. Page 13, Table 6 and lines 3-7. There is too much detail in the table. The ages could be condensed (e.g., <12 and >12 or 0-1, 1-12, 13 or older). Perhaps neoplasm and leukemia could be combined, and total number of respondents could be in small print under the table. As for lines 3-7, it is very vague, no numbers, no P values. There needs to be numbers and P values.

14. Page 14, Table 7 and lines 9-13. Same as above. Too much detail in the table (could even be eliminated) and not enough detail in the descriptions of findings.

DISCUSSION

15. Page 15, line 18. It is mentioned that regarding the control group, "they had all died in the hospital." This speaks again to the potential difference between the control and PPC groups. Did the control group all die in the hospital because they were disproportionately non-residents? or was it the lack of PPC?

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

Yes

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?
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Yes
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If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

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